2015 ANNUAL REPORT

QUARTZ MINING LICENSE QML-0009

March 2016

Prepared for:

YUKON GOVERNMENT - ENERGY, MINES AND RESOURCES

Distribution:

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First Nation of Na-cho Nyak Dun	1 original bound

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1 INTRODUCTION

Alexco Keno Hill Mining Corp. (AKHM) was issued Quartz Mining License (QML) QML-0009 on November 17, 2009. A request for amendment of this License to include mining activities at the Lucky Queen and Onek 990 Mines was submitted in 2012 and approved January 13, 2013. Prior to this, letters of approval for preliminary development of the Onek 990 and Lucky Queen Mines were received in November 2012.

On August 20, 2010, type A Water Licence QZ09-092 was issued to AKHM for operation of the Bellekeno Mine and Mill. Subsequently, on September 7th, 2010, the Bellekeno Mine became a "mine under development" as defined in subsection 1(1) and subsection 1(2) of the federal *Metal Mining Effluent Regulations*. On May 16, 2013, AKHM received an amendment (QZ12-053) to Water Licence QZ09-092 to similarly include the Lucky Queen and Onek 990 Mines. This report serves to fulfill the reporting requirements of the QML as defined under paragraphs 12.5 of QML-0009 and Section 14.0 of the Monitoring and Surveillance Plan. The district operations were placed in temporary closure in September 2013; therefore, no mining or milling activities occurred in 2014 or 2015. Activities in 2014 and 2015 focused on care and maintenance, water treatment, and monitoring.

1.1 LOCATION

The Bellekeno Mine, owned and operated by AKHM, is located in the vicinity of Keno City (63° 55'N, 135° 29'W), in central Yukon, 354 km (by air) due north of Whitehorse. Access to the property is via a paved, two-lane highway from Whitehorse to Mayo (407 km) and an all-weather gravel road northeast from Mayo to Elsa (45 km); a total distance of 452 km. The property lies along the broad McQuesten River valley with three prominent hills to the south of the valley. Figure 1-1 shows the general project location within Yukon while Figure 1-2 shows the location on a smaller scale. The Bellekeno area is located about 3 km east of Keno City, the Onek 990 Mine is about 0.5 km to the northeast of Keno City ,the Keno Hill District Mill site is about 1.2 km to the west (Figure 1-3), while the Lucky Queen Mine is about 4 km to the north of Keno City.

AKHM

AEG

ALEXCO KENO HILL MINING CORP.

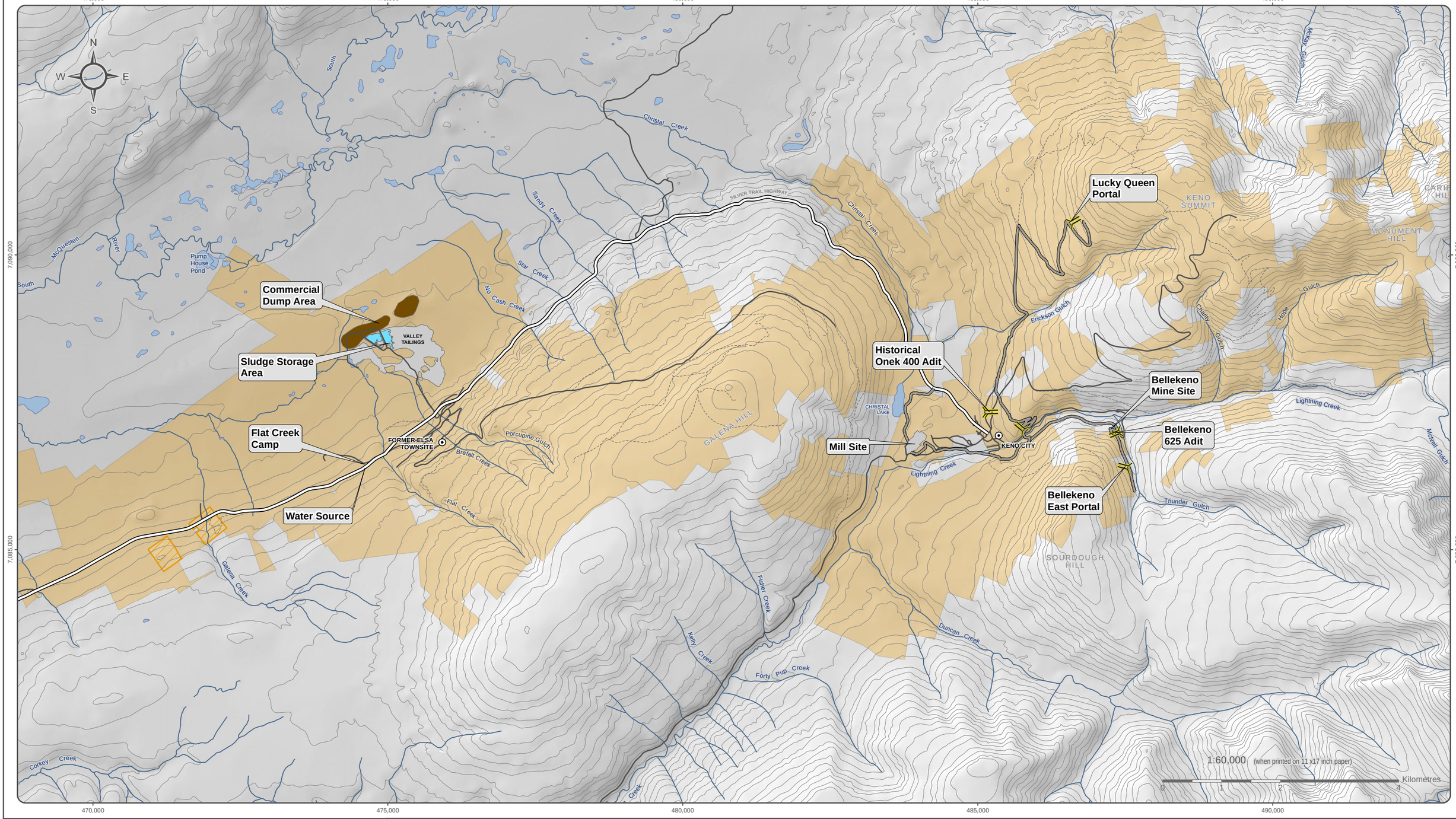
QML ANNUAL REPORT

FIGURE 1-1

PROJECT LOCATION

MARCH 2016

D:\Project\All\Projects\ALEX-05-01\gis\mxd\Overview_Maps\Project-Location\Project_Location_MASTER_20160316.mxd
(Last edited by: amatlashevska; 3/16/2016/12:26 PM)



National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Cadastral data compiled by Natural Resources Canada. Reproduced underlicense from Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.

Datum: NAD 83; Map Projection: UTM Zone 8N

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- Town
- Adit
- Silver Trail Highway
- Haul Road
- Other Road
- Limited-Use Road
- Valley Tailings Pond
- Valley Tailings Borrow Source
- Valley Tailings
- ERDC Owned Quartz Claims

ERDC

ANNUAL QUARTZ MINING LICENCE REPORT, QML-009

FIGURE1-2

KENO HILL PROPERTY LOCATION MAP

MARCH, 2016

D:\Project\AllProjects\ALEX-05-01\gis\mxd\Overview_Maps\Property_Overviews\Project_Overview_AKHM_20160316.mxd
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484000 485000 486000 487000

7091000 7090000 7089000 7088000 7087000 7086000

N W E S

LUCKY QUEEN

WERNECKE ROAD

Lucky Queen Access

Erickson Gu

SILVER TRAIL HIGHWAY

Wernecke Road

SIGN POST ROAD

Christal Lake Road

CHRISTAL LAKE

ONEK PIT

Lightning Creek Haul Road

Bellekeno Mine Site

Bellekeno Haul Road

Onek 990 Portal

KENO CITY

BELLEKENO HAUL ROAD

Bellekeno 625 Adit

Existing Bellekeno 625 Water Treatment Area

District Mill

Bellekeno East Haul Road

DUNCAN CREEK ROAD

Bellekeno East Portal

484000 485000 486000 487000

Satelite imagery obtained from Yukon Geomatics map service http://mapservices.gov.yk.ca/ArcGIS/services on March 2016
Contour data based on LiDAR data acquired in September 25th 2014

Datum: NAD 83; Projection: UTM Zone 8N

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0 100 200 400 600 800 Meters

- Adit
- Highway
- Haul Road
- Contours (5m)
- Underground Workings
- Mill Site Footprint

AKHM

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ANNUAL QUARTZ MINING LICENCE REPORT, QML-0009

FIGURE 1-3

BELLEKENO, ONEK 990 AND LUCKY QUEEN LOCATION MAP

MARCH 2016

D:\Project\All\Projects\Keno_Area_Mines\ALL-SITES\02-Mapl\01_Overview\01-Property Overview\Bellekeno_Onek_LQ_location_map_20160316.mxd
(Last edited by: amatlashevska;3/16/2016/15:35 PM)

2 MINING ACTIVITIES

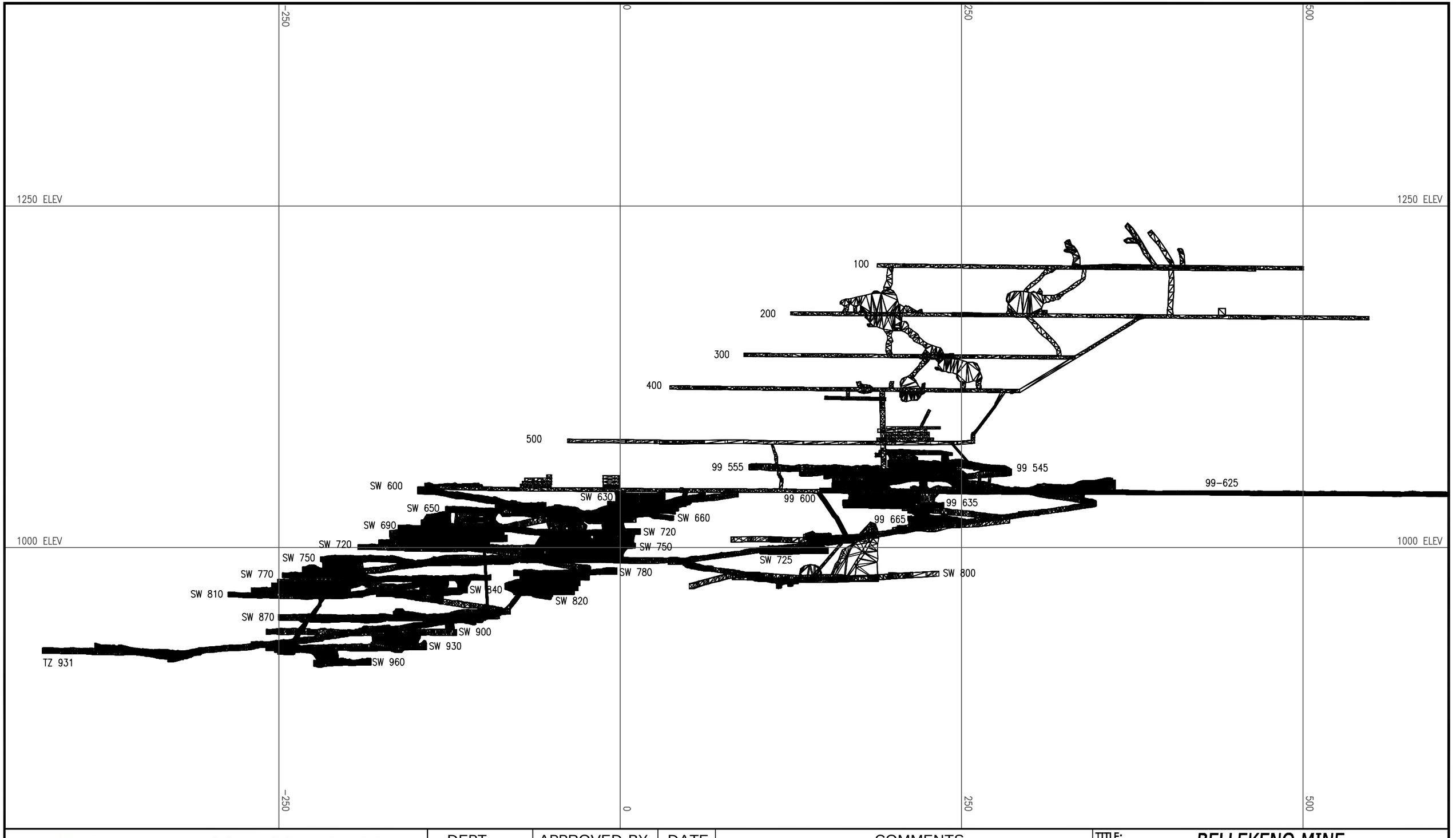
2.1 MINE SITES

2.1.1 Bellekeno

Underground development at Bellekeno was placed under temporary closure in September 2013 and no mining activities occurred in 2014 and 2015.

Production in 2013 focused mainly in the Southwest and 99 zones of the mine. The majority of development consisted of production mining of the Bellekeno ore body; specifically the SW and 99 Zone. In 2013 the CAPEX development was sustained in these zones. The waste rock development in 2013 focused on additional stope access within the Southwest and 99 zone as well as minor long term infrastructure development. The SW Main Ramp was extended down to the 930 and 960 levels for access to the lowest portion of the mine. Exploration drifting to the south of the known resources is continuing along what is termed the "Thunder Zone". As-built drawings for the Bellekeno underground workings can be seen in Figure 2-1.

Production activities were carried out in accordance with the Operation Plans submitted as per paragraph 11.1 of QML-0009, and as described in the Project Description of Water Licence Application QZ09-092 & QZ12-053.



ALEXCO

ALEXCO RESOURCE CORP
BELLEKENO MINE

DEPT.	APPROVED BY	DATE	COMMENTS
SURVEY			
ENGINEERING			
GEOLOGY			
ALEXCO MANAGER			
PROCON SUPER			

TITLE: **BELLEKENO MINE**
Long Section
Figure 2-1

Drawn by: *DARIN BAKER*	Scale: *1:2500*
Date: *07/28/2013*	Approval: Date:
File: *C:\Users\Darin Baker\Desktop\entire mine.dxf*	

2.1.2 Lucky Queen

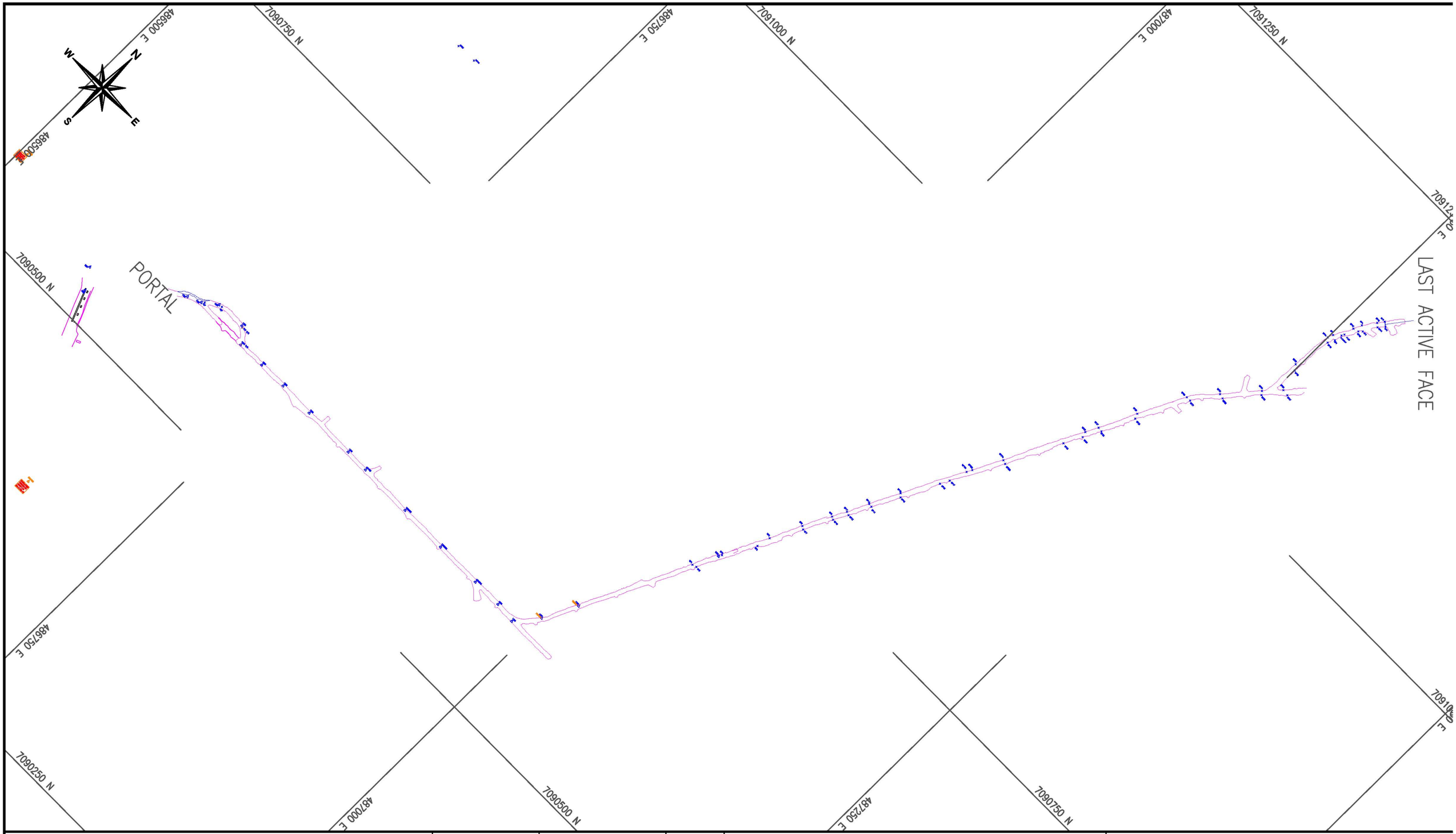
Underground rehab at Lucky Queen Mine (LQ) continued throughout the entire year in 2012 and new CAPEX development was initiated in Q4 2012 and was suspended in 2013 to allow a re-evaluation of the project. Currently the project is on hold pending re-activation of the district mining operations and no activities occurred at LQ in 2014 and 2015.

There were no issues in regards to stability or permanent closures in 2014. Preliminary activities for LQ were approved under the current QML-0009 on November 30, 2012. As-builts for underground workings can be seen in Figure 2-2.

2.1.3 Onek 990

As discussed in the 2012 Pre-Season Summary Report submitted in March 2012, a new portal was to be prepared west of the historical Onek pit called Sign Post Portal. This development proceeded, however following continued community consultation, a new portal location, Onek 990, was found to be more suitable. The Onek 990 portal site is located near Lightning Creek.

New infrastructure for the Onek 990 portal began in August 2012 and included 2 km of road building, site preparation, portal preparation, and was 80% complete by the end of 2012. CAPEX development was initiated and continued into 2013. The Onek 990 portal pad includes a temporary office/dry, shop, compressor and generator shed, several out buildings. A lay down area on the historic Onek waste rock dump is also being used. A final detailed bridge design has been submitted, permitted and construction completed in 2013 to connect the Onek connector road into the BK Haul road. Preliminary activities for the Onek 990 Mine were approved under the current QML-0009 on November 9, 2012. There were no temporary or permanent closures or stability issues that occurred in 2013, 2014 or 2015. No activities occurred at Onek 990 in 2014. As-builts for underground workings can be seen in Figure 2-3.



ALEXCO RESOURCE CORP BELLEKENO MINE	DEPT.	APPROVED BY	DATE	COMMENTS	TITLE: LUCKY QUEEN MINE *Asbuilt March 8, 2013* Figure 2-2	
ALEXCO	SURVEY					
	ENGINEERING					
	GEOLOGY				Drawn by: *DARIN BAKER*	Scale: *1:2500*
	ALEXCO MANAGER				Date: *03/08/2013*	Approval: Date:
	PROCON SUPER				File: *C:\Users\Darin Baker\Documents\Drawing1.dwg*	

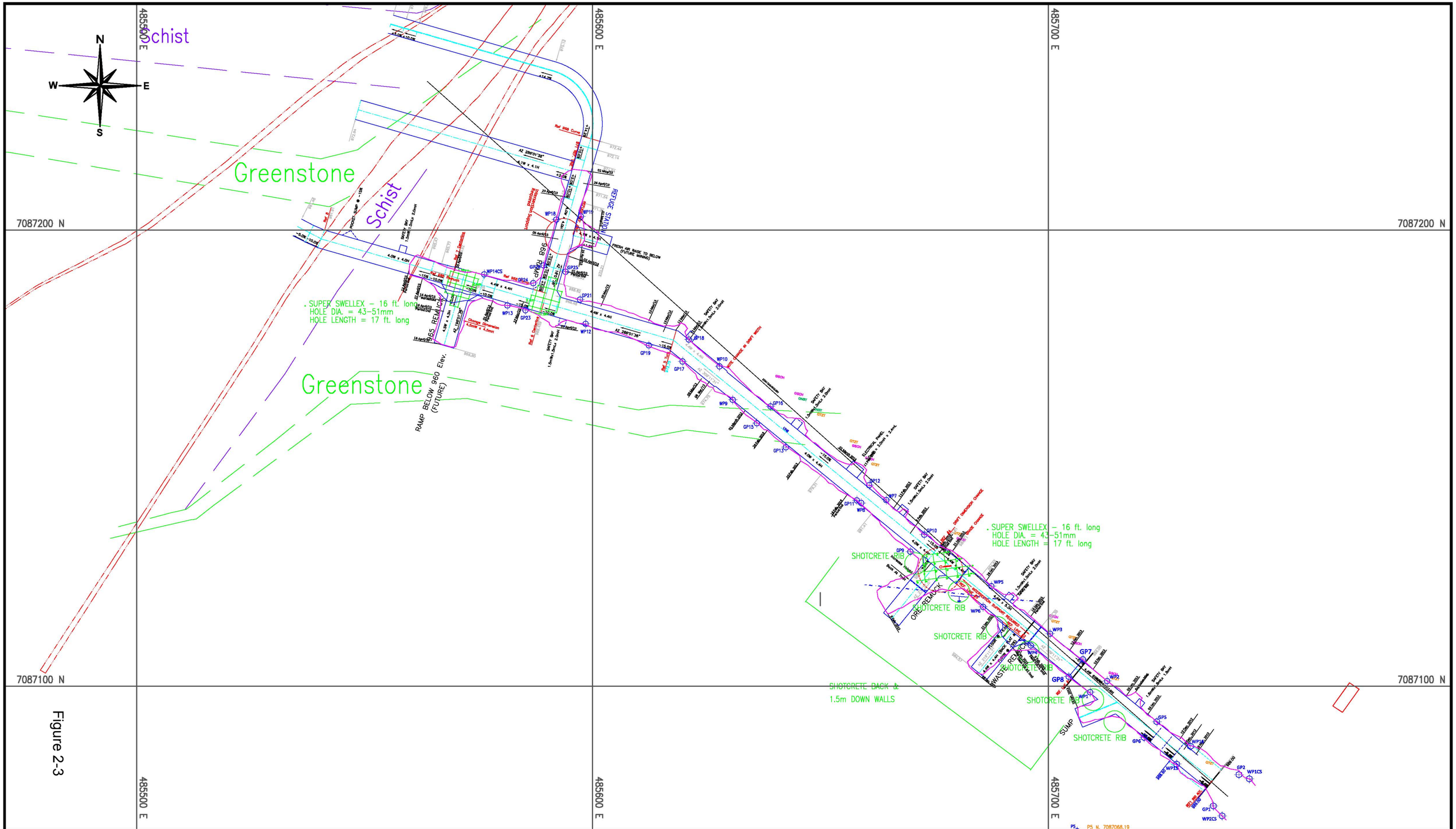


Figure 2-3

ALEXCO

ALEXCO RESOURCE CORP
BELLEKENO MINE

DEPT.	APPROVED BY	DATE	COMMENTS
SURVEY			
ENGINEERING			
GEOLOGY			
ALEXCO MANAGER			
PROCON SUPER			

TITLE: **ONEK**

ASBUILT 30 May 2013

Figure 2-3

Drawn by: *DARIN BAKER*	Scale: *1:750*
Date: *05/30/2013*	Approval: Date:
File: *H:\Bellekeno Underground\Development-Planning\Promine\promine draWi*	

2.2 LIFE OF MINE AND RESERVES

Alexco does not report Mineral Reserves as this definition has certain economic parameters that must be established in order to report as Reserves. Alexco published the technical report "Updated Preliminary Economic Assessment for the Keno Hill Silver District Project – Phase 2, Yukon, Canada" in December 2014 (http://www.alexcoresource.com/i/pdf/reports/Alexco_PEA-Dec2014.pdf). The mineral resource presented in this Updated Preliminary Economic Assessment constitutes the current mineral resource estimate for the five deposits that are part of Alexco's Keno Hill Silver District (KHSD):

- Bellekeno deposit;
- Lucky Queen deposit;
- Flame & Moth deposit;
- Bermingham deposit; and
- Onek deposit.

The mineral resources have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) *Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines* (CIM 2003) and are reported in accordance with the Canadian Securities Administrators' National Instrument 43-101. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into mineral reserve.

In the opinion of SRK, the resource evaluations reported herein are a reasonable representation of the global polymetallic mineral resources in the Bellekeno mine, Lucky Queen, and Flame & Moth deposits at the current level of sampling.

2.2.1 Bellekeno Mineral Resources

Mineral resources for the Bellekeno deposit were previously prepared by Alexco under the supervision of David Farrow and published in the technical report entitled "*Updated Preliminary Economic Assessment for the Eastern Keno Hill Silver District Project – Phase 2, Yukon, Canada*" (Alexco 2013), and was restated in the technical report "*Updated Preliminary Economic Assessment for the Keno Hill Silver District Project – Phase 2, Yukon, Canada*" on December 24, 2014, available on SEDAR.

The Mineral Resource Statement from this report is restated below.

Table 2-1: Updated Mineral Resource Statement for the Bellekeno Deposit, September 30, 2012

Class	Tonnes	Ag (gpt)	Pb (%)	Zn (%)
Indicated*	365,000	658	5.30	5.3
Inferred*	243,000	428	4.1	5.1

* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

Reported at an NSR cut-off of C$185 (US$1 = C$1)/tonne using consensus long term metal prices (US$) and recoveries of Ag US$22.50/oz, recovery 96%; Pb US$ 0.85/lb, recovery 97%; Zn US$ 0.95/lb, recovery 88%; Ag grades capped at 5,000 gpt.

Since the date of the Bellekeno deposit resource statement, mine production totalled 81,000 tonnes at average grades of 722 gpt silver, 8.3% lead, and 4.0% zinc (from November 1, 2012 to September 1, 2013).

2.2.2 Lucky Queen Mineral Resources

Mineral resource estimates for the Lucky Queen deposit were previously prepared by SRK and published in an independent technical report on September 8, 2011 entitled "*Technical Report on the Lucky Queen Deposit, Lucky Queen Property, Keno Hill District, Yukon*", and were restated in the technical report "*Updated Preliminary Economic Assessment for the Keno Hill Silver District Project – Phase 2, Yukon, Canada*" on December 24, 2014, available on SEDAR.

The Mineral Resource Statement from this report is restated below.

Table 2-2: Mineral Resource Statement for the Lucky Queen Deposit, July 27, 2011

Class	Tonnes	Ag (gpt)	Au (gpt)	Pb (%)	Zn (%)
Indicated*	124,000	1,227	0.17	2.57	1.72
Inferred*	150,000	571	0.16	1.37	0.92

* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates. Reported at an NSR cut-off of $185 (US$1 = C$1)/tonne using long term metal prices (US$) and recoveries developed for the nearby Bellekeno deposit (Ag US$18.50/oz, recovery 96%; Pb US$ 0.90/lb, recovery 97%; Zn US$ 0.95/lb, recovery 88%; Au US$ 1,100/oz, recovery 72%). Ag grades capped at 6,300 gpt; Pb capped at 14.8%, Zn capped at 7%, Au grades capped at 2 gpt.

2.2.3 Flame & Moth Mineral Resources

Mineral resources for the F&M deposit were previously prepared by Alexco under the supervision of David Farrow and published in the technical report entitled "*Updated Technical Report on the Flame & Moth Deposit, Flame & Moth Property, Keno Hill District, Yukon*" (Alexco 2013), and was restated in the technical report "*Updated Preliminary Economic Assessment for the Keno Hill Silver District Project – Phase 2, Yukon, Canada*" on December 24, 2014, available on SEDAR.

The Mineral Resource Statement from this report is restated below.

Table 2-3: Mineral Resource Statement for the Flame & Moth Deposit, January 30, 2013

Class	Tonnes	Ag (gpt)	Au (gpt)	Pb (%)	Zn (%)
Indicated*	1,378,000	516	0.42	1.72	5.70
Inferred*	107,000	313	0.27	0.86	4.21

* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

** Reported at an NSR cut-off of $185 (US$0.96 = C$1)/tonne using consensus long term metal prices (US$) and recoveries developed for the nearby Bellekeno deposit (Ag US$24.00/oz, recovery 96%; Pb US$ 0.85/lb, recovery 97%; Zn US$ 0.95/lb, recovery 88%; Au US$ 1,400/oz, recovery 72%).For all veins, Ag grades capped at 3,000 gpt; Pb and Zn capped at 15% and 20%, respectively; Au grades not capped.

2.2.4 Bermingham Mineral Resources

A mineral resource estimate for the Bermingham deposit was prepared by SRK on August 8, 2012 and published in an independent technical report entitled "*Technical Report on the Bermingham Deposit, Bermingham Property, Keno Hill District, Yukon*" (SRK 2012) and was restated in the technical report "*Updated Preliminary Economic Assessment for the Keno Hill Silver District Project – Phase 2, Yukon, Canada*" on December 24, 2014, available on SEDAR.

The Mineral Resource Statement from this report is restated below.

Table 2-4: Mineral Resource Statement for the Bermingham Deposit, SRK Consulting, October 15, 2014

Class	Tonnes	Ag (gpt)	Au (gpt)	Pb (%)	Zn (%)
Indicated*	257,000	460	0.06	2.00	2.10
Inferred*	102,000	372	0.09	1.12	1.83

* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

Reported at a dollar cut-off grade of C$185.00/tonne using metal prices (US$) and recoveries of Ag US$20.00/oz, recovery 96%; Pb US$ 0.90/lb, recovery 97%; Zn US$ 0.95/lb, recovery 88%; Au US$ 1,250/oz, recovery 72%. Confidence in the estimate of Inferred mineral resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure.

2.2.5 Onek Mineral Resources

Mineral resources for the Onek deposit were previously prepared by SRK in 2011and published in the technical report entitled "*Technical Report on the Onek Deposit, Onek Property, Keno Hill District, Yukon*" (Alexco 2011), and were re-estimated as part of the technical report "*Updated Preliminary Economic Assessment for the Keno Hill Silver District Project – Phase 2, Yukon, Canada*" on December 24, 2014, available on SEDAR.

The Mineral Resource Statement from this report is restated below.

Table 2-5: Mineral Resource Statement for the Onek Deposit, SRK Consulting, October 15, 2014

Class	Tonnes	Ag (gpt)	Au (gpt)	Pb (%)	Zn (%)
Indicated*	654,000	200	0.62	1.29	12.30
Inferred*	234,000	134	0.44	1.24	8.86

2.3 MINING METHODOLOGY

No mining occurred in 2014 and 2015.

2.4 DEVELOPMENT

No development occurred in 2014 and 2015.

3 CONSTRUCTION ACTIVITIES

In 2014, construction activities carried out at the KHSD site were minor, and only involved surface work near the Mill. In 2015 surface activities only included additional reclamation of the Dry Stack Tailings Facility (DSTF). The updated surface as-built drawing for the Mill area Facility for 2015 activities is presented as Figure 3-1.

In accordance with our efforts to minimize the impact of the construction activities on the residents of Keno City, the majority of construction materials were delivered using the Christal Lake road to bypass Keno City.

3.1 ROAD CONSTRUCTION

No major upgrades occurred on the roads to Lucky Queen, Christal Lake Road, Keno City Bypass to BKR, or the BKR haul road in 2014 and 2015. Standard maintenance occurred throughout the year.

3.2 MILL SITE CONSTRUCTION

Construction of a conventional flotation mill at the historic Flame & Moth site for processing ore and producing concentrate began in February of 2010 and was completed in December 2010. As-built drawings for this construction were submitted as part of the 2011 QML Annual Report and an update mill site as-built was submitted in the 2012 annual report.

The mill yard continues to be ditched and contoured to facilitate channeling melt water in the spring to sediment basins. Organics were consolidated and contoured to allow vegetation to take over and provide a central location for organics borrow source once reclamation begins.

In 2014 the foundation for a second ball mill was poured adjacent to the district mill and a sprung structure (shop/garage) was added near the mill to centralise the KHSD mining operations in preparation for when the mining activities are resumed (Figure 3-1). No further work was done at the Mill in 2015.

3.2.1 Dry Stack Tailings Facility

The lined area of the dry stack tailings remained at 14,148 m^2 in 2015. Additional area was cleared in 2013 and prepared for liner which will be laid in the future giving a total area of 10,982 m^2 available for additional tailings placement. The DSTF as-built was presented in the 2013 QML annual report. The extent of the cover placed on the DSTF was expanded in 2015 is shown on Figure 6-2.

Both a ground temperature cable (GTC) and a shallow monitoring well were installed in the lower bench of the DSTF as part of the ongoing monitoring of the DSTF in 2012. No water was seen during these installations, indicating no free water exists within the pile. The monitoring data collected from the GTC in the DSTF in 2015 is presented in Appendix A.

3.3 MINE SITE CONSTRUCTION

Development of the Bellekeno deposit is the first of potentially many mines in the KHSD. Because the Bellekeno Mine involved the reopening of existing historical underground mine, use of existing infrastructure such as

water treatment facilities, the reuse of the previously impacted historic Flame & Moth site and the Christal Lake haul road, 'new' environmental footprint is limited in scope.

No significant changes occurred at Bellekeno Mine footprint in 2014 and 2015.

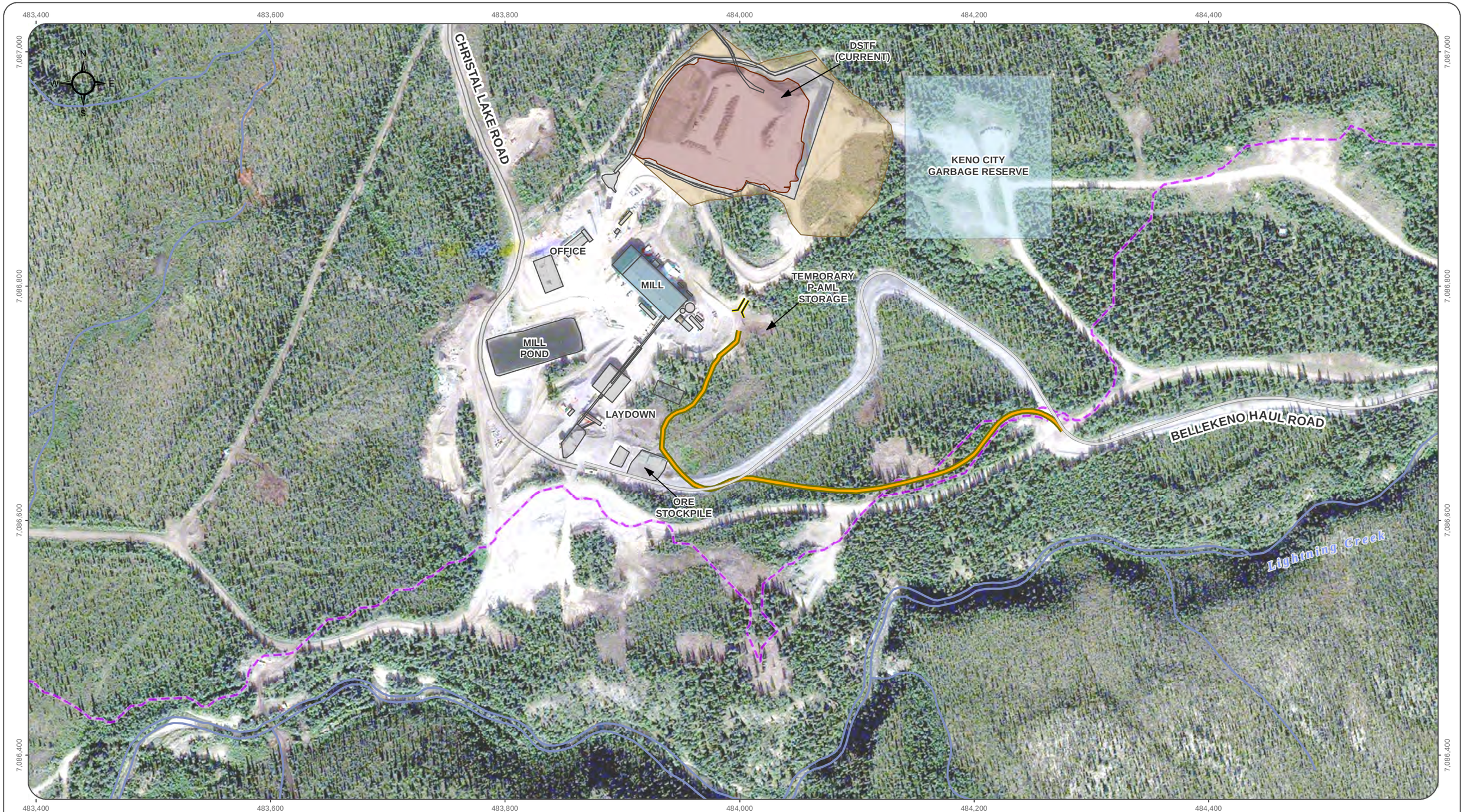
3.4 ELSA CAMP FACILITIES

A trailer camp, kitchen facility and driller's dry are currently assembled at the old Flat Creek town site (part of Elsa) on Surface Lease 105M13-001. The Camp has a total capacity of 90 permanent beds. There are four houses located on Surface Lease 105M13-009 with a total of 28 rooms. On the same lease, an additional 20 rooms are available; however, this bunkhouse is also not occupied during the winter. These bunks were upgraded to include new framing, roof, and deck.

A Commercial Dump Permit # 81-012 is currently held from Yukon Government (YG) Environment in accordance with the Environment Act, *Solid Waste Regulations* as well as the Public Health and Safety Act. This permit was renewed effective January 9, 2014 and will continue to be used in support of the Bellekeno Mine operation. In compliance with this permit upgrades to the location of solid waste disposal included upgrades to the electric bear fence and addition of a cattle guard to prevent animals from entering the facility.

Alexco currently holds two sewage disposal system permits at Elsa issued by YG Environmental Health Services: an absorption bed permit for the Flat Creek Camp (Permit #3448) in replacement to a septic tank permit (Permit #3012) and an absorption permit for five houses (Permit #3449) in replacement of a septic tank permit (Permit #3246).

Water for camp consumption is being drawn from Flat Creek or the Flat Creek well and treated through a series of filters and ultra violet (UV) light before it is chlorinated and stored in holding tanks ready for consumption under the *Yukon Environmental Health Standards*.



Satellite imagery obtained from Yukon Geomatics map service http://mapservices.gov.yk.ca/ArcGIS/services on March 2016
Data obtained from EBA: "As built" spatial data: Mill pond (Y.E.S.), Mill structure, and current DSTF footprints, Roads (In House survey December 11th 2011).
Design spatial data: Conveyance and water collection, diversion ditches and berm.

Datum: NAD 83; Projection: UTM Zone 8N

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1:3,000 *(when printed on 11 x17 inch paper)*

0 25 50 100 150 Meters

- Adit
- Land Disposition
- Building/Structures
- DSTF 322k Tonnes Design
- Current DSTF
- Proposed Road
- Road
- Watercourse
- Watershed Boundaries

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ANNUAL QUARTZ MINING LICENCE REPORT, QML-009

FIGURE 3-1

MILL AND DSTF LAYOUT OVERVIEW

MARCH 2016

D:\Project\AllProjects\Keno_Area_Mines\ALL-SITES\02-Map\01_Overview\02-District Mill\Mill_and_DSTF_Layout_current2016\321.mx
(Last edited by: amatlashevska;3/21/2016/15:50 PM)

Power for the camp is supplied from the local grid that runs through Elsa to Keno City. Several upgrades were completed in 2012; however, no upgrades were completed in 2013, 2014 and 2015. Upgrades in 2012 included:

a) removal of the existing overhead line running from the historical pump house to the upper house complex at Elsa and replacing line with an armored tech cable;
b) decommissioning of old transformers in the upper house complex area at Elsa and replacing with more current transformers and switchgear;
c) brushing out of both the Onek 990 and Elsa substations;
d) commissioning an engineering overview of the current electrical system for the purpose of identifying areas needing upgrade in the 2013 season;
e) installing new three phase transformer in camp to remove bunkhouse a from the kitchen complex and distribute the load more evenly;
f) installing new three phase transformer in the warehouse to distribute the load more effectively; and
g) commissioning an Engineering overview of the power factor at the Mill for the purpose of identifying why the power factor is low and what can be done to correct it, designed a power factor correction unit.

3.5 ANNUAL INSPECTION

In accordance with Section 12.1 to 12.3 of QML-0009, an "*annual inspection of the physical stability of all engineered structures, works and installations located at the site is conducted by an engineer by August 1st of each year*".

Tetra Tech EBA was retained to complete the 2015 annual inspection of the surface engineered earth structures located throughout the Bellekeno Mine and District Mill site.

See Appendix A for a copy of the *2015 Annual Physical Inspection Report* which includes surface inspections.

3.6 UPCOMING MAINTENANCE AND UPGRADES

Routine maintenance of mine and mill areas continued in 2014 and 2015.

3.6.1 Mill Upgrades and Maintenance

Several projects were completed in 2014 for the mill area to improve overall efficiency. These upgrades included the addition of a mill maintenance shop, and pouring the foundation for a second ball mill. No upgrades for the mill were completed in 2015.

3.6.2 Mine Upgrades and Maintenance

3.6.2.1 Bellekeno

Underground infrastructure was removed in the fall of 2015 between the 800 and 900 mine levels to allow flooding of the mine up to the 800 level to undertake insitu treatment. Mine water is currently collecting on the 900 level and will eventually flood the workings up to the 800 level, where the water will be pumped up to the 625 adit and may be treated in the water treatment plant if required.

3.6.2.2 Lucky Queen

No upgrades were done during temporary closure.

3.6.2.3 Onek 990

No upgrades were done during temporary closure.

4 MILLING OPERATIONS

Mill operations did not occur in 2014 and 2015.

5 WASTE MANAGEMENT

5.1 TAILINGS MANAGEMENT

Tailings were not generated in 2014 and 2015 under temporary closure.

5.2 WASTE ROCK MANAGEMENT

Waste Rock was not generated in 2014 and 2015 under temporary closure.

6 MONITORING

6.1 MONITORING AND SURVEILLANCE PLAN

Site environmental monitoring was carried out at the site in accordance with the *Monitoring and Surveillance Plan*. A revision to the Plan was submitted in September 2011 and approved on May 22, 2012. This updated plan included monitoring and surveillance to reflect requirements of Water License QZ09-092 and also to reflect updates to other terrestrial monitoring (e.g. dust monitoring) which have been developed.

Water quality and groundwater monitoring have been carried out in accordance with the Type A water license QZ09-092. Results of this monitoring were included within the Type A water license 2015 Annual Report. Details can be seen in Appendix E3 of the QZ09-092 2015 Annual Report, which is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline). Permafrost monitoring through geotechnical programs installed at the site of the future Non- acid-generating and/or metal leaching (AML) Waste Rock Disposal Area and the DSTF is monitored routinely by the engineers of record (Tetra Tech EBA) in accordance with the DSTF OMS Manual, which forms part of the DSTF Construction and Operation Plan. As discussed in Section 3.2.1 of this report, an additional GTC and monitoring well were installed on the DSTF, as well as full depth tailings analysis were completed in 2012.

6.1.1 Water Quality Surveillance Network

The existing water quality surveillance network for the KHSD Mining Operations includes surface receiving waters in the Lightning Creek and Christal Creek watersheds. Most of the monitoring stations have been sampled extensively in the past. Current water quality monitoring is required in these areas under Water Licence QZ12-057, and Water Licence QZ09-092. Water Licence QZ06-074 expired in November of 2012 and was renewed as QZ12-057, effective on January 30, 2013. Results can be seen in the QZ09-092 2015 Annual Report, which is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline). QZ09-092 surface and groundwater monitoring sites can be seen in Figure 6-1, 6-2 and 6-3.

6.1.2 Groundwater Surveillance Network

A groundwater monitoring plan for the Bellekeno mine has been developed under Water Licence QZ09-092. This program outlines monitoring locations and frequency for the Keno District Mill and Dry Stack Tailings Facility, the non-AML waste rock disposal area, and Keno City.

Groundwater wells are scheduled for monthly monitoring for both water level and quality for the first year after QZ09-092 came into effect to establish baseline conditions, followed by quarterly sampling thereafter, for the duration of the project.

Results can be seen in the QZ09-092 2015 Annual Report, which is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline). QZ09-092 groundwater monitoring locations can be seen in Figure 6-2 and Figure 6-3.

475000 480000 485000 490000

7090000 7085000

N W E S

Haldane Lake

McQuesten River

South McQuesten River

Christal Creek

Sandy Creek

Star Creek

No Cash Creek

Flat Creek

Bedrock Creek

Porcupine Gulch

Fisher Creek

Lightning Creek

Gambler Gulch

Faro Gulch

Mackay Gulch

Erickson Gulch

Charity Gulch

Hope Gulch

Thunder Gulch

SILVER TRAIL HIGHWAY

HANSON MCQUESTEN ROAD

CALUMET DRIVE

HUSKY SW ACCESS ROAD

WERNECKE ROAD

SIGN POST ROAD

BELLEKENO HAUL ROAD

MILL ACCESS

DUNCAN CREEK ROAD

CHRISTAL LAKE

KV-1: South McQuesten River u/s Christal Creek

KV-2: South McQuesten River at Pumphouse

KV-6: Christal Creek at Keno Highway

KV-7: Christal Creek at Hanson Road

KV-8: Christal Creek at mouth

KV-34: Lucky Queen Adit

KV-34: Lucky Queen P-AML WRSF

KV-37: Lightning Creek u/s Hope Gulch

KV-38: Lightning Creek u/s Thunder Gulch

KV-39: Hope Gulch u/s Lightning Creek

KV-40: Charity Gulch u/s Lightning Creek

KV-41: Lightning Creek u/s bridge at Keno City

KV-42: Bellekeno 625 Adit

KV-43: Bellekeno 625 Treatment Pond Decant

KV-44: Bellekeno 625 Seep

KV-45: Onek Adit

KV-49: Hinton Creek u/s Christal Creek

KV-50: Christal Creek u/s Hinton Creek

KV-51: Christal Creek d/s Hinton Creek

KV-52: Natural spring to Christal Lake at Old Mackeno pump house

KV-65: Thunder Gulch u/s of Bellekeno

KV-76: Thunder Gulch d/s of Bellekeno 625 Adit

KV-77: Thunder Gulch u/s of Bellekeno East

KV-78: Bellekeno East Temporary Storage Facility

KV-78A: Onek PAML Waste Rock Storage Facility discharge

KV-79: Christal Creek d/s of Mackeno Tailings

KV-80: Christal Creek u/s of Mackeno Tailings

KV-81: Lightning Creek Southwest of Mill Site

KV-96: Onek 990 Settling Pond Decant

KV-97: Lucky Queen Settling Pond Decant

KV-98: Lucky Queen N-AML Dump Seep Monitoring Location

KV-100: Onek 990 Settling Pond

Valley TailingsWeather Station

Calumet Weather Station

Mill Weather Station

1:50,000 (when printed on 11 x17 inch paper)

Contours are 200 ft intervals

0 0.5 1 2 3 4 Kilometers

National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Cadastral data compiled by Natural Resources Canada. Reproduced underlicense from Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved. Mill district inset hydrography derived from 2006 aerial imagery obtained from Aero Geometrics, Calgary Alberta.

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Datum: NAD 83; Map Projection: UTM Zone 8N

- Adit Water Quality Station
- Surface Water Quality Station
- Pending Water Quality Stations
- Weather Station
- Valley Tailings Pond
- Valley Tailings Borrow Source
- Valley Tailings
- District Mill
- Silver Trail Highway
- Other Road
- Limited-Use Road

AKHM AEG

ANNUAL QUARTZ MINING LICENCING REPORT QML-0009

FIGURE 6-1

SURFACE WATER QUALITY STATION LOCATIONS

MARCH 2016

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Monitoring Well

Haul Road

Other Road

Building/Structures

DSTF 322k Tonnes Design

Current DSTF

Mill Site Footprint

Watercourse

Waterbody

1:3,000 *When printed on 8.5 by 11 inch paper*

0 50 100 150 Meters

Satelite imagery obtained from Yukon Geomatics map service http://mapservices.gov.yk.ca/ArcGIS/services on March 2016
Contour data based on LiDAR data acquired in September 25th 2014

Datum: NAD 83; Projection: UTM Zone 8N

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ANNUAL QUARTZ MINING LICENCE REPORT, QML-0009

FIGURE 6-2

GROUNDWATER MONITORING LOCATIONS

AKHM AEC

MARCH 2016

D:\Project\All\Projects\Keno_Area_Mines\Bellekeno\GIS\mxd\Overview_Maps\WQ_Stations\Groundwater_MillSite_20160318.mxd
(Last edited by: amatlashevska; 3/18/2016/14:31 PM)

Adit
Proposed Monitoring Well
Monitoring Well
Private Drilled Well
Public Drilled Well
Water Supply Well
Decommissioned Manual Drive Point
Mill Site Footprint
Highway
Contour (5 m interval)

Satelite imagery obtained from Yukon Geomatics map service
http://mapservices.gov.yk.ca/ArcGIS/services on March 2016
Contour data based on LiDAR data acquired in September 25th 2014

Datum: NAD 83; Projection: UTM Zone 8N

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FIGURE 6-3
KENO HILL SILVER DISTRICT GROUNDWATER MONITORING LOCATIONS

MARCH 2016

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(*Last edited by: amatlashevska;3/23/2016/14:08 PM*)

6.1.3 Permafrost Monitoring

Geotechnical programs have identified areas of permafrost within operational areas of the project. Specifically, some permafrost was encountered beneath the proposed non-AML Waste Rock Storage Area (WRSA) and in the vicinity of the proposed DSTF. Ground temperature and permafrost monitoring is currently in place at these locations. Details on monitoring for the DSTF are included in the DSTF OMS manual, which forms a part of the DSTF *Development and Operations Plan*.

Locations are monitored routinely by the engineers of record (Tetra Tech EBA). Details on permafrost monitoring for the WRSA are included in the Mine Development and operations Plan.

Results of the 2015 permafrost monitoring can be seen in the Tetra Tech EBA monitoring report in Appendix A.

6.1.4 Physical Inspections

The purpose of the physical inspection is to observe and record sufficient information related to physical and water retaining structures to permit development of a course of action, repair or rehabilitation if it is required. Physical inspections are currently inspected under the *Physical Inspections and Reporting Plan* prepared for Water Licence QZ09-092. Results of these inspections are presented in Appendix A.

6.1.5 Meteorological Monitoring

As part of closure planning studies, a meteorological station was established on Galena Hill in summer 2007 by Alexco. The station measures air temperature, relative humidity, barometric pressure, rainfall, wind speed and direction, solar radiation, and soil temperature. As a condition of Type A Water Use Licence QZ09-092, a second metrological station and snow course was established at the Keno District Mill site. The location of the mill site weather station is shown on Figure 6-4. A YG monitored snow course station also exists in the area. An analysis of the meteorological monitoring data results can be seen in the QZ12-053 2015 Annual Report, which is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline).

6.1.6 Noise Impacts and Sound Monitoring

The objective of noise impact monitoring was to reduce and mitigate impacts to local residents and the environment resulting from noise produced during the development and operations of the Bellekeno Mine and Keno District Mill. To achieve this goal, AKHM identified potential noise sources and receivers in the *Noise Abatement Plan*, and will continue to do so during development and production as a part of monitoring. Details can be found in the *Noise Abatement Plan* submitted under QML-0009. An update to this plan was approved on March 19, 2013, and includes potential noise impact associated with the development of the Lucky Queen and Onek 990 Mines.

As identified in the 2011 review of the data collected from 2009 to 2011 (submitted in the 2011 QML Annual Report) no significant noise impacts (defined as exceedences of daytime or nighttime noise levels as recommended in the *Decision Document*) have been observed in Keno City as a result of operations. With the approval for development of the Lucky Queen and Onek 990 Mines in November 2012 and the updated *Noise Abatement Plan* for 2013, noise monitoring at newly identified sites commenced in 2013. The results for the Noise Monitoring Program up to 2015 are presented in Appendix B.

6.1.7 Dust Abatement and Monitoring

In accordance with Clause 69 of the Decision Document for the assessment for the Bellekeno Mine Project (Yukon Environmental and Socio-Economic Assessment Board [YESAB] File Number 2009-0030), dustfall monitoring stations were installed at four locations near the Keno District Mill site. Bergerhoff dust monitoring gauges were selected as the appropriate instrumentation to carry out this program. At the time of installation, the Yukon had not yet developed the *Ambient Air Quality Standards*.

The Bergerhoff deposit dust gauge is designed to measure dust deposition, which can be reported as a weight per unit area over unit time. These results are comparable to the *Ambient Air Control Objectives in the Pollution Control Objectives for the Mining, Smelting and Related Industries of BC* (1979), which provides an acceptable range of 1.7 to 2.9 mg/(dm^2*d).

As a result of the updated Monitoring and Surveillance Plan Revision 1.1, as well as the development of the *Yukon Ambient Air Quality Standards*, two Total Suspended Particulate (TSP) monitoring devices were installed near the Keno District Mill site. After a thorough investigation of both continuous duty (real-time) constant flow air monitoring systems and discrete (gravimetric) samplers, the BGI OMNI sampler was chosen as the most appropriate instrument. TSP results have been compared to the *Yukon Ambient Air Quality Standards* [TSP = 120 µg/m^3 (24-hr average)].

In addition to TSP monitoring using the BGI OMNI samples, samples from these instruments were analyzed for total metals. The most common metals observed were aluminum, calcium, iron, lead, magnesium, manganese, sulfur, and zinc.

Though several results from the Bergerhoff method exceeded the Ambient Air Control Objectives in the *Pollution Control Objectives for the Mining, Smelting and Related Industries of BC*, all of the TSP results were well below the Yukon Ambient Air Quality Standards, which is the accepted standard.

The complete 2015 monitoring results can be seen in Appendix C. Dust control measures including dust suppression of haul roads, mill site, and DSTF continue on an as-needed basis throughout the year.

Mill site layout with locations of both the old Bergerhoff dust monitoring gauges and TSP monitoring instruments currently in place are shown on Figure 6-4.

Satelite imagery obtained from Yukon Geomatics map service http://mapservices.gov.yk.ca/ArcGIS/services on March 2016
Data obtained from EBA: "As built" spatial data: Mill pond (Y.E.S.), Mill structure, and current DSTF footprints, Roads (In House survey December 11th 2011).
Design spatial data: Conveyance and water collection, diversion ditches and berm.

Datum: NAD 83; Projection: UTM Zone 8N

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1:3,630 *(when printed on 11 x17 inch paper)*

0 50 100 150 200 Meters

- Dust Monitoring Station
- Weather Station
- Building/Structures
- DSTF 322k Tonnes Design
- Current DSTF
- Mill Site Footprint
- Silver Trail Highway
- Secondary Road

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FIGURE 6-4

DUST MONITORING AND WEATHER STATION LOCATIONS

MARCH 2016

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6.1.8 Waste Rock Monitoring

All waste rock management facilities are subject to monitoring for physical and geochemical stability (acid rock drainage or metal leaching). A complete Waste Rock Management Plan was attached to the Construction Site Plan Revision 1 and includes detailed descriptions of waste rock monitoring and mine wall testing. This plan was submitted as part of the QML-0009 2010 Annual Report submitted in June 2011. This plan was revised and approved in 2013 to include the Lucky Queen and Onek 990 Mines.

No new waste rock was generated in 2014 and 2015, therefore no new monitoring was conducted.

6.1.9 Environmental Effects Monitoring

AHKM prepared the first study design for the Environmental Effects Monitoring (EEM) program required under the federal Metal Mining Effluent Regulations (MMER) and submitted in September 2011. The first round of EEM program was completed in 2012 with the EEM interpretive report for Bellekeno completed and submitted in March 2013. Sub-lethal toxicity testing of effluent from the BK625 treatment pond decant was conducted during 2012 and no significant adverse effects were noted during these tests. The results for the first cycle of EEM were presented in the 2012 annual report. The second EEM cycle study was completed in 2015 and the results are presented in Appendix D.

6.1.10 Wildlife Monitoring Plan

The Keno Hill Silver District, including Elsa, the Silver Trail Highway, District Mill, Bellekeno, Lucky Queen, and Onek 990 Mine sites, and all associated haul roads are frequented by natural wildlife in the area. This wildlife includes fox, bear, moose, wolverine, rabbit, lynx, and a number of other species of animal and birds. Wildlife encounters are recorded in a log located in the Elsa Administration Office. The most common sightings involved moose, fox, as well as both black and grizzly bears in 2013. Other less common sightings involved lynx, and wolves.

Any encounters between vehicles and wildlife are reported to both the Safety and Environmental departments for documentation and if required, incident investigation. 2014 and 2015 saw no encounters between AKHM vehicles and wildlife.

6.1.11 Traffic Management

The BKR haul road crosses two public roads in the Keno City area, both Duncan Creek road and the access to the Sourdough Trail. Mine traffic has been redirected around Keno City to ensure that direct ore haulage traffic is routed around the community, effectively minimizing impact on the local community. This road consists of two portions, the Bellekeno Bypass North, which ensures all mill traffic and concentrate haul will bypass Keno City via Chrystal Lake Road, and the Bellekeno Bypass South which connects the Sourdough Trail on the south side of Lightning Creek to the Duncan Creek Road across Lightning Creek. Figure 6-5 shows the routing of traffic around the community along the Bypass Roads.

With the developments of the Lucky Queen and Onek 990 Mines, the Onek Connector Road has been developed from the Wernecke Road, crossing Sign Post Road, along the historic Onek waste rock storage area, to the Onek 990 Portal, crossing Lightning Creek Road and the new Onek Access Bridge across Lightning Creek to the Bellekeno Haul Road (Figure 6-6). The road maybe restricted to one-way travel where conditions prevent

construction to 9 m wide. Until the completion of the new Onek Access Bridge in May 2013, some light vehicle traffic has been directed through Keno City. This traffic was discontinued with the construction of the new Onek Bridge. It is expected that occasional traffic will continue to flow through Keno City but the use of the bypass roads will continue to be a priority and policy.

Satelite imagery obtained from Yukon Geomatics map service http://mapservices.gov.yk.ca/ArcGIS/services on March 2016
Data obtained from EBA: "As built" spatial data: Mill pond (Y.E.S.), Mill structure, and current DSTF footprints, Roads (In House survey December 11th 2011).
Design spatial data: Conveyance and water collection, diversion ditches and berm.

Datum: NAD 83; Projection: UTM Zone 8N

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1:7,000 *(when printed on 11 x17 inch paper)*

0 50 100 200 300 Meters

- Bellekeno Haul Road
- Christal Lake Road
- Silver Trail Highway
- Secondary Roads
- Road Right of Way

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ANNUAL QUARTZ MINING LICENCE REPORT, QML-009

FIGURE 6-5

BELLEKENO PROJECT BYPASS ROAD

MARCH 2016

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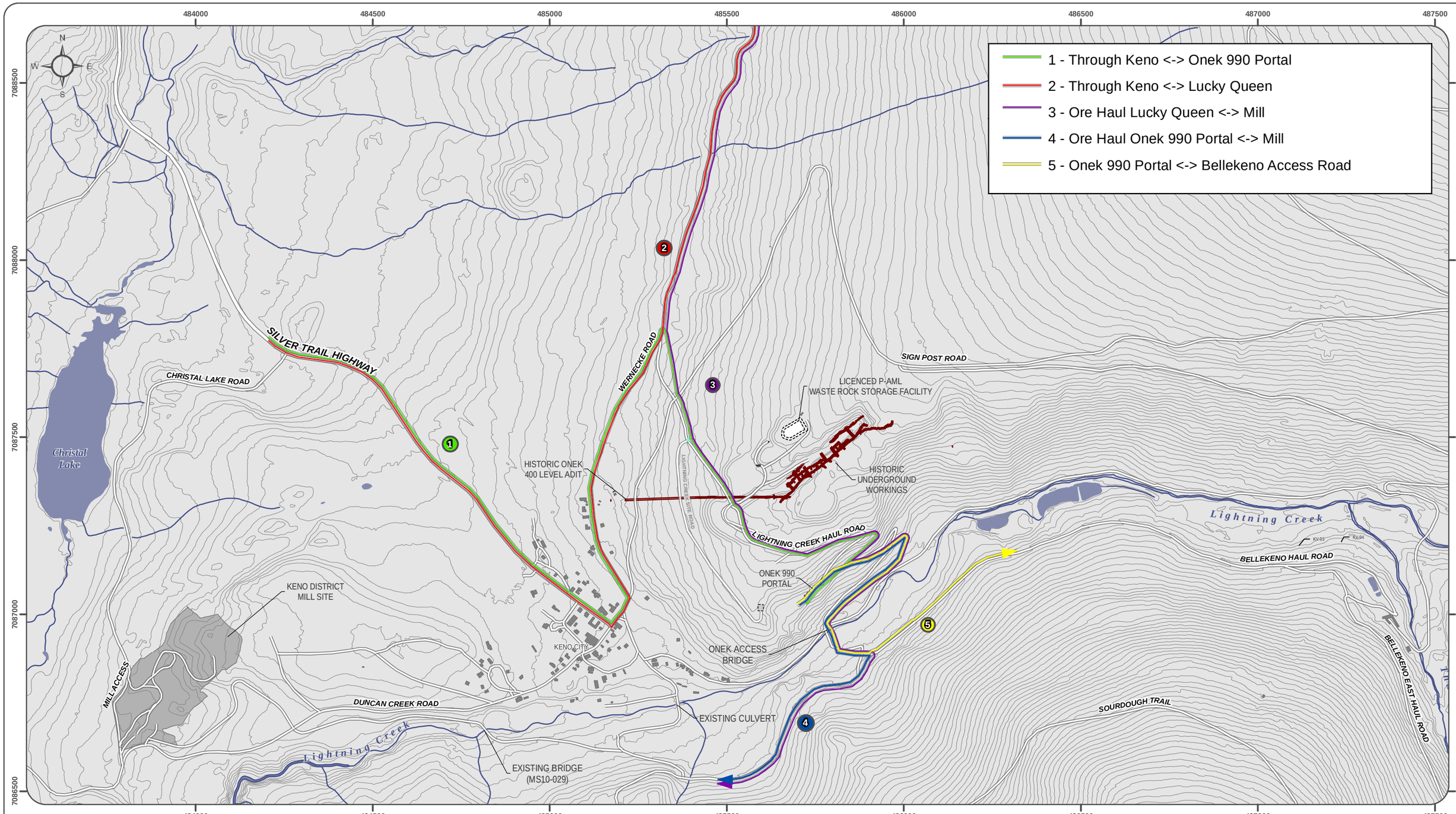

Site Contours derived from LiDAR data acquired September 25th 2014

Datum: NAD 83; Projection: UTM Zone 8N

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1:10,000 *(when printed on 11 x17 inch paper)*

0 100 200 300 400 Meters

- Adit
- Building/Structure
- Mill Footprint
- Existing Features
- Silver Trail Highway
- Secondary Roads
- Historical Underground Workings
- Contours
- Watercourse
- Waterbody

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ANNUAL QUARTZ MINING LICENCE REPORT, QML-009

FIGURE 6-6

LUCKY QUEEN, ONEK 990 AND BELLEKENO ACCESS ROUTES

MARCH 2016

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6.2 ADAPTIVE MANAGEMENT PLAN

Pursuant to Clause 90 and Clause 91 of QZ09-092, Alexco developed a Bellekeno *Adaptive Management Plan*, which was submitted to Yukon Water Board in April, 2011. This plan was based on the framework established by the District Wide Adaptive Management Plan, but was customized for the specific activities and developments of the Bellekeno Undertaking. The Adaptive Management Plan was updated in 2013 to include the Onek 990 and Lucky Queen Mines. No adaptive management triggers or activities were undertaken during 2014 and 2015.

Reporting for the AMP including a summary of any adaptive management triggers and actions was prepared for the WUL QZ09-092 2015 Annual Report. The QZ09-092 2015 Annual Report is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline).

7 UNAUTHORIZED DISCHARGE

7.1 REPORTABLE SPILLS

No reportable spill occurred in 2014 and 2015.

7.1.1 Non-Reportable Spills

There were no non-reportable spills recorded at the Site in 2014 and 2015 according to the reportable spill quantities defined in Schedule A of the *Yukon Spill Regulations*.

7.2 PERMIT EXCEEDENCES

There were no Water Licence exceedences during the course of 2014 and 2015 relating to mine discharge.

8 CARE AND MAINTENANCE AND RECLAMATION

The care and maintenance activities at the Keno Hill District are the primary objective of Water Use License QZ06-074, which was renewed for five years and issued as QZ12-057 effective January 30, 2013. The purpose of this license is to obtain water, divert water, store water, and to deposit waste for the purpose of care and maintenance activities for the Keno Hill Mines Property.

Alexco Resource Canada Corporation was issued Water Use Licence QZ07-078 on October 3, 2008, for the purpose to obtain water, store water, and to deposit a waste for the purpose of advanced exploration and preliminary development activities at the Bellekeno Mine on the Keno Hill Property. The Bellekeno project has since moved into production (under QZ09-092) and in 2011, Alexco applied to amend QZ07-078 to remove clauses pertinent to the mine production Licence. AKHM was issued Water Use Licence QZ10-060 on November 16, 2011 for the amended purpose: to store water and to deposit waste for the purpose of maintaining the Onek Potentially acid-generating and/or metal leaching (P-AML) Waste Rock Storage Facility on the Keno Hill Property. Licence QZ07-078 was cancelled on January 14, 2015 as all activities are now part of QZ12-053.

Information and analyses pertaining to the Bellekeno Mine, Lucky Queen Mine, Onek 990 Mine and District Mill areas have been fully developed through WUL QZ12-053.

8.1 CARE AND MAINTENANCE ACTIVITIES

Prevention of environmental degradation within the Keno Hill Silver District is accomplished largely by the daily operation of lime-addition water treatment systems existing at Galkeno 900, Galkeno 300, Silver King 100, and Bellekeno 625 adits. The Valley Tailings Facility is also treated on an as-required basis during spring and early summer. Care and Maintenance activities and performance monitoring (i.e. water quality monitoring) is undertaken by Elsa Reclamation and Development Company Ltd. (ERDC), using on-site laboratory facilities for daily and weekly water quality analysis. Monitoring of surface and groundwater sites as well as physical conditions is completed as per WL monitoring schedules.

A detailed discussion of these results and other Care and Maintenance activities can be found in 2015 Annual Water License report submitted to the Yukon Water Board as per Water Use License QZ06-074 (QZ12-057 effective January 30, 2013) in February 2016.

8.2 RECLAMATION ACTIVITIES

Progressive reclamation of the DSTF was initiated during the summer of 2012 as presented in the *Reclamation and Closure Plan* to prevent potential dusting and erosion of exposed tailings slopes. Final slope and bench elevations were reached on the west toe of the DSTF, allowing final reclamation to begin.

The progressive reclamation included four areas (block A, B, C, & D) on the DSTF which were covered with granular/organic material and seeded to test various cover trials. The cover material was local material that had been cleared and stockpiled during the initial construction of the Keno District Mill. The seed material (Keno District Dry Land Seed Mix) was selected using a blend of suitable species seeded at the Brewery Creek and Minto Mine sites also located in the Yukon. Additional slopes were contoured in 2013 for preparation of progressive reclamation that completed in 2014 including covering portions of the DSTF and seeding the cover. In 2015, further progressive reclamation activities were completed for the DSTF cover, which expanded the cover over the majority of the DSTF (Figure 6-2).

9 REFERENCES

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SRK Consulting, Technical Report on the Lucky Queen Deposit, Lucky Queen Property, Keno Hill District, Yukon. SRK Project 2CA017.001. Prepared for Alexco Resource Corporation, September 8, 2011a.

SRK Consulting, Technical Report on the Onek Deposit, Onek Property, Keno Hill District, Yukon. SRK Project 2CA017.001. Prepared for Alexco Resource Corporation, September 8, 2011b.

APPENDIX A

2015 ANNUAL PHYSICAL INSPECTION

August 26, 2015

FILE: W14103659-01
Via Email: kwoloshyn@alexcoresource.com

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3 – 151 Industrial Road
Whitehorse, YT Y1A 2V3

Attention: Kai Woloshyn, Environmental Manager

Subject: 2015 Annual Inspection – Surface Engineered Earth Structures
Bellekeno Mine, Keno City, YT

NND EBA Land Protection Corp. operating as NELPCo Limited Partnership (NELPCo) is pleased to submit the enclosed 2015 Annual Inspection Report for the Surface Engineered Earth Structures at the Bellekeno Mine, prepared by our exclusive service provider Tetra Tech EBA Inc. (Tetra Tech EBA)

NELPCo is a limited partnership corporation owned by NND Development Corporation (NNDDC) and Tetra Tech EBA. The partnership aims to develop business and employment opportunities associated with providing Environmental and Engineering Services in the Traditional Territory of the Na-Cho Nyak Dun First Nation (NND). The NELPCo partnership serves to further working relationships between Tetra Tech EBA, NND, and companies operating in NND Traditional Territory.

Thank you for selecting NELPCo to assist with your project, we look forward to supporting you on future projects in NND Traditional Territory. If you have any questions or comments about the NELPCo partnership please contact the undersigned.

Respectfully,

Pat Titus
NELPCo Director
Direct Line: 867.336.4340
coo@nnddc.ca

NELPCo Limited Partnership
61 Wasson Place
Whitehorse, YT Y1A 0H7 CANADA
Tel 867.668.3068 Fax 867.668.4349

TETRA TECH EBA

August 26, 2015

ISSUED FOR USE
FILE: W14103659-01
Via Email: kwoloshyn@alexcoresource.com

Alexco Resource Corp.
3 – 151 Industrial Road
Whitehorse, YT Y1A 2V3

Attention: Kai Woloshyn – Environmental Manager

Subject: 2015 Annual Inspection – Surface Engineered Earth Structures
Bellekeno Mine, Keno City, YT

1.0 INTRODUCTION

Alexco Resource Corp (Alexco) retained Tetra Tech EBA Inc. (Tetra Tech EBA) to complete the 2015 annual inspection of the surface engineered earth structures at the Bellekeno Mine near Keno City, Yukon. Authorization to complete this work was received by way of an Alexco purchase order (PO #16717) on June 26, 2015. The following structures were identified by Alexco as requiring inspection:

- Potentially acid generating (PAG) waste storage facility
- Bellekeno waste rock pile
- Bellekeno 625 water treatment ponds
- Lightning Creek bridge abutments (Onek Road)
- Lightning Creek bridge abutments (Bellekeno Haul Road)
- Mill water storage pond
- Dry stacked tailings facility (DSTF)

The location of each structure is shown on Figure 1.

2.0 SCOPE OF SERVICES

Tetra Tech EBA's scope of services for the 2015 annual inspection is summarized in the following list:

- Complete a visual inspection of the surface engineered earth structures at the Bellekeno Mine.
- Prepare a report containing the results of the inspection, summary of the stability, integrity, and status of all inspected structures, and recommendations for remedial actions, if any.

Tetra Tech EBA Inc.
61 Wasson Place
Whitehorse, YT Y1A 0H7 CANADA
Tel 867.668.3068 Fax 867.668.4349

3.0 INSPECTION SUMMARY AND RECOMMENDATIONS

The 2015 annual inspection was completed by Justin Pigage, P.Eng. on August 10th and 11th. The following sections summarize inspection results for each structure, and provide recommended remedial actions if necessary. The recommended remedial actions have been separated into geotechnical stability concerns and ongoing facility maintenance concerns. Select photographs taken during the inspection are attached to this report.

3.1 PAG Waste Storage Facility

The PAG waste storage facility is located south of the Bellekeno portal, as shown on Figure 1. The facility remains untouched from the 2014 annual inspection and requires some maintenance prior to accepting additional storage material.

The perimeter berms are intact with no visible signs of instability (Photo 1). The north and west anchor trenches along the berm crests remain incomplete (Photo 2) and the liner components have been displaced by wind as a result of improper anchoring (Photo 3). The protective geonet and geotextile components of the liner system have only been installed in the north half of the facility to date and some rock currently being stored in the southern portion of the facility is in direct contact with the geosynthetic liner. Angular waste rock can puncture the geosynthetic liner causing a breach in facility containment. The installation of the liner system should be completed as per the original facility design prior to the placement of additional material in the facility.

3.2 Bellekeno Waste Rock Pile

The Bellekeno waste rock pile forms a portion of the Bellekeno Haul Road and is located north of the Bellekeno portal, as shown on Figure 1. At the time of the inspection the waste rock pile sideslopes appeared intact and stable (Photo 4). No remedial action is required for the Bellekeno waste rock pile at this time.

3.3 Bellekeno 625 Water Treatment Ponds

The Bellekeno 625 water treatment ponds are located north of the Bellekeno portal, as shown on Figure 1. The facility consists of two water treatment ponds that were both operating at the time of the inspection (Photo 5). The perimeter berms appeared stable at the time of the inspection and the liners appeared intact. There is some accumulation of surface runoff deposited sediment on the outside of the perimeter berm in the southwest corner of the facility (Photo 6). Accumulation in this area should be monitored and, if necessary, removed as part of facility maintenance to prevent surface runoff water from entering the ponds.

The primary treatment pond was operating at the discharge invert elevation with a freeboard of 0.5 m below perimeter berm crest at the time of the inspection. The secondary pond was also operating at the discharge elevation. Freeboard in the secondary pond ranges from about 0.5 m at the south end to about 0.3 m at the north end. Diminished freeboard could be the result of settlement of the north end of the facility (Photo 7). No signs of settlement were observed during the inspection but a survey should be completed prior to winter to determine if settlement has occurred and establish a base case for future survey monitoring.

The discharge line appeared intact at the time of the inspection but had a noticeable deflection at one of the joints resulting from supporting material eroding away from beneath the pipe (Photo 8). The discharge line should be monitored and supported with additional fill if necessary to minimize distress to the pipe.

3.4 Lightning Creek Bridge Abutments (Onek Road)

The Lightning Creek bridge on the Onek Road is located east of Keno City, as shown on Figure 1. The bridge is a single span steel structure (Photo 9) founded on earth filled timber cribbing abutments. The abutments appeared stable at the time of the inspection (Photo 10). Some of the rip-rap armouring the south abutment on the downstream side of the bridge has been displaced exposing the underlying geotextile (Photo 11). The rip-rap should be replaced as part of ongoing site maintenance to prevent erosion, and the abutment should be monitored for settlement.

3.5 Lightning Creek Bridge Abutments (Bellekeno Haul Road)

The Lightning Creek bridge on the Bellekeno Haul Road is located southwest of Keno City, as shown on Figure 1. The bridge is a single span steel structure with a wooden deck (Photo 12) founded on earth filled timber cribbing abutments. The abutments appeared stabled at the time of the inspection and are sufficiently protected from erosion by rip-rap armouring (Photo 13). No remedial action is required for the Lightning Creek bridge on the Bellekeno Haul Road at this time.

3.6 Mill Water Storage Pond

The mill water storage pond is located at the Keno Hill District Mill Site, west of Keno City, as shown on Figure 1. At the time of the inspection the pond was not operating but contained water with a freeboard of about 1 m below the perimeter berm crest (Photo 14). The pond liner appeared intact with no visible signs of instability (Photo 15). No remedial action is required for the mill water storage pond at this time.

3.7 Dry Stacked Tailings Facility

The dry stacked tailings facility (DSTF) is located at the Keno Hill District Mill Site west of Keno City, as shown on Figure 1. No tailings have been placed in the DSTF since fall 2013 as milling operations have been suspended. The tailings placed to date have been regraded and covered with organic growth medium as part of progressive reclamation activities (Photo 16). The surface of the DSTF is either supporting vegetation growth (Photo 17) or recently covered/seeded with vegetation growth pending (Photo 18). No visible signs of instability were observed at the time of the inspection. To date, operation and performance of the DSTF has been consistent with the design.

3.7.1 Instrumentation

Performance of the DSTF is monitored with compaction testing during tailings placement and regular instrumentation readings. DSTF instrumentation consists of seven ground temperature cables installed to monitor permafrost conditions (six in natural soils adjacent to the DSTF and one through tailings placed within the DSTF footprint) and three slope indicators installed to monitor lateral movement of the foundation soils. The locations of installed DSTF instrumentation are shown on Figure 2.

3.7.1.1 Background Ground Temperature Readings

Updated ground temperature readings were collected from five of the six ground temperature cables installed in natural soils adjacent to the DSTF during the inspection. Readings were not collected from BH17 as the protective steel casing has been damaged, wedging the instrument connector within the protective casing. The protective casing should be repaired or removed to allow for continued instrumentation reading. As indicated on the updated ground temperature profiles included in Appendix B, the slight warming trend observed in previous years has continued. The warming trend appears to be more significant in areas of recent disturbance, such as BH32,

indicating it may be the result of disturbance to the insulating vegetative cover during instrumentation installation. Continued regular instrumentation readings are recommended to monitor ground temperature conditions.

3.7.1.2 DSTF Ground Temperature Readings

The ground temperature cable installed in BH40, through the placed tailings and into the foundation soils below the DSTF has been damaged and requires replacement. The next time a geotechnical drill program is completed near the DSTF, a borehole should be advanced to replace the malfunctioning installation.

3.7.1.3 Slope Indicator Readings

An updated lateral movement profile developed from readings collected from the slope indicator installed in BH36 in natural soils adjacent to the DSTF is included in Appendix C. No significant lateral movement of the foundation soils has been observed in the slope indicator results to date.

Readings were not possible in BH30 as the casing remains blocked by ice near the ground surface. A steam unit should be used to clear the blockage in BH30 and instrumentation readings attempted. If unsuccessful, a replacement borehole should be advanced near BH30 the next time a geotechnical drill program is conducted near the DSTF.

The slope indicator casing in BH28 remains unobstructed to the bottom (27 m below ground surface) but the probe gets derailed between 3.0 and 5.0 m below the ground surface, corrupting any collected lateral movement data. A camera should be lowered to assess the source of the derailment and subsequent rehabilitation of the casing completed, if possible. In unsuccessful, a replacement borehole should be advanced near BH28 the next time a geotechnical drill program is conducted near the DSTF.

4.0 CONCLUSIONS

The surface engineered earth structures inspected pose no significant risk to the environment or human health and safety in their current condition. The remedial actions recommended in the previous sections are summarized in the following Table 1 for reference.

Table 1: Summary of Remedial Recommendations

Structure	Stability Recommendations	Maintenance Recommendations
PAG Waste Storage Facility	None	▪ Complete proper anchor trenching along north and west sides of facility ▪ Finish installation of protective geonet and geotextile as per original facility design
Bellekeno Waste Rock Pile	None	None
Bellekeno 625 Water Treatment Ponds	▪ Survey perimeter of secondary pond to check for settlement and establish base for future monitoring	▪ Monitor and, if necessary, remove sediment accumulation in southwest corner of facility to prevent surface water from entering facility ▪ Monitor and, if necessary, support the discharge line from secondary pond to prevent damage to the pipe
Lightning Creek Bridge Abutments (Onek Road)	None	▪ Replace displaced rip-rap on south abutment (downstream side) ▪ Monitor abutment for signs of settlement
Lightning Creek Bridge Abutments (Bellekeno Haul Road)	None	None
Mill Water Storage Pond	None	None
Dry Stacked Tailings Facility	▪ Advance replacement borehole for BH40 within DSTF and install ground temperature cable ▪ Clear ice blockage in slope indicator casing in BH30 and attempt readings. If unsuccessful, advance replacement borehole near BH 30. ▪ Lower camera inside slope indicator casing in BH28 to determine cause of probe derailment at 3.0-5.0 m and rehabilitabe if possible. If unsuccessful, advance replacement borehole near BH28	▪ Continue regular instrumentation readings to monitor DSTF foundation conditions

5.0 LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Alexco Resource Corp. and their agents. Tetra Tech EBA Inc. (Tetra Tech EBA) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Alexco Resource Corp., or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this report is subject to the terms and conditions stated in Tetra Tech EBA's Services Agreement. Tetra Tech EBA's General Conditions are provided in Appendix A of this report.

6.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech EBA Inc.

Prepared by:
Justin Pigage, P.Eng.
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Reviewed by:
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Principal Consultant, Arctic Region
Direct Line: 867.668.9216
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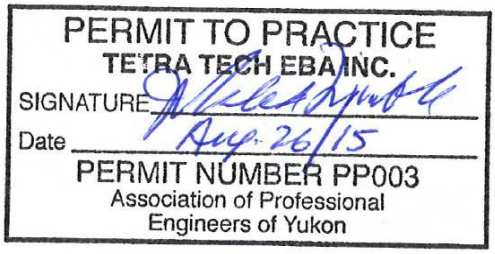


FIGURES

Figure 1 Site Plan Showing Structure Locations
Figure 2 DSTF Site Plan Showing Instrumentation Locations

Christal Lake

SILVER TRAIL HIGHWAY

Keno City

BELLEKENO MINE HAUL ROAD

Lightning Creek

Lightning Creek

Thunder

DRY STACKED TAILINGS STORAGE FACILITY

MILL WATER STORAGE POND

LIGHTNING CREEK BRIDGE ABUTMENTS (BELLEKENO ROAD)

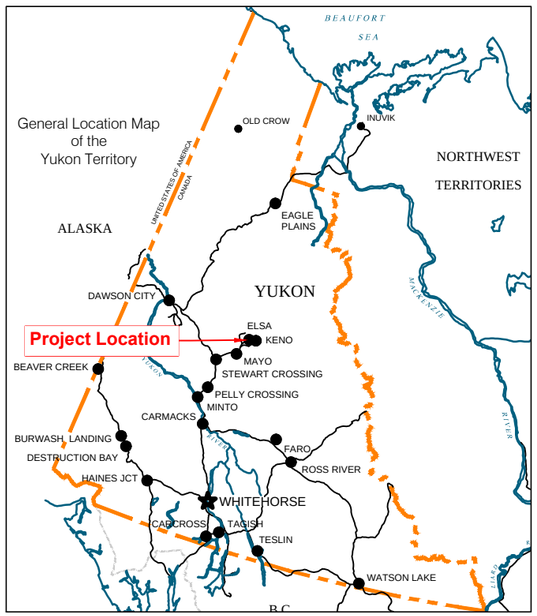
LIGHTNING CREEK BRIDGE ABUTMENTS (ONEK ROAD)

WASTE ROCK PILE

BELLEKENO 625 WATER TREATMENT POND

BELLEKENO MINE PORTAL

PAG WASTE STORAGE FACILITY



0 500

Scale: 1: 15 000 (metres)

NOTES

CONTOUR INFORMATION IS BASED ON DRAWING PROVIDED BY ALEXCO RESOURCE INC.

CLIENT

ALEXCO

TETRA TECH EBA

2015 ANNUAL INSPECTION
BELLEKENO MINE SITE - KENO CITY, YUKON

SITE PLAN SHOWING STRUCTURE LOCATIONS

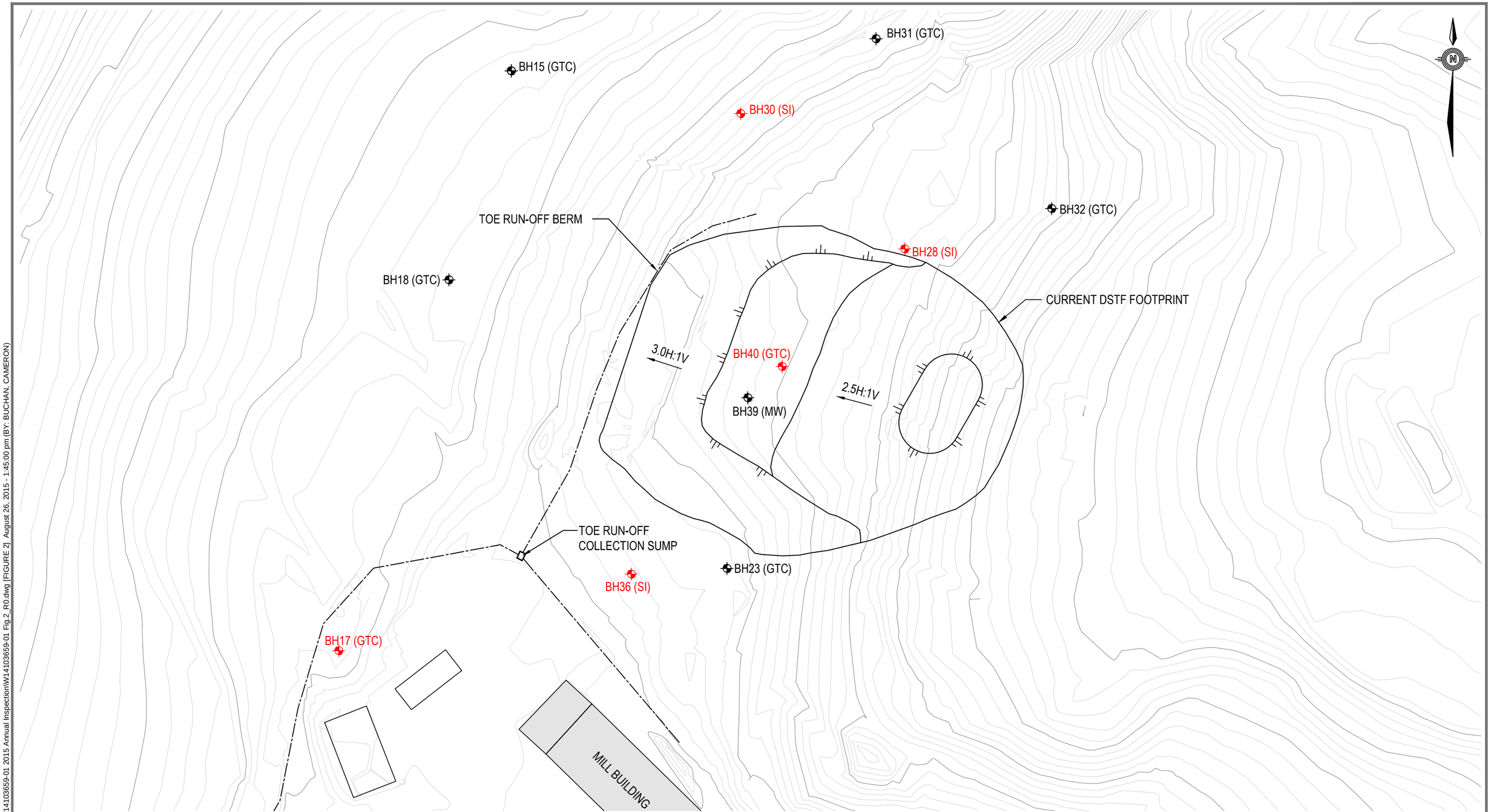
PROJECT NO.	DWN	CKD	REV
W14103659-01	CB	JTP	0

OFFICE: EBA-WHSE

DATE: August 25, 2015

Figure 1

Q:\Whitehorse\Data\02\01\drawings\Keno\W14103659-01 2015 Annual Inspection\W14103659-01 Fig_1 R0.dwg [FIGURE 1] August 26, 2015 - 11:30:52 am (BY: BUCHAN, CAMERON)



LEGEND

GTC - GROUND TEMPERATURE CABLE

SI - SLOPE INDICATOR

MW - MONITORING WELL

0 50m

Scale: 1:1,250 @ 11"x17"

NOTE

INSTRUMENTATION SHOWN IN RED HAS BEEN DAMAGED.

CLIENT

ALEXCO

TETRA TECH EBA

2015 ANNUAL INSPECTION
BELLEKENO MINE SITE - KENO CITY, YUKON

SITE PLAN SHOWING
BOREHOLE AND INSTRUMENTATION LOCATIONS

PROJECT NO.	DWN	CKD	REV
W14103659-01	CB	JTP	0

OFFICE: EBA-WHSE

DATE: August 25, 2015

Figure 2

Q:\Whitehorse\Data\0201drawings\Keno\W14103659-01 2015 Annual Inspection\W14103659-01 Fig.2_R0.dwg [FIGURE 2] August 26, 2015 - 1:45:00 pm (BY: BUCHAN, CAMERON)

PHOTOGRAPHS

Photo 1: **PAG Waste Storage Facility**
Stable facility berms and sideslopes
Facing North - August 10, 2015

Photo 2: **PAG Waste Storage Facility**
Incomplete anchor trench on north and west side of facility
Facing South - August 10, 2015

Photo 3: **PAG Waste Storage Facility**
Liner components displaced due to wind
Facing East - August 10, 2015

Photo 4: **Bellekeno Waste Rock Pile**
Stable waste rock pile sideslope
Facing West - August 10, 2015

Photo 5: **Bellekeno 625 Water Treatment Ponds**
Facility overview
Facing North - August 10, 2015

Photo 6: **Bellekeno 625 Water Treatment Ponds**
Sediment deposited outside southwest corner of facility
Facing North - August 10, 2015

Photo 7: **Bellekeno 625 Water Treatment Ponds**
Reduced freeboard at north end of secondary pond
Facing North - August 10, 2015

Photo 8: **Bellekeno 625 Water Treatment Ponds**
Bend in discharge pipe at coupler
Facing East - August 10, 2015

Photo 9: **Lightning Creek Bridge Abutments (Onek Road)**
Bridge overview
Facing South - August 10, 2015

Photo 10: **Lightning Creek Bridge Abutments (Onek Road)**
South bridge abutment
Facing East - August 10, 2015

Photo 11: **Lightning Creek Bridge Abutments (Onek Road)**
Displaced rip-rap on downstream side of south abutment
Facing South - August 10, 2015

Photo 12: **Lightning Creek Bridge Abutments (Bellekeno Haul Road)**
Bridge overview
Facing South - August 10, 2015

Photo 13: **Lightning Creek Bridge Abutments (Bellekeno Haul Road)**
Stable abutment and sufficient rip-rap armouring
Facing South - August 10, 2015

Photo 14: **Mill Water Storage Pond**
Water level in pond
Facing East - August 11, 2015

Photo 15: **Mill Water Storage Pond**
Stable perimeter berm and intact liner
Facing South - August 11, 2015

Photo 16: **Dry Stacked Tailings Facility**
Regraded and covered tailings facility
Facing East - August 11, 2015

Photo 17: **Dry Stacked Tailings Facility**
Surface of DSTF supporting vegetation
Facing North - August 11, 2015

Photo 18: **Dry Stacked Tailings Facility**
Surface of DSTF covered with growth medium
Facing South - August 11, 2015

APPENDIX A
TETRA TECH EBA'S GENERAL CONDITIONS

GENERAL CONDITIONS

GEOTECHNICAL REPORT

This report incorporates and is subject to these “General Conditions”.

1.0 USE OF REPORT AND OWNERSHIP

This geotechnical report pertains to a specific site, a specific development and a specific scope of work. It is not applicable to any other sites nor should it be relied upon for types of development other than that to which it refers. Any variation from the site or development would necessitate a supplementary geotechnical assessment.

This report and the recommendations contained in it are intended for the sole use of Tetra Tech EBA’s Client. Tetra Tech EBA does not accept any responsibility for the accuracy of any of the data, the analyses or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than Tetra Tech EBA’s Client unless otherwise authorized in writing by Tetra Tech EBA. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of Tetra Tech EBA. Additional copies of the report, if required, may be obtained upon request.

2.0 ALTERNATE REPORT FORMAT

Where Tetra Tech EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed Tetra Tech EBA’s instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by Tetra Tech EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of Tetra Tech EBA’s instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except Tetra Tech EBA. Tetra Tech EBA’s instruments of professional service will be used only and exactly as submitted by Tetra Tech EBA.

Electronic files submitted by Tetra Tech EBA have been prepared and submitted using specific software and hardware systems. Tetra Tech EBA makes no representation about the compatibility of these files with the Client’s current or future software and hardware systems.

3.0 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, Tetra Tech EBA has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

4.0 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. Tetra Tech EBA does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

5.0 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

6.0 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. Tetra Tech EBA does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

7.0 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

8.0 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

9.0 INFLUENCE OF CONSTRUCTION ACTIVITY

There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

10.0 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

11.0 DRAINAGE SYSTEMS

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

12.0 BEARING CAPACITY

Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

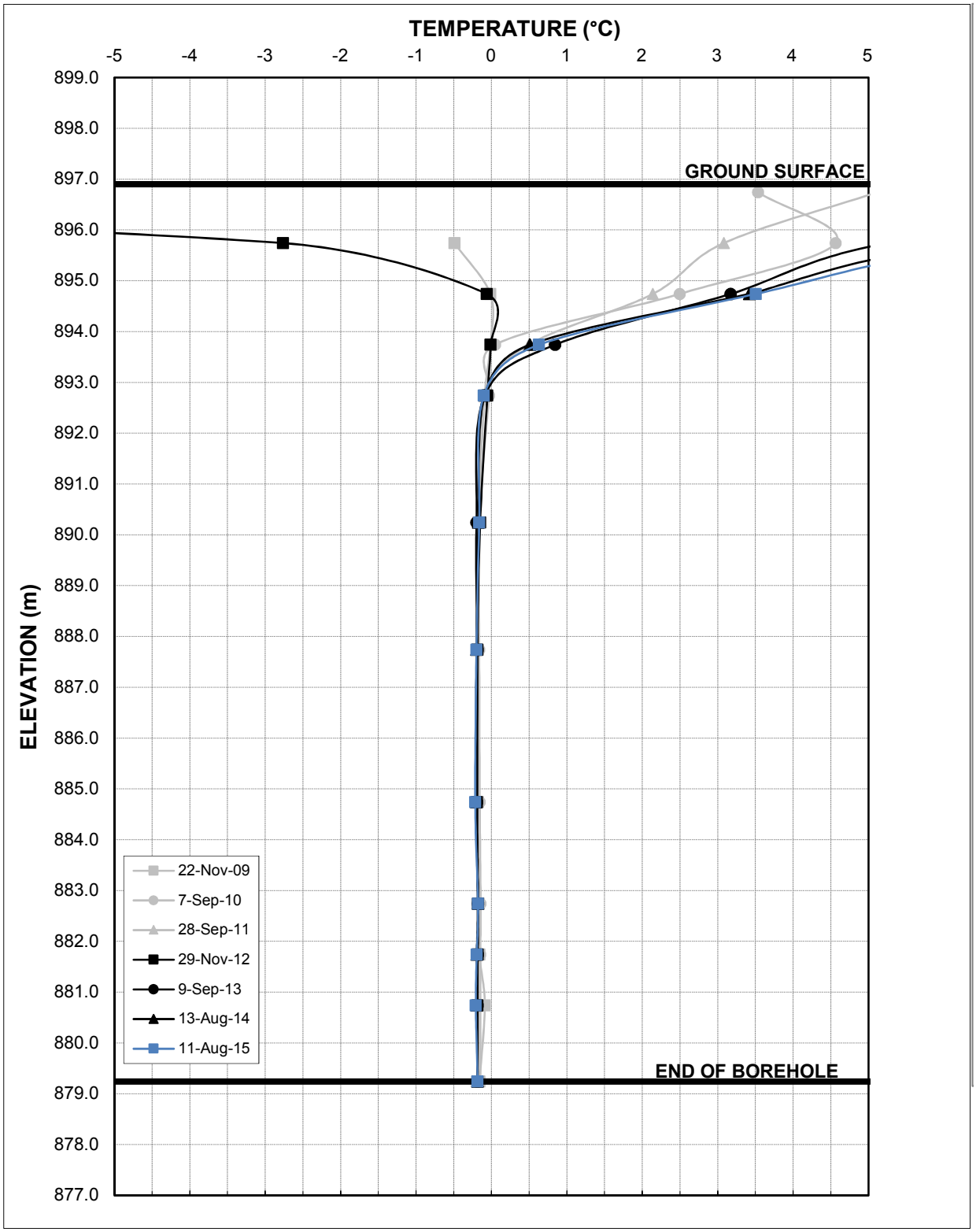
13.0 SAMPLES

Tetra Tech EBA will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the Client's expense upon written request, otherwise samples will be discarded.

14.0 INFORMATION PROVIDED TO TETRA TECH EBA BY OTHERS

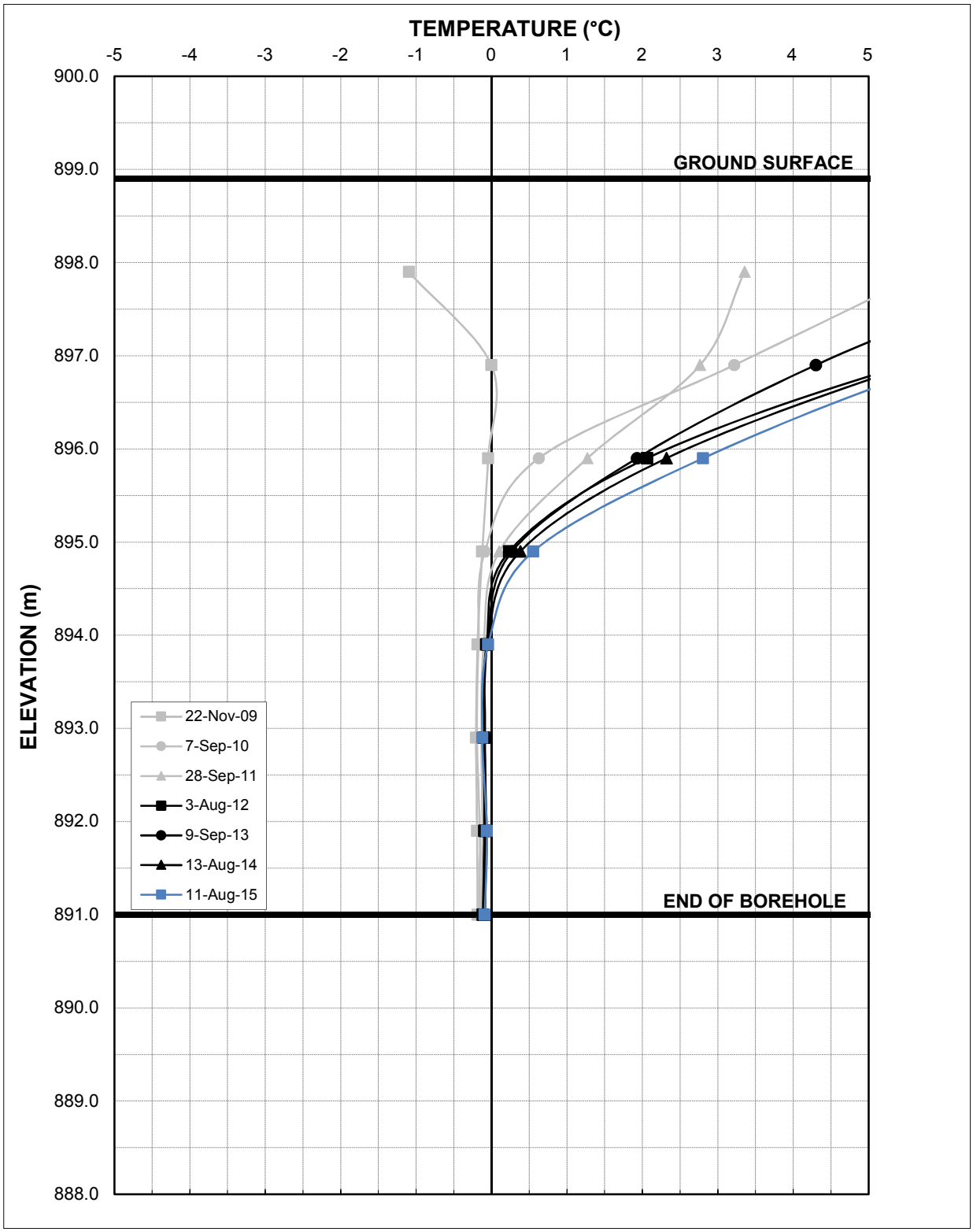
During the performance of the work and the preparation of the report, Tetra Tech EBA may rely on information provided by persons other than the Client. While Tetra Tech EBA endeavours to verify the accuracy of such information when instructed to do so by the Client, Tetra Tech EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

APPENDIX B
DSTF GROUND TEMPERATURE PROFILES



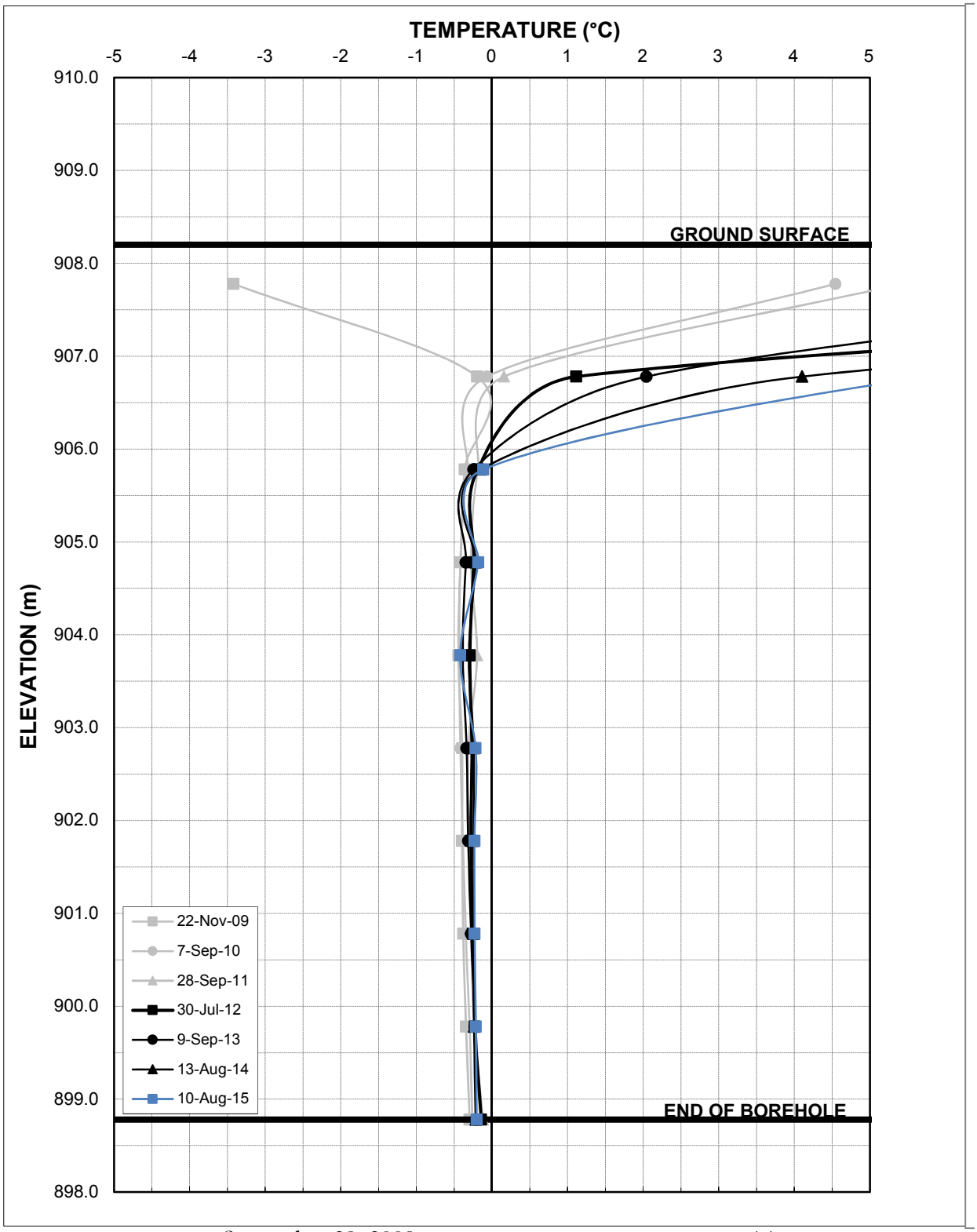
Install Date	August 30, 2009
Last Updated	August 11, 2015
Cable No:	2207

Ground Temperature Profile
Keno Hill District Mill Site Borehole BH15
Figure T1



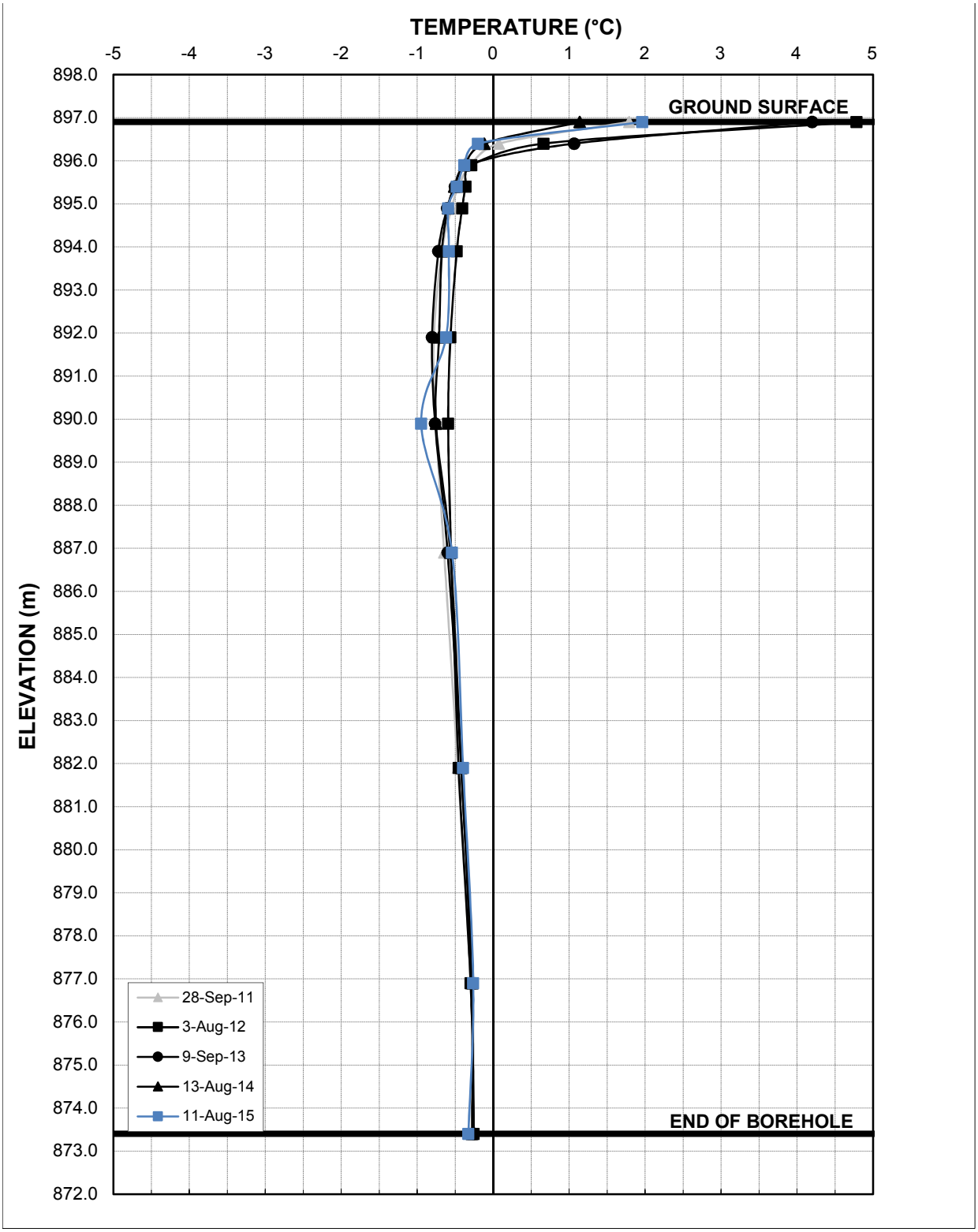
Install Date	September 2, 2009
Last Updated	August 11, 2015
Cable No:	2209

Ground Temperature Profile
Keno Hill District Mill Site Borehole BH18
Figure T3



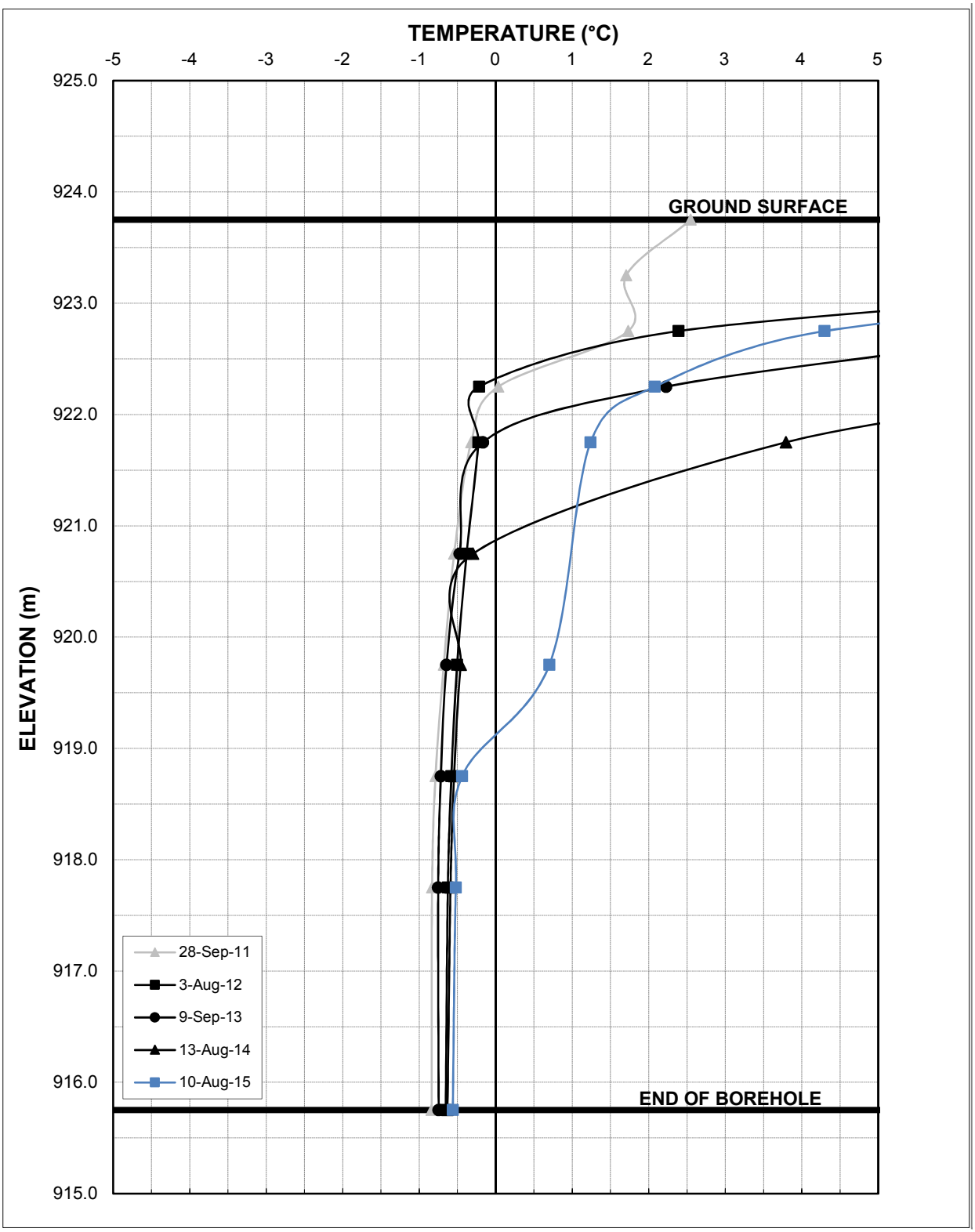
Install Date	September 29, 2009
Last Updated	August 10, 2015
Cable No:	2210

Ground Temperature Profile
Keno Hill District Mill Site Borehole BH23
Figure T4



Install Date	February 22, 2011
Last Updated	August 11, 2015
Cable No:	2263

Ground Temperature Profile
Keno Hill District Mill Site Borehole BH31
Figure T5



Install Date	February 22, 2011
Last Updated	August 10, 2015
Cable No:	2264

Ground Temperature Profile
Keno Hill District Mill Site Borehole BH32
Figure T6

APPENDIX C
DSTF LATERAL MOVEMENT PROFILES

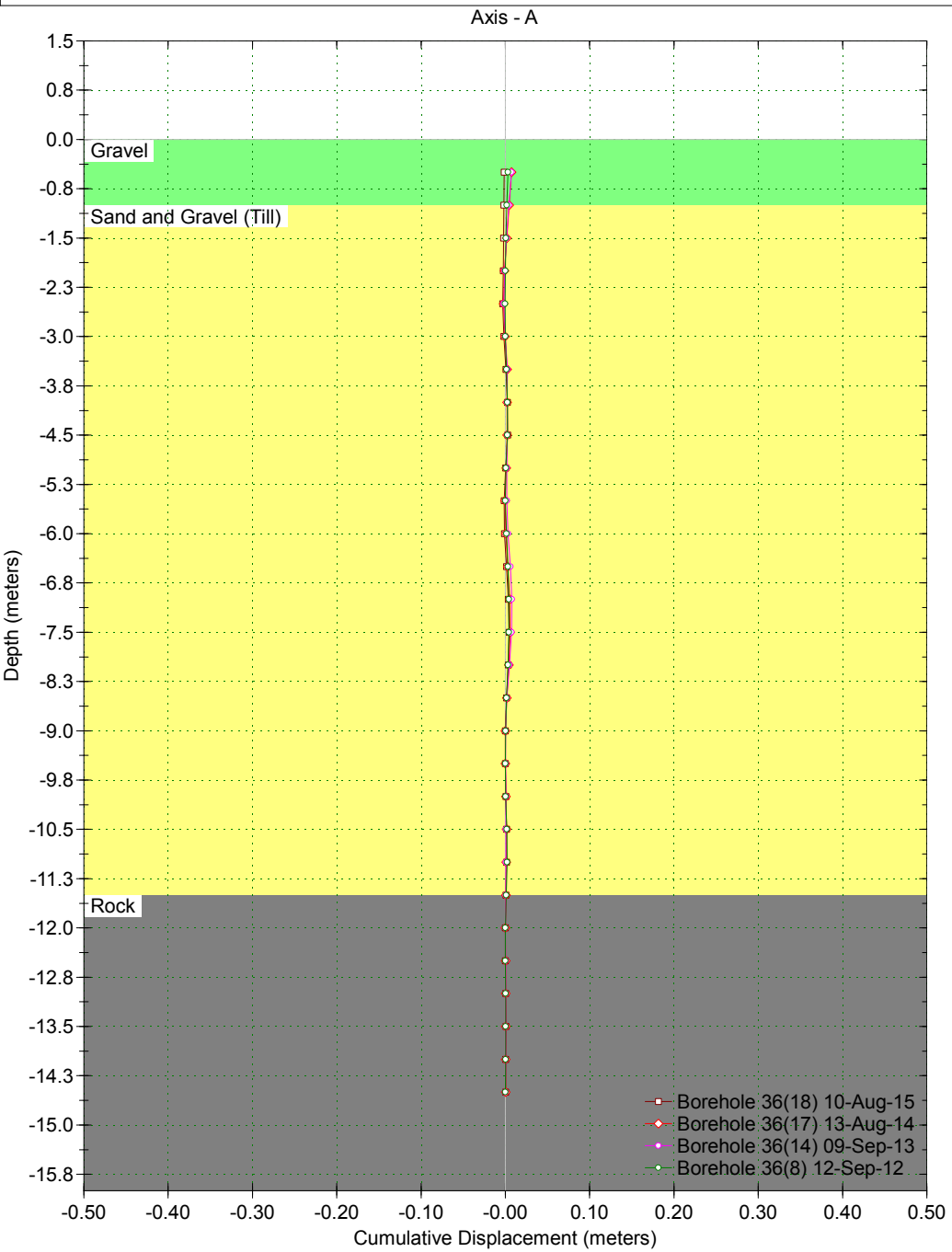
RST Instruments Ltd.

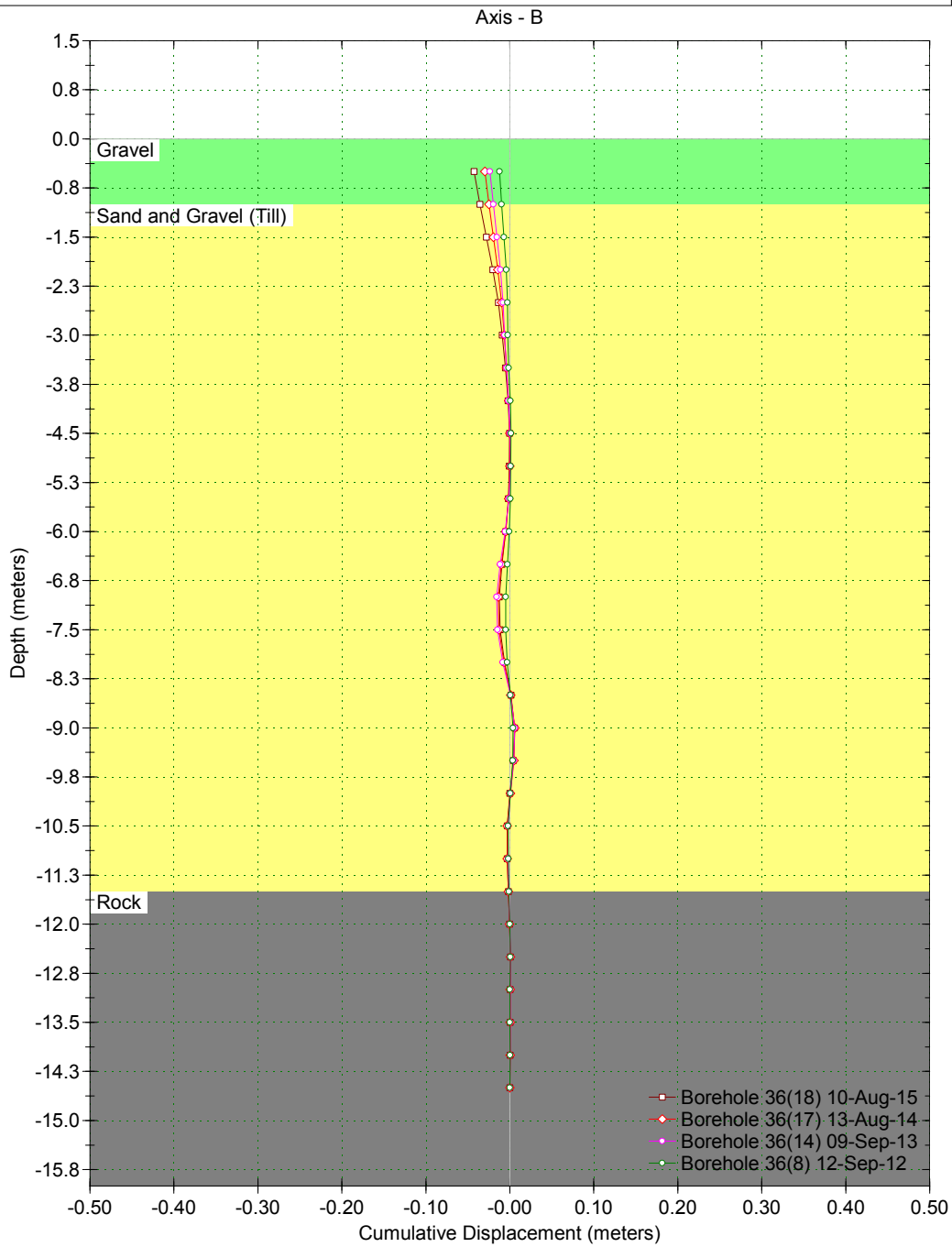
CUMULATIVE DISPLACEMENT

Inclinalysis v. 2.43.1

Borehole : BH36
Project : Keno
Location : DSTF
Northing : 7086872
Easting : 483931
Collar :

Spiral Correction : N/A
Collar Elevation : 0.0 meters
Borehole Total Depth : 14.5 meters
A+ Groove Azimuth :
Base Reading : 2011 Dec 14 16:52
Applied Azimuth : 0.0 degrees





APPENDIX B

2015 NOISE MONITORING RESULTS

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Whitehorse, Yukon Y1A 2V3
Phone (867) 668-6463 Fax (867) 633-4882
www.accessconsulting.ca

Memorandum

To: Alexco Keno Hill Mining Corp.

From: Alexco Environmental Group Inc.

CC: Kai Woloshyn, Alexco Resource Corp.

Date: March 30, 2016

Re: 2015 Noise Monitoring Data Summary, Keno, YT

INTRODUCTION

As part of the Keno Hill Silver District Mining Operations Noise Management Plan (the Plan) Alexco Keno Hill Mining Corp. (AKHM) has been monitoring noise levels in Keno City. The Plan was initially developed to address any potential noise effects that might occur with the addition of the two new mines, Lucky Queen and Onek 990. In addition to noise mitigation measures and the creation of a Noise Disturbance Notification Form and Noise Disturbance Register to track noise disturbance claims, AKHM committed to monitor noise levels within the community at various locations to assess the actual versus predicted noise levels and to determine if the noise abatement measures are effective. These noise data can now be used in the context of the no active mining period for the District and noise data collection for the no active mining period continues in 2016.

The predicted noise levels were presented in the Noise Impact Assessment (NIA) completed by Patching Associates Acoustical Engineering Ltd (PAAE) conducted during the *Yukon Environmental and Socio-Economic Assessment Act* (YESAA) process (Project 2011-0315). The NIA identifies the noise sources from the current mining-related activities, noise receptors, and predicts the anticipated noise level from all existing sources and those associated with the addition of Lucky Queen and Onek 990 mining operations.

This memo presents noise monitoring results from 2015 with reference to the data collected in 2013 and 2014.

NOISE RECEPTORS

AKHM has monitored noise at the five locations selected in the NIA as being potential noise receptors within a 2 km radius study area around Keno City. Since November 2013, noise has also been monitored at a sixth location, the Keno City Campground. These monitoring locations are listed in Table 1 and shown in Figure 1.

Table 1 Representative Locations Assessed in Keno City

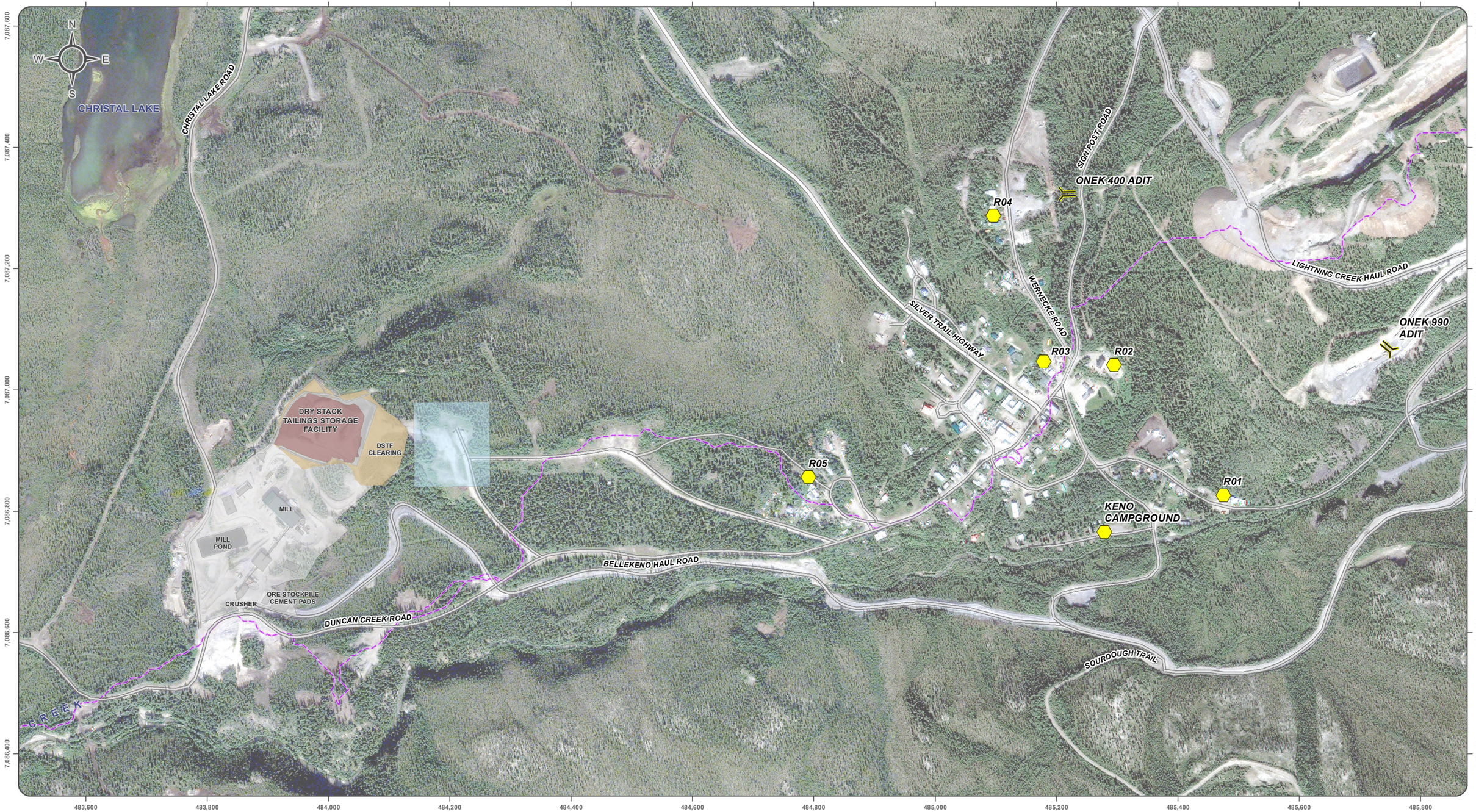
Monitoring Location	GPS Location	Description
R01	N63.90827 W135.29599	East end Residence, north side of Lightning Creek Road
R02	N63.91019 W135.29968	Residence, east side of Sign Post Road
R03	N63.91023 W135.30205	Town Center, north from the Snack Bar
R04	N63.91239 W135.30376	Residence, west side of Wernecke Road
R05	N63.90851 W135.30993	Residence, about 850 m east from the Mill
Campground	N63.90772 W135.29998	Keno City campground

The background noise levels experienced by these locations vary considerably, depending on location and local activities. Climate parameters, such as relative humidity, temperature, and temperature inversions impact the sound level and propagation experienced by each of these receptors.

MINING ACTIVITIES TIMELINE

Mining took place at Bellekeno, and milling at the Keno District Mill throughout 2013, until these were suspended on September 3rd, 2013. Operations at Onek 990 ceased at the end of May 2013. Exploration activities at Flame & Moth took place from late March to early November 2014. The remaining months: September 2013 through March 2014, and December 2014 to December 2015, can be considered baseline conditions as no mining or exploration activities were taking place at that time.

Care and Maintenance activities associated with the closed mines are minor but ongoing from September 2013 to present, which includes activities such as maintaining roads, covering the dry stack tailings facility, and other small construction activities at the mill site.



Satellite imagery obtained from Yukon Geomatics map service http://mapservices.gov.yk.ca/ArcGIS/services on March 2016
Data obtained from EBA: "As built" spatial data: Mill pond (Y.E.S.), Mill structure, and current DSTF footprints, Roads (In House survey December 11th 2011).
Design spatial data: Conveyance and water collection, diversion ditches and berm.

Datum: NAD 83; Projection: UTM Zone 8N

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1:6,000 *(when printed on 11 x17 inch paper)*

0 50 100 150 200 Meters

- Adit
- Noise Monitoring Station
- Building/Structures
- DSTF 322k Tonnes Design
- Current DSTF
- Mill Site Footprint
- Land Disposition Garbage Dump
- Watershed Boundaries
- Silver Trail Highway
- Secondary Road

AKHM

AEG

KENO HILL SILVER DISTRICT MINING OPERATIONS

FIGURE 1

NOISE MONITORING STATIONS

MARCH 2016

D:\Project\AllProjects\Keno_Area_Mines\Bellekeno\GIS\mxd\Overview_Maps\Specific_Topics\Noise_Monitoring_Stns_20160330.mxd
(Last edited by: amatlashevska;3/30/2016/11:19 AM)

MONITORING EQUIPMENT

The noise monitoring profiles collected between April 2013 and November 2014 were measured using an Extech Integrating Sound Level Datalogger (Model 407780) to capture average dBA over a single ten minute period. The wind speed, wind direction, temperature and precipitation data from the Flame and Moth Meteorological Station, on top of the dry stack tailings facility, associated with each noise monitoring event have been reported as these can have a significant effect on measured noise levels. Any notable noise sources associated with the monitoring event were also documented where possible. The results from 31 monitoring events from April 2013 to November 2014 are presented in Appendix A.

Starting in December 2014, noise monitoring readings were collected with a Casella CEL-63X Sound Level Meter and a Casella CEL-495 Microphone. The microphone was mounted on a tri-pod at approximately 1.5 meters above ground and surrounded by a windscreen provided by Casella for use with this microphone to reduce wind impacts as required for outdoor sound measurements. The sound level meter and battery power source were housed inside a weather-proof case which was held in a locked metal box for extra security.

In 2015, January has 24 hr period data recorded for each site; however, data collected in February and March were out of calibration, and the microphone was found to be broken. The Casella sound monitor was sent in for repair in April and was received in June. The next recordings were conducted in July 2015, when 10 minute data was collected at each of the six stations twice. In August, September, and November two sets of 10 minute data were collected from each site, as well as a complete set of 24 hour data from all of the sites. In October, two sets of 10 minute data was collected for all sites, but due to battery failure not all sites had complete 24 hour data collected. In December, one set of data was collected as the temperature was too low for the equipment to stay calibrated properly.

For the purposes of this report the more numerous 10 minute data will be presented as continued baseline data collection, and starting in 2016, to meet the Plan requirements 24 hour data will be presented alongside the 24 hours data collected in 2015.

RESULTS

Six months of noise monitoring data are available for 2015, from July to December, for a total of 66 ten minute measurements periods. The LA_{eq} values for all of these measurements ranged from 21.6 to 125 dB, with a median of 47 dB. The LA_{eq} is an equivalent continuous sound level which would contain the same sound energy as the varying sound record. The LA_{eq} value exceeds the LAF_{10} value for these measurements 13% of the time, indicating that these 10 minute noise monitoring events are characterized by significant short-term loud events and not general background levels.

The difference between the LA_{eq} and the LAF_{90} provides an indication if the LA_{eq} has been heavily influenced by short term noise events (difference greater than 10%) or if the LA_{eq} indicates a very steady noise background level (difference less than 5%). Approximately 28% of the LA_{eq} values are heavily influenced by short term events, compared to 45% which show a very steady noise environment. As 2015 represents baseline conditions, much of the short term noise events was presumably road traffic, such as the water truck or local vehicle traffic.

Approximately 72% of the LA_{eq} measurements in 2015 exceeded the predicted levels from the NIA range (from 32 to 39 dB) and of those that exceeded, nearly 70% represent steady to very steady baseline conditions. Baseline noise levels were greater than those predicted in the NIA on several occasions in 2014 as well, indicating that many of the notable noise sources are not linked to Keno mining or milling operations.

Noise levels (LA_{eq}) at the campground were generally steady and ranged from 48.6 to 57.0 dB in 2015. All of the measurements were less than 5% from the LAF_{90}, indicating these values represent very steady background data. These results are higher than those collected in the summer months of 2013 and 2014, but are similar to the values recorded during the previous winter periods.

The Casella sound meter is calibrated in the field before and after each set of measurements, which is recorded with the noise monitoring data. The drift can be effected by temperature or too long a period from a factory calibration. If the drift is recoded as greater than ±3.0 dB not all data is recorded. Since drift increases as temperature decreases, this may describe why the December 2015 data is not completely recorded, as the drift was -3.1 dB. To avoid this error in the future steps should be taken to keep the sound level meter and microphone as warm as possible. During periods of extended low temperatures, the data validity will need to be evaluated.

An important limitation of the 2013 to 2015 data is related to the sampling interval duration; 10 minutes is a short time period, and the data were manually collected. As such, the 2013, 2014 and 2015 data were almost exclusively conducted during day time hours. The switch to 24 hour unattended sampling in 2016 will provide a more complete representation of the day and night time acoustic baseline data.

Table 2 provides the available 2015 summary data, as well as the relevant corresponding calibration data and Flame and Moth meteorological station as context for examining the results. The existing 2013 and 2014 data is provided in Appendix A.

Table 2 2015 Summary Noise Data and Corresponding Weather Station Data

Station	Start Date & Time	LAeq (dB)	LAF 10% (dB)	LAF 90% (dB)	LAeq > LAF10	LAeq - LAF90 (dB)	LZeq	LAleq	LAE	LCeq	LCeq-LAeq	Calibration Drift	Temp. (˚C)	R.H. (%)	Avg. WS (m/s)
R01	29/07/2015 14:43	41.9	45	29.5	No	12.40	62.3 dB	49.8 dB	69.7 dB	52.4 dB	10.5 dB	-0.1 dB	8.37	95.8	0.74
R02	29/07/2015 15:08	41.2	46.5	29	No	12.20	66.3 dB	46.5 dB	69.0 dB	55.7 dB	14.5 dB	0.1 dB	8.37	95.8	0.74
R03	29/07/2015 17:47	49.6	40	26.5	Yes	23.10	70.7 dB	61.9 dB	77.4 dB	64.1 dB	14.5 dB	----	8.09	95.7	0.68
R04	29/07/2015 18:04	51.3	55.5	44.5	No	6.80	55.3 dB	52.5 dB	79.0 dB	53.9 dB	2.6 dB	----	8.09	95.7	0.68
R05	29/07/2015 18:21	36.2	41	30.5	No	5.70	54.7 dB	42.1 dB	64.0 dB	44.7 dB	8.5 dB	----	8.09	95.7	0.68
Cgrd.	30/07/2015 9:33	51	54.5	48.5	No	2.50	59.5 dB	51.4 dB	78.8 dB	54.0 dB	3.0 dB	----	10.30	88.9	0.46
R01	30/07/2015 14:37	52.9	53.5	50	No	2.90	74.6 dB	56.2 dB	80.7 dB	70.4 dB	17.5 dB	-2.8 dB	10.14	94.3	1.10
R02	30/07/2015 14:53	47	47.5	44	No	3.00	70.0 dB	56.3 dB	74.8 dB	61.1 dB	14.1 dB	-2.8 dB	10.14	94.3	1.10
R03	30/07/2015 15:10	42.5	43.5	40.5	No	2.00	68.8 dB	46.4 dB	70.3 dB	59.2 dB	16.7 dB	-2.8 dB	10.14	94.3	1.10
R04	30/07/2015 15:26	54.3	54.5	54	No	0.30	60.1 dB	55.0 dB	82.1 dB	58.0 dB	3.7 dB	-2.8 dB	10.14	94.3	1.10
R05	30/07/2015 15:44	32.2	33.5	30.5	No	1.70	61.9 dB	35.1 dB	60.0 dB	50.4 dB	18.2 dB	-2.8 dB	11.35	92.2	0.79
Cgrd.	30/07/2015 16:04	48.6	49	48.5	No	0.10	54.4 dB	49.3 dB	76.4 dB	52.2 dB	3.6 dB	-2.8 dB	11.35	92.2	0.79
R05	11/08/2015 11:00	35	37.5	29.5	No	5.50	63.5 dB	38.7 dB	62.7 dB	52.8 dB	17.8 dB	-2.9 dB	11.05	83.8	1.68
Cgrd.	11/08/2015 11:43	48.9	50.5	46.5	No	2.40	65.8 dB	50.9 dB	77.5 dB	62.5 dB	13.6 dB	-2.9 dB	10.36	87.6	1.57
R03	11/08/2015 12:37	41.3	44.5	33	No	8.30	60.0 dB	49.4 dB	69.1 dB	55.1 dB	13.8 dB	-2.9 dB	10.71	85.5	2.18
R02	11/08/2015 13:00	56.6	60	46.5	No	10.10	64.9 dB	58.3 dB	84.4 dB	62.7 dB	6.1 dB	-2.9 dB	10.71	85.5	2.18
R04	11/08/2015 13:23	55.6	57.5	35	No	20.60	72.1 dB	58.7 dB	83.4 dB	65.1 dB	9.5 dB	-2.9 dB	10.71	85.5	2.18
R01	11/08/2015 13:43	50.5	54	43	No	7.50	64.6 dB	52.5 dB	78.3 dB	63.1 dB	12.6 dB	-2.9 dB	11.20	83.8	2.24
N/A	22/08/2015 15:25	40.4	42	34.5	No	5.90	67.7 dB	46.0 dB	68.1 dB	56.4 dB	16.0 dB	0.3 dB	12.82	52.4	2.59
N/A	22/08/2015 15:41	40.4	43	31	No	9.40	67.4 dB	48.3 dB	68.2 dB	54.8 dB	14.4 dB	0.3 dB	13.35	51.3	2.45
N/A	22/08/2015 16:05	58.8	62	29	No	29.80	94.0 dB	67.7 dB	86.6 dB	84.0 dB	25.2 dB	0.3 dB	13.35	51.3	2.45
N/A	22/08/2015 16:17	44.6	46.5	42.5	No	2.10	59.8 dB	45.0 dB	72.4 dB	55.6 dB	11.0 dB	0.3 dB	13.35	51.3	2.45
N/A	22/08/2015 16:35	48.2	48.5	48	No	0.20	54.3 dB	48.7 dB	76.0 dB	52.4 dB	4.2 dB	0.3 dB	13.35	51.3	2.45
N/A	22/08/2015 16:53	38.9	41	34.5	No	4.40	67.4 dB	44.3 dB	66.7 dB	55.5 dB	16.6 dB	0.3 dB	10.61	76.6	1.98
N/A	05/09/2015 14:25	38.6	45	21.5	No	17.10	55.3 dB	41.6 dB	66.4 dB	53.7 dB	15.1 dB	0.3 dB	7.23	85.2	0.93
N/A	05/09/2015 14:39	37.8	41	29	No	8.80	51.9 dB	41.4 dB	65.6 dB	48.9 dB	11.1 dB	0.3 dB	8.72	71.5	0.47
N/A	05/09/2015 14:57	52.7	53	52.5	No	0.20	57.0 dB	53.2 dB	80.5 dB	55.8 dB	3.1 dB	0.3 dB	8.72	71.5	0.47
N/A	05/09/2015 15:14	28.9	30.5	22.5	No	6.40	52.6 dB	36.5 dB	56.7 dB	41.1 dB	12.2 dB	0.3 dB	8.72	71.5	0.47
N/A	05/09/2015 15:30	33.6	37	21.5	No	12.10	65.5 dB	43.0 dB	61.4 dB	54.0 dB	20.4 dB	0.3 dB	8.72	71.5	0.47
N/A	05/09/2015 15:45	46.3	46.5	46	No	0.30	56.3 dB	47.7 dB	74.1 dB	50.3 dB	4.0 dB	0.3 dB	9.06	69.4	2.62
N/A	06/09/2015 12:39	41.4	44	26	No	15.40	59.6 dB	47.4 dB	69.2 dB	52.1 dB	10.7 dB	0.3 dB	6.61	56.0	2.09
N/A	06/09/2015 12:58	42.5	43.5	41.5	No	1.00	58.1 dB	44.4 dB	70.3 dB	51.6 dB	9.1 dB	0.3 dB	6.61	56.0	2.09
N/A	06/09/2015 13:19	125.6	127.5	120.5	No	5.10	130.0 dB	127.4 dB	153.3 dB	127.8 dB	2.2 dB	0.3 dB	6.61	56.0	2.09
N/A	06/09/2015 13:36	34.5	37	28.5	No	6.00	69.4 dB	42.6 dB	62.3 dB	57.7 dB	23.2 dB	0.3 dB	7.90	49.1	2.11
N/A	06/09/2015 14:03	51	49	34	Yes	17.00	68.6 dB	56.4 dB	78.8 dB	63.5 dB	12.5 dB	0.3 dB	7.90	49.1	2.11
N/A	06/09/2015 14:22	39	42.5	30	No	9.00	63.3 dB	45.1 dB	66.8 dB	51.0 dB	12.0 dB	0.3 dB	7.90	49.1	2.11

N/A	17/10/2015 10:57	34.8	37	23.5	No	11.30	55.3 dB	41.4 dB	62.6 dB	51.0 dB	16.2 dB	0.3 dB	4.42	84.0	0.93
N/A	17/10/2015 11:13	58.6	36	20.5	Yes	38.10	61.9 dB	71.6 dB	86.4 dB	60.8 dB	2.2 dB	0.3 dB	4.42	84.0	0.93
N/A	17/10/2015 11:28	38.7	26.5	20.5	Yes	18.20	63.1 dB	42.7 dB	66.4 dB	60.8 dB	22.1 dB	0.3 dB	4.42	84.0	0.93
N/A	17/10/2015 11:45	44.3	44.5	42.5	No	1.80	59.0 dB	49.7 dB	72.0 dB	55.5 dB	11.2 dB	0.3 dB	5.18	81.3	1.04
N/A	17/10/2015 12:02	63.2	47.5	42	Yes	21.20	66.3 dB	76.5 dB	91.0 dB	65.1 dB	1.9 dB	0.3 dB	5.18	81.3	1.04
N/A	17/10/2015 12:19	33.9	36.5	24.5	No	9.40	54.6 dB	40.9 dB	61.7 dB	50.4 dB	16.5 dB	0.3 dB	5.18	81.3	1.04
N/A	18/10/2015 14:48	117.2	121.5	55.5	No	61.70	131.9 dB	125.3 dB	145.0 dB	124.3 dB	7.1 dB	0.3 dB	5.68	86.3	1.78
N/A	18/10/2015 15:09	35.7	38	28.5	No	7.20	60.7 dB	41.9 dB	63.5 dB	47.9 dB	12.2 dB	0.3 dB	5.68	86.3	1.78
N/A	18/10/2015 15:25	32.2	35.5	26.5	No	5.70	63.8 dB	37.0 dB	60.0 dB	50.4 dB	18.2 dB	0.3 dB	5.68	86.3	1.78
N/A	18/10/2015 15:40	29.5	31	26.5	No	3.00	61.1 dB	36.7 dB	57.2 dB	50.7 dB	21.2 dB	0.3 dB	6.79	79.9	1.89
N/A	18/10/2015 15:58	47.7	47.5	47	Yes	0.70	54.7 dB	52.1 dB	75.5 dB	50.6 dB	2.9 dB	0.3 dB	6.79	79.9	1.89
N/A	18/10/2015 16:16	53.8	54	53.5	No	0.30	58.8 dB	54.3 dB	81.6 dB	56.3 dB	2.5 dB	0.3 dB	6.79	79.9	1.89
R05	13/11/2015 9:38	42.3	42.5	27.5	No	14.80	71.9 dB	52.4 dB	70.0 dB	60.9 dB	18.6 dB	0.3 dB	-12.60	91.4	na
R03	13/11/2015 10:22	38.2	40.5	35	No	3.20	56.0 dB	42.1 dB	66.0 dB	49.0 dB	10.8 dB	0.3 dB	-12.60	91.4	na
R02	13/11/2015 10:40	49.4	41.5	29.5	Yes	19.90	65.4 dB	59.6 dB	77.1 dB	63.8 dB	14.4 dB	0.3 dB	-12.84	91.2	na
R04	13/11/2015 10:54	55.8	56.5	54	No	1.80	75.0 dB	57.0 dB	83.6 dB	73.6 dB	17.8 dB	0.3 dB	-12.84	91.2	na
Cgrd.	13/11/2015 11:10	57	58.5	54.5	No	2.50	75.8 dB	57.9 dB	84.8 dB	74.3 dB	17.3 dB	0.3 dB	-12.84	91.2	na
R01	13/11/2015 11:25	60.1	62	56.5	No	3.60	78.3 dB	61.5 dB	87.9 dB	76.9 dB	16.8 dB	0.3 dB	-12.84	91.2	na
R05	14/11/2015 8:05	58.4	59	58	No	0.40	77.7 dB	59.1 dB	86.2 dB	76.2 dB	17.8 dB	0.3 dB	-16.97	87.8	na
R03	14/11/2015 8:21	52.8	53.5	52	No	0.80	78.9 dB	53.7 dB	80.6 dB	77.1 dB	24.3 dB	0.3 dB	-16.97	87.8	na
R02	14/11/2015 8:38	56	57	53	No	3.00	76.5 dB	57.0 dB	83.8 dB	74.8 dB	18.8 dB	0.3 dB	-17.07	87.8	na
R04	14/11/2015 9:02	58.7	59	58.5	No	0.20	76.8 dB	59.6 dB	86.5 dB	75.3 dB	16.6 dB	0.3 dB	-17.07	87.8	na
Cgrd.	14/11/2015 9:17	55.5	58	54	No	1.50	78.6 dB	56.5 dB	83.3 dB	77.1 dB	21.6 dB	0.3 dB	-17.07	87.8	na
R01	14/11/2015 9:35	55.9	57	52.5	No	3.40	76.8 dB	56.7 dB	83.7 dB	75.1 dB	19.2 dB	0.3 dB	-17.24	87.5	na
R05	14/12/2015 18:00	---.-	16.5	15.5			33.1 dB	24.8 dB	45.2 dB	28.3 dB	10.9 dB	-3.1 dB	-14.35	89.5	na
Cgrd.	14/12/2015 18:20	---.-	18	17.5			39.1 dB	22.4 dB	45.9 dB	33.0 dB	14.9 dB	-3.1 dB	-14.35	89.5	na
R02	14/12/2015 18:38	21.6	21.5	20.5	Yes	1.10	37.6 dB	27.5 dB	49.4 dB	33.1 dB	11.5 dB	-3.1 dB	-14.46	89.7	na
R04	14/12/2015 18:55	---.-	17.5	16.5			42.1 dB	---.-	44.9 dB	25.1 dB	8.0 dB	-3.1 dB	-14.46	89.7	na
R03	14/12/2015 19:11	---.-	15.5	15.5			29.8 dB	---.-	43.3 dB	21.7 dB	6.1 dB	-3.1 dB	-14.46	89.7	na
R04	14/12/2015 19:25	---.-	16.5	16			40.0 dB	---.-	44.3 dB	24.4 dB	7.9 dB	-3.1 dB	-14.46	89.7	na

Legend:

Yes	When LAeq > LAF10
<5	LAeq - LAF90 (dB) less than 5
>10	LAeq - LAF90 (dB) greater than 10
Red	Calibration Drift greater than 3.0 dB

NOISE COMPLAINTS

No formal noise complaints were received by AKHM in 2015.

CONCLUSION

Noise levels measured at all noise receptors were well within or below the 50-90 dBA range deemed to be socially acceptable for daytime noise limits, with the exception of 2 anomalous data points. The majority of the LA_{eq} measurements in 2015 exceeded the predicted levels from the NIA range and of those that exceeded, nearly 70% represent steady to very steady baseline conditions, despite the absence of mining and milling operations in the Keno Hill Silver District in 2015.

Calibration should be conducted before after field measurements, to be able to calibrate drift. As drift increases with colder temperatures, steps will need to be taken to keep the monitor and microphone as warm as possible, and if temperatures become too cold the validity of the data will need to be assessed.

Given the short measurement interval of 10 minutes for measurements since 2013 measurements could have been influenced by fluctuations in background levels and climate parameters impacting noise levels and propagation. Continued monthly monitoring over a 24-hour interval will provide further data which can better inform noise monitoring thresholds.

APPENDIX A

Keno Noise Monitoring Data September 2013 to December 2014

Keno Noise Monitoring Data

Date	Location	Time	Temp (°C)	Wind	Precipitation	DBA	Observations
08/04/2013	R01	12:26	2	Windy SSE	None	52.0	
08/04/2013	R02	12:05	2	Windy SSE	None	58.6	
08/04/2013	R03	11:45	2	Windy SSE	None	52.4	
08/04/2013	R04	11:25	2	Windy SSE	None	67.2	A dog barked 2 times.
08/04/2013	R05	11:04	2	Windy SSE	None	48.5	
10/04/2013	R01	11:33	-6	Light SSW	None	42.1	
10/04/2013	R02	13:00	-6	Light SSW	None	42.5	
10/04/2013	R03	12:40	-6	Light SSW	None	49.0	Doors slamming. People talking.
10/04/2013	R04	12:20	-6	Light SSW	None	39.4	
10/04/2013	R05	12:00	-6	Light SSW	None	39.1	
06/05/2013	R01	15:30	2	Wind West	None	35.1	Backup alarm at Onek. Tarps flapping in wind.
06/05/2013	R02	15:30	2	Slight breeze	None	34.4	
06/05/2013	R03	15:30	2	Windy	None	44.8	Dog barking. Boart truck.
06/05/2013	R04	15:30	2	Slight breeze	None	32.8	
06/05/2013	R05	15:30	2	Slight breeze	None	37.5	Dog barking.
19/05/2013	R01	10:25	-2	Light (<10km/h) N	Light snow	69.6	Creek flowing loud. Squirrels making noise. Tarp flapping. Volvo going by on the BKR.
19/05/2013	R02	10:10	-2	Light (<10km/h) E	Light snow	43.2	Creek flowing below. A few birds chirping. Boart pickup went by.
19/05/2013	R03	9:55	-2	Light (<10km/h) E	Light snow	56.3	A few birds. Talking and trucks in town in the distance. Water truck went by.
19/05/2013	R04	9:30	-2	Light (<10km/h) E	Light snow	46.6	Lots of birds calling and a woodpecker pecking close by.
19/05/2013	R05	8:55	-2	Light (<10km/h) E	Light snow	36.4	A few birds and a squirrel chirping.
18/06/2013	R01	16:25	22	Light (<10km/h) S	None	48.6	Creek flowing. Leaves rustling.
18/06/2013	R02	16:10	22	Light (<10km/h) S	None	46.8	Volvo on BKR. 2 vehicles drove past. Gusts of wind rustling trees. Chainsaw nearby in town.
18/06/2013	R03	15:55	22	Light (<10km/h) S	None	44.8	People talking and walking close by. 2 Vehicles driving through town and 1 driving by.
18/06/2013	R04	15:40	21	Light (<10km/h) S	None	34.9	Wind rustling leaves. Birds calling.
18/06/2013	R05	14:55	21	Light (<15km/h) S	None	37.6	Wind rustling leaves. Volvo on the BKR.
24/07/2013	R01	11:07	23	light (<20km/h) S	None	48.7	Leaves rustling. Creek nearby. Birds chirping.
24/07/2013	R02	10:55	23	light (<10km/h) S	None	40.4	Three vehicles driving nearby. Leaves rustling.
24/07/2013	R03	10:43	23	light (<10km/h) S	None	47.7	Backup alarm at Mill. Leaves rustling. Someone in town hammering. Two vehicles drove by.
24/07/2013	R04	10:30	23	light (<10km/h) SE	None	38.0	Backup alarm at Mill. Mill crusher. Leaves rustling. Car drove by twice. Car on Silver Trail.
24/07/2013	R05	10:14	23	Calm	None	38.0	Backup alarm at Mill. Volve down BKR. Mill crusher.
16/11/2013	R01	14:11	-20	Calm	None	27.8	Birds.
16/11/2013	R02	13:51	-20	Calm	None	31.9	Squirrel, ravens, birds noise.
16/11/2013	R03	13:35	-20	Calm	None	34.9	Squirrel, ravens, birds noise+ truck.
16/11/2013	R04	13:20	-20	Calm	None	40.6	Lots of ravens activity, birds.
16/11/2013	R05	14:27	-20	Calm	None	38.1	Birds, truck plus door slaming + humain voive + dog barking. All at about 200 meters from sound meter.
17/11/2013	R01	12:46	-30	Calm	None	25.4	Birds.
17/11/2013	R02	12:25	-30	Calm	None	27.6	Birds, squirrel and vehicle.
17/11/2013	R03	12:07	-30	Calm	None	31.1	Ravens, squirrel and vehicle.
17/11/2013	R04	11:48	-30	Calm	None	35.9	Ravens.
17/11/2013	R05	13:01	-30	Calm	None	23.8	Quiet.
29/11/2013	Cmpgrnd	15:08	-23	Calm	None	26.4	Chainsaw in town, birds chirping.
29/11/2013	R01	14:52	-23	Calm	None	27.4	Birds chirping, snowmobile in distance.
29/11/2013	R03	14:36	-23	Calm	None	46.7	Ravens, chainsaw and dog barking in the distance, water truck drove by and backed up (alarm) nearby.
29/11/2013	R04	14:20	-23	Calm	None	29.0	squirrels and little birsds in distance, ravens flying by, someone coughing, doors closing mearby, dog barking.
29/11/2013	R05	13:59	-24	Calm	None	30.7	Raven calling, snowmobile in distance, squirrel nearby.
13/12/2013	Cmpgrnd	10:55	-20	N-W Calm	None	25.2	Quiet, birds signing once.
13/12/2013	R01	10:35	-20	N-W Calm	None	24.4	Quiet.
13/12/2013	R02	10:17	-20	N-W Calm	None	32.1	Raven, birds, squirrel.
13/12/2013	R03	10:02	-20	N-W Calm	None	27.3	Raven, birds, squirrel.
13/12/2013	R04	9:44	-20	N-W Calm	None	31.2	Raven flying and walking around. Birds signing.

Keno Noise Monitoring Data

Date	Location	Time	Temp (°C)	Wind	Precipitation	DBA	Observations
13/12/2013	R05	11:13	-20	N-W Calm	None	27.1	Quiet, squirrel.
31/12/2013	R05	13:52	-18	calm	None	30.7	A few little birds chirping.
31/12/2013	R04	14:06	-18	Calm	None	44.0	lots of ravens flying, calling. Dog chewing on bone nearby. Person walking by, closing door.
31/12/2013	R03	14:20	-17	Light (<10km/h)S	None	35.8	Two vehicles drove through town. Flagpole dinging in the wind. People talking, walking in town.
31/12/2013	R01	14:34	-17	Calm	None	26.4	Little birds chirping. Raven flew by.
31/12/2013	Cmpgrnd	14:49	-17	Calm	None	25.2	Ravens calling in distance. Someone coughing. Little birds chirping.
20/01/2014	R04	14:04	-14	Calm	None	49.8	Distant grader. Birds. Vehicle.
20/01/2014	R03	14:24	-13	Calm	None	45.6	Distant grader. Birds.
20/01/2014	Cmpgrnd	14:39	-13	Calm	None	30.7	Distant grader.
20/01/2014	R01	15:13	-14	Calm	None	38.8	Distant grader. Vehicle.
20/01/2014	R05	14:56	-14	Calm	None	68.1	Grader went by.
29/01/2014	R05	15:07	-12	Calm	None	26.6	Squirrels, whiskeyjack calling nearby.
29/01/2014	R04	15:23	-12	Calm	None	33.5	Small bird chirping, ravens calling and flying by.
29/01/2014	R03	15:36	-12	Calm	None	41.1	Ravens calling, truck driving by, squirrel chatting, small bird chirping.
29/01/2014	R01	15:50	-12	Calm	None	26.1	Squirrel chatting, door closing in distance, birds calling, neighbour getting firewood.
29/01/2014	Cmpgrnd	16:06	-12	Calm	None	23.5	Squirrel chatting, bird chirping, ravens flying over and calling.
05/02/2014	R05	12:55	-20	light (5km/h)	None	28.4	Raven calling, squirrel chattering.
05/02/2014	R04	13:12	-20	light(<5km/h)	None	31.2	Small bird chirping, ravens calling and flying, door closing in distance X3, neighbour getting firewood.
05/02/2014	R03	13:27	-20	light(<5km/h)	None	26.5	Ravens calling in distance. Squirrel chattering, small birds, truck creaking.
05/02/2014	R01	13:40	-18	light(<5km/h)	None	43.0	Squirrel chattering, ice inside old dump truck (beside sample site) cracked loudly, birds chirping.
05/02/2014	Cmpgrnd	13:59	-19	light(<5km/h)	None	26.0	Small birds chirping, ravens in distance.
26/02/2014	R05	14:14	-9	Calm	None	32.5	Water truck running nearby, driving. Squirrel chattering, little birds calling.
26/02/2014	R04	14:31	-8	Calm	None	35.4	Ravens calling, person walking by and into house.
26/02/2014	R03	14:56	-8	Calm	None	30.9	Lots of squirrels chattering, dog barking in distance, small birds chirping, radio from neighbours house, raven calling.
26/02/2014	R01	15:10	-8	Calm	None	27.7	Little birds chirping. Squirrels.
26/02/2014	Cmpgrnd	15:26	-8	Calm	None	31.2	Someone chainsawing in town. Birds chirping.
05/03/2014	R05	14:19	-14	Calm	None	28.0	Raven calling in distance. Lots of little birds chirping nearby.
05/03/2014	R04	14:37	-14	Slight breeze	None	30.1	Ravens calling nearby. Squirrels chattering. Helicopter in distance. Little birds chirping. Ravens flying by.
05/03/2014	R03	14:50	-13	light (<10km/h)	None	40.1	Vehicle in town idling. Lots of little birds chirping. Raven calling. Flags tinging on flagpoles. Helicopter in distance. Vehicle driving through town and by twice.
05/03/2014	R01	15:04	-13	calm	None	26.9	lots of little birds chorping. Rvens in distance. Helicopter faintly in distance.
05/03/2014	Cmpgrnd	15:19	-14	very slight breeze	None	28.5	little birds chirping. Ravens in distance. Helicopter in distance. Backup alarm in town.
29/03/2014	R05	14:31	-3	Slight breeze	None	28.7	Lots of small birds calling nearby. Squirrel chattering.
29/03/2014	R04	14:48	0	light (10 km/h)	None	34.8	Ravens calling closeby. Small birds calling. Diamond drill and equipment working in distance. Wind chimes. Someone scraping snow.
29/03/2014	R03	15:00	0	light (10 km/h)	None	29.8	Flags hitting flagpoles. Lots of small birds calling nearby. Raven calling. Squirrel chattering. Squirrel climbing on sign nearby.
29/03/2014	R01	15:13	0	Slight breeze	None	31.3	Small birds. Squirrel chattering. Steel pipe made sound as it expanded.
29/03/2014	Cmpgrnd	15:34	0	Slight breeze	None	27.6	Small birds calling. Bulldozer (drillers) going down Duncan creek road in distance. Someone working on something in town. Raven calling.
09/04/2014	R01	10:04	-10	Calm	None	45.9	Pickup , backup alarm. Birds.
09/04/2014	R02	9:55	-10	Calm	None	44.7	Water truck x 2, delivering.
09/04/2014	R03	9:24	-10	Calm	None	29.8	Water truck x 2, delivering.
09/04/2014	R04	9:00	-10	Calm	None	33.8	Ravens.
09/04/2014	R05	10:47	-10	Calm	None	28.0	Ravens.
09/04/2014	Cmpgrnd	10:32	-10	Calm	None	25.2	Squirrel.
18/04/2014	R01	15:43	2	Calm	None	32.0	Birds, loader, backup alarm far away.
18/04/2014	R02	16:22	2	Calm	Snow/rain	30.0	Car, birds.
18/04/2014	R03	15:20	2	Calm	Snow	61.4	Loader, backup alarm. Car +horn. People talking, dog barking.

Keno Noise Monitoring Data

Date	Location	Time	Temp (°C)	Wind	Precipitation	DBA	Observations
18/04/2014	R04	15:04	2	Calm	Snow	36.2	Ravens, birds.
18/04/2014	R05	16:37	2	Calm	None	31.6	Birds.
18/04/2014	Cmpgrnd	15:04	2	Calm	Rain/snow	34.2	Birds.
11/05/2014	R01	9:14		strong N wind	None	45.7	Birds, creek.
11/05/2014	R02	8:58		Light N wind	None	40.7	Birds, car, house doors slamming.
11/05/2014	R03	8:42		Light N wind	None	40.3	Birds.
11/05/2014	R04	8:27		calme	None	34.4	Birds.
11/05/2014	R05	10:21		Light N wind	None	38.8	Wind in trees, bear or moose cracking branches.
11/05/2014	Cmpgrnd	9:30		Light N wind	None	52.4	Creek.
29/05/2014	R01	10:50		Light SW wind	None	43.4	Creek.
29/05/2014	R02	10:30		Light SW wind	None	31.5	Raven, truck.
29/05/2014	R03	9:50		Light SW wind	None	44.3	Raven, car, truck running idle, starting.
29/05/2014	R04	9:40		Light SW wind	None	33.6	Ravens.
29/05/2014	R05	11:40		Light SW wind	None	32.7	Birds.
29/05/2014	Cmpgrnd	11:20		Light SW wind	None	47.9	Creek.
01/06/2014	R01	15:49		strong wind all directions	None	46.1	Creek, wind, dog barking.
01/06/2014	R02	15:33		strong wind all directions	None	36.8	Doors slammimg x 2.
01/06/2014	R03	15:20		strong wind all directions	None	40.8	Truck, trailer, horn.
01/06/2014	R04	15:03		light wind all directions	None	31.8	ATV far away.
01/06/2014	R05	16:18		strong wind all directions	None	35.7	Silent.
01/06/2014	Cmpgrnd	16:03		strong wind all directions	None	50.0	Creek.
26/06/2014	R01	12:52		strong N wind	None	47.0	Wind in trees,creek, birds.
26/06/2014	R02	12:38		strong N wind	None	57.3	Wind in trees, car, chainsaw, ravens, people talking.
26/06/2014	R03	12:25		N wind	None	49.0	Wind in trees, ATV, music, car, ravens.
26/06/2014	R04	12:09		N wind	None	33.5	Wind in trees, birds.
26/06/2014	R05	13:30		N wind	None	42.3	Wind in trees, birds.
26/06/2014	Cmpgrnd	13:11		N wind	None	50.5	Wind in trees, creek.
05/08/2014	R01	10:14		N wind	None	42.8	Wind in trees, creek, birds.
05/08/2014	R02	9:51		N wind	None	34.6	Truck running, people talking, door slamming, wind.
05/08/2014	R03	9:33		N wind	None	39.6	Truck running, people talking, wind.
05/08/2014	R04	9:19		N wind	None	38.7	Car starting, door slamming,, car passing by, wind.
05/08/2014	R05	11:47		N wind	None	36.9	Wind in willows.
05/08/2014	Cmpgrnd	11:17		N wind	None	46.1	Creek, wind, people talking.
23/08/2014	R01	13:36		N wind	None	45.1	Creek, house building.
23/08/2014	R02	13:19		N wind	None	67	Pickup truck, motor running.
23/08/2014	R03	13:07		N wind	None	32	Dog barking x 2, vehicles.
23/08/2014	R04	12:43		N wind	None	36.3	Ravens.
23/08/2014	R05	15:44		N wind	None	38.6	Dump truck, vehicles, drill far away.
23/08/2014	Cmpgrnd	13:54		N wind	None	48.9	Creek, vehicles.
03/09/2014	R01	16:01		W wind, strong	None	49.9	Wind + creek.
03/09/2014	R02	15:47		W wind, strong	None	47.8	Dogs barking, ATV's, wind, door slamming.
03/09/2014	R03	15:35		W wind, strong	None	52.7	2 trucks drove by, dogs barking, wind.
03/09/2014	R04	15:22		W wind, strong	None	37.9	Wind, ravens.
03/09/2014	R05	16:29		W wind, strong	None	41.6	Drill, wind.
03/09/2014	Cmpgrnd	16:15		W wind, strong	None	51.1	Wind, creek, vehicles.
18/09/2014	R01	16:02		NW little wind	None	45.3	Strong wind, creek.
18/09/2014	R02	15:48		NW little wind	None	53.9	ATVs, birds.
18/09/2014	R03	15:35		NW little wind	None	39.2	ATVs, birds.
18/09/2014	R04	15:22		NW little wind	None	32.5	Birds.
18/09/2014	R05	16:30		NW little wind	None	43.1	Little wind, leaves in wind.

Keno Noise Monitoring Data

Date	Location	Time	Temp (°C)	Wind	Precipitation	DBA	Observations
18/09/2014	Cmpgrnd	16:15		NW little wind	None	48.9	Strong wind, creek.
15/10/2014	R01	14:28		No Wind	None	42.5	Creek, ravens, birds.
15/10/2014	R02	14:14		No Wind	None	46.7	Car, ravens, birds, squirrels.
15/10/2014	R03	14:00		No Wind	None	40.2	Car, ravens.
15/10/2014	R04	13:40		No Wind	None	29.6	Squirrel, birds, door slamming.
15/10/2014	R05	15:31		No Wind	None	28.8	Ravens, birds.
15/10/2014	Cmpgrnd	14:46		No Wind	None	45.7	Creek, ravens, birds.
25/10/2014	R01	9:33		No Wind	None	38.0	Calm, creek, ravens, birds.
25/10/2014	R02	9:08		No Wind	None	30.2	Calm, ravens, birds.
25/10/2014	R03	8:53		No Wind	None	27.8	Calm, ravens, birds.
25/10/2014	R04	8:37		No Wind	None	31.0	Calm, ravens, birds.
25/10/2014	R05	10:36		No Wind	None	39.2	Calm, ravens.
25/10/2014	Cmpgrnd	10:22		No Wind	None	38.3	Calm, creek, ravens.
14/11/2014	R01	10:57		No Wind	None	67.4	Water truck, squirrel, creek.
14/11/2014	R02	10:37		No Wind	None	33.8	Calm.
14/11/2014	R03	10:10		No Wind	None	37.8	Car x 2.
14/11/2014	R04	9:56		No Wind	None	31.6	Ravens, calm.
14/11/2014	R05	11:30		No Wind	None	33.3	Calm.
14/11/2014	Cmpgrnd	11:12		No Wind	None	38.2	Creek, truck.
23/11/2014	R01	9:45		No Wind	None	26.5	Squirrel.
23/11/2014	R02	9:22		No Wind	None	27.9	Ravens.
23/11/2014	R03	9:01		No Wind	None	53.9	Ravens, truck x2.
23/11/2014	R04	8:46		No Wind	None	40.7	Ravens, truck idling.
23/11/2014	R05	10:12		No Wind	None	33.3	Ravens.
23/11/2014	Cmpgrnd	9:58		No Wind	None	22.7	Ravens.
01/12/2014							Noise Mointoring coverted to 24 hours from 10 min measurements in December 2014

*All readings are taken using an Extech integrating sound level datalogger model 407780 to measure DBA for 10 min.Reading from 16/11/13 taken with an Casella CEL-63X model.(Laeq, Db.)

APPENDIX C

2015 DUST MONITORING RESULTS

Memorandum

To: Alexco Keno Hill Mining Corp.

From: Catherine Henry, Alexco Environmental Group Inc.

CC: Kai Woloshyn, Alexco Resource Corp.

Date: March 22, 2016

Re: Air Quality Data Summary, Keno, YT

1. INTRODUCTION

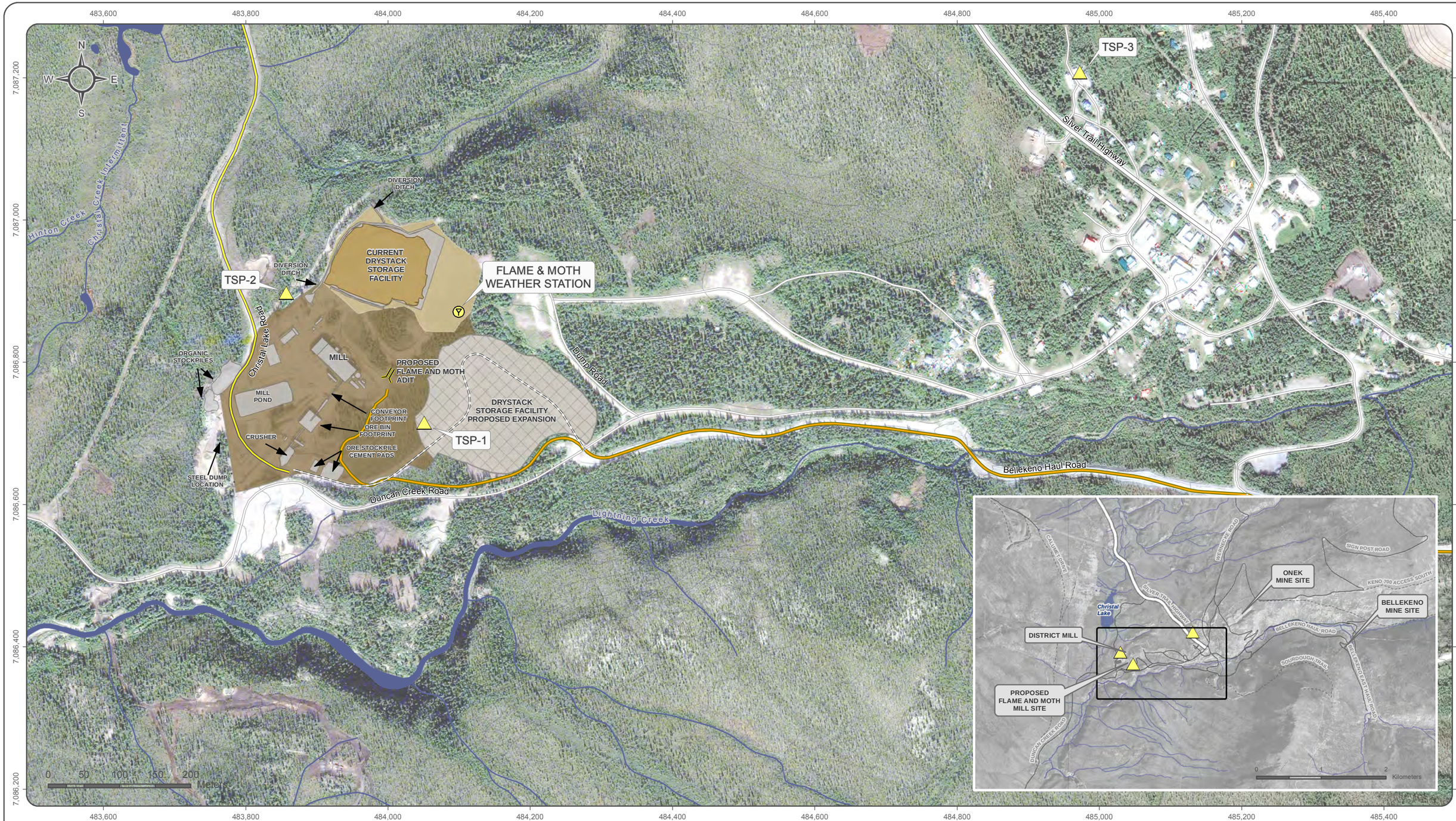
In accordance with Clause 69 of the Decision Document for the assessment of the Bellekeno Mine Project (YESAB File Number 2009-0030), dustfall monitoring was installed at two initial locations near the Keno District Mill site in March 2011 and two additional sampling locations were established in August 2011. Bergerhoff dust monitoring gauges were initially selected as the appropriate instrumentation to carry out this program. In accordance with clauses 36 and 37 of the Decision Document for the assessment of the Onek and Lucky Queen Deposit production (YESAB File Number 2011-0315), total suspended particulates (TSP) monitoring was subsequently initiated in August 2012 and dustfall monitoring was discontinued in January 2013. Additional sampling for coarse and fine fractions of particulate matter (PM_{10} and $PM_{2.5}$ respectively) was instigated in August 2015, in accordance with the revised Dust Abatement and Monitoring Plan required in the Decision Document (clause 19) for the assessment of the Flame & Moth Development and Production Program (YESAB file Number 2013-0161). This memorandum presents the results of the ambient air quality monitoring to date.

2. INSTRUMENTATION AND METHODOLOGY

Two BGI Omni Ambient Air Quality Samplers (see Figure 1) were commissioned in August 2012, one to the East of the mill and crusher (TSP-1) and one at the toe of the dry stack tailings facility (TSP-2). A third sampler (TSP-3), located in Keno City, was commissioned in December 2014, in accordance with the revised Dust Abatement and Monitoring Plan required in the Decision Document for the assessment of the Flame & Moth Development and Production Program (YESAB file Number 2013-0161). The sampling locations are shown on Figure 2. The BGI Omni samplers are set up with TSP, PM_{10} or $PM_{2.5}$ inlets, and use the filter reference method. Samples are collected over 24-hour periods and sent to Maxxam Analytics laboratory for gravimetric analysis and ICP

metals mass spectrometry (from TSP samples only). The sampling program aims to collect three samples per location every month, in order to capture the different weather conditions that may affect dust sources and transport. The BGI Omni Ambient Air Quality Samplers cannot collect samples below -20°C and therefore some winter months will have reduced data.

Figure 1 BGI Omni Ambient Air Quality Sampler



Aerial photography flight date: July 13th 2006. Ortho-rectification produced by Challenger Geomatics Ltd. Data obtained from EBA: "As built" spatial data: Mill pond (Y.E.S.), Mill structure, and current DSTF footprints, Roads (In House survey December 11th 2011). Design spatial data: Conveyance and water collection, diversion ditches and berm.
Satelite imagery obtained from Yukon Geomatics map service http://mapservices.gov.yk.ca/ArcGIS/services on March 2016

Datum: NAD 83; Projection: UTM Zone 8N

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- Dust Monitoring Station
- Weather Station
- Flame and Moth Adit
- Former Haul Road
- Mill Road
- Highway
- Haul Road
- Local Road
- Mill Infrastructure
- Proposed DSTF Expansion
- Current DSTF
- DSTF 322k Tonnes Design
- District Mill Footprint

ALEXCO

AEG

ALEXCO KENO HILL MINING CORP.

FIGURE 2

DUST MONITORING AND WEATHER STATION LOCATIONS

MARCH 2016

D:\Project\AllProjects\ALEX-05-01\gis\mxd\Overview_Maps\SpecifcTopics\Monitoring\Dust Monitoring and Air Quality\Fig_1_Dust_Monitoring_Stns_20160323.mxd
(*Last edited by: amatlashevska;3/23/2016/13:36 PM*)

3. RESULTS

3.1. AMBIENT TSP, PM_{10} AND $PM_{2.5}$ CONCENTRATIONS

Results of the gravimetric analyses can be converted into 24-hour average ambient concentrations based on the flow rate of the instruments. These can then be compared with the Yukon Ambient Air Quality Standard (YAAQS) of 120 µg/m^3 for TSP, 50 µg/m^3 for PM_{10} and 28 µg/m^3 for $PM_{2.5}$ (24-hour average). Table 1 below presents summary statistics for the three sampling locations (TSP-1, TSP-2 and TSP-3), while the complete result tables are presented in Appendix A. When results were below the detection limit a value of half the detection limit was used to calculate the summary statistics. Table 1 shows that all results are well below the Yukon ambient standards, most results being between 5 and 20 times inferior. Note that over half of the results for each of the three parameters are below the detection limit at all three stations.

The air quality monitors located on site are 160 (TSP-1) and 46 (TSP-2) meters away from the dry stack tailings facility (DSTF) and 163 (TSP-1) and 240 (TSP-2) meters away from the crusher, two of the main potential dust sources. The nearest residence is at a distance of 710 meters from the DSTF and 860 meters from the crusher. TSP levels experienced at the nearest residence are better approximated by levels observed at air quality monitor TSP-3, located in Keno City (950 m from the DSTF and 1240 m from the crusher). Note that the mine announced a temporary closure as of September 4th 2013 and operation continues to be suspended at this time. Therefore, the crusher would not have contributed to fugitive dust emissions during that period.

Table 1 24-hour TSP, PM_{10} and $PM_{2.5}$ Summary Statistics, August 2012 – December 2015

	TSP (µg/m^3)			PM_{10} (µg/m^3)			$PM_{2.5}$ (µg/m^3)		
Yukon Ambient Air Quality Standards	**120**			**50**			**28**		
Sampling Location	**TSP-1***	**TSP-2**	**TSP-3**	**TSP-1**	**TSP-2**	**TSP-3**	**TSP-1**	**TSP-2**	**TSP-3**
Average	6.7	7.4	8.4	5.2	5.3	3.2	3.9	2.8	2.8
Count	133	127	42	7	7	7	7	8	6
Minimum	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Maximum	53.2	62.2	68.1	14.6	8.6	5.8	6.5	2.8	2.8
Geometric Mean	4.9	5.4	5.5	4.1	4.5	3.1	3.6	2.8	2.8
Count <DL	73	65	21	5	4	6	5	8	6
Standard Deviation	7.2	7.7	11.8	4.5	3.1	1.1	1.8	0	0
1st Quartile	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Median	2.8	2.8	4.2	2.8	2.8	2.8	2.8	2.8	2.8
3rd Quartile	7.8	9.3	8.8	5.3	8.6	2.8	4.7	2.8	2.8
Count Over Standard	0	0	0	0	0	0	0	0	0
% Over Standard	0	0	0	0	0	0	0	0	0

** One outlier result was removed (976.4 µg/m^3 on July 1, 2015)*

3.2. METAL SPECIATION

There are no ambient air quality standards for metals in Yukon, however the Ontario Ministry of Environment has developed a comprehensive list of Ambient Air Quality Criteria (AAQC) that includes 24-hour average concentrations for a number of metals. Table 2 below presents the summary statistics for metal concentrations from TSP samples at TSP-1, TSP-2 and TSP-3, while the complete result tables are presented in Appendix A. For reference, the Ontario AAQCs are indicated in the first row where available. When results were below the detection limit a value of half the detection limit was used to calculate the statistics.

Very few exceedences of the Ontario AAQCs are observed overall, in fact samples are below the detection limit for most parameters. Parameters for which exceedences have occurred include lead (1.6 % of samples) at TSP-1 and cadmium (1.6 % of samples), lead (0.8 % of samples) and manganese (2.4 % of samples) at TSP-2. No exceedences were observed at TSP-3 to date. Note that the detection limit for beryllium and cadmium is greater than the Ontario AAQC and in many cases, it cannot be determined if exceedences of these parameters have occurred. Also, the chromium and manganese criteria do not come into effect until July 1, 2016, but are still used here for reference.

Table 2 24-hour Metal Concentrations Summary Statistics (µg/m^3) August 2012 – December 2015

	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Si	Ag	Na	Sr	S	Sn	Ti	V	Zn	Zr
Ontario Air Quality Criteria		**25**	**0.3**	**10**	**0.01**	**120**	**0.025**		**0.5**	**0.1**	**50**	**4**	**0.5**		**0.4**	**120**	**2**			**10**		**1**		**120**		**10**	**120**	**2**	**120**	
TSP-1*																														
Average	0.249	0.139	0.056	0.003	0.006	0.025	0.014	0.384	0.075	0.035	0.035	0.315	0.073	0.043	0.015	0.035	0.035	0.208	0.694	0.035	0.676	0.021	0.272	0.003	0.177	0.058	0.014	0.021	0.032	0.035
Count	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	71	129	129	129	129	129	129	129	129	129
Minimum	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.021	0.035	0.035	0.021	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.208	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
Maximum	5.292	0.139	0.056	0.022	0.006	0.264	0.014	8.722	0.139	0.035	0.035	2.528	1.083	0.429	0.301	0.035	0.035	0.208	0.694	0.035	3.875	0.021	2.444	0.023	0.708	0.193	0.042	0.021	0.558	0.035
Geometric Mean	0.162	0.139	0.056	0.002	0.006	0.022	0.014	0.188	0.068	0.035	0.035	0.206	0.060	0.030	0.008	0.035	0.035	0.208	0.694	0.035	0.403	0.021	0.238	0.002	0.161	0.057	0.014	0.021	0.020	0.035
Count <DL	118	129	129	115	129	126	129	109	13	129	129	16	124	97	102	129	129	129	129	129	42	129	114	121	111	127	128	129	96	129
Standard Deviation	0.644	0	0	0.003	0	0.030	0	1.102	0.027	0	0	0.318	0.112	0.060	0.036	0	0	0	0	0	0.869	0	0.252	0.003	0.107	0.016	0.002	0	0.062	0
1st Quartile	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.057	0.035	0.035	0.193	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.208	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
Median	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.076	0.035	0.035	0.312	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.208	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
3rd Quartile	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.092	0.035	0.035	0.368	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.7985	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.029	0.035
Count Over Standard	n/a	0	0	0	0	0	0	n/a	0	0	0	0	2	n/a	0	0	0	n/a	n/a	0	n/a	0	n/a	0	n/a	0	0	0	0	n/a
% Over Standard	n/a	0	0	0	0	0	0	n/a	0	0	0	0	1.6	n/a	0	0	0	n/a	n/a	0	n/a	0	n/a	0	n/a	0	0	0	0	n/a
TSP-2																														
Average	0.167	0.139	0.056	0.003	0.006	0.022	0.014	0.224	0.075	0.035	0.035	0.342	0.074	0.037	0.031	0.035	0.035	0.208	0.694	0.035	0.741	0.021	0.233	0.002	0.179	0.056	0.014	0.021	0.033	0.035
Count	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	66	126	126	126	126	126	126	126	126	126
Minimum	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.021	0.035	0.035	0.021	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.208	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
Maximum	1.625	0.139	0.056	0.048	0.006	0.099	0.04	3.472	0.132	0.035	0.035	1.431	0.736	0.186	0.651	0.035	0.035	0.208	0.694	0.035	5.028	0.021	1.111	0.032	0.736	0.056	0.014	0.021	0.294	0.035
Geometric Mean	0.147	0.139	0.056	0.002	0.006	0.022	0.014	0.167	0.068	0.035	0.035	0.244	0.062	0.03	0.011	0.035	0.035	0.208	0.694	0.035	0.448	0.021	0.222	0.002	0.163	0.056	0.014	0.021	0.021	0.035
Count <DL	121	126	126	118	126	123	124	110	14	126	126	12	118	90	87	126	126	126	126	126	36	126	118	122	106	126	126	126	90	126
Standard Deviation	0.185	0	0	0.005	0	0.01	0.003	0.38	0.029	0	0	0.253	0.082	0.031	0.09	0	0	0	0	0	0.9	0	0.115	0.003	0.102	0	0	0	0.05	0
1st Quartile	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.054	0.035	0.035	0.199	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.208	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
Median	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.077	0.035	0.035	0.332	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.208	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
3rd Quartile	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.096	0.035	0.035	0.385	0.056	0.047	0.014	0.035	0.035	0.208	0.694	0.035	0.941	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.029	0.035
Count Over Standard	n/a	0	0	0	0	0	2	n/a	0	0	0	0	1	n/a	3	0	0	n/a	n/a	0	n/a	0	n/a	0	n/a	0	0	0	0	n/a
% Over Standard	n/a	0	0	0	0	0	1.6	n/a	0	0	0	0	0.8	n/a	2.4	0	0	n/a	n/a	0	n/a	0	n/a	0	n/a	0	0	0	0	n/a
TSP-3																														
Average	0.241	0.139	0.056	0.003	0.006	0.03	0.014	0.441	0.065	0.035	0.035	0.163	0.056	0.053	0.008	0.035	0.035	0.208	0.694	0.035	0.384	0.021	0.208	0.008	0.158	0.056	0.014	0.021	0.015	0.035
Count	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	37	43	43	43	43	43	43	43	43	43
Minimum	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.021	0.035	0.035	0.021	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.208	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
Maximum	2.583	0.139	0.056	0.021	0.006	0.218	0.014	6.417	0.131	0.035	0.035	0.433	0.056	0.51	0.07	0.035	0.035	0.208	0.694	0.035	1.569	0.021	0.208	0.151	0.431	0.056	0.014	0.021	0.051	0.035
Geometric Mean	0.158	0.139	0.056	0.002	0.006	0.024	0.014	0.198	0.06	0.035	0.035	0.095	0.056	0.032	0.007	0.035	0.035	0.208	0.694	0.035	0.298	0.021	0.208	0.002	0.151	0.056	0.014	0.021	0.015	0.035
Count <DL	41	43	43	41	43	40	43	32	3	43	43	13	43	30	39	43	43	43	43	43	27	43	43	41	39	43	43	43	41	43

	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Si	Ag	Na	Sr	S	Sn	Ti	V	Zn	Zr
Ontario Air Quality Criteria		**25**	**0.3**	**10**	**0.01**	**120**	**0.025**		**0.5**	**0.1**	**50**	**4**	**0.5**		**0.4**	**120**	**2**			**10**		**1**		**120**		**10**	**120**	**2**	**120**	
Standard Deviation	0.472	0	0	0.004	0	0.037	0	1.198	0.025	0	0	0.136	0	0.095	0.01	0	0	0	0	0	0.358	0	0	0.029	0.062	0	0	0	0.007	0
1st Quartile	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.05	0.035	0.035	0.021	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.208	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
Median	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.139	0.057	0.035	0.035	0.128	0.056	0.021	0.006	0.035	0.035	0.208	0.694	0.035	0.208	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
3rd Quartile	0.139	0.139	0.056	0.002	0.006	0.021	0.014	0.215	0.081	0.035	0.035	0.3	0.056	0.05	0.006	0.035	0.035	0.208	0.694	0.035	0.472	0.021	0.208	0.002	0.139	0.056	0.014	0.021	0.014	0.035
Count Over Standard	n/a	0	0	0	0	0	0	n/a	0	0	0	0	0	n/a	0	0	0	n/a	n/a	0	n/a	0	n/a	0	n/a	0	0	0	0	n/a
% Over Standard	n/a	0	0	0	0	0	0	n/a	0	0	0	0	0	n/a	0	0	0	n/a	n/a	0	n/a	0	n/a	0	n/a	0	0	0	0	n/a

** One outlier result was removed (976.4 µg/m^3 on July 1, 2015)*

3.3. WIND ANALYSIS

An analysis of the hourly wind speed and direction collected between June 2011 and February 2015 at the Keno District Mill weather station (shown on Figure 2), at a height of 10 meters, indicates that dominant winds are blowing from the North and from the Southeast. The wind rose in Figure 3, which has data availability of 91.8% for that period, depicts this information based on 16 wind direction categories. The average wind speed is 1.29 m/s and winds are calm 16.51% of the time. Note that the wind sensor experienced occasional icing during the winter months and extended periods of zero wind speed were excluded from this analysis. Also, winter wind speeds may occasionally be underestimated due to the presence of ice on the sensor, but these occurrences cannot be detected in the data record.

Table 3 below compiles the wind speed and direction frequency distribution based on 8 wind direction categories, and 6 wind speed categories.

Table 3 Wind Frequency Distribution (%), Keno District Mill, June 2011 - December 2015

Directions / Wind Classes (m/s)	0.5 - 1.0	1.0 - 2.0	2.0 - 3.0	3.0 - 4.0	4.0 - 5.0	>= 5.0	Total (%)
N	5.38	8.39	3.09	0.53	0.08	0.03	16.06
NE	5.58	5.09	1.29	0.15	0.01	0.00	11.13
E	3.51	7.78	2.59	0.43	0.08	0.01	13.21
SE	3.60	5.71	3.26	1.49	0.59	0.32	13.75
S	3.20	5.75	2.42	0.49	0.11	0.05	11.04
SW	0.75	1.79	1.40	0.33	0.04	0.02	3.98
W	0.37	0.56	0.44	0.29	0.11	0.10	1.71
NW	0.88	1.57	1.33	0.61	0.32	0.10	4.42
Sub-Total	21.36	33.62	14.51	3.98	1.23	0.58	75.28
Calms							16.51
Missing/Incomplete							8.21
Total							100

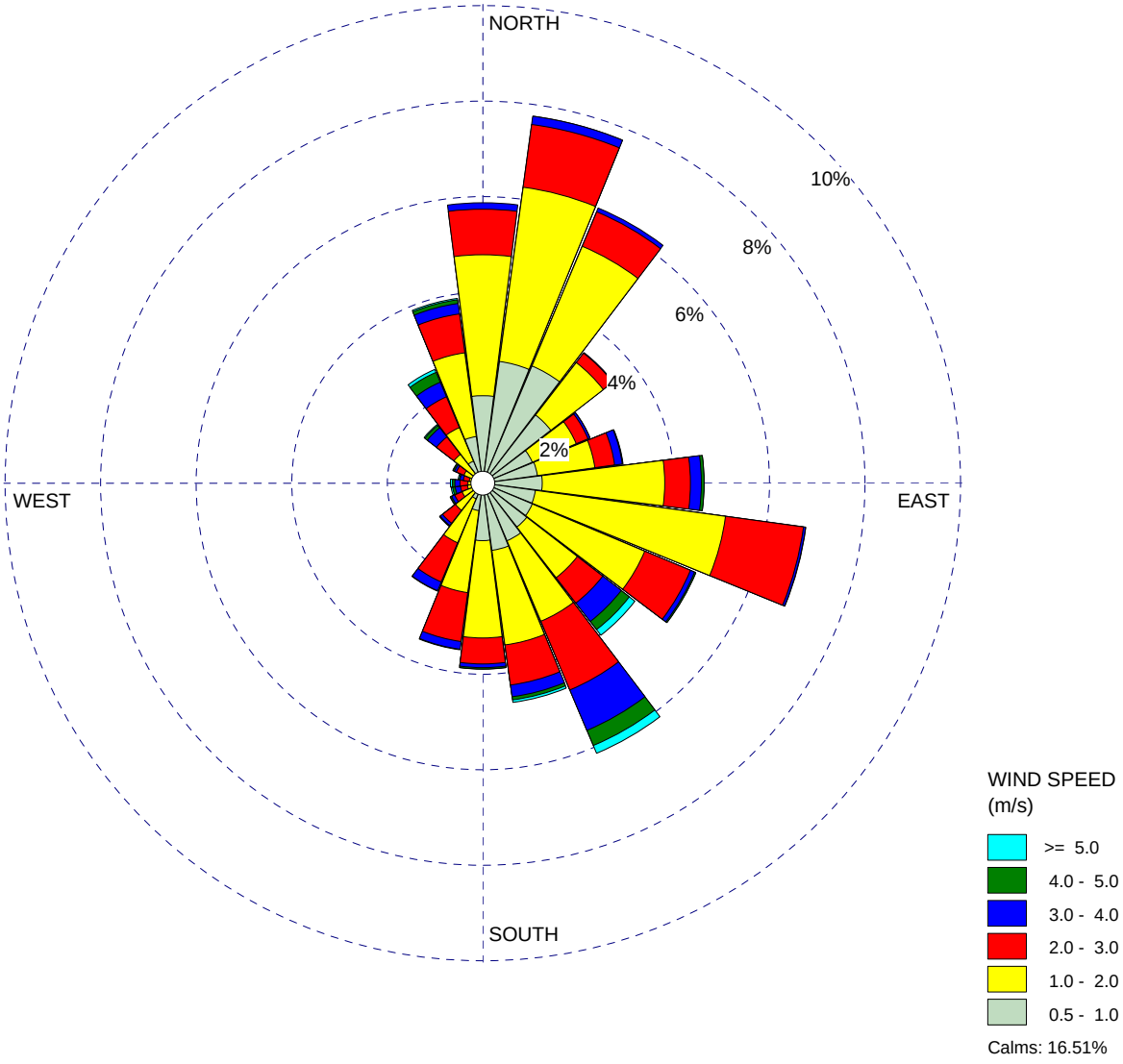
The dominant wind direction is from the north (16.06% of the time), followed by southeast (13.75%) and east (13.21%). As can be seen on the wind rose, the strongest winds tend to originate from the southeast. Referring back to Figure 2, we can see that air quality station TSP-1 is located downwind from the DSTF when the wind blows from the north, but generally upwind from the DSTF and crusher when the wind blows from the SE. Station TSP-2 is generally downwind from the DSTF and may capture the influence of the crusher when the wind is from the SE but not when it is from the north. TSP-3, located in Keno City and further away from the DSTF and crusher, is generally east (ENE) of these potential dust sources. Based on Table 3 above, westerly winds only occur 1.71% of the time (or 10.11% of the time when combining NW, W and SW), so the DSTF and crusher are expected to have very limited influence on air quality in Keno City (TSP-3).

WIND ROSE PLOT:

Figure 3 - Keno District Mill Wind Rose
June 2011 - December 2015

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Excludes periods of ice affected or missing data. Anemometer height: 10m	DATA PERIOD: **Start Date: 02/06/2011 - 00:00** **End Date: 31/12/2015 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **16.51%**	TOTAL COUNT: **36869 hrs.**	
	AVG. WIND SPEED: **1.29 m/s**	DATE: **21/03/2016**	PROJECT NO.:

The average TSP concentration is somewhat higher at TSP-2 than at TSP-1 (7.4 µg/m^3 versus 6.7 µg/m^3), however both values are over ten times below the YAAQS. The average TSP concentration at TSP-3 is slightly higher at 8.4 µg/m^3, but is strongly biased by two elevated observations in July 2015 (68.1 µg/m^3 on July 1 and 43.8 µg/m^3 on July 8). When excluding those two samples likely associated with isolated events, the average concentrations at TSP-3 is lower than at the other two sampling locations (6.0 µg/m^3).

Figure 4 presents comparisons of average metals concentrations between the three sampling stations for all parameters that were above detection limit for at least one sample. Half the detection limit (RDL) was used to calculate averages for samples that were below RDL. Although some differences in average concentrations of certain metals can be observed between the three stations, results of statistical tests indicate that only iron and zinc are significantly lower at TSP-3 than at TSP-1. Iron is also significantly lower at TSP-3 than at TSP-2. Because the samples are not normally distributed and variances are not equal, non-parametric test were used for statistical comparisons of the sample medians at a significance level of 0.05. Detailed results can be found in Appendix B.

Dust originating from the DSTF would be expected to contain high concentrations of iron, manganese, calcium, zinc, lead, magnesium, arsenic and aluminum, based on metal characterization analyses of the tailings conducted monthly in 2012 and 2013. From the wind direction distribution, TSP-2 is more frequently located downwind of the DSTF than TSP-1, and would therefore be expected to record higher concentrations of the above metals. However, no significant differences were found between TSP-1 and TSP-2, suggesting that the DSTF is likely not the predominant source of ambient dust,

On days where TSP levels were higher than average and where exceedences of the Ontario AAQCs were observed for lead at TSP-1, winds were generally blowing from the northeast and from the east (on October 23, 2012 and June 18, 2013 respectively). Site activities occurring in October 2012 and June 2013 included mining at Bellekeno, development at Lucky Queen (LQ) and Onek and milling at the Keno District Mill. Explorations activities at Flame & Moth also took place in June 2013. A source of ambient dust on these two occasions could have been the unpaved roads. Roads within the vicinity of the TSP stations include mine access roads as well as public roads including Duncan Creek Road.

On days where TSP levels were higher than average and/or where exceedences of the Ontario AAQCs were observed for lead at TSP-2, winds were generally blowing from the NNE (on August 23, 2012). A source of ambient dust in this case could have been the unpaved roads. On days where TSP levels were higher than average and/or where exceedences of the Ontario AAQCs were observed for manganese at TSP-2, winds were generally blowing from the NE (March 23-24, 2013) and from the east (April 7, 2013). On these three occasions, the DSTF could have been a source of TSP at TSP-2. Similarly, on days where exceedences of the Ontario AAQCs were observed for cadmium at TSP-2, winds were generally from the NE or NNE (on September 28, 2013 and October 21, 2015 respectively) suggesting a possible influence of the DSTF but also eventually of the unpaved roads. Site activities occurring in August 2012, March 2013 and April 2013 included mining at Bellekeno, development at LQ and Onek, and milling at the Keno District Mill. Between September 2013 and October 2015, only care and maintenance activities were taking place as the mine was under a temporary suspension of operations. Detailed meteorological conditions and site activities associated with each ambient air quality sampling event are provided with the complete tabular data in Appendix A-1.

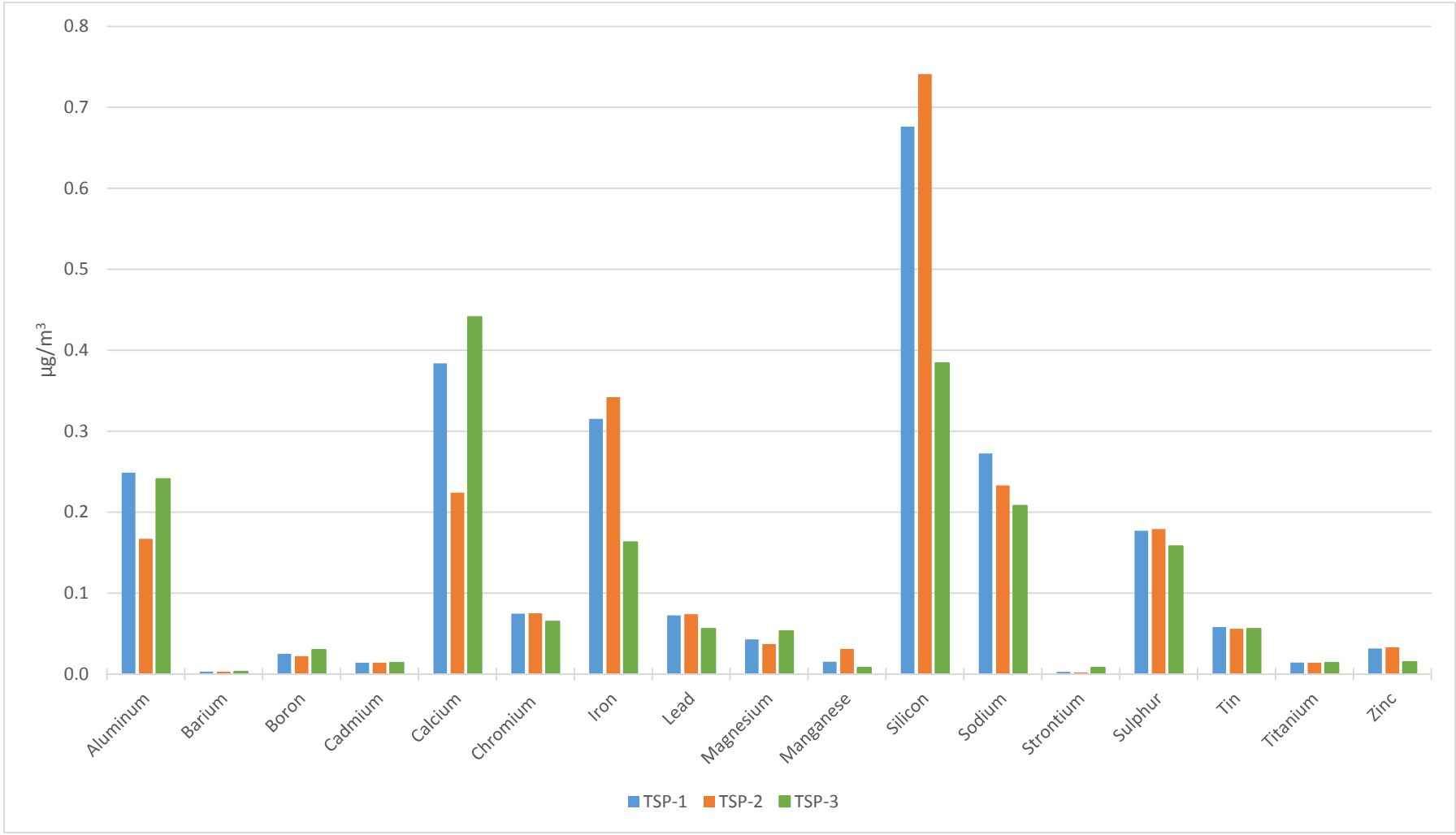


Figure 4 24-hour Average Ambient Metal Concentrations

4. PM_{10} SAMPLING BY YUKON GOVERNMENT

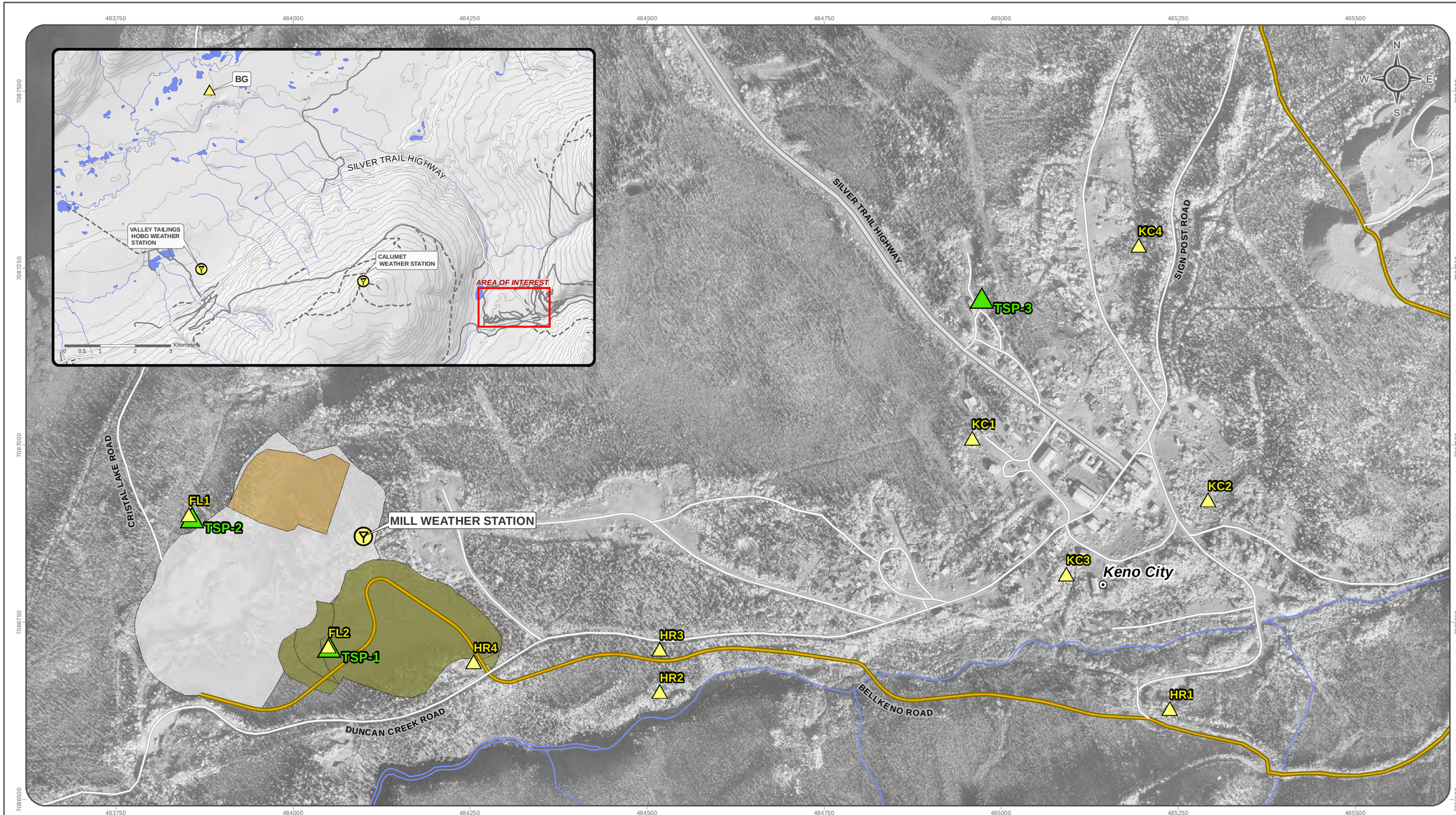
Independent PM_{10} sampling was conducted by Yukon Government in 2013 at the locations shown in Figure 5. The station labelled BG represents background (8 km outside of Keno), stations labelled KC are located in Keno City, stations labelled HR are along the Bellekeno Haul Road and stations labelled FL are fence line stations and correspond to TSP-1 and TSP-2 locations. 5-minute data averaged over the different sampling periods are presented in Table 4 below. The sampling period varies between sites (ranges from about 14 to 53 hours) but for comparison purposes, the average results are all below the 24-hour YAAQS of 50 µg/m^3. Note that in some cases the measured background PM_{10} concentration is higher than that measured at some of the receptors, suggesting that there is some variability in the data and that the difference between background and receptors sites may not be significant.

Table 4 Average PM_{10} concentrations (µg/m^3)

	June 11-13	July 15-17	August 21-22
BG	2.8	10.2	3.8
KC1	6.2		
KC2	3.8		
KC3	8.3		
KC4	2.1		
HR1		5.2	
HR2		2.1	
HR3		13.8	
HR4		16.4	
FL1			0.8
FL2			39.3

Source: Yukon Government, 2014

The data presented in Table 4 was obtained from Yukon Government and not collected by Alexco, therefore details of the collection have not been presented within this report. The data is assumed to be accurate and valid, but potentially not representative of all conditions observed over a year due to the limited dataset.



National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Cadastral data compiled by Natural Resources Canada. Reproduced underlicense from Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.

Quartz claim boundaries current as of October[R], 2013. Data source: http://geomaticsyukon.ca.

Datum: NAD 83; Map Projection: UTM Zone 8N

1:5,000 (when printed on 11 x17 inch paper)

0 50 100 200 300 400 Meters

- Weather Stations
- Alexco TSP Monitoring Stations
- YG PM10 Monitoring Sites 2013
- Haul Road
- Highway
- Secondary Road
- Current DSTF
- Proposed DSTF
- District Mill Footprint

AKHM

ACCESS

KENO HILL SILVER DISTRICT MINING OPERATIONS

FIGURE 5

METEOROLOGICAL AND AIR QUALITY MONITORING STATIONS LOCATION

MARCH 2015

D:\Project\All\Projects\Keno_Area_Mines\FM\Map\02_Permit\YESAB_IR\Dust-Monitoring\Air Dispersal Model\03_01_Meteorological_and_air_quality_monitoring_stations_20150310.mxd
(Last edited by: mheynen; 10/03/2015/5:39 PM)

5. CONCLUSION

- All TSP samples collected to date near the District Mill, DSTF and Keno City are on average at least an order of magnitude below the Yukon air quality standard for TSP;
- PM_{10} and $PM_{2.5}$ samples collected at the same three locations are all well below their respective YAAQS. Most results were in fact found to be below the lab detection limit;
- Two metal concentrations (lead) exceeded the Ontario ambient air quality criteria at TSP-1 out of 129 samples collected to date and 6 exceedances (3 manganese, 1 lead and 2 cadmium) were measured at TSP-2 from 126 samples collected to date. No exceedences of the Ontario AAQCs were observed at TSP-3 in 43 samples. Air quality samples will continue to be collected 3 times per month to identify if these infrequent events are associated with any trends or patterns; and
- A few samples were damaged during transport to the lab and could not be analyzed. Precautions have been taken to prevent this from happening again in the future.

6. REFERENCES

Ontario Ministry of Environment. 2012. Ontario's Ambient Air Quality Criteria. Standards Development Branch. PIBS#6570e01. April 2012.

Yukon Environment. 2014. Yukon Ambient Air Quality Standards. April 2010, updated September 2014.

APPENDIX A

TABULAR DATA

Table A-1 24-Hour Average Total Suspended Particulate Results and Associated Meteorological Condition and Site Activities, August 2012 – December 2015

Sample Date	TSP-1 (µg/m³)	TSP-2 (µg/m³)	TSP-3 (µg/m³)	Maximum Air Temperature (°C)	Mean Air Temperature (°C)	Minimun Air Temperature (°C)	Average Relative Humidity (%)	Total Rain* (mm)	Average Wind Speed (m/s)	Direction of Average Wind Vector (°)	Maximum Wind Speed (m/s)	Direction of Maximum Wind Speed (°)	Average Solar Radiation (W/m²)	Total Evapo-transpiration (mm)	Activities at site
23/08/2012	10.1	12.8		13.11	10.25	6.84	75.31	0	0.68	209.5	3.42	186.6	n/a	n/a	Mining at Bellekeno and development at LQ and Onek, Milling at the Keno District Mill
27/09/2012	<5.6	<5.6		8.18	5.23	2.42	62.53	4.5	4.28	304.7	14.27	325.1	n/a	n/a	Mining at Bellekeno and development at LQ and Onek, Milling at the Keno District Mill
29/09/2012	<5.6	<5.6		5.69	4.28	2.27	60.46	0	2.33	309.7	8.48	335.9	n/a	n/a	Mining at Bellekeno and development at LQ and Onek, Milling at the Keno District Mill
16/10/2012	5.8	-		1.65	0.24	-2.12	89.17	0.8	0.90	212.6	6.26	255.9	n/a	n/a	Mining at Bellekeno and development at LQ and Onek, Milling at the Keno District Mill
17/10/2012	<5.6	-		-0.04	-2.84	-8.45	76.89	0.1	1.26	238.8	7.19	339.2	n/a	n/a	Mining at Bellekeno and develepment at LQ and Onek, Milling at the Keno District Mill
23/10/2012	53.2	-		-9.97	-14.04	-17.54	78.41	0	0.66	223.2	3.28	197	n/a	n/a	Mining at Bellekeno and develepment at LQ and Onek, Milling at the Keno District Mill
15/12/2012	<5.6	13.6		-13.59	-15.89	-19.29	88.80	0	0.20	177.4	1.85	185.7	1.71	0.01	Mining at Bellekeno and develepment at LQ and Onek, Milling at the Keno District Mill
14/01/2013	<5.6	-		-3.02	-8.34	-11.78	95.04	0	*0.28*	*104.8*	*1.43*	*9.92*	0.29	*0*	Mining at Bellekeno and develepment at LQ and Onek, Milling at the Keno District Mill
16/01/2013	<5.6	<5.6		-15.96	-18.61	-20.79	84.83	0	1.26	250.2	4.52	216.1	1.08	0.039	Mining at Bellekeno and develepment at LQ and Onek, Milling at the Keno District Mill
23/03/2013	<5.6	18.2		-3.01	-10.79	-18.99	51.87	0	1.65	208.3	7.48	328.5	117.58	0.359	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill
24/03/2013	<5.6	23.2		0.17	-4.17	-9.93	57.70	0.2	2.61	258.3	11.11	311.7	113.46	0.521	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill
25/03/2013	<5.6	13.5		3.26	-0.18	-1.98	60.02	0.2	3.57	263.1	12.47	315.8	89.92	0.692	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill
26/03/2013	9.6	11.1		-1.96	-7.27	-17.97	64.66	0.1	3.53	209.0	10.49	332.2	107.38	0.518	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill
07/04/2013	-	17.1		3.46	-3.18	-12.29	65.38	2.2	2.96	274.8	10.32	325	113.25	0.71	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill
10/04/2013	5.7	7.2		-2.04	-6.54	-11.32	67.42	2.6	2.51	76.1	8.09	19.2	59.54	0.374	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill
13/04/2013	<5.6	6.9		-5.93	-12.43	-19.03	45.43	0	1.96	190.6	6.29	206.6	219.00	0.395	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill
15/04/2013	6.5	6.5		-1.90	-7.18	-13.58	53.95	0	2.18	222.3	7.95	283.5	141.21	0.401	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill
16/04/2013	7.2	6.4		0.44	-3.52	-8.62	69.65	0.1	2.14	244.3	7.03	253.8	197.88	0.38	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill
28/05/2013	6.8	-		19.47	14.39	9.06	49.38	1.6	1.74	203.9	6.95	173.5	221.13	1.048	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
16/06/2013	8.2	-		23.38	17.30	11.35	47.80	3.4	1.94	187.2	12.71	177.9	187.21	1.3	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
17/06/2013	-	<5.6		14.07	10.70	7.39	50.03	0	3.05	196.8	10.87	164	234.08	1.435	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
18/06/2013	47.2	6.3		21.94	15.07	7.66	47.63	0	1.65	277.3	6.13	316.7	277.13	1.082	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
21/06/2013	7.2	<5.6		17.66	13.90	10.38	79.66	6.6	1.42	164.9	6.83	357	124.17	0.363	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
23/06/2013	-	<5.6		18.44	12.68	7.82	76.09	9.4	1.65	203.7	9.54	126.5	149.04	0.509	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth

Sample Date	TSP-1 (µg/m³)	TSP-2 (µg/m³)	TSP-3 (µg/m³)	Maximum Air Temperature (°C)	Mean Air Temperature (°C)	Minimun Air Temperature (°C)	Average Relative Humidity (%)	Total Rain* (mm)	Average Wind Speed (m/s)	Direction of Average Wind Vector (°)	Maximum Wind Speed (m/s)	Direction of Maximum Wind Speed (°)	Average Solar Radiation (W/m²)	Total Evapo-transpiration (mm)	Activities at site
24/06/2013	<5.6	-		23.85	15.91	6.54	59.11	0	1.72	195.1	5.33	156.8	337.54	1.183	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
28/06/2013	-	62.2		23.98	18.36	12.73	65.86	10.5	1.67	231.2	10.37	320.4	182.54	0.783	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
19/07/2013	5.6	<5.6		20.14	14.74	9.64	65.78	0.1	1.42	182.3	6.15	16.5	184.71	0.647	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
20/07/2013	12.2	<5.6		17.94	12.89	7.10	72.14	0.8	1.66	207.6	6.36	124.1	179.46	0.652	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
21/07/2013	<5.6	<5.6		15.94	13.17	11.18	70.77	0.6	1.57	221.9	5.25	191.6	117.25	0.557	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
22/07/2013	<5.6	10.1		20.87	15.55	11.04	56.74	0	1.57	198.9	5.79	29.89	240.08	0.877	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
22/08/2013	<5.6	<5.6		14.14	7.63	1.62	69.10	0	1.76	187.6	6.41	65.32	150.75	0.66	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
23/08/2013	<5.6	-		8.68	6.55	4.21	91.68	6.6	0.85	197.8	3.18	288.3	56.21	0.074	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
24/08/2013	<5.6	-		8.03	5.92	3.43	75.82	0.3	2.61	240.9	8.73	267.5	134.21	0.571	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
25/08/2013	<5.6	<5.6		8.40	5.09	1.80	75.02	0	1.29	196.8	4.03	197.2	96.25	0.274	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
26/08/2013	-	<5.6		10.85	6.73	3.85	82.06	1	1.36	221.4	5.22	144.4	125.54	0.321	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
28/08/2013	-	7.2		17.01	8.66	1.14	61.42	0	1.38	253.5	6.50	325.7	181.92	0.639	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
31/08/2013	-	<5.6		9.51	7.68	5.12	91.35	4.7	1.01	202.5	4.90	11.41	53.42	0.094	Mining at Bellekeno and development at Onek, Milling at the Keno District Mill, Exploration activities at Flame & Moth
21/09/2013	-	<5.6		2.64	0.60	-0.96	96.45	6.6	*0.92*	*176.8*	*3.41*	*207.7*	48.71	*0.036*	No mining operations, Exploration activities at Flame & Moth
24/09/2013	<5.6	<5.6		1.70	0.38	-2.30	89.58	0	1.68	197.2	6.20	40.9	55.67	0.138	No mining operations, Care and Maintenance
27/09/2013	<5.6	<5.6		6.66	3.26	1.15	84.55	2.8	1.25	230.8	7.66	317.4	49.38	0.183	No mining operations, Care and Maintenance
28/09/2013	<5.6	<5.6		7.32	3.73	0.07	69.19	0	1.14	235.2	5.51	258.8	78.04	0.346	No mining operations, Care and Maintenance
29/09/2013	<5.6	-		6.77	3.58	1.28	60.97	0	2.18	243.6	7.70	272.1	81.08	0.636	No mining operations, Care and Maintenance
30/09/2013	-	6		6.19	3.22	1.00	63.34	0	1.64	229.8	5.32	264.6	49.79	0.447	No mining operations, Care and Maintenance
24/10/2013	-	<5.6		-4.58	-6.99	-10.10	95.67	0	0.77	228.1	3.78	58.21	22.92	0.022	No mining operations, Care and Maintenance
25/10/2013	7.6	<5.6		-3.58	-5.09	-7.52	96.90	0	0.47	223.3	2.99	211.6	8.96	0.015	No mining operations, Care and Maintenance
26/10/2013	<5.6	<5.6		-0.68	-4.90	-8.64	95.13	1.2	1.19	259.3	4.02	332.5	41.21	0.036	No mining operations, Care and Maintenance
27/10/2013	6.8	<5.6		-5.73	-7.60	-9.98	95.57	0	0.71	224.1	2.77	195.1	7.17	0.024	No mining operations, Care and Maintenance
28/10/2013	<5.6	-		0.21	-3.79	-5.96	97.83	0	0.97	199.7	5.27	205.8	4.92	0.016	No mining operations, Care and Maintenance
28/11/2013	7.8	8.8		-5.90	-10.14	-15.55	91.67	2.3	1.53	202.8	8.22	22.58	1.04	0.051	No mining operations, Care and Maintenance
29/11/2013	7.6	7.5		-16.84	-22.52	-27.23	81.85	0.1	1.04	291.6	3.70	339.4	1.13	0.031	No mining operations, Care and Maintenance
30/11/2013	8.9	8.5		-25.99	-27.76	-29.67	77.52	0	0.37	255.8	1.95	277.3	1.08	0.012	No mining operations, Care and Maintenance
01/12/2013	6.7	7.2		-29.46	-30.57	-32.06	74.69	0	0.54	283.8	3.58	294.7	0.79	0.016	No mining operations, Care and Maintenance
03/01/2014	13.2	11.8		-20.82	-24.67	-28.26	80.16	0	n/a	n/a	n/a	n/a	0.50	n/a	No mining operations, Care and Maintenance
04/01/2014	12.6	9.3		-23.86	-27.58	-29.03	77.62	0	n/a	n/a	n/a	n/a	0.38	n/a	No mining operations, Care and Maintenance

Sample Date	TSP-1 (µg/m³)	TSP-2 (µg/m³)	TSP-3 (µg/m³)	Maximum Air Temperature (°C)	Mean Air Temperature (°C)	Minimun Air Temperature (°C)	Average Relative Humidity (%)	Total Rain* (mm)	Average Wind Speed (m/s)	Direction of Average Wind Vector (°)	Maximum Wind Speed (m/s)	Direction of Maximum Wind Speed (°)	Average Solar Radiation (W/m²)	Total Evapo-transpiration (mm)	Activities at site
05/01/2014	18.6	11.4		-11.47	-15.47	-22.96	88.97	0	n/a	n/a	n/a	n/a	0.25	n/a	No mining operations, Care and Maintenance
06/01/2014	11.9	11		-10.08	-10.91	-11.81	92.77	2.3	*0.00*	*59.5*	*0.17*	*59.47*	0.63	*0*	No mining operations, Care and Maintenance
01/02/2014	9.7	11.9		-13.87	-15.42	-16.72	89.15	0	0.17	248.5	1.26	221.1	16.67	0.006	No mining operations, Care and Maintenance
02/02/2014	<5.6	<5.6		-10.84	-13.88	-16.51	90.43	0	0.70	234.6	2.99	225.8	18.17	0.028	No mining operations, Care and Maintenance
03/02/2014	<5.6	<5.6		-13.05	-16.23	-18.55	88.38	0	0.71	188.2	4.06	192.8	20.17	0.027	No mining operations, Care and Maintenance
04/02/2014	<5.6	6.4		-16.81	-19.32	-20.81	85.64	0	0.31	246.7	2.22	199.1	20.38	0.013	No mining operations, Care and Maintenance
05/03/2014	<5.6	<5.6		-13.83	-18.81	-21.99	54.48	0	1.10	239.6	3.62	304	82.79	0.12	No mining operations, Care and Maintenance
06/03/2014	<5.6	<5.6		-14.55	-20.50	-26.02	61.57	0	1.24	216.8	4.91	297.7	89.46	0.119	No mining operations, Care and Maintenance
07/03/2014	<5.6	<5.6		-15.31	-21.47	-26.79	62.80	0	0.84	218.6	3.17	185.5	92.17	0.084	No mining operations, Care and Maintenance
25/03/2014	<5.6	<5.6		-1.15	-9.04	-16.37	41.09	0	2.09	219.8	5.68	259.2	151.67	0.533	No mining operations, Care and Maintenance
12/04/2014	<5.6	<5.6		1.63	-6.67	-14.67	40.60	0	1.38	203.9	4.11	61.38	189.08	0.444	Exploration activities at Flame & Moth
13/04/2014	6.8	8.1		5.29	-0.40	-6.75	39.56	0.4	1.16	214.5	4.06	175.5	176.96	0.585	Exploration activities at Flame & Moth
14/04/2014	18.8	20.3		8.44	3.51	-0.45	45.57	0.1	1.43	236.6	5.66	195.6	167.38	0.69	Exploration activities at Flame & Moth
15/04/2014	15.7	14.4		8.60	3.21	-1.58	56.03	0	1.46	211.1	6.69	313.6	164.21	0.606	Exploration activities at Flame & Moth
11/05/2014	21.9	23.2		13.32	7.67	2.564	40.33	0.4	1.81	183.5	6.44	122.1	0.30	1.048	Exploration activities at Flame & Moth
12/05/2014	14.4	10		15.92	9.23	1.645	40.14	0.2	1.55	190.5	6.13	29.7	0.28	0.985	Exploration activities at Flame & Moth
13/05/2014	<5.6	18.6		17.93	11.47	4.408	47.25	0.2	2.20	155.7	8.58	14.22	0.27	1.367	Exploration activities at Flame & Moth
29/05/2014	17.1	<5.6		17.05	10.50	2.236	58.36	1.2	1.64	183.6	7.38	134.9	0.29	0.877	Exploration activities at Flame & Moth
26/06/2014	<5.6			15.56	11.04	5.062	48.68	0.4	2.02	259.7	7.96	330.5	0.26	1.047	Exploration activities at Flame & Moth
27/06/2014	<5.6	5.6		18.11	12.96	8.05	48.56	0	1.42	214.9	5.67	142.6	0.18	0.916	Exploration activities at Flame & Moth
28/06/2014		<5.6		23.06	16.15	6.332	38.97	0.4	2.11	148.2	7.94	105.6	0.35	1.641	Exploration activities at Flame & Moth
29/06/2014	<5.6	<5.6		24.93	17.07	7.576	40.23	0.2	1.90	215.0	6.44	156.1	0.29	1.48	Exploration activities at Flame & Moth
30/06/2014	<5.6	<5.6		17.12	14.37	12.5	67.69	0	1.12	227.7	6.95	272.8	0.09	0.454	Exploration activities at Flame & Moth
08/07/2014	<5.6	<5.6		16.39	12.98	8.98	63.26	0	1.57	146.4	6.45	43.65	0.16	0.65	Exploration activities at Flame & Moth
27/07/2014	<5.6	<5.6		16.61	11.39	8.41	83.50	2.8	1.11	48.9	5.30	154.3	0.14	0.266	Exploration activities at Flame & Moth
28/07/2014	<5.6	<5.6		18.93	12.56	7.43	68.18	0.6	1.36	40.2	6.31	331.2	0.19	0.599	Exploration activities at Flame & Moth
29/07/2014	<5.6	<5.6		15.18	12.05	9.11	79.40	3.4	1.69	31.1	6.90	140.3	0.13	0.354	Exploration activities at Flame & Moth
22/08/2014	<5.6	<5.6		14.95	10.31	6.149	76.43	0	1.35	224.2	5.99	196.6	0.13	0.337	Exploration activities at Flame & Moth
23/08/2014	6.9	16.7		16.65	10.05	4.659	78.54	1.5	1.37	239.5	4.99	323.45	0.18	0.354	Exploration activities at Flame & Moth
24/08/2014	<5.6	5.6		14.83	9.69	5.429	74.60	0	1.60	235.6	5.76	174.8	0.12	0.447	Exploration activities at Flame & Moth
25/08/2014	<5.6			12.09	9.40	7.071	86.62	1.1	0.73	198.6	3.96	174	0.09	0.156	Exploration activities at Flame & Moth
26/08/2014		<5.6		11.48	8.22	5.645	91.57	16	0.65	231.2	4.10	13.15	0.07	0.059	Exploration activities at Flame & Moth
20/09/2014	<5.6	<5.6		8.42	6.10	4.174	77.89	0	1.00	238.8	5.53	274.3	0.05	0.223	Exploration activities at Flame & Moth
23/09/2014	5.6	6.9		4.986	0.95	-1.977	88.36	0.7	1.51	91.1	7.22	14.91	0.06	0.134	Exploration activities at Flame & Moth
24/09/2014	5.6	6.9		4.955	-0.44	-3.427	76.34	0.4	1.28	202.7	4.81	41.03	0.10	0.221	Exploration activities at Flame & Moth

Sample Date	TSP-1 (µg/m³)	TSP-2 (µg/m³)	TSP-3 (µg/m³)	Maximum Air Temperature (°C)	Mean Air Temperature (°C)	Minimun Air Temperature (°C)	Average Relative Humidity (%)	Total Rain* (mm)	Average Wind Speed (m/s)	Direction of Average Wind Vector (°)	Maximum Wind Speed (m/s)	Direction of Maximum Wind Speed (°)	Average Solar Radiation (W/m²)	Total Evapo-transpiration (mm)	Activities at site
27/09/2014	5.6	<5.6		4.42	0.96	-1.406	89.84	3.5	1.42	212.8	8.05	346	0.02	0.109	Exploration activities at Flame & Moth
15/10/2014	9.7	18.1		-0.86	-3.51	-5.65	87.21	0.1	0.88	205.4	3.51	210.7	0.03	0.063	Exploration activities at Flame & Moth
16/10/2014	<5.6	<5.6		-0.581	-1.62	-3.093	89.96	0	1.10	208.4	4.97	205.6	0.01	0.068	Exploration activities at Flame & Moth
23/10/2014	<5.6	<5.6		-3.667	-4.97	-5.752	89.54	0	0.93	210.2	4.95	214.6	0.02	0.063	Exploration activities at Flame & Moth
24/10/2014	<5.6	<5.6		-2.715	-4.57	-5.456	95.21	0	0.79	219.2	3.81	351.6	0.01	0.031	Exploration activities at Flame & Moth
19/11/2014	10			-2.206	-3.73	-5.562	97.74	0	0.45	230.3	2.98	7.456	0.00	0.012	No mining operations, Care and Maintenance
20/11/2014	<5.6			-4.7	-10.00	-15.01	93.46	0	0.49	304.5	2.75	297	0.00	0.016	No mining operations, Care and Maintenance
22/11/2014		<5.6		-18.86	-19.79	-21.6	85.38	0.2	0.22	192.2	1.61	209.1	0.00	0.008	No mining operations, Care and Maintenance
23/11/2014		5.8		-17.53	-19.71	-22.09	85.39	0.1	0.15	194.1	2.55	197	0.00	0.003	No mining operations, Care and Maintenance
24/11/2014	<5.6			-14.55	-16.44	-18.21	88.27	0.1	0.18	225.0	1.58	208.1	0.00	0.007	No mining operations, Care and Maintenance
25/11/2014	10.4	8.1		-11.02	-12.48	-13.85	91.50	0	*0.18*	*210.3*	*1.31*	*220.8*	0.00	*0.002*	No mining operations, Care and Maintenance
12/12/2014	10.3	7.8		-11.81	-14.01	-16.65	90.33	0	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance
13/12/2014	5.8	11.7	16	-11.22	-14.47	-17.02	89.88	0	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance
14/12/2014		5.6	<5.6	-2.637	-10.17	-15.75	93.13	0.1	n/a	n/a	0.04	226.8	0.00	*0*	No mining operations, Care and Maintenance
15/12/2014	<5.6	<5.6	<5.6	-0.904	-1.88	-4.157	85.83	0	*0.78*	*228.5*	*8.87*	*335.1*	0.00	*0.081*	No mining operations, Care and Maintenance
17/12/2014	<5.6			-5.392	-6.76	-8.51	94.93	0	0.55	249.5	3.02	218.6	0.00	0.024	No mining operations, Care and Maintenance
10/01/2015	5.6	<5.6		-9.46	-10.34	-10.97	93.47	0	0.09	71.9	1.42	190.3	0.00	0.003	No mining operations, Care and Maintenance
11/01/2015	<5.6	<5.6		-9.37	-10.03	-10.63	93.32	0	*0.11*	*245.4*	*1.26*	*213.4*	0.00	*0.001*	No mining operations, Care and Maintenance
12/01/2015			<5.6	-9.68	-10.29	-11.46	93.20	0	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance
13/01/2015	<5.6	<5.6		-6.068	-8.44	-11.23	94.59	0	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance
15/01/2015	6.1	<5.6	<5.6	-0.888	-5.06	-9.68	96.82	0	*0.22*	*176.6*	*3.70*	*218.4*	0.00	*0.005*	No mining operations, Care and Maintenance
16/01/2015			<5.6	-0.335	-2.85	-7.954	98.10	0	1.14	166.9	4.48	7.95	0.00	0.018	No mining operations, Care and Maintenance
18/01/2015			<5.6	-3.823	-6.18	-8.51	96.00	0.2	0.69	240.2	4.21	350.8	0.00	0.023	No mining operations, Care and Maintenance
12/02/2015		6.3	8.6	-11.62	-13.95	-15.81	89.23	0	0.37	199.4	3.26	92	0.01	0.023	No mining operations, Care and Maintenance
13/02/2015	<5.6	<5.6		-6.289	-8.23	-11.42	93.90	0	0.52	204.5	4.93	217.9	0.00	0.024	No mining operations, Care and Maintenance
15/02/2015	7.1	<5.6	8.8	-3.145	-6.33	-9.71	92.52	7.3	0.73	278.5	3.04	277.7	0.01	0.038	No mining operations, Care and Maintenance
16/02/2015	<5.6	<5.6	7.9	-2.157	-7.74	-11.49	93.95	0.7	0.85	195.9	4.61	210.5	0.00	0.029	No mining operations, Care and Maintenance
18/02/2015	<5.6		11.5	-0.889	-2.64	-4.515	96.48	0	0.42	209.1	3.69	187.9	0.00	0.016	No mining operations, Care and Maintenance
06/03/2015	7.1	7.8	<5.6	-0.298	-3.66	-5.577	86.59	0.1	1.37	142.7	6.53	8.22	0.03	0.148	No mining operations, Care and Maintenance
07/03/2015	<5.6	<5.6	<5.6	0.932	-2.44	-4.272	78.47	0.2	1.42	210.5	6.22	0.242	0.02	0.2	No mining operations, Care and Maintenance
16/03/2015	6.7	<5.6	9	-12.89	-19.53	-26.15	73.31	0	0.89	194.5	3.84	197	0.06	0.07	No mining operations, Care and Maintenance
17/03/2015	<5.6	<5.6	16.5	-1.807	-9.23	-13.81	72.37	0.3	0.93	208.9	4.24	204	0.07	0.158	No mining operations, Care and Maintenance
02/04/2015	<5.6	<5.6	<5.6	4.032	-1.57	-5.899	66.26	0	1.70	207.7	4.94	251	0.17	0.415	No mining operations, Care and Maintenance
03/04/2015	<5.6	<5.6	<5.6	2.002	-2.72	-7.184	58.66	0	2.35	196.5	7.17	268.7	0.17	0.575	No mining operations, Care and Maintenance
04/04/2015	<5.6	<5.6	5.7	3.513	-3.70	-10.48	61.55	0	1.53	251.0	6.57	332.2	0.16	0.414	No mining operations, Care and Maintenance

Sample Date	TSP-1 (µg/m³)	TSP-2 (µg/m³)	TSP-3 (µg/m³)	Maximum Air Temperature (°C)	Mean Air Temperature (°C)	Minimun Air Temperature (°C)	Average Relative Humidity (%)	Total Rain* (mm)	Average Wind Speed (m/s)	Direction of Average Wind Vector (°)	Maximum Wind Speed (m/s)	Direction of Maximum Wind Speed (°)	Average Solar Radiation (W/m²)	Total Evapo-transpiration (mm)	Activities at site
05/04/2015	<5.6	<5.6	5.8	3.213	-2.10	-5.496	84.15	0	1.20	165.9	7.63	67.74	0.13	0.174	No mining operations, Care and Maintenance
21/05/2015			<5.6	23.83	16.28	7.585	34.05	0	1.73	193.0	5.17	58.3	0.31	1.389	No mining operations, Care and Maintenance
22/05/2015			<5.6	25.09	17.82	10.28	29.16	0	1.71	205.5	6.02	120.9	0.29	1.554	No mining operations, Care and Maintenance
23/05/2015			8.8	26.43	19.79	12.86	26.79	0	1.36	198.1	9.86	4.223	0.25	1.466	No mining operations, Care and Maintenance
24/05/2015			9.9	26.51	19.20	11.59	32.85	0	1.79	271.6	7.59	347.6	0.27	1.648	No mining operations, Care and Maintenance
25/05/2015	15.8	18.9		25.12	17.97	10.28	38.93	0	2.05	181.8	8.18	0.742	0.28	1.556	No mining operations, Care and Maintenance
26/05/2015	22.2	26.4		21.73	15.55	9.78	53.49	0	1.79	212.8	9.22	270.9	0.16	0.986	No mining operations, Care and Maintenance
27/05/2015	15.8	15		22.99	16.43	11.38	52.67	0	2.18	171.8	8.63	204	0.29	1.243	No mining operations, Care and Maintenance
28/05/2015	6.3	5.8		20.98	14.38	8.42	62.40	0	1.94	153.9	10.63	89	0.25	0.924	No mining operations, Care and Maintenance
16/06/2015	<5.6	<5.6	<5.6	19.74	13.76	6.668	51.79	0.9	1.75	201.2	10.14	174.4	0.27	1.096	No mining operations, Care and Maintenance
17/06/2015	<5.6	9.3	<5.6	15.41	11.36	6.976	63.50	0	2.66	177.7	9.73	157.9	0.22	1.071	No mining operations, Care and Maintenance
18/06/2015	<5.6	<5.6	<5.6	18.34	11.65	4.589	42.59	0	2.27	169.6	7.18	136.9	0.35	1.479	No mining operations, Care and Maintenance
01/07/2015		<5.6	68.1	15.59	11.07	7.143	76.46	1.4	1.58	124.9	7.87	25.51	0.18	0.466	No mining operations, Care and Maintenance
08/07/2015	15.4	32.1	43.8	17.01	12.85	10.73	80.11	3.2	1.68	96.1	11.49	77.07	0.08	0.453	No mining operations, Care and Maintenance
11/07/2015	<5.6	7.6	<5.6	14.04	12.35	10.35	75.27	9.5	1.01	219.0	5.52	332.4	0.11	0.281	No mining operations, Care and Maintenance
20/07/2015	9.6	5.7	13.1	17.42	11.86	4.725	62.55	0	2.03	182.0	9.09	138.7	0.26	1.007	No mining operations, Care and Maintenance
13/08/2015	6.8	10.4		14.48	7.56	0.308	64.18	0	1.56	184.2	6.06	142.4	0.21	0.644	No mining operations, Care and Maintenance
14/08/2015	11.4	<5.6	9.7	16.49	9.14	3.399	70.07	0	1.67	214.3	6.71	44.49	0.17	0.55	No mining operations, Care and Maintenance
15/08/2015	7.4	9	6.4	18.97	11.31	4.551	63.45	0	1.67	181.3	5.93	35.3	0.21	0.728	No mining operations, Care and Maintenance
16/08/2015	11	8.6	6.5	16.31	11.81	8.21	64.84	0	1.52	118.6	6.48	27.91	0.14	0.687	No mining operations, Care and Maintenance
17/09/2015	5.7	<5.6		8.56	5.26	3.57	83.42	4.4	1.69	301.4	6.94	322.7	0.08	0.26	No mining operations, Care and Maintenance
20/10/2015	6	<5.6	5.6	3.167	1.32	-1.097	89.12	0	0.99	270.8	5.45	300.4	0.04	0.11	No mining operations, Care and Maintenance
21/10/2015	<5.6	8.2	<5.6	2.824	0.27	-1.349	89.93	0	0.70	203.8	5.71	320.6	0.01	0.065	No mining operations, Care and Maintenance
13/11/2015	21.4	14	16	-11.46	-12.67	-14.95	91.27	2.4	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance
15/11/2015	10.3	10	8.5	-14.97	-16.71	-19.11	88.00	1	*n/a*	*n/a*	*0.09*	*25.82*	0.00	*0*	No mining operations, Care and Maintenance
16/11/2015	10.8	12.2	6.9	-14.95	-16.51	-18.04	88.14	0.2	*0.36*	*199.4*	*2.93*	*206*	0.00	*0.005*	No mining operations, Care and Maintenance
17/11/2015	17.8	20.8		-17.84	-18.96	-22.21	85.90	0.3	*0.69*	*200.9*	*2.99*	*200.7*	0.00	*0.02*	No mining operations, Care and Maintenance
18/11/2015	9.7	17.4		-22.09	-25.52	-29.1	79.53	0	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance
16/12/2015	<5.6		<5.6	-15.9	-17.77	-21.21	87.08	0	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance
17/12/2015	<5.6		<5.6	-12.54	-17.25	-19.91	87.61	0	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance
18/12/2015	<5.6		<5.6	-10.93	-11.80	-12.91	91.85	0.1	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance
19/12/2015	<5.6		<5.6	-11.73	-12.75	-14.99	90.93	0	n/a	n/a	n/a	n/a	0.00	n/a	No mining operations, Care and Maintenance

** Starting October 15, 2013, total precipitation is reported rather than total rain*

Table A-2 24-Hour Average PM_{10} and $PM_{2.5}$ Results, August 2015 – December 2015

Sample Date	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
TSP-1		
17/08/2015		<5.6
18/08/2015		6.5
20/08/2015		6.5
22/08/2015	<5.6	
23/08/2015	7.8	
24/08/2015	14.6	
05/09/2015	<5.6	
06/09/2015	<5.6	
09/09/2015	<5.6	
11/09/2015		<5.6
20/11/2015		<5.6
21/11/2015		<5.6
24/11/2015		<5.6
25/11/2015	<5.6	

Sample Date	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
TSP-2		
17/08/2015		<5.6
18/08/2015		<5.6
20/08/2015		<5.6
22/08/2015	8.6	
23/08/2015	8.6	
24/08/2015	8.5	
05/09/2015	<5.6	
06/09/2015	<5.6	
09/09/2015	<5.6	
11/09/2015		<5.6
12/09/2015		<5.6
14/09/2015		<5.6
20/11/2015		<5.6
21/11/2015		<5.6
24/11/2015	<5.6	

Sample Date	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
TSP-3		
17/08/2015		<5.6
18/08/2015		<5.6
20/08/2015		<5.6
22/08/2015	<5.6	
23/08/2015	<5.6	
24/08/2015	5.8	
05/09/2015	<5.6	
06/09/2015	<5.6	
09/09/2015	<5.6	
11/09/2015		<5.6
12/09/2015		<5.6
14/09/2015		<5.6
25/11/2015	<5.6	

Table A-3 24-Hour Average Metal Concentrations, TSP-1, August 2012 – December 2015

Sample Date	Aluminum (Al), total µg/m3	Antimony (Sb), total µg/m3	Arsenic (As), total µg/m3	Barium (Ba), total µg/m3	Beryllium (Be), total µg/m3	Boron (B), total µg/m3	Cadmium (Cd), total µg/m3	Calcium (Ca), total µg/m3	Chromium (Cr), total µg/m3 *	Cobalt (Co), total µg/m3	Copper (Cu), total µg/m3	Iron (Fe), total µg/m3	Lead (Pb), total µg/m3	Magnesium (Mg), total µg/m3	Manganese (Mn), total µg/m3 *	Molybdenum (Mo), total µg/m3	Nickel (Ni), total µg/m3	Phosphorus (P), total µg/m3	Potassium (K), total µg/m3	Selenium (Se), total µg/m3	Silicon (Si), total µg/m3	Silver (Ag), total µg/m3	Sodium (Na), total µg/m3	Strontium (Sr), total µg/m3	Sulphur (S), total µg/m3	Tin (Sn), total µg/m3	Titanium (Ti), total µg/m3	Vanadium (V), total µg/m3	Zinc (Zn), total µg/m3	Zirconium (Zr), total µg/m3
Ontario AAQC (24-hr avg)		**25**	**0.3**	**10**	**0.01**	**120**	**0.025**		**0.5**	**0.1**	**50**	**4**	**0.5**		**0.4**	**120**	**2**			**10**		**1**		**120**		**10**	**120**	**2**	**120**	
23/08/12	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.486	<0.042	<0.069	<0.069	0.554	0.174	0.061	0.045	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.708	<0.111	<0.028	<0.042	0.118	<0.069
27/09/12	0.667	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	1.722	<0.042	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.039	<0.069
23/10/12	0.653	<0.278	<0.111	0.022	<0.011	<0.042	<0.028	1.153	<0.042	<0.069	<0.069	2.528	1.083	0.308	0.301	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.569	<0.111	<0.028	<0.042	0.558	<0.069
15/12/12	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.194	0.139	<0.042	0.053	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.094	<0.069
14/01/13	0.403	<0.278	<0.111	0.010	<0.011	<0.042	<0.028	2.069	<0.042	<0.069	<0.069	0.815	<0.111	0.217	0.026	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	0.875	0.007	0.556	0.174	<0.028	<0.042	0.196	<0.069
16/01/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.444	<0.042	<0.069	<0.069	0.126	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.039	<0.069
23/03/13	0.292	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	1.347	<0.042	<0.069	<0.069	0.318	<0.111	0.072	0.034	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.347	<0.111	<0.028	<0.042	0.043	<0.069
24/03/13	<0.278	<0.278	<0.111	0.019	<0.011	<0.042	<0.028	0.597	<0.042	<0.069	<0.069	0.293	<0.111	0.094	0.066	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.067	<0.069
25/03/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.057	<0.069	<0.069	0.181	<0.111	0.058	0.021	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.039	<0.069
26/03/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.168	<0.111	0.057	0.019	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.050	<0.069
10/04/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.043	<0.069	<0.069	0.272	<0.111	0.082	0.017	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.292	<0.111	<0.028	<0.042	0.035	<0.069
13/04/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.306	0.053	<0.069	<0.069	0.465	<0.111	0.106	0.022	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.375	<0.111	<0.028	<0.042	0.038	<0.069
15/04/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.047	<0.069	<0.069	0.169	<0.111	0.061	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.333	<0.111	<0.028	<0.042	<0.028	<0.069
16/04/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.107	<0.111	0.046	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
28/05/13	5.292	<0.278	<0.111	0.009	<0.011	0.264	<0.028	8.722	0.049	<0.069	<0.069	0.313	<0.111	0.222	0.013	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	0.583	0.017	0.306	<0.111	<0.028	<0.042	0.079	<0.069
16/06/13	5.236	<0.278	<0.111	0.012	<0.011	0.264	<0.028	8.597	0.076	<0.069	<0.069	0.879	0.224	0.211	0.083	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	0.722	0.016	0.292	<0.111	<0.028	<0.042	0.164	<0.069
18/06/13	0.861	<0.278	<0.111	0.019	<0.011	<0.042	<0.028	1.417	0.075	<0.069	<0.069	2.153	0.794	0.318	0.218	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	0.569	0.005	0.681	<0.111	0.042	<0.042	0.382	<0.069
21/06/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.319	0.068	<0.069	<0.069	0.372	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	0.431	<0.004	<0.278	<0.111	<0.028	<0.042	0.058	<0.069
24/06/13	<0.278	<0.278	<0.111	0.018	<0.011	<0.042	<0.028	<0.278	0.103	<0.069	<0.069	0.450	<0.111	<0.042	0.018	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	0.444	<0.004	<0.278	<0.111	<0.028	<0.042	0.032	<0.069
19/07/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.128	<0.069	<0.069	0.419	<0.111	<0.042	0.017	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.032	<0.069
20/07/13	<0.278	<0.278	<0.111	0.005	<0.011	<0.042	<0.028	0.444	0.100	<0.069	<0.069	1.367	<0.111	0.096	0.175	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.096	<0.069
21/07/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.106	<0.069	<0.069	0.322	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
22/07/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.119	<0.069	<0.069	0.493	<0.111	<0.042	0.032	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.051	<0.069
22/08/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.078	<0.069	<0.069	0.383	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.029	<0.069
23/08/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.053	<0.069	<0.069	0.194	<0.111	0.054	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
24/08/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.088	<0.069	<0.069	0.388	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/08/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.046	<0.069	<0.069	0.208	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
24/09/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.096	<0.069	<0.069	0.319	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
27/09/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.086	<0.069	<0.069	0.435	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
28/09/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.083	<0.069	<0.069	0.351	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
29/09/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.088	<0.069	<0.069	0.672	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/10/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.096	<0.069	<0.069	0.360	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
26/10/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.115	<0.069	<0.069	0.269	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
27/10/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.103	<0.069	<0.069	0.331	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069

Sample Date	Aluminum (Al), total µg/m3	Antimony (Sb), total µg/m3	Arsenic (As), total µg/m3	Barium (Ba), total µg/m3	Beryllium (Be), total µg/m3	Boron (B), total µg/m3	Cadmium (Cd), total µg/m3	Calcium (Ca), total µg/m3	Chromium (Cr), total µg/m3 *	Cobalt (Co), total µg/m3	Copper (Cu), total µg/m3	Iron (Fe), total µg/m3	Lead (Pb), total µg/m3	Magnesium (Mg), total µg/m3	Manganese (Mn), total µg/m3 *	Molybdenum (Mo), total µg/m3	Nickel (Ni), total µg/m3	Phosphorus (P), total µg/m3	Potassium (K), total µg/m3	Selenium (Se), total µg/m3	Silicon (Si), total µg/m3	Silver (Ag), total µg/m3	Sodium (Na), total µg/m3	Strontium (Sr), total µg/m3	Sulphur (S), total µg/m3	Tin (Sn), total µg/m3	Titanium (Ti), total µg/m3	Vanadium (V), total µg/m3	Zinc (Zn), total µg/m3	Zirconium (Zr), total µg/m3
28/10/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.097	<0.069	<0.069	0.308	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
28/11/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.086	<0.069	<0.069	0.308	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.042	<0.069
29/11/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.104	<0.069	<0.069	0.358	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
30/11/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.083	<0.069	<0.069	0.361	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
01/12/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.085	<0.069	<0.069	0.417	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
03/01/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.099	<0.069	<0.069	0.378	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.750	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
04/01/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.076	<0.069	<0.069	0.335	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.500	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
05/01/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.089	<0.069	<0.069	0.322	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	3.875	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
06/01/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.079	<0.069	<0.069	0.342	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	2.736	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
01/02/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.075	<0.069	<0.069	0.312	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
02/02/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.115	<0.069	<0.069	0.294	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.032	<0.069
03/02/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.075	<0.069	<0.069	0.308	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
04/02/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.107	<0.069	<0.069	0.368	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.031	<0.069
05/03/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.09	<0.069	<0.069	0.193	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.057	<0.069
06/03/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.079	<0.069	<0.069	0.218	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.04	<0.069
07/03/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.099	<0.069	<0.069	0.319	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/03/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.089	<0.069	<0.069	0.231	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
12/04/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.081	<0.069	<0.069	0.253	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/04/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.053	<0.069	<0.069	0.232	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
14/04/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.071	<0.069	<0.069	0.276	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.167	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/04/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.089	<0.069	<0.069	0.21	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.792	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
11/05/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.086	<0.069	<0.069	0.472	<0.111	0.047	0.02	<0.069	<0.069	<0.417	<1.389	<0.069	3.583	<0.042	<0.417	<0.004	0.333	<0.111	<0.028	<0.042	0.039	<0.069
12/05/14	0.861	<0.278	<0.111	0.012	<0.011	0.05	<0.028	1.847	0.074	<0.069	<0.069	0.478	<0.111	0.078	0.012	<0.069	<0.069	<0.417	<1.389	<0.069	2.694	<0.042	<0.417	0.016	<0.278	<0.111	<0.028	<0.042	0.039	<0.069
13/05/14	0.667	<0.278	<0.111	0.009	<0.011	<0.042	<0.028	1.403	0.086	<0.069	<0.069	0.411	<0.111	0.068	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.583	<0.042	<0.417	0.012	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
29/05/14	<0.278	<0.278	<0.111	0.006	<0.011	<0.042	<0.028	1.319	0.096	<0.069	<0.069	0.556	<0.111	0.429	0.012	<0.069	<0.069	<0.417	<1.389	<0.069	3.764	<0.042	0.431	<0.004	0.306	<0.111	<0.028	<0.042	0.074	<0.069
26/06/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.094	<0.069	<0.069	0.338	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.431	0.431	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
27/06/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.074	<0.069	<0.069	0.344	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
29/06/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.086	<0.069	<0.069	0.413	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.708	0.708	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
30/06/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.072	<0.069	<0.069	0.328	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
08/07/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.139	<0.069	<0.069	0.397	<0.111	<0.042	0.017	<0.069	<0.069	<0.417	<1.389	<0.069	0.458	0.458	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
27/07/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.076	<0.069	<0.069	0.351	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
28/07/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.114	<0.069	<0.069	0.308	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
29/07/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.081	<0.069	<0.069	0.368	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	0.029	<0.069
22/08/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.079	<0.069	<0.069	0.333	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
23/08/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.118	<0.069	<0.069	0.365	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
24/08/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.067	<0.069	<0.069	0.204	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/08/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.087	<0.069	<0.069	0.293	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069

Sample Date	Aluminum (Al), total µg/m3	Antimony (Sb), total µg/m3	Arsenic (As), total µg/m3	Barium (Ba), total µg/m3	Beryllium (Be), total µg/m3	Boron (B), total µg/m3	Cadmium (Cd), total µg/m3	Calcium (Ca), total µg/m3	Chromium (Cr), total µg/m3 *	Cobalt (Co), total µg/m3	Copper (Cu), total µg/m3	Iron (Fe), total µg/m3	Lead (Pb), total µg/m3	Magnesium (Mg), total µg/m3	Manganese (Mn), total µg/m3 *	Molybdenum (Mo), total µg/m3	Nickel (Ni), total µg/m3	Phosphorus (P), total µg/m3	Potassium (K), total µg/m3	Selenium (Se), total µg/m3	Silicon (Si), total µg/m3	Silver (Ag), total µg/m3	Sodium (Na), total µg/m3	Strontium (Sr), total µg/m3	Sulphur (S), total µg/m3	Tin (Sn), total µg/m3	Titanium (Ti), total µg/m3	Vanadium (V), total µg/m3	Zinc (Zn), total µg/m3	Zirconium (Zr), total µg/m3
20/09/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.111	<0.069	<0.069	0.319	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.444	<0.042	0.583	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
23/09/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.090	<0.069	<0.069	0.347	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.431	<0.042	0.542	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
24/09/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.082	<0.069	<0.069	0.308	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	0.514	<0.004	0.542	<0.111	<0.028	<0.042	<0.028	<0.069
27/09/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.100	<0.069	<0.069	0.369	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	0.528	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/10/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.071	<0.069	<0.069	0.211	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.958	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/10/14	0.306	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.075	<0.069	<0.069	0.307	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
23/10/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.086	<0.069	<0.069	0.292	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
24/10/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.104	<0.069	<0.069	0.338	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
19/11/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.126	<0.069	<0.069	0.410	<0.111	<0.042	0.020	<0.069	<0.069	<0.417	<1.389	<0.069	0.764	<0.042	0.889	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
20/11/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.108	<0.069	<0.069	0.386	<0.111	<0.042	0.014	<0.069	<0.069	<0.417	<1.389	<0.069	0.931	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
24/11/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.100	<0.069	<0.069	0.424	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.833	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/11/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.086	<0.069	<0.069	0.344	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.333	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
12/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.099	<0.069	<0.069	0.246	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.125	<0.042	1.458	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.135	<0.069	<0.069	0.338	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.028	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.069	<0.069	<0.069	0.321	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	0.193	<0.028	<0.042	<0.028	<0.069
17/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.076	<0.069	<0.069	0.457	<0.111	<0.042	0.031	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
10/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.121	<0.069	<0.069	0.389	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.472	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
11/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.096	<0.069	<0.069	0.360	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.079	<0.069	<0.069	0.411	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.054	<0.069	<0.069	0.054	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.458	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.062	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.054	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.103	<0.069	<0.069	0.343	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
18/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.057	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
06/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.06	<0.069	<0.069	0.047	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.847	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
07/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.064	<0.069	<0.069	0.128	<0.111	0.043	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.062	<0.069	<0.069	0.051	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.542	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.069	<0.069	<0.069	0.043	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
02/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.074	<0.069	<0.069	0.344	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
03/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.101	<0.069	<0.069	0.464	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
04/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.075	<0.069	<0.069	0.31	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
05/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.064	<0.069	<0.069	0.05	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/05/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.292	0.05	<0.069	<0.069	0.326	<0.111	0.075	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.389	<0.111	<0.028	<0.042	<0.028	<0.069
26/05/15	<0.278	<0.278	<0.111	0.004	<0.011	<0.042	<0.028	0.292	0.067	<0.069	<0.069	0.314	<0.111	0.071	0.023	<0.069	<0.069	<0.417	<1.389	<0.069	0.458	<0.042	<0.417	<0.004	0.431	<0.111	<0.028	<0.042	0.029	<0.069
27/05/15	0.444	<0.278	<0.111	0.005	<0.011	<0.042	<0.028	1.139	<0.042	<0.069	<0.069	0.24	<0.111	0.122	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	0.023	0.333	<0.111	<0.028	<0.042	<0.028	<0.069
28/05/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.431	0.06	<0.069	<0.069	0.431	<0.111	0.089	0.023	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	0.005	0.292	<0.111	<0.028	<0.042	<0.028	<0.069
16/06/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.057	<0.069	<0.069	0.2	<0.111	0.064	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069

Sample Date	Aluminum (Al), total µg/m3	Antimony (Sb), total µg/m3	Arsenic (As), total µg/m3	Barium (Ba), total µg/m3	Beryllium (Be), total µg/m3	Boron (B), total µg/m3	Cadmium (Cd), total µg/m3	Calcium (Ca), total µg/m3	Chromium (Cr), total µg/m3 *	Cobalt (Co), total µg/m3	Copper (Cu), total µg/m3	Iron (Fe), total µg/m3	Lead (Pb), total µg/m3	Magnesium (Mg), total µg/m3	Manganese (Mn), total µg/m3 *	Molybdenum (Mo), total µg/m3	Nickel (Ni), total µg/m3	Phosphorus (P), total µg/m3	Potassium (K), total µg/m3	Selenium (Se), total µg/m3	Silicon (Si), total µg/m3	Silver (Ag), total µg/m3	Sodium (Na), total µg/m3	Strontium (Sr), total µg/m3	Sulphur (S), total µg/m3	Tin (Sn), total µg/m3	Titanium (Ti), total µg/m3	Vanadium (V), total µg/m3	Zinc (Zn), total µg/m3	Zirconium (Zr), total µg/m3
17/06/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.053	<0.069	<0.069	0.213	<0.111	0.064	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.681	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
18/06/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.053	<0.069	<0.069	0.221	<0.111	0.057	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.931	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
08/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.047	<0.069	<0.069	<0.042	<0.111	0.051	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	2.444	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
11/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.049	<0.069	<0.069	0.09	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.049	<0.069
20/07/15	<0.278	<0.278	<0.111	0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.113	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.046	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
14/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.061	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.05	<0.069	<0.069	0.21	<0.111	0.049	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.053	<0.069	<0.069	0.239	<0.111	0.06	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/09/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
20/10/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.092	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
21/10/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.072	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.042	<0.069
13/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.078	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.068	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.035	<0.069
16/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.054	<0.069	<0.069	<0.042	<0.111	<0.042	0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.064	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
18/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.067	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/12/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.078	<0.069	<0.069	0.047	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/12/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.082	<0.069	<0.069	0.046	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
18/12/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.074	<0.069	<0.069	0.044	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
19/12/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.053	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069

** Criteria effective on July 1, 2016*

Table A-4 24-Hour Average Metal Concentrations, TSP-2, August 2012 – December 2015

Sample Date	Aluminum (Al), total µg/m³	Antimony (Sb), total µg/m³	Arsenic (As), total µg/m³	Barium (Ba), total µg/m³	Beryllium (Be), total µg/m³	Boron (B), total µg/m³	Cadmium (Cd), total µg/m³	Calcium (Ca), total µg/m³	Chromium (Cr), total µg/m³ *	Cobalt (Co), total µg/m³	Copper (Cu), total µg/m³	Iron (Fe), total µg/m³	Lead (Pb), total µg/m³	Magnesium (Mg), total µg/m³	Manganese (Mn), total µg/m³ *	Molybdenum (Mo), total µg/m³	Nickel (Ni), total µg/m³	Phosphorus (P), total µg/m³	Potassium (K), total µg/m³	Selenium (Se), total µg/m³	Silicon (Si), total µg/m3	Silver (Ag), total µg/m³	Sodium (Na), total µg/m³	Strontium (Sr), total µg/m³	Sulphur (S), total µg/m³	Tin (Sn), total µg/m³	Titanium (Ti), total µg/m³	Vanadium (V), total µg/m³	Zinc (Zn), total µg/m³	Zirconium (Zr), total µg/m³
Ontario AAQC (24-hr avg)		**25**	**0.3**	**10**	**0.01**	**120**	**0.025**		**0.5**	**0.1**	**50**	**4**	**0.5**		**0.4**	**120**	**0.2**			**10**		**1**		**120**		**10**	**120**	**2**	**120**	
23/08/12	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.439	0.736	0.047	0.033	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.736	<0.111	<0.028	<0.042	0.108	<0.069
27/09/12	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.375	<0.042	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.039	<0.069
15/12/12	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.533	0.181	0.076	0.066	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.122	<0.069
16/01/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.143	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
23/03/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.375	<0.042	<0.069	<0.069	1.431	0.321	0.089	0.407	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.389	<0.111	<0.028	<0.042	0.244	<0.069
24/03/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.486	<0.042	<0.069	<0.069	1.174	0.361	0.124	0.651	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.389	<0.111	<0.028	<0.042	0.278	<0.069
25/03/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.417	0.056	<0.069	<0.069	1.163	0.367	0.108	0.390	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.403	<0.111	<0.028	<0.042	0.264	<0.069
26/03/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.375	0.046	<0.069	<0.069	0.921	0.153	0.117	0.290	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.319	<0.111	<0.028	<0.042	0.142	<0.069
07/04/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.486	<0.042	<0.069	<0.069	1.161	0.417	0.119	0.471	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.333	<0.111	<0.028	<0.042	0.294	<0.069
10/04/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.043	<0.069	<0.069	0.439	<0.111	0.081	0.049	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.069	<0.069
13/04/13	0.306	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.044	<0.069	<0.069	0.199	<0.111	0.081	0.017	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.375	<0.111	<0.028	<0.042	<0.028	<0.069
15/04/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.047	<0.069	<0.069	0.268	<0.111	0.079	0.025	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.333	<0.111	<0.028	<0.042	<0.028	<0.069
16/04/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.043	<0.069	<0.069	0.165	<0.111	0.065	0.013	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.319	<0.111	<0.028	<0.042	<0.028	<0.069
17/06/13	0.361	<0.278	<0.111	0.009	<0.011	<0.042	<0.028	0.708	<0.042	<0.069	<0.069	0.232	<0.111	0.053	0.016	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
18/06/13	1.583	<0.278	<0.111	0.005	<0.011	0.071	<0.028	2.569	0.122	<0.069	<0.069	0.825	0.133	0.094	0.078	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	0.542	0.005	<0.278	<0.111	<0.028	<0.042	0.096	<0.069
21/06/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.089	<0.069	<0.069	0.432	<0.111	<0.042	0.014	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	0.472	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
23/06/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.361	0.054	<0.069	<0.069	0.282	<0.111	0.072	0.017	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.031	<0.069
28/06/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.500	0.054	<0.069	<0.069	0.414	<0.111	0.082	0.046	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	0.319	<0.111	<0.028	<0.042	0.071	<0.069
19/07/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.117	<0.069	<0.069	0.526	<0.111	<0.042	0.027	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.039	<0.069
20/07/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.065	<0.069	<0.069	0.381	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
21/07/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.096	<0.069	<0.069	0.500	<0.111	<0.042	0.052	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.029	<0.069
22/07/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.292	0.094	<0.069	<0.069	1.122	<0.111	0.071	0.134	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.092	<0.069
22/08/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.094	<0.069	<0.069	0.314	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/08/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.050	<0.069	<0.069	0.185	<0.111	0.047	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
26/08/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.074	<0.069	<0.069	0.496	<0.111	<0.042	0.012	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.046	<0.069
28/08/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.071	<0.069	<0.069	0.496	<0.111	<0.042	0.046	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.122	<0.069
31/08/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.057	<0.069	<0.069	0.200	<0.111	0.047	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
21/09/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.097	<0.069	<0.069	0.347	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
24/09/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.114	<0.069	<0.069	0.424	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
27/09/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.126	<0.069	<0.069	0.479	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
28/09/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	0.036	<0.278	0.086	<0.069	<0.069	0.338	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.047	<0.069
30/09/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.069	<0.069	<0.069	0.450	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069

Sample Date	Aluminum (Al), total µg/m³	Antimony (Sb), total µg/m³	Arsenic (As), total µg/m³	Barium (Ba), total µg/m³	Beryllium (Be), total µg/m³	Boron (B), total µg/m³	Cadmium (Cd), total µg/m³	Calcium (Ca), total µg/m³	Chromium (Cr), total µg/m³ *	Cobalt (Co), total µg/m³	Copper (Cu), total µg/m³	Iron (Fe), total µg/m³	Lead (Pb), total µg/m³	Magnesium (Mg), total µg/m³	Manganese (Mn), total µg/m³ *	Molybdenum (Mo), total µg/m³	Nickel (Ni), total µg/m³	Phosphorus (P), total µg/m³	Potassium (K), total µg/m³	Selenium (Se), total µg/m³	Silicon (Si), total µg/m3	Silver (Ag), total µg/m³	Sodium (Na), total µg/m³	Strontium (Sr), total µg/m³	Sulphur (S), total µg/m³	Tin (Sn), total µg/m³	Titanium (Ti), total µg/m³	Vanadium (V), total µg/m³	Zinc (Zn), total µg/m³	Zirconium (Zr), total µg/m³
24/10/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.076	<0.069	<0.069	0.326	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/10/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.096	<0.069	<0.069	0.303	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
26/10/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.667	0.124	<0.069	<0.069	0.311	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
27/10/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.075	<0.069	<0.069	0.268	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
28/11/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.083	<0.069	<0.069	0.538	<0.111	<0.042	0.042	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.042	<0.069
29/11/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.069	<0.069	<0.069	0.361	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
30/11/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.079	<0.069	<0.069	0.372	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
01/12/13	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.096	<0.069	<0.069	0.363	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
03/01/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.079	<0.069	<0.069	0.314	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.458	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
04/01/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.108	<0.069	<0.069	0.611	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.833	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
05/01/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.09	<0.069	<0.069	0.361	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.542	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.054	<0.069
06/01/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.069	<0.069	<0.069	0.371	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.861	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.038	<0.069
01/02/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.082	<0.069	<0.069	0.281	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
02/02/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.101	<0.069	<0.069	0.381	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
03/02/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.121	<0.069	<0.069	0.321	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
04/02/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.079	<0.069	<0.069	0.39	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
05/03/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.106	<0.069	<0.069	0.325	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.029	<0.069
06/03/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.09	<0.069	<0.069	0.351	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.049	<0.069
07/03/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.082	<0.069	<0.069	0.276	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/03/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.083	<0.069	<0.069	0.267	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.597	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.031	<0.069
12/04/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.086	<0.069	<0.069	0.239	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
13/04/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.114	<0.069	<0.069	0.301	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.625	<0.042	<0.417	<0.004	0.375	<0.111	<0.028	<0.042	<0.028	<0.069
14/04/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.086	<0.069	<0.069	0.315	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	2.236	<0.042	<0.417	<0.004	0.347	<0.111	<0.028	<0.042	0.032	<0.069
15/04/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.075	<0.069	<0.069	0.186	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.944	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.031	<0.069
11/05/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.139	0.081	<0.069	<0.069	0.376	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	5.028	<0.042	<0.417	<0.004	0.319	<0.111	<0.028	<0.042	<0.028	<0.069
12/05/14	1.625	<0.278	<0.111	<0.004	<0.011	0.099	<0.028	3.472	0.089	<0.069	<0.069	0.506	<0.111	0.113	0.013	<0.069	<0.069	<0.417	<1.389	<0.069	1.736	<0.042	0.417	0.032	0.292	<0.111	<0.028	<0.042	0.04	<0.069
13/05/14	<0.278	<0.278	<0.111	0.005	<0.011	<0.042	<0.028	0.569	0.09	<0.069	<0.069	0.426	<0.111	0.056	0.014	<0.069	<0.069	<0.417	<1.389	<0.069	3.750	<0.042	<0.417	0.005	<0.278	<0.111	<0.028	<0.042	0.029	<0.069
29/05/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.139	0.071	<0.069	<0.069	0.489	<0.111	<0.042	0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
27/06/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.079	<0.069	<0.069	0.408	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.736	0.736	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
28/06/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.104	<0.069	<0.069	0.389	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.736	0.736	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
29/06/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.078	<0.069	<0.069	0.326	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
30/06/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.119	<0.069	<0.069	0.365	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
08/07/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.114	<0.069	<0.069	0.378	<0.111	<0.042	0.013	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
27/07/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.086	<0.069	<0.069	0.34	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
28/07/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.096	<0.069	<0.069	0.354	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
29/07/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.028	0.126	<0.069	<0.069	0.431	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069

Sample Date	Aluminum (Al), total µg/m³	Antimony (Sb), total µg/m³	Arsenic (As), total µg/m³	Barium (Ba), total µg/m³	Beryllium (Be), total µg/m³	Boron (B), total µg/m³	Cadmium (Cd), total µg/m³	Calcium (Ca), total µg/m³	Chromium (Cr), total µg/m³ *	Cobalt (Co), total µg/m³	Copper (Cu), total µg/m³	Iron (Fe), total µg/m³	Lead (Pb), total µg/m³	Magnesium (Mg), total µg/m³	Manganese (Mn), total µg/m³ *	Molybdenum (Mo), total µg/m³	Nickel (Ni), total µg/m³	Phosphorus (P), total µg/m³	Potassium (K), total µg/m³	Selenium (Se), total µg/m³	Silicon (Si), total µg/m3	Silver (Ag), total µg/m³	Sodium (Na), total µg/m³	Strontium (Sr), total µg/m³	Sulphur (S), total µg/m³	Tin (Sn), total µg/m³	Titanium (Ti), total µg/m³	Vanadium (V), total µg/m³	Zinc (Zn), total µg/m³	Zirconium (Zr), total µg/m³
22/08/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.132	<0.069	<0.069	0.317	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.028	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
23/08/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.071	<0.069	<0.069	0.331	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	2.722	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
24/08/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.107	<0.069	<0.069	0.335	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
26/08/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.093	<0.069	<0.069	0.315	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
20/09/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.101	<0.069	<0.069	0.350	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	0.472	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
23/09/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.079	<0.069	<0.069	0.358	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	0.458	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
24/09/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.106	<0.069	<0.069	0.338	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.486	<0.042	<0.417	<0.004	0.569	<0.111	<0.028	<0.042	<0.028	<0.069
27/09/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.100	<0.069	<0.069	0.354	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	0.458	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/10/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.069	<0.069	<0.069	0.242	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	2.167	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/10/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.087	<0.069	<0.069	0.239	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
23/10/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.090	<0.069	<0.069	0.386	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
24/10/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.054	<0.069	<0.069	0.161	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
22/11/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.132	<0.069	<0.069	0.353	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.611	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
23/11/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.115	<0.069	<0.069	0.339	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.833	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/11/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.104	<0.069	<0.069	0.258	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.458	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
12/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.094	<0.069	<0.069	0.362	<0.111	<0.042	0.017	<0.069	<0.069	<0.417	<1.389	<0.069	1.167	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.114	<0.069	<0.069	0.414	<0.111	<0.042	0.043	<0.069	<0.069	<0.417	<1.389	<0.069	1.361	<0.042	0.917	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
14/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.096	<0.069	<0.069	0.378	<0.111	<0.042	0.021	<0.069	<0.069	<0.417	<1.389	<0.069	0.833	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.126	<0.069	<0.069	0.381	<0.111	<0.042	0.020	<0.069	<0.069	<0.417	<1.389	<0.069	0.931	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
10/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.110	<0.069	<0.069	0.342	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.444	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
11/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.082	<0.069	<0.069	0.281	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.061	<0.069	<0.069	0.263	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.042	<0.069
15/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.061	<0.069	<0.069	0.333	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.028	<0.069
12/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.065	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.75	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.057	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.058	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.075	<0.069	<0.069	0.304	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
06/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.062	<0.069	<0.069	0.047	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.014	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
07/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.069	<0.069	<0.069	0.138	<0.111	0.046	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.054	<0.069	<0.069	0.075	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.06	<0.069	<0.069	0.05	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
02/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.096	<0.069	<0.069	0.357	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
03/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.104	<0.069	<0.069	0.281	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
04/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.083	<0.069	<0.069	0.306	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
05/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.049	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
25/05/15	<0.278	<0.278	<0.111	0.048	<0.011	<0.042	<0.028	0.611	0.056	<0.069	<0.069	1.015	<0.111	0.167	0.117	<0.069	<0.069	<0.417	<1.389	<0.069	0.444	<0.042	<0.417	<0.004	0.556	<0.111	<0.028	<0.042	0.069	<0.069

Sample Date	Aluminum (Al), total µg/m³	Antimony (Sb), total µg/m³	Arsenic (As), total µg/m³	Barium (Ba), total µg/m³	Beryllium (Be), total µg/m³	Boron (B), total µg/m³	Cadmium (Cd), total µg/m³	Calcium (Ca), total µg/m³	Chromium (Cr), total µg/m³ *	Cobalt (Co), total µg/m³	Copper (Cu), total µg/m³	Iron (Fe), total µg/m³	Lead (Pb), total µg/m³	Magnesium (Mg), total µg/m³	Manganese (Mn), total µg/m³ *	Molybdenum (Mo), total µg/m³	Nickel (Ni), total µg/m³	Phosphorus (P), total µg/m³	Potassium (K), total µg/m³	Selenium (Se), total µg/m³	Silicon (Si), total µg/m3	Silver (Ag), total µg/m³	Sodium (Na), total µg/m³	Strontium (Sr), total µg/m³	Sulphur (S), total µg/m³	Tin (Sn), total µg/m³	Titanium (Ti), total µg/m³	Vanadium (V), total µg/m³	Zinc (Zn), total µg/m³	Zirconium (Zr), total µg/m³
26/05/15	<0.278	<0.278	<0.111	<0.011	<0.011	<0.042	<0.028	0.625	0.05	<0.069	<0.069	0.96	<0.111	0.186	0.101	<0.069	<0.069	<0.417	<1.389	<0.069	0.556	<0.042	<0.417	<0.004	0.431	<0.111	<0.028	<0.042	0.064	<0.069
27/05/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.043	<0.069	<0.069	0.353	<0.111	0.065	0.018	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.389	<0.111	<0.028	<0.042	<0.028	<0.069
28/05/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.043	<0.069	<0.069	0.347	<0.111	0.075	0.023	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/06/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.071	<0.069	<0.069	0.238	<0.111	0.061	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/06/15	<0.278	<0.278	<0.111	0.008	<0.011	<0.042	<0.028	<0.278	0.061	<0.069	<0.069	0.179	<0.111	0.064	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.5	<0.042	<0.417	<0.004	0.292	<0.111	<0.028	<0.042	<0.028	<0.069
18/06/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.06	<0.069	<0.069	0.197	<0.111	0.056	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
01/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.054	<0.069	<0.069	0.071	<0.111	0.044	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
08/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.064	<0.069	<0.069	0.346	<0.111	0.056	0.066	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
11/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.161	<0.111	0.062	0.02	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.042	<0.069
20/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	1.111	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.051	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
14/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.081	<0.111	0.043	0.015	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.054	<0.069	<0.069	0.147	<0.111	0.047	0.016	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/09/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.051	<0.069	<0.069	0.115	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
20/10/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.097	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
21/10/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	0.04	<0.278	0.099	<0.069	<0.069	0.111	<0.111	0.054	<0.028	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.033	<0.069
13/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.056	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.074	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	0.087	<0.111	0.053	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
18/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.065	<0.069	<0.069	0.069	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	0.072	<0.069

** Criteria effective on July 1, 2016*

Table A-5 24-Hour Average Metal Concentrations, TSP-3, December 2014 – December 2015

Sample Date	Aluminum (Al), total µg/m³	Antimony (Sb), total µg/m³	Arsenic (As), total µg/m³	Barium (Ba), total µg/m³	Beryllium (Be), total µg/m³	Boron (B), total µg/m³	Cadmium (Cd), total µg/m³	Calcium (Ca), total µg/m³	Chromium (Cr), total µg/m³ *	Cobalt (Co), total µg/m³	Copper (Cu), total µg/m³	Iron (Fe), total µg/m³	Lead (Pb), total µg/m³	Magnesium (Mg), total µg/m³	Manganese (Mn), total µg/m³ *	Molybdenum (Mo), total µg/m³	Nickel (Ni), total µg/m³	Phosphorus (P), total µg/m³	Potassium (K), total µg/m³	Selenium (Se), total µg/m³	Silicon (Si), total µg/m3	Silver (Ag), total µg/m³	Sodium (Na), total µg/m³	Strontium (Sr), total µg/m³	Sulphur (S), total µg/m³	Tin (Sn), total µg/m³	Titanium (Ti), total µg/m³	Vanadium (V), total µg/m³	Zinc (Zn), total µg/m³	Zirconium (Zr), total µg/m³
Ontario AAQC (24-hr avg)		**25**	**0.3**	**10**	**0.01**	**120**	**0.025**		**0.5**	**0.1**	**50**	**4**	**0.5**		**0.4**	**120**	**0.2**			**10**		**1**		**120**		**10**	**120**	**2**	**120**	
12/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.306	0.096	<0.069	<0.069	0.367	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	0.694	<0.069	1.472	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.319	0.097	<0.069	<0.069	0.315	<0.111	<0.042	0.021	<0.069	<0.069	<0.417	0.694	<0.069	1.097	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
14/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.103	<0.069	<0.069	0.272	<0.111	<0.042	0.014	<0.069	<0.069	<0.417	<1.389	<0.069	0.611	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/12/14	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.099	<0.069	<0.069	0.339	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	1.569	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
12/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.081	<0.069	<0.069	0.351	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.053	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.076	<0.069	<0.069	0.065	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.569	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
18/01/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.061	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
12/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.06	<0.069	<0.069	0.043	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	0.064	<0.028	0.431	0.09	<0.069	<0.069	0.325	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.542	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.306	0.068	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
18/02/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.292	0.131	<0.069	<0.069	0.046	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.972	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
06/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.057	<0.069	<0.069	0.054	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
07/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.057	<0.069	<0.069	0.147	<0.111	0.05	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.054	<0.069	<0.069	0.054	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.472	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/03/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.056	<0.069	<0.069	0.062	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.833	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
02/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.097	<0.069	<0.069	0.317	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
03/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.101	<0.069	<0.069	0.289	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
04/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.094	<0.069	<0.069	0.332	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
05/04/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.118	<0.069	<0.069	0.433	<0.111	<0.042	0.024	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
21/05/15	2.583	<0.278	<0.111	<0.042	<0.011	0.218	<0.028	6.417	<0.042	<0.069	<0.069	0.247	<0.111	0.51	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	0.151	<0.278	<0.111	<0.028	<0.042	0.051	<0.069
22/05/15	2.097	<0.278	<0.111	0.018	<0.011	0.165	<0.028	5.083	<0.042	<0.069	<0.069	0.238	<0.111	0.421	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	0.12	<0.278	<0.111	<0.028	<0.042	0.04	<0.069
23/05/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.05	<0.069	<0.069	0.274	<0.111	0.071	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
24/05/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.417	0.05	<0.069	<0.069	0.332	<0.111	0.106	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.431	<0.111	<0.028	<0.042	<0.028	<0.069
16/06/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.047	<0.069	<0.069	0.214	<0.111	0.075	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/06/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.333	0.049	<0.069	<0.069	0.228	<0.111	0.082	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.333	<0.111	<0.028	<0.042	<0.028	<0.069
18/06/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.306	0.057	<0.069	<0.069	0.157	<0.111	0.049	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
01/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.06	<0.069	<0.069	0.128	<0.111	0.057	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	0.306	<0.111	<0.028	<0.042	<0.028	<0.069
08/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.053	<0.069	<0.069	0.082	<0.111	0.05	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
11/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	<0.042	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
20/07/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.042	<0.069	<0.069	0.254	<0.111	0.071	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
14/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.051	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	0.472	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069

Sample Date	Aluminum (Al), total µg/m³	Antimony (Sb), total µg/m³	Arsenic (As), total µg/m³	Barium (Ba), total µg/m³	Beryllium (Be), total µg/m³	Boron (B), total µg/m³	Cadmium (Cd), total µg/m³	Calcium (Ca), total µg/m³	Chromium (Cr), total µg/m³ *	Cobalt (Co), total µg/m³	Copper (Cu), total µg/m³	Iron (Fe), total µg/m³	Lead (Pb), total µg/m³	Magnesium (Mg), total µg/m³	Manganese (Mn), total µg/m³ *	Molybdenum (Mo), total µg/m³	Nickel (Ni), total µg/m³	Phosphorus (P), total µg/m³	Potassium (K), total µg/m³	Selenium (Se), total µg/m³	Silicon (Si), total µg/m3	Silver (Ag), total µg/m³	Sodium (Na), total µg/m³	Strontium (Sr), total µg/m³	Sulphur (S), total µg/m³	Tin (Sn), total µg/m³	Titanium (Ti), total µg/m³	Vanadium (V), total µg/m³	Zinc (Zn), total µg/m³	Zirconium (Zr), total µg/m³
15/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.043	<0.069	<0.069	0.119	<0.111	0.047	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/08/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.042	<0.069	<0.069	0.311	<0.111	0.06	0.07	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
20/10/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.054	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
21/10/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.078	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
13/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.074	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
15/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.056	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/11/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.051	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	-	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
16/12/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.05	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
17/12/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.064	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
18/12/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	<0.278	0.047	<0.069	<0.069	<0.042	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069
19/12/15	<0.278	<0.278	<0.111	<0.004	<0.011	<0.042	<0.028	0.292	0.081	<0.069	<0.069	0.344	<0.111	<0.042	<0.011	<0.069	<0.069	<0.417	<1.389	<0.069	<0.417	<0.042	<0.417	<0.004	<0.278	<0.111	<0.028	<0.042	<0.028	<0.069

** Criteria effective on July 1, 201*

APPENDIX B

STATISTICAL TESTS RESULTS

	Non-paramteric	Pairwise comparisons (Wilcoxon test) p-values**		
Parameter	**Kruskal-Wallis p-value***	**TSP-1/TSP-2**	**TSP-1/TSP-3**	**TSP-2/TSP-3**
TSP	0.6424	-	-	-
PM_{10}	0.4	-	-	-
$PM_{2.5}$	0.1218	-	-	-
Al	0.2865	-	-	-
Ba	0.2937	-	-	-
B	0.2624	-	-	-
Cd	0.2542	-	-	-
Ca	0.2058	-	-	-
Cr	0.04454	0.6098	0.2385	0.3337
Fe	3.37E-06	0.4596	0.008669	0.0007368
Pb	0.2021	-	-	-
Mg	0.7859	-	-	-
Mn	0.009427	0.09865	0.5821	0.2113
Si	0.103	-	-	-
Na	0.03388	0.3253	0.145	0.186
Sr	0.5215	-	-	-
S	0.5333	-	-	-
Sn	0.2686	-	-	-
Ti	0.5194	-	-	-
Zn	0.005951	0.8535	0.01559	0.05001

** Compared to α=0.05*

*** Compared to α=0.017 (using Bonferroni adjustment α/x where α is the overall significance level and x=3 for 3 pairwise comparisons)*

APPENDIX D

BELLEKENO MINE EEM CYCLE 2 INTERPRETIVE REPORT

ALEXCO ENVIRONMENTAL GROUP

Bellekeno Mine Environmental Effects Monitoring

CYCLE 2 INTERPRETIVE REPORT

FINAL

March 2016

Prepared for:

ALEXCO KENO HILL MINING CORP.

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March 7, 2016

Alexco Keno Hill Mining Corp.

attn.: Steven Wright

Environment Canada
Environmental Protection Operations Directorate
Pacific & Yukon Region
201-401 Burrard Street
Vancouver, BC V6C 3S5

Dear Steven Wright:

Regarding: Bellekeno Mine Cycle 2 EEM Interpretive Report

The Bellekeno Mine, subject to the Metal Mining Effluent Regulations (MMER) since, September 7th, 2010, has undergone a first cycle of the Environmental Effects Monitoring (EEM) in 2012. The Cycle 2 EEM Study Design was submitted in February 2015. This current submission represents the Cycle 2 Interpretive Report. We trust that this submission fulfills the study design requirements as outlined in Schedule 5 of the MMER.

Sincerely,
Alexco Environmental Group Inc.

Kai Woloshyn
Environmental Manager

DISTRIBUTION LIST

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EXECUTIVE SUMMARY

In compliance with the Metal Mining Effluent Regulations (MMER) of the Fisheries Act, Environmental Effects Monitoring (EEM) must be conducted at the Bellekeno Mine to determine whether Mine effluent is causing effects on benthic invertebrate communities, fish populations and/or fish tissues (e.g., mercury accumulation; Environment Canada 2012a). The EEM program consists of routine effluent and water quality monitoring studies as well as biological monitoring studies. The Bellekeno Mine became subject to MMER on September 7th 2010 as a result of exceeding the treated effluent flow rate of 50 m^3 per day, stipulated in the regulation. Cycle 1 Environmental Effects Monitoring (EEM) Study Design was developed in 2011 and implemented in 2012. An Interpretive Report of the first EEM study for the Bellekeno Mine was finalized in March 2013. The objective of this Cycle 2 EEM interpretive report is to present results of chemical and biological monitoring carried out in accordance with the Cycle 2 Study Design submitted in February 2015, in order to meet the objectives of the EEM program in compliance with the MMER.

The benthic invertebrate community survey was conducted on September 1st and 2nd, 2015, consistent with the methodology and samplings locations used during the Cycle 1 study. Reference 1 site was situated in a relatively pristine reach of the river where historical placer alterations were minimal. Reference 2 sampling site was located in a placer-impacted reach of the creek and upstream of any discharge from the Mine or Thunder Gulch and Exposure 2 sampling area included all the downstream influences of the current placer activities and the Mine effluent discharge. Water and sediment samples were collected and analyzed in conjunction with the benthic invertebrates. Water chemistry analysis indicated the presence of a metal concentration gradient moving downstream, with an increase in the number of metals present and a rise in their concentrations moving downstream. Stream sediment analysis however indicated an opposite trend, with the most upstream site (Reference 1) having the highest number and magnitude of guideline exceedences for metals. A statistical analysis of the benthic invertebrate community structure indicated that all of the endpoints examined (density, diversity, Simpson's evenness, Bray-Curtis Index, % EPT, % Diptera, % Chironomids) presented a significant difference between the two reference areas (except for %EPT), indicating a potential impact of the historical placer mining activities. Only density and % Diptera had a significant difference between the Reference 2 and Exposure 2 areas. Even though water chemistry results showed that water quality is somewhat degraded at Exposure 2 site in comparison to the reference areas, the fact that TSS and turbidity are also elevated at Exposure 2 site could support linking those results to current placer mining activities rather than to the Bellekeno Mine effluent.

As described in the Cycle 2 Study Design, a fish laboratory exposure study was undertaken instead of a traditional EEM fish monitoring program, due to a naturally low fish population. Additionally, the controlled laboratory study allowed for distinguishing potential effects of the Bellekeno Mine effluent from effects of the Thunder Gulch placer Mine discharge, an influence that would be challenging or not possible to isolate *in situ*. Fish were randomly distributed into three groups and submitted to identical growing conditions with the only variable being the water quality. The control group was reared in Lightning Creek water obtained from the reference area upstream of Thunder Gulch and the Bellekeno Mine (Reference) – this location corresponds to the Reference 2 area of the benthic invertebrate study. The exposure group 1 (Exposure 1) was reared in water obtained at the same location as for the Control group but with Mine effluent water added at a concentration of 2.5%. The second exposure group (Exposure 2) was reared in Lightning Creek water extracted downstream of all disturbances/influences including the infiltration of the Bellekeno Mine effluent and the current placer mine activity in Thunder Gulch. The analysis of fish metrics endpoints before and after 41 days of experiment demonstrated no increased mortality associated with exposure to mine effluent, and a positive effect on fish

growth and condition relative to reference water of Lightning Creek. Overall, the fish from the Exposure 1 tank achieved better growth and final condition compared to the Exposure 2 and Reference groups.

As recommended in the Cycle 1 Interpretive report, a tracer study was conducted in the fall of 2015 to determine the subsurface flow path of the Bellekeno Mine effluent. Bellekeno Mine effluent leaving the last treatment pond at control point KV-43, proceeds through an underground pipe which discharges on a steep hillslope above Lightning Creek. Fluorescein dye was introduced at the pipe outlet and ten sampling locations were established in Lightning Creek. A reference site at the Lightning Creek placer miner bridge and above Thunder Gulch was denoted as TS-01. TS-02-08 are spaced every 50 meters downstream of the bridge and TS-09 and TS-10 were spaced at 100 meters. Assuming the dye travels as a plume which expands both downward and horizontally from the point of entry, results indicated that the center of the plume and therefore the greatest concentration of the effluent is between TS-08 and TS-09 (see Figure 2-3).

Effluent characterization results for the period of temporary suspension of mine operations (September 4th, 2013 to time of reporting (December 31, 2015)) showed no exceedance of the MMER authorized grab limit and one exceedance of the MMER authorized monthly mean (TSS - January 2015). For parameters that are not subject to MMER but for which an effluent standard is set in the Water Use Licence (WUL), no exceedances were observed during the same period. Bioassay tests for acute toxicity have been conducted monthly, using rainbow trout (*Onchorhynchus mykiss*, 96h pass/fail) and *Daphnia magna* (48h pass/fail) since September 2010. Rainbow trout results conducted between September 2010 and December 2015 have returned non-toxic results with the exception of December 2011 where results failed the <50% mortality threshold. Results for *Daphnia magna* also returned non-toxic results with the exception of October 2011 where results failed the <50% mortality threshold. Sublethal toxicity tests are conducted twice per year using effluent collected at the station KV-43 control point, on rainbow trout (*Oncorhynchus mykiss;* 7-day early life stage survival test), a cladoceran invertebrate (*Ceriodaphnia dubia;* 7-day survival and reproduction test), duckweed (*Lemna minor*; 7-day growth inhibition test), and a green algae (*Psuedokirchneriella subcapitata*; 3-day growth inhibition test). No effluent-related adverse influences to fish embryos, planktonic invertebrates, aquatic plants or algae are predicted in Lightning Creek based on comparison of sub-lethal toxicity geometric mean effect concentrations from 2010 to 2015 and receiving environment effluent concentrations.

As part of the EEM requirements for the Bellekeno Mine, AKHM has been conducting and will continue to conduct monthly water quality monitoring in Lightning Creek effluent-exposed and reference areas. Results up to July 2014 were presented in the Cycle 2 Study Design. For the period of August 2014 to December 2015, parameters frequently exceeding the CCME guideline for the Protection of Aquatic Life (PAL) include aluminum, cadmium, chromium, copper, iron and lead. Parameters with occasional exceedances include pH, arsenic, mercury, selenium, silver and zinc. Concentrations are generally the highest at stations KV-65 and KV-76 (Thunder Gulch) and the lowest at KV-37 (Lightning Creek upstream). In Lightning Creek, the highest concentrations are found at KV-41 and KV-81, located downstream of Thunder Gulch confluence, indicating the probable influence of Thunder Gulch. Thunder Gulch water quality is likely affected by placer mining activities given there is no direct discharge to Thunder Gulch from Bellekeno.

The Cycle 2 EEM benthic invertebrate survey generally supports the conclusion from the Cycle 1 study that suggests there is no clear effluent-related influences on the benthic invertebrate community of Lightning Creek. Differences in organism density and composition between effluent-exposed and reference areas are more consistent with a placer mining-related habitat influence than with an effluent toxicity-related response.

The fish laboratory exposure trials indicate no increase in mortality and a positive effect on fish growth and condition from short term exposure to reference water mixed with mine effluent relative to Lightning Creek reference water alone.

Recommendations for future studies include the establishment of a benthic invertebrate sampling site on Lightning Creek upstream of the Mine effluent main point of entry and downstream of Thunder Gulch or any active placer mining discharge, to better isolate the two influences. A tracer study was undertaken as part of this program that delineates where the Mine effluent enters Lightning Creek. This will allow for future establishment of a benthic sampling station that is exposed to active placer mining only. Also, since the results of the two cycles of biological monitoring indicate a similar type of effect on the benthic invertebrate community, it is recommended that one or more additional sampling site(s) within the exposure area be incorporated in the Bellekeno Cycle 3 Study Design, in order to assess the magnitude and geographic extent of the effect, as required under the MMER.

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1 INTRODUCTION

The Bellekeno Mine is a silver-lead-zinc mine located in the Keno Hill Silver District of central Yukon (Figure 1-1). The mine operated by Alexco Keno Hill Mining Corp. (AKHM) transitioned from the advanced exploration program to commercial production in September 2010. The Bellekeno Mine became subject to MMER on September 7th 2010 as a result of exceeding the treated effluent flow rate of 50 m^3 per day stipulated in the regulation (ACG and Minnow 2011). The mine announced a temporary closure as of September 4th 2013 and operation continues to be suspended at this time.

Although mining at Bellekeno is temporarily suspended, the mine requires de-watering. In the fall of 2015 infrastructure was removed from the 900 level of the mine to allow for the lower portion of the mine (up to 800 level) to be flooded. As of November 26, 2015 there has been no water discharged from the Bellekeno Mine and discharge is not anticipated to resume until Q2 of 2016. Once water reaches the 800 level it will be pumped to the 625 adit and treated if required before being discharged to Lightning Creek.

Water pumped from the underground workings is treated prior to discharge. The Bellekeno Mine waste water treatment process involves lime and ferric chloride addition followed by settling and multi-media filtration prior to discharge to a decant box that releases treated effluent to the ground within the Lightning Creek catchment. From the discharge location (KV-43), effluent infiltrates to ground, flows underground, and enters Lightning Creek downstream of Thunder Gulch (Figure 1-2). Lightning Creek is a second order stream, draining into Duncan Creek, which then flows south into the Mayo River, a key tributary of the Stewart River. An active placer mining operation is located on Thunder Gulch. Lightning Creek was also subject to historical placer mining activities which resulted in substantial habitat alteration both upstream and downstream of Thunder Gulch.

The Bellekeno Cycle 1 Interpretive Report recommended the implementation of a tracer study validating the assumption that the Bellekeno Mine effluent infiltrates Lightning Creek downstream of Thunder Gulch. "Knowledge concerning the location of effluent reception in Lightning Creek is important for possibly delineating the relative influence of Mine effluent on water quality of Lightning Creek from that of active placer mining." (Minnow 2013). With intent of delineating the location(s) of infiltration, a fluorescent dye tracer study was undertaken and is discussed further in this report.

The potential effects the Bellekeno Mine effluent has on Lightning Creek's biota and chemistry is difficult to assess given the ground infiltration of the Mine effluent, effects of historical mining in the area (upper Lightning Creek watershed) and the proximity of the discharge coming from the placer mining operation.

Under the Metal Mining Effluent Regulations (MMER) of the Fisheries Act, Environmental Effects Monitoring (EEM) must be conducted at the Bellekeno Mine to determine whether Mine effluent is causing effects on benthic invertebrate communities, fish populations and/or fish tissues (Environment Canada 2012a). The first Cycle of the mine under the MMER was initiated with the Cycle 1 Study Design in 2011 and completed in March 2013. The Cycle 2 Study Design was developed and provided to Environment Canada in February 2015 and the study was implemented in late summer of 2015.

This Cycle 2 Interpretive Report documents methods, data and results pertaining to routine effluent and water quality monitoring studies as well as laboratory (fish) and in situ biological monitoring studies (benthos) and derived conclusions. In order to acquire a better understanding of the plume delineation of the effluent

infiltration into Lightning Creek, a preliminary tracer study was conducted. Minor deviations from the design in the laboratory exposure study were required and Environment Canada was notified of these modifications in advance of implementing the study.

Strict QA/QC procedures were adhered to throughout the study and are further described in the different sections of the report.

AKHM

AEG

BELLEKENO PROJECT - ENVIRONMENTAL EFFECTS MONITORING PROGRAM - CYCLE 2 INTERPRETIVE REPORT

FIGURE 1-1

PROJECT LOCATION

482000 483000 484000 485000 486000 487000 488000

7088000 7087000 7086000

N W E S

Christal Creek
Erickson Gulch
Mackeno Creek
Christal Lake
Hinton Creek
Christal Creek Intermittent
Lightning Creek
Thunder Gulch

KENO CITY
DISTRICT MILL SITE
DISTRICT MILL WEATHER STATION
KV-43
EXISTING BELLKENO 625 WATER TREATMENT AREA
BELLEKENO 625 ADIT
BELLEKENO EAST ADIT
P-AML STORAGE FACILITY

Main Map: 1:16,000 (when printed on 11 x17 inch paper)

0 250 500 1,000 1,500 Meters

Aerial photograph obtained from Geodesy Remote Sensing Inc., Calgary Alberta. Imagery acquired September 13th and 14th 2006.
Site hydrography and contours derived from 2006 aerial imagery obtained from Aero Geometrics, Calgary Alberta.
Sattelite Imagery obtained from Yukon Geomatics web service http://mapservices.gov.yk.ca/ArcGIS/services on February 2016

Datum: NAD 83; Map Projection: UTM Zone 8N

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- Keno City
- Mill Weather Station
- Adit
- Water Quality Station
- Silver Trail Highway
- Local Road
- Haul Road
- Mill Access Road
- Limited-Use Road
- Building
- Footprints
- Pond/Water Treatment Facility
- District Mill Footprint
- Underground Workings
- Contours (10 m)

AKHM AEG

BELLEKENO MINE PROJECT - ENVIRONMENTAL EFFECTS MONITORING PROGRAM - CYCLE 2 INTERPRETIVE REPORT

FIGURE 1-2

BELLEKENO PROJECT OVERVIEW

FEBRUARY 2016

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2 METHODS

As part of the Bellekeno EEM cycle 2 program, the following components were evaluated or studies undertaken:

- Benthic invertebrate community;
- Fish laboratory exposure;
- Supporting environmental variables;
- Fluorescein tracer study;
- Sub-lethal toxicity testing; and
- Effluent characterization and water quality.

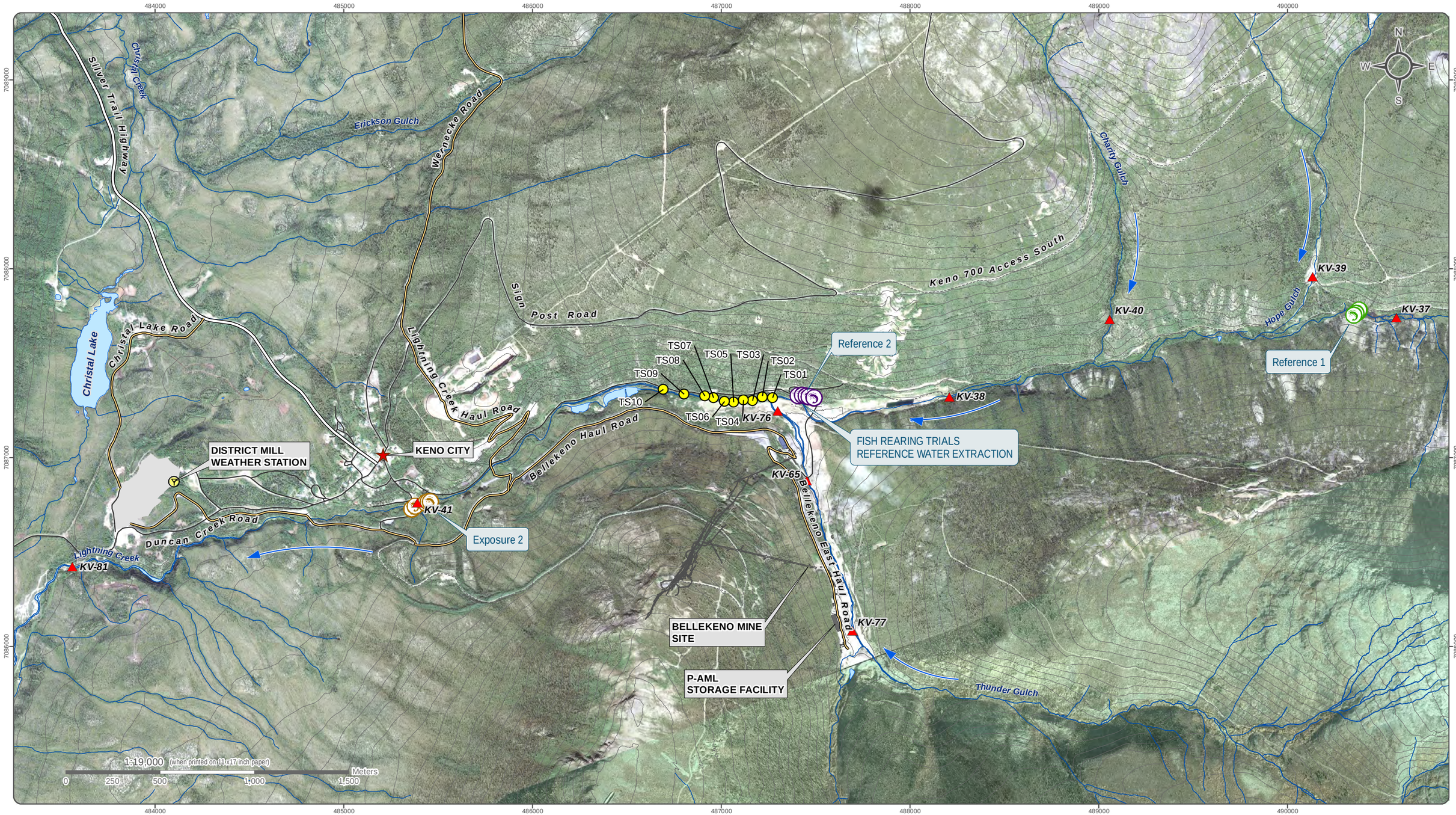
2.1 BENTHIC INVERTEBRATE COMMUNITY SURVEY

The benthic invertebrate communities of Lightning Creek were sampled as per the study design following a multiple Control Impact design (MCI). Organisms were collected in respect of a quantitative method at the same sampling locations, similar seasonal timing and methodology implemented in Cycle 1 and described in the Cycle 2 Study Design, in order to facilitate the detection of any effects, as per the MMER.

Lightning Creek encompasses both the receiving environment and the reference sites. The infiltration of the Mine effluent in relation to the infiltration of Thunder Gulch discharge in Lightning Creek is relatively merged. Because of historical and current placer mining activities, finding an exposure sampling site that could isolate the influence of Bellekeno Mine effluent was very challenging. In addition, the historical anthropogenic alteration of the channel characteristics and the high velocity of the stream posed a challenge in terms of habitat availability for benthic sampling.

Consequently, the sampling sites were selected as follows: the most upstream reference area (Reference 1) was situated in a relatively pristine reach of the river where historical placer alterations were minimal. Reference 2 sampling site was located in a placer-impacted reach of the creek and upstream of any discharge from the Mine or Thunder Gulch (Figure 2-1). Finally, the Exposure 2 sampling area included all the downstream influences of the current placer activities and the Mine effluent discharge. Sampling sites were in proximity to established regular water quality monitoring stations KV-37 (Reference 1), KV-38 (Reference 2) and KV-41 (Exposure 2) and sample sites selected for the Cycle 1 EEM Study. The benthic invertebrate community survey was conducted on September 1st and 2nd, 2015, which is also consistent with the seasonal timing of previous studies.

Samples were collected using the “Traveling kick net sampling method”. This is the recommended approach for samples being collected as part of the Canadian Aquatic Biomonitoring Network (CABIN), an aquatic monitoring program maintained by Environment Canada (2012b). Under this approach, sampling is conducted while zig-zagging across/along a riffle stream section to provide a standardized time rather than area delimited estimate of relative organism abundance.



Aerial photograph obtained from Aero Geometrics. Imagery acquired September 13th and 14th 2006.

Site hydrography and contours derived from 2006 aerial imagery obtained from Aero Geometrics, Calgary Alberta.

Sattelite Imagery obtained from Yukon Geomatics web service http://mapservices.gov.yk.ca/ArcGIS/services on February 2016

Datum: NAD 83; Map Projection: UTM Zone 8N

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BENTHIC SAMPLING STATIONS

- Reference 1
- Reference 2
- Exposure 2

- Keno City
- EEM Tracer Study Sampling Point
- Surface Water Quality Station
- Adit
- Underground Workings

- Haul Road
- Silver Trail Highway
- Other Road
- Limited-Use Road
- Contours (20 m)

- Watercourse
- Waterbody
- District Mill Footprint

AKHM

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BELLEKENO MINE PROJECT - ENVIRONMENTAL EFFECTS MONITORING PROGRAM - CYCLE 2 INTERPRETIVE REPORT

FIGURE 2-1

LOCATION OF BENTHIC INVERTEBRATE COMMUNITY AND TRACER STUDY

FEBRUARY 2016

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Consistent with EEM guidance regarding adequate statistical power to detect differences of ± two standard deviations at an α and β of 0.10, kick sampling was conducted at five stations from each study area (Environment Canada 2012a). A triangular kick net was used with a base of 36 cm (510 cm^2 aperture) outfitted with 400 µm mesh. As per CABIN protocols (Environment Canada 2012b), riffle habitat at each station was sampled for a 3 minute period.

Following the three minute collection period, all material and organisms retained in the collection net were carefully transferred into wide-mouth plastic jars containing both internal and external identification labels. The benthic samples were preserved on site with 10% buffered formalin. Samples were sent to Cordillera Consulting in Summerland (BC). Taxonomy was conducted by a taxonomist certified from the Society of Freshwater Science (SFS) Taxonomic Certification Program, which is the required certification for CABIN protocol.

2.1.1 Water and Sediment Sampling Location

Water samples were collected, prior to entering the stream for benthic invertebrate sampling, in accordance with the EEM protocol and the Water Use Licence (WUL) QZ09-092 requirements. In situ water parameters were measured with a calibrated YSI Pro Plus.

Stream sediments were collected from the Reference 1, Reference 2 and Exposure 2 sites of Lightning Creek (Figure 2-1), in areas of slow moving water adjacent to the benthic invertebrate sampling locations. Sediment samples were collected in triplicate with a Teflon trowel at different locations along the main active channel and distributed in three wide-mouth 120 ml glass jars. Samples were kept cool and in the dark until delivered to ALS Laboratories for analysis.

Laboratory sample preparation was completed according to WUL protocol specification. Sediments were dried and screened for particle size distribution and the fine fraction (≤ 2 mm) of the sediment was analysed for total metal chemistry.

2.2 FISH LABORATORY EXPOSURE

As described in Cycle 1 Interpretive Report, naturally low fish populations of Lightning Creek prevents undertaking a conventional EEM fish survey, despite high sampling efforts. Therefore, a controlled fish exposure study was developed. More specifically, a laboratory-based exposure protocol was used to determine if Lightning Creek water receiving effluent from the Bellekeno Mine causes differences in growth, survival or condition of kokanee salmon (*Oncorhynchus nerka)* relative to reference water. Although kokanee salmon is not native to this system, it is a salmonid reared at a fish hatchery in Whitehorse, Yukon with original parent stock coming from the Kathleen River system in Yukon. These kokanee are well adapted to hatchery rearing conditions and have relatively good growth rates and high metabolism in cold water much like Arctic grayling, a salmonid which does occur in Lightning creek. The two prominent species of fish inhabiting Lightning Creek are Arctic grayling and slimy sculpin. The numbers of these fish in the system are very low (as demonstrated during the Cycle 1 EEM) and these species are not available from hatchery facilities. Therefore it was necessary to use a species that is not indigenous to the system. Additional rationale for selecting kokanee salmon for this exposure study includes:

- Kokanee salmon are reared locally in the Yukon and were available in sufficient quantity for the trials. This avoided having to import live fish from an external source.

- The kokanee are from a group indigenous to the Yukon (Kathleen River system, Kluane National Park) and are 4th generation hatchery stock. Therefore they are well adapted to artificial rearing systems and their behaviour and nutritional requirements are well known.

- The kokanee rearing program involves annual disease screening which indicates that the hatchery population is free of certain pathogens that are known to occur in other kokanee stocks.

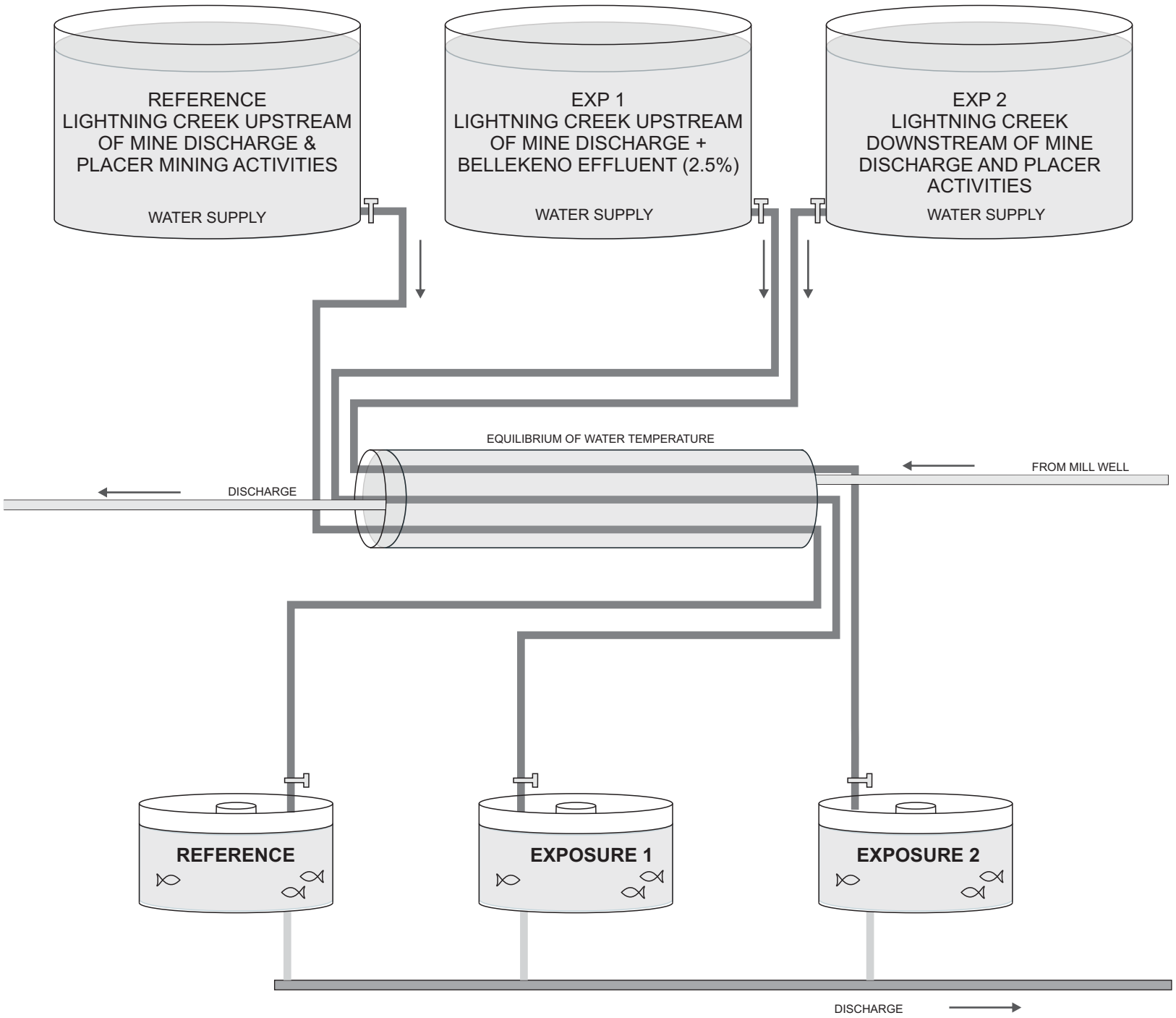
- The Yukon reared kokanee have relatively high growth rates in cold water as they have adapted to cold water conditions in both their natural and hatchery environments. Therefore it can be expected that their metabolic rate will be higher in colder creek water then might be the case for another species such as rainbow trout. This in turn provides more likelihood for effects to manifest if in fact it is triggered by water quality.

- The kokanee present a very consistent growth rate between individuals which in turn minimised growth rate standard deviations within each group.

2.2.1 Description of Fish Exposure Infrastructure

The infrastructure for the exposure trials was assembled inside the mill building of the Bellekeno District Mill which is temporarily closed for operation. The use of a shelter allowed for better control of critical variables such as temperature and light. The infrastructure consisted of three circular rearing vessels 1.47 m in diameter and 0.30 m deep (0.225m water depth) providing 0.38 m^3 of wetted rearing volume. Rearing vessels received water gravitationally supplied by three individual water reservoirs with dimensions of 1.6 x 1.6 x 1.3 m and total volume of 3.3 cubic meters (Figure 2-2). All three rearing vessels were configured the same and included an air stone, a water re-circulator and a water supply inlet with a flow control valve. A plastic cover was kept on top of the tanks to avoid airborne contamination (see photos in Appendix B-1). The three groups were as described in the C2 Study Design. The control group was reared in Lightning Creek water obtained from the reference area upstream of Thunder Gulch and Bellekeno Mine (Reference) – this location corresponds to the Reference 2 area of the benthic invertebrate study. The exposure group 1 (Exposure 1) was reared in water obtained at the same location as the water obtained for the Control group but with Mine effluent water added at concentration of 2.5%. This concentration represents the upper range of effluent concentration in Lightning Creek that has been observed during low flow conditions, based on historical data presented in the Cycle 2 Study Design. The second exposure group (Exposure 2) was reared in Lightning Creek water extracted downstream of all disturbances/influences including the infiltration of the Bellekeno Mine effluent and the current placer mining activity situated in Thunder Gulch. This location corresponds to the Exposure 2 area of the benthic invertebrate study (Figure 2-1) and to regular water quality monitoring station KV-41.

A passive heat exchange system supplied by ground water of constant temperature of 3°C was set up to allow equilibrium of the water temperature between the tanks and maintain cool temperatures independently from ambient air temperature. Water flowing through the system was then delivered to each tank at a flow rate ranging between 200 to 250 ml per minute.



CONCEPTUAL DRAWING; FEATURES ARE NOT TO SCALE

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ENVIRONMENTAL EFFECTS MONITORING PROGRAM CYCLE 2

FIGURE 2-2

FISH GROWTH TRIALS REARING SYSTEM SCHEMATICS

AEG

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2.2.2 Modifications to Study Design

Minor modifications to the study design protocol were presented to Environment Canada prior to the start of the study and were subsequently implemented. Modifications included a reduction in the number of fish in each tank from 200 to 150 individuals as well as reducing mid-program sub-sampling to one event from an original two. A total of 456 young of year (0+) kokanee salmon supplied from Whitehorse Rapid Fish Hatchery (brood stock originating from the Kathleen River/lake system in Yukon) were randomly selected and distributed in Reference, Exposure 1 and Exposure 2 groups on August 8th for a duration of 41 days.

2.2.3 Monitoring of study

The daily monitoring of *in situ* water parameters allowed for adjustment and maintenance of appropriate water parameters and consistency between the tanks to promote fish health and optimal growth. Parameters of interest included pH, dissolved oxygen, temperature, ammonia and specific conductance (SPC), and were measured on a daily basis.

Given the volume of the holding tanks and the flow necessary to maintain optimal parameters, the tanks were refilled every 3 to 4 days. Water was pumped directly from Lightning Creek at the locations described above and hauled with a 3.5 cubic meter tank to the mill site in the holding tank. Trips were completed within a few hours of each other to ensure the baseline of the water chemistry would be of similar nature.

For the Exposure 1 group, approximately 80 litres of water was collected directly from the Bellekeno Mine discharge flow monitoring weir during each re-filling event. This effluent water was then added to the Lightning creek water collected for this group effectively providing a water mix with 2.5% Bellekeno effluent.

2.2.3.1 In situ water parameters and Water Quality

During the biological monitoring, *in-situ* water temperature, pH, dissolved oxygen, specific conductance and ammonia were recorded once or twice daily for each tank using a calibrated YSI Pro Plus unit and an Oakton Waterproof meter for ammonia. Additionally, with the intent of collecting precise and continuous water temperature data, three Onset TidbiT® v2 temperature data logger (UTBI-001) were deployed in each fish tank with readings captured at 10-minute intervals.

Water chemistry in the tanks was sampled and analyzed on a weekly basis. Water quality samples were extracted directly from the fish tanks into labeled bottles, preserved and filtered when required. Water samples were stored in a cooler to maintain cool temperatures during shipment to the laboratory. All samples were shipped to ALS Laboratory in Whitehorse then transferred to Vancouver for some of the required analyses. Samples were analyzed for routine parameters (temperature, pH, conductivity, hardness, alkalinity, TSS, ammonia, nitrate, and metals).

The water quality data were compared with EEM guidelines and evaluated relative to the Canadian Water Quality Guidelines (CWQG; CCME 1999) and provincial criteria for British Columbia. Given its significant importance for fish health, total ammonia was monitored on site as well through the water quality laboratory analysis.

2.2.4 Fish Metrics and Condition endpoints

Fish were fed 100% commercial feed salmon diet adjusted to their life stage and fed at rates according to tables provided by the manufacturer. Feed rates were based on temperature and fish size. Each tank was fed the same ration of food daily. Key endpoints included growth (length, weight) and condition (Fulton's index, length-at-body-weight relationship), survival as well as the presence of abnormalities and deformities. As part of the assessment objectives, the initial condition of the fish was part of the initial measurements where fork length (± 0.01 mm), total length (± 0.01 mm), weight (± 0.001 g) as well as any observed abnormalities were recorded. Fish lengths were measured using electronic callipers with 0.01 mm precision and weight was measured to the nearest 0.001 g using a Scientech® ZSA scale ranging to 120 g at a 0.0001 g precision.

All 456 kokanee salmon fry used in the study were measured on August 8th, the day following their transport to the temporary rearing site. On day 23 of the study (August 31st), a sub-sample of 50 fish per tank was measured for the same metrics. The final measurements were repeated on day 41 on September 18th when 452 fish were re-sampled for weight, fork length and total length. Following final measurements, all fish were destroyed as per the Yukon Environment/DFO transport permit.

Consistent with EEM technical guidance (Environment Canada, 2012a), summary statistics including mean, median, minimum, maximum, standard deviation, standard error and sample size were calculated for endpoints of length, weight and condition. A Before-After-Control-Impact (BACI) approach was employed to assess differences in these endpoints between treatment groups. The "Before" denotes measurements taken on Day 0, while the "After" denotes measurements taken on Day 23 and 41. Accordingly, the Control and Impact denote the control and exposures treatments. The BACI approach thus takes into account any possible differences in size of the fish between treatments prior to any exposures. Statistical differences in these endpoints between the exposure and control group were made using either ANOVA or Analysis of Covariance (ANCOVA) in a manner consistent with Environment Canada (2005, 2012a) guidance. Specifically, at each sampling interval (and using both BACI and CI approaches), an ANOVA was used to assess any significant differences (at α=0.10) in fork length, body weight and condition factor, and ANCOVA was used to assess any significant differences in relative body weight (body weight at length - condition). If significant differences were found, Tukey pairwise comparisons were carried out to determine which group(s) was/were significantly different from the other(s). Where assumptions for ANOVA or ANCOVA were violated and data transformation were not successful in normalizing distributions, non-parametric tests were used. All statistical analyses were carried out with Minitab or R statistical software.

Quality Control/Quality Assurance (QA/QC) to ensure valid testing includes minimum survival of control fish (>90%), as well as consistency of temperature, flow rate, pH and DO among treatments and replicates. Data from any control group holding tank are deemed invalid if >10% fish mortality occurs, and data from that holding tank are not considered in further data analysis.

2.2.5 Fish Tissue Analysis

The analysis of fish tissue in Cycle 1 study found that mercury levels in Arctic Grayling tissue of the exposure area had significantly lower levels of mercury and other metals than at the reference area, although all of the areas were well below Health Canada's threshold of 0.5 µg/g (wet weight in fish tissue) for human

consumption. Also, the water quality monitoring of Lightning Creek at (KV-37, 38 and 41) confirmed levels of mercury generally below the CCME guidelines for protection of aquatic life of 0.026 µg/g (CCME, 2003).

As indicated in the Bellekeno EEM Cycle 2 study design, mercury concentrations in the Mine effluent were all below 0.10 µg/L during recent effluent characterization events, and therefore did not trigger a requirement to evaluate fish tissue as part of Cycle 2 EEM. This component was nonetheless added to provide complementary information on the potential effect of the Mine effluent on the kokanee salmon during the short-term study. Ten complete fish specimen from each treatment were frozen and sent to ALS Environmental. Laboratory methods included wet/dry metals (CRC ICPMS), mercury (CVAS), silver (CRC ICPMS). The micro digestion method was used for fish smaller than 5g.

The objective of this evaluation was to globally assess fish health and potential accumulation of metals rather than their suitability for consumption.

2.3 SUPPORTING ENVIRONMENTAL VARIABLES

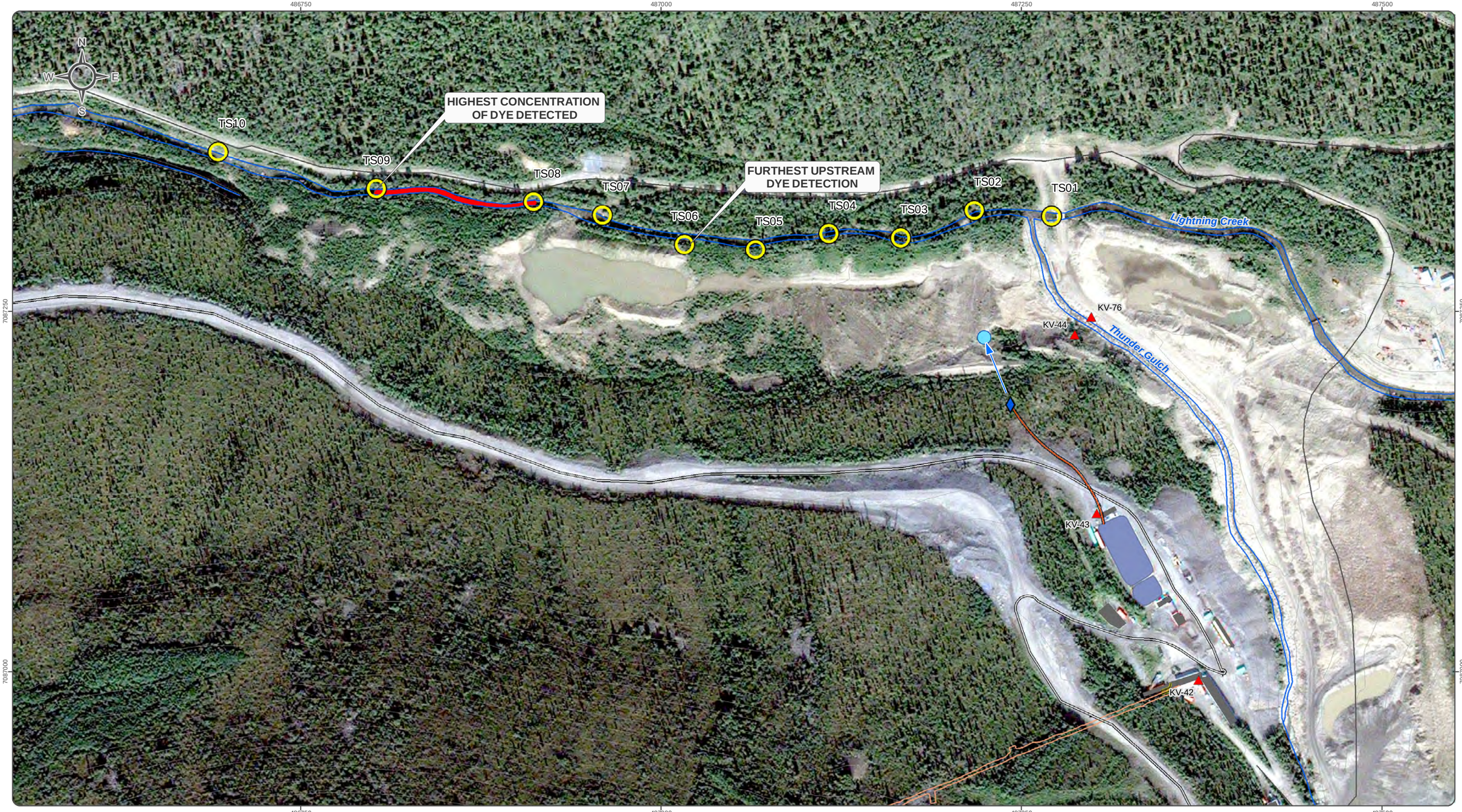
Climate data are continuously being recorded with a Campbell Scientific weather station located in the mill district area (Figure 1-2). The study was established inside the mill building with the intention to stabilize most of the climate parameters such as solar radiation, wind and precipitation. The timing of the fish laboratory exposure study was partially determined based on historical ambient air temperature in the mill area being conducive to water temperature for fish health. Additionally, variables such as the amount of precipitation had a direct impact on the water quality of Lightning Creek and the total suspended solids (TSS) content, which consequently affected the water in the fish tanks.

2.4 TRACER STUDY

A tracer study was carried out in the fall of 2015 to determine the subsurface flow path of the Bellekeno Mine effluent. Bellekeno Mine effluent leaving the last treatment pond at control point KV-43, proceeds through a partially buried pipe which discharges on a steep hillslope above Lightning Creek. The effluent then flows at least partially on the surface downhill and completely infiltrates near a pile of coarse rocks close to the river valley bottom. The infiltration point is downstream of Thunder Gulch and approximately 30-40 meters from Lightning Creek.

In order to trace the flow path of the effluent, fluorescein dye was introduced at the pipe outlet. Ten sampling locations were established prior to dye deployment in Lightning Creek. A reference site at the Lightning Creek placer miner bridge and above Thunder Gulch was denoted as TS-01. TS-02-08 are spaced every 50 meters downstream of the bridge and TS-09 and TS-10 were spaced at 100 meters (Figure 2-3).

Two pounds of Fluorescein was provided by Ozark Underground Laboratory (OUL) in Missouri, USA along with sixty (60) activated carbon samplers which were deployed in pairs. The dye was deployed at 1830h on September 15th, 2015. The first round of samples were collected between 0820h and 0920h on September 19th, 2015 at which time fresh carbon samplers were deployed. The second round of samplers were collected on October 9th between 1454h and 1605h. A small water sample was collected at each site at the time of carbon sampler retrieval.



Site hydrography and contours derived from 2006 aerial imagery obtained from Aero Geometrics, Calgary Alberta.

Sattelite Imagery obtained from Yukon Geomatics web service http://mapservices.gov.yk.ca/ArcGIS/services on February 2016

Datum: NAD 83; Map Projection: UTM Zone 8N

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1:2,500 (when printed on 11 x17 inch paper)

Meters
0 25 50 100 150

- End of Decant Pipe
- Effluent to Ground
- Tracer Study Sampling Location
- Surface Water Quality Station
- Adit
- Reach where Majority of Dye / Effluent enters creek
- Underground Workings
- Pipeline
- Pond
- Building/Structure
- Haul Road
- Other Road
- Limited-Use Road
- Contours (5 m)
- Watercourse

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FIGURE 2-3

BELLEKENO TRACER STUDY OVERVIEW

FEBRUARY 2016

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Dye was deployed and samples were collected in accordance with the instructions provided by OUL for safe handling in order to avoid contamination of samples and false positives. Carbon samplers and water samples were kept in a cooler from time of collection and shipped to the OUL in that cooler with icepacks for analysis. OUL confirms the presence of dye and its concentration in both the carbon samplers and water samples.

It is important to note that at the time of the study Thunder Gulch has been diverted by the placer miner into settlement ponds which flowed back into Lightning Creek below TS-07 as opposed to directly below the bridge (TS-01). It was determined that proceeding with the study was still of value even in light of this unexpected change to the local hydrology.

2.5 EFFLUENT CHARACTERIZATION AND SUB-LETHAL TOXICITY

Effluent volume and characterization samples were collected at the outlet of the Bellekeno 625 Water Treatment System decant point of compliance, referred to as Station KV-43 (Figure 2-1). Effluent characterization samples were shipped to an accredited laboratory (ALS Laboratories) to be analyzed for the entire suite of EEM parameters, using appropriate method detection limits and quality assurance protocols, as stipulated by Environment Canada (2012a). In addition to deleterious substances (arsenic, copper, lead, nickel, zinc, total suspended solids and radium-226) and pH, effluent characterization included analysis of temperature, conductivity, hardness, alkalinity, ammonia, nitrate and additional metals (aluminum, cadmium, iron, mercury, molybdenum and selenium). As part of the effluent characterization, monthly acute toxicity testing (bioassays) on Rainbow trout (*Oncorhynchus mykiss*) and the invertebrate *Daphnia Magna* was also undertaken.

Sublethal toxicity testing was initiated shortly after the start of commercial mine production in 2010 and conducted twice per calendar year until 2014, using effluent collected at the Station KV-43 control point. As per the MMER, sublethal sampling frequency can be reduced to once per year after 3 years and as such, only one sublethal toxicity test occurred in 2015 as there was no discharge from Bellekeno in December 2015. Final effluent samples were collected into pre-labeled plastic containers provided by the toxicity laboratory, put on ice inside coolers and shipped to the toxicity laboratory where they arrived within 48 hours of collection. Sublethal toxicity tests were conducted using rainbow trout (*Oncorhynchus mykiss;* 7-day early life stage survival test), a cladoceran invertebrate (*Ceriodaphnia dubia;* 7-day survival and reproduction test), duckweed (*Lemna minor*; 7-day growth inhibition test), and a green algae (*Psuedokirchneriella subcapitata*; 3-day growth inhibition test) using standard test methods (i.e., Environment Canada 1998; 2007a,b,c).

For *C. dubia* chronic toxicity tests, an LC50 (i.e., lethal concentration to 50% of test organisms) was calculated from the mortality data. Chronic toxicity test EC25 or IC25 values were calculated from the growth or reproductive data. Reference toxicant testing was employed to ensure that all test systems met protocol criteria during effluent testing. All EC25 and IC25 data were derived by the toxicity laboratory using non-linear regression models or linear interpolation models, as appropriate. Sublethal toxicity test results were subsequently reported to Environment Canada as part of the Bellekeno Mine annual reporting and were summarized in this report.

2.6 LIGHTNING CREEK WATER QUALITY MONITORING

As part of the EEM requirements, AKHM has been conducting and will continue to conduct monthly water quality monitoring in Lightning Creek effluent-exposed and reference areas. During the implementation of the Cycle 2 EEM, water samples were collected from areas of biological sampling as described in Section 2.1.1. All water quality sampling methods, analytical parameters, quality assurance/quality control sampling and analyses, sample storage and shipping methods were conducted in accordance with Environment Canada (2012a). Routine water quality monitoring data are reported to Environment Canada as part of the Bellekeno Mine's annual reporting under the MMER. Similar to effluent characterization samples, water quality monitoring samples were shipped to an accredited laboratory (ALS Laboratories) and analyzed for the same suite of variables outlined above. All water quality monitoring results collected up to the time of preparation of the Cycle 2 EEM Interpretive Report are summarized and discussed therein.

3 RESULTS

3.1 BENTHIC INVERTEBRATE COMMUNITY SURVEY

3.1.1 Water Quality

In situ water quality data recorded during the September benthic sampling event is presented in Table 3-1. Overall, *in situ* parameters were similar from one station to another, aside from a minor temperature difference at Reference 1.

Table 3-1 In-situ water quality measurements collected at benthic invertebrate community stations, Bellekeno Mine Cycle 2 EEM

Station	Date and Time	Temperature (°C)	Dissolved Oxygen (mg/L)	pH (pH units)	Specific Conductance (SPC) (µS/cm)
Reference 1 (Downstream of KV-37)	2-Sept-2015 10:00AM	2.7	12.7	7.44	162.6
Reference 2 (Downstream of KV-38)	1-Sept-2015 1:48PM	3.3	12.8	7.25	171.7
Exposure 2 (KV-41)	1-Sept-2015 12:00PM	3.4	12.7	7.44	160.1

Water chemistry analysis of samples collected at Reference 1, 2 and Exposure 2 during the benthic invertebrate study indicated a metal concentration gradient moving downstream, with an increase in the number of metals present and a rise in their concentrations moving downstream. Cadmium (total and dissolved) was the only metal exceeding CCME Protection for Aquatic Life (PAL) at Reference 1. At Reference 2, five metals exceeded the CCME-PAL limit including aluminum, cadmium (total and dissolved), chromium, copper and iron. Exposure 2 had the most metals in exceedance and overall higher concentrations. In addition to the previously mentioned metals, arsenic, lead, mercury, silver and zinc were reported in exceedance of the CCME-PAL guidelines. Metal concentrations for selected parameters (listed in the MMER or constituents historically known to be elevated) are presented in Table 3-2, while complete results are available in Appendix A-2. Numbers shown in red indicate an exceedence of the CCME-PAL guidelines.

Table 3-2. Water chemistry of Lightning Creek sampled during Bellekeno benthic surveys September 1st and 2nd, 2015.

Parameter (mg/l) (Total unless otherwise specified)	CCME Guidelines - Protection of Aquatic Life	Reference 1 (Downstream of KV-37)	Reference 2 (Downstream of KV-38)	Exposure 2 (KV-41)
DOC	-	1.38	1.50	1.91
pH (pH units)	6.5 – 9.0	7.59	7.53	7.60
Hardness	-	87.8	98.1	103
TSS	Narrative	2.4	43.2	196
Turbidity (NTU)	Narrative	0.20	7.14	215
Aluminum	5 µg/L if pH < 6.5 100 µg/L if pH ≥ 6.5	0.0160	0.864	7.42
Arsenic	0.005	0.00315	0.00336	0.0178
Cadmium [1]	0.04 µg/L if hardness (as $CaCO_3$) < 17 mg/L $10^{\{0.83(\log[\text{hardness}]) - 2.46\}}$ if hardness ≥ 17 mg/L and ≤ 280 mg/L 0.37 µg/L if hardness > 280 mg/L	0.000256	0.000263	0.000582
Chromium	0.001	0.00012	0.00151	0.0137
Copper [2]	2 µg/L if hardness (as CaCO3) ≤ 82 mg/L or unknown $0.2 * e^{\{0.8545[\ln(\text{hardness})]-1.465\}}$ if hardness ≥ 82 mg/L and ≤ 180 mg/L 4 µg/L if hardness > 180 mg/L	<0.00050	0.00313	0.0260
Iron	0.3	0.041	1.45	12.5
Lead [3]	1 µg/L if hardness (as $CaCO_3$) ≤ 60 mg/L or unknown $e^{\{1.273[\ln(\text{hardness})]-4.705\}}$ if hardness > 60 mg/L and ≤ 180 mg/L 7 µg/L if hardness > 180 mg/L	0.000336	0.00166	0.0351
Nickel [4]	25 µg/L if hardness (as $CaCO_3$) ≤ 60 mg/L or unknown $e^{\{0.76[\ln(\text{hardness})]+1.06\}}$ if hardness > 60 mg/L and ≤ 180 mg/L 150 µg/L if hardness > 180 mg/L	<0.00050	0.0023	0.0164
Mercury	0.000026	<0.0000050	<0.0000050	0.000037
Silver	0.00025	<0.000010	0.000032	0.000611
Zinc	0.03	0.0219	0.0251	0.0759
Cadmium (dissolved)	0.04 µg/L if hardness (as CaCO3) < 17 mg/L $10^{\{0.83(\log[\text{hardness}]) - 2.46\}}$ if hardness ≥ 17 mg/L and ≤ 280 mg/L 0.37 µg/L if hardness > 280 mg/L	0.000248	0.000177	0.0000751

[1] Guideline calculated based on hardness value for each site: 0.00042 mg/L (KV-37), 0.000156 mg/L (KV-38), and 0.000162mg/L (KV-41)

[2] Guideline calculated based on hardness value for each site: 0.00212 mg/L (KV-37), 0.00233 mg/L (KV-38), and 0.00243 mg/L (KV-41)

[3] Guideline calculated based on hardness value for each site: 0.00270 mg/L (KV-37), 0.00310 mg/L (KV-38), and 0.00330 mg/L (KV-41)

[4] Guideline calculated based on hardness value for each site: 0.08658 mg/L (KV-37), 0.09419 mg/L (KV-38), and 0.09775 mg/L (KV-41) Stream Sediment

Metal concentration data for sediments sampled from the Reference 1, Reference 2 and Exposure 2 sites of Lightning Creek were compiled and summarized to allow for comparisons against applicable sediment quality guidelines and to assess sediment quality. Results for key parameters are presented in Table 3-3, while the complete results, laboratory certificate of analysis, including QAQC procedures are available in Appendix A-3. Exceedences of the CCME Interim Sediment Quality Guidelines (ISQG) are shown in blue while exceedences of the CCME Probable Effect Level (PEL) level are shown in red. Generally concentrations greater than the PEL have a 50% incidence of creating adverse biological effects.

Table 3-3. Metal concentration in sediment at Reference 1, 2 and Exposure 2 sites of Lightning Creek, September 1st and 2nd, 2015.

Total Metal	Lab MDL	Guideline		Station		
Concentration mg/g		CCME ISQG	CCME PEL	Reference 1 (KV-37)	Reference 2 (KV-38)	Exposure 2 (KV-41)
Aluminum	50	-	-	8940	8510	9430
Antimony	0.10	-	-	17.7	1.61	1.98
Arsenic	0.10	5.9	17	**324**	**27.1**	**28.3**
Cadmium	0.020	0.6	3.5	**20.4**	**1.11**	**1.48**
Copper	0.5	35.7	197	**46.6**	24.1	34.2
Iron	50	-	-	27000	19200	21700
Lead	2.5	35	91.3	**541**	30.2	**70.6**
Mercury	0.0050	0.17	0.486	0.135	0.0443	0.0324
Nickel	0.50	-	-	33.3	24.5	27.0
Selenium	0.20	-	-	1.37	0.59	0.47
Silver	0.10	-	-	16.1	0.49	1.09
Zinc	10	123	315	**1260**	**127**	**177**
Particle size						
Fines (<0.075mm) %				1.8	82.6	31.0
Fine Sand (0.075mm - 0.425mm) %				1.7	15.6	10.7
Medium sand (0.425mm – 2.0mm) %				47.9	1.7	12.2
Corse sand (2 - 4.75mm) %				24.5	<1.0	12.0
Gravel (4.75mm – 3in.) %				21.1	<1.0	34.1

Arsenic, cadmium and zinc were in exceedance for all sites when compared with the Canadian Environmental Quality Guidelines (CEQGs) Interim Sediment Quality Guideline (ISQG) or Probable Effects Level (PEL) guidelines. Elevated concentrations of copper and lead were also noted in the Reference 1 site and lead was also above ISQG limit at the Exposure 2 site.

As documented in Table 3-3 above, the most upstream site (Reference 1) has the most metal exceedances of the three sites and those exceedences are present in higher concentrations. Probable effects on Aquatic life are reported for arsenic, cadmium, lead and zinc. Despite the sediment contamination, Reference 1 appeared to have a preserved channel minimally impacted by historical placer activity with vegetated banks and natural shoreline. Particle size analysis indicated that the majority of the sample (47.9%) was composed of medium

sand. The elevated metal concentrations in sediment may be a reflection of the naturally elevated metal input from the watershed in combination with historical activities. Assuming that natural metal inputs originate from higher order sections of the stream, they would tend to deposit in the upstream reaches of Lightning Creek such that concentrations in sediments at the downstream sites are lower. It is also possible that they are put back in suspension by the placer mining activities downstream (as supported by higher TSS values in water samples collected at Exposure 2 - see Table 3-2) and therefore not found as much in sediment downstream,

Sediments collected at Reference 2 and Exposure 2 are relatively similar in chemical composition with Exposure 2 having slightly higher metal concentrations. Particle size analysis at Reference 2 consisted mainly of fines (82.6%) while Exposure 2 contained 31.0% of fines and 34.1% of gravel. (Table 3-3).

3.1.2 Benthic Invertebrate Community Structure

Descriptive statistics for the selected benthic invertebrate community structure endpoints are presented in Table 3-4 below, and boxplots of the four primary EEM metrics are shown in Figure 3-1. Complete laboratory results, including QAQC analysis are presented in Appendix A-4.

Table 3-4 Benthic Invertebrate Community Descriptive Statistics

Endpoint	Area	n	Mean	Median	Standard Error	Standard Deviation	Minimum	Maximum	95% Confidence Interval of the mean	
									Lower Bound	Upper Bound
Density (# organism/kick sample)	Ref1	5	4359.8	4437	689.3	1541.3	2490	6556	2446.1	6273.5
	Ref2	5	7646.2	7400	786.2	1758.1	6120	10520	5463.2	9829.2
	Exp2	5	2097.2	2086	241.4	539.8	1510	2755	1426.9	2767.5
Taxonomic Diversity (number of taxa)	Ref1	5	41	42	1.9	4.2	35	46	35.806	46.194
	Ref2	5	33.8	34	3.0	6.6	27	44	25.592	42.008
	Exp2	5	37.6	38	0.9	2.1	35	40	35.025	40.175
Simpson's Evenness D	Ref1	5	0.075	0.079	0.009	0.020	0.054	0.104	0.050	0.100
	Ref2	5	0.126	0.129	0.017	0.038	0.073	0.179	0.078	0.173
	Exp2	5	0.081	0.066	0.018	0.041	0.057	0.154	0.031	0.132
Bray Curtis Dissimilarity Index (Ref 1 Median)	Ref1	5	0.260	0.279	0.021	0.047	0.175	0.284	0.201	0.319
	Ref2	5	0.605	0.581	0.049	0.110	0.462	0.748	0.468	0.742
	Exp2	5	0.617	0.615	0.010	0.023	0.590	0.653	0.589	0.645
% EPT	Ref1	5	41.34	42.23	1.86	4.17	35.36	46.34	36.16	46.51
	Ref2	5	34.53	34.80	2.90	0.36	27.93	44.53	26.47	42.60
	Exp2	5	38.30	38.81	0.93	2.09	35.68	40.69	35.71	40.89
% Diptera	Ref1	5	42.48	37.91	4.94	11.04	33.77	60.85	28.77	56.20
	Ref2	5	15.43	16.49	3.73	8.34	5.89	27.82	5.08	25.78
	Exp2	5	7.67	7.22	0.83	1.85	6.03	10.57	5.37	9.97
% Chironomidae	Ref1	5	40.44	37.04	4.97	11.10	30.51	58.60	26.65	54.22

Endpoint	Area	n	Mean	Median	Standard Error	Standard Deviation	Minimum	Maximum	95% Confidence Interval of the mean	
									Lower Bound	Upper Bound
	Ref2	5	13.56	14.32	3.66	8.19	4.94	25.71	3.39	23.73
	Exp2	5	5.75	5.43	1.00	2.23	3.63	9.34	2.98	8.53

Results of statistical tests (see Table 3-5) indicate that density is significantly different between the three groups, with the highest value at the Reference 2 site and the lowest at Exposure 2. The magnitude of the difference between those two sites is of 3.6 standard deviations (SD). The first EEM cycle had found similar differences between the reference and exposure sites, but no significant difference between the two reference sites.

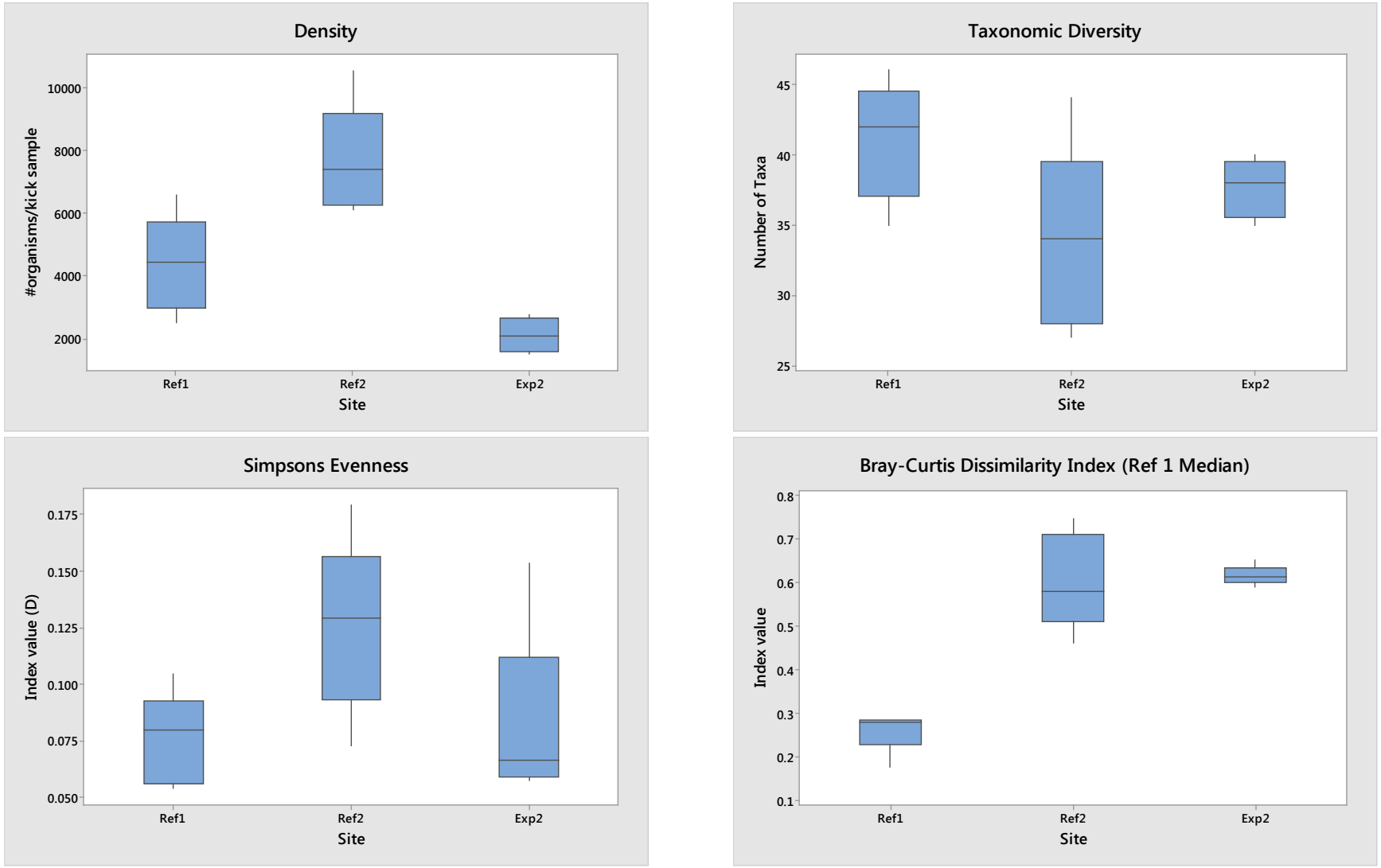


Figure 3-1 Boxplots of benthic invertebrate community primary EEM endpoints, Bellekeno Mine

Table 3-5 Benthic Invertebrate Community Statistical Comparisons among Lightning Creek Study Areas

Endpoint	Pairwise Comparisons	Test	Significant Difference? [1]	p-value	Magnitude of difference (# of Ref1 SDs)
Density (# organism/kick sample)	Ref1-Ref2	ANOVA [2]	Yes	0.007	2.132
	Ref1-Exp2	ANOVA [2]	Yes	0.058	-1.468
	Ref2-Exp2	ANOVA [2]	Yes	0.000	-3.600
Taxonomic Diversity (number of taxa)	Ref1-Ref2	ANOVA [2]	Yes	0.075	-0.813
	Ref1-Exp2	ANOVA [2]	No	0.503	-
	Ref2-Exp2	ANOVA [2]	No	0.429	-
Simpson's Evenness D	Ref1-Ref2	ANOVA [2]	Yes	0.091	2.489
		Mann-Whitney	Yes	0.060	2.447
	Ref1-Exp2	ANOVA [2]	No	0.955	-
		Mann-Whitney	No	1.000	-
	Ref2-Exp2	ANOVA [2]	No	0.147	-
		Mann-Whitney	Yes	0.095	-2.177
A Bray Curtis Dissimilarity Index (Ref 1 Median)	Ref1-Ref2	ANOVA [2]	Yes	0.000	7.283
		Mann-Whitney	Yes	0.012	6.370
	Ref1-Exp2	ANOVA [2]	Yes	0.000	7.534
		Mann-Whitney	Yes	0.012	7.076
	Ref2-Exp2	ANOVA [2]	No	0.962	-
		Mann-Whitney	No	0.676	-
% EPT	-	ANOVA [2]	No	0.106	-
% Diptera	Ref1-Ref2	ANOVA [2]	Yes	0.002	-2.450
	Ref1-Exp2	ANOVA [2]	Yes	0.000	-3.153
	Ref2-Exp2	ANOVA [2]	Yes	0.081	-0.703
% Chironomidae	Ref1-Ref2	ANOVA [2]	Yes	0.001	-2.420
	Ref1-Exp2	ANOVA [2]	Yes	0.000	-3.124
	Ref2-Exp2	ANOVA [2]	No	0.312	-

[1] Based on α = 0.10

[2] Post hoc power analysis indicates a power of 0.823 for critical effect size of 2 reference standard deviations (as per EC guidance, 2012) Minimum effect size detectable = 2.261 Ref1 SDs

Taxonomic diversity (at the lowest practical level) is significantly higher at the Reference 1 site than at Reference 2 (0.8 SD) but neither of the reference sites is significantly different from the Exposure 2 site. No significant differences were observed between the three sites during Cycle 1, however statistical comparisons were made at the family level rather than at the lowest practical level (LPL). It is noteworthy that the total number of taxa (LPL) was observed to be greater at every site during Cycle 2 when compared to Cycle 1.

Similarly, Simpson's evenness D (at LPL) is significantly different between the two reference sites (2.5 or 2.4 SDs depending on the test), with D being higher at the Reference 2 site. No significant difference exists between Reference 1 and Exposure 2 sites, but the results are less clear between Reference 2 and Exposure 2. Two sets of statistical tests were conducted for this endpoint (ANOVA and non parametric test) as one of the distributions was not normal and couldn't be normalized through data transformation. Results of the ANOVA indicate no significant difference while results of the Mann-Whitney test indicate a significant difference of 2.2 SDs. Analyses conducted during Cycle 1 did not find any significant differences in Simpson's evenness between the three areas, but as was the case for diversity, comparisons were made at the family level.

Comparisons of the Bray-Curtis index based on the Reference 1 median indicate significant differences between Reference 1 and the other two areas (which show no significant difference among themselves). The magnitude of the difference is of 6.4 to 7.3 SDs (depending on the test) between Reference 1 and Reference 2 and of 7.1 to 7.5 SDs between Reference 1 and Exposure 2, with Reference 1 site having the lowest Bray-Curtis Dissimilarity Index.

Other endpoints for which comparisons were made consist of % EPT (Ephemeroptera, Plecoptera, Trichoptera) and % of dominant taxa, which include Diptera and Chironomidae. No significant differences were found among the three groups for % EPT. As EPT taxa are generally considered to have low pollution tolerance (Environment Canada, 2012b), this could indicate minimal impact of the Mine effluent. All three groups were significantly different from each other in terms of % Diptera, with the highest proportion found at Reference 1 (3.2 SDs and 2.5 SDs difference with Exposure 2 and Reference 2 respectively). % Chironomidae was significantly higher in the Reference 1 group (3.1 SDs and 2.4 SDs difference with Exposure 2 and Reference 2 respectively), while no significant difference exists between Reference 2 and Exposure 2 groups. Chironomids are generally sensitive to TSS (Bilotta and Brazier, 2008), which could explain their lower proportion at Exposure 2.

Overall, all of the metrics examined show a significant difference between the two reference areas (except for % EPT), indicating a potential impact of the historical placer mining activities. Only the density and % Diptera had a significant difference between the Reference 2 and Exposure 2 areas. Most of the differences observed exceed the critical effect size of two reference standard deviations identified in the Metal Mining Technical Guidance for EEM (Environment Canada, 2012a), indicating a potentially higher risk to the environment. These differences may however be linked to current placer mining rather than to the Mine effluent. Water chemistry results presented in Table 3-2 indicate that water quality is somewhat degraded at Exposure 2 site in comparison to the reference areas, but the fact that TSS and turbidity are also elevated at Exposure 2 site could link those results to current placer mining activities rather than to the Mine effluent which has a generally low TSS content (See Section 3.5.1). At the time of benthic invertebrate sample collection, the effluent volume represented approximately 0.2% of the total discharge volume at Exposure 2 site (KV-41). Based on this dilution factor, the Mine effluent contribution to TSS measured at Exposure 2 represents approximately 0.01%. When comparing water chemistry results at Reference 2 and Exposure 2 site (see Appendix A-2), it can be noted that dissolved metals are generally similar at the two locations, while total metals are higher downstream. This could indicate that for most constituents, the main contribution to elevated total metals at Exposure 2 is associated with high TSS and originates downstream of KV-38/Reference 2, where Thunder Gulch is a major contributor.

Reference 2 was heavily impacted by placer mining activities and characterized by modified channel features such as steep banks in some sections with artificial shorelines reinforced with large boulders. Exposure 2 has a relatively preserved channel configuration with vegetated, natural gently sloped shoreline (see photos in Appendix A-1). Although an effort was made to select sampling locations with similar habitat features at all

sites, minor differences, could possibly explain in part some of the disparities observed in the benthic metrics between Exposure 2 and Reference 2 areas. For example, the generally smaller substrate and interstitial material at Exposure 2 site might be less suitable for benthic invertebrates and account in part for the lower abundance observed at this site. Table 3-6 below summarizes habitat characteristics of the three sampling locations.

Table 3-6 Summary of Habitat Characteristics at Lightning Creek study areas during the EEM benthic invertebrate community survey, September 2015

Habitat Characteristics		Reference 1	Reference 2	Exposure 2
		Pristine	Placer Influenced	Effluent Exposed
Latitude		63°55'0.9"	63°54'46.1"	63°54'35.4"
Longitude		135°11'46.7"	135°15'21.0"	135°17'9.5"
Approximate Length of Reach Assessed (m)		60	80	100
Channel Width (m)	Wetted	8.95	4.8	8.3
Channel Depth (m)	Mean	0.2	0.3	0.3
Water velocity (m/s)	Mean	0.7	0.8	0.7
Water turbidity		Water was clear	Water was clear	Water was grey and silty
Stream morphology	Pool	Yes	No	Yes
	Rapid	Yes	Yes	Yes
	Riffle	Yes	Yes	Yes
	Run	No	No	Yes
Gradient (%)		5	4	1
Bank Condition		Stable	Stable	Stable
Substrate Properties	General Composition	4% gravel 19% pebble 73% cobble 4% boulders	1% gravel 23% pebble 72% cobble 4% boulders	7% gravel 46% pebble 47% cobble
	Average size (cm)	12.2	10.5	7.1
	Average Embeddedness (%)	10	18	15
	Dominant Interstitial material	Large Pebbles	Gravel and small pebbles	Gravel
Aquatic Vegetation (% coverage)	Macrophytes	0%	0%	1-25%
	Periphyton	1-5 mm	0.5-1 mm	0.5-1 mm
Riparian Features	Vegetation Types Present	Grass, shrubs, coniferous	Grass, shrubs, coniferous, deciduous	Grass, shrubs, coniferous, deciduous
	Dominant Vegetation Type	Shrubs	Shrubs	Grasses & shrubs
	Canopy Coverage (%)	1-25%	1-25%	1-25%
General notes	Surrounding Land Use	Forested	Forested	Forested
	Evidence of Anthropogenic Disturbance	Historical Placer mine	Historical Placer mine	Metal mining and Placer mine upstream

3.2 FISH LABORATORY EXPOSURE

3.2.1 Monitoring of Study

3.2.1.1 In situ water parameters

Critical parameters for fish growth such as temperature, dissolved oxygen and pH remained relatively constant throughout the duration of the study. Specific Conductance (SPC) presented more variability. The following table presents average in situ water parameters for each group as well as their minimal and maximal fluctuation.

Table 3-7. Average water parameters for the Reference, Exposure 1 and Exposure 2 fish tanks during the fish laboratory exposure study.

Parameter*		Reference	Exposure1	Exposure2
Temperature (°C)	Average	6.89	6.86	7.01
	Min	3.86	3.78	3.92
	Max	10.05	10.01	10.17
Dissolved Oxygen (mg/l)	Average	10.90	10.90	10.40
	Min	7.9	8.3	7.4
	Max	13.88	14.28	13.94
pH (pH units)	Average	7.54	7.52	7.45
	Min	6.4	6.29	6.38
	Max	8.2	8.13	7.9
SPC (µS/cm)	Average	188.6	224.5	185.9
	Min	157.8	174.2	159.2
	Max	314.2	316.7	321.7
Turbidity (NTU)	Average	2.57	2.06	9.3
	Min	0.54	0.51	0.7
	Max	4.37	4.05	29.9
Ammonia (mg/L)	Average	0.64	0.87	0.65
	Min	0.20	0.27	0.27
	Max	1.71	2.00	1.90

**Temperature based on Tidbit unit daily averages ; all other parameters were measured using a YSI Pro Plus or an Oakton Waterproof meter.*

Water temperature in tanks was maintained at an average of 6.9°C to 7.0°C for the three groups, although it fluctuated between 3.86°C and 10.05°C for the reference tank, 3.78°C and 10.1°C for Exposure 1, while the tank Exposure 2 varied between 3.92°C and 10.17°C. The fluctuations in water temperature were consistent among the three tanks and also reflective of a drop in air temperatures in the Keno area. The mill building was not heated and therefore the water in the tanks was susceptible to temperature change. Accumulated thermal units

(ATUs) were comparable for the three tanks and were calculated to be 281.43°C, 280.00°C and 285.94°C for the Reference, Exposure 1 and Exposure 2 respectively. Daily ATUs were consistent between the three groups and are presented in Appendix B-2.

Figure 3-2 illustrates the water temperature recorded with the Tidbit units compared against the water temperature of Lightning Creek in 2014 and 2015 from early August to mid-September. The temperature drop observed in the fish rearing tanks correlates well with water temperature observed in Lightning Creek in 2015. Water temperature in Lightning Creek during the same period in 2014 did not experience such large fluctuations and the drop observed in 2015 is believed to be a result of the atmospheric temperature being lower than normal during that period (see section 3.3).

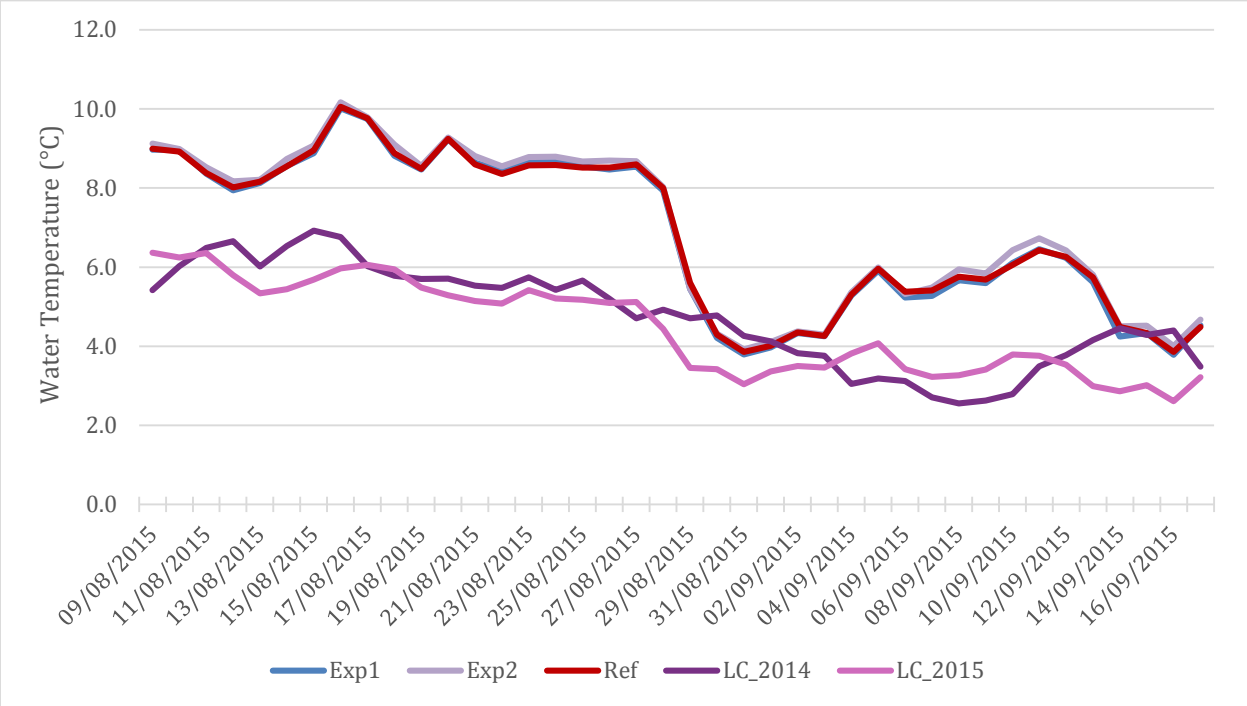


Figure 3-2 Water temperature curve of the fish tanks compared to *in situ* Lightning Creek water temperature during the same period in 2014 and 2015.

3.2.1.2 Water Quality in fish tanks

Tank water was sampled weekly for a total of six events. For parameters where at least one exceedance of CCME PAL guidelines were observed, average concentrations and % exceedance are summarized in Table 3-8. Values shown in red indicate that the average of the six sampling events exceeds the guideline. The frequency and magnitude of exceedences are the greatest in Exposure 2 tank. The frequency and magnitude of exceedences are generally comparable between the Reference and Exposure 1 tanks.

Table 3-8 Average Concentrations for Parameters Exceeding Guidelines in Water Tanks

Parameter	Guideline	Reference		Exposure 1		Exposure 2	
mg/l		Average Concentration	% Exceedence	Average Concentration	% Exceedence	Average Concentration	% Exceedence
DOC	-	2.62	n/a	2.97	n/a	2.49	n/a
Hardness	-	99.77	n/a	119.67	n/a	97.33	n/a
Aluminum	5 µg/L if pH < 6.5 100 µg/L if pH ≥ 6.5	0.174	67	0.136	67	0.776	83
Arsenic	0.005	0.0028	0	0.0028	0	0.0047	17
Cadmium [1]	0.04 µg/L if hardness (as $CaCO_3$) < 17 mg/L $10^{\{0.83(\log[\text{hardness}]) - 2.46\}}$ if hardness ≥ 17 mg/L and ≤ 280 mg/L 0.37 µg/L if hardness > 280 mg/L	0.00059	100	0.00052	100	0.00231	100
Chromium	0.001	0.00082	17	0.00042	0	0.00158	33
Copper [2]	2 µg/L if hardness (as $CaCO_3$) ≤ 82 mg/L or unknown $0.2 * e^{\{0.8545[\ln(\text{hardness})]-1.465\}}$ if hardness ≥ 82 mg/L and ≤ 180 mg/L 4 µg/L if hardness > 180 mg/L	0.00179	17	0.00140	0	0.00434	33
Iron	0.3	0.317	67	0.264	50	1.370	83
Lead [3]	1 µg/L if hardness (as $CaCO_3$) ≤ 60 mg/L or unknown $e^{\{1.273[\ln(\text{hardness})]-4.705\}}$ if hardness > 60 mg/L and ≤ 180 mg/L 7 µg/L if hardness > 180 mg/L	0.00596	83	0.00345	33	0.00695	100
Silver	0.00025	0.000023	0	0.000032	0	0.00011	17
Zinc	0.03	0.0337	50	0.0520	100	0.0944	100

[1] Average concentrations are compared to guideline values calculated from average hardness for each tank: 0.000414 mg/L (Ref), 0.000482 mg/L (Exp1), and 0.000406 mg/L (Exp2)
[2] Average concentrations are compared to guideline values calculated from average hardness for each tank: 0.002921 mg/L (Ref), 0.003412 mg/L (Exp1), and 0.002860 mg/L (Exp2)
[3] Average concentrations are compared to guideline values calculated from average hardness for each tank: 0.000878 mg/L (Ref), 0.001107 mg/L (Exp1), and 0.000851 mg/L (Exp2)

Hardness level of water has an impact on the toxicity level of some metals such as dissolved copper and total zinc. Hardness was slightly higher on average in the Exposure 1 tank. The presence of natural organic matter in natural waters is also an important complexing ligand for silver and most other metals and would have a protective effect against silver toxicity (CCME 2015). Dissolved organic carbon in the three groups was of similar magnitude throughout the study and its ameliorating effect on metal toxicity was therefore consistent between the groups.

Ammonia toxicity to fish is relatively well documented and is known to create lesions in the gills as well as tissue degradation in the kidney, to affect the development of fish embryos and larval stages and to cause mortality. The solubility of ammonia in water is closely affected by pH and water temperature. Ammonia toxicity is largely related to the un-ionized component (NH_3) which increase in proportion to total ammonia as pH and temperature increases (CCME, 2010). For an average pH of 7.5 and average temperatures ranging between 5 and 10°C, guideline values fall between 4.84 and 3.26 mg/L of total ammonia ($NH_3 + NH_4^+$). At these concentrations, it is recommended to exert caution (CCME, 2010). Total ammonia concentrations in the fish tanks were however at or below 2.0 mg/L at all times during the study and therefore ammonia did not represent a parameter of concern.

The concentration of total suspended solids remained relatively constant over time and consistent between the reference and exposure groups, except towards the end of the study when TSS increased significantly in the exposure 2 tank (see Figure 3-3). A similar difference in TSS between reference and exposure sites was observed in Lightning Creek during the benthic invertebrate study (see Table 3-2) and increased TSS and turbidity are thought to be associated with the placer mining activities that were taking place in Thunder Gulch. An analysis of the meteorological record for the study period indicates no heavy rainfall event that could have affected TSS content in Lightning Creek and consequently in the fish rearing tanks. TSS values were generally observed to be more variable in the exposure 2 tank.

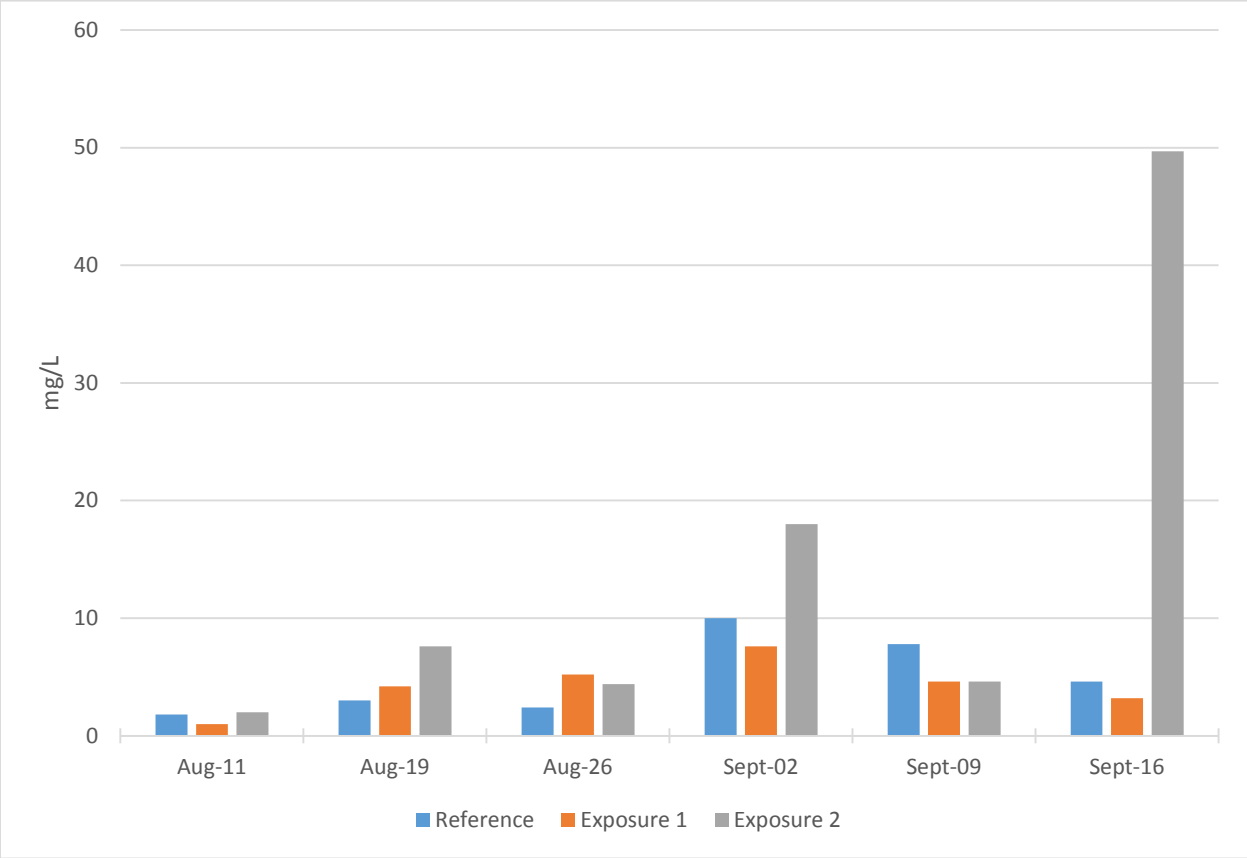


Figure 3-3 Laboratory measurement of Total Suspended Solids in fish tanks for the reference and exposure groups.

3.2.2 Fish Metrics and Condition Endpoints

All kokanee salmon fry were measured on August 8th (n=456) for weight (± 0.001g), fork length (± 0.01mm) and total length (± 0.01mm). A subsample of 50 fish per tank were measured again on August 31st (day 23 of the study), and the final measurements were repeated on day 41 (September 18th), when 452 fish were re-sampled. Four mortalities occurred during the study: one from the Reference group, one from the Exposure 1 group and two from the Exposure 2 group. The fish in Exposure 1 group had the highest increase in fork and total lengths and weight overall, however results of the subsampling event on September 1st indicated a different trend, with fish in Exposure 2 group showing the greatest increase at that point. See Table 3-9 for a summary of descriptive statistics, and Figure 3-4 for a graphical representation.

Table 3-9 Fish Laboratory Exposure Descriptive Statistics for Fork Length and Body Weight, and % increase

		Reference		Exposure 1		Exposure 2	
	Parameter	Fork Length (mm)	Weight (g)	Fork Length (mm)	Weight (g)	Fork Length (mm)	Weight (g)
Aug 8th	n	156	156	150	150	147	150
	Min	62.23	2.12	55.51	1.52	58.97	1.23
	Median	77.82	4.15	77.38	4.05	77.14	4.07
	Max	94.64	6.09	93.43	6.90	86.28	6.08
	Mean	77.30	4.09	76.42	3.98	76.79	4.05
	Standard Deviation	5.20	0.81	6.01	0.94	4.93	0.84
	Standard Error	0.42	0.07	0.49	0.08	0.41	0.07
Aug 31st	n	50	50	50	50	50	50
	Min	66.85	2.114	60.06	1.96	60.73	2.77
	Median	80.56	4.6	82.84	5.08	85.43	5.82
	Max	89.81	6.39	95.79	8.11	91.77	8.55
	Mean	80.16	4.4	81.54	5.04	83.49	5.74
	Standard Deviation	5.29	0.94	6.85	1.26	6.26	1.16
	Standard Error	0.75	0.13	0.97	0.18	0.89	0.16
	% increase since Aug 8th	3.7	7.7	6.7	26.7	8.7	41.8
Sept 18th	n	154	154	147	147	147	148
	Min	65.42	1.99	62.96	2,58	62.57	1.42
	Median	83.84	5.1	87.62	6.58	86.44	5.45
	Max	97.09	8.18	100.15	10.25	96.19	7.7
	Mean	83.62	5.15	86.56	6.42	86.49	5.41
	Standard Deviation	6.22	1.33	7.18	1.59	5.27	1.08
	Standard Error	0.5	0.11	0.59	0.13	0.43	0.09
	% increase since Aug 8th	8.2	26.0	13.3	61.4	12.6	33.6

**Statistics calculated after removal of outliers*
% increase was calculated using average fork length and average weight

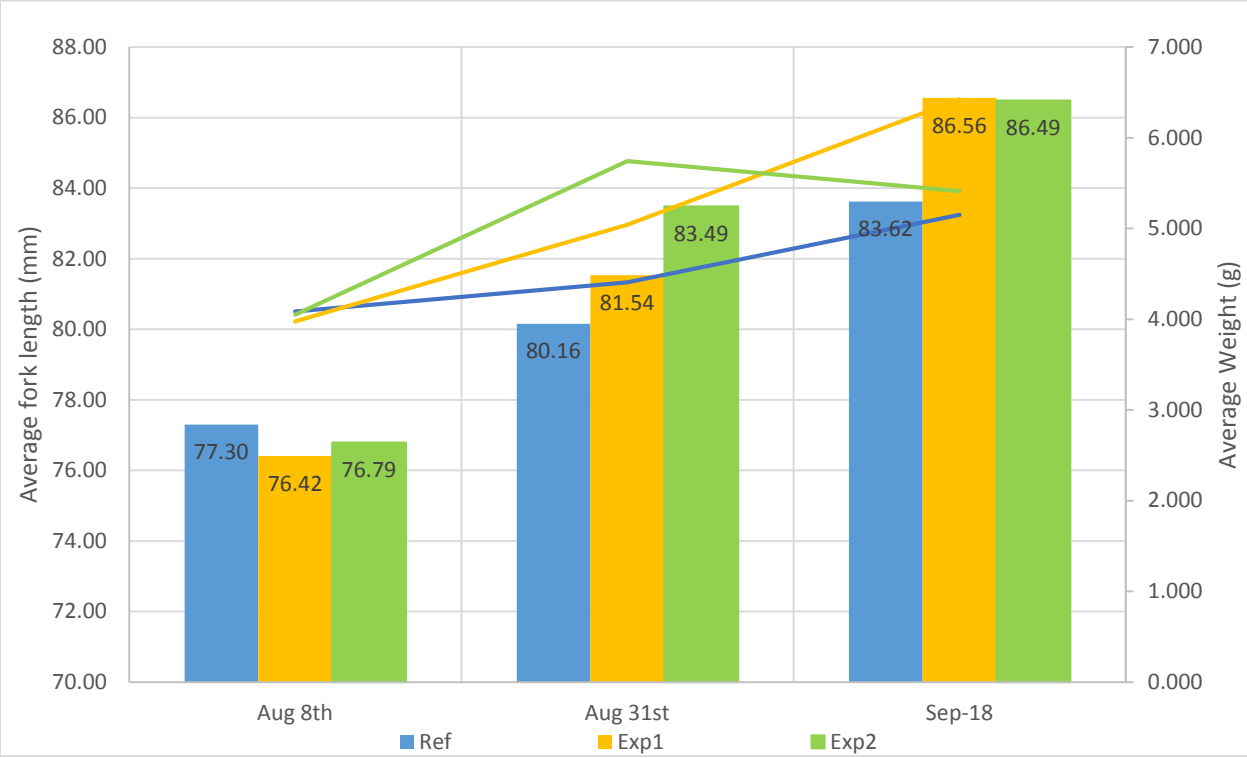


Figure 3-4 Progression of average fork length (mm) and average weight (g) for each group between August 8th and September 18th 2015.

Fish condition was evaluated two ways: through the calculation of Fulton's index K and through a linear length-at-body-weight relationship. Fulton's index is calculated according to the equation (Fulton, 1902):

$$K = 100\ \frac{W}{L^3}$$

where W = Fish weight in grams

L = Fish Length in cm (for salmonids, fork length is used)

Although the relationship between weight and length is not linear, a linear approximation was also applied given the limited length range of fish used in this laboratory exposure, to enable comparisons between groups using ANCOVA. Descriptive statistics and percent change for Fulton's index K are presented in Table 3-10, while linear length-at-body-weight relationships at the beginning and end of the study are shown in Figures 3-5 and 3-6 respectively. The R^2 values of the linear trend lines in Figures 3-5 and 3-6 range from 0.85 to 0.94, indicating that a linear model is a reasonable approximation and the equations coefficients a (y = ax + b) indicate that slopes are relatively parallel between the groups (this assumption was further tested when performing the ANCOVA analysis).

Table 3-10 Fish Laboratory Exposure Descriptive Statistics for Fulton's Index K, and % Change

		Reference	Exposure 1	Exposure 2
Aug 8th	n	153	150	146
	Min	0.759	0.749	0.738
	Median	0.877	0.870	0.888
	Max	1.021	1.063	1.063
	Mean	0.879	0.874	0.887
	Standard Deviation	0.051	0.055	0.055
	Standard Error	0.004	0.004	0.005
Aug 31st	n	49	50	49
	Min	0.692	0.813	0.848
	Median	0.833	0.912	0.964
	Max	0.977	1.018	1.106
	Mean	0.835	0.909	0.967
	Standard Deviation	0.055	0.052	0.055
	Standard Error	0.008	0.007	0.008
	% change since Aug 8th	-5.0	4.0	9.0
Sept 18th	n	153	145	144
	Min	0.621	0.828	0.715
	Median	0.871	0.977	0.829
	Max	1.033	1.105	1.041
	Mean	0.860	0.975	0.835
	Standard Deviation	0.077	0.050	0.057
	Standard Error	0.006	0.004	0.005
	% change since Aug 8th	-2.2	11.6	-5.9

**Statistics calculated after removal of outliers*
% change was calculated using mean K values

As was the case for length and weight, the group showing the greatest increase in Fulton's condition index overall is Reference 1 (the other two groups even showed a decrease in condition index K over the entire length of the study). Interestingly however, the Exposure 2 group had the greatest increase in condition factor during the mid-study subsampling on August 31st. This trend reversal could be attributed in part to increased water turbidity and TSS in Exposure 2 tank towards the end of the study (see Figure 3-3), which could have prevented fish from feeding adequately due to poor visibility.

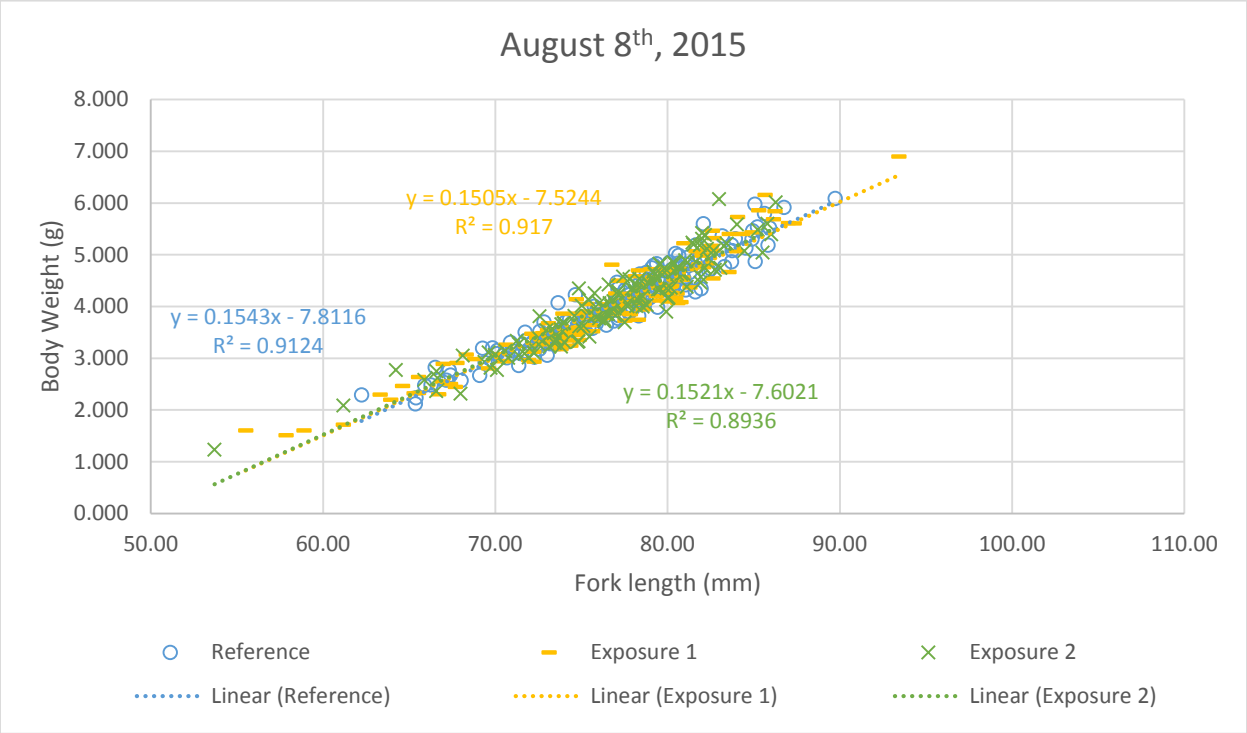


Figure 3-5 Condition (length at body weight relationship) and trend lines on August 8th, 2015.

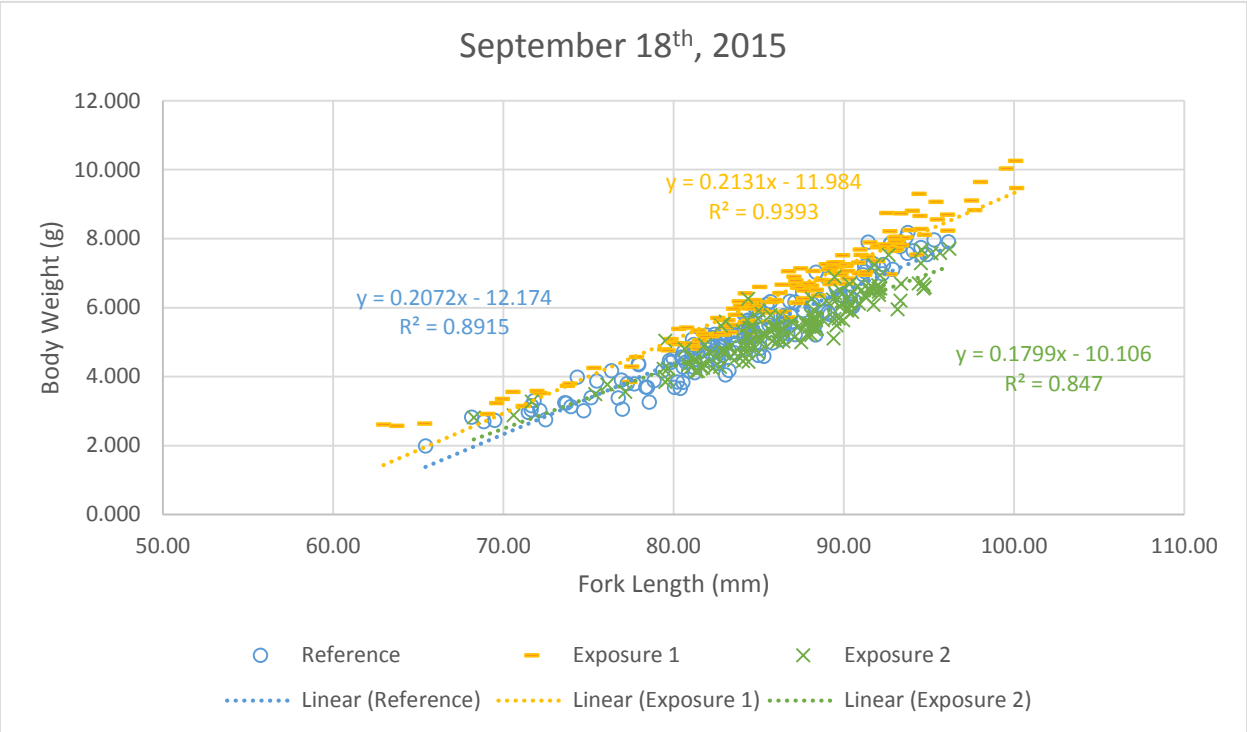


Figure 3-6 Condition (length at body weight relationship) and trend lines on September 18th, 2015.

At the start of the study (August 8th), no significant differences were observed between the three groups for total length, fork length and weight. For fish condition, although no significant difference existed between the reference and either of the exposure groups, the two exposure groups presented a difference of 1.5% of the reference mean among themselves, both when comparing Fulton's index K and the linear weight-at-length relationship. See Table 3-11 for results of statistical comparisons and Figure 3-7 for boxplots of initial and final distributions of fork length, body weight and Fulton's index K.

On day 23 of the study (August 31st), the difference in length (total and fork) was not significant between the reference and the exposure 1 groups, but was significant between the reference and exposure 2 groups and to a lesser extent between the exposure 1 and exposure 2 groups. The difference ranged from 4.2 to 6.0% of the reference mean or median (depending on the tests) in favour of the exposure 2 group when compared to the reference group and from 3.2 to 4.2% of the reference mean or median when compared to the exposure 1 group. Significant differences in weight and condition were observed between all three groups, again with the exposure 2 group having the highest mean, median or adjusted mean. The difference in weight was 30.5% of the reference mean between the exposure 2 and reference groups, of 14.6% between exposure 1 and reference (exposure 1 being higher) and of 15.9% between the two exposure groups. These differences in weight were mirrored in fish condition comparisons, although the magnitude of the difference in each case was roughly half of that observed in body weight. Overall, the kokanee from exposure 2 group were slightly longer, heavier and in better condition.

Upon study termination (September 18th), statistically significant differences in length (total and fork) existed between the reference and each of the exposure groups, but not between the two exposure groups. The magnitude of the difference ranged from 3.1 to 4.7% of the reference mean or median, in favour of the exposure groups. Differences in body weight were observed between all groups, with the greatest magnitude (24.7 to 29.0%) between reference and exposure 1 groups followed by a difference of 19.6 to 22.1% between the two exposure groups (exposure 1 having higher values) and a less significant difference of 6.9% between the reference and exposure 2 groups. Condition was statistically different between the three groups, with fish from the exposure 1 group being in the best condition (12.1% to 13.4% better than the reference group and 16.3% to 16.9% better than the exposure 2 group). Although there was a 1.5% difference in condition between the fish from the two exposure tanks at the start of the study, the magnitude of the difference observed at the end of the study indicates that fish condition in the two groups diverged significantly over the study period. Fish from the reference tank were in better condition than fish from the exposure 2 tank by 2.9% to 4.9%. Note that the condition of fish in the reference and exposure 2 tanks deteriorated over the course of the study. The condition of fish in exposure 1 tank improved and their length and weight were the greatest at the end of the study.

A total of four mortalities occurred during the study: one from the Reference group, one from the Exposure 1 group and two from the Exposure 2 group. This represents less than 1% overall. Although there was no clear cause of death, it was likely attributable to the syphon that was used to clean the tanks. Abnormalities were slightly more common in the reference group with several affectations to the eyes including blood shot eyes and white pupil. These observations were encountered more frequently during the last measuring event. A summary of abnormalities is presented in Appendix B-3.

Table 3-11 Fish Laboratory Exposure Statistical Comparisons among Treatment Groups

Date	Response	Endpoint		Test	Statistical Difference (p-value)			Mean, Median or Adjusted Mean [1]			Sample size			Mean Square Error	Magnitude of difference (%)			Power	Minimum Effect Size Detectable (%) [2]	Outliers removed [8]
		Parameter	Covariate		Ref-Exp1	Ref-Exp2	Exp1-Exp2	Ref	Exp1	Exp2	Ref	Exp1	Exp2		Ref-Exp1	Ref-Exp2	Exp1-Exp2			
08-Aug-2015	Growth	Total Length (mm)	n/a	ANOVA	No (0.6049)			81.71	81.14	81.13	156	150	149	34.111	-	-	-	0.206	2.42	FishID 416 (Exp2)
				Kruskal-Wallis [3]	No (0.8416)			82.09	81.97	81.73	156	150	149	-	-	-	-	-	-	FishID 416 (Exp2)
		Fork Length (mm)	n/a	ANOVA	No (0.3580)			77.3	76.42	76.79	156	150	147	28.180	-	-	-	0.350	2.55	FishID 369 (Exp2), 414 (Exp2), 416 (Exp2)
				Kruskal-Wallis [3]	No (0.5980)			77.82	77.38	77.14	156	150	147	-	-	-	-	-	-	FishID 369 (Exp2), 414 (Exp2), 416 (Exp2)
		Weight (g)	n/a	ANOVA	No (0.5293)			4.087	3.977	4.049	156	150	150	0.746	-	-	-	0.263	7.39	none
	Condition	K (Fulton)	n/a	ANOVA	No (0.647)	No (0.389)	Yes (0.074)	0.8792	0.8738	0.8873	153	150	146	0.003	-	-	1.5	0.642	2.19	FishID 47 (Ref), 50 (Ref), 71 (Ref), 325 (Exp2), 339 (Exp2), 369 (Exp2), 416 (Exp2)
		Weight (g)	Fork Length (mm)	ANCOVA	No (0.704)	No (0.367)	Yes (0.083)	3.942	3.921	3.980	153	150	146	0.001	-	-	1.5	0.617	2.20	FishID 47 (Ref), 50 (Ref), 71 (Ref), 325 (Exp2), 339 (Exp2), 369 (Exp2), 416 (Exp2)
31-Aug-2015	Growth	Total Length (mm)	n/a	ANOVA	No (0.7430)	Yes (0.0014)	Yes (0.0143)	85.65	86.58	90.18	50	50	49	39.815	-	5.3	4.2	0.972	4.4	FishID 119 (Exp2)
				Mann-Whitney [3]	No (0.2656)	Yes (0.0001)	Yes (0.0143)	86.53	88.01	91.36	50	50	49	-	-	5.6	3.9	-	-	FishID 119 (Exp2)
		Fork Length (mm)	n/a	ANOVA	No (0.5078)	Yes (0.0211)	No (0.2546)	80.16	81.53	83.49	50	50	50	38.022		4.2	-	0.887	4.3	none
				Mann-Whitney [3]	No (0.1067)	Yes (0.0006)	Yes (0.0608)	80.56	82.84	85.43	50	50	50	-	-	6.0	3.2	-	-	none
		Weight (g)	n/a	ANOVA	Yes (0.0138)	Yes (0.0000)	Yes (0.0065)	4.4	5.044	5.744	50	50	50	1.274	14.6	30.5	15.9	1.000	-	none
	Condition	K (Fulton)	n/a	ANOVA	Yes (0.0000)	Yes (0.0000)	Yes (0.0000)	0.8349	0.9089	0.9673	49	50	49	0.003	8.9	15.9	7.0	1.000	-	FishID 5 (Ref), 119 (Exp2)
		Weight (g)	Fork Length (mm)	ANCOVA [4,7]	Yes (0.0000)	Yes (0.0000)	Yes (0.0000)	4.555	4.949	5.241	49	50	49	0.001	8.7	15.1	6.4	1.000	-	FishID 5 (Ref), 119 (Exp2)
18-Sept-2015	Growth	Total Length (mm)	n/a	ANOVA	Yes (0.0002)	Yes (0.0010)	No (0.8927)	89.37	92.59	92.23	154	147	148	47.348	3.6	3.2	-	0.983	2.8	FishID 344 (Exp2), 442 (Exp2)
				Mann-Whitney [3]	Yes (0.0000)	Yes (0.0000)	No (0.3383)	89.47	93.68	92.79	154	147	148	-	4.7	3.7	-	-	-	FishID 344 (Exp2), 442 (Exp2)
		Fork Length (mm)	n/a	ANOVA	Yes (0.0002)	Yes (0.0003)	No (0.9950)	83.62	86.56	86.49	154	147	147	39.360	3.5	3.4	-	0.980	2.8	FishID 313 (Exp2), 344 (Exp2), 442 (Exp2)
				Mann-Whitney [3]	Yes (0.0000)	Yes (0.0000)	No (0.4583)	83.84	87.62	86.44	154	147	147	-	4.5	3.1	-	-	-	FishID 313 (Exp2), 344 (Exp2), 442 (Exp2)
		Weight (g)	n/a	ANOVA	Yes (0.0000)	No (0.217)	Yes (0.0000)	5.152	6.423	5.411	154	147	148 [5]	1.816	24.7	-	-19.6	1.000	9.8	none
				Mann-Whitney [3]	Yes (0.0000)	Yes (0.0126)	Yes (0.0000)	5.1	6.579	5.454	154	147	148 [5]	-	29.0	6.9	-22.1	-	-	none
	Condition	K (Fulton)	n/a	ANOVA	Yes (0.0000)	Yes (0.0015)	Yes (0.0000)	0.8598	0.9746	0.8345	153	145	144 [5]	0.004	13.4	-2.9	-16.3	1.000	-	FishID 27 (Ref), 218 (Exp1), 226 (Exp1), 313 (Exp2), 323 (Exp2), 364 (Exp2), 442 (Exp2)
				Mann-Whitney [3]	Yes (0.0000)	Yes (0.0002)	Yes (0.0000)	0.8715	0.9766	0.829	153	145	144 [5]	-	12.1	-4.9	-16.9	-	-	FishID 27 (Ref), 218 (Exp1), 226 (Exp1), 313 (Exp2), 323 (Exp2), 364 (Exp2), 442 (Exp2)
		Weight (g)	Fork Length (mm)	ANCOVA [6,7]	Yes (0.0000)	Yes (0.0000)	Yes (0.0000)	5.352	6.029	5.158	152	145	143 [5]	0.001	12.6	-3.6	-16.3	1.000	-	FishID 27 (Ref), 48 (Ref), 218 (Exp1), 226 (Exp1), 313 (Exp2), 323 (Exp2), 344 (Exp2), 364 (Exp2), 442 (Exp2)

[1] Mean reported for ANOVA, median reported for Kruskal-Wallis and Mann-Whitney, adjusted mean for ANCOVA

[2] Based on $\alpha = \beta = 0.1$

[3] Non-parametric test performed when assumptions for ANOVA are violated

[4] The reference tank distribution did not meet the normality assumption but ANCOVA is robust to minor violations of assumptions

[5] FishID 411 (Exp2) and 431 (Exp2) had missing weight data and were removed

[6] The equality of variance assumption is violated but ANCOVA is robust to minor violations of assumptions

[7] Slopes are not parallel but coefficient of determination are >0.8 and similar between full and reduced model (difference <0.02), therefore reduced model was used

[8] Studentized residuals >4 or <-4 were treated as outliers and removed from the analysis

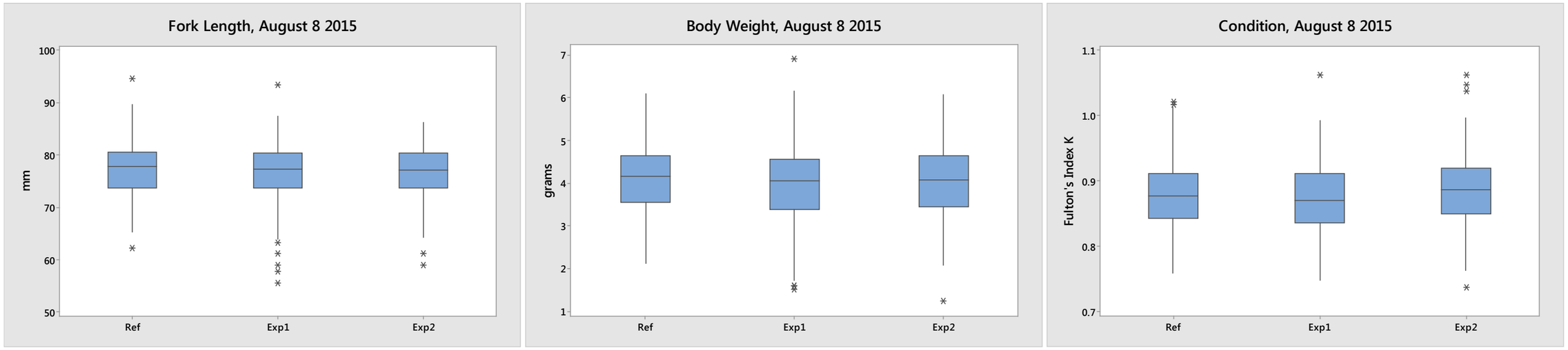


Figure 3-7 Boxplots of Fish Laboratory Exposure Endpoints at the Beginning and End of the Study

As described in the Study Design, Quality Assurance /Quality Control (QA/QC) measures were reviewed to ensure valid testing included a minimum survival of control fish (>90%) in the Reference tank, as well as consistency in temperature, flow rate, pH and dissolved oxygen among the groups. Data from the reference group was considered invalid if >10% fish mortality occurred although this situation did not occur. Other QA/QC practices included the calculation of Accumulated Thermal Units (ATU's). Although ATU's are more commonly used to describe the embryonic development of the egg to hatchlings, it provides an additional indication that the temperature was consistent between groups and was not a weighted factor. ATU'S were comparable for the three tanks and were calculated at 281.43°C, 280.00°C, 285.94°C for the Reference, Exposure 1 and Exposure 2 respectively (see Appendix B-2), which represents a maximum of 2.1% difference between Exposure 1 and Exposure 2 tanks.

Of the endpoints examined in this fish laboratory exposure study, only condition has a critical effect size (CES) identified in the Metal Mining Technical guidance for EEM (Environment Canada, 2012a). This CES value of ±10% of the reference mean indicates a threshold above which an effect may be indicative of a higher risk to the environment. On day 23 of the study, differences in condition observed between the reference and exposure 2 groups were above this threshold, while at the end of the study, only differences between the reference and exposure 1 and exposure 1 and exposure 2 groups were above this threshold. Note however that fish exposed to mine effluent (exposure 1) were in better condition than fish from the reference group or fish from the exposure 2 group (combining exposure to Mine effluent and to placer mining activities), which would not be indicative of an increased risk to the environment but rather of some positive influence resulting from exposure to the mine effluent. It is possible that micronutrients present in the mine effluent could have stimulated the stronger growth response in Exposure 1 tank. This response would also have occurred in the Exposure 2 tank, but the effluent concentrations was significantly less (the average effluent concentration at Exposure 2 site in Lightning Creek during the fish laboratory study period was approximately 0.6%) and any growth stimulating effect would have likely been counteracted by elevated TSS. The exact cause of the outcome is not clear and is beyond the scope of the Study Design.

3.2.3 Fish Tissue Metal Analysis

A fish tissue survey was not required for this study but was undertaken to help understand the effect of short-term exposure to mine effluent may have on fish health or to determine if certain metals would accumulate in the fish tissue. Ten complete kokanee specimen from each treatment were frozen and sent to ALS Environmental for metals analysis. Descriptive statistics for key metals are presented in Table 3-12 below, while complete results are available in Appendix B-4.

Table 3-12 Fish Tissue Metal Concentration (µg/g ww) after Short-Term Laboratory Exposure

Parameter	Treatment	n	Mean	Median	Standard Error	Standard Deviation	Minimum	Maximum	Outliers removed *
Aluminum	Reference	10	0.776	0.5	0.19046259	0.60229561	0.5	2.21	
	Exposure 1	10	1.456	1.525	0.20791665	0.65749018	0.5	2.55	
	Exposure 2	10	1.642	1.805	0.25286711	0.79963603	0.5	3.1	
Arsenic	Reference	10	1.3127	1.29	0.07384188	0.23350853	0.857	1.75	

Parameter	Treatment	n	Mean	Median	Standard Error	Standard Deviation	Minimum	Maximum	Outliers removed *
	Exposure 1	10	1.457	1.5	0.03672874	0.11614646	1.21	1.57	
	Exposure 2	10	1.377	1.375	0.05531827	0.17493173	1.17	1.69	
Cadmium	Reference	10	0.08292	0.07905	0.00658942	0.02083756	0.0594	0.115	
	Exposure 1	10	0.05758	0.05465	0.00508348	0.01607536	0.0394	0.0891	
	Exposure 2	10	0.15316	0.174	0.01784974	0.05644585	0.0491	0.22	
Chromium	Reference	10	0.0269	0.02	0.00395376	0.01250289	0.02	0.051	
	Exposure 1	10	0.023	0.02	0.0028519	0.0090185	0.012	0.04	
	Exposure 2	10	0.0224	0.02	0.00201219	0.00636309	0.015	0.037	
Copper	Reference	10	4.391	4.295	0.30214584	0.95546905	3.07	6.33	
	Exposure 1	10	2.951	2.725	0.2933161	0.92754694	2.08	5.36	
	Exposure 2	10	3.74	3.655	0.27867145	0.88123651	2.38	5.1	
Iron	Reference	10	18.04	18	1.12409964	3.55471518	13.7	26.9	
	Exposure 1	10	18.38	18.15	0.67376224	2.13062328	15.6	22.5	
	Exposure 2	10	19.64	18.7	1.05537776	3.33739752	14.5	24.4	
Lead	Reference	10	0.04421	0.03315	0.00542473	0.01715449	0.0288	0.076	
	Exposure 1	10	0.03067	0.03245	0.00143256	0.00453016	0.0245	0.036	
	Exposure 2	10	0.04299	0.04335	0.00430925	0.01362705	0.021	0.063	
Selenium	Reference	10	0.2898	0.282	0.00708488	0.02240436	0.266	0.334	
	Exposure 1	10	0.3287	0.335	0.00726032	0.02295914	0.285	0.353	
	Exposure 2	10	0.3128	0.316	0.00872519	0.02759146	0.273	0.346	
Silver	Reference	10	0.0008	0.0005	0.00012472	0.00039441	0.0005	0.0014	
	Exposure 1	9	0.0007	0.0005	0.00010289	0.00030867	0.0005	0.0012	FishID 18
	Exposure 2	10	0.0006	0.0005	0.00006	0.00018974	0.0005	0.0011	
Zinc	Reference	10	38.13	36.35	1.94325329	6.14510645	27.3	46.8	
	Exposure 1	10	36.69	36.4	0.9041202	2.85907911	33	42.4	
	Exposure 2	10	38.19	37.5	1.00093845	3.1652453	33	43.5	

** Studentized residuals >4 or <-4 were treated as outliers and removed from the analysis*

Statistical comparisons were made to determine if any significant differences existed in tissue metal concentrations between the three treatment groups. See Table 3-13 below for a summary of parameters for which significant differences were found (detailed results of statistical analyses for all parameters can be found in Appendix B-4). Barium, cadmium, copper and lead were found to be in higher concentrations in fish tissue of the reference group when compared to the exposure 1 group. Conversely, aluminum, cesium, cobalt, potassium, rubidium, selenium and thallium were more elevated in fish tissue of the exposure 1 group than in the reference group. Aluminum, cadmium, calcium and cesium were more concentrated in fish tissue of the exposure 2 group than in the reference group. When comparing the two exposure groups, cesium, molybdenum, potassium, rubidium and thallium are in higher concentration in fish tissue of exposure 1 group, while cadmium, calcium, copper and mercury are more concentrated in tissue of exposure 2 group.

Table 3-13 Fish Laboratory Exposure Tissue Metal Concentrations Statistical Comparisons among Treatment Groups

Parameter	Reference	Exposure 1	Exposure 2
Aluminum	A	B	B
Barium	B	A	A, B
Cadmium	A	A	B
Cesium	A	C	B
Cobalt	A	B	A, B
Copper	B	A	A, B
Lead	B	A	A, B
Mercury	A, B	A	B
Molybdenum	A, B	B	A
Potassium	A	B	A
Rubidium	A	B	A
Selenium	A	B	A, B
Sodium	A, B	B	A
Thallium	A	B	A

** Identical letters indicate no significant difference. Mean value of group A < mean value of group B < mean value of group C*

*** Where both ANOVA and Mann-Whitney tests were carried out and results differed, results of ANOVA were used in this table*

Some of the parameters that were found in higher concentration in fish tissue of Exposure 2 tank were also observed to be more elevated in the Exposure 2 tank water samples (see Table 3-8), such as aluminum, cadmium and lead. For other parameters however (arsenic, chromium, iron, silver and zinc), even though concentrations were generally higher in the Exposure 2 water samples, no significant differences were observed in the fish tissue samples. Similarly, copper showed no significant difference in fish tissue between reference and exposure 2 tanks while water quality results returned higher concentration in the exposure 2 tank. The percentage of the total concentration in water samples represented by the dissolved fraction can be an indicator of bioavailability, however this does not seem to always corroborate the results presented above. For example, cadmium has a high dissolved fraction (90% on average) in water samples from the three tanks and was also found to be higher in tissue of fish reared in the tanks with a higher cadmium concentration. However arsenic also has a large dissolved fraction (67% on average) but fish tissue results do not follow concentrations in water samples.

Overall, results of fish tissue analysis correlate with water chemistry data of the fish rearing tanks for certain parameters but not for others, and do not support a strong conclusion regarding potential metal accumulation during a short-term laboratory exposure.

3.3 SUPPORTING ENVIRONMENTAL VARIABLES

Climate data are being continuously recorded at the district mill weather station located within 250 meters of the mill building where the fish laboratory infrastructure was established. Monthly air temperature (°C), total precipitation data (mm), relative humidity (%), solar radiation (W/m^2) and total evapo-transpiration (mm) are summarized in Table 3-14 from time of commissioning in June 2011 to the end of 2015.

Table 3-14 Monthly and Annual Meteorological Parameters, District Mill Weather Station, 2011-2015

Month	Extreme Maximum Temp (ºC)	Average Maximum Temp (ºC)	Average Temp (ºC)	Average Minimum Temp (ºC)	Extreme Minimum Temp (ºC)	Average Relative Humidity (%)	Total Precip (mm) *	Average Solar Radiation (W/m^2)	Total Evapo-transpiration (mm)
January	3.74	-14.81	-17.95	-21.03	-41.48	86.07	13.4	1.6	0.63
February	2.87	-11.02	-14.46	-17.58	-30.87	82.84	7.8	16.9	1.37
March	5.54	-6.32	-11.91	-16.63	-28.31	63.12	2.4	99.3	7.27
April	10.93	3.21	-1.85	-6.81	-17.20	57.92	5.8	174.9	15.43
May	26.51	12.65	7.55	2.19	-5.74	53.12	18.0	226.7	28.73
June	30.51	17.97	12.49	6.93	0.82	58.07	36.4	223.9	28.28
July	25.67	18.40	13.18	8.16	2.73	66.39	59.0	196.4	23.64
August	27.34	16.01	10.85	6.39	-0.47	70.96	55.4	147.6	16.99
September	20.24	9.43	4.97	1.19	-5.18	74.23	41.3	85.4	10.85
October	8.25	-0.43	-3.40	-6.09	-13.84	85.91	17.6	31.0	3.52
November	0.83	-14.61	-17.24	-20.12	-33.57	85.86	11.6	4.0	0.76
December	0.18	-17.01	-19.75	-22.46	-33.33	84.55	4.5	0.5	0.38
ANNUAL	30.51	1.12	-3.13	-7.15	-41.48	72.42	273.2	100.68	137.8

**Total precipitation has only been measured since October 2013, prior to which only total rainfall was recorded. Total precipitation monthly averages for winter months (Oct-Mar) were compiled using only data subsequent to installation of the total precipitation gauge in October 2013.*

Average daily air temperature from early August to mid-September (2011 to 2015) are presented in Figure 3-8. A drop below average temperature is observed between August 27th and September 2nd 2015. This same temperature pattern and timing were reflected in the water temperature of Lightning Creek and of the fish tanks. Total monthly precipitation (mm) are shown in Figure 3-9. Total precipitation in August and September 2015 was 54.9 and 32.6 mm respectively and appears to be within the normal for the season when compared to previous years. No short or long term heavy rainfall event occurred during the study period.

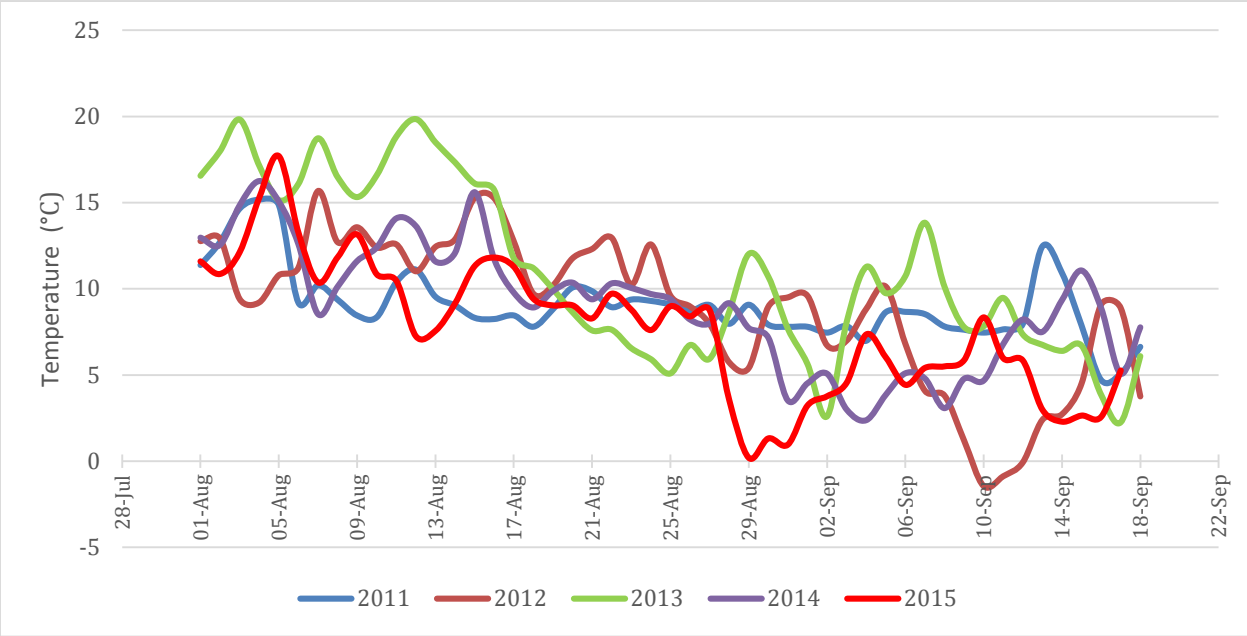
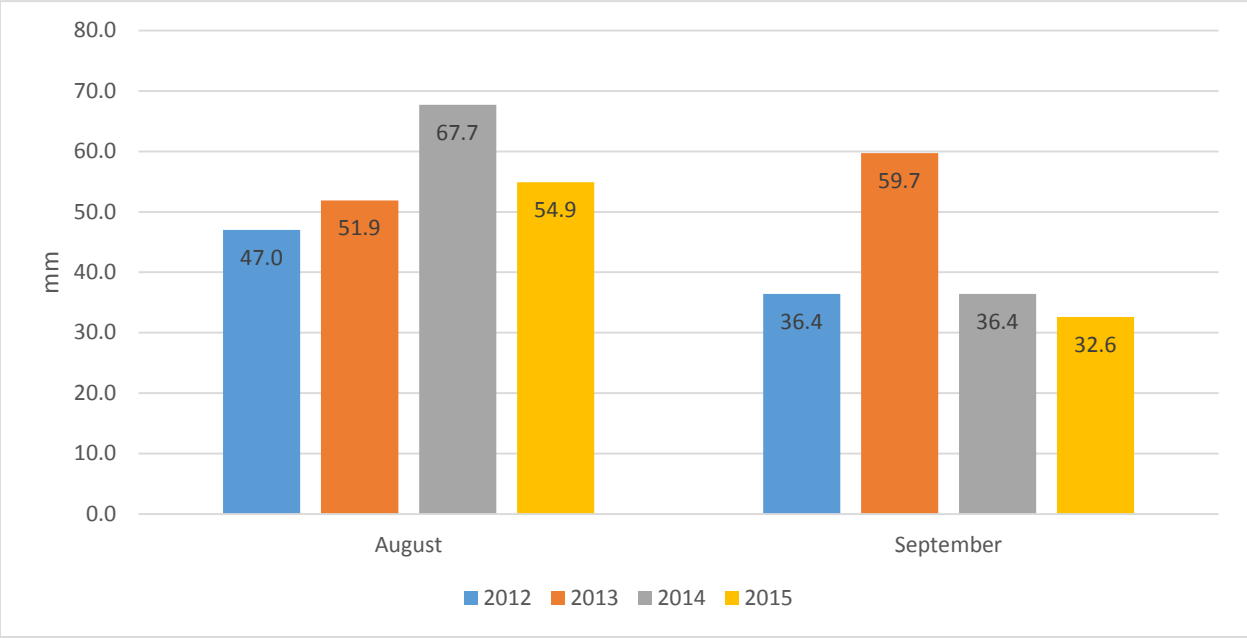


Figure 3-8 Average Daily Air Temperature for August and September during the years 2011 to 2015, Keno District Mill Meteorological Station.



**Total precipitation data are missing for August and September 2011.*

Figure 3-9 Monthly Total Precipitation for August and September, Keno District Mill Meteorological Station, 2012 to 2015.

3.4 TRACER STUDY

Carbon sampler analyses are provided by Ozark Underground Laboratory (OUL) including the peak wavelength of the detected dye and the concentration of the dye in ppb. Carbon samplers are placed in an eluent to pull dye from the carbon sampler for analysis with a spectrofluorometer. If a positive dye result is found on a carbon packet, the associated water sample is also tested. The results of the two rounds of sampling are included in Appendix C.

The first round of carbon samplers were deployed for just less than four days and positive dye detection came back from TS-08, TS-09 and TS-10 (Figure 2-3). Dye was detected in the water samples from TS-09 and TS-10 indicating dye was still moving through the system. The initial indication is that effluent pathways may be influenced by the diverted water from Thunder Gulch and not entering Lightning creek above the diversion. The concentration of dye increased substantially from 0.874 ppm to 9.70 ppm from TS-08 to TS-09, which indicates that the bulk of the effluent is travelling below the diversion and daylighting downstream. The increase in concentration from TS-09 to TS-10 was far less significant which suggest the main point of entry is between TS-08 and TS-09. However, it is possible that the diversion results in the effluent entering Lightning Creek further downstream than it might otherwise. There was a questionable dye result not meeting all the criteria for a positive result at TS-06 indicating dye may be daylighting above the diversion also.

The second round of samples were deployed for a much longer period of approximately 21 days. Dye was detected again at TS-08, TS-09 and TS-10, but in lower concentrations indicating the bulk of the dye came through in the first four day period. If the concentration of the samples is taken as a proxy for the volume of dye passing the sampler, 84% and 79% of the dye passing TS-09 and TS-10, respectively, emerged during the initial four day period. There was also a positive dye result at TS-06 and a dye hit not meeting all the criteria for a positive result at TS-07. All water samples, that were sampled when the second sampling round packets were retrieved, came back negative indicating that the all dye had moved through the system.

The results of the second round indicate that the effluent is daylighting above the diversion, but in significantly smaller volume. In both sampling rounds the greatest dye concentration was found at TS-10, which would give the impression that there is still effluent emerging below TS-09; however, the RPD between TS-09 and TS-10 is less than the average RPD between paired samples of 40% indicating that is it possible that all the effluent has emerged above TS-09.

It can be concluded that the main pathway of entry is above TS-09, but the dye is emerging from as far upstream as between TS-05 and TS-06 and likely still emerging in small quantities downstream of TS-09 and possibly TS-10. Presumably, the dye travels as a plume which expands both downward and horizontally from the point of entry. The study indicates the center of the plume and therefore the greatest concentration of the effluent is between TS-08 and TS-09. It is possible that the Thunder Gulch diversion is pushing this point further downstream than it might otherwise enter, however the impact for Lightning Creek of whether the main point of entry is 50m, 100m or 150m upstream is likely insignificant.

3.5 EFFLUENT CHARACTERIZATION

3.5.1 Effluent Chemistry

In the Bellekeno Mine EEM Cycle 2 Study Design, effluent quality data was summarized for the following four phases:

- Care and Maintenance (November 14th, 2007 to October 2nd, 2009),
- Advanced Exploration (October 3rd, 2008 to September 6th, 2010),
- Production (September 7th, 2010 to September 3rd, 2013) and
- Temporary suspension of operations (September 4th, 2013 to time of reporting (November 30th, 2014)).

Given that the Mine is still under temporary suspension of operations, data for this phase, including results of additional sampling conducted since November 2014 up to December 31, 2015, are summarized in Table 3-15 and 3-16 below and compared with MMER Standards and Water Use License QZ09-092 (WUL) effluent quality standards where applicable. Detailed results are available in Appendix D-1. During that period, there were no exceedances of the MMER authorized grab limit and one exceedance of the MMER authorized monthly mean (TSS - January 2015). For parameters that are not subject to MMER but for which an effluent standard is set in the WUL, no exceedances were observed during the temporary suspension of operations period.

3.5.2 Toxicity Testing

As required under the MMER and WUL applicable to the site acute toxicity testing has been conducted on a monthly basis under water collected at KV-43, the final discharge point at the Bellekeno Mine. Specifically, bioassay tests for acute toxicity have been conducted monthly using rainbow trout (*Onchorhynchus mykiss*, 96h pass/fail) and *Daphnia magna* (48h pass/fail) since September 2010. Rainbow trout results conducted between September 2010 and December 2015 have returned non-toxic results with the exception of December 2011 where results failed the <50% mortality threshold with 80% mortality after 96 hours. Results for *Daphnia magna* also returned non-toxic results with the exception of October 2011 where results failed the <50% mortality threshold with 100% mortality after 48 hours. Results from all testing events conducted between September 2010 and November 2014 were presented in the Bellekeno Mine EEM Cycle 2 Study Design, while more recent results can be found in Appendix D-1 of the present report.

Table 3-15 Summary of Bellekeno Mine effluent Quality (Station KV-43), Temporary Suspension of Operations Period (September 4th, 2013 to December 31st, 2015) - MMER Parameters

Parameter	Units	MMER Authorized Monthly Mean	MMER Authorized in Grab	Average	Standard Deviation	Minimum	Maximum	Count	Count <DL	% Over Grab Standard	% Over Monthly Mean Standard*
TSS	mg/L	15	30	8.9	6.1	0.5	29.4	114	5	0	3.6
pH (field)	pH units		6.0-9.5	8.7	0.32	7.74	9.44	113	0	0	0
pH (lab)	pH units		6.0-9.5	8.19	0.19	7.69	8.73	114	0	0	0
Total Arsenic	mg/L	0.5	1	0.00118	0.00068	0.00035	0.0036	113	28	0	0
Total Copper	mg/L	0.3	0.6	0.0019	0.00094	0.00025	0.0025	113	99	0	0
Total Lead	mg/L	0.2	0.4	0.005004	0.010134	0.000187	0.0674	113	5	0	0
Total Nickel	mg/L	0.5	1	0.01751	0.00436	0.00621	0.0264	113	0	0	0
Total Zinc	mg/L	0.5	1	0.1151	0.0994	0.015	0.652	113	7	0	0
Radium-226	Bq/L	0.37	1.11	0.0073	0.0036	0.005	0.014	9	6	0	0

**Monthly means results are compared to monthly mean standards.*

Table 3-16 Summary of Bellekeno Mine effluent Quality (Station KV-43), Temporary Suspension of Operations Period (September 4th, 2013 to December 31st, 2015) - Other Parameters

Parameter	Units	QZ09-092 Effluent Standard (Grab)	Average	Standard Deviation	Minimum	Maximum	Count	Count <DL	% Over Standard
Specific Conductance (lab)	µS/cm	-	1339	193	576	1710	114	0	-
Hardness (from total)	mg/L	-	812	108	517	1080	113	0	-
Alkalinity, total	mg/L	-	67.1	26.2	18.8	121	114	0	-
Ammonia (N)	mg/L	5	0.9318	0.6879	0.0863	3.56	113	0	0
Nitrite (N)	mg/L	-	0.1422	0.2936	0.0025	1.66	114	2	-
Nitrate (N)	mg/L	-	1.312	1.106	0.542	7.21	114	0	-
Dissolved Organic Carbon	mg/L	-	0.56	0.49	0.25	3.13	113	57	-
Total Aluminum	mg/L	-	0.0129	0.005	0.0032	0.034	113	76	-
Total Cadmium	mg/L	0.01	0.000384	0.0003979	0.000046	0.00267	113	13	0
Total Chromium	mg/L	-	0.0004	0.00032	0.00005	0.0032	113	87	-
Total Iron	mg/L	-	0.055	0.039	0.005	0.249	113	4	-
Total Mercury	mg/L	-	1.83E-05	0.0000098	2.5E-06	0.000025	113	113	-
Total Molybdenum	mg/L	-	0.002387	0.001245	0.000473	0.00614	113	0	-
Total Selenium	mg/L	-	0.002196	0.002027	0.000079	0.011	113	22	-
Total Silver	mg/L	0.01	0.000046	0.000042	0.000005	0.00031	113	94	0
Total Thallium	mg/L	-	0.000157	0.000033	0.00005	0.00024	113	1	-

3.5.3 Sublethal Toxicity Testing

As required under the MMER, sublethal toxicity testing has been initiated in 2010 and occurred semi-annually until 2014 and annually since 2015 on water taken at KV-43, the final discharge point from the Bellekeno Mine. Testing has occurred from December 2010 to September 2015. Results for the December 2010 sampling event can be found in the Bellekeno Mine Cycle 1 Environmental Effects Study Design, while results from September 2011 to June 2014 were presented in the Bellekeno Mine Cycle 2 EEM Study Design. A summary of all results since December 2010, including additional testing carried out since June 2014, is presented in Table 3-17 below, together with the geometric mean effect concentrations.

As indicated in the Bellekeno Mine Cycle 2 EEM Study Design, based on discharge measurements taken from 2003 through 2014, it was determined that treated Mine effluent discharging into Lightning Creek constitutes less than 1% of total flow throughout most of the year, with peak measurements during this time frame resulting in a effluent concentration of just over 4%. As a result, no effluent-related adverse influences to fish embryos, planktonic invertebrates, aquatic plants or algae are predicted in Lightning Creek based on comparison of sublethal toxicity geometric mean effect concentrations and receiving environment effluent concentrations. When looking at individual results, only *Lemna Minor* frond number inhibition (IC25) approached on one occasion the observed effluent concentration in Lightning Creek receiving environment.

Table 3-17 Sublethal Toxicity Testing Results from December 2014 to September 2015

Date	Rainbow Trout (early life stage)	*Ceriodaphnia Dubia*		*Lemna Minor*		*Pseudokerchneriella subcapitata*
	Viability EC25	Survival LC50	Reproduction IC25	Dry Weight IC25	Frond Number IC25	Growth IC25
Dec-10	>100	>100	71	>97	>97	89
Sep-11	>100	>100	>100	91	>97	91
Dec-11	>100	>100	11	>97	46	91
Jul-12	>100	77	37	>97	>97	91
Oct-12	>100	>100	60	>97	35	91
Jul-13	>100	>100	53	>97	67	>91
Dec-13	>100	>100	36	>97	19	>91
Jul-14	>100	>100	>100	81	18	>91
Dec-14	>100	>100	39	>97	<1.5	47
Sep-15	>100	>100	94	5.6	5.4	>91
Geometric Mean	**100**	**97.4**	**51.1**	**71.2**	**27.8**	**85.0**

**LC50 = Concentration which would cause a 50% mortality*
IC25 = Concentration which would cause a 25% inhibition in reproduction or growth
EC25 = Concentration expected to produce a certain effect in 50% of test organisms

3.6 LIGHTNING CREEK WATER QUALITY

Lightning Creek watershed water quality data for 2004 to July 2014 were presented in the Bellekeno Mine EEM Cycle 2 Study Design, while more recent results from August 2014 to December 2015 are summarized in Table 3-18 below (detailed results can be found in Appendix E). The water quality monitoring stations locations are shown on Figure 2-1. Parameters frequently exceeding the CCME guideline for the Protection of Aquatic Life (PAL) include aluminum, cadmium, chromium, copper, iron and lead. Parameters with occasional exceedances include pH, arsenic, mercury, selenium, silver and zinc. Note that parameters frequently or occasionally found to be in exceedance however vary between stations. Metals and TSS concentrations are generally the highest at stations KV-65 and KV-76 (Thunder Gulch) and the lowest at KV-37 (Lightning Creek upstream). In Lightning Creek, the highest concentrations are found at KV-41 and KV-81, located downstream of Thunder Gulch, which indicates the probable influence of Thunder Gulch. Thunder Gulch water quality is influenced by current placer mining activities.

Table 3-18 Lightning Creek Water Quality Summary, August 2014 to December 2015

Station Name		TSS	pH (field)	pH (lab)	DO (field)	Hard (tot)	Cl^-	F	CN	NH_4-N	NO_2-N	NO_3-N	Al	As	B	Cd	Cr	Cu	Fe	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	Zn
		mg/L	pH units	pH units	mg/L	mg/L	mg/L	mg/L	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
CCME Guidelines - Protection of Aquatic Life			**6.5-9**	**6.5-9**	**6.5**		**120**	**0.12**	**0.005**	**0.197**	**0.06**	**3**	*	**5**	**1500**	*	**1**	*	**300**	*	**0.026**	**73**	*	**1**	**0.25**	**0.8**	**15**	**30**
KV-37	Average	0.8	7.53	7.67	12.47	69.8	0.25	0.042	0.0025	0.0042	0.0005	0.09	17.3	2.62	5	0.0456	0.2	0.35	61	0.462	0.0035	0.127	0.25	0.54	0.007	0.005	0.075	4.6
	Std Dev	0.5	0.44	0.21	1.33	9.7	0	0.008	0	0.0023	0	0.0595	12.1	0.41	0	0.0793	0.12	0.16	26	0.68	0.0013	0.023	0	0.08	0.004	0	0.021	6.6
	Minimum	0.5	6.47	7.44	10.12	46	0.25	0.027	0.0025	0.0025	0.0005	0.0105	6.6	1.87	5	0.0076	0.05	0.25	33	0.025	0.0025	0.083	0.25	0.348	0.005	0.005	0.021	1.5
	Maximum	2.4	8.52	8.19	14.9	87.8	0.25	0.055	0.0025	0.0083	0.0005	0.163	49.2	3.3	5	0.256	0.48	0.7	130	2.51	0.005	0.164	0.25	0.688	0.018	0.005	0.11	21.9
	Count	17	17	17	17	17	17	17	7	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
	Count <DL	10	0	0	0	0	17	0	7	10	17	0	0	0	17	0	1	12	0	3	17	0	17	0	14	17	0	11
	Count > Standard	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0
	% Over Standard	0	5.9	0	0	0	0	0	0	0	0	0	5.9	0	0	11.8	0	0	0	5.9	0	0	0	0	0	0	0	0
KV-38	Average	4.5	7.48	7.64	13.33	90.6	0.25	0.053	0.0025	0.0028	0.0006	0.1063	88.7	2.76	5	0.146	0.27	0.67	165	0.674	0.0042	0.21	0.47	0.67	0.01	0.006	0.176	14.3
	Std Dev	12.2	0.21	0.23	1.05	13.4	0	0.012	0	0.0011	0.0004	0.0623	244.5	0.33	0	0.091	0.39	0.81	406	0.609	0.0012	0.054	0.57	0.124	0.009	0.002	0.066	8.1
	Minimum	0.5	7.18	7.44	11.3	51.1	0.25	0.034	0.0025	0.0025	0.0005	0.0247	6.4	2.33	5	0.067	0.05	0.25	22	0.084	0.0025	0.111	0.25	0.426	0.005	0.005	0.047	7.5
	Maximum	43.2	7.86	8.14	15.43	102	0.25	0.07	0.0025	0.0062	0.0018	0.178	864	3.36	5	0.349	1.51	3.13	1450	1.73	0.005	0.332	2.25	0.82	0.032	0.012	0.268	32.8
	Count	12	13	12	13	12	12	12	8	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Count <DL	8	0	0	0	0	12	0	8	11	11	0	0	0	12	0	1	6	0	0	12	0	9	0	8	11	0	0
	Count > Standard	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	1	1	1	1	0	0	0	0	0	0	0	1
	% Over Standard	0	0	0	0	0	0	0	0	0	0	0	8.3	0	0	25	8.3	8.3	8.3	8.3	0	0	0	0	0	0	0	8.3
KV-39	Average	0.9	7.71	7.76	12.81	135	0.25	0.056			0.0005	0.223	13.9	9.49	5	2.31	0.08	0.43	21	2.05	0.0031	0.365	0.87	1.049	0.02	0.005	0.687	173
	Std Dev	0.5	0.05	0.18	0.83	46.5	0	0.011			0	0.041	15.4	0.34	0	0.16	0.05	0.36	32	2.948	0.0012	0.111	0.11	0.424	0.029	0	0.41	26
	Minimum	0.5	7.66	7.55	11.8	71.2	0.25	0.045			0.0005	0.178	4.4	9.09	5	2.08	0.05	0.25	5	0.445	0.0025	0.204	0.73	0.522	0.005	0.005	0.186	138
	Maximum	1.4	7.78	7.93	13.53	170	0.25	0.066			0.0005	0.257	36.8	9.88	5	2.42	0.15	0.97	69	6.47	0.005	0.453	0.98	1.44	0.064	0.005	1.12	201
	Count	4	4	4	4	4	3	3			3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	Count <DL	2	0	0	0	0	3	0			3	0	0	0	4	0	3	3	3	0	4	0	0	0	3	4	0	0
	Count > Standard	0	0	0	0	0	0	0			0	0	0	4	0	4	0	0	0	1	0	0	0	2	0	0	0	4
	% Over Standard	0	0	0	0	0	0	0			0	0	0	100	0	100	0	0	0	25	0	0	0	50	0	0	0	100
KV-40	Average	0.6	7.66	7.61	13.04	209	0.25	0.068			0.0005	0.133	19.8	0.81	5	0.0419	0.11	0.66	8	0.059	0.0031	0.075	1.56	1.486	0.008	0.006	0.039	4.1
	Std Dev	0.2	0.16	0.05	1.3	42	0	0.018			0	0.022	13.3	0.37	0	0.0193	0.04	0.82	6	0.051	0.0012	0.016	1.3	0.544	0.006	0.003	0.009	1.3
	Minimum	0.5	7.45	7.54	12.07	154	0.25	0.057			0.0005	0.103	8.2	0.35	5	0.0302	0.05	0.25	5	0.025	0.0025	0.063	0.75	0.703	0.005	0.005	0.032	3.1
	Maximum	1	7.8	7.67	14.95	248	0.25	0.095			0.0005	0.152	36.1	1.25	5	0.0707	0.15	1.89	17	0.132	0.005	0.097	3.49	1.94	0.017	0.011	0.051	6
	Count	4	4	4	4	4	4	4			4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	Count <DL	3	0	0	0	0	4	0			4	0	0	0	4	0	2	3	3	2	4	0	0	0	3	3	0	0
	Count > Standard	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
	% Over Standard	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	75	0	0	0	0
KV-41	Average	24.5	7.54	7.72	13.62	106	0.3	0.063	0.0025	0.0032	0.0005	0.1461	734.1	3.31	5	0.1518	1.46	3.26	1270	5.612	0.007	0.262	2.06	0.859	0.082	0.011	0.42	19.5
	Std Dev	45.5	0.31	0.21	1.45	22.1	0.22	0.011	0	0.0021	0.0002	0.0676	1745.8	3.87	0	0.1329	3.19	6.03	2931	8.204	0.0093	0.115	3.79	0.225	0.141	0.02	0.19	16.8
	Minimum	0.5	6.98	7.22	10.2	50.9	0.25	0.048	0.0025	0.0025	0.0005	0.0472	32	1.25	5	0.0513	0.15	0.25	53	0.38	0.0025	0.178	0.25	0.395	0.005	0.005	0.149	6.4
	Maximum	196	8.02	8.17	16.42	141	1.14	0.077	0.0025	0.0097	0.0013	0.234	7420	17.8	5	0.582	13.7	26	12500	35.1	0.037	0.694	16.4	1.23	0.611	0.084	0.805	75.9

Station Name		TSS	pH (field)	pH (lab)	DO (field)	Hard (tot)	Cl^-	F	CN	NH_4-N	NO_2-N	NO_3-N	Al	As	B	Cd	Cr	Cu	Fe	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	Zn
		mg/L	pH units	pH units	mg/L	mg/L	mg/L	mg/L	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
CCME Guidelines - Protection of Aquatic Life			**6.5-9**	**6.5-9**	**6.5**		**120**	**0.12**	**0.005**	**0.197**	**0.06**	**3**	*	**5**	**1500**	*	**1**	*	**300**	*	**0.026**	**73**	*	**1**	**0.25**	**0.8**	**15**	**30**
	Count	17	17	17	17	17	17	17	8	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
	Count <DL	2	0	0	0	0	16	0	8	15	16	0	0	0	17	0	0	1	0	0	15	0	3	0	1	14	0	0
	Count > Standard	0	0	0	0	0	0	0	0	0	0	0	11	1	0	5	4	4	11	9	1	0	0	5	1	0	0	2
	% Over Standard	0	0	0	0	0	0	0	0	0	0	0	64.7	5.9	0	29.4	23.5	23.5	64.7	52.9	5.9	0	0	29.4	5.9	0	0	11.8
KV-65	Average	112	7.64	7.82	13.49	110	0.31	0.065	0.0025	0.0033	0.0005	0.1298	2616.6	7.06	5	0.2552	5.76	19.77	5440	24.61	0.0106	0.395	8.32	0.858	0.347	0.029	0.914	41.8
	Std Dev	199	0.3	0.29	1.25	35.5	0.25	0.015	0	0.0019	0	0.0417	4334.9	10.94	0	0.3525	9.68	38.34	9240	41.08	0.0127	0.295	13.54	0.21	0.596	0.044	0.42	66.3
	Minimum	1.8	7.13	6.79	11.2	26.2	0.25	0.03	0.0025	0.0025	0.0005	0.0398	34.5	0.5	5	0.0241	0.17	0.25	54	1.02	0.0025	0.093	0.25	0.275	0.005	0.005	0.109	3.6
	Maximum	743	8.27	8.17	15.4	162	1.3	0.083	0.0025	0.0087	0.0005	0.182	12300	33.1	5	1.03	29.8	124	26400	133	0.0412	1.26	38.3	1.21	1.76	0.133	1.77	192
	Count	17	18	17	18	17	17	17	8	16	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
	Count <DL	0	0	0	0	0	16	0	8	13	17	0	0	0	17	0	0	1	0	0	12	0	4	0	1	11	0	0
	Count > Standard	0	0	0	0	0	0	0	0	0	0	0	14	4	0	6	8	8	9	9	3	0	0	2	4	0	0	4
	% Over Standard	0	0	0	0	0	0	0	0	0	0	0	82.4	23.5	0	35.3	47.1	47.1	52.9	52.9	17.6	0	0	11.8	23.5	0	0	23.5
KV-76	Average	102	7.53	7.8	13.94	104	0.25	0.062		0.0032	0.0005	0.1283	2450	7.73	5	0.3307	4.83	14.51	5324	23.81	0.0153	0.374	8.27	0.863	0.331	0.029	0.907	52.9
	Std Dev	149	0.41	0.21	1.39	43.9	0	0.014		0.0015	0	0.0503	4203	13.37	0	0.4188	8.22	26.28	9785	35.67	0.0153	0.317	14.09	0.341	0.561	0.049	0.553	85.8
	Minimum	11.6	6.85	7.45	11.5	42.5	0.25	0.045		0.0025	0.0005	0.0621	161	0.8	5	0.0943	0.42	0.5	295	3.12	0.0025	0.172	0.71	0.298	0.033	0.005	0.273	10.5
	Maximum	366	8	8.02	16.03	165	0.25	0.083		0.0059	0.0005	0.182	9940	31.6	5	1.07	19.5	61.4	22800	86.3	0.034	0.938	33.4	1.17	1.33	0.116	1.53	206
	Count	5	18	5	18	5	5	5		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Count <DL	0	0	0	0	0	5	0		4	5	0	0	0	5	0	0	1	0	0	3	0	0	0	0	3	0	0
	Count > Standard	0	0	0	0	0	0	0		0	0	0	5	1	0	2	3	3	4	4	2	0	0	2	1	0	0	1
	% Over Standard	0	0	0	0	0	0	0		0	0	0	100	20	0	40	60	60	80	80	40	0	0	40	20	0	0	20
KV-77	Average	35.4	7.71	7.69	13.25	64.7	0.25	0.041			0.0005	0.0884	605	1.89	5	0.0555	1.17	2.42	1016	3.573	0.0043	0.181	2.09	0.623	0.054	0.009	0.335	7.2
	Std Dev	44.4	0.13	0.11	1.95	35.7	0	0.01			0	0.0537	875.2	2.59	0	0.0549	1.53	3.06	1548	5.709	0.0017	0.071	2.69	0.226	0.086	0.009	0.207	9.5
	Minimum	1.4	7.58	7.55	10.5	20.8	0.25	0.027			0.0005	0.0369	24.8	0.27	5	0.013	0.13	0.25	32	0.376	0.0025	0.075	0.25	0.307	0.005	0.005	0.092	1.5
	Maximum	99.6	7.85	7.86	15.2	120	0.25	0.056			0.0005	0.166	2090	6.31	5	0.139	3.73	7.56	3650	13.6	0.0063	0.256	6.58	0.823	0.206	0.025	0.661	23.5
	Count	5	5	5	5	5	5	5			5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Count <DL	0	0	0	0	0	5	0			5	0	0	0	5	0	0	2	0	0	4	0	2	0	2	4	0	3
	Count > Standard	0	0	0	0	0	0	0			0	0	3	1	0	1	2	2	2	2	0	0	0	0	0	0	0	0
	% Over Standard	0	0	0	0	0	0	0			0	0	60	20	0	20	40	40	40	40	0	0	0	0	0	0	0	0
KV-81	Average	11.9	7.49	7.8	13.74	108	0.31	0.064		0.0037	0.0005	0.139	301.1	2.1	5	0.1301	0.63	1.78	511	2.631	0.0038	0.22	1.58	0.85	0.038	0.006	0.435	16.8
	Std Dev	14.5	0.67	0.22	1.26	22	0.17	0.013		0.0029	0	0.0794	354	0.81	0	0.053	0.57	1.15	589	1.613	0.0013	0.035	0.68	0.223	0.032	0.003	0.173	9.5
	Minimum	0.5	6.44	7.39	11.6	45.7	0.25	0.035		0.0025	0.0005	0.0025	48.7	1.21	5	0.0759	0.15	0.69	61	0.357	0.0025	0.15	0.83	0.419	0.005	0.005	0.106	9
	Maximum	64.6	8.33	8.32	15.46	137	0.9	0.088		0.0117	0.0005	0.236	1410	4.23	5	0.255	2.4	5.1	2310	6.8	0.0054	0.309	3.68	1.13	0.131	0.016	0.778	46.3
	Count	17	16	17	16	17	17	17		17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
	Count <DL	1	0	0	0	0	15	0		14	17	1	0	0	17	0	1	0	0	0	16	0	0	0	2	15	0	0
	Count > Standard	0	1	0	0	0	0	0		0	0	0	14	0	0	5	2	4	10	7	0	0	0	5	0	0	0	1
	% Over Standard	0	6.2	0	0	0	0	0		0	0	0	82.4	0	0	29.4	11.8	23.5	58.8	41.2	0	0	0	29.4	0	0	0	5.9

** Guideline is determined by a hardness dependent equation*

4 CONCLUSION AND RECOMMENDATIONS

4.1 CONCLUSION

The objective of this Cycle 2 Bellekeno Mine EEM study was to determine the influence of treated Mine effluent on biological communities of Lightning Creek. To meet this objective, effluent quality and receiving environment water quality monitoring data collected by the Mine were used to support the interpretation of benthic invertebrate community survey data collected at one effluent-exposed area and to two reference areas of Lightning Creek. A laboratory fish exposure study was also carried out to substitute for the naturally low fish population and to isolate the mine effluent influence from the placer mining influence.

Results of the benthic invertebrate community survey indicate more differences in the selected endpoints between the two reference areas (pristine and historical placer mining influence) than between the reference and exposure areas. Specifically, all of the endpoints examined show a significant difference between the two reference areas (except for % EPT). Only the density and % Diptera are significantly different between the Reference 2 and Exposure 2 areas. Differences between Reference 1 and Reference 2 areas could be associated with channel and habitat disturbances from historical placer mining activities while differences between Reference 2 and Exposure 2 areas are thought to be mainly associated with current placer mining activities occurring in Thunder Gulch rather than to the mine effluent, as supported by water quality results. Water chemistry analysis indicated the presence of a metal concentration gradient moving downstream, leading to a greater number and magnitude of CCME-PAL guideline exceedences at Exposure 2 site, which correlates well with the increase in total suspended solids (TSS) observed along the same gradient. Based on results of monthly water quality sampling, the main TSS input to Lightning Creek appears to originate from Thunder Gulch, which is subject to active placer mining. Sediments collected at Reference 2 and Exposure 2 are relatively similar in chemistry, which testifies the minimal effect the Bellekeno Mine has on sediment quality downstream of the effluent infiltration in Lightning Creek but also speaks to the local variation of Lightning Creek with regards to historical activity and natural inputs.

The fish laboratory exposure study allowed for distinguishing potential effects from the Bellekeno Mine effluent from those of the Thunder Gulch placer mine discharge, influences that are not possible to isolate *in situ*. The analysis of fish metrics endpoints before and after 41 days of experiment demonstrated no increased mortality associated with exposure to mine effluent, and a positive effect on fish growth and condition relative to reference water of Lightning Creek. Overall, the kokanee from the Exposure 1 group (Lightning Creek reference water + 2.5% mine effluent) achieved better growth and condition compared to the Exposure 2 group (Lightning Creek water downstream of mine effluent infiltration and historical and current placer mining) and the Reference group. It is possible that micronutrients present in the mine effluent could have stimulated the stronger growth response in Exposure 1 tank. This response would also have occurred in the Exposure 2 tank, but the effluent concentration was significantly less (the average effluent concentration at Exposure 2 site in Lightning Creek during the fish laboratory study period was approximately 0.6%) and any growth stimulating effect would have likely been counteracted by elevated TSS. The exact cause of the outcome is not clear and goes beyond the scope of the Study Design. Results of fish tissue analysis correlate with water chemistry data of the fish rearing tanks for certain parameters but not for others, and do not support a strong conclusion regarding potential metal accumulation during a short-term laboratory exposure.

Effluent characterization results indicate no exceedance of the MMER authorized grab limit and one exceedance of the MMER authorized monthly mean (TSS - January 2015) during the temporary suspension of operations period (September 4th, 2013 to present). Monthly toxicity testing results since 2010 have all returned non-toxic results with one exception (December 2011) for rainbow trout and one exception (October 2011) for *Daphnia magna.* Results of semi-annual or annual sublethal toxicity tests denote no effluent-related adverse influences to fish embryos, planktonic invertebrates, aquatic plants or algae are predicted in Lightning Creek based on comparison of sublethal toxicity geometric mean effect concentrations and receiving environment effluent concentrations. Overall, effluent characterization results are consistent with results of the biological sampling component of this EEM cycle 2 study.

Lightning Creek watershed water quality data indicate that metals and TSS concentrations are generally the highest at stations KV-65 and KV-76 (Thunder Gulch) and the lowest at KV-37 (Lightning Creek upstream). In Lightning Creek, the highest concentrations are found at KV-41 and KV-81, located downstream of Thunder Gulch, which supports the probable influence of Thunder Gulch. Thunder Gulch water quality is influenced by active placer mining, suggesting that effects observed on the benthic community could be associated with placer mining activities rather than with the mine effluent.

The Bellekeno Cycle 1 EEM study was conducted during the mine production period (Sept. 7th, 2010 to September 3rd, 2013) while the Cycle 2 study took place during a period of temporary suspension of mine operations (September 4th, 2013 to present). The Bellekeno Cycle 2 EEM Study Design presented effluent chemistry results averaged for each period, and results for the temporary closure period were updated in the present interpretive report (see Appendix D-1). Further discussion on water quality between 2013 and 2015 is presented in the annual Water Use Licence reports. TSS, pH and hardness were on average higher during the temporary closure period when compared to the operation period, while ammonia, nitrite and nitrate were on average lower during the temporary suspension of operations. Average total metals concentrations for the two periods are not all showing the same trends with some being on average higher (cadmium, copper, nickel, selenium, thallium and zinc) and others lower (aluminum, arsenic, chromium, iron, mercury, lead, molybdenum and silver) during the temporary closure period. Differences in effluent chemistry between the two periods did not however appear to have significantly influenced the results of the biological studies of the two EEM cycles.

Similarly, water quality in the receiving environment (KV-41/Exposure 2) showed some differences in the average TSS and metals concentrations between the operation and temporary closure periods, but no clear trend emerges. TSS was on average higher during operations, while total and dissolved metals vary. Thunder Gulch could be a significant contributor to TSS at KV-41 since TSS levels at KV-76 during the mine operation period were also on average much higher. Upstream of Thunder Gulch and of the mine effluent point of entry (KV-38/Reference 2), TSS values were on average much lower than at KV-41 and comparable between the two periods. Most total and dissolved metals were in higher concentration during operations. Further discussion on water quality between 2013 and 2015 is presented in the annual Water Use Licence reports. Overall though, as was the case for effluent chemistry, differences in Lightning Creek water quality between the two periods did not appear to have significantly influenced the results of the biological studies of the two EEM cycles.

With respect to the benthic invertebrate studies, conclusions of the Bellekeno Cycle 1 EEM Interpretive report were generally similar to those of the present report: “Overall, the Bellekeno Mine EEM study suggested some minor effluent-related influences on water quality of Lightning Creek. However, no clear effluent-related influences on the benthic invertebrate community of Lightning Creek were indicated, with differences in

organism density and composition between effluent-exposed and reference areas more consistent with a placer mining-related habitat influence than with an effluent toxicity-related response. In addition, no effluent-related influences on the usability of fish tissues were indicated at the effluent-exposed area, with mercury and other metal concentrations often much lower in Arctic grayling collected downstream of the mine discharge than in reference grayling."

4.2 RECOMMENDATIONS

Both the Cycle 1 and Cycle 2 Bellekeno Mine EEM studies suggested that historical mining activity and current placer mining activity in the Lightning Creek watershed can be confounding factors to the determination of effluent-related effects to the benthic invertebrate community of Lightning Creek. In order to better isolate the potential influence of active placer mining and in light of the results of the tracer study conducted in the fall of 2015, it is recommended that future benthic invertebrate community monitoring programs relocate the Reference 2 sampling site upstream of the mine effluent main point of entry in Lightning Creek, and downstream of Thunder Gulch or of any active placer mining discharge to Lightning Creek. Alternatively, the Reference 2 site could be kept at its current location and an additional sampling site as described above could be added to the study. It should be noted that placer mining is a dynamic activity and that the state of operations at the time of the next EEM cycle (3 years from now) may have changed. Therefore benthic invertebrate sampling locations will have to be confirmed or refined as the timing of the next study approaches.

In addition, since the results of the two cycles of biological monitoring indicate a similar type of effect on the benthic invertebrate community, it is recommended that one or more additional sampling site(s) within the exposure area be incorporated in the Bellekeno Cycle 3 Study Design, in order to assess the magnitude and geographic extent of the effect, as required under the MMER.

5 SCHEDULE

Based on the EEM schedule prescribed in the MMER, the next Bellekeno Mine EEM Biological Study Interpretive Report must be submitted to Environment Canada no later than March 7th 2019. Accordingly, a Study Design pertaining to the next EEM biological studies must be submitted to Environment Canada at least six months prior to implementation of the field portion of the study.

6 REFERENCES

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APPENDIX A

BENTHIC INVERTEBRATE COMMUNITY SURVEY DATA

Photo 1: Reference 1 looking upstream

Photo 2: Reference 1 looking downstream

Photo 3: Reference 1 looking across

Photo 4: Reference 1 substrate

Photo 5: Reference 2 looking upstream

Photo 6: Reference 2 looking downstream

Photo 7: Reference 2 looking across

Photo 8: Reference 2 substrate

Photo 9: Exposure 2 looking upstream

Photo 10: Exposure 2 looking downstream

Photo 11: Exposure 2 looking across

Photo 12: Exposure 2 substrate

APPENDIX A-2

Benthic Invertebrate Survey Surface Water Quality Laboratory Results

Station Name		CCME Guidelines - Protection of Aquatic Life	KV-37 Lightning Creek u/s Hope Gulch	KV-38 Lightning Creek u/s Thunder Gulch	KV-41 Lightning Creek u/s Keno City bridge
Description					
Sample Date			02/09/2015	01/09/2015	01/09/2015
Discharge (Flow)	L/s				2057.8
Discharge RPD	%				7.1
Staff Gauge Water Level	m				0.268
Total Suspended Solids	mg/L		2.4	43.2	196
Total Dissolved Solids (lab)	mg/L		110	119	108
pH (field)	pH units	6.5-9	7.44	7.25	7.44
pH (lab)	pH units	6.5-9	7.59	7.53	7.60
Specific Conductance (field)	µS/cm		162.6	171.7	160.1
Specific Conductance (lab)	µS/cm		184	194	178
Temperature (field)	C		2.7	3.3	3.4
Dissolved Oxygen (field)	mg/L	6.5	12.7	12.8	12.7
Dissolved Oxygen (field)	%		106		107
ORP (field)	mV		309.7		331
Turbidity (lab)	NTU		0.20	7.14	215
Hardness (from total)	mg/L		87.8	98.1	103
Hardness (from dissolved)	mg/L		88.4	98.8	87.3
Alkalinity, total	mg/L		32.1	32.8	37.9
Chloride	mg/L	120	<0.50	<0.50	<0.50
Fluoride	mg/L	0.12	0.039	0.043	0.048
Bromide	mg/L		<0.050	<0.050	<0.050
Sulphate, dissolved	mg/L		57.7	62.3	52.5
Ammonia (N)	mg/L	0.197	<0.0050	<0.0050	0.0097
Nitrite (N)	mg/L	0.06	<0.0010	<0.0010	<0.0010
Nitrate (N)	mg/L	3	0.0578	0.0521	0.0884
Total Kjeldahl Nitrogen	mg/L				
Dissolved Organic Carbon	mg/L		1.38	1.50	1.91
Aluminum (Al), total	mg/L	*	0.0160	**0.864**	**7.42**
Antimony (Sb), total	mg/L		0.00033	0.00040	0.00127
Arsenic (As), total	mg/L	0.005	0.00315	0.00336	**0.0178**

APPENDIX A-2

Benthic Invertebrate Survey Surface Water Quality Laboratory Results

Station Name		CCME Guidelines - Protection of Aquatic Life	KV-37 Lightning Creek u/s Hope Gulch	KV-38 Lightning Creek u/s Thunder Gulch	KV-41 Lightning Creek u/s Keno City bridge
Description					
Sample Date			02/09/2015	01/09/2015	01/09/2015
Barium (Ba), total	mg/L		0.0526	0.0723	0.216
Beryllium (Be), total	mg/L		<0.00010	<0.00010	0.00023
Bismuth (Bi), total	mg/L		<0.000050	<0.000050	0.000100
Boron (B), total	mg/L	1.5	<0.010	<0.010	<0.010
Cadmium (Cd), total	mg/L	*	**0.000256**	**0.000263**	**0.000582**
Calcium (Ca), total	mg/L		26.7	29.9	29.4
Chromium (Cr), total	mg/L	0.001	0.00012	**0.00151**	**0.0137**
Cobalt (Co), total	mg/L		<0.00010	0.00066	0.00603
Copper (Cu), total	mg/L	*	<0.00050	**0.00313**	**0.0260**
Iron (Fe), total	mg/L	0.3	0.041	**1.45**	**12.5**
Lead (Pb), total	mg/L	*	0.000336	0.00166	**0.0351**
Lithium (Li), total	mg/L		<0.0010	0.0023	0.0080
Magnesium (Mg), total	mg/L		5.11	5.71	7.14
Manganese (Mn), total	mg/L		0.00724	0.0420	0.286
Mercury (Hg), total	mg/L	0.000026	<0.0000050	<0.0000050	**0.000037**
Molybdenum (Mo), total	mg/L	0.073	0.000150	0.000251	0.000694
Nickel (Ni), total	mg/L	*	<0.00050	0.00225	0.0164
Phosphorus (P), total	mg/L		<0.050	<0.050	0.281
Potassium (K), total	mg/L		0.10	0.29	1.16
Selenium (Se), total	mg/L	0.001	0.000618	0.000667	0.000767
Silicon (Si), total	mg/L		2.27	3.61	13.7
Silver (Ag), total	mg/L	0.00025	<0.000010	0.000032	**0.000611**
Sodium (Na), total	mg/L		0.623	0.659	0.828
Strontium (Sr), total	mg/L		0.0728	0.0804	0.0831
Sulphur (S), total	mg/L		20.2	21.4	18.2
Thallium (Tl), total	mg/L	0.0008	<0.000010	0.000012	0.000084
Tin (Sn), total	mg/L		<0.00010	<0.00010	0.00016
Titanium (Ti), total	mg/L		<0.00090	<0.042	0.237
Uranium (U), total	mg/L	0.015	0.000110	0.000159	0.000641

APPENDIX A-2

Benthic Invertebrate Survey Surface Water Quality Laboratory Results

Station Name		CCME Guidelines - Protection of Aquatic Life	KV-37 Lightning Creek u/s Hope Gulch	KV-38 Lightning Creek u/s Thunder Gulch	KV-41 Lightning Creek u/s Keno City bridge
Description					
Sample Date			02/09/2015	01/09/2015	01/09/2015
Vanadium (V), total	mg/L		0.00065	0.00281	0.0199
Zinc (Zn), total	mg/L	0.03	0.0219	0.0251	**0.0759**
Zirconium (Zr), total	mg/L		<0.00030	<0.00030	0.00184
Aluminum (Al), dissolved	mg/L		0.0056	0.0087	0.0081
Antimony (Sb), dissolved	mg/L		0.00029	0.00031	0.00025
Arsenic (As), dissolved	mg/L		0.00272	0.00223	0.00131
Barium (Ba), dissolved	mg/L		0.0530	0.0540	0.0589
Beryllium (Be), dissolved	mg/L		<0.00010	<0.00010	<0.00010
Bismuth (Bi), dissolved	mg/L		<0.000050	<0.000050	<0.000050
Boron (B), dissolved	mg/L		<0.010	<0.010	<0.010
Cadmium (Cd), dissolved	mg/L		**0.000248**	**0.000177**	0.0000751
Calcium (Ca), dissolved	mg/L		27.0	30.6	26.8
Chromium (Cr), dissolved	mg/L		<0.00010	<0.00010	<0.00010
Cobalt (Co), dissolved	mg/L		<0.00010	<0.00010	<0.00010
Copper (Cu), dissolved	mg/L		0.00038	0.00046	0.00050
Iron (Fe), dissolved	mg/L		0.016	0.018	0.012
Lead (Pb), dissolved	mg/L		<0.000050	<0.000050	0.000072
Lithium (Li), dissolved	mg/L		<0.0010	<0.0010	<0.0010
Magnesium (Mg), dissolved	mg/L		5.12	5.47	4.95
Manganese (Mn), dissolved	mg/L		0.00593	0.00654	0.00659
Mercury (Hg), dissolved	mg/L		<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo), dissolved	mg/L		0.000206	0.000163	0.000191
Nickel (Ni), dissolved	mg/L		<0.00050	<0.00050	<0.00050
Phosphorus (P), dissolved	mg/L		<0.050	<0.050	<0.050
Potassium (K), dissolved	mg/L		<0.10	0.11	0.15
Selenium (Se), dissolved	mg/L		0.000589	0.000631	0.000688
Silicon (Si), dissolved	mg/L		2.27	2.30	2.44
Silver (Ag), dissolved	mg/L		<0.000010	<0.000010	<0.000010
Sodium (Na), dissolved	mg/L		0.651	0.626	0.649

APPENDIX A-2

Benthic Invertebrate Survey Surface Water Quality Laboratory Results

	Station Name	CCME Guidelines -	KV-37	KV-38	KV-41
	Description	Protection of	Lightning Creek u/s	Lightning Creek u/s	Lightning Creek u/s
	Sample Date	Aquatic Life	Hope Gulch	Thunder Gulch	Keno City bridge
			02/09/2015	01/09/2015	01/09/2015
Strontium (Sr), dissolved	mg/L		0.0720	0.0781	0.0731
Sulphur (S), dissolved	mg/L		20.1	21.9	18.4
Thallium (Tl), dissolved	mg/L		<0.000010	<0.000010	<0.000010
Tin (Sn), dissolved	mg/L		<0.00010	<0.00010	<0.00010
Titanium (Ti), dissolved	mg/L		<0.00030	<0.00030	<0.00030
Uranium (U), dissolved	mg/L		0.000104	0.000109	0.000162
Vanadium (V), dissolved	mg/L		<0.00050	<0.00050	<0.00050
Zinc (Zn), dissolved	mg/L		0.0217	0.0171	0.0046
Zirconium (Zr), dissolved	mg/L		<0.00030	<0.00030	<0.00030
Ion Balance			0.98	1.01	0.98
Total Anion Sum	meq/L		1.85	1.96	1.86
Total Cation Sum	meq/L		1.80	2.01	1.78

Alexco Environmental Group Inc.
ATTN: Audrey Sanfacon
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 05-SEP-15
Report Date: 15-SEP-15 19:35 (MT)
Version: FINAL

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1669086

Project P.O. #:	PO16375
Job Reference:	AKHM-14-03 BENTHIC PROGRAM - BELLEKENO EEM
C of C Numbers:	1
Legal Site Desc:	

Comments:

Ariel Tang, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1669086-1	L1669086-2	L1669086-3		
	Description	Water	Water	Water		
	Sampled Date	02-SEP-15	01-SEP-15	01-SEP-15		
	Sampled Time	10:00	13:48	12:00		
	Client ID	REF (KV-37)	EXP1	EXP2 (KV-41)		
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	184	194	178		
	Hardness (as CaCO3) (mg/L)	88.4	98.8	87.3		
	Hardness (from Totals) (mg/L)	87.8	98.1	103		
	pH (pH)	7.59	7.53	7.60		
	Total Suspended Solids (mg/L)	2.4	43.2	196		
	Total Dissolved Solids (mg/L)	110	119	108		
	Turbidity (NTU)	0.20	7.14	215		
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	32.1	32.8	37.9		
	Ammonia, Total (as N) (mg/L)	<0.0050	<0.0050	0.0097		
	Bromide (Br) (mg/L)	<0.050	<0.050	<0.050		
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50		
	Fluoride (F) (mg/L)	0.039	0.043	0.048		
	Nitrate (as N) (mg/L)	0.0578	0.0521	0.0884		
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010		
	Sulfate (SO4) (mg/L)	57.7	62.3	52.5		
	Anion Sum (meq/L)	1.85	1.96	1.86		
	Cation Sum (meq/L)	1.80	2.01	1.78		
	Cation - Anion Balance (%)	-1.5	1.2	-2.2		
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	1.38	1.50	1.91		
Total Metals	Aluminum (Al)-Total (mg/L)	0.0160	0.864	7.42		
	Antimony (Sb)-Total (mg/L)	0.00033	0.00040	0.00127		
	Arsenic (As)-Total (mg/L)	0.00315	0.00336	0.0178		
	Barium (Ba)-Total (mg/L)	0.0526	0.0723	0.216		
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	0.00023		
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	0.000100		
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010		
	Cadmium (Cd)-Total (mg/L)	0.000256	0.000263	0.000582		
	Calcium (Ca)-Total (mg/L)	26.7	29.9	29.4		
	Chromium (Cr)-Total (mg/L)	0.00012	0.00151	0.0137		
	Cobalt (Co)-Total (mg/L)	<0.00010	0.00066	0.00603		
	Copper (Cu)-Total (mg/L)	<0.00050	0.00313	0.0260		
	Iron (Fe)-Total (mg/L)	0.041	1.45	12.5		
	Lead (Pb)-Total (mg/L)	0.000336	0.00166	0.0351		
	Lithium (Li)-Total (mg/L)	<0.0010	0.0023	0.0080		
	Magnesium (Mg)-Total (mg/L)	5.11	5.71	7.14		
	Manganese (Mn)-Total (mg/L)	0.00724	0.0420	0.286		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1669086-1	L1669086-2	L1669086-3		
	Description	Water	Water	Water		
	Sampled Date	02-SEP-15	01-SEP-15	01-SEP-15		
	Sampled Time	10:00	13:48	12:00		
	Client ID	REF (KV-37)	EXP1	EXP2 (KV-41)		
Grouping	**Analyte**					
WATER						
Total Metals	Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050	0.000037		
	Molybdenum (Mo)-Total (mg/L)	0.000150	0.000251	0.000694		
	Nickel (Ni)-Total (mg/L)	<0.00050	0.00225	0.0164		
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	0.281		
	Potassium (K)-Total (mg/L)	0.10	0.29	1.16		
	Selenium (Se)-Total (mg/L)	0.000618	0.000667	0.000767		
	Silicon (Si)-Total (mg/L)	2.27	3.61	13.7		
	Silver (Ag)-Total (mg/L)	<0.000010	0.000032	0.000611		
	Sodium (Na)-Total (mg/L)	0.623	0.659	0.828		
	Strontium (Sr)-Total (mg/L)	0.0728	0.0804	0.0831		
	Sulfur (S)-Total (mg/L)	20.2	21.4	18.2		
	Thallium (Tl)-Total (mg/L)	<0.000010	0.000012	0.000084		
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	0.00016		
	Titanium (Ti)-Total (mg/L)	<0.00090 DLM	<0.042 DLM	0.237		
	Uranium (U)-Total (mg/L)	0.000110	0.000159	0.000641		
	Vanadium (V)-Total (mg/L)	0.00065	0.00281	0.0199		
	Zinc (Zn)-Total (mg/L)	0.0219	0.0251	0.0759		
	Zirconium (Zr)-Total (mg/L)	<0.00030	<0.00030	0.00184		
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD		
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD		
	Aluminum (Al)-Dissolved (mg/L)	0.0056	0.0087	0.0081		
	Antimony (Sb)-Dissolved (mg/L)	0.00029	0.00031	0.00025		
	Arsenic (As)-Dissolved (mg/L)	0.00272	0.00223	0.00131		
	Barium (Ba)-Dissolved (mg/L)	0.0530	0.0540	0.0589		
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050		
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010		
	Cadmium (Cd)-Dissolved (mg/L)	0.000248	0.000177	0.0000751		
	Calcium (Ca)-Dissolved (mg/L)	27.0	30.6	26.8		
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Copper (Cu)-Dissolved (mg/L)	0.00038	0.00046	0.00050		
	Iron (Fe)-Dissolved (mg/L)	0.016	0.018	0.012		
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	0.000072		
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Magnesium (Mg)-Dissolved (mg/L)	5.12	5.47	4.95		
	Manganese (Mn)-Dissolved (mg/L)	0.00593	0.00654	0.00659		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1669086-1	L1669086-2	L1669086-3		
	Description	Water	Water	Water		
	Sampled Date	02-SEP-15	01-SEP-15	01-SEP-15		
	Sampled Time	10:00	13:48	12:00		
	Client ID	REF (KV-37)	EXP1	EXP2 (KV-41)		
Grouping	**Analyte**					
WATER						
Dissolved Metals	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)	0.000206	0.000163	0.000191		
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050		
	Potassium (K)-Dissolved (mg/L)	<0.10	0.11	0.15		
	Selenium (Se)-Dissolved (mg/L)	0.000589	0.000631	0.000688		
	Silicon (Si)-Dissolved (mg/L)	2.27	2.30	2.44		
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Sodium (Na)-Dissolved (mg/L)	0.651	0.626	0.649		
	Strontium (Sr)-Dissolved (mg/L)	0.0720	0.0781	0.0731		
	Sulfur (S)-Dissolved (mg/L)	20.1	21.9	18.4		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		
	Uranium (U)-Dissolved (mg/L)	0.000104	0.000109	0.000162		
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Zinc (Zn)-Dissolved (mg/L)	0.0217	0.0171	0.0046		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Antimony (Sb)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Arsenic (As)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Beryllium (Be)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Cadmium (Cd)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Chromium (Cr)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Cobalt (Co)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Copper (Cu)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Lead (Pb)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Nickel (Ni)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Selenium (Se)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Silver (Ag)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Thallium (Tl)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Tin (Sn)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Titanium (Ti)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Vanadium (V)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Zinc (Zn)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Aluminum (Al)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Antimony (Sb)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Beryllium (Be)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Boron (B)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Chromium (Cr)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Cobalt (Co)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Copper (Cu)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Lead (Pb)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Nickel (Ni)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Silver (Ag)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Thallium (Tl)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Tin (Sn)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Vanadium (V)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Zinc (Zn)-Dissolved	DLA	L1669086-1, -2, -3
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1669086-1, -2, -3
Matrix Spike	Mercury (Hg)-Total	MS-B	L1669086-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Molybdenum (Mo)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Copper (Cu)-Dissolved	MS-B	L1669086-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1669086-1, -2, -3

Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1669086-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2

This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.

ALK-TITR-VA	Water	Alkalinity Species by Titration	APHA 2320 Alkalinity

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.

CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-MAN-WR	Water	Conductivity by Meter	APHA 2510 (B)

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using an electrode.

F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA	Water	Hardness	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA	Water	Diss. Mercury in Water by CVAAS or CVAFS	APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Reference Information

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-MAN-WR Water pH by Meter APHA 4500-H+

pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 – 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA Water TDS (Calculated) APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-LOW-WR Water Total Suspended Solids by Grav. (1 mg/L) APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

Reference Information

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

VIC100-T-HARDNESS-VA Water Hardness from Total Metals APHA 2340B

Custom Calculation for Hardness. Client is requesting when Total Metals are run, only Total metals are used for hardness calculation.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1669086-COFC

COC Number: 14 -

Page ____ of ____

Report To		Report Format / D	Rush Turnaround Time (TAT) is not available for all tests
Company:	Alexco Environmental Group Inc.	Select Report Format: ☐PDF ☐EXCEL ☐EDD (DIGITAL)	R ☑Regular (Standard TAT if received by 3 pm - business days)
Contact:	Audrey Sanfacon	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	#3 Calcite Business Centre 151 Industrial Road, Whitehorse, YT Y1A 2V3	☐Criteria on Report - provide details below if box checked	E ☐Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution: ☐EMAIL ☐MAIL ☐FAX	E2 ☐Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	668-6463	Email 1 or Fax asanfacon@accessconsulting.ca	Specify Date Required for E2,E or P:
		Email 2 Kai@alexcoresource.com, nichole@accessconsultin	**Analysis Request**
Invoice To	Same as Report To ☐ Yes ☐ No	**Invoice Distribution**	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐EMAIL ☐MAIL ☐FAX	
Company:	Access Consulting Group	Email 1 or Fax	
Contact:	Audrey Sanfacon	Email 2 Kai@alexcoresource.com	
Project Information		**Oil and Gas Required Fields (client use)**	
ALS Quote #:		Approver ID: / Cost Center:	
Job #:	AKHM-14-03 Benthic Program - Bellekeno EEM.	GL Account: / Routing Code:	
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		**ALS Contact:** / **Sampler:**	

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-TITR-TOT-ONLY-VA	PH-PCT-VA, EC-PCT-VA, BR-L-IC-N-VA	ANIONS-ALL-IC-WR, TSS-LOW-WR	TDS-CALC-VA, IONBALANCE-VA	CARBONS-DOC-VA	NH3-F-VA	VIC100-MET-T-LOW-VA	VIC100-MET-D-LOW-VA	Number of Containers
							F/P	P		P	P	F/P	
	REF (KV-37)	2 Sept 15	1000	Water	✓	✓	✓	✓	✓	✓	✓	✓	
	EXP1	1 Sept 15	1348	Water	✓	✓	✓	✓	✓	✓	✓	✓	
	EXP2 (KV-41)	1 Sept 15	1200	Water	✓	✓	✓	✓	✓	✓	✓	✓	

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)	SAMPLE CONDITION AS RECEIVED (lab use only)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No		Frozen ☐ SIF Observations Yes ☐ No ☐
Are samples for human drinking water use? ☐ Yes ☐ No		Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐
		Cooling Initiated ☑

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
5.5	5.0	5.1			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	5 Sept '15	1300		5-Sept-15	2:00			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA FM-03264 v09 FrontBN January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**

Tanita Sept 9 14:20 9.8°

Report To Kai Woloshyn, Alexco Environmental Group Inc.
#3 Calcite Business Centre
151 Industrial Road
Whitehorse, YT Y1A 2V3

Client Phone 867-668-6463

Date Received	8-Sep-2015 13:50
Report Date	18-Sep-2015 17:25
Report Revision	1
Version	FINAL

Certificate of Analysis

Lab Work Order #	L1669328
Project P.O. #	PO16375
Job Reference	ERDC-001-15
Legal Site Description	
C of C Numbers	1

Case Narrative/Comments

Ariel Tang, B.Sc.
Account Manager

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Sample Summary L1669328

Job Reference	ERDC-001-15
Report To	Kai Woloshyn, Alexco Environmental Group Inc.
Date Received	8-Sep-2015 13:50
Report Date	18-Sep-2015 17:25
Report Revision	1

Sample Details

ALS Sample ID	Client Sample ID	Matrix	Date Sampled	Time Sampled	Qualifier
L1669328-1	REF (KV-37)	Sed	02-Sep-15	00:00	
L1669328-2	EXP-1 (KV-38)	Sed	01-Sep-15	00:00	
L1669328-3	EXP-2 (KV-41)	Sed	01-Sep-15	00:00	
L1669328-4	KV-6	Sed	01-Sep-15	00:00	

APPENDIX A-3
Stream Sediments Laboratory Results

Results Summary L1669328

Job Reference	ERDC-001-15
Report To	Kai Woloshyn, Alexco Environmental Group Inc.
Date Received	8-Sep-2015 13:50
Report Date	18-Sep-2015 17:25
Report Revision	1

Client Sample ID			REF (KV-37)	EXP-1 (KV-38)	EXP-2 (KV-41)
Date Sampled			2-Sep-2015	1-Sep-2015	1-Sep-2015
Time Sampled			0:00	0:00	0:00
ALS Sample ID			L1669328-1	L1669328-2	L1669328-3
Parameter	Lowest Detection Limit	Units	Soil	Soil	Soil
Physical Tests (Soil)					
Grain Size Curve		-	SEE ATTACHED	SEE ATTACHED	SEE ATTACHED
pH (1:2 soil:water)	0.10	pH	8.23	7.16	7.55
Particle Size (Soil)					
Cobbles (>3in.)	1.0	%	<1.0	<1.0	<1.0
Gravel (4.75mm - 3in.)	1.0	%	21.1	<1.0	34.1
Medium Sand (0.425mm - 2.0mm)	1.0	%	47.9	1.7	12.2
Fines (<0.075mm)	1.0	%	1.8	82.6	31.0
Coarse Sand (2.0mm - 4.75mm)	1.0	%	24.5	<1.0	12.0
Fine Sand (0.075mm - 0.425mm)	1.0	%	4.7	15.6	10.7
Metals (Soil)					
Aluminum (Al)	50	mg/kg	8940	8510	9430
Antimony (Sb)	0.10	mg/kg	17.7	1.61	1.98
Arsenic (As)	0.10	mg/kg	324	27.1	28.3
Barium (Ba)	0.50	mg/kg	175	261	224
Beryllium (Be)	0.10	mg/kg	0.30	0.26	0.29
Bismuth (Bi)	0.20	mg/kg	0.42	<0.20	<0.20
Boron (B)	5.0	mg/kg	<5.0	<5.0	<5.0
Cadmium (Cd)	0.020	mg/kg	20.4	1.11	1.48
Calcium (Ca)	50	mg/kg	4690	6020	5650
Chromium (Cr)	0.50	mg/kg	24.6	19.5	22.4
Cobalt (Co)	0.10	mg/kg	11.3	8.87	9.96
Copper (Cu)	0.50	mg/kg	46.6	24.1	34.2
Iron (Fe)	50	mg/kg	27000	19200	21700
Lead (Pb)	0.50	mg/kg	541	30.2	70.6
Lithium (Li)	2.0	mg/kg	13.8	9.9	12.2
Magnesium (Mg)	20	mg/kg	3480	4590	4650
Manganese (Mn)	1.0	mg/kg	1870	416	498
Mercury (Hg)	0.0050	mg/kg	0.135	0.0443	0.0324
Molybdenum (Mo)	0.10	mg/kg	3.46	1.25	1.09
Nickel (Ni)	0.50	mg/kg	33.3	24.5	27.0
Phosphorus (P)	50	mg/kg	856	837	809
Potassium (K)	100	mg/kg	360	590	570
Selenium (Se)	0.20	mg/kg	1.37	0.59	0.47
Silver (Ag)	0.10	mg/kg	16.1	0.49	1.09
Sodium (Na)	50	mg/kg	70	132	130
Strontium (Sr)	0.50	mg/kg	22.1	26.1	27.6
Thallium (Tl)	0.050	mg/kg	0.111	0.084	0.083
Tin (Sn)	2.0	mg/kg	7.5	<2.0	<2.0
Titanium (Ti)	1.0	mg/kg	191	464	466
Uranium (U)	0.050	mg/kg	1.71	0.967	1.04
Vanadium (V)	0.20	mg/kg	25.1	32.9	35.0
Zinc (Zn)	2.0	mg/kg	1260	127	177
Zirconium (Zr)	1.0	mg/kg	<1.0	1.8	2.3

Qualifier Legend

DLA	Detection Limit adjusted for required dilution

Results of Analysis L1669328

Job Reference ERDC-001-15
Report To Kai Woloshyn, Alexco Environmental Group Inc.
Date Received 8-Sep-2015 13:50
Report Date 18-Sep-2015 17:25
Report Revision 1

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Physical Tests (Soil)																
Grain Size Curve	L1669328-1	REF (KV-37)	GRAIN SIZE-SK	SEE ATTACHED		-		02-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Physical Tests
pH (1:2 soil:water)	L1669328-1	REF (KV-37)	PH-1:2-SK	8.23	0.10	pH		02-Sep-15	00:00	14-Sep-15	14-Sep-15	371100	✓	✓	Soil	Physical Tests
Particle Size (Soil)																
Cobbles (>3in.)	L1669328-1	REF (KV-37)	GRAIN SIZE-SK	<1.0	1.0	%		02-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Gravel (4.75mm - 3in.)	L1669328-1	REF (KV-37)	GRAIN SIZE-SK	21.1	1.0	%		02-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Medium Sand (0.425mm - 2.0mm)	L1669328-1	REF (KV-37)	GRAIN SIZE-SK	47.9	1.0	%		02-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Fines (<0.075mm)	L1669328-1	REF (KV-37)	GRAIN SIZE-SK	1.8	1.0	%		02-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Coarse Sand (2.0mm - 4.75mm)	L1669328-1	REF (KV-37)	GRAIN SIZE-SK	24.5	1.0	%		02-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Fine Sand (0.075mm - 0.425mm)	L1669328-1	REF (KV-37)	GRAIN SIZE-SK	4.7	1.0	%		02-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Metals (Soil)																
Aluminum (Al)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	8940	50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Antimony (Sb)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	17.7	0.10	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Arsenic (As)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	324	0.10	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Barium (Ba)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	175	0.50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Beryllium (Be)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	0.30	0.10	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Bismuth (Bi)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	0.42	0.20	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Boron (B)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	<5.0	5.0	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Cadmium (Cd)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	20.4	0.020	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Calcium (Ca)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	4690	50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Chromium (Cr)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	24.6	0.50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Cobalt (Co)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	11.3	0.10	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Copper (Cu)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	46.6	0.50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Iron (Fe)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	27000	50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Lead (Pb)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	541	2.5	mg/kg	DLA	02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Lithium (Li)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	13.8	2.0	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Magnesium (Mg)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	3480	20	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Manganese (Mn)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	1870	1.0	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Mercury (Hg)	L1669328-1	REF (KV-37)	HG-200.2-CVAF-SK	0.135	0.0050	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Molybdenum (Mo)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	3.46	0.10	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Nickel (Ni)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	33.3	0.50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Phosphorus (P)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	856	50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Potassium (K)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	360	100	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Selenium (Se)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	1.37	0.20	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Silver (Ag)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	16.1	0.10	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Sodium (Na)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	70	50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Strontium (Sr)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	22.1	0.50	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Thallium (Tl)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	0.111	0.050	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Tin (Sn)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	7.5	2.0	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Titanium (Ti)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	191	1.0	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Uranium (U)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	1.71	0.050	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Vanadium (V)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	25.1	0.20	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Zinc (Zn)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	1260	10	mg/kg	DLA	02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Zirconium (Zr)	L1669328-1	REF (KV-37)	MET-200.2-CCMS-SK	<1.0	1.0	mg/kg		02-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals

APPENDIX A-3
Stream Sediments Laboratory Results

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Physical Tests (Soil)																
Grain Size Curve	L1669328-2	EXP-1 (KV-38)	GRAIN SIZE-SK	SEE ATTACHED		-		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Physical Tests
pH (1:2 soil:water)	L1669328-2	EXP-1 (KV-38)	PH-1:2-SK	7.16	0.10	pH		01-Sep-15	00:00	14-Sep-15	14-Sep-15	371100	✓	✓	Soil	Physical Tests
Particle Size (Soil)																
Cobbles (>3in.)	L1669328-2	EXP-1 (KV-38)	GRAIN SIZE-SK	<1.0	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Gravel (4.75mm - 3in.)	L1669328-2	EXP-1 (KV-38)	GRAIN SIZE-SK	<1.0	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Medium Sand (0.425mm - 2.0mm)	L1669328-2	EXP-1 (KV-38)	GRAIN SIZE-SK	1.7	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Fines (<0.075mm)	L1669328-2	EXP-1 (KV-38)	GRAIN SIZE-SK	82.6	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Coarse Sand (2.0mm - 4.75mm)	L1669328-2	EXP-1 (KV-38)	GRAIN SIZE-SK	<1.0	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Fine Sand (0.075mm - 0.425mm)	L1669328-2	EXP-1 (KV-38)	GRAIN SIZE-SK	15.6	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Metals (Soil)																
Aluminum (Al)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	8510	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Antimony (Sb)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	1.61	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Arsenic (As)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	27.1	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Barium (Ba)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	261	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Beryllium (Be)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	0.26	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Bismuth (Bi)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	<0.20	0.20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Boron (B)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	<5.0	5.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Cadmium (Cd)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	1.11	0.020	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Calcium (Ca)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	6020	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Chromium (Cr)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	19.5	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Cobalt (Co)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	8.87	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Copper (Cu)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	24.1	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Iron (Fe)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	19200	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Lead (Pb)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	30.2	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Lithium (Li)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	9.9	2.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Magnesium (Mg)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	4590	20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Manganese (Mn)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	416	1.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Mercury (Hg)	L1669328-2	EXP-1 (KV-38)	HG-200.2-CVAF-SK	0.0443	0.0050	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Molybdenum (Mo)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	1.25	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Nickel (Ni)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	24.5	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Phosphorus (P)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	837	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Potassium (K)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	590	100	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Selenium (Se)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	0.59	0.20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Silver (Ag)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	0.49	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Sodium (Na)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	132	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Strontium (Sr)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	26.1	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Thallium (Tl)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	0.084	0.050	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Tin (Sn)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	<2.0	2.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Titanium (Ti)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	464	1.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Uranium (U)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	0.967	0.050	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Vanadium (V)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	32.9	0.20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Zinc (Zn)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	127	2.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Zirconium (Zr)	L1669328-2	EXP-1 (KV-38)	MET-200.2-CCMS-SK	1.8	1.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Physical Tests (Soil)																
Grain Size Curve	L1669328-3	EXP-2 (KV-41)	GRAIN SIZE-SK	SEE ATTACHED		-		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Physical Tests
pH (1:2 soil:water)	L1669328-3	EXP-2 (KV-41)	PH-1:2-SK	7.55	0.10	pH		01-Sep-15	00:00	14-Sep-15	14-Sep-15	371100	✓	✓	Soil	Physical Tests
Particle Size (Soil)																
Cobbles (>3in.)	L1669328-3	EXP-2 (KV-41)	GRAIN SIZE-SK	<1.0	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Gravel (4.75mm - 3in.)	L1669328-3	EXP-2 (KV-41)	GRAIN SIZE-SK	34.1	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Medium Sand (0.425mm - 2.0mm)	L1669328-3	EXP-2 (KV-41)	GRAIN SIZE-SK	12.2	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size

APPENDIX A-3
Stream Sediments Laboratory Results

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Fines (<0.075mm)	L1669328-3	EXP-2 (KV-41)	GRAIN SIZE-SK	31.0	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Coarse Sand (2.0mm - 4.75mm)	L1669328-3	EXP-2 (KV-41)	GRAIN SIZE-SK	12.0	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Fine Sand (0.075mm - 0.425mm)	L1669328-3	EXP-2 (KV-41)	GRAIN SIZE-SK	10.7	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Metals (Soil)																
Aluminum (Al)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	9430	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Antimony (Sb)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	1.98	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Arsenic (As)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	28.3	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Barium (Ba)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	224	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Beryllium (Be)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	0.29	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Bismuth (Bi)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	<0.20	0.20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Boron (B)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	<5.0	5.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Cadmium (Cd)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	1.48	0.020	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Calcium (Ca)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	5650	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Chromium (Cr)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	22.4	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Cobalt (Co)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	9.96	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Copper (Cu)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	34.2	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Iron (Fe)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	21700	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Lead (Pb)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	70.6	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Lithium (Li)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	12.2	2.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Magnesium (Mg)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	4650	20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Manganese (Mn)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	498	1.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Mercury (Hg)	L1669328-3	EXP-2 (KV-41)	HG-200.2-CVAF-SK	0.0324	0.0050	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Molybdenum (Mo)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	1.09	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Nickel (Ni)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	27.0	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Phosphorus (P)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	809	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Potassium (K)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	570	100	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Selenium (Se)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	0.47	0.20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Silver (Ag)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	1.09	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Sodium (Na)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	130	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Strontium (Sr)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	27.6	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Thallium (Tl)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	0.083	0.050	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Tin (Sn)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	<2.0	2.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Titanium (Ti)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	466	1.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Uranium (U)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	1.04	0.050	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Vanadium (V)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	35.0	0.20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Zinc (Zn)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	177	2.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Zirconium (Zr)	L1669328-3	EXP-2 (KV-41)	MET-200.2-CCMS-SK	2.3	1.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Physical Tests (Soil)																
Grain Size Curve	L1669328-4	KV-6	GRAIN SIZE-SK	SEE ATTACHED		-		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Physical Tests
pH (1:2 soil:water)	L1669328-4	KV-6	PH-1:2-SK	7.43	0.10	pH		01-Sep-15	00:00	14-Sep-15	14-Sep-15	371100	✓	✓	Soil	Physical Tests
Particle Size (Soil)																
Cobbles (>3in.)	L1669328-4	KV-6	GRAIN SIZE-SK	<1.0	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Gravel (4.75mm - 3in.)	L1669328-4	KV-6	GRAIN SIZE-SK	10.2	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Medium Sand (0.425mm - 2.0mm)	L1669328-4	KV-6	GRAIN SIZE-SK	3.5	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Fines (<0.075mm)	L1669328-4	KV-6	GRAIN SIZE-SK	77.4	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Coarse Sand (2.0mm - 4.75mm)	L1669328-4	KV-6	GRAIN SIZE-SK	6.1	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Fine Sand (0.075mm - 0.425mm)	L1669328-4	KV-6	GRAIN SIZE-SK	2.8	1.0	%		01-Sep-15	00:00	12-Sep-15	14-Sep-15	371121	✓	✓	Soil	Particle Size
Metals (Soil)																
Aluminum (Al)	L1669328-4	KV-6	MET-200.2-CCMS-SK	7450	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Antimony (Sb)	L1669328-4	KV-6	MET-200.2-CCMS-SK	0.84	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Arsenic (As)	L1669328-4	KV-6	MET-200.2-CCMS-SK	16.5	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Barium (Ba)	L1669328-4	KV-6	MET-200.2-CCMS-SK	207	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals

APPENDIX A-3
Stream Sediments Laboratory Results

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Beryllium (Be)	L1669328-4	KV-6	MET-200.2-CCMS-SK	0.22	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Bismuth (Bi)	L1669328-4	KV-6	MET-200.2-CCMS-SK	<0.20	0.20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Boron (B)	L1669328-4	KV-6	MET-200.2-CCMS-SK	<5.0	5.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Cadmium (Cd)	L1669328-4	KV-6	MET-200.2-CCMS-SK	0.994	0.020	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Calcium (Ca)	L1669328-4	KV-6	MET-200.2-CCMS-SK	6600	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Chromium (Cr)	L1669328-4	KV-6	MET-200.2-CCMS-SK	14.4	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Cobalt (Co)	L1669328-4	KV-6	MET-200.2-CCMS-SK	9.31	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Copper (Cu)	L1669328-4	KV-6	MET-200.2-CCMS-SK	21.9	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Iron (Fe)	L1669328-4	KV-6	MET-200.2-CCMS-SK	15100	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Lead (Pb)	L1669328-4	KV-6	MET-200.2-CCMS-SK	27.5	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Lithium (Li)	L1669328-4	KV-6	MET-200.2-CCMS-SK	10.0	2.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Magnesium (Mg)	L1669328-4	KV-6	MET-200.2-CCMS-SK	3490	20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Manganese (Mn)	L1669328-4	KV-6	MET-200.2-CCMS-SK	887	1.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Mercury (Hg)	L1669328-4	KV-6	HG-200.2-CVAF-SK	0.0359	0.0050	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Molybdenum (Mo)	L1669328-4	KV-6	MET-200.2-CCMS-SK	0.79	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Nickel (Ni)	L1669328-4	KV-6	MET-200.2-CCMS-SK	25.2	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Phosphorus (P)	L1669328-4	KV-6	MET-200.2-CCMS-SK	825	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Potassium (K)	L1669328-4	KV-6	MET-200.2-CCMS-SK	330	100	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Selenium (Se)	L1669328-4	KV-6	MET-200.2-CCMS-SK	0.98	0.20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Silver (Ag)	L1669328-4	KV-6	MET-200.2-CCMS-SK	0.43	0.10	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Sodium (Na)	L1669328-4	KV-6	MET-200.2-CCMS-SK	99	50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Strontium (Sr)	L1669328-4	KV-6	MET-200.2-CCMS-SK	24.5	0.50	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Thallium (Tl)	L1669328-4	KV-6	MET-200.2-CCMS-SK	0.085	0.050	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Tin (Sn)	L1669328-4	KV-6	MET-200.2-CCMS-SK	<2.0	2.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Titanium (Ti)	L1669328-4	KV-6	MET-200.2-CCMS-SK	241	1.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Uranium (U)	L1669328-4	KV-6	MET-200.2-CCMS-SK	1.09	0.050	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Vanadium (V)	L1669328-4	KV-6	MET-200.2-CCMS-SK	23.6	0.20	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Zinc (Zn)	L1669328-4	KV-6	MET-200.2-CCMS-SK	132	2.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals
Zirconium (Zr)	L1669328-4	KV-6	MET-200.2-CCMS-SK	1.8	1.0	mg/kg		01-Sep-15	00:00	15-Sep-15	16-Sep-15	370976	✓	✓	Soil	Metals

Qualifier Legend

DLA	Detection Limit adjusted for required dilution

Evaluation Legend

✓	QC Lot met ALS Data Quality Objectives

APPENDIX A-3
Stream Sediments Laboratory Results

Duplicates L1669328

Job Reference ERDC-001-15
Report To Kai Woloshyn, Alexco Environmental Group Inc.
Date Received ##########
Report Date ##########
Report Revision 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Particle Size (Soil)																	
WG2169219-1	L1669328-4	KV-6	DUP	371121	Cobbles (>3in.)	<1.0	<1.0	1.0	%	N/A	25	-			✓	Soil	Particle Size
WG2169219-1	L1669328-4	KV-6	DUP	371121	Gravel (4.75mm - 3in.)	10.2	10.2	1.0	%	0	25	-			✓	Soil	Particle Size
WG2169219-1	L1669328-4	KV-6	DUP	371121	Medium Sand (0.425mm - 2.0mm)	3.5	3.6	1.0	%	2	25	-			✓	Soil	Particle Size
WG2169219-1	L1669328-4	KV-6	DUP	371121	Fines (<0.075mm)	77.4	77.2	1.0	%	0.2	25	-			✓	Soil	Particle Size
WG2169219-1	L1669328-4	KV-6	DUP	371121	Coarse Sand (2.0mm - 4.75mm)	6.1	6.1	1.0	%	0	25	-			✓	Soil	Particle Size
WG2169219-1	L1669328-4	KV-6	DUP	371121	Fine Sand (0.075mm - 0.425mm)	2.8	2.9	1.0	%	2.8	25	-			✓	Soil	Particle Size
Metals (Soil)																	
WG2169054-2	L1669328-4	KV-6	DUP	370976	Aluminum (Al)	7450	7630	50	mg/kg	2.4	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Antimony (Sb)	0.84	0.88	0.10	mg/kg	4.5	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Arsenic (As)	16.5	16.7	0.10	mg/kg	1.1	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Barium (Ba)	207	196	0.50	mg/kg	5.3	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Beryllium (Be)	0.22	0.24	0.10	mg/kg	8.7	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Bismuth (Bi)	<0.20	<0.20	0.20	mg/kg	N/A	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Boron (B)	<5.0	<5.0	5.0	mg/kg	N/A	25	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Cadmium (Cd)	0.994	1.03	0.020	mg/kg	3.8	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Calcium (Ca)	6600	7260	50	mg/kg	9.5	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Chromium (Cr)	14.4	14.7	0.50	mg/kg	2	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Cobalt (Co)	9.31	9.40	0.10	mg/kg	1	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Copper (Cu)	21.9	21.8	0.50	mg/kg	0.4	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Iron (Fe)	15100	15000	50	mg/kg	0.9	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Lead (Pb)	27.5	28.5	0.50	mg/kg	3.7	40	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Lithium (Li)	10.0	11.2	2.0	mg/kg	12	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Magnesium (Mg)	3490	3560	20	mg/kg	2	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Manganese (Mn)	887	875	1.0	mg/kg	1.3	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Mercury (Hg)	0.0359	0.0366	0.0050	mg/kg	1.9	40	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Molybdenum (Mo)	0.79	0.90	0.10	mg/kg	14	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Nickel (Ni)	25.2	25.6	0.50	mg/kg	1.7	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Phosphorus (P)	825	796	50	mg/kg	3.6	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Potassium (K)	330	340	100	mg/kg	4.7	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Selenium (Se)	0.98	0.93	0.20	mg/kg	5	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Silver (Ag)	0.43	0.40	0.10	mg/kg	5.5	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Sodium (Na)	99	97	50	mg/kg	1.3	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Strontium (Sr)	24.5	26.0	0.50	mg/kg	5.9	30	-			✓	Soil	Metals

Duplicates L1669328

Job Reference ERDC-001-15
Report To Kai Woloshyn, Alexco Environmental Group Inc.
Date Received ############
Report Date ############
Report Revision 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
WG2169054-2	L1669328-4	KV-6	DUP	370976	Thallium (Tl)	0.085	0.091	0.050	mg/kg	6.8	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Tin (Sn)	<2.0	<2.0	2.0	mg/kg	N/A	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Titanium (Ti)	241	246	1.0	mg/kg	1.9	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Uranium (U)	1.09	1.25	0.050	mg/kg	14	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Vanadium (V)	23.6	23.9	0.20	mg/kg	1.1	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Zinc (Zn)	132	135	2.0	mg/kg	2	30	-			✓	Soil	Metals
WG2169054-2	L1669328-4	KV-6	DUP	370976	Zirconium (Zr)	1.8	2.0	1.0	mg/kg	9.4	25	-			✓	Soil	Metals

Evaluation Legend
✓ Met ALS Data Quality Objectives

Quality Control L1669328

Job Reference ERDC-001-15
Report To Kai Woloshyn, Alexco Environmental Group Inc.
Date Received 8-Sep-2015 13:50
Report Date 18-Sep-2015 17:25
Report Revision 1

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Metals (Soil)													
CRM	Aluminum (Al)	370976	WG2169054-3	16300	18200	mg/kg	89.4	70-130	%		✓	Soil	Metals
CRM	Antimony (Sb)	370976	WG2169054-3	5.96	6.3	mg/kg	94.5	70-130	%		✓	Soil	Metals
CRM	Arsenic (As)	370976	WG2169054-3	14.8	15.4	mg/kg	96.2	70-130	%		✓	Soil	Metals
CRM	Barium (Ba)	370976	WG2169054-3	72.6	80.6	mg/kg	90.1	70-130	%		✓	Soil	Metals
CRM	Beryllium (Be)	370976	WG2169054-3	0.50	0.544	mg/kg	92.0	50-150	%		✓	Soil	Metals
CRM	Bismuth (Bi)	370976	WG2169054-3	1.69	2	mg/kg	84.6	70-130	%		✓	Soil	Metals
CRM	Cadmium (Cd)	370976	WG2169054-3	0.204	0.24	mg/kg	85.1	50-150	%		✓	Soil	Metals
CRM	Calcium (Ca)	370976	WG2169054-3	3400	3320	mg/kg	102.4	70-130	%		✓	Soil	Metals
CRM	Chromium (Cr)	370976	WG2169054-3	26.2	27.2	mg/kg	96.2	70-130	%		✓	Soil	Metals
CRM	Cobalt (Co)	370976	WG2169054-3	11.5	12.5	mg/kg	92.1	70-130	%		✓	Soil	Metals
CRM	Copper (Cu)	370976	WG2169054-3	40.5	44.9	mg/kg	90.2	70-130	%		✓	Soil	Metals
CRM	Iron (Fe)	370976	WG2169054-3	30400	33300	mg/kg	91.3	70-130	%		✓	Soil	Metals
CRM	Lead (Pb)	370976	WG2169054-3	12.2	14.4	mg/kg	85.0	70-130	%		✓	Soil	Metals
CRM	Lithium (Li)	370976	WG2169054-3	8.9	10	mg/kg	88.8	70-130	%		✓	Soil	Metals
CRM	Magnesium (Mg)	370976	WG2169054-3	5810	5830	mg/kg	99.6	70-130	%		✓	Soil	Metals
CRM	Manganese (Mn)	370976	WG2169054-3	1030	1100	mg/kg	94.1	70-130	%		✓	Soil	Metals
CRM	Mercury (Hg)	370976	WG2169054-3	0.0967	0.092	mg/kg	105.1	70-130	%		✓	Soil	Metals
CRM	Molybdenum (Mo)	370976	WG2169054-3	0.65	0.738	mg/kg	87.5	70-130	%		✓	Soil	Metals
CRM	Nickel (Ni)	370976	WG2169054-3	16.7	17.4	mg/kg	96.3	70-130	%		✓	Soil	Metals
CRM	Phosphorus (P)	370976	WG2169054-3	717	796	mg/kg	90.1	70-130	%		✓	Soil	Metals
CRM	Potassium (K)	370976	WG2169054-3	580	619	mg/kg	93.3	70-130	%		✓	Soil	Metals
CRM	Selenium (Se)	370976	WG2169054-3	0.31	0.3	mg/kg	104.1	70-130	%		✓	Soil	Metals
CRM	Silver (Ag)	370976	WG2169054-3	0.22	0.22	mg/kg	99.6	70-130	%		✓	Soil	Metals
CRM	Sodium (Na)	370976	WG2169054-3	337	340	mg/kg	99.0	50-150	%		✓	Soil	Metals
CRM	Strontium (Sr)	370976	WG2169054-3	12.1	11.6	mg/kg	104.6	70-130	%		✓	Soil	Metals
CRM	Thallium (Tl)	370976	WG2169054-3	0.115	0.13	mg/kg	88.2	70-130	%		✓	Soil	Metals
CRM	Tin (Sn)	370976	WG2169054-3	<2.0	1.1	mg/kg	105.2	70-130	%		✓	Soil	Metals
CRM	Titanium (Ti)	370976	WG2169054-3	798	874	mg/kg	91.3	70-130	%		✓	Soil	Metals
CRM	Uranium (U)	370976	WG2169054-3	0.787	0.8	mg/kg	98.4	70-130	%		✓	Soil	Metals
CRM	Vanadium (V)	370976	WG2169054-3	54.7	54.9	mg/kg	99.7	70-130	%		✓	Soil	Metals
CRM	Zinc (Zn)	370976	WG2169054-3	63.9	67.5	mg/kg	94.6	70-130	%		✓	Soil	Metals
Physical Tests (Soil)													
IRM	pH (1:2 soil:water)	371100	WG2169189-2	8.06	8	pH	8.06	7.7-8.3	pH		✓	Soil	Physical Tests

APPENDIX A-3
Stream Sediments Laboratory Results

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Metals (Soil)													
LCS	Aluminum (Al)	370976	WG2169054-4	187	200	mg/kg	93.3	80-120	%		✓	Soil	Metals
LCS	Antimony (Sb)	370976	WG2169054-4	95.3	100	mg/kg	95.3	80-120	%		✓	Soil	Metals
LCS	Arsenic (As)	370976	WG2169054-4	94.2	100	mg/kg	94.2	80-120	%		✓	Soil	Metals
LCS	Barium (Ba)	370976	WG2169054-4	23.0	25	mg/kg	91.9	80-120	%		✓	Soil	Metals
LCS	Beryllium (Be)	370976	WG2169054-4	9.52	10	mg/kg	95.2	80-120	%		✓	Soil	Metals
LCS	Bismuth (Bi)	370976	WG2169054-4	91.6	100	mg/kg	91.6	80-120	%		✓	Soil	Metals
LCS	Boron (B)	370976	WG2169054-4	93.0	100	mg/kg	93.0	80-120	%		✓	Soil	Metals
LCS	Cadmium (Cd)	370976	WG2169054-4	9.44	10	mg/kg	94.4	80-120	%		✓	Soil	Metals
LCS	Calcium (Ca)	370976	WG2169054-4	4780	5000	mg/kg	95.5	80-120	%		✓	Soil	Metals
LCS	Chromium (Cr)	370976	WG2169054-4	23.2	25	mg/kg	93.0	80-120	%		✓	Soil	Metals
LCS	Cobalt (Co)	370976	WG2169054-4	23.4	25	mg/kg	93.6	80-120	%		✓	Soil	Metals
LCS	Copper (Cu)	370976	WG2169054-4	22.9	25	mg/kg	91.6	80-120	%		✓	Soil	Metals
LCS	Iron (Fe)	370976	WG2169054-4	97.9	100	mg/kg	97.9	80-120	%		✓	Soil	Metals
LCS	Lead (Pb)	370976	WG2169054-4	46.4	50	mg/kg	92.7	80-120	%		✓	Soil	Metals
LCS	Lithium (Li)	370976	WG2169054-4	22.4	25	mg/kg	89.6	80-120	%		✓	Soil	Metals
LCS	Magnesium (Mg)	370976	WG2169054-4	4930	5000	mg/kg	98.7	80-120	%		✓	Soil	Metals
LCS	Manganese (Mn)	370976	WG2169054-4	24.2	25	mg/kg	97.0	80-120	%		✓	Soil	Metals
LCS	Mercury (Hg)	370976	WG2169054-4	0.0833	0.1	mg/kg	83.3	70-130	%		✓	Soil	Metals
LCS	Molybdenum (Mo)	370976	WG2169054-4	24.0	25	mg/kg	96.0	80-120	%		✓	Soil	Metals
LCS	Nickel (Ni)	370976	WG2169054-4	47.4	50	mg/kg	94.8	80-120	%		✓	Soil	Metals
LCS	Phosphorus (P)	370976	WG2169054-4	259	250	mg/kg	103.6	80-120	%		✓	Soil	Metals
LCS	Potassium (K)	370976	WG2169054-4	4980	5000	mg/kg	99.6	80-120	%		✓	Soil	Metals
LCS	Selenium (Se)	370976	WG2169054-4	100	100	mg/kg	100.3	80-120	%		✓	Soil	Metals
LCS	Silver (Ag)	370976	WG2169054-4	8.96	10	mg/kg	89.6	80-120	%		✓	Soil	Metals
LCS	Sodium (Na)	370976	WG2169054-4	4770	5000	mg/kg	95.3	80-120	%		✓	Soil	Metals
LCS	Strontium (Sr)	370976	WG2169054-4	24.5	25	mg/kg	97.9	80-120	%		✓	Soil	Metals
LCS	Thallium (Tl)	370976	WG2169054-4	92.4	100	mg/kg	92.4	80-120	%		✓	Soil	Metals
LCS	Tin (Sn)	370976	WG2169054-4	47.5	50	mg/kg	94.9	80-120	%		✓	Soil	Metals
LCS	Titanium (Ti)	370976	WG2169054-4	23.6	25	mg/kg	94.3	80-120	%		✓	Soil	Metals
LCS	Uranium (U)	370976	WG2169054-4	0.477	0.5	mg/kg	95.4	80-120	%		✓	Soil	Metals
LCS	Vanadium (V)	370976	WG2169054-4	48.1	50	mg/kg	96.2	80-120	%		✓	Soil	Metals
LCS	Zinc (Zn)	370976	WG2169054-4	45.5	50	mg/kg	90.9	80-120	%		✓	Soil	Metals
LCS	Zirconium (Zr)	370976	WG2169054-4	9.22	10	mg/kg	92.2	80-120	%		✓	Soil	Metals
MB	Aluminum (Al)	370976	WG2169054-1	<50		mg/kg	-	<50	mg/kg		✓	Soil	Metals
MB	Antimony (Sb)	370976	WG2169054-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Soil	Metals
MB	Arsenic (As)	370976	WG2169054-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Soil	Metals
MB	Barium (Ba)	370976	WG2169054-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Soil	Metals
MB	Beryllium (Be)	370976	WG2169054-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Soil	Metals
MB	Bismuth (Bi)	370976	WG2169054-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Soil	Metals
MB	Boron (B)	370976	WG2169054-1	<5.0		mg/kg	-	<5.0	mg/kg		✓	Soil	Metals
MB	Cadmium (Cd)	370976	WG2169054-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Soil	Metals
MB	Calcium (Ca)	370976	WG2169054-1	<50		mg/kg	-	<50	mg/kg		✓	Soil	Metals

APPENDIX A-3
Stream Sediments Laboratory Results

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Chromium (Cr)	370976	WG2169054-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Soil	Metals
MB	Cobalt (Co)	370976	WG2169054-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Soil	Metals
MB	Copper (Cu)	370976	WG2169054-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Soil	Metals
MB	Iron (Fe)	370976	WG2169054-1	<50		mg/kg	-	<50	mg/kg		✓	Soil	Metals
MB	Lead (Pb)	370976	WG2169054-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Soil	Metals
MB	Lithium (Li)	370976	WG2169054-1	<2.0		mg/kg	-	<2.0	mg/kg		✓	Soil	Metals
MB	Magnesium (Mg)	370976	WG2169054-1	<20		mg/kg	-	<20	mg/kg		✓	Soil	Metals
MB	Manganese (Mn)	370976	WG2169054-1	<1.0		mg/kg	-	<1.0	mg/kg		✓	Soil	Metals
MB	Mercury (Hg)	370976	WG2169054-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Soil	Metals
MB	Molybdenum (Mo)	370976	WG2169054-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Soil	Metals
MB	Nickel (Ni)	370976	WG2169054-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Soil	Metals
MB	Phosphorus (P)	370976	WG2169054-1	<50		mg/kg	-	<50	mg/kg		✓	Soil	Metals
MB	Potassium (K)	370976	WG2169054-1	<100		mg/kg	-	<100	mg/kg		✓	Soil	Metals
MB	Selenium (Se)	370976	WG2169054-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Soil	Metals
MB	Silver (Ag)	370976	WG2169054-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Soil	Metals
MB	Sodium (Na)	370976	WG2169054-1	<50		mg/kg	-	<50	mg/kg		✓	Soil	Metals
MB	Strontium (Sr)	370976	WG2169054-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Soil	Metals
MB	Thallium (Tl)	370976	WG2169054-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Soil	Metals
MB	Tin (Sn)	370976	WG2169054-1	<2.0		mg/kg	-	<2.0	mg/kg		✓	Soil	Metals
MB	Titanium (Ti)	370976	WG2169054-1	<1.0		mg/kg	-	<1.0	mg/kg		✓	Soil	Metals
MB	Uranium (U)	370976	WG2169054-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Soil	Metals
MB	Vanadium (V)	370976	WG2169054-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Soil	Metals
MB	Zinc (Zn)	370976	WG2169054-1	<2.0		mg/kg	-	<2.0	mg/kg		✓	Soil	Metals
MB	Zirconium (Zr)	370976	WG2169054-1	<1.0		mg/kg	-	<1.0	mg/kg		✓	Soil	Metals

Evaluation Legend

✓ Met ALS Data Quality Objectives

Methodology L1669328

Job Reference ERDC-001-15
Report To Kai Woloshyn, Alexco Environmental Group Inc.

Date Received 8-Sep-2015 13:50
Report Date 18-Sep-2015 17:25
Report Revision 1

ALS Test Code	ALS Test Description	Lab Location	Matrix	Method Reference	Methodology Description
Physical Tests (Soil)					
GRAIN SIZE-SK	Grain Size Analysis	Saskatoon	Soil	SSIR-51 METHOD 3.2.1	Particle size distribution is determined by a combination of techniques. Dry sieving is performed for coarse particles, wet sieving for sand particles and the pipette sedimentation method for clay particles. Reference: Burt, R. (2009). Soil Survey Field and Laboratory Methods Manual. Soil Survey Investigations Report No. 5. Method 3.2.1.2.2. United States Department of Agriculture Natural Resources Conservation Service.
PH-1:2-SK	pH (1:2 Soil:Water Extraction)	Saskatoon	Soil	CSSC 3.13	1 part dry soil and 2 parts de-ionized water (by volume) is mixed. The slurry is allowed to stand with occasional stirring for 30 - 60 minutes. After equilibration, pH of the slurry is measured using a pH meter.
Particle Size (Soil)					
GRAIN SIZE-SK	Grain Size Analysis	Saskatoon	Soil	SSIR-51 METHOD 3.2.1	Particle size distribution is determined by a combination of techniques. Dry sieving is performed for coarse particles, wet sieving for sand particles and the pipette sedimentation method for clay particles. Reference: Burt, R. (2009). Soil Survey Field and Laboratory Methods Manual. Soil Survey Investigations Report No. 5. Method 3.2.1.2.2. United States Department of Agriculture Natural Resources Conservation Service.
Metals (Soil)					
HG-200.2-CVAF-SK	Mercury in Soil by CVAFS	Saskatoon	Soil	EPA 200.2/1631E (mod)	Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAFS.
MET-200.2-CCMS-SK	Metals in Soil by CRC ICPMS	Saskatoon	Soil	EPA 200.2/6020A (mod)	Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS. Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. This method does not dissolve all silicate materials and may result in a partial extraction. depending on the sample matrix, for some metals, including, but not limited to Al, Ba, Be, Cr, Sr, Ti, Tl, and V.

Detection Limits L1669328

Job Reference ERDC-001-15
Report To Kai Woloshyn, Alexco Environmental Group Inc.
Date Received 8-Sep-2015 13:50
Report Date 18-Sep-2015 17:25
Report Revision 1

Client Sample ID		REF (KV-37)	EXP-1 (KV-38)	EXP-2 (KV-41)	KV-6
Date Sampled		2-Sep-2015	1-Sep-2015	1-Sep-2015	1-Sep-2015
Time Sampled		0:00	0:00	0:00	0:00
ALS Sample ID		L1669328-1	L1669328-2	L1669328-3	L1669328-4
Parameter	Units	Soil	Soil	Soil	Soil
Physical Tests (Soil)					
Grain Size Curve	-				
pH (1:2 soil:water)	pH	0.10	0.10	0.10	0.10
Particle Size (Soil)					
Cobbles (>3in.)	%	1.0	1.0	1.0	1.0
Gravel (4.75mm - 3in.)	%	1.0	1.0	1.0	1.0
Medium Sand (0.425mm - 2.0mm)	%	1.0	1.0	1.0	1.0
Fines (<0.075mm)	%	1.0	1.0	1.0	1.0
Coarse Sand (2.0mm - 4.75mm)	%	1.0	1.0	1.0	1.0
Fine Sand (0.075mm - 0.425mm)	%	1.0	1.0	1.0	1.0
Metals (Soil)					
Aluminum (Al)	mg/kg	50	50	50	50
Antimony (Sb)	mg/kg	0.10	0.10	0.10	0.10
Arsenic (As)	mg/kg	0.10	0.10	0.10	0.10
Barium (Ba)	mg/kg	0.50	0.50	0.50	0.50
Beryllium (Be)	mg/kg	0.10	0.10	0.10	0.10
Bismuth (Bi)	mg/kg	0.20	0.20	0.20	0.20
Boron (B)	mg/kg	5.0	5.0	5.0	5.0
Cadmium (Cd)	mg/kg	0.020	0.020	0.020	0.020
Calcium (Ca)	mg/kg	50	50	50	50
Chromium (Cr)	mg/kg	0.50	0.50	0.50	0.50
Cobalt (Co)	mg/kg	0.10	0.10	0.10	0.10
Copper (Cu)	mg/kg	0.50	0.50	0.50	0.50
Iron (Fe)	mg/kg	50	50	50	50
Lead (Pb)	mg/kg	2.5	0.50	0.50	0.50
Lithium (Li)	mg/kg	2.0	2.0	2.0	2.0
Magnesium (Mg)	mg/kg	20	20	20	20
Manganese (Mn)	mg/kg	1.0	1.0	1.0	1.0
Mercury (Hg)	mg/kg	0.0050	0.0050	0.0050	0.0050
Molybdenum (Mo)	mg/kg	0.10	0.10	0.10	0.10
Nickel (Ni)	mg/kg	0.50	0.50	0.50	0.50
Phosphorus (P)	mg/kg	50	50	50	50
Potassium (K)	mg/kg	100	100	100	100
Selenium (Se)	mg/kg	0.20	0.20	0.20	0.20
Silver (Ag)	mg/kg	0.10	0.10	0.10	0.10
Sodium (Na)	mg/kg	50	50	50	50
Strontium (Sr)	mg/kg	0.50	0.50	0.50	0.50
Thallium (Tl)	mg/kg	0.050	0.050	0.050	0.050
Tin (Sn)	mg/kg	2.0	2.0	2.0	2.0
Titanium (Ti)	mg/kg	1.0	1.0	1.0	1.0
Uranium (U)	mg/kg	0.050	0.050	0.050	0.050
Vanadium (V)	mg/kg	0.20	0.20	0.20	0.20
Zinc (Zn)	mg/kg	10	2.0	2.0	2.0
Zirconium (Zr)	mg/kg	1.0	1.0	1.0	1.0

Alexco Environmental Group Inc.
ATTN: Kai Woloshyn
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 08-SEP-15
Report Date: 18-SEP-15 17:25 (MT)
Version: FINAL

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1669328

Project P.O. #: PO16375
Job Reference: ERDC-001-15
C of C Numbers: 1
Legal Site Desc:

Ariel Tang, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1669328-1	L1669328-2	L1669328-3	L1669328-4	
Description	Sed	Sed	Sed	Sed	
Sampled Date	02-SEP-15	01-SEP-15	01-SEP-15	01-SEP-15	
Sampled Time					
Client ID	REF (KV-37)	EXP-1 (KV-38)	EXP-2 (KV-41)	KV-6	
Grouping / **Analyte**					
SOIL					
Physical Tests Grain Size Curve	SEE ATTACHED	SEE ATTACHED	SEE ATTACHED	SEE ATTACHED	
pH (1:2 soil:water) (pH)	8.23	7.16	7.55	7.43	
Particle Size Cobbles (>3in.) (%)	<1.0	<1.0	<1.0	<1.0	
Gravel (4.75mm - 3in.) (%)	21.1	<1.0	34.1	10.2	
Medium Sand (0.425mm - 2.0mm) (%)	47.9	1.7	12.2	3.5	
Fines (<0.075mm) (%)	1.8	82.6	31.0	77.4	
Coarse Sand (2.0mm - 4.75mm) (%)	24.5	<1.0	12.0	6.1	
Fine Sand (0.075mm - 0.425mm) (%)	4.7	15.6	10.7	2.8	
Metals Aluminum (Al) (mg/kg)	8940	8510	9430	7450	
Antimony (Sb) (mg/kg)	17.7	1.61	1.98	0.84	
Arsenic (As) (mg/kg)	324	27.1	28.3	16.5	
Barium (Ba) (mg/kg)	175	261	224	207	
Beryllium (Be) (mg/kg)	0.30	0.26	0.29	0.22	
Bismuth (Bi) (mg/kg)	0.42	<0.20	<0.20	<0.20	
Boron (B) (mg/kg)	<5.0	<5.0	<5.0	<5.0	
Cadmium (Cd) (mg/kg)	20.4	1.11	1.48	0.994	
Calcium (Ca) (mg/kg)	4690	6020	5650	6600	
Chromium (Cr) (mg/kg)	24.6	19.5	22.4	14.4	
Cobalt (Co) (mg/kg)	11.3	8.87	9.96	9.31	
Copper (Cu) (mg/kg)	46.6	24.1	34.2	21.9	
Iron (Fe) (mg/kg)	27000	19200	21700	15100	
Lead (Pb) (mg/kg)	541 DLA	30.2	70.6	27.5	
Lithium (Li) (mg/kg)	13.8	9.9	12.2	10.0	
Magnesium (Mg) (mg/kg)	3480	4590	4650	3490	
Manganese (Mn) (mg/kg)	1870	416	498	887	
Mercury (Hg) (mg/kg)	0.135	0.0443	0.0324	0.0359	
Molybdenum (Mo) (mg/kg)	3.46	1.25	1.09	0.79	
Nickel (Ni) (mg/kg)	33.3	24.5	27.0	25.2	
Phosphorus (P) (mg/kg)	856	837	809	825	
Potassium (K) (mg/kg)	360	590	570	330	
Selenium (Se) (mg/kg)	1.37	0.59	0.47	0.98	
Silver (Ag) (mg/kg)	16.1	0.49	1.09	0.43	
Sodium (Na) (mg/kg)	70	132	130	99	
Strontium (Sr) (mg/kg)	22.1	26.1	27.6	24.5	
Thallium (Tl) (mg/kg)	0.111	0.084	0.083	0.085	
Tin (Sn) (mg/kg)	7.5	<2.0	<2.0	<2.0	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1669328-1	L1669328-2	L1669328-3	L1669328-4	
	Description	Sed	Sed	Sed	Sed	
	Sampled Date	02-SEP-15	01-SEP-15	01-SEP-15	01-SEP-15	
	Sampled Time					
	Client ID	REF (KV-37)	EXP-1 (KV-38)	EXP-2 (KV-41)	KV-6	
Grouping	**Analyte**					
SOIL						
Metals	Titanium (Ti) (mg/kg)	191	464	466	241	
	Uranium (U) (mg/kg)	1.71	0.967	1.04	1.09	
	Vanadium (V) (mg/kg)	25.1	32.9	35.0	23.6	
	Zinc (Zn) (mg/kg)	1260 DLA	127	177	132	
	Zirconium (Zr) (mg/kg)	<1.0	1.8	2.3	1.8	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
GRAIN SIZE-SK	Soil	Grain Size Analysis	SSIR-51 METHOD 3.2.1

Particle size distribution is determined by a combination of techniques. Dry sieving is performed for coarse particles, wet sieving for sand particles and the pipette sedimentation method for clay particles.

Reference:

Burt, R. (2009). Soil Survey Field and Laboratory Methods Manual. Soil Survey Investigations Report No. 5. Method 3.2.1.2.2. United States Department of Agriculture Natural Resources Conservation Service.

HG-200.2-CVAF-SK	Soil	Mercury in Soil by CVAFS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAFS.

MET-200.2-CCMS-SK	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS.

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. This method does not dissolve all silicate materials and may result in a partial extraction. depending on the sample matrix, for some metals, including, but not limited to Al, Ba, Be, Cr, Sr, Ti, Tl, and V.

PH-1:2-SK	Soil	pH (1:2 Soil:Water Extraction)	CSSC 3.13

1 part dry soil and 2 parts de-ionized water (by volume) is mixed. The slurry is allowed to stand with occasional stirring for 30 - 60 minutes. After equilibration, pH of the slurry is measured using a pH meter.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
SK	ALS ENVIRONMENTAL - SASKATOON, SASKATCHEWAN, CANADA

Chain of Custody Numbers:

1

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

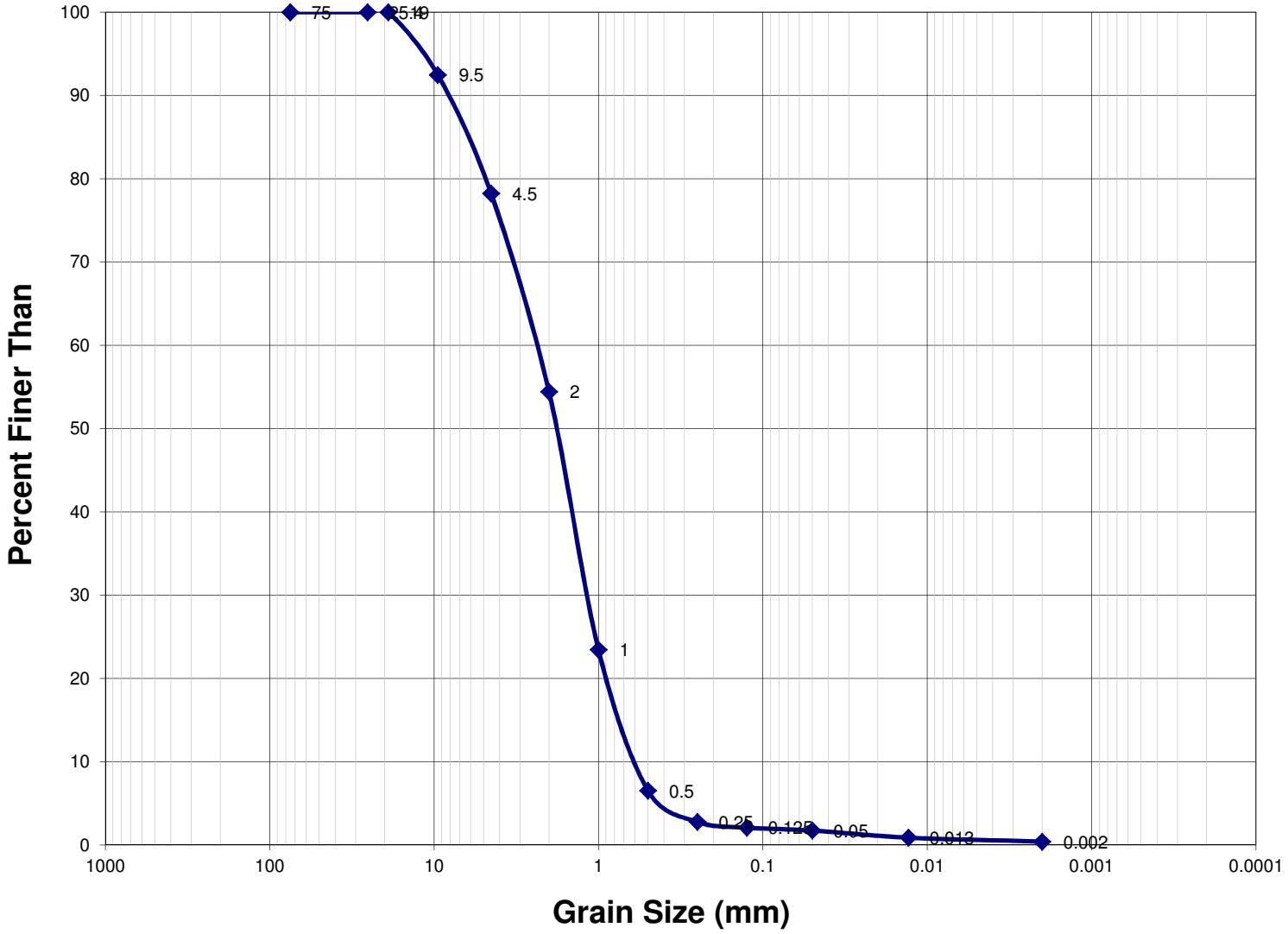
Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

819-58th Street, Saskatoon, SK S7K 6X5

Client Name: ALEXCO RESOURCE CORP
Project: VIC100-VIC200-VA
Sample ID: REF (KV-37)
Lab ID: L1669328-1

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	21
Coarse Sand	2.0mm - 4.75mm	25
Medium Sand	0.425mm - 2.0mm	48
Fine Sand	0.075mm - 0.425mm	5
Fines	< 0.075mm	2

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	46
Sand	0.05mm - 2mm	53
Silt	0.002mm - 0.05mm	1
Clay	< 0.002mm	0

Texture Sand

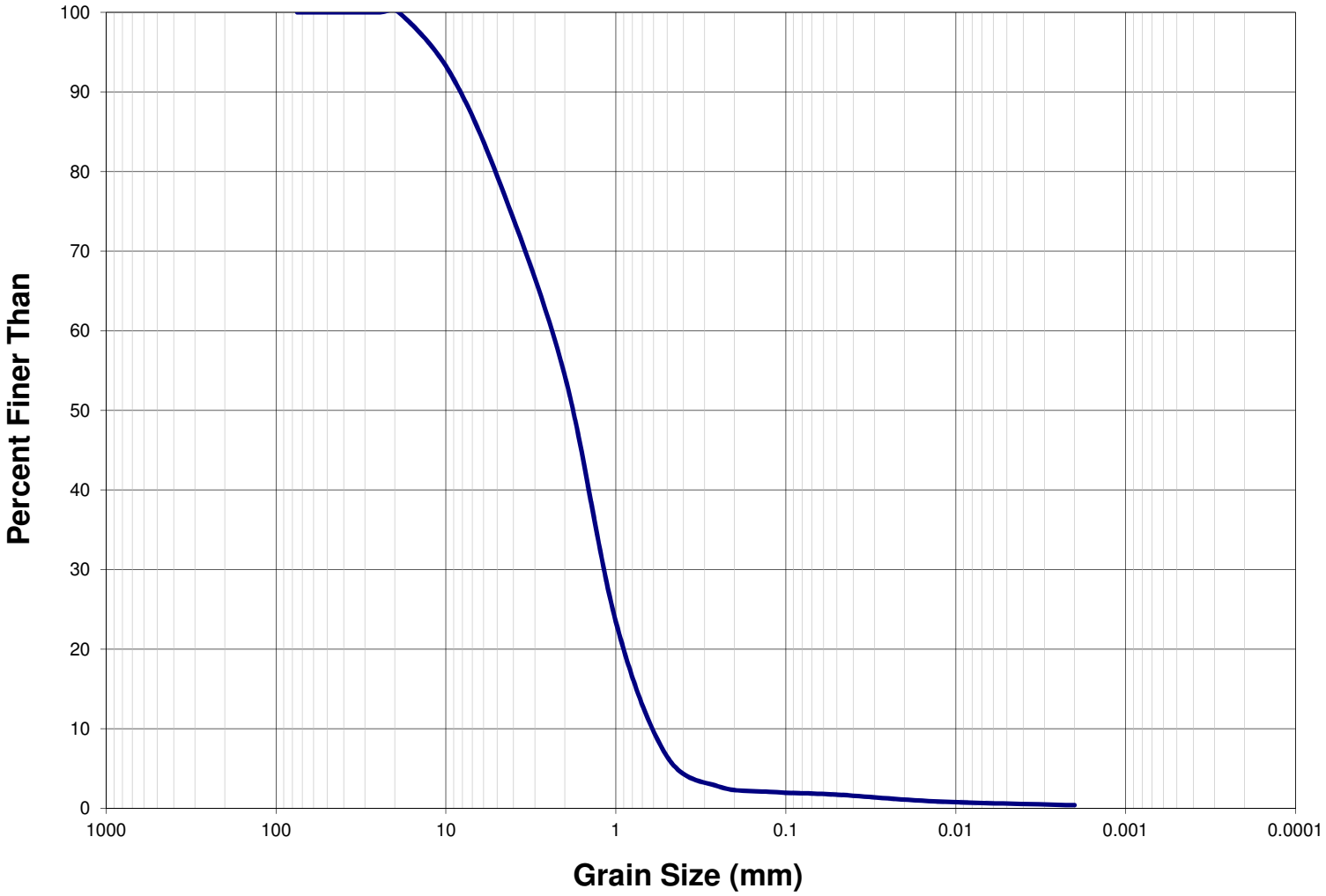
Method Reference: Can. Soc. Soil Sci. (1993) Method 47.2

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

819-58th Street, Saskatoon, SK S7K 6X5

Client Name: ALEXCO RESOURCE CORP.
Project: VIC100-VIC200-VA
Sample ID: REF (KV-37)
Lab ID: L1669328-1

Particle Size Distribution Curve



Particle Size Distribution

Range (mm)	Wt. (%)	% Passing	Range (mm)	Wt. (%)	% Passing
> 2	45.59	54.41			
2 - 0.85	36.05	18.36			
0.85 - 0.425	12.97	5.39			
0.425 - 0.25	2.63	2.76			
0.25 - 0.149	0.56	2.21			
0.149 - 0.106	0.22	1.99			
0.106 - 0.053	0.25	1.74			
<0.053	1.74	0.00			

Texture: Sand

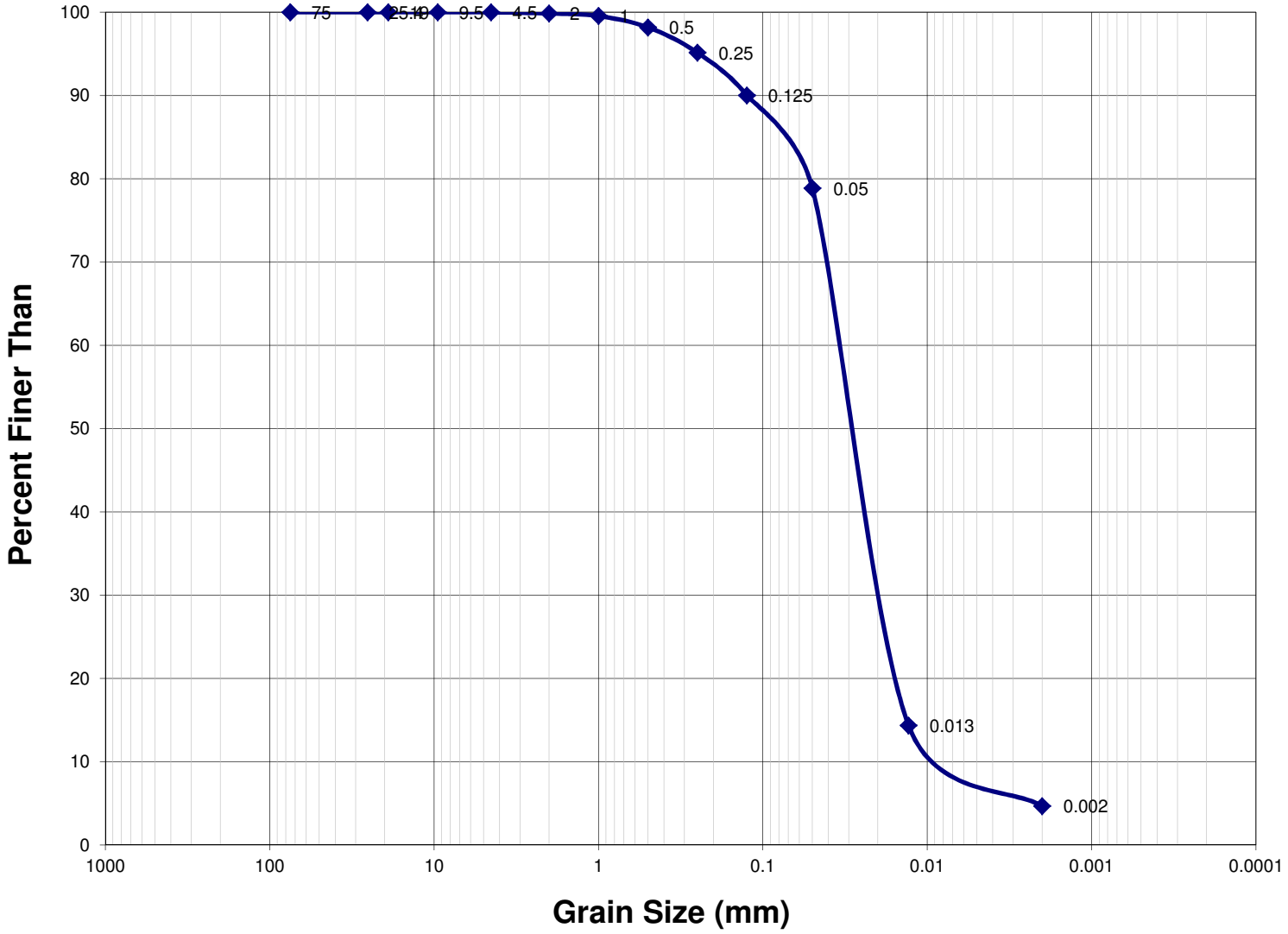
Method Reference: Can. Soc. Soil Sci. (1993) Method 47.2

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

819-58th Street, Saskatoon, SK S7K 6X5

Client Name: ALEXCO RESOURCE CORP
Project: VIC100-VIC200-VA
Sample ID: EXP-1 (KV-38)
Lab ID: L1669328-2

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	0
Coarse Sand	2.0mm - 4.75mm	0
Medium Sand	0.425mm - 2.0mm	2
Fine Sand	0.075mm - 0.425mm	16
Fines	< 0.075mm	83

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	0
Sand	0.05mm - 2mm	21
Silt	0.002mm - 0.05mm	74
Clay	< 0.002mm	5
Texture	Silt loam	

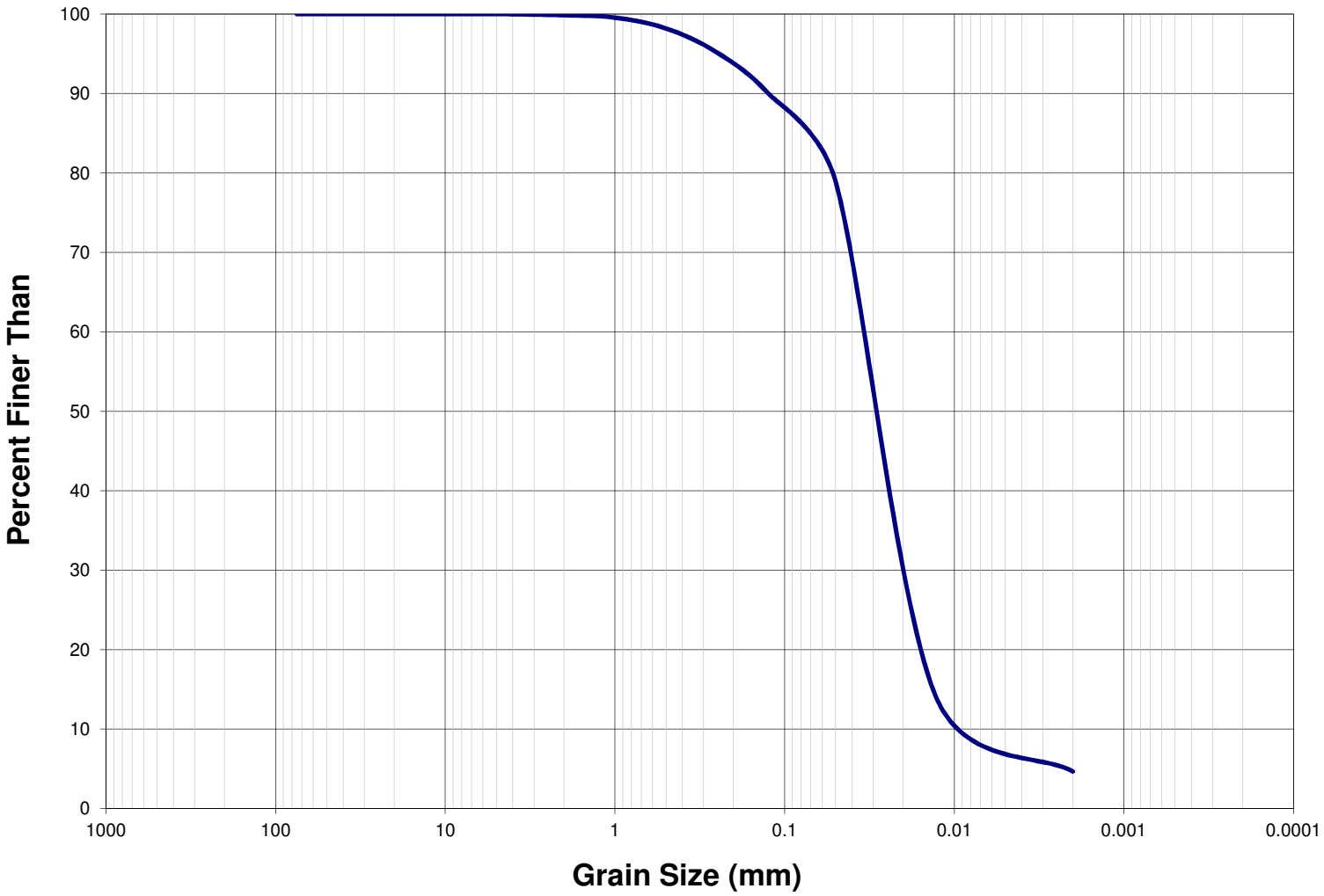
Method Reference: Can. Soc. Soil Sci. (1993) Method 47.2

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

819-58th Street, Saskatoon, SK S7K 6X5

Client Name: ALEXCO RESOURCE CORP.
Project: VIC100-VIC200-VA
Sample ID: EXP-1 (KV-38)
Lab ID: L1669328-2

Particle Size Distribution Curve



Particle Size Distribution

Range (mm)	Wt. (%)	% Passing	Range (mm)	Wt. (%)	% Passing
> 2	0.14	99.86			
2 - 0.85	0.71	99.15			
0.85 - 0.425	1.87	97.28			
0.425 - 0.25	2.13	95.15			
0.25 - 0.149	4.14	91.01			
0.149 - 0.106	3.81	87.20			
0.106 - 0.053	7.88	79.32			
<0.053	79.32	0.00			

Texture: Silt loam

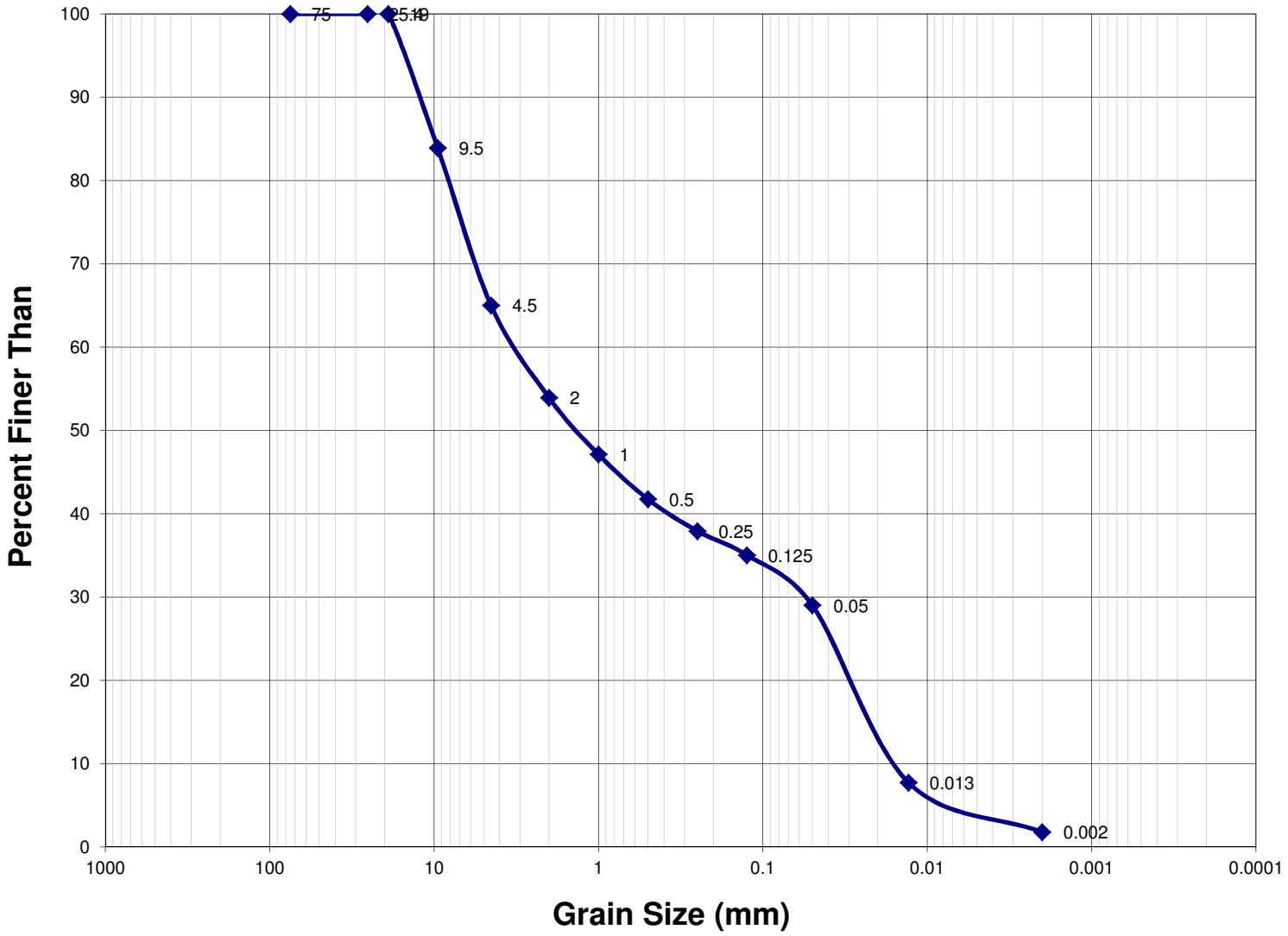
Method Reference: Can. Soc. Soil Sci. (1993) Method 47.2

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

819-58th Street, Saskatoon, SK S7K 6X5

Client Name: ALEXCO RESOURCE CORP
Project: VIC100-VIC200-VA
Sample ID: EXP-2 (KV-41)
Lab ID: L1669328-3

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	34
Coarse Sand	2.0mm - 4.75mm	12
Medium Sand	0.425mm - 2.0mm	12
Fine Sand	0.075mm - 0.425mm	11
Fines	< 0.075mm	31

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	46
Sand	0.05mm - 2mm	25
Silt	0.002mm - 0.05mm	27
Clay	< 0.002mm	2
Texture	Silt loam	

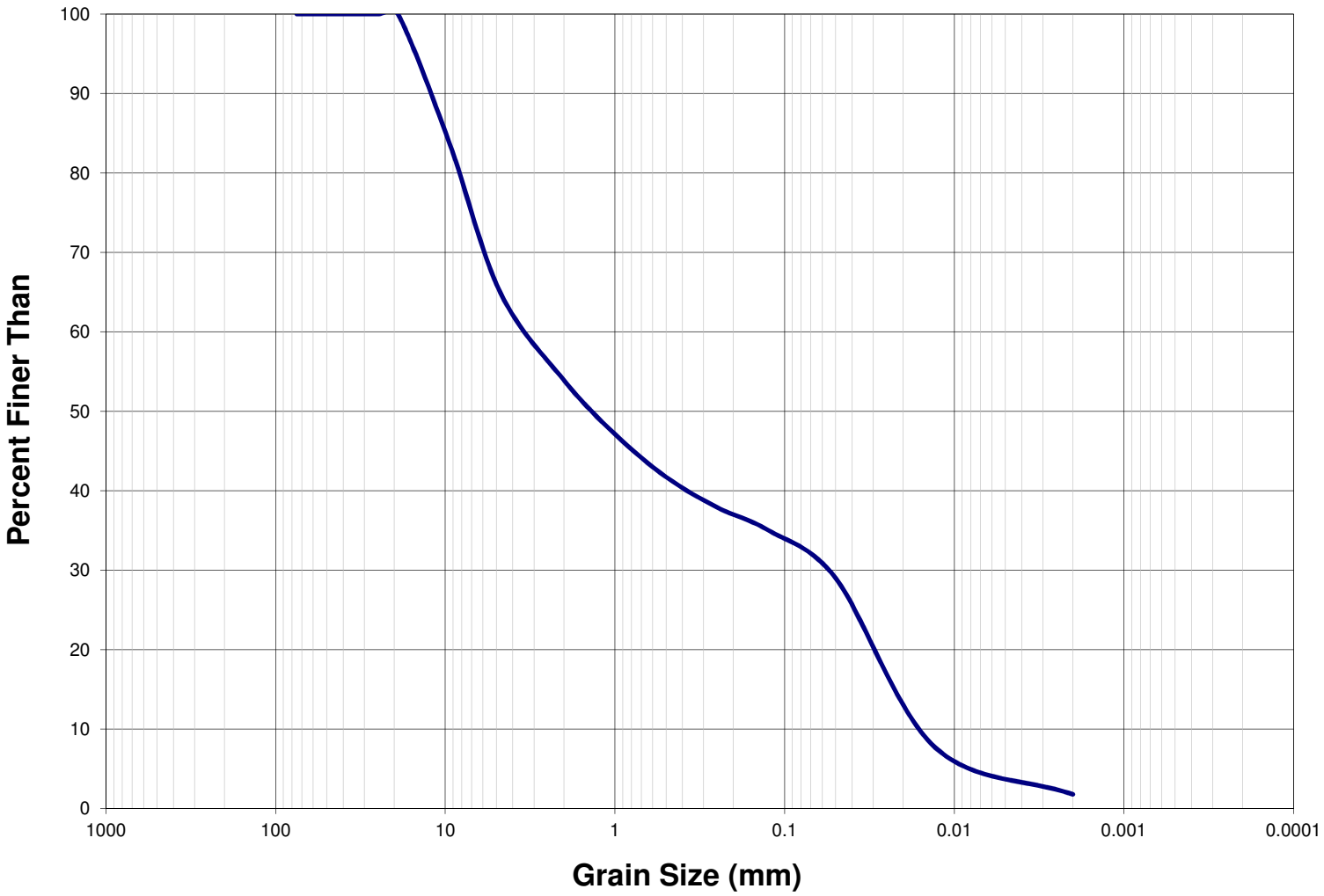
Method Reference: Can. Soc. Soil Sci. (1993) Method 47.2

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

819-58th Street, Saskatoon, SK S7K 6X5

Client Name: ALEXCO RESOURCE CORP.
Project: VIC100-VIC200-VA
Sample ID: EXP-2 (KV-41)
Lab ID: L1669328-3

Particle Size Distribution Curve



Particle Size Distribution

Range (mm)	Wt. (%)	% Passing	Range (mm)	Wt. (%)	% Passing
> 2	46.06	53.94			
2 - 0.85	8.43	45.51			
0.85 - 0.425	4.92	40.59			
0.425 - 0.25	2.68	37.91			
0.25 - 0.149	2.33	35.58			
0.149 - 0.106	2.08	33.50			
0.106 - 0.053	4.26	29.24			
<0.053	29.24	0.00			

Texture: Silt loam

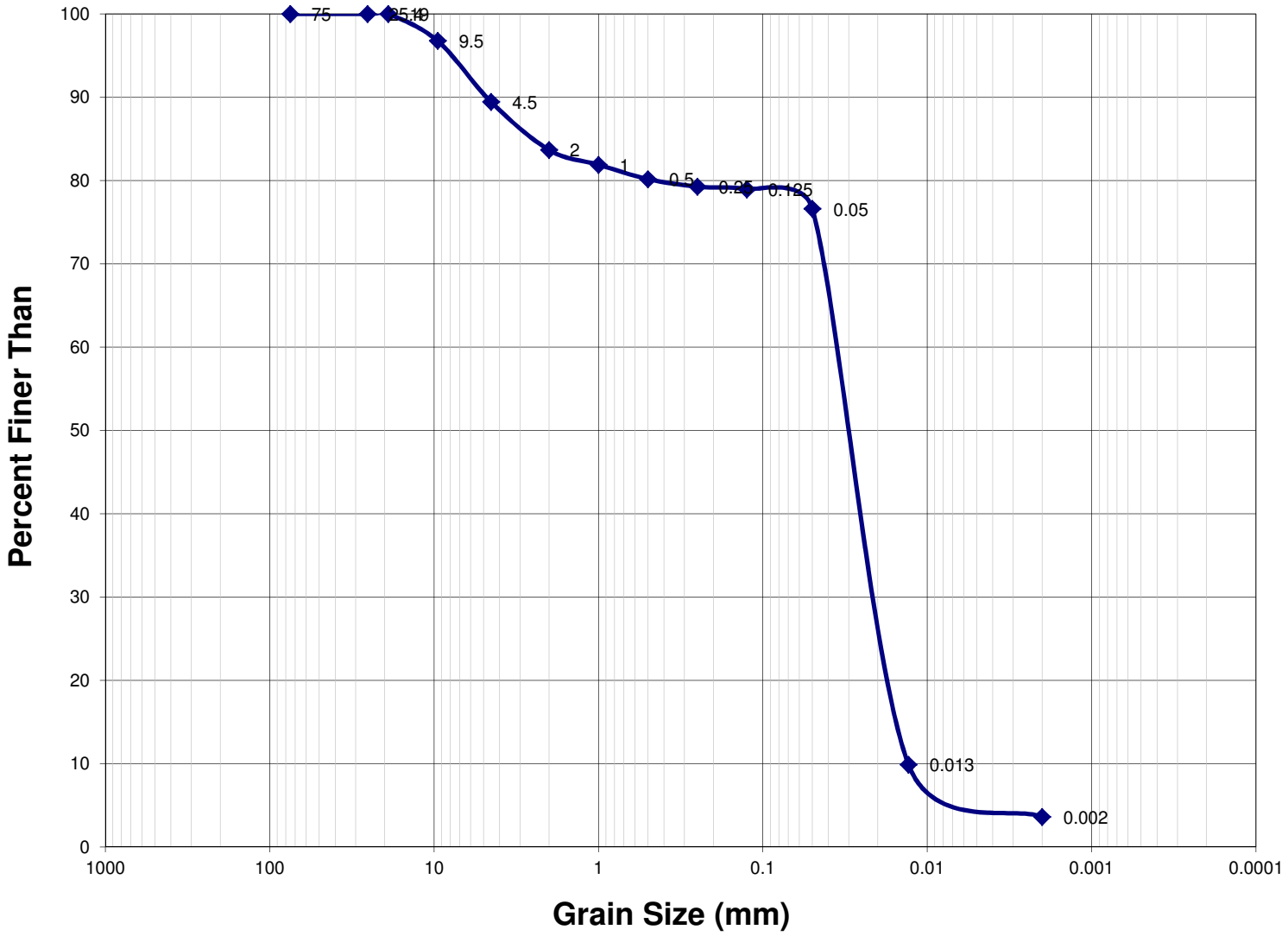
Method Reference: Can. Soc. Soil Sci. (1993) Method 47.2

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

819-58th Street, Saskatoon, SK S7K 6X5

Client Name: ALEXCO RESOURCE CORP
Project: VIC100-VIC200-VA
Sample ID: KV-6
Lab ID: L1669328-4

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	10
Coarse Sand	2.0mm - 4.75mm	6
Medium Sand	0.425mm - 2.0mm	4
Fine Sand	0.075mm - 0.425mm	3
Fines	< 0.075mm	77

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	16
Sand	0.05mm - 2mm	7
Silt	0.002mm - 0.05mm	73
Clay	< 0.002mm	4

Texture Silt

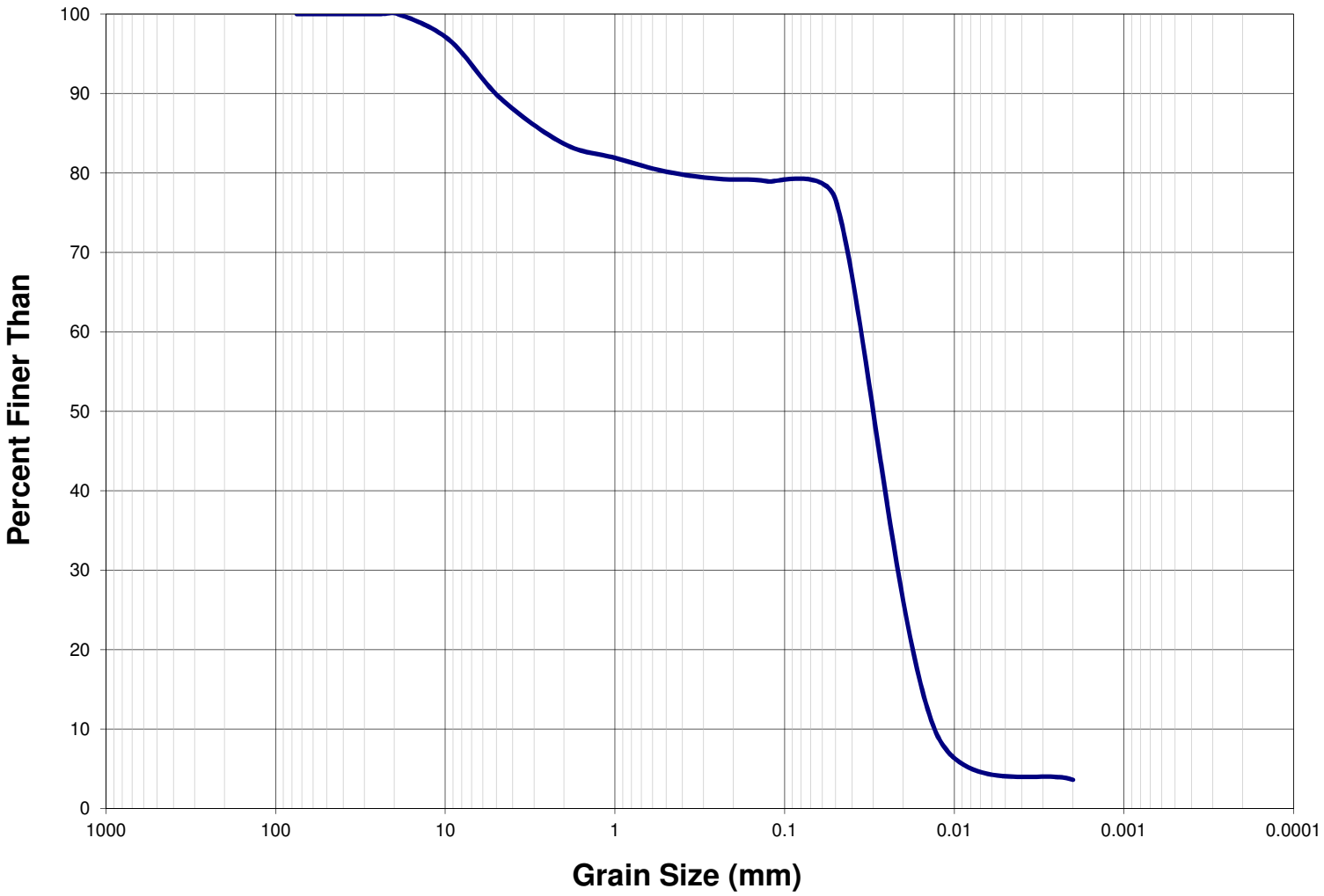
Method Reference: Can. Soc. Soil Sci. (1993) Method 47.2

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

819-58th Street, Saskatoon, SK S7K 6X5

Client Name: ALEXCO RESOURCE CORP.
Project: VIC100-VIC200-VA
Sample ID: KV-6
Lab ID: L1669328-4

Particle Size Distribution Curve



Particle Size Distribution

Range (mm)	Wt. (%)	% Passing	Range (mm)	Wt. (%)	% Passing
> 2	16.32	83.68			
2 - 0.85	2.29	81.38			
0.85 - 0.425	1.48	79.90			
0.425 - 0.25	0.63	79.27			
0.25 - 0.149	0.27	79.00			
0.149 - 0.106	0.66	78.34			
0.106 - 0.053	1.65	76.69			
<0.053	76.69	0.00			

Texture: Silt

Method Reference: Can. Soc. Soil Sci. (1993) Method 47.2

ALS ENVIRONMENTAL ANALYTICAL REPORT L1669328
NON-ROUTINE TESTING

Sample	Client ID	Matrix	Analyte	Results	Units	LOR
L1669328-1	REF (KV-37)	Sediment	Loss on ignition @ 600°C	5.8	%	1
L1669328-2	EXP-1 (KV-38)	Sediment	Loss on ignition @ 600°C	2.7	%	1
L1669328-3	EXP-2 (KV-41)	Sediment	Loss on ignition @ 600°C	2.8	%	1
L1669328-4	KV-6	Sediment	Loss on ignition @ 600°C	7.6	%	1

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph 08 8359 0890 E. adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph 07 3243 7222 E. samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph 07 7471 5600 E. gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph 07 4944 0177 E. mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph 03 8549 9600 E. samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph 02 6372 6735 E. mudgee.mail@alsglobal.com
NEWCASTLE 5 Re... Ph 02 4968 9433 E...
ONOWRA 4/10 Gear... Ph 02 4423 2063 E. ...
PERTH 10 Hod Wa... Ph 08 9209 7655 E. ...

L1669328-COFC

d NSW 2164 ...al.com
D 4816 ...alsglobal.com
ag NSW 2500 ...com

CLIENT: Alexco Env Group	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE: Whitehorse	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:ERDC-001-15	ALS QUOTE NO.:	Free Ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:16371	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: 9.9 °C
PROJECT MANAGER:Kal Woloshyn CONTACT PH: 668-6463	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AS-CH asanfacon@accessconsulting.ca SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO) EDD FORMAT (or default):				Twila 9.9°
Email Reports to (will default to PM if no other addresses are listed): kwoloshyn@alexcoenvironmental.com	DATE/TIME: 8 Sept 15 @ 1400	DATE/TIME: 1350	DATE/TIME:	DATE/TIME: Sept 9/14:20
Email Invoice to (will default to PM if no other addresses are listed): nichole@accessconsulting.ca				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS									
	Ref (KV-37)	02-Sep-15	sed	na	3		See water licence requirements attached with samples. Apply to all samples							
	Exp-1 (KV-38)	01-Sep-15	sed	na	3									
	Exp-2 (KV-41)	01-Sep-15	sed	na	3									
	KV-6	01-Sep-15	sed	na	3									
					TOTAL									

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Cordillera Consulting

Project: Wernecke Lake (ERDC-001-15)
Alexco - Access, Kai Woloshyn; Audrey Sanfacon
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

Site:	REF	REF	REF	REF	REF	EXP1	EXP1	EXP1	EXP1	EXP1	KV-41	KV-41	KV-41	KV-41	KV-41
Sample:	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
CC#:	CC160622	CC160623	CC160624	CC160625	CC160626	CC160627	CC160628	CC160629	CC160630	CC160631	CC160632	CC160633	CC160634	CC160635	CC160636
Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Insecta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Ephemeroptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Ameletidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ameletus	107	200	213	14	143	100	40	0	40	200	108	73	92	68	29
| Family: Baetidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetis	27	22	13	0	29	83	40	20	60	20	192	55	54	136	94
Baetis bicaudatus	27	56	0	29	71	17	140	60	60	60	108	77	138	72	59
Baetis tricaudatus group	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
| Family: Ephemerellidae	40	133	75	114	200	67	80	40	140	20	42	23	77	24	24
Drunella coloradensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Drunella doddsii	0	11	0	0	0	33	20	20	0	60	8	0	8	4	6
Drunella sp.	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0
Ephemerella	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Serratella	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0
| Family: Heptageniidae	207	378	113	629	771	800	1040	800	600	640	33	50	46	12	41
Cinygmula sp.	7	22	13	14	71	83	0	40	40	20	8	14	0	12	18
Epeorus	33	22	13	114	200	183	200	100	80	80	242	200	108	112	194
Rhithrogena	53	78	75	200	143	0	20	20	40	0	0	5	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Plecoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Capniidae	27	156	113	314	229	167	480	100	100	160	275	55	23	124	141
| Family: Chloroperlidae	0	22	0	57	0	0	0	0	0	0	8	0	0	0	0
Haploperla sp.	0	0	0	0	43	0	0	0	0	20	8	14	15	0	6
Suwallia	13	11	0	100	71	0	0	0	0	0	0	5	0	0	6
Sweltsa sp.	7	0	0	14	14	0	0	0	0	0	0	0	0	0	0
| Family: Nemouridae	7	11	0	0	0	0	0	0	0	0	0	0	0	0	0
Zapada	0	278	88	229	357	417	800	380	560	440	142	127	131	96	165
Zapada cinctipes	13	11	13	0	0	17	0	0	0	0	0	0	0	0	0
Zapada columbiana	227	144	338	171	657	250	140	240	300	100	150	50	0	12	35
Zapada frigida	53	33	63	43	29	83	0	60	40	40	133	45	46	80	71
Zapada oregonensis group	60	144	50	114	214	133	140	220	140	20	175	114	69	132	141
| Family: Perlodidae	33	22	25	0	0	67	0	40	60	100	0	5	8	0	0
Megarcys sp.	27	0	13	14	43	17	0	100	40	0	92	55	85	16	65
Skwala	0	0	0	14	0	17	20	0	0	0	0	0	0	0	0
| Family: Taeniopterygidae	0	44	13	129	186	800	940	640	1180	520	275	109	131	140	194
Doddsia occidentalis	13	67	0	29	71	333	280	200	140	180	75	36	15	52	65
Taenionema	47	33	0	0	86	233	1540	720	1260	720	83	27	15	24	24
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Trichoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Brachycentridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micrasema	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0
| Family: Glossosomatidae	0	0	0	0	29	0	0	0	0	0	0	0	8	0	0

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Site:	REF	REF	REF	REF	REF	EXP1	EXP1	EXP1	EXP1	EXP1	KV-41	KV-41	KV-41	KV-41	KV-41
Sample:	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
CC#:	CC160622	CC160623	CC160624	CC160625	CC160626	CC160627	CC160628	CC160629	CC160630	CC160631	CC160632	CC160633	CC160634	CC160635	CC160636
Glossosoma	13	33	50	171	129	83	180	60	60	80	50	5	108	16	29
| Family: Hydropsychidae	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0
| Family: Limnephilidae	0	11	13	0	0	0	0	0	0	0	0	0	0	0	0
Ecclisomyia sp.	0	0	0	0	0	33	0	0	20	0	0	0	0	4	6
| Family: Rhyacophilidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhyacophila	20	0	0	29	29	0	0	0	0	20	0	18	31	16	24
Rhyacophila hyalinata group	7	0	0	29	0	0	0	0	0	0	0	5	0	0	6
Rhyacophila vofixa group	7	11	25	43	14	0	0	0	0	0	50	18	62	52	53
| Family: Uenoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Neothremma sp.	0	0	13	86	0	0	0	0	0	0	0	0	0	0	0
Oligophlebodes	187	111	275	0	57	50	20	0	0	60	250	195	915	164	353
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Coleoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Staphylinidae	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Diptera	0	0	38	0	0	0	0	20	0	0	0	5	0	0	0
| Family: Chironomidae	33	56	25	43	71	317	240	160	360	360	8	18	15	28	12
| Subfamily: Chironominae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Tanytarsini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsectra	87	289	825	171	300	17	0	0	0	20	0	0	15	0	0
Rheotanytarsus	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0
| Subfamily: Diamesinae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Diamesini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diamesa	73	44	163	114	143	83	20	160	120	40	8	23	23	32	12
Pagastia	467	289	500	571	571	17	20	20	0	0	0	0	0	0	0
Pseudodiamesa sp.	13	67	25	0	14	33	0	0	20	0	8	0	0	8	0
| Subfamily: Orthocladiinae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brillia sp.	13	22	13	14	71	33	0	0	0	0	0	0	0	0	0
Chaetocladius	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	307	233	888	857	629	900	200	500	0	520	33	32	54	56	24
Heleniella sp.	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0
Hydrobaenus	0	0	0	0	14	0	0	0	0	0	0	0	0	8	0
Limnophyes sp.	0	11	13	0	0	33	20	40	40	0	0	0	8	0	6
Metriocnemus sp.	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0
Orthocladius	40	89	38	0	43	50	0	60	0	20	8	5	15	4	24
Orthocladius lignicola	0	0	0	0	0	0	0	0	0	0	17	0	0	4	0
Parorthocladius sp.	7	0	25	0	0	17	0	20	0	0	0	0	8	12	6
Rheocricotopus	0	0	0	0	0	17	0	20	20	0	0	0	15	0	0
Tvetenia	0	33	88	0	100	117	0	80	0	0	0	0	0	0	0
Tvetenia bavarica group	20	0	0	43	0	0	20	0	0	0	0	0	0	0	0
| Subfamily: Podonominae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Boreochlini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Boreochlus sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
| Subfamily: Tanypodinae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Pentaneurini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thienemannimyia group	0	0	0	0	0	0	0	0	0	0	8	5	0	0	0
| Family: Empididae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chelifera/ Metachela	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Neoplasta sp.	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0
Oreogeton sp.	0	0	0	0	14	50	80	60	100	60	17	0	15	8	6
| Family: Muscidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Limnophora sp.	0	0	0	0	0	0	0	20	20	0	0	0	0	0	0
| Family: Psychodidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pericoma/Telmatoscopus sp.	27	44	50	0	57	33	0	20	0	0	25	14	15	8	0

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Site:	REF	REF	REF	REF	REF	EXP1	EXP1	EXP1	EXP1	EXP1	KV-41	KV-41	KV-41	KV-41	KV-41
Sample:	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
CC#:	CC160622	CC160623	CC160624	CC160625	CC160626	CC160627	CC160628	CC160629	CC160630	CC160631	CC160632	CC160633	CC160634	CC160635	CC160636
| Family: Simuliidae	0	0	0	28	14	17	0	0	0	0	0	0	0	0	0
Helodon sp.	7	11	13	0	43	17	20	0	60	0	0	0	0	0	0
| Family: Tipulidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dicranota	7	11	0	14	86	17	0	0	0	20	25	9	8	4	6
Gonomyodes sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
Tipula	0	0	0	0	0	0	0	40	40	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Lepidoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Chelicerata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Arachnida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Trombidiformes	0	0	0	0	14	0	0	0	0	0	0	0	0	4	0
| Family: Feltriidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feltria sp.	0	0	0	0	0	33	0	0	0	0	0	0	0	4	0
| Family: Hygrobatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Atractides	7	0	25	0	0	0	0	0	0	0	0	0	8	0	0
Hygrobates	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0
| Family: Lebertiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lebertia	13	0	25	0	0	0	0	0	20	0	0	0	0	8	0
| Family: Sperchontidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sperchon	53	44	63	0	29	50	0	60	60	0	42	5	15	8	29
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Lumbriculida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Lumbriculidae	47	100	13	314	400	417	3780	2260	1980	1520	33	14	85	60	47
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phylum: Cnidaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Hydrozoa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Anthoathecatae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Hydridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydra	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0
Totals:	**2490**	**3418**	**4437**	**4898**	**6556**	**6351**	**10520**	**7400**	**7840**	**6120**	**2755**	**1510**	**2507**	**1628**	**2086**

Taxa present but not included:

Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Crustacea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Ostracoda	0	11	0	14	14	0	0	20	0	0	0	0	0	4	0
| Class: Maxillipoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Copepoda	0	0	0	0	0	0	20	20	0	20	0	0	0	4	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phylum: Nemata	0	11	0	14	14	17	0	20	0	0	0	0	0	4	0
Phylum: Platyhelminthes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Turbellaria	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0
Totals:	**0**	**22**	**0**	**28**	**28**	**17**	**20**	**60**	**0**	**40**	**0**	**0**	**0**	**12**	**0**

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Project: Wernecke Lake (ERDC-001-15)
Alexco - Access, Kai Woloshyn; Audrey Sanfacon
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

Site:	REF	REF	REF	REF	REF	EXP1
Sample:	A	B	C	D	E	A
CC#:	CC160622	CC160623	CC160624	CC160625	CC160626	CC160627
Richness Measures						
Species Richness	43	42	39	35	46	44
EPT Richness	25	26	21	24	25	23
Ephemeroptera Richness	8	9	7	7	8	8
Plecoptera Richness	12	13	9	12	12	12
Trichoptera Richness	5	4	5	5	5	3
Chironomidae Richness	10	11	11	7	12	12
Oligochaeta Richness	1	1	1	1	1	1
Non-Chiro. Non-Olig. Richness						
Abundance Measures						
Corrected Abundance	2490	3418	4437	4898	6556	6351
EPT Abundance	1260	2067	1599	2700	3886	4067
Dominance Measures						
1st Dominant Taxon	Pagastia	Heptageniidae	Eukiefferiella	Eukiefferiella	Heptageniidae	Eukiefferiella
1st Dominant Abundance	467	378	888	857	771	900
2nd Dominant Taxon	Eukiefferiella	Micropsectra	Micropsectra	Heptageniidae	Zapada columbiana	Heptageniidae
2nd Dominant Abundance	307	289	825	629	657	800
3rd Dominant Taxon	Zapada columbiana	Pagastia	Pagastia	Pagastia	Eukiefferiella	Taeniopterygidae
3rd Dominant Abundance	227	289	500	571	629	800
% 1 Dominant Taxon	18.76%	11.06%	20.01%	17.50%	11.76%	14.17%
% 2 Dominant Taxa	12.33%	8.46%	18.59%	12.84%	10.02%	12.60%
% 3 Dominant Taxa	9.12%	8.46%	11.27%	11.66%	9.59%	12.60%
Community Composition						
% Ephemeroptera	20.08%	26.97%	11.54%	22.74%	24.85%	21.52%
% Plecoptera	21.16%	28.61%	16.05%	25.09%	30.51%	39.88%
% Trichoptera	9.36%	4.89%	8.45%	7.29%	3.92%	2.63%
% EPT	50.60%	60.47%	36.04%	55.12%	59.27%	64.04%
% Diptera	44.46%	35.43%	60.85%	37.91%	33.77%	27.82%
% Oligochaeta	1.89%	2.93%	0.27%	6.41%	6.10%	6.57%
% Baetidae	2.13%	2.28%	0.27%	0.59%	1.53%	1.57%

APPENDIX A-4

Benthic Invertebrates Laboratory Results

Site:	REF	REF	REF	REF	REF	EXP1
Sample:	A	B	C	D	E	A
CC#:	CC160622	CC160623	CC160624	CC160625	CC160626	CC160627
% Chironomidae	42.57%	33.47%	58.60%	37.04%	30.51%	25.71%
% Odonata						
Functional Group Composition						
% Predators	8.07%	3.54%	3.97%	7.00%	5.66%	4.22%
% Shredder-Herbivores	16.06%	23.38%	15.28%	18.07%	23.75%	17.32%
% Collector-Gatherers	37.83%	37.36%	44.60%	25.64%	29.19%	16.53%
% Scrapers	11.77%	7.78%	9.89%	11.94%	9.15%	6.28%
% MH						
% CF	0.28%	0.32%	0.29%	0.59%	1.08%	0.54%
% OM	14.74%	9.74%	20.01%	18.09%	11.99%	23.87%
% PA						
% Piercer-Herbivore						
% Gatherer						
% Unclassified	11.24%	17.88%	5.95%	18.66%	19.17%	31.24%
Functional Group Richness						
Predators Richness	12	6	6	10	11	8
Shredder-Herbivores Richness	7	8	7	6	6	7
Collector-Gatherers Richness	12	15	13	7	13	14
Scrapers Richness	5	5	6	5	5	4
MH Richness						
CF Richness	1	1	1	1	3	2
OM Richness	3	3	1	2	3	5
PA Richness						
Piercer-Herbivore Richness						
Gatherer Richness						
Unclassified	3	4	5	4	5	4
Diversity/Evenness Measures						
Shannon-Weiner H' (log 10)	1.31	1.40	1.20	1.27	1.39	1.32
Shannon-Weiner H' (log 2)	4.35	4.64	3.99	4.20	4.63	4.39
Shannon-Weiner H' (log e)	3.02	3.22	2.77	2.91	3.21	3.04
Simpson's Index (D)	0.08	0.05	0.10	0.08	0.06	0.07
Simpson's Index of Diversity (1 - D)	0.92	0.95	0.90	0.92	0.94	0.93
Simpson's Reciprocal Index (1/D)	12.61	18.56	9.60	12.42	17.29	13.78
Biotic Indices						
Hilsenhoff Biotic Index	2.81	2.75	4.06	2.92	2.82	3.16

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Project: Wernecke Lake (ERDC-001-15)
Alexco - Access, Kai Woloshyn; Audrey
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

	Site:	EXP1	EXP1	EXP1	EXP1	KV-41	KV-41	KV-41
	Sample:	B	C	D	E	A	B	C
	CC#:	CC160628	CC160629	CC160630	CC160631	CC160632	CC160633	CC160634
Richness Measures								
Species Richness		27	35	34	29	36	35	38
EPT Richness		18	19	22	21	23	25	23
Ephemeroptera Richness		8	8	9	8	8	8	8
Plecoptera Richness		8	10	10	10	11	12	10
Trichoptera Richness		2	1	3	3	4	5	5
Chironomidae Richness		6	9	5	5	8	5	8
Oligochaeta Richness		1	1	1	1	1	1	1
Non-Chiro. Non-Olig. Richness								
Abundance Measures								
Corrected Abundance		10520	7400	7840	6120	2755	1510	2507
EPT Abundance		6120	3860	5000	3560	2517	1377	2193
Dominance Measures								
1st Dominant Taxon		Lumbriculidae	Lumbriculidae	Lumbriculidae	Lumbriculidae	Capniidae	Epeorus	Oligophlebodes
1st Dominant Abundance		3780	2260	1980	1520	275	200	915
2nd Dominant Taxon		Taenionema	Heptageniidae	Taenionema	Taenionema	Taeniopterygidae	Oligophlebodes	Baetis bicaudatus
2nd Dominant Abundance		1540	800	1260	720	275	195	138
3rd Dominant Taxon		Heptageniidae	Taenionema	Taeniopterygidae	Heptageniidae	Oligophlebodes	Zapada	Taeniopterygidae
3rd Dominant Abundance		1040	720	1180	640	250	127	131
% 1 Dominant Taxon		35.93%	30.54%	25.26%	24.84%	9.98%	13.25%	36.50%
% 2 Dominant Taxa		14.64%	10.81%	16.07%	11.76%	9.98%	12.91%	5.50%
% 3 Dominant Taxa		9.89%	9.73%	15.05%	10.46%	9.07%	8.41%	5.23%
Community Composition								
% Ephemeroptera		15.02%	14.86%	13.78%	17.97%	26.93%	32.78%	21.18%
% Plecoptera		41.25%	36.49%	48.72%	37.58%	51.43%	42.45%	21.50%
% Trichoptera		1.90%	0.81%	1.28%	2.61%	12.99%	15.96%	44.79%
% EPT		58.17%	52.16%	63.78%	58.17%	91.36%	91.19%	87.48%
% Diptera		5.89%	16.49%	9.95%	16.99%	6.03%	7.22%	8.30%
% Oligochaeta		35.93%	30.54%	25.26%	24.84%	1.20%	0.93%	3.39%
% Baetidae		1.71%	1.08%	1.53%	1.31%	10.89%	8.74%	7.66%

APPENDIX A-4

Benthic Invertebrates Laboratory Results

Site:	EXP1	EXP1	EXP1	EXP1	KV-41	KV-41	KV-41	
Sample:	B	C	D	E	A	B	C	
CC#:	CC160628	CC160629	CC160630	CC160631	CC160632	CC160633	CC160634	
% Chironomidae	4.94%	14.32%	7.14%	15.69%	3.63%	5.43%	6.14%	
% Odonata								
Functional Group Composition								
% Predators	0.95%	3.78%	3.83%	3.59%	9.07%	9.21%	10.45%	
% Shredder-Herbivores	14.83%	13.51%	14.54%	12.42%	31.76%	25.89%	10.73%	
% Collector-Gatherers	38.97%	37.30%	29.85%	31.70%	18.98%	17.28%	18.71%	
% Scrapers	3.99%	2.97%	2.81%	3.92%	19.96%	27.75%	45.11%	
% MH			0.26%					
% CF	0.19%		0.77%		0.29%			
% OM	19.20%	20.00%	18.88%	23.20%	6.93%	6.29%	3.95%	
% PA								
% Piercer-Herbivore								
% Gatherer								
% Unclassified	21.86%	22.43%	29.08%	25.16%	12.99%	13.58%	11.05%	
Functional Group Richness								
Predators Richness	2	5	6	5	8	10	10	
Shredder-Herbivores Richness	4	5	5	5	5	5	4	
Collector-Gatherers Richness	9	11	8	8	11	7	12	
Scrapers Richness	4	4	4	4	4	5	3	
MH Richness			1					
CF Richness	1		1		1			
OM Richness	3	5	5	3	3	3	4	
PA Richness								
Piercer-Herbivore Richness								
Gatherer Richness								
Unclassified	4	5	4	4	4	5	5	
Diversity/Evenness Measures								
Shannon-Weiner H' (log 10)	0.97	1.13	1.10	1.12	1.32	1.31	1.17	
Shannon-Weiner H' (log 2)	3.22	3.75	3.66	3.73	4.40	4.35	3.88	
Shannon-Weiner H' (log e)	2.23	2.60	2.53	2.58	3.05	3.02	2.69	
Simpson's Index (D)	0.18	0.13	0.13	0.11	0.06	0.07	0.15	
Simpson's Index of Diversity (1 - D)	0.82	0.87	0.87	0.89	0.94	0.93	0.85	
Simpson's Reciprocal Index (1/D)	5.59	7.47	7.76	8.81	16.64	15.08	6.51	
Biotic Indices								
Hilsenhoff Biotic Index	3.89	4.17	3.40	3.77	1.70	1.55	1.53	

Cordillera Consulting

Project: Wernecke Lake (ERDC-001-15)
Alexco - Access, Kai Woloshyn; Audrey
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

Site:	KV-41	KV-41
Sample:	D	E
CC#:	CC160635	CC160636
Richness Measures		
Species Richness	39	40
EPT Richness	23	27
Ephemeroptera Richness	9	10
Plecoptera Richness	9	11
Trichoptera Richness	5	6
Chironomidae Richness	8	7
Oligochaeta Richness	1	1
Non-Chiro. Non-Olig. Richness		
Abundance Measures		
Corrected Abundance	1628	2086
EPT Abundance	1372	1870
Dominance Measures		
1st Dominant Taxon	Oligophlebodes	Oligophlebodes
1st Dominant Abundance	164	353
2nd Dominant Taxon	Taeniopterygidae	Taeniopterygidae
2nd Dominant Abundance	140	194
3rd Dominant Taxon	Baetis	Epeorus
3rd Dominant Abundance	136	194
% 1 Dominant Taxon	10.07%	16.92%
% 2 Dominant Taxa	8.60%	9.30%
% 3 Dominant Taxa	8.35%	9.30%
Community Composition		
% Ephemeroptera	27.27%	23.39%
% Plecoptera	41.52%	43.72%
% Trichoptera	15.48%	22.53%
% EPT	84.28%	89.65%
% Diptera	10.57%	6.23%
% Oligochaeta	3.69%	2.25%
% Baetidae	12.78%	7.62%

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Site:	KV-41	KV-41
Sample:	D	E
CC#:	CC160635	CC160636
% Chironomidae	9.34%	4.22%
% Odonata		
Functional Group Composition		
% Predators	7.37%	10.50%
% Shredder-Herbivores	27.27%	26.80%
% Collector-Gatherers	25.80%	15.53%
% Scrapers	18.67%	28.48%
% MH		
% CF		
% OM	8.35%	5.70%
% PA		
% Piercer-Herbivore		
% Gatherer		
% Unclassified	12.53%	12.99%
Functional Group Richness		
Predators Richness	9	10
Shredder-Herbivores Richness	5	6
Collector-Gatherers Richness	13	12
Scrapers Richness	4	4
MH Richness		
CF Richness		
OM Richness	4	4
PA Richness		
Piercer-Herbivore Richness		
Gatherer Richness		
Unclassified	4	4
Diversity/Evenness Measures		
Shannon-Weiner H' (log 10)	1.35	1.32
Shannon-Weiner H' (log 2)	4.48	4.39
Shannon-Weiner H' (log e)	3.10	3.04
Simpson's Index (D)	0.06	0.07
Simpson's Index of Diversity (1 - D)	0.94	0.93
Simpson's Reciprocal Index (1/D)	17.53	14.21
Biotic Indices		
Hilsenhoff Biotic Index	2.22	1.56

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Cordillera Consulting

Project: Wernecke Lake (ERDC-001-15)
Alexco - Access, Kai Woloshyn; Audrey Sanfacon
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

Site:	REF	REF	REF	REF	REF	EXP1	EXP1	EXP1	EXP1	EXP1	KV-41	KV-41	KV-41	KV-41	KV-41
Sample:	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
CC#:	CC160622	CC160623	CC160624	CC160625	CC160626	CC160627	CC160628	CC160629	CC160630	CC160631	CC160632	CC160633	CC160634	CC160635	CC160636
Sieve Size:	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
SubSample %:	15	9	8	7	7	6	5	5	5	5	12	22	13	25	17
Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Insecta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Ephemeroptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Ameletidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ameletus	16	18	17	1	10	6	2	0	2	10	13	16	12	17	5
| Family: Baetidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetis	4	2	1	0	2	5	2	1	3	1	23	12	7	34	16
Baetis bicaudatus	4	5	0	2	5	1	7	3	3	3	13	17	18	18	10
Baetis tricaudatus group	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
| Family: Ephemerellidae	6	12	6	8	14	4	4	2	7	1	5	5	10	6	4
Drunella coloradensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Drunella doddsii	0	1	0	0	0	2	1	1	0	3	1	0	1	1	1
Drunella sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Ephemerella	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Serratella	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
| Family: Heptageniidae	31	34	9	44	54	48	52	40	30	32	4	11	6	3	7
Cinygmula sp.	1	2	1	1	5	5	0	2	2	1	1	3	0	3	3
Epeorus	5	2	1	8	14	11	10	5	4	4	29	44	14	28	33
Rhithrogena	8	7	6	14	10	0	1	1	2	0	0	1	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Plecoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Capniidae	4	14	9	22	16	10	24	5	5	8	33	12	3	31	24
| Family: Chloroperlidae	0	2	0	4	0	0	0	0	0	0	1	0	0	0	0
Haploperla sp.	0	0	0	0	3	0	0	0	0	1	1	3	2	0	1
Suwallia	2	1	0	7	5	0	0	0	0	0	0	1	0	0	1
Sweltsa sp.	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
| Family: Nemouridae	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Zapada	0	25	7	16	25	25	40	19	28	22	17	28	17	24	28
Zapada cinctipes	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0
Zapada columbiana	34	13	27	12	46	15	7	12	15	5	18	11	0	3	6
Zapada frigida	8	3	5	3	2	5	0	3	2	2	16	10	6	20	12
Zapada oregonensis group	9	13	4	8	15	8	7	11	7	1	21	25	9	33	24
| Family: Perlodidae	5	2	2	0	0	4	0	2	3	5	0	1	1	0	0
Megarcys sp.	4	0	1	1	3	1	0	5	2	0	11	12	11	4	11
Skwala	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0
| Family: Taeniopterygidae	0	4	1	9	13	48	47	32	59	26	33	24	17	35	33
Doddsia occidentalis	2	6	0	2	5	20	14	10	7	9	9	8	2	13	11
Taenionema	7	3	0	0	6	14	77	36	63	36	10	6	2	6	4
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Trichoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Brachycentridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micrasema	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
| Family: Glossosomatidae	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Site:	REF	REF	REF	REF	REF	EXP1	EXP1	EXP1	EXP1	EXP1	KV-41	KV-41	KV-41	KV-41	KV-41
Sample:	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
CC#:	CC160622	CC160623	CC160624	CC160625	CC160626	CC160627	CC160628	CC160629	CC160630	CC160631	CC160632	CC160633	CC160634	CC160635	CC160636
Sieve Size:	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
SubSample %:	15	9	8	7	7	6	5	5	5	5	12	22	13	25	17
Glossosoma	2	3	4	12	9	5	9	3	3	4	6	1	14	4	5
| Family: Hydropsychidae	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
| Family: Limnephilidae	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Ecclisomyia sp.	0	0	0	0	0	2	0	0	1	0	0	0	0	1	1
| Family: Rhyacophilidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhyacophila	3	0	0	2	2	0	0	0	0	1	0	4	4	4	4
Rhyacophila hyalinata group	1	0	0	2	0	0	0	0	0	0	0	1	0	0	1
Rhyacophila vofixa group	1	1	2	3	1	0	0	0	0	0	6	4	8	13	9
| Family: Uenoidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Neothremma sp.	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0
Oligophlebodes	28	10	22	0	4	3	1	0	0	3	30	43	119	41	60
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Coleoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Staphylinidae	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Diptera	0	0	3	0	0	0	0	1	0	0	0	1	0	0	0
| Family: Chironomidae	5	5	2	3	5	19	12	8	18	18	1	4	2	7	2
| Subfamily: Chironominae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Tanytarsini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsectra	13	26	66	12	21	1	0	0	0	1	0	0	2	0	0
Rheotanytarsus	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
| Subfamily: Diamesinae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Diamesini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diamesa	11	4	13	8	10	5	1	8	6	2	1	5	3	8	2
Pagastia	70	26	40	40	40	1	1	1	0	0	0	0	0	0	0
Pseudodiamesa sp.	2	6	2	0	1	2	0	0	1	0	1	0	0	2	0
| Subfamily: Orthocladiinae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brillia sp.	2	2	1	1	5	2	0	0	0	0	0	0	0	0	0
Chaetocladius	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	46	21	71	60	44	54	10	25	0	26	4	7	7	14	4
Heleniella sp.	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Hydrobaenus	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0
Limnophyes sp.	0	1	1	0	0	2	1	2	2	0	0	0	1	0	1
Metriocnemus sp.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Orthocladius	6	8	3	0	3	3	0	3	0	1	1	1	2	1	4
Orthocladius lignicola	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0
Parorthocladius sp.	1	0	2	0	0	1	0	1	0	0	0	0	1	3	1
Rheocricotopus	0	0	0	0	0	1	0	1	1	0	0	0	2	0	0
Tvetenia	0	3	7	0	7	7	0	4	0	0	0	0	0	0	0
Tvetenia bavarica group	3	0	0	3	0	0	1	0	0	0	0	0	0	0	0
| Subfamily: Podonominae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Boreochlini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Boreochlus sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
| Subfamily: Tanypodinae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Pentaneurini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thienemannimyia group	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
| Family: Empididae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chelifera/ Metachela	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Neoplasta sp.	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Oreogeton sp.	0	0	0	0	1	3	4	3	5	3	2	0	2	2	1
| Family: Muscidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Limnophora sp.	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
| Family: Psychodidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pericoma/Telmatoscopus sp.	4	4	4	0	4	2	0	1	0	0	3	3	2	2	0

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Site:	REF	REF	REF	REF	REF	EXP1	EXP1	EXP1	EXP1	EXP1	KV-41	KV-41	KV-41	KV-41	KV-41
Sample:	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
CC#:	CC160622	CC160623	CC160624	CC160625	CC160626	CC160627	CC160628	CC160629	CC160630	CC160631	CC160632	CC160633	CC160634	CC160635	CC160636
Sieve Size:	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
SubSample %:	15	9	8	7	7	6	5	5	5	5	12	22	13	25	17
| Family: Simuliidae	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0
Helodon sp.	1	1	1	0	3	1	1	0	3	0	0	0	0	0	0
| Family: Tipulidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dicranota	1	1	0	1	6	1	0	0	0	1	3	2	1	1	1
Gonomyodes sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Tipula	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Lepidoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Chelicerata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Arachnida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Trombidiformes	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
| Family: Feltriidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feltria sp.	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0
| Family: Hygrobatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Atractides	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0
Hygrobates	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
| Family: Lebertiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lebertia	2	0	2	0	0	0	0	0	1	0	0	0	0	2	0
| Family: Sperchontidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sperchon	8	4	5	0	2	3	0	3	3	0	5	1	2	2	5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Lumbriculida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Lumbriculidae	7	9	1	22	28	25	189	113	99	76	4	3	11	15	8
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phylum: Cnidaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Hydrozoa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Anthoathecatae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Hydridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydra	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Totals:	**373**	**308**	**354**	**343**	**459**	**381**	**526**	**370**	**392**	**306**	**331**	**331**	**326**	**407**	**354**

Taxa present but not included:

Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Crustacea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Ostracoda	0	1	0	1	1	0	0	1	0	0	0	0	0	1	0
| Class: Maxillipoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Copepoda	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phylum: Nemata	0	1	0	1	1	1	0	1	0	0	0	0	0	1	0
Phylum: Platyhelminthes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Turbellaria	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Totals:	**0**	**2**	**0**	**2**	**2**	**1**	**1**	**3**	**0**	**2**	**0**	**0**	**0**	**3**	**0**

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Cordillera Consulting

Project: Wernecke Lake (ERDC-001-15)
Alexco - Access, Kai Woloshyn; Audrey Sanfacon
Taxonomist: Sue Salter
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250-494-7553

Site - REF Sample - A, CC# - CC160622, Percent sampled = 15, Sieve size = 400

Glossosoma	Larvae	2
Rhyacophila hyalinata group	Larvae	1
Rhyacophila vofixa group	Larvae	1
Rhyacophila	Juvenile/Damaged	3
Oligophlebodes	Larvae	28
Zapada cinctipes	Larvae	2
Zapada columbiana	Larvae	34
Perlodidae	Juvenile/Damaged	5
Taenionema	Larvae	7
Doddsia occidentalis	Larvae	2
Megarcys sp.	Larvae	4
Sweltsa sp.	Larvae	1
Zapada frigida	Larvae	8
Nemouridae	Juvenile/Damaged	1
Suwallia	Larvae	2
Zapada oregonensis group	Larvae	9
Capniidae	Juvenile/Damaged	4
Sperchon	Adult	8
Lebertia	Adult	2
Atractides	Adult	1
Pericoma/Telmatoscopus sp.	Larvae	4
Chelifera/ Metachela	Larvae	1
Dicranota	Larvae	1
Helodon sp.	Larvae	1
Epeorus	Larvae	5
Heptageniidae	Juvenile/Damaged	31
Ameletus	Larvae	16
Baetis	Juvenile/Damaged	4
Baetis bicaudatus	Larvae	4
Rhithrogena	Larvae	8
Cinygmula sp.	Larvae	1
Ephemerellidae	Juvenile/Damaged	6
Lumbriculidae	None	7
Chironomidae	Pupa	5
Tvetenia bavarica group	Larvae	3
Pagastia	Larvae	70
Pseudodiamesa sp.	Larvae	2

Diamesa	Larvae	11
Eukiefferiella	Larvae	46
Parorthocladius sp.	Larvae	1
Brillia sp.	Larvae	2
Orthocladius	Larvae	6
Micropsectra	Larvae	13
Total:		**373**

Site - REF Sample - B, CC# - CC160623, Percent sampled = 9, Sieve size = 400

Lumbriculidae	None	9
Chironomidae	Pupa	5
Diamesa	Larvae	4
Pagastia	Larvae	26
Pseudodiamesa sp.	Larvae	6
Eukiefferiella	Larvae	21
Micropsectra	Larvae	26
Limnophyes sp.	Larvae	1
Brillia sp.	Larvae	2
Orthocladius	Larvae	8
Chaetocladius	Larvae	1
Tvetenia	Larvae	3
Rhithrogena	Larvae	7
Heptageniidae	Juvenile/Damaged	34
Ameletus	Larvae	18
Baetis	Juvenile/Damaged	2
Baetis bicaudatus	Larvae	5
Epeorus	Larvae	2
Ephemerellidae	Juvenile/Damaged	12
Cinygmula sp.	Larvae	2
Drunella doddsii	Larvae	1
Glossosoma	Larvae	3
Rhyacophila vofixa group	Larvae	1
Oligophlebodes	Larvae	10
Limnephilidae	Juvenile/Damaged	1
Zapada	Juvenile/Damaged	25
Zapada cinctipes	Larvae	1
Zapada columbiana	Larvae	13
Zapada oregonensis group	Larvae	13
Zapada frigida	Larvae	3
Capniidae	Juvenile/Damaged	14
Taenionema	Larvae	3
Taeniopterygidae	Juvenile/Damaged	4
Suwallia	Larvae	1
Nemouridae	Juvenile/Damaged	1
Perlodidae	Juvenile/Damaged	2
Doddsia occidentalis	Larvae	6

Chloroperlidae	Juvenile/Damaged	2
Sperchon	Adult	4
Pericoma/Telmatoscopus sp.	Larvae	4
Dicranota	Larvae	1
Helodon sp.	Larvae	1
Total:		**308**

Site - REF Sample - C, CC# - CC160624, Percent sampled = 8, Sieve size = 400

Sperchon	Adult	5
Atractides	Adult	2
Lebertia	Adult	2
Rhyacophila vofixa group	Larvae	2
Oligophlebodes	Larvae	22
Glossosoma	Larvae	4
Limnephilidae	Juvenile/Damaged	1
Neothremma sp.	Larvae	1
Zapada	Juvenile/Damaged	7
Zapada cinctipes	Larvae	1
Zapada columbiana	Larvae	27
Zapada frigida	Larvae	5
Zapada oregonensis group	Larvae	4
Taeniopterygidae	Juvenile/Damaged	1
Perlodidae	Juvenile/Damaged	2
Megarcys sp.	Larvae	1
Capniidae	Juvenile/Damaged	9
Rhithrogena	Larvae	6
Ameletus	Larvae	17
Ephemerellidae	Juvenile/Damaged	6
Heptageniidae	Juvenile/Damaged	9
Epeorus	Larvae	1
Baetis	Juvenile/Damaged	1
Cinygmula sp.	Larvae	1
Diptera	Juvenile/Damaged	2
Diptera	Pupa	1
Pericoma/Telmatoscopus sp.	Larvae	4
Helodon sp.	Larvae	1
Lumbriculidae	None	1
Chironomidae	Pupa	2
Pagastia	Larvae	40
Pseudodiamesa sp.	Larvae	2
Diamesa	Larvae	13
Eukiefferiella	Larvae	71
Brillia sp.	Larvae	1
Limnophyes sp.	Larvae	1
Orthocladius	Larvae	3
Parorthocladius sp.	Larvae	2

Tvetenia	Larvae	7
Micropsectra	Larvae	66
Total:		**354**

Site - REF Sample - D, CC# - CC160625, Percent sampled = 7, Sieve size = 400

Lumbriculidae	None	22
Chironomidae	Pupa	3
Pagastia	Larvae	40
Diamesa	Larvae	8
Micropsectra	Larvae	12
Tvetenia bavarica group	Larvae	3
Brillia sp.	Larvae	1
Eukiefferiella	Larvae	60
Hydra	None	2
Simuliidae	Pupa	1
Simuliidae	Juvenile/Damaged	1
Heptageniidae	Juvenile/Damaged	44
Rhithrogena	Larvae	14
Ameletus	Larvae	1
Ephemerellidae	Juvenile/Damaged	8
Epeorus	Larvae	8
Cinygmula sp.	Larvae	1
Baetis bicaudatus	Larvae	2
Sweltsa sp.	Larvae	1
Suwallia	Larvae	7
Zapada	Juvenile/Damaged	16
Zapada oregonensis group	Larvae	8
Zapada frigida	Larvae	3
Zapada columbiana	Larvae	12
Chloroperlidae	Juvenile/Damaged	4
Capniidae	Juvenile/Damaged	22
Taeniopterygidae	Juvenile/Damaged	9
Skwala	Larvae	1
Megarcys sp.	Larvae	1
Doddsia occidentalis	Larvae	2
Glossosoma	Larvae	12
Rhyacophila	Juvenile/Damaged	2
Rhyacophila vofixa group	Larvae	3
Neothremma sp.	Larvae	6
Rhyacophila hyalinata group	Larvae	2
Dicranota	Larvae	1
Total:		**343**

Site - REF Sample - E, CC# - CC160626, Percent sampled = 7, Sieve size = 400

Heptageniidae	Juvenile/Damaged	54

Rhithrogena	Larvae	10
Ephemerellidae	Juvenile/Damaged	14
Baetis	Juvenile/Damaged	2
Baetis bicaudatus	Larvae	5
Epeorus	Larvae	14
Cinygmula sp.	Larvae	5
Ameletus	Larvae	10
Zapada	Juvenile/Damaged	25
Zapada columbiana	Larvae	46
Zapada oregonensis group	Larvae	15
Zapada frigida	Larvae	2
Doddsia occidentalis	Larvae	5
Haploperla sp.	Larvae	3
Sweltsa sp.	Larvae	1
Suwallia	Larvae	5
Capniidae	Juvenile/Damaged	16
Taenionema	Larvae	6
Taeniopterygidae	Juvenile/Damaged	13
Megarcys sp.	Larvae	3
Rhyacophila	Juvenile/Damaged	2
Rhyacophila vofixa group	Larvae	1
Glossosoma	Larvae	9
Glossosomatidae	Juvenile/Damaged	2
Oligophlebodes	Larvae	4
Pericoma/Telmatoscopus sp.	Larvae	4
Dicranota	Larvae	6
Oreogeton sp.	Larvae	1
Helodon sp.	Larvae	3
Simuliidae	Juvenile/Damaged	1
Sperchon	Adult	2
Trombidiformes	Juvenile/Damaged	1
Staphylinidae	Adult	1
Lumbriculidae	None	28
Chironomidae	Pupa	5
Pseudodiamesa sp.	Larvae	1
Pagastia	Larvae	40
Diamesa	Larvae	10
Tvetenia	Larvae	7
Brillia sp.	Larvae	5
Orthocladius	Larvae	3
Heleniella sp.	Larvae	2
Hydrobaenus	Larvae	1
Rheotanytarsus	Larvae	1
Micropsectra	Larvae	21
Eukiefferiella	Larvae	44
Total:		**459**

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Site - EXP1 Sample - A, CC# - CC160627, Percent sampled = 6, Sieve size = 400		
Chironomidae	Pupa	19
Diamesa	Larvae	5
Micropsectra	Larvae	1
Eukiefferiella	Larvae	54
Parorthocladius sp.	Larvae	1
Pseudodiamesa sp.	Larvae	2
Pagastia	Larvae	1
Brillia sp.	Larvae	2
Limnophyes sp.	Larvae	2
Rheocricotopus	Larvae	1
Orthocladius	Larvae	3
Tvetenia	Larvae	7
Lumbriculidae	None	25
Zapada	Juvenile/Damaged	25
Zapada columbiana	Larvae	15
Zapada cinctipes	Larvae	1
Zapada oregonensis group	Larvae	8
Capniidae	Juvenile/Damaged	10
Taenionema	Larvae	14
Taeniopterygidae	Juvenile/Damaged	48
Zapada frigida	Larvae	5
Doddsia occidentalis	Larvae	20
Skwala	Larvae	1
Perlodidae	Juvenile/Damaged	4
Megarcys sp.	Larvae	1
Heptageniidae	Juvenile/Damaged	48
Baetis	Juvenile/Damaged	5
Baetis bicaudatus	Larvae	1
Ephemerellidae	Juvenile/Damaged	4
Ameletus	Larvae	6
Epeorus	Larvae	11
Cinygmula sp.	Larvae	5
Drunella doddsii	Larvae	2
Pericoma/Telmatoscopus sp.	Larvae	2
Sperchon	Adult	3
Hygrobates	Adult	1
Feltria sp.	Adult	2
Oreogeton sp.	Larvae	3
Dicranota	Larvae	1
Simuliidae	Juvenile/Damaged	1
Helodon sp.	Larvae	1
Glossosoma	Larvae	5
Oligophlebodes	Larvae	3
Ecclisomyia sp.	Larvae	2
Total:		**381**

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Site - EXP1 Sample - B, CC# - CC160628, Percent sampled = 5, Sieve size = 400		
Zapada	Juvenile/Damaged	40
Zapada columbiana	Larvae	7
Zapada oregonensis group	Larvae	7
Capniidae	Juvenile/Damaged	24
Taenionema	Larvae	77
Taeniopterygidae	Juvenile/Damaged	47
Doddsia occidentalis	Larvae	14
Skwala	Larvae	1
Heptageniidae	Juvenile/Damaged	52
Ephemerellidae	Juvenile/Damaged	4
Rhithrogena	Larvae	1
Ameletus	Larvae	2
Epeorus	Larvae	10
Baetis	Juvenile/Damaged	2
Baetis bicaudatus	Larvae	7
Drunella doddsii	Larvae	1
Oreogeton sp.	Larvae	4
Helodon sp.	Larvae	1
Glossosoma	Larvae	9
Oligophlebodes	Larvae	1
Lumbriculidae	None	189
Chironomidae	Pupa	12
Diamesa	Larvae	1
Tvetenia bavarica group	Larvae	1
Eukiefferiella	Larvae	10
Limnophyes sp.	Larvae	1
Pagastia	Larvae	1
Total:		**526**

Site - EXP1 Sample - C, CC# - CC160629, Percent sampled = 5, Sieve size = 400		
Chironomidae	Pupa	8
Diamesa	Larvae	8
Parorthocladius sp.	Larvae	1
Eukiefferiella	Larvae	25
Pagastia	Larvae	1
Tvetenia	Larvae	4
Rheocricotopus	Larvae	1
Limnophyes sp.	Larvae	2
Orthocladius	Larvae	3
Lumbriculidae	None	113
Zapada	Juvenile/Damaged	19
Zapada columbiana	Larvae	12
Zapada frigida	Larvae	3

Zapada oregonensis group	Larvae	11
Diptera	Juvenile/Damaged	1
Capniidae	Juvenile/Damaged	5
Taenionema	Larvae	36
Taeniopterygidae	Juvenile/Damaged	32
Doddsia occidentalis	Larvae	10
Megarcys sp.	Larvae	5
Perlodidae	Juvenile/Damaged	2
Heptageniidae	Juvenile/Damaged	40
Ephemerellidae	Juvenile/Damaged	2
Baetis	Juvenile/Damaged	1
Baetis bicaudatus	Larvae	3
Epeorus	Larvae	5
Cinygmula sp.	Larvae	2
Rhithrogena	Larvae	1
Drunella doddsii	Larvae	1
Glossosoma	Larvae	3
Sperchon	Adult	3
Oreogeton sp.	Larvae	3
Pericoma/Telmatoscopus sp.	Larvae	1
Tipula	Larvae	2
Limnophora sp.	Larvae	1
Total:		**370**

Site - EXP1 Sample - D, CC# - CC160630, Percent sampled = 5, Sieve size = 400

Zapada	Juvenile/Damaged	28
Zapada columbiana	Larvae	15
Zapada oregonensis group	Larvae	7
Zapada frigida	Larvae	2
Perlodidae	Juvenile/Damaged	3
Megarcys sp.	Larvae	2
Capniidae	Juvenile/Damaged	5
Taenionema	Larvae	63
Taeniopterygidae	Juvenile/Damaged	59
Doddsia occidentalis	Larvae	7
Baetis	Juvenile/Damaged	3
Baetis bicaudatus	Larvae	3
Ameletus	Larvae	2
Ephemerellidae	Juvenile/Damaged	7
Serratella	Larvae	1
Heptageniidae	Juvenile/Damaged	30
Rhithrogena	Larvae	2
Epeorus	Larvae	4
Cinygmula sp.	Larvae	2
Oreogeton sp.	Larvae	5
Tipula	Larvae	2

Limnophora sp.	Larvae	1
Sperchon	Adult	3
Lebertia	Adult	1
Helodon sp.	Larvae	3
Glossosoma	Larvae	3
Micrasema	Larvae	1
Ecclisomyia sp.	Larvae	1
Chironomidae	Pupa	18
Diamesa	Larvae	6
Pseudodiamesa sp.	Larvae	1
Limnophyes sp.	Larvae	2
Rheocricotopus	Larvae	1
Lumbriculidae	None	99
Total:		**392**

Site - EXP1 Sample - E, CC# - CC160631, Percent sampled = 5, Sieve size = 400

Diamesa	Larvae	2
Chironomidae	Pupa	18
Orthocladius	Larvae	1
Micropsectra	Larvae	1
Eukiefferiella	Larvae	26
Lumbriculidae	None	76
Zapada	Juvenile/Damaged	22
Zapada columbiana	Larvae	5
Zapada oregonensis group	Larvae	1
Zapada frigida	Larvae	2
Capniidae	Juvenile/Damaged	8
Taenionema	Larvae	36
Taeniopterygidae	Juvenile/Damaged	26
Doddsia occidentalis	Larvae	9
Haploperla sp.	Larvae	1
Perlodidae	Juvenile/Damaged	5
Heptageniidae	Juvenile/Damaged	32
Drunella doddsii	Larvae	3
Ameletus	Larvae	10
Baetis	Juvenile/Damaged	1
Baetis bicaudatus	Larvae	3
Epeorus	Larvae	4
Ephemerellidae	Juvenile/Damaged	1
Cinygmula sp.	Larvae	1
Rhyacophila	Juvenile/Damaged	1
Glossosoma	Larvae	4
Oligophlebodes	Larvae	3
Oreogeton sp.	Larvae	3
Dicranota	Larvae	1
Total:		**306**

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Site - KV-41 Sample - A, CC# - CC160632, Percent sampled = 12, Sieve size = 400		
Zapada	Juvenile/Damaged	17
Zapada columbiana	Larvae	18
Zapada frigida	Larvae	16
Zapada oregonensis group	Larvae	21
Megarcys sp.	Larvae	11
Capniidae	Juvenile/Damaged	33
Taeniopterygidae	Juvenile/Damaged	33
Taenionema	Larvae	10
Doddsia occidentalis	Larvae	9
Haploperla sp.	Larvae	1
Chloroperlidae	Juvenile/Damaged	1
Ephemerellidae	Juvenile/Damaged	5
Drunella doddsii	Larvae	1
Ameletus	Larvae	13
Epeorus	Larvae	29
Heptageniidae	Juvenile/Damaged	4
Cinygmula sp.	Larvae	1
Baetis	Juvenile/Damaged	23
Baetis bicaudatus	Larvae	13
Rhyacophila vofixa group	Larvae	6
Glossosoma	Larvae	6
Oligophlebodes	Larvae	30
Hydropsychidae	Juvenile/Damaged	1
Pericoma/Telmatoscopus sp.	Larvae	3
Dicranota	Larvae	3
Sperchon	Adult	5
Oreogeton sp.	Larvae	2
Lumbriculidae	None	4
Chironomidae	Pupa	1
Pseudodiamesa sp.	Larvae	1
Diamesa	Larvae	1
Eukiefferiella	Larvae	4
Orthocladius	Larvae	1
Orthocladius lignicola	Larvae	2
Metriocnemus sp.	Larvae	1
Thienemannimyia group	Larvae	1
Total:		**331**

Site - KV-41 Sample - B, CC# - CC160633, Percent sampled = 22, Sieve size = 400		
Lumbriculidae	None	3
Chironomidae	Pupa	4
Diamesa	Larvae	5
Thienemannimyia group	Larvae	1

Eukiefferiella	Larvae	7
Orthocladius	Larvae	1
Megarcys sp.	Larvae	12
Zapada	Juvenile/Damaged	28
Zapada columbiana	Larvae	11
Zapada frigida	Larvae	10
Zapada oregonensis group	Larvae	25
Capniidae	Juvenile/Damaged	12
Taenionema	Larvae	6
Taeniopterygidae	Juvenile/Damaged	24
Doddsia occidentalis	Larvae	8
Suwallia	Larvae	1
Haploperla sp.	Larvae	3
Perlodidae	Juvenile/Damaged	1
Rhyacophila	Juvenile/Damaged	4
Rhyacophila vofixa group	Larvae	4
Rhyacophila hyalinata group	Larvae	1
Oligophlebodes	Larvae	43
Glossosoma	Larvae	1
Epeorus	Larvae	44
Baetis	Juvenile/Damaged	12
Baetis bicaudatus	Larvae	17
Heptageniidae	Juvenile/Damaged	11
Ephemerellidae	Juvenile/Damaged	5
Cinygmula sp.	Larvae	3
Ameletus	Larvae	16
Rhithrogena	Larvae	1
Sperchon	Adult	1
Diptera	Juvenile/Damaged	1
Pericoma/Telmatoscopus sp.	Larvae	3
Dicranota	Larvae	2
Total:		**331**

Site - KV-41 Sample - C, CC# - CC160634, Percent sampled = 13, Sieve size = 400

Megarcys sp.	Larvae	11
Zapada	Juvenile/Damaged	17
Zapada oregonensis group	Larvae	9
Zapada frigida	Larvae	6
Capniidae	Juvenile/Damaged	3
Perlodidae	Juvenile/Damaged	1
Haploperla sp.	Larvae	2
Taenionema	Larvae	2
Taeniopterygidae	Juvenile/Damaged	17
Doddsia occidentalis	Larvae	2
Rhyacophila vofixa group	Larvae	8
Rhyacophila	Juvenile/Damaged	4

Oligophlebodes	Larvae	119
Glossosoma	Larvae	14
Glossosomatidae	Juvenile/Damaged	1
Ephemerellidae	Juvenile/Damaged	10
Ameletus	Larvae	12
Drunella doddsii	Larvae	1
Drunella sp.	Juvenile/Damaged	1
Oreogeton sp.	Larvae	2
Dicranota	Larvae	1
Pericoma/Telmatoscopus sp.	Larvae	2
Sperchon	Adult	2
Atractides	Adult	1
Neoplasta sp.	Larvae	2
Epeorus	Larvae	14
Heptageniidae	Juvenile/Damaged	6
Baetis	Juvenile/Damaged	7
Baetis bicaudatus	Larvae	18
Chironomidae	Pupa	2
Rheocricotopus	Larvae	2
Orthocladius	Larvae	2
Eukiefferiella	Larvae	7
Parorthocladius sp.	Larvae	1
Diamesa	Larvae	3
Limnophyes sp.	Larvae	1
Micropsectra	Larvae	2
Lumbriculidae	None	11
Total:		**326**

Site - KV-41 Sample - D, CC# - CC160635, Percent sampled = 25, Sieve size = 400

Lumbriculidae	None	15
Chironomidae	Pupa	7
Diamesa	Larvae	8
Parorthocladius sp.	Larvae	3
Pseudodiamesa sp.	Larvae	2
Hydrobaenus	Larvae	2
Orthocladius	Larvae	1
Orthocladius lignicola	Larvae	1
Eukiefferiella	Larvae	14
Baetis	Juvenile/Damaged	34
Baetis bicaudatus	Larvae	18
Ephemerellidae	Juvenile/Damaged	6
Epeorus	Larvae	28
Heptageniidae	Juvenile/Damaged	3
Cinygmula sp.	Larvae	3
Ameletus	Larvae	17
Drunella doddsii	Larvae	1

Ephemerella	Larvae	1
Zapada	Juvenile/Damaged	24
Zapada columbiana	Larvae	3
Zapada frigida	Larvae	20
Zapada oregonensis group	Larvae	33
Megarcys sp.	Larvae	4
Capniidae	Juvenile/Damaged	31
Taenionema	Larvae	6
Taeniopterygidae	Juvenile/Damaged	35
Doddsia occidentalis	Larvae	13
Trombidiformes	Juvenile/Damaged	1
Feltria sp.	Adult	1
Sperchon	Adult	2
Lebertia	Adult	2
Oreogeton sp.	Larvae	2
Dicranota	Larvae	1
Pericoma/Telmatoscopus sp.	Larvae	2
Oligophlebodes	Larvae	41
Rhyacophila	Juvenile/Damaged	4
Rhyacophila vofixa group	Larvae	13
Ecclisomyia sp.	Larvae	1
Glossosoma	Larvae	4
Total:		**407**

Site - KV-41 Sample - E, CC# - CC160636, Percent sampled = 17, Sieve size = 400

Zapada	Juvenile/Damaged	28
Zapada columbiana	Larvae	6
Zapada frigida	Larvae	12
Zapada oregonensis group	Larvae	24
Megarcys sp.	Larvae	11
Capniidae	Juvenile/Damaged	24
Taenionema	Larvae	4
Taeniopterygidae	Juvenile/Damaged	33
Doddsia occidentalis	Larvae	11
Suwallia	Larvae	1
Haploperla sp.	Larvae	1
Oligophlebodes	Juvenile/Damaged	60
Rhyacophila	Juvenile/Damaged	4
Rhyacophila hyalinata group	Larvae	1
Rhyacophila vofixa group	Larvae	9
Glossosoma	Larvae	5
Ecclisomyia sp.	Larvae	1
Epeorus	Larvae	33
Heptageniidae	Juvenile/Damaged	7
Baetis	Juvenile/Damaged	16
Baetis bicaudatus	Larvae	10

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Baetis tricaudatus group	Larvae	1
Ephemerellidae	Juvenile/Damaged	4
Cinygmula sp.	Larvae	3
Ameletus	Larvae	5
Drunella coloradensis	Larvae	3
Drunella doddsii	Larvae	1
Sperchon	Adult	5
Lepidoptera	Juvenile/Damaged	1
Oreogeton sp.	Larvae	1
Dicranota	Larvae	1
Gonomyodes sp.	Larvae	5
Lumbriculidae	None	8
Chironomidae	Pupa	2
Orthocladius	Larvae	4
Limnophyes sp.	Larvae	1
Diamesa	Larvae	2
Eukiefferiella	Larvae	4
Boreochlus sp.	Larvae	1
Parorthocladius sp.	Larvae	1
Total:		**354**

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Benthic Invertebrates Laboratory Results

Cordillera Consulting

Project: Wernecke Lake (ERDC-001-15)
Alexco - Access, Kai Woloshyn; Audrey Sanfacon
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

Client	Project	Site	Sample	CC#	400 micron fraction	
					% Sampled	# Invertebrates
Alexco - Access	Wernecke Lake (ERDC-001-15)	REF	A	CC160622	15%	373
Alexco - Access	Wernecke Lake (ERDC-001-15)	REF	B	CC160623	9%	310
Alexco - Access	Wernecke Lake (ERDC-001-15)	REF	C	CC160624	8%	354
Alexco - Access	Wernecke Lake (ERDC-001-15)	REF	D	CC160625	7%	345
Alexco - Access	Wernecke Lake (ERDC-001-15)	REF	E	CC160626	7%	461
Alexco - Access	Wernecke Lake (ERDC-001-15)	EXP1	A	CC160627	6%	382
Alexco - Access	Wernecke Lake (ERDC-001-15)	EXP1	B	CC160628	5%	527
Alexco - Access	Wernecke Lake (ERDC-001-15)	EXP1	C	CC160629	5%	373
Alexco - Access	Wernecke Lake (ERDC-001-15)	EXP1	D	CC160630	5%	392
Alexco - Access	Wernecke Lake (ERDC-001-15)	EXP1	E	CC160631	5%	308
Alexco - Access	Wernecke Lake (ERDC-001-15)	KV-41	A	CC160632	12%	331
Alexco - Access	Wernecke Lake (ERDC-001-15)	KV-41	B	CC160633	22%	331
Alexco - Access	Wernecke Lake (ERDC-001-15)	KV-41	C	CC160634	13%	326
Alexco - Access	Wernecke Lake (ERDC-001-15)	KV-41	D	CC160635	25%	410
Alexco - Access	Wernecke Lake (ERDC-001-15)	KV-41	E	CC160636	17%	354

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Benthic Invertebrates Laboratory Results

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Reference for feeding codes can be found at http://safit.org/TVFFG.html

	Functional Feeding Groups	ITIS Number	Tolerance	Voltinism
Phylum: Arthropoda	Unclassified	82696		UV
Subphylum: Hexapoda	Unclassified	563886		UV
| Class: Insecta	Unclassified	99208		UV
| Order: Ephemeroptera	Collector-Gatherer	100502		UV
| Family: Ameletidae	Unclassified	568544		UV
Ameletus	Collector-Gatherer	100996		UV
| Family: Baetidae	Collector-Gatherer	100755	5	MV
Baetis	Collector-Gatherer	100800	5	MV
Baetis bicaudatus	Collector-Gatherer	100823	4	Unclassified
Baetis tricaudatus group	Collector-Gatherer	100800A	6	Unclassified
| Family: Ephemerellidae	Unclassified	101232		Unclassified
Drunella coloradensis	Predator	101389		Unclassified
Drunella doddsii	Collector-Gatherer	101365		UV
Drunella sp.	Collector-Gatherer	101365		UV
Ephemerella	Collector-Gatherer	101233	1	UV
Serratella	Collector-Gatherer	101395	2	UV
| Family: Heptageniidae	Unclassified	100504		Unclassified
Cinygmula sp.	Scraper	100557	4	Unclassified
Epeorus	Scraper	100626		Unclassified
Rhithrogena	Scraper	100572		Unclassified
| Order: Plecoptera	Unclassified	102467		Unclassified

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Benthic Invertebrates Laboratory Results

	Functional Feeding Groups	ITIS Number	Tolerance	Voltinism
| Family: Capniidae	Shredder-Herbivore	102643		Unclassified
| Family: Chloroperlidae	Predator	103202		Unclassified
Haploperla sp.	Predator	103260		Unclassified
Suwallia	Predator	103254	1	Unclassified
Sweltsa sp.	Predator	103273	1	SV
| Family: Nemouridae	Shredder-Herbivore	102517		Unclassified
Zapada	Shredder-Herbivore	102591	2	Unclassified
Zapada cinctipes	Shredder-Herbivore	102594	2	UV
Zapada columbiana	Shredder-Herbivore	102596	2	SV
Zapada frigida	Shredder-Herbivore	102601	2	Unclassified
Zapada oregonensis group	Shredder-Herbivore	102591B	2	Unclassified
| Family: Perlodidae	Predator	102994	2	Unclassified
Megarcys sp.	Predator	103110	2	Unclassified
Skwala	Predator	103102	2	Unclassified
| Family: Taeniopterygidae	Unclassified	102788		Unclassified
Doddsia occidentalis	Omnivore	102839	2	Unclassified
Taenionema	Omnivore	102519	2	Unclassified
| Order: Trichoptera	Unclassified	115095	1	Unclassified
| Family: Brachycentridae	Collector-Filterer	116905	1	Unclassified
Micrasema	Macrophyte-Herbivore	116958	1	Unclassified
| Family: Glossosomatidae	Unclassified	117120		Unclassified
Glossosoma	Scraper	117159	1	Unclassified
| Family: Hydropsychidae	Collector-Filterer	115398	4	Unclassified
| Family: Limnephilidae	Collector-Gatherer	115933		Unclassified
Ecclisomyia sp.	Omnivore	116025	2	Unclassified
| Family: Rhyacophilidae	Unclassified	115096		Unclassified
Rhyacophila	Predator	115097		Unclassified
Rhyacophila hyalinata group	Predator	115097H	1	Unclassified
Rhyacophila vofixa group	Predator	115097S		Unclassified
| Family: Uenoidae	Unclassified	568757		Unclassified
Neothremma sp.	Scraper	116388		Unclassified

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	Functional Feeding Groups	ITIS Number	Tolerance	Voltinism
Oligophlebodes	Scraper	116039		Unclassified
| Order: Coleoptera	Predator	109216	8	
| Family: Staphylinidae	Predator	113265	8	
| Order: Diptera	Unclassified	118831		
| Family: Chironomidae	Unclassified	127917	6	
| Subfamily: Chironominae	Collector-Gatherer	129228	7	
| Tribe: Tanytarsini	Collector-Gatherer	129872	7	
Micropsectra	Collector-Gatherer	129890	7	
Rheotanytarsus	Collector-Filterer	129952	6	
| Subfamily: Diamesinae	Collector-Gatherer	128341	5	
| Tribe: Diamesini	Collector-Gatherer	128351	5	
Diamesa	Collector-Gatherer	128355	5	
Pagastia	Collector-Gatherer	128401	1	
Pseudodiamesa sp.	Collector-Gatherer	128416	6	
| Subfamily: Orthocladiinae	Unclassified	128457	5	
Brillia sp.	Shredder-Herbivore	128477	5	
Chaetocladius	Collector-Gatherer	128520	6	
Eukiefferiella	Omnivore	128689	8	
Heleniella sp.	Collector-Gatherer	128730	6	
Hydrobaenus	Collector-Gatherer	128750	8	
Limnophyes sp.	Collector-Gatherer	128776	8	
Metriocnemus sp.	Collector-Gatherer	128821		
Orthocladius	Collector-Gatherer	128874	6	
Orthocladius lignicola	Collector-Gatherer	128913	6	
Parorthocladius sp.	Collector-Gatherer	129011	6	
Rheocricotopus	Omnivore	129086	6	
Tvetenia	Collector-Gatherer	129197	5	
Tvetenia bavarica group	Collector-Gatherer	129197B	5	
| Subfamily: Podonominae	Collector-Gatherer	127952	6	
| Tribe: Boreochlini	Unclassified	127953	6	

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Benthic Invertebrates Laboratory Results

	Functional Feeding Groups	ITIS Number	Tolerance	Voltinism
Boreochlus sp.	Collector-Gatherer	127954	6	
| Subfamily: Tanypodinae	Predator	127994	6	
| Tribe: Pentaneurini	Predator	128078	6	
Thienemannimyia group	Predator	127917N	6	
| Family: Empididae	Predator	135830	6	
Chelifera/ Metachela	Predator	135830	6	
Neoplasta sp.	Predator	136352	6	
Oreogeton sp.	Predator	136377	6	
| Family: Muscidae	Unclassified	150025	6	
Limnophora sp.	Predator	150730	6	
| Family: Psychodidae	Unclassified	125351	4	
Pericoma/Telmatoscopus sp.	Collector-Gatherer	125514	4	
| Family: Simuliidae	Collector-Filterer	126640	6	
Helodon sp.	Collector-Filterer	126640		
| Family: Tipulidae	Shredder-Herbivore	118840	3	
Dicranota	Predator	121027	3	
Gonomyodes sp.	Collector-Gatherer	120722		
Tipula	Omnivore	119037	4	
| Order: Lepidoptera	Shredder-Herbivore	117232		
Subphylum: Chelicerata	Unclassified	82697	5	
| Class: Arachnida	Predator	82708	5	
| Order: Trombidiformes	Predator	82769	5	
| Family: Feltriidae	Predator	83313	5	Unclassified
Feltria sp.	Predator	83314	5	Unclassified
| Family: Hygrobatidae	Unclassified	83281	8	Unclassified
Atractides	Predator	83282	8	Unclassified
Hygrobates	Predator	83297	8	Unclassified
| Family: Lebertiidae	Predator	83033	8	Unclassified
Lebertia	Predator	83034	8	Unclassified
| Family: Sperchontidae	Unclassified	895710	8	Unclassified

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Benthic Invertebrates Laboratory Results

	Functional Feeding Groups	ITIS Number	Tolerance	Voltinism
Sperchon	Predator	83006	8	Unclassified
Phylum: Annelida	Unclassified	64357	8	
Subphylum: Clitellata	Unclassified	568832	8	
| Class: Oligochaeta	Collector-Gatherer	68422	8	
| Order: Lumbriculida	Unclassified	68439	8	
| Family: Lumbriculidae	Collector-Gatherer	68440	8	
Phylum: Cnidaria	Unclassified	48738	5	
| Class: Hydrozoa	Unclassified	48739	5	
| Order: Anthoathecatae	Unclassified	718925	5	
| Family: Hydridae	Unclassified	50844	5	
Hydra	Predator	50845	5	

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Benthic Invertebrates Laboratory Results

Cordillera Consulting

Project: Wernecke Lake (ERDC-001-15)
Alexco - Access, Kai Woloshyn; Audrey Sanfacon
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Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Functional Feeding Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	REF	A	CC160622	2	15	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila	115097	Unclassified	P	Juvenile/Damaged	Rhyacophila	REF	A	CC160622	3	15	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	REF	A	CC160622	28	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada cinctipes	102594	UV	SH	Larvae	Zapada cinctipes	REF	A	CC160622	2	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	REF	A	CC160622	34	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae				102994	Unclassified	P	Juvenile/Damaged	Perlodidae	REF	A	CC160622	5	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	REF	A	CC160622	7	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	REF	A	CC160622	2	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	REF	A	CC160622	4	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Sweltsa sp.	103273	SV	P	Larvae	Sweltsa sp.	REF	A	CC160622	1	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae				102517	Unclassified	SH	Juvenile/Damaged	Nemouridae	REF	A	CC160622	1	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Suwallia	103254	Unclassified	P	Larvae	Suwallia	REF	A	CC160622	2	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	REF	A	CC160622	4	15	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	REF	A	CC160622	8	15	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Hygrobatidae			Atractides	83282	Unclassified	P	Adult	Atractides	REF	A	CC160622	1	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	REF	A	CC160622	4	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Chelifera/ Metachela	135830		P	Larvae	Chelifera/ Metachela	REF	A	CC160622	1	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	REF	A	CC160622	1	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae			Helodon sp.	126640		CF	Larvae	Helodon sp.	REF	A	CC160622	1	15	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	REF	A	CC160622	5	15	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	REF	A	CC160622	31	15	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	REF	A	CC160622	16	15	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	REF	A	CC160622	4	15	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	REF	A	CC160622	4	15	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Rhithrogena	100572	Unclassified	SC	Larvae	Rhithrogena	REF	A	CC160622	8	15	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	REF	A	CC160622	1	15	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	REF	A	CC160622	6	15	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	REF	A	CC160622	7	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	REF	A	CC160622	5	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Tvetenia bavarica group	129197B		CG	Larvae	Tvetenia bavarica group	REF	A	CC160622	3	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pagastia	128401		CG	Larvae	Pagastia	REF	A	CC160622	70	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pseudodiamesa sp.	128416		CG	Larvae	Pseudodiamesa sp.	REF	A	CC160622	2	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	REF	A	CC160622	11	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	REF	A	CC160622	46	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Parorthocladius sp.	129011		CG	Larvae	Parorthocladius sp.	REF	A	CC160622	1	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Brillia sp.	128477		SH	Larvae	Brillia sp.	REF	A	CC160622	2	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Chironominae	Tanytarsini	Micropsectra	129890		CG	Larvae	Micropsectra	REF	A	CC160622	13	15	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila hyalinata group	115097H	Unclassified	P	Larvae	Rhyacophila hyalinata group	REF	A	CC160622	1	15	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	REF	A	CC160622	1	15	400

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Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	REF	A	CC160622	8	15	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	REF	A	CC160622	9	15	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Lebertiidae			Lebertia	83034	Unclassified	P	Adult	Lebertia	REF	A	CC160622	2	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	REF	A	CC160622	6	15	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	REF	B	CC160623	8	9	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	REF	B	CC160623	1	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	REF	B	CC160623	13	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	REF	B	CC160623	3	9	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	REF	B	CC160623	9	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	REF	B	CC160623	5	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	REF	B	CC160623	4	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pagastia	128401		CG	Larvae	Pagastia	REF	B	CC160623	26	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pseudodiamesa sp.	128416		CG	Larvae	Pseudodiamesa sp.	REF	B	CC160623	6	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	REF	B	CC160623	21	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Chironominae	Tanytarsini	Micropsectra	129890		CG	Larvae	Micropsectra	REF	B	CC160623	26	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Limnophyes sp.	128776		CG	Larvae	Limnophyes sp.	REF	B	CC160623	1	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Brillia sp.	128477		SH	Larvae	Brillia sp.	REF	B	CC160623	2	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Chaetocladius	128520		CG	Larvae	Chaetocladius	REF	B	CC160623	1	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Tvetenia	129197		CG	Larvae	Tvetenia	REF	B	CC160623	3	9	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Rhithrogena	100572	Unclassified	SC	Larvae	Rhithrogena	REF	B	CC160623	7	9	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	REF	B	CC160623	34	9	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	REF	B	CC160623	18	9	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	REF	B	CC160623	2	9	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	REF	B	CC160623	5	9	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	REF	B	CC160623	2	9	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	REF	B	CC160623	12	9	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	REF	B	CC160623	2	9	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella doddsii	101365	UV	CG	Larvae	Drunella doddsii	REF	B	CC160623	1	9	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	REF	B	CC160623	3	9	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	REF	B	CC160623	10	9	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Limnephilidae				115933	Unclassified	CG	Juvenile/Damaged	Limnephilidae	REF	B	CC160623	1	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	REF	B	CC160623	25	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada cinctipes	102594	UV	SH	Larvae	Zapada cinctipes	REF	B	CC160623	1	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	REF	B	CC160623	13	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	REF	B	CC160623	14	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	REF	B	CC160623	3	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	REF	B	CC160623	4	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Suwallia	103254	Unclassified	P	Larvae	Suwallia	REF	B	CC160623	1	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae				102517	Unclassified	SH	Juvenile/Damaged	Nemouridae	REF	B	CC160623	1	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae				102994	Unclassified	P	Juvenile/Damaged	Perlodidae	REF	B	CC160623	2	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	REF	B	CC160623	6	9	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae				103202	Unclassified	P	Juvenile/Damaged	Chloroperlidae	REF	B	CC160623	2	9	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	REF	B	CC160623	4	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	REF	B	CC160623	4	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	REF	B	CC160623	1	9	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae			Helodon sp.	126640		CF	Larvae	Helodon sp.	REF	B	CC160623	1	9	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	REF	C	CC160624	5	8	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Hygrobatidae			Atractides	83282	Unclassified	P	Adult	Atractides	REF	C	CC160624	2	8	400

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Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	REF	C	CC160624	22	8	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	REF	C	CC160624	4	8	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Limnephilidae				115933	Unclassified	CG	Juvenile/Damaged	Limnephilidae	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Neothremma sp.	116388	Unclassified	SC	Larvae	Neothremma sp.	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	REF	C	CC160624	7	8	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada cinctipes	102594	UV	SH	Larvae	Zapada cinctipes	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	REF	C	CC160624	27	8	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae				102994	Unclassified	P	Juvenile/Damaged	Perlodidae	REF	C	CC160624	2	8	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	REF	C	CC160624	9	8	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Rhithrogena	100572	Unclassified	SC	Larvae	Rhithrogena	REF	C	CC160624	6	8	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	REF	C	CC160624	17	8	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	REF	C	CC160624	6	8	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	REF	C	CC160624	9	8	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Diptera					118831			Juvenile/Damaged	Diptera	REF	C	CC160624	2	8	400
Arthropoda	Hexapoda	Insecta	Diptera					118831			Pupa	Diptera	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	REF	C	CC160624	4	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae			Helodon sp.	126640		CF	Larvae	Helodon sp.	REF	C	CC160624	1	8	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	REF	C	CC160624	2	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pagastia	128401		CG	Larvae	Pagastia	REF	C	CC160624	40	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pseudodiamesa sp.	128416		CG	Larvae	Pseudodiamesa sp.	REF	C	CC160624	2	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	REF	C	CC160624	13	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	REF	C	CC160624	71	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Brillia sp.	128477		SH	Larvae	Brillia sp.	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Limnophyes sp.	128776		CG	Larvae	Limnophyes sp.	REF	C	CC160624	1	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Parorthocladius sp.	129011		CG	Larvae	Parorthocladius sp.	REF	C	CC160624	2	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Tvetenia	129197		CG	Larvae	Tvetenia	REF	C	CC160624	7	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Chironominae	Tanytarsini	Micropsectra	129890		CG	Larvae	Micropsectra	REF	C	CC160624	66	8	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Lebertiidae			Lebertia	83034	Unclassified	P	Adult	Lebertia	REF	C	CC160624	2	8	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	REF	C	CC160624	2	8	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	REF	C	CC160624	5	8	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	REF	C	CC160624	4	8	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	REF	C	CC160624	3	8	400
Cnidaria		Hydrozoa	Anthoathecatae	Hydridae			Hydra	50845		P	None	Hydra	REF	D	CC160625	2	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae				126640		CF	Pupa	Simuliidae	REF	D	CC160625	1	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae				126640		CF	Juvenile/Damaged	Simuliidae	REF	D	CC160625	1	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	REF	D	CC160625	8	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	REF	D	CC160625	3	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Skwala	103102	Unclassified	P	Larvae	Skwala	REF	D	CC160625	1	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	REF	D	CC160625	3	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila hyalinata group	115097H	Unclassified	P	Larvae	Rhyacophila hyalinata group	REF	D	CC160625	2	7	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	REF	D	CC160625	22	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	REF	D	CC160625	3	7	400

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Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pagastia	128401		CG	Larvae	Pagastia	REF	D	CC160625	40	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	REF	D	CC160625	8	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Chironominae	Tanytarsini	Micropsectra	129890		CG	Larvae	Micropsectra	REF	D	CC160625	12	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Tvetenia bavarica group	129197B		CG	Larvae	Tvetenia bavarica group	REF	D	CC160625	3	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Brillia sp.	128477		SH	Larvae	Brillia sp.	REF	D	CC160625	1	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	REF	D	CC160625	60	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	REF	D	CC160625	44	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Rhithrogena	100572	Unclassified	SC	Larvae	Rhithrogena	REF	D	CC160625	14	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	REF	D	CC160625	1	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	REF	D	CC160625	8	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	REF	D	CC160625	8	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	REF	D	CC160625	1	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	REF	D	CC160625	2	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Sweltsa sp.	103273	SV	P	Larvae	Sweltsa sp.	REF	D	CC160625	1	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Suwallia	103254	Unclassified	P	Larvae	Suwallia	REF	D	CC160625	7	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	REF	D	CC160625	16	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	REF	D	CC160625	12	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae				103202	Unclassified	P	Juvenile/Damaged	Chloroperlidae	REF	D	CC160625	4	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	REF	D	CC160625	22	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	REF	D	CC160625	9	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	REF	D	CC160625	1	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	REF	D	CC160625	2	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	REF	D	CC160625	12	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila	115097	Unclassified	P	Juvenile/Damaged	Rhyacophila	REF	D	CC160625	2	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Neothremma sp.	116388	Unclassified	SC	Larvae	Neothremma sp.	REF	D	CC160625	6	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	REF	D	CC160625	1	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	REF	E	CC160626	54	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Rhithrogena	100572	Unclassified	SC	Larvae	Rhithrogena	REF	E	CC160626	10	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	REF	E	CC160626	14	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	REF	E	CC160626	2	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	REF	E	CC160626	5	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	REF	E	CC160626	14	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	REF	E	CC160626	5	7	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	REF	E	CC160626	10	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	REF	E	CC160626	25	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	REF	E	CC160626	46	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	REF	E	CC160626	5	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Sweltsa sp.	103273	SV	P	Larvae	Sweltsa sp.	REF	E	CC160626	1	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Suwallia	103254	Unclassified	P	Larvae	Suwallia	REF	E	CC160626	5	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	REF	E	CC160626	16	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	REF	E	CC160626	6	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	REF	E	CC160626	13	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	REF	E	CC160626	3	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila	115097	Unclassified	P	Juvenile/Damaged	Rhyacophila	REF	E	CC160626	2	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	REF	E	CC160626	9	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae				117120	Unclassified		Juvenile/Damaged	Glossosomatidae	REF	E	CC160626	2	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	REF	E	CC160626	4	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	REF	E	CC160626	4	7	400

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Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	REF	E	CC160626	6	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	REF	E	CC160626	1	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae			Helodon sp.	126640		CF	Larvae	Helodon sp.	REF	E	CC160626	3	7	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	REF	E	CC160626	2	7	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes					82769		P	Juvenile/Damaged	Trombidiformes	REF	E	CC160626	1	7	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	REF	E	CC160626	28	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	REF	E	CC160626	5	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pseudodiamesa sp.	128416		CG	Larvae	Pseudodiamesa sp.	REF	E	CC160626	1	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pagastia	128401		CG	Larvae	Pagastia	REF	E	CC160626	40	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	REF	E	CC160626	10	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Tvetenia	129197		CG	Larvae	Tvetenia	REF	E	CC160626	7	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Brillia sp.	128477		SH	Larvae	Brillia sp.	REF	E	CC160626	5	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Heleniella sp.	128730		CG	Larvae	Heleniella sp.	REF	E	CC160626	2	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Hydrobaenus	128750		CG	Larvae	Hydrobaenus	REF	E	CC160626	1	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Chironominae	Tanytarsini	Rheotanytarsus	129952		CF	Larvae	Rheotanytarsus	REF	E	CC160626	1	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Chironominae	Tanytarsini	Micropsectra	129890		CG	Larvae	Micropsectra	REF	E	CC160626	21	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	REF	E	CC160626	44	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	REF	E	CC160626	15	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	REF	E	CC160626	2	7	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Haploperla sp.	103260	Unclassified	P	Larvae	Haploperla sp.	REF	E	CC160626	3	7	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	REF	E	CC160626	1	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae				126640		CF	Juvenile/Damaged	Simuliidae	REF	E	CC160626	1	7	400
Arthropoda	Hexapoda	Insecta	Coleoptera	Staphylinidae				113265		P	Adult	Staphylinidae	REF	E	CC160626	1	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	REF	E	CC160626	3	7	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	EXP1	A	CC160627	3	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	EXP1	A	CC160627	3	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	EXP1	A	CC160627	8	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	EXP1	A	CC160627	5	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Skwala	103102	Unclassified	P	Larvae	Skwala	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae				126640		CF	Juvenile/Damaged	Simuliidae	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	EXP1	A	CC160627	19	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	EXP1	A	CC160627	5	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Chironominae	Tanytarsini	Micropsectra	129890		CG	Larvae	Micropsectra	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	EXP1	A	CC160627	54	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Parorthocladius sp.	129011		CG	Larvae	Parorthocladius sp.	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pseudodiamesa sp.	128416		CG	Larvae	Pseudodiamesa sp.	EXP1	A	CC160627	2	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pagastia	128401		CG	Larvae	Pagastia	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Brillia sp.	128477		SH	Larvae	Brillia sp.	EXP1	A	CC160627	2	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Limnophyes sp.	128776		CG	Larvae	Limnophyes sp.	EXP1	A	CC160627	2	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Rheocricotopus	129086		OM	Larvae	Rheocricotopus	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Tvetenia	129197		CG	Larvae	Tvetenia	EXP1	A	CC160627	7	6	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	EXP1	A	CC160627	25	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	EXP1	A	CC160627	25	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	EXP1	A	CC160627	15	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada cinctipes	102594	UV	SH	Larvae	Zapada cinctipes	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	EXP1	A	CC160627	10	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	EXP1	A	CC160627	14	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	EXP1	A	CC160627	48	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	EXP1	A	CC160627	20	6	400

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Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae				102994	Unclassified	P	Juvenile/Damaged	Perlodidae	EXP1	A	CC160627	4	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	EXP1	A	CC160627	48	6	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	EXP1	A	CC160627	5	6	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	EXP1	A	CC160627	4	6	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	EXP1	A	CC160627	6	6	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	EXP1	A	CC160627	11	6	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	EXP1	A	CC160627	5	6	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella doddsii	101365	UV	CG	Larvae	Drunella doddsii	EXP1	A	CC160627	2	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	EXP1	A	CC160627	2	6	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	EXP1	A	CC160627	3	6	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Hygrobatidae			Hygrobates	83297	Unclassified	P	Adult	Hygrobates	EXP1	A	CC160627	1	6	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Feltriidae			Feltria sp.	83314	Unclassified	P	Adult	Feltria sp.	EXP1	A	CC160627	2	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	EXP1	A	CC160627	3	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae			Helodon sp.	126640		CF	Larvae	Helodon sp.	EXP1	A	CC160627	1	6	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	EXP1	A	CC160627	5	6	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	EXP1	A	CC160627	3	6	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Limnephilidae			Ecclisomyia sp.	116025	Unclassified	OM	Larvae	Ecclisomyia sp.	EXP1	A	CC160627	2	6	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	EXP1	B	CC160628	40	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	EXP1	B	CC160628	7	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	EXP1	B	CC160628	24	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	EXP1	B	CC160628	77	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	EXP1	B	CC160628	47	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	EXP1	B	CC160628	14	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	EXP1	B	CC160628	52	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	EXP1	B	CC160628	4	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Rhithrogena	100572	Unclassified	SC	Larvae	Rhithrogena	EXP1	B	CC160628	1	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	EXP1	B	CC160628	2	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	EXP1	B	CC160628	10	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	EXP1	B	CC160628	2	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	EXP1	B	CC160628	7	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella doddsii	101365	UV	CG	Larvae	Drunella doddsii	EXP1	B	CC160628	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	EXP1	B	CC160628	4	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae			Helodon sp.	126640		CF	Larvae	Helodon sp.	EXP1	B	CC160628	1	5	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	EXP1	B	CC160628	9	5	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	EXP1	B	CC160628	1	5	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	EXP1	B	CC160628	189	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	EXP1	B	CC160628	12	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	EXP1	B	CC160628	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Tvetenia bavarica group	129197B		CG	Larvae	Tvetenia bavarica group	EXP1	B	CC160628	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	EXP1	B	CC160628	10	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Limnophyes sp.	128776		CG	Larvae	Limnophyes sp.	EXP1	B	CC160628	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pagastia	128401		CG	Larvae	Pagastia	EXP1	B	CC160628	1	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	EXP1	B	CC160628	7	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Skwala	103102	Unclassified	P	Larvae	Skwala	EXP1	B	CC160628	1	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	EXP1	C	CC160629	3	5	400

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Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	EXP1	C	CC160629	11	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Tipula	119037		OM	Larvae	Tipula	EXP1	C	CC160629	2	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	EXP1	C	CC160629	8	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	EXP1	C	CC160629	8	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Parorthocladius sp.	129011		CG	Larvae	Parorthocladius sp.	EXP1	C	CC160629	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	EXP1	C	CC160629	25	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pagastia	128401		CG	Larvae	Pagastia	EXP1	C	CC160629	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Tvetenia	129197		CG	Larvae	Tvetenia	EXP1	C	CC160629	4	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Rheocricotopus	129086		OM	Larvae	Rheocricotopus	EXP1	C	CC160629	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Limnophyes sp.	128776		CG	Larvae	Limnophyes sp.	EXP1	C	CC160629	2	5	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	EXP1	C	CC160629	113	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	EXP1	C	CC160629	3	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	EXP1	C	CC160629	19	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	EXP1	C	CC160629	12	5	400
Arthropoda	Hexapoda	Insecta	Diptera					118831			Juvenile/Damaged	Diptera	EXP1	C	CC160629	1	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	EXP1	C	CC160629	5	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	EXP1	C	CC160629	36	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	EXP1	C	CC160629	32	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	EXP1	C	CC160629	10	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	EXP1	C	CC160629	5	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae				102994	Unclassified	P	Juvenile/Damaged	Perlodidae	EXP1	C	CC160629	2	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	EXP1	C	CC160629	40	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	EXP1	C	CC160629	2	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	EXP1	C	CC160629	1	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	EXP1	C	CC160629	3	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	EXP1	C	CC160629	5	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	EXP1	C	CC160629	2	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Rhithrogena	100572	Unclassified	SC	Larvae	Rhithrogena	EXP1	C	CC160629	1	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella doddsii	101365	UV	CG	Larvae	Drunella doddsii	EXP1	C	CC160629	1	5	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	EXP1	C	CC160629	3	5	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	EXP1	C	CC160629	3	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	EXP1	C	CC160629	3	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	EXP1	C	CC160629	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Muscidae			Limnophora sp.	150730		P	Larvae	Limnophora sp.	EXP1	C	CC160629	1	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	EXP1	D	CC160630	28	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	EXP1	D	CC160630	15	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae				102994	Unclassified	P	Juvenile/Damaged	Perlodidae	EXP1	D	CC160630	3	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	EXP1	D	CC160630	2	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	EXP1	D	CC160630	5	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	EXP1	D	CC160630	63	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	EXP1	D	CC160630	59	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	EXP1	D	CC160630	7	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	EXP1	D	CC160630	3	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	EXP1	D	CC160630	3	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	EXP1	D	CC160630	2	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	EXP1	D	CC160630	7	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	EXP1	D	CC160630	30	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Rhithrogena	100572	Unclassified	SC	Larvae	Rhithrogena	EXP1	D	CC160630	2	5	400

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Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	EXP1	D	CC160630	4	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	EXP1	D	CC160630	2	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	EXP1	D	CC160630	5	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Muscidae			Limnophora sp.	150730		P	Larvae	Limnophora sp.	EXP1	D	CC160630	1	5	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	EXP1	D	CC160630	3	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Simuliidae			Helodon sp.	126640		CF	Larvae	Helodon sp.	EXP1	D	CC160630	3	5	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	EXP1	D	CC160630	3	5	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Brachycentridae			Micrasema	116958	Unclassified	MH	Larvae	Micrasema	EXP1	D	CC160630	1	5	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Limnephilidae			Ecclisomyia sp.	116025	Unclassified	OM	Larvae	Ecclisomyia sp.	EXP1	D	CC160630	1	5	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	EXP1	D	CC160630	99	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	EXP1	D	CC160630	18	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	EXP1	D	CC160630	6	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pseudodiamesa sp.	128416		CG	Larvae	Pseudodiamesa sp.	EXP1	D	CC160630	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Limnophyes sp.	128776		CG	Larvae	Limnophyes sp.	EXP1	D	CC160630	2	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Rheocricotopus	129086		OM	Larvae	Rheocricotopus	EXP1	D	CC160630	1	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	EXP1	D	CC160630	7	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	EXP1	D	CC160630	2	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Serratella	101395	UV	CG	Larvae	Serratella	EXP1	D	CC160630	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Tipula	119037		OM	Larvae	Tipula	EXP1	D	CC160630	2	5	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Lebertiidae			Lebertia	83034	Unclassified	P	Adult	Lebertia	EXP1	D	CC160630	1	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	EXP1	E	CC160631	1	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	EXP1	E	CC160631	2	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Haploperla sp.	103260	Unclassified	P	Larvae	Haploperla sp.	EXP1	E	CC160631	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	EXP1	E	CC160631	2	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	EXP1	E	CC160631	18	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	EXP1	E	CC160631	2	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	EXP1	E	CC160631	18	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Chironominae	Tanytarsini	Micropsectra	129890		CG	Larvae	Micropsectra	EXP1	E	CC160631	1	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	EXP1	E	CC160631	26	5	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	EXP1	E	CC160631	76	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	EXP1	E	CC160631	1	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	EXP1	E	CC160631	22	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	EXP1	E	CC160631	5	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	EXP1	E	CC160631	8	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	EXP1	E	CC160631	36	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	EXP1	E	CC160631	26	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	EXP1	E	CC160631	9	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae				102994	Unclassified	P	Juvenile/Damaged	Perlodidae	EXP1	E	CC160631	5	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	EXP1	E	CC160631	32	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella doddsii	101365	UV	CG	Larvae	Drunella doddsii	EXP1	E	CC160631	3	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	EXP1	E	CC160631	10	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	EXP1	E	CC160631	1	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	EXP1	E	CC160631	3	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	EXP1	E	CC160631	4	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	EXP1	E	CC160631	1	5	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	EXP1	E	CC160631	1	5	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila	115097	Unclassified	P	Juvenile/Damaged	Rhyacophila	EXP1	E	CC160631	1	5	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	EXP1	E	CC160631	4	5	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	EXP1	E	CC160631	3	5	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	EXP1	E	CC160631	3	5	400

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Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	EXP1	E	CC160631	1	5	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	KV-41	A	CC160632	17	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	KV-41	A	CC160632	18	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	KV-41	A	CC160632	11	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	KV-41	A	CC160632	33	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	KV-41	A	CC160632	33	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	KV-41	A	CC160632	10	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	KV-41	A	CC160632	9	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae				103202	Unclassified	P	Juvenile/Damaged	Chloroperlidae	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	KV-41	A	CC160632	5	12	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella doddsii	101365	UV	CG	Larvae	Drunella doddsii	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	KV-41	A	CC160632	13	12	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	KV-41	A	CC160632	29	12	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	KV-41	A	CC160632	4	12	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	KV-41	A	CC160632	23	12	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	KV-41	A	CC160632	13	12	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	KV-41	A	CC160632	6	12	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	KV-41	A	CC160632	30	12	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Hydropsychidae				115398	Unclassified	CF	Juvenile/Damaged	Hydropsychidae	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	KV-41	A	CC160632	3	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	KV-41	A	CC160632	3	12	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	KV-41	A	CC160632	5	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	KV-41	A	CC160632	2	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	KV-41	A	CC160632	1	12	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	KV-41	A	CC160632	4	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pseudodiamesa sp.	128416		CG	Larvae	Pseudodiamesa sp.	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	KV-41	A	CC160632	4	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius lignicola	128913		CG	Larvae	Orthocladius lignicola	KV-41	A	CC160632	2	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Metriocnemus sp.	128821		CG	Larvae	Metriocnemus sp.	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Tanypodinae	Pentaneurini	Thienemannimyia group	127917N		P	Larvae	Thienemannimyia group	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	KV-41	A	CC160632	16	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	KV-41	A	CC160632	21	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Haploperla sp.	103260	Unclassified	P	Larvae	Haploperla sp.	KV-41	A	CC160632	1	12	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	KV-41	A	CC160632	6	12	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	KV-41	B	CC160633	10	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	KV-41	B	CC160633	25	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Haploperla sp.	103260	Unclassified	P	Larvae	Haploperla sp.	KV-41	B	CC160633	3	22	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	KV-41	B	CC160633	4	22	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila hyalinata group	115097H	Unclassified	P	Larvae	Rhyacophila hyalinata group	KV-41	B	CC160633	1	22	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	KV-41	B	CC160633	3	22	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	KV-41	B	CC160633	4	22	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	KV-41	B	CC160633	5	22	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Tanypodinae	Pentaneurini	Thienemannimyia group	127917N		P	Larvae	Thienemannimyia group	KV-41	B	CC160633	1	22	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	KV-41	B	CC160633	7	22	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	KV-41	B	CC160633	1	22	400

APPENDIX A-4

Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	KV-41	B	CC160633	12	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	KV-41	B	CC160633	28	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	KV-41	B	CC160633	11	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	KV-41	B	CC160633	12	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	KV-41	B	CC160633	6	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	KV-41	B	CC160633	24	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	KV-41	B	CC160633	8	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Suwallia	103254	Unclassified	P	Larvae	Suwallia	KV-41	B	CC160633	1	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae				102994	Unclassified	P	Juvenile/Damaged	Perlodidae	KV-41	B	CC160633	1	22	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila	115097	Unclassified	P	Juvenile/Damaged	Rhyacophila	KV-41	B	CC160633	4	22	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	KV-41	B	CC160633	43	22	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	KV-41	B	CC160633	1	22	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	KV-41	B	CC160633	44	22	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	KV-41	B	CC160633	12	22	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	KV-41	B	CC160633	17	22	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	KV-41	B	CC160633	11	22	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	KV-41	B	CC160633	5	22	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	KV-41	B	CC160633	3	22	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	KV-41	B	CC160633	16	22	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Rhithrogena	100572	Unclassified	SC	Larvae	Rhithrogena	KV-41	B	CC160633	1	22	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	KV-41	B	CC160633	1	22	400
Arthropoda	Hexapoda	Insecta	Diptera					118831			Juvenile/Damaged	Diptera	KV-41	B	CC160633	1	22	400
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	KV-41	B	CC160633	3	22	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	KV-41	B	CC160633	2	22	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	KV-41	C	CC160634	11	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	KV-41	C	CC160634	17	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	KV-41	C	CC160634	3	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae				102994	Unclassified	P	Juvenile/Damaged	Perlodidae	KV-41	C	CC160634	1	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	KV-41	C	CC160634	2	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	KV-41	C	CC160634	17	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	KV-41	C	CC160634	2	13	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila	115097	Unclassified	P	Juvenile/Damaged	Rhyacophila	KV-41	C	CC160634	4	13	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	KV-41	C	CC160634	119	13	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	KV-41	C	CC160634	14	13	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae				117120	Unclassified		Juvenile/Damaged	Glossosomatidae	KV-41	C	CC160634	1	13	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	KV-41	C	CC160634	10	13	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	KV-41	C	CC160634	12	13	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella doddsii	101365	UV	CG	Larvae	Drunella doddsii	KV-41	C	CC160634	1	13	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella sp.	101365	UV	CG	Juvenile/Damaged	Drunella sp.	KV-41	C	CC160634	1	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	KV-41	C	CC160634	2	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	KV-41	C	CC160634	1	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	KV-41	C	CC160634	2	13	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	KV-41	C	CC160634	2	13	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Hygrobatidae			Atractides	83282	Unclassified	P	Adult	Atractides	KV-41	C	CC160634	1	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Neoplasta sp.	136352		P	Larvae	Neoplasta sp.	KV-41	C	CC160634	2	13	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	KV-41	C	CC160634	14	13	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	KV-41	C	CC160634	6	13	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	KV-41	C	CC160634	7	13	400

APPENDIX A-4

Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	KV-41	C	CC160634	18	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	KV-41	C	CC160634	2	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	KV-41	C	CC160634	2	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Rheocricotopus	129086		OM	Larvae	Rheocricotopus	KV-41	C	CC160634	2	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	KV-41	C	CC160634	7	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Parorthocladius sp.	129011		CG	Larvae	Parorthocladius sp.	KV-41	C	CC160634	1	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	KV-41	C	CC160634	3	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Limnophyes sp.	128776		CG	Larvae	Limnophyes sp.	KV-41	C	CC160634	1	13	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Chironominae	Tanytarsini	Micropsectra	129890		CG	Larvae	Micropsectra	KV-41	C	CC160634	2	13	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	KV-41	C	CC160634	11	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	KV-41	C	CC160634	9	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	KV-41	C	CC160634	6	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Haploperla sp.	103260	Unclassified	P	Larvae	Haploperla sp.	KV-41	C	CC160634	2	13	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	KV-41	C	CC160634	8	13	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	KV-41	D	CC160635	20	25	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	KV-41	D	CC160635	33	25	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Lebertiidae			Lebertia	83034	Unclassified	P	Adult	Lebertia	KV-41	D	CC160635	2	25	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	KV-41	D	CC160635	13	25	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	KV-41	D	CC160635	15	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	KV-41	D	CC160635	7	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	KV-41	D	CC160635	8	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Parorthocladius sp.	129011		CG	Larvae	Parorthocladius sp.	KV-41	D	CC160635	3	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Pseudodiamesa sp.	128416		CG	Larvae	Pseudodiamesa sp.	KV-41	D	CC160635	2	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Hydrobaenus	128750		CG	Larvae	Hydrobaenus	KV-41	D	CC160635	2	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius lignicola	128913		CG	Larvae	Orthocladius lignicola	KV-41	D	CC160635	1	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	KV-41	D	CC160635	14	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	KV-41	D	CC160635	1	25	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	KV-41	D	CC160635	34	25	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	KV-41	D	CC160635	18	25	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	KV-41	D	CC160635	6	25	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	KV-41	D	CC160635	28	25	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	KV-41	D	CC160635	3	25	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	KV-41	D	CC160635	3	25	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	KV-41	D	CC160635	17	25	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella doddsii	101365	UV	CG	Larvae	Drunella doddsii	KV-41	D	CC160635	1	25	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Ephemerella	101233	UV	CG	Larvae	Ephemerella	KV-41	D	CC160635	1	25	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	KV-41	D	CC160635	24	25	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	KV-41	D	CC160635	3	25	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	KV-41	D	CC160635	4	25	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	KV-41	D	CC160635	31	25	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	KV-41	D	CC160635	6	25	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	KV-41	D	CC160635	35	25	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	KV-41	D	CC160635	13	25	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes					82769		P	Juvenile/Damaged	Trombidiformes	KV-41	D	CC160635	1	25	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Feltriidae			Feltria sp.	83314	Unclassified	P	Adult	Feltria sp.	KV-41	D	CC160635	1	25	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	KV-41	D	CC160635	2	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	KV-41	D	CC160635	2	25	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	KV-41	D	CC160635	1	25	400

APPENDIX A-4

Benthic Invertebrates Laboratory Results

Phylum	Sub Phylum	Class	Order	Family	Subfamily	Tribe	Taxonomy	ITIS Code	Voltinism	Group	Maturity	Name	Site	Sample	CC#	Count	Percent Sampled	Seive Size
Arthropoda	Hexapoda	Insecta	Diptera	Psychodidae			Pericoma/Telmatoscopus sp.	125514		CG	Larvae	Pericoma/Telmatoscopus sp.	KV-41	D	CC160635	2	25	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Larvae	Oligophlebodes	KV-41	D	CC160635	41	25	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila	115097	Unclassified	P	Juvenile/Damaged	Rhyacophila	KV-41	D	CC160635	4	25	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Limnephilidae			Ecclisomyia sp.	116025	Unclassified	OM	Larvae	Ecclisomyia sp.	KV-41	D	CC160635	1	25	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	KV-41	D	CC160635	4	25	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada	102591	Unclassified	SH	Juvenile/Damaged	Zapada	KV-41	E	CC160636	28	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada columbiana	102596	SV	SH	Larvae	Zapada columbiana	KV-41	E	CC160636	6	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Perlodidae			Megarcys sp.	103110	Unclassified	P	Larvae	Megarcys sp.	KV-41	E	CC160636	11	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Capniidae				102643	Unclassified	SH	Juvenile/Damaged	Capniidae	KV-41	E	CC160636	24	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Taenionema	102519	Unclassified	OM	Larvae	Taenionema	KV-41	E	CC160636	4	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae				102788	Unclassified		Juvenile/Damaged	Taeniopterygidae	KV-41	E	CC160636	33	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Taeniopterygidae			Doddsia occidentalis	102839	Unclassified	OM	Larvae	Doddsia occidentalis	KV-41	E	CC160636	11	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Suwallia	103254	Unclassified	P	Larvae	Suwallia	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Uenoidae			Oligophlebodes	116039	Unclassified	SC	Juvenile/Damaged	Oligophlebodes	KV-41	E	CC160636	60	17	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila	115097	Unclassified	P	Juvenile/Damaged	Rhyacophila	KV-41	E	CC160636	4	17	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Glossosomatidae			Glossosoma	117159	Unclassified	SC	Larvae	Glossosoma	KV-41	E	CC160636	5	17	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Limnephilidae			Ecclisomyia sp.	116025	Unclassified	OM	Larvae	Ecclisomyia sp.	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Epeorus	100626	Unclassified	SC	Larvae	Epeorus	KV-41	E	CC160636	33	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae				100504	Unclassified		Juvenile/Damaged	Heptageniidae	KV-41	E	CC160636	7	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis	100800	MV	CG	Juvenile/Damaged	Baetis	KV-41	E	CC160636	16	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis bicaudatus	100823	Unclassified	CG	Larvae	Baetis bicaudatus	KV-41	E	CC160636	10	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Baetidae			Baetis tricaudatus group	100800A	Unclassified	CG	Larvae	Baetis tricaudatus group	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae				101232	Unclassified		Juvenile/Damaged	Ephemerellidae	KV-41	E	CC160636	4	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Heptageniidae			Cinygmula sp.	100557	Unclassified	SC	Larvae	Cinygmula sp.	KV-41	E	CC160636	3	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ameletidae			Ameletus	100996	UV	CG	Larvae	Ameletus	KV-41	E	CC160636	5	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella coloradensis	101389	Unclassified	P	Larvae	Drunella coloradensis	KV-41	E	CC160636	3	17	400
Arthropoda	Hexapoda	Insecta	Ephemeroptera	Ephemerellidae			Drunella doddsii	101365	UV	CG	Larvae	Drunella doddsii	KV-41	E	CC160636	1	17	400
Arthropoda	Chelicerata	Arachnida	Trombidiformes	Sperchontidae			Sperchon	83006	Unclassified	P	Adult	Sperchon	KV-41	E	CC160636	5	17	400
Arthropoda	Hexapoda	Insecta	Lepidoptera					117232		SH	Juvenile/Damaged	Lepidoptera	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Empididae			Oreogeton sp.	136377		P	Larvae	Oreogeton sp.	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Dicranota	121027		P	Larvae	Dicranota	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Tipulidae			Gonomyodes sp.	120722		CG	Larvae	Gonomyodes sp.	KV-41	E	CC160636	5	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Orthocladius	128874		CG	Larvae	Orthocladius	KV-41	E	CC160636	4	17	400
Annelida	Clitellata	Oligochaeta	Lumbriculida	Lumbriculidae				68440		CG	None	Lumbriculidae	KV-41	E	CC160636	8	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae				127917			Pupa	Chironomidae	KV-41	E	CC160636	2	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Limnophyes sp.	128776		CG	Larvae	Limnophyes sp.	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Diamesinae	Diamesini	Diamesa	128355		CG	Larvae	Diamesa	KV-41	E	CC160636	2	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Eukiefferiella	128689		OM	Larvae	Eukiefferiella	KV-41	E	CC160636	4	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Podonominae	Boreochlini	Boreochlus sp.	127954		CG	Larvae	Boreochlus sp.	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Diptera	Chironomidae	Orthocladiinae		Parorthocladius sp.	129011		CG	Larvae	Parorthocladius sp.	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada frigida	102601	Unclassified	SH	Larvae	Zapada frigida	KV-41	E	CC160636	12	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Nemouridae			Zapada oregonensis group	102591B	Unclassified	SH	Larvae	Zapada oregonensis group	KV-41	E	CC160636	24	17	400
Arthropoda	Hexapoda	Insecta	Plecoptera	Chloroperlidae			Haploperla sp.	103260	Unclassified	P	Larvae	Haploperla sp.	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila hyalinata group	115097H	Unclassified	P	Larvae	Rhyacophila hyalinata group	KV-41	E	CC160636	1	17	400
Arthropoda	Hexapoda	Insecta	Trichoptera	Rhyacophilidae			Rhyacophila vofixa group	115097S	Unclassified	P	Larvae	Rhyacophila vofixa group	KV-41	E	CC160636	9	17	400

APPENDIX A-4
Benthic Invertebrates Laboratory Results

Project: Wernecke Lake (ERDC-001-15)
Alexco - Access, Kai Woloshyn; Audrey Sanfacon
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

		Total from Sample	Percent Efficiency
Site - QC Sample - QC 1, CC# - CC160630, Percent sampled = 5, Sieve size = 400			
No Invertebrates Found	0		
Total:	**0**	**392**	**100%**

Site - QC Sample - QC 2, CC# - CC160631, Percent sampled = 5, Sieve size = 400			
Plecoptera	2		
Ephemeroptera	1		
Chironomidae	2		
Trombidiformes	1		
Oligochaeta	6		
Total:	**12**	**308**	**96%**

Methods and QC Report for ERDC-001-15 from Alexco Environmental Group Inc.
Benthic Invertebrate Samples processed by Cordillera Consulting

On September 21, 2015, 15 benthic samples were received by Cordillera Consulting from Alexco Environmental Group Inc.
When samples arrive at Cordillera Consulting they are logged into a proprietary software data base (INSTAR1) and the client generated sample information is recorded along with a Cordillera Consulting number for cross reference. The client representative is notified of the arrival of the shipment. The samples are checked that all sites and replicates recorded on field sheets or packing lists have been delivered intact and with adequate preservative. If there are any missing, mislabelled or extra samples Cordillera Consulting will contact the client immediately to confirm the total numbers and correct names on the sample jars.
Each sample was assigned a distinct Cordillera Consulting code. See table below for summary:

Table 1: Summary of sample information including Cordillera Consulting number.

Site	Sample	CC#	Date	Size	# of Jars
REF	A	CC160622	9/2/2015	400µM	1
REF	B	CC160623	9/2/2015	400µM	1
REF	C	CC160624	9/2/2015	400µM	1
REF	D	CC160625	9/2/2015	400µM	1
REF	E	CC160626	9/2/2015	400µM	1
EXP1	A	CC160627	9/1/2015	400µM	2
EXP1	B	CC160628	9/1/2015	400µM	1
EXP1	C	CC160629	9/1/2015	400µM	1
EXP1	D	CC160630	9/1/2015	400µM	1
EXP1	E	CC160631	9/1/2015	400µM	1
KV-41	A	CC160632	9/1/2015	400µM	1
KV-41	B	CC160633	9/1/2015	400µM	1
KV-41	C	CC160634	9/1/2015	400µM	1
KV-41	D	CC160635	9/1/2015	400µM	1
KV-41	E	CC160636	9/1/2015	400µM	1

Sorting Effort

The sorting team at Cordillera Consulting sorted the invertebrates into order/family taxa level vials.

- Using a gridded Petri dish, fine forceps and a low power stereo microscope (Olympus, Nikon, Lieca) the sorting technicians removed the invertebrates and sorted them into family/orders at the same time
- The sorting technician kept a running tally of total numbers as they sorted the invertebrates into family/order specific vials. Excluded organisms from Porifera, Nemata, Platyhelminthes, Ostracoda, Copepoda, Cladocera and terrestrial drop-ins such as aphids were removed and counted but they were not included towards the total count
- Where specimens were broken or damaged, only heads were counted
- The number of organisms removed were recorded manually on a bench sheet. The number of organisms in each family or order were also recorded at this time.

- The groups of invertebrates and numbers of each group were entered into INSTAR1
- They are stored in 80% ethanol in separate vials (according to family/order) and an interior label using heavy laser paper is made using site names, date of sampling, site code numbers and portion subsampled. This information is also recorded on the laboratory bench sheet and on the data base.
- The sorted portion of the debris was preserved and labeled separately from the unsorted portion and was tested for sorting efficiency. The unsorted portion was also labeled and preserved in separate jars.

Percent sub-sampled and total countable invertebrates pulled from the samples are summarized in the table below.

Table 2: Percent sub-sample and invertebrate numbers for each sample.

Site	**Sample**	**CC#**	**400 micron fraction**	
			% Sampled	**# Invertebrates**
REF	A	CC160622	15%	373
REF	B	CC160623	9%	310
REF	C	CC160624	8%	354
REF	D	CC160625	7%	345
REF	E	CC160626	7%	461
EXP1	A	CC160627	6%	382
EXP1	B	CC160628	5%	527
EXP1	C	CC160629	5%	373
EXP1	D	CC160630	5%	392
EXP1	E	CC160631	5%	308
KV-41	A	CC160632	12%	331
KV-41	B	CC160633	22%	331
KV-41	C	CC160634	13%	326
KV-41	D	CC160635	25%	410
KV-41	E	CC160636	17%	354

Sorting QC – Sorting Efficiency

10% of samples were selected at random for resorting analysis to measure the effectiveness of the sorters. A different sorter from the original sorter did the resort.
All of the resorted samples were above 95% efficiency of invertebrate removal and so achieved industry standards.

Table 3: Summary of sorting efficiency

CC #	Site	Number of Organisms Recovered (initial sort)	Number of Organisms in Re-sort	Percent Recovery
CC160630	EXP1-D	392	0	100%
CC160631	EXP1-E	308	12	96%
			Average % Recovery	98%

Taxonomic Effort

The next procedure was the identification of invertebrates to genus-species level where possible. According to CABIN criteria[1], identifications were made at the genus/species level for all insect organisms found including Chironomidae. Non-insect organisms (except those not included in count) were identified to genus/species where possible and to a minimum of family level with intact and mature specimens. The Standard Taxonomic Effort lists compiled by SAFIT[2] was used as a guideline for what level of identification to achieve where the condition and maturity of the organism enables. Appendix 1 lists the major reference texts used for identification, though other online keys and journal publications are also used.

- Organisms from the same families/order were kept in separate vials (unless directed to do otherwise) in 80% ethanol and labeled with an interior label of heavy laser paper. Where numbers of organisms in a family or genus was large (>30) it merited a separate vial.
- Chironomidae will be identified to genus/species level using slide mounts. CMC-10 will be used to clear and mount the slide.
- Oligochaetes were identified to family/genus level with the aid of slide mounts. CMC-10 was used to clear and mount the slide
- Decapoda, Amphipoda and Isopoda were identified at family/genus/species level where possible.
- Nemata remained at the phylum level
- Hydrachnidae were identified at the family/genus level where possible.

Taxonomic QC

The taxonomists for this project were certified by the Society of Freshwater Science (SFS) Taxonomic Certification Program, which is the required certification for CABIN projects:

Sue Salter: Holds 5 SFS certifications - Level 2 Group 1 General Arthropods East/West; Group 2 EPT West; Group 3 Chironomids EPT East/West

Scott Finlayson: Holds 6 SFS certifications **-** Level 2 Group 1 General Arthropods (East/West); Group 2 EPT East/West; Group 3 Chironomids East/West

Adam Bliss: Holds 4 SFS certifications - Level 2 Group 1 General Arthropods (East/West); Group 2 EPT East/West

Rita Avery: Holds 2 SFS certifications - Level 2 Group 2 EPT East/West

Taxonomic QC was performed in house by someone other than the original taxonomist.

CABIN protocol calculates taxonomic efficiency as:

$$\frac{\#\ Incorrect\ Identifications}{Total\ organisms\ found\ in\ audit} * 100\% = \%\ Identification\ Error$$

ERROR SUMMARY

All samples report errors within the acceptable limits for CABIN Laboratory methods (less than 5% error).

Table 4: Summary of taxonomic error following QC

CC #	# Taxa identified	% Misidentifications
CC160623	308	0.00
CC160632	330	0.30

There will always be disagreements between taxonomists regarding the degree of taxonomic resolution in immature specimens and when laboratories make use of different keys for certain groups (Mollusks is an especially disputed group). It is always possible that some taxa found by the original taxonomist were overlooked in QC.

All of the Taxonomic QC samples that were observed passed testing according to the CABIN misidentification protocols. See the tables below for results from taxonomic QC audit.

TAXONOMIC NOTES

Based on the results of the taxonomic QC, no corrective action was taken. Sample CC160632 contained a single Diamesia misidentified as Eukiefferiella, resulting only in differences in enumeration and did not affect species diversity, richness or other metrics.

Site - REF Sample - B, CC# - CC160623, Percent sampled = 9, Sieve size = 400	Laboratory Count	QC Audit Count	Agreement	Misidentification	Questionable Taxonomic Resolution	Enumeration	Insufficent Taxonomic Resolution	Comments
Rhithrogena	7	7	Yes					
Heptageniidae	34	34	Yes					
Ameletus	18	18	Yes					
Baetis	2	2	Yes					
Baetis bicaudatus	5	5	Yes					
Epeorus	2	2	Yes					
Ephemerellidae	12	12	Yes					
Cinygmula sp.	2	2	Yes					
Drunella doddsii	1	1	Yes					
Glossosoma	3	3	Yes					
Rhyacophila vofixa group	1	1	Yes					
Oligophlebodes	10	10	Yes					
Limnephilidae	1	1	Yes					
Zapada	25	25	Yes					
Zapada cinctipes	1	1	Yes					
Zapada columbiana	13	13	Yes					
Zapada oregonensis group	13	13	Yes					

Zapada frigida	3	3	Yes					
Capniidae	14	14	Yes					
Taenionema	3	3	Yes					
Taeniopterygidae	4	4	Yes					
Suwallia	1	1	Yes					
Nemouridae	1	1	Yes					
Perlodidae	2	2	Yes					
Doddsia occidentalis	6	6	Yes					
Chloroperlidae	2	2	Yes					
Sperchon	4	4	Yes					
Pericoma/Telmatoscopus sp.	4	4	Yes					
Dicranota	1	1	Yes					
Helodon sp.	1	1	Yes					
Chironomidae	5	5	Yes					
Diamesa	4	4	Yes					
Pagastia	26	26	Yes					
Pseudodiamesa	6	6	Yes					
Eukiefferiella	21	21	Yes					
Micropsectra	26	26	Yes					
Limnophyes	1	1	Yes					
Brillia	2	2	Yes					
Orthocladius	8	8	Yes					
Chaetocladius	1	1	Yes					
Tvetenia	3	3	Yes					
Lumbriculidae	9	9	Yes					
Total:	**308**							
					0	**0**	**0**	
% Total Misidentification Rate =	misidentifications / total number			x100 =	0.00	**Pass**		

Site - KV-41 Sample - A, CC# - CC160632, Percent sampled = 12, Sieve size = 400	**Laboratory Count**	**QC Audit Count**	**Agreement**	**Misidentification**	**Questionable Taxonomic Resolution**	**Enumeration**	**Insufficent Taxonomic Resolution**	**Comments**
Zapada	17	17	Yes					
Zapada columbiana	18	18	Yes					
Zapada frigida	16	16	Yes					
Zapada oregonensis group	21	21	Yes					
Megarcys sp.	11	11	Yes					
Capniidae	33	33	Yes					
Taeniopterygidae	33	33	Yes					
Taenionema	10	10	Yes					

Doddsia occidentalis	9	9	Yes					
Haploperla sp.	1	1	Yes					
Chloroperlidae	1	1	Yes					
Ephemerellidae	5	5	Yes					
Drunella doddsii	1	1	Yes					
Ameletus	13	13	Yes					
Epeorus	29	29	Yes					
Heptageniidae	4	4	Yes					
Cinygmula sp.	1	1	Yes					
Baetis	23	23	Yes					
Baetis bicaudatus	13	13	Yes					
Rhyacophila vofixa group	6	6	Yes					
Glossosoma	6	6	Yes					
Oligophlebodes	30	30	Yes					
Hydropsychidae	1	1	Yes					
Pericoma/Telmatoscopus sp.	3	3	Yes					
Dicranota	3	3	Yes					
Sperchon	5	5	Yes					
Oreogeton sp.	2	2	Yes					
Chironomidae	1	1	Yes					
Pseudodiamesa	1	1	Yes					
Diamesa	1	2	No			X		
Eukiefferiella	4	3	No	1		X		
Orthocladius	1	1	Yes					
Orthocladius lignicola	1	1	Yes					
Metriocnemus	1	1	Yes					
Thienemannimyia group	1	1	Yes					
Lumbriculidae	4	4	Yes					
Total:	**330**							
					0	**2**	**0**	
% Total Misidentification Rate =	misidentifications / total number			x100 =	0.30	**Pass**		

References

[1] 2012. Laboratory Methods. Processing, Taxonomy, and Quality Control of Benthic Macroinvertebrate Samples. Environment Canada.
Author: Environment Canada, **Cat. No.:** En84-86/2012E-PDF, **ISBN:** 978-1-100-20815-2, **Year:** 2012

[2] Richards, Austin Brady and Rogers, Christopher D. March 2011. List of Freshwater Invertebrate Taxa from California and Adjacent States including Standard Taxonomic Effort Levels. Southwest Association of Freshwater Invertebrate Taxonomists. http://www.safit.org/Docs/STE_1_March_2011_7MB.pdf

Keys used for Identification of Freshwater Benthic Invertebrates - Cordillera Consulting 2014

Below is a reference list of taxonomic keys utilized by taxonomists at Cordillera Consulting. Cordillera taxonomists routinely seek out new literature to ensure the most accurate identification keys are being utilized. This is not reflective of the exhaustive list of resources that we use for identification. A more complete list of taxonomic resources can be found at Southwest Association of Freshwater Invertebrate Taxonomists. (2015). http://www.safit.org/Docs/SAFIT_Taxonomic_Literature_Database_1_March_2011.enl

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Clifford, Hugh F. 1991. Aquatic Invertebrates of Alberta. University of Alberta Press Edmonton, Alberta.

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Epler, John. Identification Manual for the Water Beetles of Florida. http://home.earthlink.net/~johnepler/

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APPENDIX B

FISH LABORATORY EXPOSURE DATA

Photo 1: Installation of rearing facility.

Photo 2:Rearing tanks with cover

Photo 3: Tank with water re-circulator and air stone.

Photo 4: Mill building.

Photo 5: Outlet of tank water.

Photo 6: Siphon marking.

Photo 7: Stunt growth fish.

Photo 8: Blod shot eye.

Photo 9: Parr marks.

Photo 10:Parr marks.

Photo 11: Whitish eye.

Photo 12: White dot in cephalic area.

APPENDIX B-2

Daily Accumulated Thermal Units (ATUs) for the Three Fish Laboratory Exposure Tanks

Date	Reference	Exposure 1	Exposure 2
09-Aug-15	8.99	8.97	9.12
10-Aug-15	17.92	17.94	18.11
11-Aug-15	26.30	26.30	26.64
12-Aug-15	34.31	34.24	34.81
13-Aug-15	42.47	42.37	43.02
14-Aug-15	51.02	50.92	51.75
15-Aug-15	59.98	59.80	60.83
16-Aug-15	70.03	69.82	71.00
17-Aug-15	79.80	79.56	80.79
18-Aug-15	88.68	88.38	89.89
19-Aug-15	97.16	96.85	98.45
20-Aug-15	106.41	106.07	107.73
21-Aug-15	115.01	114.71	116.54
22-Aug-15	123.36	123.15	125.09
23-Aug-15	131.93	131.84	133.87
24-Aug-15	140.51	140.52	142.66
25-Aug-15	149.03	149.06	151.33
26-Aug-15	157.54	157.53	160.03
27-Aug-15	166.15	166.08	168.70
28-Aug-15	174.14	174.01	176.73
29-Aug-15	179.74	179.46	182.19
30-Aug-15	184.03	183.67	186.50
31-Aug-15	187.89	187.46	190.42
01-Sep-15	191.90	191.43	194.53
02-Sep-15	196.25	195.76	198.90
03-Sep-15	200.52	200.01	203.20
04-Sep-15	205.82	205.29	208.56
05-Sep-15	211.78	211.19	214.55
06-Sep-15	217.16	216.43	219.87
07-Sep-15	222.57	221.70	225.36
08-Sep-15	228.33	227.37	231.30
09-Sep-15	234.02	232.97	237.14
10-Sep-15	240.08	239.07	243.57
11-Sep-15	246.50	245.53	250.30
12-Sep-15	252.76	251.76	256.73
13-Sep-15	258.50	257.39	262.53
14-Sep-15	262.99	261.63	267.03
15-Sep-15	267.33	265.96	271.55
16-Sep-15	271.18	269.74	275.55
17-Sep-15	275.67	274.27	280.22
18-Sep-15	281.43	280.00	285.94

APPENDIX B-2
Fish Tanks Water Quality Results

Station Name	Description	Sample Date	Total Suspended Solids mg/L	Total Dissolved Solids (lab) mg/L	pH (lab) pH units	Specific Conductance (lab) µS/cm	Turbidity (lab) NTU	Hardness (from total) mg/L	Hardness (from dissolved) mg/L	Alkalinity, total mg/L	Chloride mg/L	Fluoride mg/L	Bromide mg/L	Sulphate, dissolved mg/L	Ammonia (N) mg/L	Nitrite (N) mg/L	Nitrate (N) mg/L	Dissolved Organic Carbon mg/L	Aluminum (Al), total mg/L	Antimony (Sb), total mg/L	Arsenic (As), total mg/L	Barium (Ba), total mg/L	Beryllium (Be), total mg/L	Bismuth (Bi), total mg/L	Boron (B), total mg/L	Cadmium (Cd), total mg/L	Calcium (Ca), total mg/L
CCME Guidelines - Protection of Aquatic Life					6.5-9						120	0.12			0.197	0.06	3		*		0.005				1.5	*	
CCME Guidelines - Protection of Aquatic Life vs. Dissolved Metals					6.5-9						120	0.12			0.197	0.06	3										
REF	EEM Fish Study Tank Water	11/08/2015	1.8	116	7.24	191	0.54	96.0	95.9	40.8	<0.50	0.054	<0.050	53.7	**0.660**	<0.0010	0.0602	3.30	0.0117	0.00042	0.00251	0.0558	<0.00010	<0.000050	<0.010	**0.000841**	29.7
REF	EEM Fish Study Tank Water	19/08/2015	3.0	121	7.66	211	1.22	97.1	99.0	41.6	<0.50	0.055	<0.050	57.7	**0.480**	<0.0010	0.0415	2.09	0.0800	0.00048	0.00257	0.0586	<0.00010	<0.000050	<0.010	**0.000481**	29.7
REF	EEM Fish Study Tank Water	26/08/2015	2.4	126	7.38	215	1.34	103	105	37.8	<0.50	0.042	<0.050	62.7	**0.291**	<0.0010	0.0442	2.74	**0.202**	0.00040	0.00275	0.0631	<0.00010	<0.000050	<0.010	**0.000360**	31.5
REF	EEM Fish Study Tank Water	02/09/2015	10.0	125	7.34	203	4.37	103	102	32.6	<0.50	0.042	<0.050	66.1	0.189	<0.0010	0.0481	3.63	**0.282**	0.00046	0.00326	0.0644	<0.00010	<0.000050	<0.010	**0.000656**	31.7
REF	EEM Fish Study Tank Water	09/09/2015	7.8		7.40	201	3.56	95.5	102	35.7	<0.50	0.044	<0.050	62.4	**0.254**	<0.0010	0.0576	1.71	**0.178**	0.00043	0.00288	0.0576	<0.00010	<0.000050	<0.010	**0.000634**	29.0
REF	EEM Fish Study Tank Water	16/09/2015	4.6	124	7.76	202	4.36	104	103	35.2	<0.50	0.044	<0.050	63.0	**0.411**	<0.0010	0.0622	2.22	**0.288**	0.00040	0.00287	0.0611	<0.00010	<0.000050	<0.010	**0.000584**	31.9
EXP-1	EEM Fish Study Tank Water	11/08/2015	1.0	141	7.31	227	0.51	114	117	42.0	<0.50	0.050	<0.050	71.0	**0.349**	<0.0010	0.0522	3.12	0.0151	0.00043	0.00283	0.0534	<0.00010	<0.000050	<0.010	**0.000756**	34.9
EXP-1	EEM Fish Study Tank Water	19/08/2015	4.2	149	7.64	256	0.66	119	118	43.9	<0.50	0.056	<0.050	77.1	**0.717**	0.0012	0.0568	2.08	**0.123**	0.00055	0.00281	0.0570	<0.00010	<0.000050	<0.010	**0.000539**	35.9
EXP-1	EEM Fish Study Tank Water	26/08/2015	5.2	152	7.41	247	2.77	122	125	38.8	<0.50	0.044	<0.050	81.3	**0.455**	<0.0010	0.0565	2.35	**0.217**	0.00049	0.00290	0.0611	<0.00010	<0.000050	<0.010	**0.000404**	37.0
EXP-1	EEM Fish Study Tank Water	02/09/2015	7.6	154	7.37	250	4.05	120	124	35.8	<0.50	0.045	<0.050	85.4	**0.311**	<0.0010	0.0675	6.25	**0.244**	0.00045	0.00306	0.0586	<0.00010	<0.000050	<0.010	**0.000565**	36.8
EXP-1	EEM Fish Study Tank Water	09/09/2015	4.6		7.47	242	2.40	117	124	38.1	<0.50	0.047	<0.050	81.3	**0.359**	0.0010	0.0693	1.88	0.0156	0.00045	0.00247	0.0539	<0.00010	<0.000050	<0.010	**0.000454**	35.0
EXP-1	EEM Fish Study Tank Water	16/09/2015	3.2	153	7.82	240	1.96	126	125	37.9	<0.50	0.045	<0.050	82.0	**0.577**	<0.0010	0.0721	2.11	**0.202**	0.00043	0.00279	0.0590	<0.00010	<0.000050	<0.010	**0.000411**	38.1
EXP-2	EEM Fish Study Tank Water	11/08/2015	2.0	116	7.27	167	0.70	100	99.7	45.4	<0.50	0.057	<0.050	49.6	**0.530**	<0.0010	0.0627	2.87	0.0923	0.00041	0.00205	0.0524	<0.00010	<0.000050	<0.010	**0.00528**	31.3
EXP-2	EEM Fish Study Tank Water	19/08/2015	7.6	123	7.66	216	5.21	98.6	102	48.9	<0.50	0.058	<0.050	53.9	**0.986**	<0.0010	0.0670	2.26	**0.351**	0.00052	0.00254	0.0601	<0.00010	<0.000050	<0.010	**0.00282**	30.4
EXP-2	EEM Fish Study Tank Water	26/08/2015	4.4	121	7.46	204	2.54	97.6	101	42.6	<0.50	0.051	<0.050	56.0	**0.524**	<0.0010	0.0752	2.31	**0.178**	0.00043	0.00222	0.0600	<0.00010	<0.000050	<0.010	**0.00161**	30.3
EXP-2	EEM Fish Study Tank Water	02/09/2015	18.0	116	7.43	194	14.7	94.4	96.1	36.4	<0.50	0.047	<0.050	57.2	**0.248**	<0.0010	0.0754	2.95	**1.04**	0.00051	0.00466	0.0739	<0.00010	<0.000050	<0.010	**0.00172**	29.1
EXP-2	EEM Fish Study Tank Water	09/09/2015	4.6		7.52	188	2.75	92.4	97.6	39.8	<0.50	0.049	<0.050	55.2	**0.223**	<0.0010	0.0745	2.12	**0.205**	0.00039	0.00241	0.0567	<0.00010	<0.000050	<0.010	**0.00154**	28.3
EXP-2	EEM Fish Study Tank Water	16/09/2015	49.7	120	7.84	196	29.9	101	101	37.8	0.50	0.047	<0.050	57.1	**0.359**	<0.0010	0.0789	2.42	**2.79**	0.00080	**0.0140**	0.102	<0.00010	<0.000050	<0.010	**0.000909**	30.8

APPENDIX B-2
Fish Tanks Water Quality Results

Station Name	Description	Sample Date	Chromium (Cr), total mg/L	Cobalt (Co), total mg/L	Copper (Cu), total mg/L	Iron (Fe), total mg/L	Lead (Pb), total mg/L	Lithium (Li), total mg/L	Magnesium (Mg), total mg/L	Manganese (Mn), total mg/L	Mercury (Hg), total mg/L	Molybdenum (Mo), total mg/L	Nickel (Ni), total mg/L	Phosphorus (P), total mg/L	Potassium (K), total mg/L	Selenium (Se), total mg/L	Silicon (Si), total mg/L	Silver (Ag), total mg/L	Sodium (Na), total mg/L	Strontium (Sr), total mg/L	Sulphur (S), total mg/L	Thallium (Tl), total mg/L	Tin (Sn), total mg/L	Titanium (Ti), total mg/L
CCME Guidelines - Protection of Aquatic Life			0.001		*	0.3	*				0.000026	0.073	*			0.001		0.00025				0.0008		
CCME Guidelines - Protection of Aquatic Life vs. Dissolved Metals																								
REF	EEM Fish Study Tank Water	11/08/2015	**0.00180**	0.00013	0.00167	0.048	**0.00638**	<0.0010	5.30	0.0169	<0.0000050	0.000336	0.00498	0.143	0.30	0.000559	2.61	0.000037	0.812	0.0818	18.6	<0.000010	<0.00010	<0.00030
REF	EEM Fish Study Tank Water	19/08/2015	0.00056	0.00012	0.00123	0.182	0.00221	0.0011	5.56	0.0145	<0.0000050	0.000286	0.00172	0.132	0.39	0.000575	2.76	0.000012	0.977	0.0848	18.8	<0.000010	<0.00010	<0.0030
REF	EEM Fish Study Tank Water	26/08/2015	0.00057	0.00023	0.00194	**0.415**	**0.00474**	<0.0010	5.88	0.0267	<0.0000050	0.000274	0.00139	0.171	0.47	0.000592	2.87	0.000031	0.952	0.0830	20.1	<0.000010	<0.00010	0.00541
REF	EEM Fish Study Tank Water	02/09/2015	0.00075	0.00030	**0.00273**	**0.504**	**0.0134**	0.0016	5.76	0.0348	<0.0000050	0.000249	0.00154	0.172	0.44	0.000683	2.83	0.000096	2.45	0.0848	23.4	<0.000010	<0.00010	0.00652
REF	EEM Fish Study Tank Water	09/09/2015	0.00058	0.00021	0.00148	**0.344**	**0.00556**	0.0011	5.63	0.0221	<0.0000050	0.000222	0.00122	0.154	0.30	0.000653	2.74	0.000033	0.818	0.0829	21.1	<0.000010	<0.00010	0.00405
REF	EEM Fish Study Tank Water	16/09/2015	0.00068	0.00026	0.00168	**0.409**	**0.00347**	0.0015	5.95	0.0217	<0.0000050	0.000261	0.00129	0.221	0.48	0.000671	3.08	0.000023	1.02	0.0917	21.4	<0.000010	<0.00010	0.00871
EXP-1	EEM Fish Study Tank Water	11/08/2015	0.00029	0.00013	0.00086	0.052	0.00358	0.0014	6.48	0.0431	<0.0000050	0.000232	0.00184	0.126	0.37	0.000606	2.59	0.000031	1.11	0.100	24.6	<0.000010	<0.00010	0.00033
EXP-1	EEM Fish Study Tank Water	19/08/2015	0.00040	0.00020	0.00120	0.247	0.00208	0.0019	7.17	0.0280	<0.0000050	0.000284	0.00155	0.149	0.39	0.000662	2.89	0.000018	1.26	0.102	25.2	<0.000010	<0.00010	0.00356
EXP-1	EEM Fish Study Tank Water	26/08/2015	0.00053	0.00029	0.00199	**0.469**	**0.00598**	0.0016	7.30	0.0438	<0.0000050	0.000290	0.00158	0.121	0.44	0.000637	2.95	0.000042	1.16	0.0981	25.7	<0.000010	<0.00010	<0.0090
EXP-1	EEM Fish Study Tank Water	02/09/2015	0.00059	0.00034	0.00217	**0.479**	**0.00604**	0.0020	6.96	0.0373	<0.0000050	0.000250	0.00181	0.173	0.45	0.000677	2.61	0.000054	1.15	0.0992	29.0	<0.000010	<0.00010	0.00621
EXP-1	EEM Fish Study Tank Water	09/09/2015	0.00015	0.00016	0.00073	0.021	0.000570	0.0018	7.14	0.0276	<0.0000050	0.000234	0.00121	0.077	0.27	0.000673	2.47	<0.000010	1.11	0.102	28.3	<0.000010	<0.00010	<0.00030
EXP-1	EEM Fish Study Tank Water	16/09/2015	0.00058	0.00028	0.00146	**0.318**	0.00247	0.0021	7.61	0.0315	<0.0000050	0.000272	0.00161	0.180	0.44	0.000728	2.93	0.000017	1.29	0.106	27.8	<0.000010	<0.00010	<0.0090
EXP-2	EEM Fish Study Tank Water	11/08/2015	0.00037	0.00013	0.00138	0.169	**0.00388**	0.0011	5.39	0.0270	<0.0000050	0.000224	0.00086	0.128	0.32	0.000653	3.00	0.000034	0.827	0.0832	17.6	<0.000010	<0.00010	0.00304
EXP-2	EEM Fish Study Tank Water	19/08/2015	0.00073	0.00030	0.00217	**0.568**	**0.00380**	0.0017	5.50	0.0254	<0.0000050	0.000262	0.00122	0.176	0.37	0.000677	3.37	0.000046	0.982	0.0832	17.8	<0.000010	<0.00010	0.0111
EXP-2	EEM Fish Study Tank Water	26/08/2015	0.00041	0.00022	0.00182	**0.357**	**0.00753**	0.0016	5.31	0.0337	<0.0000050	0.000254	0.00093	0.137	0.36	0.000609	2.90	0.000049	0.937	0.0804	17.8	<0.000010	<0.00010	<0.0090
EXP-2	EEM Fish Study Tank Water	02/09/2015	**0.00208**	0.00085	**0.00495**	**1.67**	**0.0129**	0.0021	5.25	0.0523	0.0000071	0.000271	0.00265	0.120	0.41	0.000666	4.25	0.000149	0.748	0.0767	19.1	0.000013	<0.00010	0.0301
EXP-2	EEM Fish Study Tank Water	09/09/2015	0.00046	0.00022	0.00181	**0.343**	**0.00327**	0.0016	5.25	0.0202	<0.0000050	0.000214	0.00096	0.149	0.38	0.000630	2.89	0.000029	0.945	0.0794	18.9	<0.000010	<0.00010	0.00583
EXP-2	EEM Fish Study Tank Water	16/09/2015	**0.00540**	0.00339	**0.0139**	**5.11**	**0.0103**	0.0046	5.92	0.0724	0.0000206	0.000476	0.0122	0.345	0.87	0.000703	7.03	**0.000324**	1.05	0.0841	18.3	0.000029	<0.00010	0.103

APPENDIX B-2
Fish Tanks Water Quality Results

Station Name	Description	Sample Date	Uranium (U), total mg/L	Vanadium (V), total mg/L	Zinc (Zn), total mg/L	Zirconium (Zr), total mg/L	Aluminum (Al), dissolved mg/L	Antimony (Sb), dissolved mg/L	Arsenic (As), dissolved mg/L	Barium (Ba), dissolved mg/L	Beryllium (Be), dissolved mg/L	Bismuth (Bi), dissolved mg/L	Boron (B), dissolved mg/L	Cadmium (Cd), dissolved mg/L	Calcium (Ca), dissolved mg/L	Chromium (Cr), dissolved mg/L	Cobalt (Co), dissolved mg/L	Copper (Cu), dissolved mg/L	Iron (Fe), dissolved mg/L	Lead (Pb), dissolved mg/L	Lithium (Li), dissolved mg/L	Magnesium (Mg), dissolved mg/L	Manganese (Mn), dissolved mg/L	Mercury (Hg), dissolved mg/L
CCME Guidelines - Protection of Aquatic Life			0.015		0.03																			
CCME Guidelines - Protection of Aquatic Life vs. Dissolved Metals							*		0.005				1.5	*		0.001		*	0.3	*				0.000026
REF	EEM Fish Study Tank Water	11/08/2015	0.000125	<0.00050	**0.0555**	<0.00030	0.0072	0.00036	0.00236	0.0574	<0.00010	<0.000050	<0.010	**0.000841**	29.9	**0.00141**	0.00012	0.00147	0.023	**0.00400**	<0.0010	5.17	0.0152	<0.0000050
REF	EEM Fish Study Tank Water	19/08/2015	0.000143	0.00072	0.0285	<0.00030	0.0078	0.00037	0.00228	0.0584	<0.00010	<0.000050	<0.010	**0.000439**	30.5	0.00033	<0.00010	0.00068	0.015	0.000797	<0.0010	5.55	0.0105	<0.0000050
REF	EEM Fish Study Tank Water	26/08/2015	0.000153	0.00077	0.0226	0.00032	0.0068	0.00032	0.00221	0.0601	<0.00010	<0.000050	<0.010	**0.000281**	32.2	0.00013	<0.00010	0.00063	0.015	0.000360	<0.0010	6.02	0.0122	<0.0000050
REF	EEM Fish Study Tank Water	02/09/2015	0.000130	0.00081	**0.0361**	<0.00030	0.0099	0.00033	0.00232	0.0581	<0.00010	<0.000050	<0.010	**0.000468**	31.7	<0.00010	<0.00010	0.00080	0.019	0.000933	<0.0010	5.57	0.0116	<0.0000050
REF	EEM Fish Study Tank Water	09/09/2015	0.000151	0.00082	**0.0309**	<0.00030	0.0139	0.00036	0.00242	0.0575	<0.00010	<0.000050	<0.010	**0.000540**	31.2	0.00012	<0.00010	0.00059	0.016	0.000600	<0.0010	5.85	0.0120	<0.0000050
REF	EEM Fish Study Tank Water	16/09/2015	0.000182	0.00100	0.0287	0.00034	0.0097	0.00034	0.00225	0.0538	<0.00010	<0.000050	<0.010	**0.000480**	31.7	0.00011	<0.00010	0.00057	0.014	0.000309	0.0011	5.78	0.0105	<0.0000050
EXP-1	EEM Fish Study Tank Water	11/08/2015	0.000422	<0.00050	**0.0783**	<0.00030	0.0076	0.00038	0.00257	0.0536	<0.00010	<0.000050	<0.010	**0.000758**	36.0	0.00012	0.00011	0.00065	0.018	0.000626	0.0014	6.56	0.0326	<0.0000050
EXP-1	EEM Fish Study Tank Water	19/08/2015	0.000489	0.00084	**0.0683**	<0.00030	0.0078	0.00048	0.00239	0.0570	<0.00010	<0.000050	<0.010	**0.000521**	36.1	0.00012	<0.00010	0.00057	0.016	0.000249	0.0018	6.86	0.0219	<0.0000050
EXP-1	EEM Fish Study Tank Water	26/08/2015	0.000484	0.00080	**0.0474**	<0.00030	0.0094	0.00037	0.00225	0.0604	<0.00010	<0.000050	<0.010	**0.000329**	38.0	<0.00010	0.00010	0.00048	0.018	0.000411	0.0011	7.33	0.0221	<0.0000050
EXP-1	EEM Fish Study Tank Water	02/09/2015	0.000523	0.00082	**0.0497**	<0.00030	0.0171	0.00039	0.00237	0.0567	<0.00010	<0.000050	<0.010	**0.000481**	37.9	<0.00010	0.00014	0.00067	0.024	0.000493	0.0017	7.09	0.0233	<0.0000050
EXP-1	EEM Fish Study Tank Water	09/09/2015	0.000486	<0.00050	**0.0378**	<0.00030	0.0144	0.00040	0.00241	0.0550	<0.00010	<0.000050	<0.010	**0.000460**	37.3	0.00010	0.00015	0.00058	0.018	0.000347	0.0014	7.48	0.0266	<0.0000050
EXP-1	EEM Fish Study Tank Water	16/09/2015	0.000516	0.00068	**0.0306**	<0.00030	0.0073	0.00037	0.00221	0.0533	<0.00010	<0.000050	<0.010	**0.000328**	37.9	0.00011	0.00011	0.00052	0.025	0.000241	0.0017	7.33	0.0202	<0.0000050
EXP-2	EEM Fish Study Tank Water	11/08/2015	0.000192	<0.00050	**0.115**	<0.00030	0.0095	0.00033	0.00156	0.0509	<0.00010	<0.000050	<0.010	**0.00515**	31.3	0.00015	<0.00010	0.00080	0.019	0.000564	0.0010	5.20	0.0215	<0.0000050
EXP-2	EEM Fish Study Tank Water	19/08/2015	0.000231	0.00142	**0.0931**	<0.00030	0.0075	0.00035	0.00153	0.0553	<0.00010	<0.000050	<0.010	**0.00259**	31.7	0.00011	<0.00010	0.00069	0.012	0.000206	0.0013	5.52	0.0139	<0.0000050
EXP-2	EEM Fish Study Tank Water	26/08/2015	0.000211	0.00066	**0.0762**	<0.00030	0.0105	0.00031	0.00155	0.0564	<0.00010	<0.000050	<0.010	**0.00150**	31.4	<0.00010	<0.00010	0.00063	0.016	0.000302	0.0014	5.53	0.0136	<0.0000050
EXP-2	EEM Fish Study Tank Water	02/09/2015	0.000223	0.00296	**0.0916**	0.00053	0.0063	0.00030	0.00167	0.0534	<0.00010	<0.000050	<0.010	**0.00140**	30.0	<0.00010	<0.00010	0.00055	0.011	0.000225	<0.0010	5.13	0.0165	<0.0000050
EXP-2	EEM Fish Study Tank Water	09/09/2015	0.000188	0.00103	**0.102**	<0.00030	0.0308	0.00033	0.00179	0.0555	<0.00010	<0.000050	<0.010	**0.00152**	30.0	0.00013	<0.00010	0.00089	0.037	0.000419	0.0010	5.50	0.0138	<0.0000050
EXP-2	EEM Fish Study Tank Water	16/09/2015	0.000864	0.00728	**0.0886**	0.00138	0.0170	0.00029	0.00171	0.0578	<0.00010	<0.000050	<0.010	**0.000521**	31.4	0.00012	0.00017	0.00085	0.034	0.000400	0.0017	5.55	0.0144	<0.0000050

APPENDIX B-2
Fish Tanks Water Quality Results

Station Name	Description	Sample Date	Molybdenum (Mo), dissolved mg/L	Nickel (Ni), dissolved mg/L	Phosphorus (P), dissolved mg/L	Potassium (K), dissolved mg/L	Selenium (Se), dissolved mg/L	Silicon (Si), dissolved mg/L	Silver (Ag), dissolved mg/L	Sodium (Na), dissolved mg/L	Strontium (Sr), dissolved mg/L	Sulphur (S), dissolved mg/L	Thallium (Tl), dissolved mg/L	Tin (Sn), dissolved mg/L	Titanium (Ti), dissolved mg/L	Uranium (U), dissolved mg/L	Vanadium (V), dissolved mg/L	Zinc (Zn), dissolved mg/L	Zirconium (Zr), dissolved mg/L	Ion Balance	Total Anion Sum meq/L	Total Cation Sum meq/L
CCME Guidelines - Protection of Aquatic Life																						
CCME Guidelines - Protection of Aquatic Life vs. Dissolved Metal			0.073	*			0.001		0.00025				0.0008			0.015		0.03				
REF	EEM Fish Study Tank Water	11/08/2015	0.000321	0.00462	0.129	0.28	0.000576	2.56	<0.000010	0.797	0.0801	18.2	<0.000010	<0.00010	<0.00030	0.000115	<0.00050	**0.0535**	<0.00030	1.02	1.94	2.01
REF	EEM Fish Study Tank Water	19/08/2015	0.000273	0.00145	0.128	0.33	0.000633	2.67	<0.000010	0.975	0.0857	19.0	<0.000010	<0.00010	<0.00030	0.000136	<0.00050	0.0249	<0.00030	1.01	2.04	2.07
REF	EEM Fish Study Tank Water	26/08/2015	0.000244	0.00080	0.152	0.41	0.000660	2.59	<0.000010	0.907	0.0834	20.5	<0.000010	<0.00010	<0.00030	0.000128	<0.00050	0.0154	<0.00030	1.03	2.07	2.18
REF	EEM Fish Study Tank Water	02/09/2015	0.000176	0.00077	0.139	0.35	0.000640	2.23	<0.000010	0.849	0.0802	22.8	<0.000010	<0.00010	<0.00030	0.000102	<0.00050	0.0230	<0.00030	1.02	2.03	2.10
REF	EEM Fish Study Tank Water	09/09/2015	0.000197	0.00077	0.089	0.26	0.000632	2.56	<0.000010	0.819	0.0834	21.3	<0.000010	<0.00010	<0.00030	0.000135	<0.00050	0.0235	<0.00030	1.02	2.02	2.10
REF	EEM Fish Study Tank Water	16/09/2015	0.000207	0.00064	0.166	0.35	0.000678	2.41	<0.000010	0.949	0.0869	20.9	<0.000010	<0.00010	<0.00030	0.000140	<0.00050	0.0206	<0.00030	1.03	2.02	2.14
EXP-1	EEM Fish Study Tank Water	11/08/2015	0.000221	0.00166	0.108	0.37	0.000621	2.61	<0.000010	1.08	0.0991	24.5	<0.000010	<0.00010	<0.00030	0.000417	<0.00050	**0.0720**	<0.00030	1.02	2.32	2.42
EXP-1	EEM Fish Study Tank Water	19/08/2015	0.000292	0.00116	0.122	0.30	0.000683	2.61	<0.000010	1.26	0.113	25.9	<0.000010	<0.00010	<0.00030	0.000516	<0.00050	**0.0633**	<0.00030	1	2.49	2.49
EXP-1	EEM Fish Study Tank Water	26/08/2015	0.000245	0.00103	0.113	0.36	0.000699	2.58	<0.000010	1.17	0.0967	26.5	<0.000010	<0.00010	<0.00030	0.000446	<0.00050	**0.0380**	<0.00030	1.02	2.47	2.60
EXP-1	EEM Fish Study Tank Water	02/09/2015	0.000202	0.00118	0.136	0.41	0.000724	2.30	<0.000010	1.16	0.0991	29.3	<0.000010	<0.00010	<0.00030	0.000498	<0.00050	**0.0405**	<0.00030	1.01	2.50	2.56
EXP-1	EEM Fish Study Tank Water	09/09/2015	0.000233	0.00115	0.079	0.31	0.000674	2.55	<0.000010	1.09	0.102	27.7	<0.000010	<0.00010	<0.00030	0.000481	<0.00050	**0.0382**	<0.00030	1.02	2.46	2.56
EXP-1	EEM Fish Study Tank Water	16/09/2015	0.000221	0.00104	0.143	0.39	0.000688	2.44	<0.000010	1.20	0.102	26.9	<0.000010	<0.00010	<0.00030	0.000454	<0.00050	0.0226	<0.00030	1.02	2.47	2.60
EXP-2	EEM Fish Study Tank Water	11/08/2015	0.000199	0.00058	0.109	0.27	0.000633	2.73	<0.000010	0.797	0.0802	17.0	<0.000010	<0.00010	<0.00030	0.000175	<0.00050	**0.106**	<0.00030	1.03	1.95	2.08
EXP-2	EEM Fish Study Tank Water	19/08/2015	0.000228	<0.00050	0.148	0.29	0.000683	2.81	<0.000010	0.992	0.0836	17.8	<0.000010	<0.00010	<0.00030	0.000201	<0.00050	**0.0788**	<0.00030	1.01	2.11	2.16
EXP-2	EEM Fish Study Tank Water	26/08/2015	0.000233	<0.00050	0.117	0.32	0.000675	2.67	<0.000010	0.929	0.0812	18.2	<0.000010	<0.00010	<0.00030	0.000186	<0.00050	**0.0662**	<0.00030	1.02	2.03	2.11
EXP-2	EEM Fish Study Tank Water	02/09/2015	0.000191	<0.00050	0.069	0.23	0.000633	2.40	<0.000010	0.742	0.0775	19.6	<0.000010	<0.00010	<0.00030	0.000151	<0.00050	**0.0639**	<0.00030	1.01	1.93	1.98
EXP-2	EEM Fish Study Tank Water	09/09/2015	0.000210	0.00055	0.088	0.34	0.000693	2.66	<0.000010	0.912	0.0816	18.9	<0.000010	<0.00010	<0.0012	0.000176	<0.00050	**0.0937**	<0.00030	1.02	1.95	2.02
EXP-2	EEM Fish Study Tank Water	16/09/2015	0.000275	0.00066	0.196	0.46	0.000679	2.61	<0.000010	0.984	0.0832	18.6	0.000010	<0.00010	0.00050	0.000268	<0.00050	**0.0352**	<0.00030	1.03	1.97	2.11

APPENDIX B-2

Fish Tanks Water Quality Results

Duplicate

EXP-1 (September 16): Of the 86 parameters compared, RPD is >25% for 6 parameters shown in the following table.

Of the 5 parameters with RPD >25%, 2 meet the Practical Quantitation Limit (PQL), where both results are >3 times the DL.

Parameter	Units	DL	Result 1	Result 2	RPD	Meet PQL? (both results >3 times DL)
Aluminum (Al), total	mg/L	0.003	0.202	0.287	35%	yes
Vanadium (V), total	mg/L	0.0005	0.00068	0.001	38%	no
Lead (Pb), dissolved	mg/L	0.00005	0.000241	0.00031	25%	yes
Aluminum (Al), dissolved	mg/L	0.001	0.0073	0.0192	90%	yes
Iron (Fe), dissolved	mg/L	0.01	0.025	0.018	33%	no
Copper (Cu), dissolved	mg/L	0.0002	0.00052	0.00092	56%	no

Alexco Environmental Group Inc.
ATTN: David Petkovich
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 12-AUG-15
Report Date: 20-AUG-15 09:08 (MT)
Version: FINAL

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1656360

Project P.O. #: NOT SUBMITTED
Job Reference: AKHM-14-03
C of C Numbers: 1
Legal Site Desc:

Ariel Tang, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1656360-1	L1656360-2	L1656360-3		
	Description	Water	Water	Water		
	Sampled Date	11-AUG-15	11-AUG-15	11-AUG-15		
	Sampled Time	08:00	08:00	08:00		
	Client ID	REF	EXP-1	EXP-2		
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	191	227	167		
	Hardness (as CaCO3) (mg/L)	95.9	117	99.7		
	Hardness (from Totals) (mg/L)	96.0	114	100		
	pH (pH)	7.24	7.31	7.27		
	Total Suspended Solids (mg/L)	1.8	1.0	2.0		
	Total Dissolved Solids (mg/L)	116	141	116		
	Turbidity (NTU)	0.54	0.51	0.70		
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	40.8	42.0	45.4		
	Ammonia, Total (as N) (mg/L)	0.660	0.349	0.530		
	Bromide (Br) (mg/L)	<0.050	<0.050	<0.050		
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50		
	Fluoride (F) (mg/L)	0.054	0.050	0.057		
	Nitrate (as N) (mg/L)	0.0602	0.0522	0.0627		
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010		
	Sulfate (SO4) (mg/L)	53.7	71.0	49.6		
	Anion Sum (meq/L)	1.94	2.32	1.95		
	Cation Sum (meq/L)	2.01	2.42	2.08		
	Cation - Anion Balance (%)	1.8	2.1	3.2		
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	3.30	3.12	2.87		
Total Metals	Aluminum (Al)-Total (mg/L)	0.0117	0.0151	0.0923		
	Antimony (Sb)-Total (mg/L)	0.00042	0.00043	0.00041		
	Arsenic (As)-Total (mg/L)	0.00251	0.00283	0.00205		
	Barium (Ba)-Total (mg/L)	0.0558	0.0534	0.0524		
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050		
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010		
	Cadmium (Cd)-Total (mg/L)	0.000841	0.000756	0.00528		
	Calcium (Ca)-Total (mg/L)	29.7	34.9	31.3		
	Chromium (Cr)-Total (mg/L)	0.00180	0.00029	0.00037		
	Cobalt (Co)-Total (mg/L)	0.00013	0.00013	0.00013		
	Copper (Cu)-Total (mg/L)	0.00167	0.00086	0.00138		
	Iron (Fe)-Total (mg/L)	0.048	0.052	0.169		
	Lead (Pb)-Total (mg/L)	0.00638	0.00358	0.00388		
	Lithium (Li)-Total (mg/L)	<0.0010	0.0014	0.0011		
	Magnesium (Mg)-Total (mg/L)	5.30	6.48	5.39		
	Manganese (Mn)-Total (mg/L)	0.0169	0.0431	0.0270		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1656360-1	L1656360-2	L1656360-3		
	Description	Water	Water	Water		
	Sampled Date	11-AUG-15	11-AUG-15	11-AUG-15		
	Sampled Time	08:00	08:00	08:00		
	Client ID	REF	EXP-1	EXP-2		
Grouping	**Analyte**					
WATER						
Total Metals	Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050	<0.0000050		
	Molybdenum (Mo)-Total (mg/L)	0.000336	0.000232	0.000224		
	Nickel (Ni)-Total (mg/L)	0.00498	0.00184	0.00086		
	Phosphorus (P)-Total (mg/L)	0.143	0.126	0.128		
	Potassium (K)-Total (mg/L)	0.30	0.37	0.32		
	Selenium (Se)-Total (mg/L)	0.000559	0.000606	0.000653		
	Silicon (Si)-Total (mg/L)	2.61	2.59	3.00		
	Silver (Ag)-Total (mg/L)	0.000037	0.000031	0.000034		
	Sodium (Na)-Total (mg/L)	0.812	1.11	0.827		
	Strontium (Sr)-Total (mg/L)	0.0818	0.100	0.0832		
	Sulfur (S)-Total (mg/L)	18.6	24.6	17.6		
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010		
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
	Titanium (Ti)-Total (mg/L)	<0.00030	0.00033	0.00304		
	Uranium (U)-Total (mg/L)	0.000125	0.000422	0.000192		
	Vanadium (V)-Total (mg/L)	<0.00050	<0.00050	<0.00050		
	Zinc (Zn)-Total (mg/L)	0.0555	0.0783	0.115		
	Zirconium (Zr)-Total (mg/L)	<0.00030	<0.00030	<0.00030		
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD		
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD		
	Aluminum (Al)-Dissolved (mg/L)	0.0072	0.0076	0.0095		
	Antimony (Sb)-Dissolved (mg/L)	0.00036	0.00038	0.00033		
	Arsenic (As)-Dissolved (mg/L)	0.00236	0.00257	0.00156		
	Barium (Ba)-Dissolved (mg/L)	0.0574	0.0536	0.0509		
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050		
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010		
	Cadmium (Cd)-Dissolved (mg/L)	0.000841	0.000758	0.00515		
	Calcium (Ca)-Dissolved (mg/L)	29.9	36.0	31.3		
	Chromium (Cr)-Dissolved (mg/L)	0.00141	0.00012	0.00015		
	Cobalt (Co)-Dissolved (mg/L)	0.00012	0.00011	<0.00010		
	Copper (Cu)-Dissolved (mg/L)	0.00147	0.00065	0.00080		
	Iron (Fe)-Dissolved (mg/L)	0.023	0.018	0.019		
	Lead (Pb)-Dissolved (mg/L)	0.00400	0.000626	0.000564		
	Lithium (Li)-Dissolved (mg/L)	<0.0010	0.0014	0.0010		
	Magnesium (Mg)-Dissolved (mg/L)	5.17	6.56	5.20		
	Manganese (Mn)-Dissolved (mg/L)	0.0152	0.0326	0.0215		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1656360-1	L1656360-2	L1656360-3		
	Description	Water	Water	Water		
	Sampled Date	11-AUG-15	11-AUG-15	11-AUG-15		
	Sampled Time	08:00	08:00	08:00		
	Client ID	REF	EXP-1	EXP-2		
Grouping	**Analyte**					
WATER						
Dissolved Metals	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)	0.000321	0.000221	0.000199		
	Nickel (Ni)-Dissolved (mg/L)	0.00462	0.00166	0.00058		
	Phosphorus (P)-Dissolved (mg/L)	0.129	0.108	0.109		
	Potassium (K)-Dissolved (mg/L)	0.28	0.37	0.27		
	Selenium (Se)-Dissolved (mg/L)	0.000576	0.000621	0.000633		
	Silicon (Si)-Dissolved (mg/L)	2.56	2.61	2.73		
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Sodium (Na)-Dissolved (mg/L)	0.797	1.08	0.797		
	Strontium (Sr)-Dissolved (mg/L)	0.0801	0.0991	0.0802		
	Sulfur (S)-Dissolved (mg/L)	18.2	24.5	17.0		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		
	Uranium (U)-Dissolved (mg/L)	0.000115	0.000417	0.000175		
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Zinc (Zn)-Dissolved (mg/L)	0.0535	0.0720	0.106		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Beryllium (Be)-Dissolved	DLA	L1656360-1, -2, -3
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1656360-1, -2, -3
Duplicate	Chromium (Cr)-Dissolved	DLA	L1656360-1, -2, -3
Duplicate	Lead (Pb)-Dissolved	DLA	L1656360-1, -2, -3
Duplicate	Silver (Ag)-Dissolved	DLA	L1656360-1, -2, -3
Duplicate	Tin (Sn)-Dissolved	DLA	L1656360-1, -2, -3
Duplicate	Titanium (Ti)-Dissolved	DLA	L1656360-1, -2, -3
Duplicate	Vanadium (V)-Dissolved	DLA	L1656360-1, -2, -3
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1656360-1, -2, -3
Matrix Spike	Barium (Ba)-Total	MS-B	L1656360-1, -2, -3
Matrix Spike	Sodium (Na)-Total	MS-B	L1656360-1, -2, -3
Matrix Spike	Strontium (Sr)-Total	MS-B	L1656360-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Copper (Cu)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1656360-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1656360-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TITR-VA	Water	Alkalinity Species by Titration	APHA 2320 Alkalinity

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.

CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-MAN-WR	Water	Conductivity by Meter	APHA 2510 (B)

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using an electrode.

F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Reference Information

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA Water Hardness APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA Water Diss. Mercury in Water by CVAAS or CVAFS APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA Water Total Mercury in Water by CVAAS or CVAFS EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA Water Ion Balance Calculation APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-MAN-WR Water pH by Meter APHA 4500-H (B)

"This analysis is carried out using procedures adapted from APHA Method 4500-H ""pH Value"". The pH is determined in the laboratory using a pH electrode."

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

Reference Information

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA Water TDS (Calculated) APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-LOW-WR Water Total Suspended Solids by Grav. (1 mg/L) APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

VIC100-T-HARDNESS-VA Water Hardness from Total Metals APHA 2340B

Custom Calculation for Hardness. Client is requesting when Total Metals are run, only Total metals are used for hardness calculation.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

L1656360-COFC

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com

☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com

☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Access Consulting Group	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: Whitehorse		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes / No / N/A
PROJECT: AKHM-14-03	**ALS QUOTE NO.:**	**COC SEQUENCE NUMBER (Circle)**	Free ice / frozen ice bricks present upon receipt? Yes / No / N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: David Petkovich	**CONTACT PH:**	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: AS	**SAMPLER MOBILE:**	**RELINQUISHED BY:** AS	**RECEIVED BY:**
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):**		
Email Reports to (will default to PM if no other addresses are listed): asanfacon@accessconsulting.ca		DATE/TIME: 12 Aug 1000	DATE/TIME: 12-AUG-15 9:30 AM
Email Invoice to (will default to PM if no other addresses are listed): david@accessconculting.ca			

RELINQUISHED BY:	**RECEIVED BY:**
DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	General	DM	TM	DM HS	TM Hg	DOC	TOC/TP/NH3		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	Ref	11 Aug/ 800			7	✓	✓	✓	✓	✓	✓	✓		
	Exp-1	11 Aug/ 800			7	✓	✓	✓	✓	✓	✓	✓		
	Exp-2	11 Aug/ 800			7	✓	✓	✓	✓	✓	✓	✓		
				TOTAL	21									

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Alexco Environmental Group Inc.
ATTN: Audrey Sanfacon
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 21-AUG-15
Report Date: 15-SEP-15 19:06 (MT)
Version: FINAL REV. 2

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1661449

Project P.O. #: 16842
Job Reference:
C of C Numbers: 1
Legal Site Desc:

Comments: ADDITIONAL 11-SEP-15: Turbidity analysis has been added to all samples as per client's request.

Ariel Tang, B.Sc.
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1661449-1	L1661449-2	L1661449-3		
Description	Water	Water	Water		
Sampled Date	19-AUG-15	19-AUG-15	19-AUG-15		
Sampled Time	18:00	18:15	18:30		
Client ID	EXP 2	EXP 1	REF		
Grouping / **Analyte**					
WATER					
Physical Tests Conductivity (uS/cm)	216	256	211		
Hardness (as CaCO3) (mg/L)	102	118	99.0		
Hardness (from Totals) (mg/L)	98.6	119	97.1		
pH (pH)	7.66	7.64	7.66		
Total Suspended Solids (mg/L)	7.6	4.2	3.0		
Total Dissolved Solids (mg/L)	123	149	121		
Turbidity (NTU)	5.21	0.66	1.22		
Anions and Nutrients Alkalinity, Total (as CaCO3) (mg/L)	48.9	43.9	41.6		
Ammonia, Total (as N) (mg/L)	0.986	0.717	0.480		
Bromide (Br) (mg/L)	<0.050	<0.050	<0.050		
Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50		
Fluoride (F) (mg/L)	0.058	0.056	0.055		
Nitrate (as N) (mg/L)	0.0670	0.0568	0.0415		
Nitrite (as N) (mg/L)	<0.0010	0.0012	<0.0010		
Sulfate (SO4) (mg/L)	53.9	77.1	57.7		
Anion Sum (meq/L)	2.11	2.49	2.04		
Cation Sum (meq/L)	2.16	2.49	2.07		
Cation - Anion Balance (%)	1.2	-0.1	0.7		
Organic / Inorganic Carbon Dissolved Organic Carbon (mg/L)	2.26	2.08	2.09		
Total Metals Aluminum (Al)-Total (mg/L)	0.351	0.123	0.0800		
Antimony (Sb)-Total (mg/L)	0.00052	0.00055	0.00048		
Arsenic (As)-Total (mg/L)	0.00254	0.00281	0.00257		
Barium (Ba)-Total (mg/L)	0.0601	0.0570	0.0586		
Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050		
Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010		
Cadmium (Cd)-Total (mg/L)	0.00282	0.000539	0.000481		
Calcium (Ca)-Total (mg/L)	30.4	35.9	29.7		
Chromium (Cr)-Total (mg/L)	0.00073	0.00040	0.00056		
Cobalt (Co)-Total (mg/L)	0.00030	0.00020	0.00012		
Copper (Cu)-Total (mg/L)	0.00217	0.00120	0.00123		
Iron (Fe)-Total (mg/L)	0.568	0.247	0.182		
Lead (Pb)-Total (mg/L)	0.00380	0.00208	0.00221		
Lithium (Li)-Total (mg/L)	0.0017	0.0019	0.0011		
Magnesium (Mg)-Total (mg/L)	5.50	7.17	5.56		
Manganese (Mn)-Total (mg/L)	0.0254	0.0280	0.0145		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1661449-1	L1661449-2	L1661449-3		
Description	Water	Water	Water		
Sampled Date	19-AUG-15	19-AUG-15	19-AUG-15		
Sampled Time	18:00	18:15	18:30		
Client ID	EXP 2	EXP 1	REF		
Grouping / **Analyte**					
WATER					
Total Metals Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050	<0.0000050		
Molybdenum (Mo)-Total (mg/L)	0.000262	0.000284	0.000286		
Nickel (Ni)-Total (mg/L)	0.00122	0.00155	0.00172		
Phosphorus (P)-Total (mg/L)	0.176	0.149	0.132		
Potassium (K)-Total (mg/L)	0.37	0.39	0.39		
Selenium (Se)-Total (mg/L)	0.000677	0.000662	0.000575		
Silicon (Si)-Total (mg/L)	3.37	2.89	2.76		
Silver (Ag)-Total (mg/L)	0.000046	0.000018	0.000012		
Sodium (Na)-Total (mg/L)	0.982	1.26	0.977		
Strontium (Sr)-Total (mg/L)	0.0832	0.102	0.0848		
Sulfur (S)-Total (mg/L)	17.8	25.2	18.8		
Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010		
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
Titanium (Ti)-Total (mg/L)	0.0111	0.00356	<0.0030 DLM		
Uranium (U)-Total (mg/L)	0.000231	0.000489	0.000143		
Vanadium (V)-Total (mg/L)	0.00142	0.00084	0.00072		
Zinc (Zn)-Total (mg/L)	0.0931	0.0683	0.0285		
Zirconium (Zr)-Total (mg/L)	<0.00030	<0.00030	<0.00030		
Dissolved Metals Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD		
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD		
Aluminum (Al)-Dissolved (mg/L)	0.0075	0.0078	0.0078		
Antimony (Sb)-Dissolved (mg/L)	0.00035	0.00048	0.00037		
Arsenic (As)-Dissolved (mg/L)	0.00153	0.00239	0.00228		
Barium (Ba)-Dissolved (mg/L)	0.0553	0.0570	0.0584		
Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050		
Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010		
Cadmium (Cd)-Dissolved (mg/L)	0.00259	0.000521	0.000439		
Calcium (Ca)-Dissolved (mg/L)	31.7	36.1	30.5		
Chromium (Cr)-Dissolved (mg/L)	0.00011	0.00012	0.00033		
Cobalt (Co)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
Copper (Cu)-Dissolved (mg/L)	0.00069	0.00057	0.00068		
Iron (Fe)-Dissolved (mg/L)	0.012	0.016	0.015		
Lead (Pb)-Dissolved (mg/L)	0.000206	0.000249	0.000797		
Lithium (Li)-Dissolved (mg/L)	0.0013	0.0018	<0.0010		
Magnesium (Mg)-Dissolved (mg/L)	5.52	6.86	5.55		
Manganese (Mn)-Dissolved (mg/L)	0.0139	0.0219	0.0105		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1661449-1	L1661449-2	L1661449-3		
	Description	Water	Water	Water		
	Sampled Date	19-AUG-15	19-AUG-15	19-AUG-15		
	Sampled Time	18:00	18:15	18:30		
	Client ID	EXP 2	EXP 1	REF		
Grouping	**Analyte**					
WATER						
Dissolved Metals	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)	0.000228	0.000292	0.000273		
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	0.00116	0.00145		
	Phosphorus (P)-Dissolved (mg/L)	0.148	0.122	0.128		
	Potassium (K)-Dissolved (mg/L)	0.29	0.30	0.33		
	Selenium (Se)-Dissolved (mg/L)	0.000683	0.000683	0.000633		
	Silicon (Si)-Dissolved (mg/L)	2.81	2.61	2.67		
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Sodium (Na)-Dissolved (mg/L)	0.992	1.26	0.975		
	Strontium (Sr)-Dissolved (mg/L)	0.0836	0.113	0.0857		
	Sulfur (S)-Dissolved (mg/L)	17.8	25.9	19.0		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		
	Uranium (U)-Dissolved (mg/L)	0.000201	0.000516	0.000136		
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Zinc (Zn)-Dissolved (mg/L)	0.0788	0.0633	0.0249		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Bromide (Br)	DLM	L1661449-1, -2, -3
Matrix Spike	Dissolved Organic Carbon	MS-B	L1661449-1, -2, -3
Matrix Spike	Dissolved Organic Carbon	MS-B	L1661449-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1661449-1, -2, -3
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1661449-1, -2, -3
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1661449-1, -2, -3
Matrix Spike	Barium (Ba)-Total	MS-B	L1661449-1, -2, -3
Matrix Spike	Boron (B)-Total	MS-B	L1661449-1, -2, -3
Matrix Spike	Manganese (Mn)-Total	MS-B	L1661449-1, -2, -3
Matrix Spike	Sodium (Na)-Total	MS-B	L1661449-1, -2, -3
Matrix Spike	Strontium (Sr)-Total	MS-B	L1661449-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1661449-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1661449-1, -2, -3
Matrix Spike	Molybdenum (Mo)-Dissolved	MS-B	L1661449-1, -2, -3
Matrix Spike	Nickel (Ni)-Dissolved	MS-B	L1661449-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1661449-1, -2, -3
Matrix Spike	Uranium (U)-Dissolved	MS-B	L1661449-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TITR-VA	Water	Alkalinity Species by Titration	APHA 2320 Alkalinity

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.

CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA	Water	Hardness	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA	Water	Diss. Mercury in Water by CVAAS or CVAFS	APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions)

Reference Information

should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

Reference Information

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA Water TDS (Calculated) APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-LOW-WR Water Total Suspended Solids by Grav. (1 mg/L) APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

VIC100-T-HARDNESS-VA Water Hardness from Total Metals APHA 2340B

Custom Calculation for Hardness. Client is requesting when Total Metals are run, only Total metals are used for hardness calculation.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1661449-COFC

COC Number: 14 -

Page ____ of ____

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Alexco Environmental Group Inc.	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Audrey Sanfacon	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	#3 Calcite Business Centre 151 Industrial Road, Whitehorse, YT Y1A 2V3	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
Phone:	668-6463	Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
		Email 1 or Fax	Specify Date Required for E2,E or P:
		Email 2	

Invoice To		Invoice Distribution
	Same as Report To ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
	Copy of Invoice with Report ☐ Yes ☐ No	
Company:		Email 1 or Fax
Contact:		Email 2

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:		GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-TITR-TOT-ONLY-VA	PH-PCT-VA, EC-PCT-VA, BR-L-IC-N-VA	ANIONS-ALL-IC-WR, TSS-LOW-WR	TDS-CALC-VA, IONBALANCE-VA	CARBONS-DOC-VA	NH3-F-VA	VIC100-MET-T-LOW-VA	VIC100-MET-D-LOW-VA	Number of Containers
					F/P	P		P		P	P	F/P	
	EXP 2	8/19/2015	18:00	Water									7
	EXP 1	8/19/2015	18:15	Water									7
	REF	8/19/2015	18:30	Water									7

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐		SIF Observations	Yes ☐	No ☐
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
5.5					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Charles Blysak	Date:20/08/15	Time17:00	Received by:	Date: 21Aug15	Time: 1040	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0226a v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Alexco Environmental Group Inc.
ATTN: Audrey Sanfacon
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 27-AUG-15
Report Date: 15-SEP-15 19:02 (MT)
Version: FINAL REV. 2

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1664022

Project P.O. #: 16842
Job Reference: AKHM-14-03
C of C Numbers: 1
Legal Site Desc:

Comments: ADDITIONAL 11-SEP-15: Turbidity analysis has been added to all samples in this submission as per client's request.

Ariel Tang, B.Sc.
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1664022-1	L1664022-2	L1664022-3		
	Description	Water	Water	Water		
	Sampled Date	26-AUG-15	26-AUG-15	26-AUG-15		
	Sampled Time	13:00	13:30	14:00		
	Client ID	REF	EXP-1	EXP-2		
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	215	247	204		
	Hardness (as CaCO3) (mg/L)	105	125	101		
	Hardness (from Totals) (mg/L)	103	122	97.6		
	pH (pH)	7.38	7.41	7.46		
	Total Suspended Solids (mg/L)	2.4	5.2	4.4		
	Total Dissolved Solids (mg/L)	126	152	121		
	Turbidity (NTU)	1.34	2.77	2.54		
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	37.8	38.8	42.6		
	Ammonia, Total (as N) (mg/L)	0.291	0.455	0.524		
	Bromide (Br) (mg/L)	<0.050	<0.050	<0.050		
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50		
	Fluoride (F) (mg/L)	0.042	0.044	0.051		
	Nitrate (as N) (mg/L)	0.0442	0.0565	0.0752		
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010		
	Sulfate (SO4) (mg/L)	62.7	81.3	56.0		
	Anion Sum (meq/L)	2.07	2.47	2.03		
	Cation Sum (meq/L)	2.18	2.60	2.11		
	Cation - Anion Balance (%)	2.6	2.4	2.2		
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	2.74	2.35	2.31		
Total Metals	Aluminum (Al)-Total (mg/L)	0.202	0.217	0.178		
	Antimony (Sb)-Total (mg/L)	0.00040	0.00049	0.00043		
	Arsenic (As)-Total (mg/L)	0.00275	0.00290	0.00222		
	Barium (Ba)-Total (mg/L)	0.0631	0.0611	0.0600		
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050		
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010		
	Cadmium (Cd)-Total (mg/L)	0.000360	0.000404	0.00161		
	Calcium (Ca)-Total (mg/L)	31.5	37.0	30.3		
	Chromium (Cr)-Total (mg/L)	0.00057	0.00053	0.00041		
	Cobalt (Co)-Total (mg/L)	0.00023	0.00029	0.00022		
	Copper (Cu)-Total (mg/L)	0.00194	0.00199	0.00182		
	Iron (Fe)-Total (mg/L)	0.415	0.469	0.357		
	Lead (Pb)-Total (mg/L)	0.00474	0.00598	0.00753		
	Lithium (Li)-Total (mg/L)	<0.0010	0.0016	0.0016		
	Magnesium (Mg)-Total (mg/L)	5.88	7.30	5.31		
	Manganese (Mn)-Total (mg/L)	0.0267	0.0438	0.0337		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1664022-1	L1664022-2	L1664022-3		
Description	Water	Water	Water		
Sampled Date	26-AUG-15	26-AUG-15	26-AUG-15		
Sampled Time	13:00	13:30	14:00		
Client ID	REF	EXP-1	EXP-2		
Grouping / **Analyte**					
WATER					
Total Metals Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050	<0.0000050		
Molybdenum (Mo)-Total (mg/L)	0.000274	0.000290	0.000254		
Nickel (Ni)-Total (mg/L)	0.00139	0.00158	0.00093		
Phosphorus (P)-Total (mg/L)	0.171	0.121	0.137		
Potassium (K)-Total (mg/L)	0.47	0.44	0.36		
Selenium (Se)-Total (mg/L)	0.000592	0.000637	0.000609		
Silicon (Si)-Total (mg/L)	2.87	2.95	2.90		
Silver (Ag)-Total (mg/L)	0.000031	0.000042	0.000049		
Sodium (Na)-Total (mg/L)	0.952	1.16	0.937		
Strontium (Sr)-Total (mg/L)	0.0830	0.0981	0.0804		
Sulfur (S)-Total (mg/L)	20.1	25.7	17.8		
Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010		
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
Titanium (Ti)-Total (mg/L)	0.00541	<0.0090 DLM	<0.0090 DLM		
Uranium (U)-Total (mg/L)	0.000153	0.000484	0.000211		
Vanadium (V)-Total (mg/L)	0.00077	0.00080	0.00066		
Zinc (Zn)-Total (mg/L)	0.0226	0.0474	0.0762		
Zirconium (Zr)-Total (mg/L)	0.00032	<0.00030	<0.00030		
Dissolved Metals Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD		
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD		
Aluminum (Al)-Dissolved (mg/L)	0.0068	0.0094	0.0105		
Antimony (Sb)-Dissolved (mg/L)	0.00032	0.00037	0.00031		
Arsenic (As)-Dissolved (mg/L)	0.00221	0.00225	0.00155		
Barium (Ba)-Dissolved (mg/L)	0.0601	0.0604	0.0564		
Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050		
Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010		
Cadmium (Cd)-Dissolved (mg/L)	0.000281	0.000329	0.00150		
Calcium (Ca)-Dissolved (mg/L)	32.2	38.0	31.4		
Chromium (Cr)-Dissolved (mg/L)	0.00013	<0.00010	<0.00010		
Cobalt (Co)-Dissolved (mg/L)	<0.00010	0.00010	<0.00010		
Copper (Cu)-Dissolved (mg/L)	0.00063	0.00048	0.00063		
Iron (Fe)-Dissolved (mg/L)	0.015	0.018	0.016		
Lead (Pb)-Dissolved (mg/L)	0.000360	0.000411	0.000302		
Lithium (Li)-Dissolved (mg/L)	<0.0010	0.0011	0.0014		
Magnesium (Mg)-Dissolved (mg/L)	6.02	7.33	5.53		
Manganese (Mn)-Dissolved (mg/L)	0.0122	0.0221	0.0136		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1664022-1	L1664022-2	L1664022-3		
	Description	Water	Water	Water		
	Sampled Date	26-AUG-15	26-AUG-15	26-AUG-15		
	Sampled Time	13:00	13:30	14:00		
	Client ID	REF	EXP-1	EXP-2		
Grouping	**Analyte**					
WATER						
Dissolved Metals	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)	0.000244	0.000245	0.000233		
	Nickel (Ni)-Dissolved (mg/L)	0.00080	0.00103	<0.00050		
	Phosphorus (P)-Dissolved (mg/L)	0.152	0.113	0.117		
	Potassium (K)-Dissolved (mg/L)	0.41	0.36	0.32		
	Selenium (Se)-Dissolved (mg/L)	0.000660	0.000699	0.000675		
	Silicon (Si)-Dissolved (mg/L)	2.59	2.58	2.67		
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Sodium (Na)-Dissolved (mg/L)	0.907	1.17	0.929		
	Strontium (Sr)-Dissolved (mg/L)	0.0834	0.0967	0.0812		
	Sulfur (S)-Dissolved (mg/L)	20.5	26.5	18.2		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		
	Uranium (U)-Dissolved (mg/L)	0.000128	0.000446	0.000186		
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Zinc (Zn)-Dissolved (mg/L)	0.0154	0.0380	0.0662		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Sodium (Na)-Total	MS-B	L1664022-1, -2, -3
Matrix Spike	Strontium (Sr)-Total	MS-B	L1664022-1, -2, -3
Matrix Spike	Dissolved Organic Carbon	MS-B	L1664022-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Uranium (U)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Molybdenum (Mo)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1664022-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1664022-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TITR-VA	Water	Alkalinity Species by Titration	APHA 2320 Alkalinity

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.

CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA	Water	Hardness	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA	Water	Diss. Mercury in Water by CVAAS or CVAFS	APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions)

Reference Information

should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

Reference Information

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA Water TDS (Calculated) APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-LOW-WR Water Total Suspended Solids by Grav. (1 mg/L) APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

VIC100-T-HARDNESS-VA Water Hardness from Total Metals APHA 2340B

Custom Calculation for Hardness. Client is requesting when Total Metals are run, only Total metals are used for hardness calculation.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1664022-COFC

COC Number: 14 -

Page 1 of 1

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Alexco Environmental Group Inc.	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)		R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Audrey Sanfacon	Quality Control (QC) Report with Report ☐ Yes ☐ No		P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	#3 Calcite Business Centre 151 Industrial Road, Whitehorse, YT Y1A 2V3	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
Phone:	668-6463	Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX		E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
		Email 1 or Fax asanfacon@accessconsulting.ca		Specify Date Required for E2,E or P:
		Email 2 david@accessconsulting.ca		

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	AKHM-14-03	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-TITR-TOT-ONLY-VA	PH-PCT-VA, EC-PCT-VA, BR-L-IC-N-VA	ANIONS-ALL-IC-WR, TSS-LOW-WR	TDS-CALC-VA, IONBALANCE-VA	CARBONS-DOC-VA	NH3-F-VA	VIC100-MET-T-LOW-VA	VIC100-MET-D-LOW-VA	Number of Containers
					F/P	P		P		P	P	F/P	
	Ref	8/15/2026	13:00	Water									7
	Exp-1	8/15/2026	13:30	Water									7
	Exp-2	8/15/2026	14:00	Water									7

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐		SIF Observations	Yes ☐	No ☐		
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐		
Cooling Initiated	☐						

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
7.5			8	8	9

Released by:	Date:	Time:	INITIAL SHIPMENT RECEPTION (lab use only) Received by:	Date:	Time:	FINAL SHIPMENT RECEPTION (lab use only) Received by:	Date:	Time:
			Shyuno	27Aug15	11:30	Shafer	Aug28	1400

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Alexco Environmental Group Inc.
ATTN: Audrey Sanfacon
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 05-SEP-15
Report Date: 15-SEP-15 17:14 (MT)
Version: FINAL

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1669090

Project P.O. #: PO16375
Job Reference: AKHM-14-03 FISH STUDY - BELLEKENO EEM
C of C Numbers: 1
Legal Site Desc:

Ariel Tang, B.Sc.
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1669090-1 Water 02-SEP-15 18:00 REF	L1669090-2 Water 02-SEP-15 18:00 EXP-1	L1669090-3 Water 02-SEP-15 18:00 EXP-2		
WATER						
Physical Tests	Conductivity (uS/cm)	203	250	194		
	Hardness (as CaCO3) (mg/L)	102	124	96.1		
	Hardness (from Totals) (mg/L)	103	120	94.4		
	pH (pH)	7.34	7.37	7.43		
	Total Suspended Solids (mg/L)	10.0	7.6	18.0		
	Total Dissolved Solids (mg/L)	125	154	116		
	Turbidity (NTU)	4.37	4.05	14.7		
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	32.6	35.8	36.4		
	Ammonia, Total (as N) (mg/L)	0.189	0.311	0.248		
	Bromide (Br) (mg/L)	<0.050	<0.050	<0.050		
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50		
	Fluoride (F) (mg/L)	0.042	0.045	0.047		
	Nitrate (as N) (mg/L)	0.0481	0.0675	0.0754		
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010		
	Sulfate (SO4) (mg/L)	66.1	85.4	57.2		
	Anion Sum (meq/L)	2.03	2.50	1.93		
	Cation Sum (meq/L)	2.10	2.56	1.98		
	Cation - Anion Balance (%)	1.6	1.2	1.4		
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	3.63	6.25	2.95		
Total Metals	Aluminum (Al)-Total (mg/L)	0.282	0.244	1.04		
	Antimony (Sb)-Total (mg/L)	0.00046	0.00045	0.00051		
	Arsenic (As)-Total (mg/L)	0.00326	0.00306	0.00466		
	Barium (Ba)-Total (mg/L)	0.0644	0.0586	0.0739		
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050		
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010		
	Cadmium (Cd)-Total (mg/L)	0.000656	0.000565	0.00172		
	Calcium (Ca)-Total (mg/L)	31.7	36.8	29.1		
	Chromium (Cr)-Total (mg/L)	0.00075	0.00059	0.00208		
	Cobalt (Co)-Total (mg/L)	0.00030	0.00034	0.00085		
	Copper (Cu)-Total (mg/L)	0.00273	0.00217	0.00495		
	Iron (Fe)-Total (mg/L)	0.504	0.479	1.67		
	Lead (Pb)-Total (mg/L)	0.0134	0.00604	0.0129		
	Lithium (Li)-Total (mg/L)	0.0016	0.0020	0.0021		
	Magnesium (Mg)-Total (mg/L)	5.76	6.96	5.25		
	Manganese (Mn)-Total (mg/L)	0.0348	0.0373	0.0523		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1669090-1 Water 02-SEP-15 18:00 REF	L1669090-2 Water 02-SEP-15 18:00 EXP-1	L1669090-3 Water 02-SEP-15 18:00 EXP-2		
WATER						
Total Metals	Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050	0.0000071		
	Molybdenum (Mo)-Total (mg/L)	0.000249	0.000250	0.000271		
	Nickel (Ni)-Total (mg/L)	0.00154	0.00181	0.00265		
	Phosphorus (P)-Total (mg/L)	0.172	0.173	0.120		
	Potassium (K)-Total (mg/L)	0.44	0.45	0.41		
	Selenium (Se)-Total (mg/L)	0.000683	0.000677	0.000666		
	Silicon (Si)-Total (mg/L)	2.83	2.61	4.25		
	Silver (Ag)-Total (mg/L)	0.000096	0.000054	0.000149		
	Sodium (Na)-Total (mg/L)	2.45	1.15	0.748		
	Strontium (Sr)-Total (mg/L)	0.0848	0.0992	0.0767		
	Sulfur (S)-Total (mg/L)	23.4	29.0	19.1		
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	0.000013		
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
	Titanium (Ti)-Total (mg/L)	0.00652	0.00621	0.0301		
	Uranium (U)-Total (mg/L)	0.000130	0.000523	0.000223		
	Vanadium (V)-Total (mg/L)	0.00081	0.00082	0.00296		
	Zinc (Zn)-Total (mg/L)	0.0361	0.0497	0.0916		
	Zirconium (Zr)-Total (mg/L)	<0.00030	<0.00030	0.00053		
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD		
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD		
	Aluminum (Al)-Dissolved (mg/L)	0.0099	0.0171	0.0063		
	Antimony (Sb)-Dissolved (mg/L)	0.00033	0.00039	0.00030		
	Arsenic (As)-Dissolved (mg/L)	0.00232	0.00237	0.00167		
	Barium (Ba)-Dissolved (mg/L)	0.0581	0.0567	0.0534		
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050		
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010		
	Cadmium (Cd)-Dissolved (mg/L)	0.000468	0.000481	0.00140		
	Calcium (Ca)-Dissolved (mg/L)	31.7	37.9	30.0		
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	0.00014	<0.00010		
	Copper (Cu)-Dissolved (mg/L)	0.00080	0.00067	0.00055		
	Iron (Fe)-Dissolved (mg/L)	0.019	0.024	0.011		
	Lead (Pb)-Dissolved (mg/L)	0.000933	0.000493	0.000225		
	Lithium (Li)-Dissolved (mg/L)	<0.0010	0.0017	<0.0010		
	Magnesium (Mg)-Dissolved (mg/L)	5.57	7.09	5.13		
	Manganese (Mn)-Dissolved (mg/L)	0.0116	0.0233	0.0165		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1669090-1	L1669090-2	L1669090-3		
	Description	Water	Water	Water		
	Sampled Date	02-SEP-15	02-SEP-15	02-SEP-15		
	Sampled Time	18:00	18:00	18:00		
	Client ID	REF	EXP-1	EXP-2		
Grouping	**Analyte**					
WATER						
Dissolved Metals	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)	0.000176	0.000202	0.000191		
	Nickel (Ni)-Dissolved (mg/L)	0.00077	0.00118	<0.00050		
	Phosphorus (P)-Dissolved (mg/L)	0.139	0.136	0.069		
	Potassium (K)-Dissolved (mg/L)	0.35	0.41	0.23		
	Selenium (Se)-Dissolved (mg/L)	0.000640	0.000724	0.000633		
	Silicon (Si)-Dissolved (mg/L)	2.23	2.30	2.40		
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Sodium (Na)-Dissolved (mg/L)	0.849	1.16	0.742		
	Strontium (Sr)-Dissolved (mg/L)	0.0802	0.0991	0.0775		
	Sulfur (S)-Dissolved (mg/L)	22.8	29.3	19.6		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		
	Uranium (U)-Dissolved (mg/L)	0.000102	0.000498	0.000151		
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Zinc (Zn)-Dissolved (mg/L)	0.0230	0.0405	0.0639		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Antimony (Sb)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Arsenic (As)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Beryllium (Be)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Cadmium (Cd)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Chromium (Cr)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Cobalt (Co)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Copper (Cu)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Lead (Pb)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Nickel (Ni)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Selenium (Se)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Silver (Ag)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Thallium (Tl)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Tin (Sn)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Titanium (Ti)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Vanadium (V)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Zinc (Zn)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Aluminum (Al)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Antimony (Sb)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Beryllium (Be)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Boron (B)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Chromium (Cr)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Cobalt (Co)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Copper (Cu)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Lead (Pb)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Nickel (Ni)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Silver (Ag)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Thallium (Tl)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Tin (Sn)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Vanadium (V)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Zinc (Zn)-Dissolved	DLA	L1669090-1, -2, -3
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1669090-1, -2, -3
Matrix Spike	Mercury (Hg)-Total	MS-B	L1669090-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Molybdenum (Mo)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1669090-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1669090-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description

Reference Information

DLA	Detection Limit adjusted for required dilution
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2

This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.

BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.

CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-MAN-WR	Water	Conductivity by Meter	APHA 2510 (B)

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using an electrode.

F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA	Water	Hardness	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA	Water	Diss. Mercury in Water by CVAAS or CVAFS	APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA	Water	Total Metals in Water by ICPOES	EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United

Reference Information

States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA	Water	Ammonia in Water by Fluorescence	APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-MAN-WR	Water	pH by Meter	APHA 4500-H+

pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 – 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.

S-DIS-ICP-VA	Water	Dissolved Sulfur in Water by ICPOES	EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA	Water	Total Sulfur in Water by ICPOES	EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA	Water	TDS (Calculated)	APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-LOW-WR	Water	Total Suspended Solids by Grav. (1 mg/L)	APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

VIC100-T-HARDNESS-VA	Water	Hardness from Total Metals	APHA 2340B

Custom Calculation for Hardness. Client is requesting when Total Metals are run, only Total metals are used for hardness calculation.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1669090-COFC

COC Number: 14 -

Page ____ of ____

Report To		Report Format / Distribution		Rush TAT (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Alexco Environmental Group Inc.	Select Report Format: ☐PDF ☐EXCEL ☐EDD (DIGITAL)		R ☑Regular (Standard TAT if received by 3 pm - business days)
Contact:	Audrey Sanfacon	Quality Control (QC) Report with Report ☐ Yes ☐ No		P ☐Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	#3 Calcite Business Centre 151 Industrial Road, Whitehorse, YT Y1A 2V3	☐Criteria on Report - provide details below if box checked		E ☐Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution: ☐EMAIL ☐MAIL ☐FAX		E2 ☐Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	668-6463	Email 1 or Fax	asanfacon@accessconsulting.ca	Specify Date Required for E2,E or P:
		Email 2	david@accessconsulting.ca	
Invoice To	Same as Report To ☐ Yes ☐ No	**Invoice Distribution**		**Analysis Request**
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐EMAIL ☐MAIL ☐FAX		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:	Access Consulting Group	Email 1 or Fax	asanfacon@accessconsulting.ca	
Contact:	Audrey Sanfacon	Email 2	Kal@alexcoresource.com, nichole@accessconsultin	
Project Information		**Oil and Gas Required Fields (client use)**		
ALS Quote #:		Approver ID:	Cost Center:	
Job #:	AKHM-14-03 FISH STUDY - Bellekeno EEM	GL Account:	Routing Code:	
PO / AFE:		Activity Code:		
LSD:		Location:		
ALS Lab Work Order # (lab use only)		**ALS Contact:**	**Sampler:**	

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-TITR-TOT-ONLY-VA	PH-PCT-VA, EC-PCT-VA, BR-I-IC-N-VA	ANIONS-ALL-IC-WR, TSS-LOW-WR	TDS-CALC-VA, IONBALANCE-VA	CARBONS-DOC-VA	NH3-F-VA	VIC100-MET-T-LOW-VA	VIC100-MET-D-LOW-VA					Number of Containers
						F/P	P		P	P	F/P						
	Ref	02-Sep-15	1800	Water	✓	✓	✓	✓	✓	✓	✓	✓					
	Exp-1	02-Sep-15	1800	Water	✓	✓	✓	✓	✓	✓	✓	✓					
	Exp-2	02-Sep-15	1800	Water	✓	✓	✓	✓	✓	✓	✓	✓					

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice packs Yes ☑ No ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☑

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
5.5	5.0	5.1			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: Sept 15	Time: 1300	Received by:	Date: 5-SEP-15	Time: 2:00	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Twila Sept 9 14:20 9.5°

Alexco Environmental Group Inc.
ATTN: Audrey Sanfacon
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 10-SEP-15
Report Date: 17-SEP-15 17:32 (MT)
Version: FINAL

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1670642

Project P.O. #:	PO16375
Job Reference:	AKHM-14-03 BENTHIC PROGRAM - BELLEKENO EEM
C of C Numbers:	1
Legal Site Desc:	

Ariel Tang, B.Sc.
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1670642-1	L1670642-2	L1670642-3		
Description	Water	Water	Water		
Sampled Date	09-SEP-15	09-SEP-15	09-SEP-15		
Sampled Time	15:45	15:45	15:58		
Client ID	EXP2	EXP1	REF		
Grouping / **Analyte**					
WATER					
Physical Tests Conductivity (uS/cm)	188	242	201		
Hardness (as CaCO3) (mg/L)	97.6	124	102		
Hardness (from Totals) (mg/L)	92.4	117	95.5		
pH (pH)	7.52	7.47	7.40		
Total Suspended Solids (mg/L)	4.6	4.6	7.8		
Turbidity (NTU)	2.75	2.40	3.56		
Anions and Nutrients Alkalinity, Total (as CaCO3) (mg/L)	39.8	38.1	35.7		
Ammonia, Total (as N) (mg/L)	0.223	0.359	0.254		
Bromide (Br) (mg/L)	<0.050	<0.050	<0.050		
Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50		
Fluoride (F) (mg/L)	0.049	0.047	0.044		
Nitrate (as N) (mg/L)	0.0745	0.0693	0.0576		
Nitrite (as N) (mg/L)	<0.0010	0.0010	<0.0010		
Sulfate (SO4) (mg/L)	55.2	81.3	62.4		
Anion Sum (meq/L)	1.95	2.46	2.02		
Cation Sum (meq/L)	2.02	2.56	2.10		
Cation - Anion Balance (%)	1.8	1.9	2.0		
Organic / Inorganic Carbon Dissolved Organic Carbon (mg/L)	2.12	1.88	1.71		
Total Metals Aluminum (Al)-Total (mg/L)	0.205	0.0156	0.178		
Antimony (Sb)-Total (mg/L)	0.00039	0.00045	0.00043		
Arsenic (As)-Total (mg/L)	0.00241	0.00247	0.00288		
Barium (Ba)-Total (mg/L)	0.0567	0.0539	0.0576		
Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050		
Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010		
Cadmium (Cd)-Total (mg/L)	0.00154	0.000454	0.000634		
Calcium (Ca)-Total (mg/L)	28.3	35.0	29.0		
Chromium (Cr)-Total (mg/L)	0.00046	0.00015	0.00058		
Cobalt (Co)-Total (mg/L)	0.00022	0.00016	0.00021		
Copper (Cu)-Total (mg/L)	0.00181	0.00073	0.00148		
Iron (Fe)-Total (mg/L)	0.343	0.021	0.344		
Lead (Pb)-Total (mg/L)	0.00327	0.000570	0.00556		
Lithium (Li)-Total (mg/L)	0.0016	0.0018	0.0011		
Magnesium (Mg)-Total (mg/L)	5.25	7.14	5.63		
Manganese (Mn)-Total (mg/L)	0.0202	0.0276	0.0221		
Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050	<0.0000050		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1670642-1	L1670642-2	L1670642-3		
Description	Water	Water	Water		
Sampled Date	09-SEP-15	09-SEP-15	09-SEP-15		
Sampled Time	15:45	15:45	15:58		
Client ID	EXP2	EXP1	REF		
Grouping / **Analyte**					
WATER					
Total Metals Molybdenum (Mo)-Total (mg/L)	0.000214	0.000234	0.000222		
Nickel (Ni)-Total (mg/L)	0.00096	0.00121	0.00122		
Phosphorus (P)-Total (mg/L)	0.149	0.077	0.154		
Potassium (K)-Total (mg/L)	0.38	0.27	0.30		
Selenium (Se)-Total (mg/L)	0.000630	0.000673	0.000653		
Silicon (Si)-Total (mg/L)	2.89	2.47	2.74		
Silver (Ag)-Total (mg/L)	0.000029	<0.000010	0.000033		
Sodium (Na)-Total (mg/L)	0.945	1.11	0.818		
Strontium (Sr)-Total (mg/L)	0.0794	0.102	0.0829		
Sulfur (S)-Total (mg/L)	18.9	28.3	21.1		
Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010		
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010		
Titanium (Ti)-Total (mg/L)	0.00583	<0.00030	0.00405		
Uranium (U)-Total (mg/L)	0.000188	0.000486	0.000151		
Vanadium (V)-Total (mg/L)	0.00103	<0.00050	0.00082		
Zinc (Zn)-Total (mg/L)	0.102	0.0378	0.0309		
Zirconium (Zr)-Total (mg/L)	<0.00030	<0.00030	<0.00030		
Dissolved Metals Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD		
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD		
Aluminum (Al)-Dissolved (mg/L)	0.0308	0.0144	0.0139		
Antimony (Sb)-Dissolved (mg/L)	0.00033	0.00040	0.00036		
Arsenic (As)-Dissolved (mg/L)	0.00179	0.00241	0.00242		
Barium (Ba)-Dissolved (mg/L)	0.0555	0.0550	0.0575		
Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050		
Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010		
Cadmium (Cd)-Dissolved (mg/L)	0.00152	0.000460	0.000540		
Calcium (Ca)-Dissolved (mg/L)	30.0	37.3	31.2		
Chromium (Cr)-Dissolved (mg/L)	0.00013	0.00010	0.00012		
Cobalt (Co)-Dissolved (mg/L)	<0.00010	0.00015	<0.00010		
Copper (Cu)-Dissolved (mg/L)	0.00089	0.00058	0.00059		
Iron (Fe)-Dissolved (mg/L)	0.037	0.018	0.016		
Lead (Pb)-Dissolved (mg/L)	0.000419	0.000347	0.000600		
Lithium (Li)-Dissolved (mg/L)	0.0010	0.0014	<0.0010		
Magnesium (Mg)-Dissolved (mg/L)	5.50	7.48	5.85		
Manganese (Mn)-Dissolved (mg/L)	0.0138	0.0266	0.0120		
Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1670642-1 Water 09-SEP-15 15:45 EXP2	L1670642-2 Water 09-SEP-15 15:45 EXP1	L1670642-3 Water 09-SEP-15 15:58 REF		
WATER						
Dissolved Metals	Molybdenum (Mo)-Dissolved (mg/L)	0.000210	0.000233	0.000197		
	Nickel (Ni)-Dissolved (mg/L)	0.00055	0.00115	0.00077		
	Phosphorus (P)-Dissolved (mg/L)	0.088	0.079	0.089		
	Potassium (K)-Dissolved (mg/L)	0.34	0.31	0.26		
	Selenium (Se)-Dissolved (mg/L)	0.000693	0.000674	0.000632		
	Silicon (Si)-Dissolved (mg/L)	2.66	2.55	2.56		
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Sodium (Na)-Dissolved (mg/L)	0.912	1.09	0.819		
	Strontium (Sr)-Dissolved (mg/L)	0.0816	0.102	0.0834		
	Sulfur (S)-Dissolved (mg/L)	18.9	27.7	21.3		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	<0.0012 DLM	<0.00030	<0.00030		
	Uranium (U)-Dissolved (mg/L)	0.000176	0.000481	0.000135		
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Zinc (Zn)-Dissolved (mg/L)	0.0937	0.0382	0.0235		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Antimony (Sb)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Arsenic (As)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Beryllium (Be)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Cadmium (Cd)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Chromium (Cr)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Copper (Cu)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Lead (Pb)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Nickel (Ni)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Selenium (Se)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Silver (Ag)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Thallium (Tl)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Tin (Sn)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Titanium (Ti)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Vanadium (V)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Zinc (Zn)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1670642-1, -2, -3
Duplicate	Bromide (Br)	DLM	L1670642-1, -2, -3
Duplicate	Bromide (Br)	DLM	L1670642-1, -2, -3
Matrix Spike	Barium (Ba)-Total	MS-B	L1670642-1, -2, -3
Matrix Spike	Manganese (Mn)-Total	MS-B	L1670642-1, -2, -3
Matrix Spike	Sodium (Na)-Total	MS-B	L1670642-1, -2, -3
Matrix Spike	Strontium (Sr)-Total	MS-B	L1670642-1, -2, -3
Matrix Spike	Copper (Cu)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Zinc (Zn)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Ammonia, Total (as N)	MS-B	L1670642-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Aluminum (Al)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1670642-1, -2, -3
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1670642-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)

Reference Information

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.

CL-IC-N-WR Water Chloride in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-MAN-WR Water Conductivity by Meter APHA 2510 (B)

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using an electrode.

F-IC-N-WR Water Fluoride in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA Water Hardness APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA Water Diss. Mercury in Water by CVAAS or CVAFS APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA Water Total Mercury in Water by CVAAS or CVAFS EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA Water Ion Balance Calculation APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Reference Information

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-MAN-WR	Water	pH by Meter	APHA 4500-H+

pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 – 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.

S-DIS-ICP-VA	Water	Dissolved Sulfur in Water by ICPOES	EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA	Water	Total Sulfur in Water by ICPOES	EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TSS-LOW-WR	Water	Total Suspended Solids by Grav. (1 mg/L)	APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

VIC100-T-HARDNESS-VA	Water	Hardness from Total Metals	APHA 2340B

Custom Calculation for Hardness. Client is requesting when Total Metals are run, only Total metals are used for hardness calculation.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1

Reference Information

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1670642-COFC

COC Number: 14 -

Page ___ of ___

Report To		Report Format / Distribution	Turnaround Time (TAT) is not available for all tests
Company:	Alexco Environmental Group Inc.	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Audrey Sanfacon	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	#3 Calcite Business Centre 151 Industrial Road, Whitehorse, YT Y1A 2V3	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
Phone:	668-6463	Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
		Email 1 or Fax	Specify Date Required for E2,E or P:
		Email 2	

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax
Contact:		Email 2

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:		GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-TITR-TOT-ONLY-VA	PH-PCT-VA, EC-PCT-VA, BR-L-IC-N-VA	ANIONS-ALL-IC-WR, TSS-LOW-WR	TDS-CALC-VA, IONBALANCE-VA	CARBONS-DOC-VA	NH3-F-VA	VIC100-MET-T-LOW-VA	VIC100-MET-D-LOW-VA	Number of Containers
						F/P	P		P	P	F/P		
	EXP 2	9/9/2015	15:45	Water									7
	EXP 1	9/9/2015	15:45	Water									7
	REF	9/9/2015	15:58	Water									7

Short Holding Time

Rush Processing

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐	SIF Observations Yes ☐ No ☐
Ice packs ☐ Yes ☐ No	Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐	

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
2.1 [illegible]	5.C-8C

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Charles Blysak	Date: 20/08/15	Time: 17:00	Received by:	Date: Aug 11	Time: 10:00	Received by: Shayon	Date: Sept 11	Time: 1430

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

ALS-FM-0320a v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Alexco Environmental Group Inc.
ATTN: Audrey Sanfacon
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 19-SEP-15
Report Date: 29-SEP-15 15:20 (MT)
Version: FINAL

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1675902

Project P.O. #: PO16375
Job Reference: AKHM-14-03 BENTHIC PROGRAM - BELLEKENO EEM
C of C Numbers:
Legal Site Desc:

Ariel Tang, B.Sc.
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1675902-1	L1675902-2	L1675902-3	L1675902-4	
Description	Water	Water	Water	Water	
Sampled Date	16-SEP-15	16-SEP-15	16-SEP-15	16-SEP-15	
Sampled Time	20:30	20:45	21:00	21:15	
Client ID	EXP 2	EXP 1	REF	EXP 3	
Grouping	**Analyte**				
WATER					
Physical Tests	Conductivity (uS/cm)	196	240	202	239
	Hardness (as CaCO3) (mg/L)	101	125	103	124
	Hardness (from Totals) (mg/L)	101	126	104	124
	pH (pH)	7.84	7.82	7.76	7.79
	Total Suspended Solids (mg/L)	49.7	3.2	4.6	3.4
	Total Dissolved Solids (mg/L)	120	153	124	152
	Turbidity (NTU)	29.9	1.96	4.36	1.95
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	37.8	37.9	35.2	37.3
	Ammonia, Total (as N) (mg/L)	0.359	0.577	0.411	0.606
	Bromide (Br) (mg/L)	<0.050	<0.050	<0.050	<0.050
	Chloride (Cl) (mg/L)	0.50	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.047	0.045	0.044	0.048
	Nitrate (as N) (mg/L)	0.0789	0.0721	0.0622	0.0709
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)	57.1	82.0	63.0	82.2
	Anion Sum (meq/L)	1.97	2.47	2.02	2.47
	Cation Sum (meq/L)	2.11	2.60	2.14	2.59
	Cation - Anion Balance (%)	3.5	2.5	2.9	2.4
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	2.42	2.11	2.22	2.32
Total Metals	Aluminum (Al)-Total (mg/L)	2.79	0.202	0.288	0.287
	Antimony (Sb)-Total (mg/L)	0.00080	0.00043	0.00040	0.00044
	Arsenic (As)-Total (mg/L)	0.0140	0.00279	0.00287	0.00267
	Barium (Ba)-Total (mg/L)	0.102	0.0590	0.0611	0.0583
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000909	0.000411	0.000584	0.000381
	Calcium (Ca)-Total (mg/L)	30.8	38.1	31.9	37.5
	Chromium (Cr)-Total (mg/L)	0.00540	0.00058	0.00068	0.00067
	Cobalt (Co)-Total (mg/L)	0.00339	0.00028	0.00026	0.00029
	Copper (Cu)-Total (mg/L)	0.0139	0.00146	0.00168	0.00153
	Iron (Fe)-Total (mg/L)	5.11	0.318	0.409	0.367
	Lead (Pb)-Total (mg/L)	0.0103	0.00247	0.00347	0.00226
	Lithium (Li)-Total (mg/L)	0.0046	0.0021	0.0015	0.0022
	Magnesium (Mg)-Total (mg/L)	5.92	7.61	5.95	7.43
	Manganese (Mn)-Total (mg/L)	0.0724	0.0315	0.0217	0.0308

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1675902-1	L1675902-2	L1675902-3	L1675902-4	
Description	Water	Water	Water	Water	
Sampled Date	16-SEP-15	16-SEP-15	16-SEP-15	16-SEP-15	
Sampled Time	20:30	20:45	21:00	21:15	
Client ID	EXP 2	EXP 1	REF	EXP 3	
Grouping / **Analyte**					
WATER					
Total Metals Mercury (Hg)-Total (mg/L)	0.0000206	<0.0000050	<0.0000050	<0.0000050	
Molybdenum (Mo)-Total (mg/L)	0.000476	0.000272	0.000261	0.000273	
Nickel (Ni)-Total (mg/L)	0.0122	0.00161	0.00129	0.00165	
Phosphorus (P)-Total (mg/L)	0.345	0.180	0.221	0.184	
Potassium (K)-Total (mg/L)	0.87	0.44	0.48	0.50	
Selenium (Se)-Total (mg/L)	0.000703	0.000728	0.000671	0.000695	
Silicon (Si)-Total (mg/L)	7.03	2.93	3.08	3.10	
Silver (Ag)-Total (mg/L)	0.000324	0.000017	0.000023	0.000020	
Sodium (Na)-Total (mg/L)	1.05	1.29	1.02	1.26	
Strontium (Sr)-Total (mg/L)	0.0841	0.106	0.0917	0.108	
Sulfur (S)-Total (mg/L)	18.3	27.8	21.4	27.3	
Thallium (Tl)-Total (mg/L)	0.000029	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total (mg/L)	0.103	<0.0090 DLM	0.00871	<0.012 DLM	
Uranium (U)-Total (mg/L)	0.000864	0.000516	0.000182	0.000508	
Vanadium (V)-Total (mg/L)	0.00728	0.00068	0.00100	0.00100	
Zinc (Zn)-Total (mg/L)	0.0886	0.0306	0.0287	0.0292	
Zirconium (Zr)-Total (mg/L)	0.00138	<0.00030	0.00034	<0.00030	
Dissolved Metals Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	
Aluminum (Al)-Dissolved (mg/L)	0.0170	0.0073	0.0097	0.0192	
Antimony (Sb)-Dissolved (mg/L)	0.00029	0.00037	0.00034	0.00039	
Arsenic (As)-Dissolved (mg/L)	0.00171	0.00221	0.00225	0.00222	
Barium (Ba)-Dissolved (mg/L)	0.0578	0.0533	0.0538	0.0528	
Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	
Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (mg/L)	0.000521	0.000328	0.000480	0.000333	
Calcium (Ca)-Dissolved (mg/L)	31.4	37.9	31.7	37.7	
Chromium (Cr)-Dissolved (mg/L)	0.00012	0.00011	0.00011	0.00010	
Cobalt (Co)-Dissolved (mg/L)	0.00017	0.00011	<0.00010	0.00013	
Copper (Cu)-Dissolved (mg/L)	0.00085	0.00052	0.00057	0.00092	
Iron (Fe)-Dissolved (mg/L)	0.034	0.025	0.014	0.018	
Lead (Pb)-Dissolved (mg/L)	0.000400	0.000241	0.000309	0.000310	
Lithium (Li)-Dissolved (mg/L)	0.0017	0.0017	0.0011	0.0018	
Magnesium (Mg)-Dissolved (mg/L)	5.55	7.33	5.78	7.26	
Manganese (Mn)-Dissolved (mg/L)	0.0144	0.0202	0.0105	0.0205	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1675902-1 Water 16-SEP-15 20:30 EXP 2	L1675902-2 Water 16-SEP-15 20:45 EXP 1	L1675902-3 Water 16-SEP-15 21:00 REF	L1675902-4 Water 16-SEP-15 21:15 EXP 3	
Sample ID						
Description						
Sampled Date						
Sampled Time						
Client ID						
WATER						
Dissolved Metals	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
	Molybdenum (Mo)-Dissolved (mg/L)	0.000275	0.000221	0.000207	0.000231	
	Nickel (Ni)-Dissolved (mg/L)	0.00066	0.00104	0.00064	0.00129	
	Phosphorus (P)-Dissolved (mg/L)	0.196	0.143	0.166	0.160	
	Potassium (K)-Dissolved (mg/L)	0.46	0.39	0.35	0.39	
	Selenium (Se)-Dissolved (mg/L)	0.000679	0.000688	0.000678	0.000635	
	Silicon (Si)-Dissolved (mg/L)	2.61	2.44	2.41	2.44	
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	
	Sodium (Na)-Dissolved (mg/L)	0.984	1.20	0.949	1.24	
	Strontium (Sr)-Dissolved (mg/L)	0.0832	0.102	0.0869	0.102	
	Sulfur (S)-Dissolved (mg/L)	18.6	26.9	20.9	27.2	
	Thallium (Tl)-Dissolved (mg/L)	0.000010	<0.000010	<0.000010	<0.000010	
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	
	Titanium (Ti)-Dissolved (mg/L)	0.00050	<0.00030	<0.00030	0.00033	
	Uranium (U)-Dissolved (mg/L)	0.000268	0.000454	0.000140	0.000459	
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	
	Zinc (Zn)-Dissolved (mg/L)	0.0352	0.0226	0.0206	0.0238	
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Antimony (Sb)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Beryllium (Be)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Boron (B)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Copper (Cu)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Lead (Pb)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Nickel (Ni)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Selenium (Se)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Silver (Ag)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Thallium (Tl)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Tin (Sn)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Titanium (Ti)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Vanadium (V)-Dissolved	DLA	L1675902-1, -2, -3, -4
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1675902-1, -2, -3, -4
Matrix Spike	Barium (Ba)-Total	MS-B	L1675902-1, -2, -3, -4
Matrix Spike	Strontium (Sr)-Total	MS-B	L1675902-1, -2, -3, -4

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLM	Detection Limit Adjusted due to sample matrix effects.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2

This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.

BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.

CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA	Water	Hardness	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA	Water	Diss. Mercury in Water by CVAAS or CVAFS	APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions)

Reference Information

should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

Reference Information

S-TOT-ICP-VA	Water	Total Sulfur in Water by ICPOES	EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA	Water	TDS (Calculated)	APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-LOW-WR	Water	Total Suspended Solids by Grav. (1 mg/L)	APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

VIC100-T-HARDNESS-VA	Water	Hardness from Total Metals	APHA 2340B

Custom Calculation for Hardness. Client is requesting when Total Metals are run, only Total metals are used for hardness calculation.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1675902-COFC

COC Number: 14 -

Page ___ of ___

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Alexco Environmental Group Inc.	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Audrey Sanfacon	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	#3 Calcite Business Centre 151 Industrial Road, Whitehorse, YT Y1A 2V3	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	668-6463	Email 1 or Fax	Specify Date Required for E2,E or P:
		Email 2	

Invoice To		Invoice Distribution
	Same as Report To ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
	Copy of Invoice with Report ☐ Yes ☐ No	
Company:		Email 1 or Fax
Contact:		Email 2

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:		GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-TITR-TOT-ONLY-VA	PH-PCT-VA, EC-PCT-VA, BR-L-IC-N-VA	ANIONS-ALL-IC-WR, TSS-LOW-WR	TDS-CALC-VA, IONBALANCE-VA	CARBONS-DOC-VA	NH3-F-VA	VIC100-MET-T-LOW-VA	VIC100-MET-D-LOW-VA	Number of Containers
						F/P	P		P	P	F/P		
	EXP 2	9/16/2015	20:30	Water									7
	EXP 1	9/16/2015	20:45	Water									7
	REF	9/16/2015	21:00	Water									7
	EXP 3	9/16/2015	21:15	Water									

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen		SIF Observations	Yes	No
Ice packs	Yes ☐ No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐			

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
2 [redacted]	3 4 [redacted] cooler [redacted]

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Charles Blysak	Date: 18/09/15	Time: 17:00	Received by: Shyuno	Date: 19 Sep 15	Time: 0930	Received by: [redacted]	Date: Sep 22	Time: 10Am

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Alexco Environmental Group Inc.
ATTN: Audrey Sanfacon
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 22-SEP-15
Report Date: 29-SEP-15 18:10 (MT)
Version: FINAL

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1676392

Project P.O. #: PO16375
Job Reference: AKHM-14-03 FISH STUDY - BELLEKENO EEM
C of C Numbers:
Legal Site Desc:

Ariel Tang, B.Sc.
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1676392-1				
	Description	Water				
	Sampled Date					
	Sampled Time					
	Client ID	TRIP BLANK				
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	<2.0				
	Hardness (from Totals) (mg/L)	<0.50				
	pH (pH)	5.37				
	Total Suspended Solids (mg/L)	<1.0				
	Total Dissolved Solids (mg/L)	1.2				
	Turbidity (NTU)	<0.10				
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	<1.0				
	Ammonia, Total (as N) (mg/L)	0.0058 RRV				
	Bromide (Br) (mg/L)	<0.050				
	Chloride (Cl) (mg/L)	<0.50				
	Fluoride (F) (mg/L)	<0.020				
	Nitrate (as N) (mg/L)	<0.0050				
	Nitrite (as N) (mg/L)	<0.0010				
	Sulfate (SO4) (mg/L)	<0.30				
	Anion Sum (meq/L)	<0.10				
	Cation Sum (meq/L)	<0.10				
	Cation - Anion Balance (%)	0.0				
Organic / Inorganic Carbon	Total Organic Carbon (mg/L)	1.15 RRV				
Total Metals	Aluminum (Al)-Total (mg/L)	<0.0030				
	Antimony (Sb)-Total (mg/L)	<0.00010				
	Arsenic (As)-Total (mg/L)	<0.00010				
	Barium (Ba)-Total (mg/L)	<0.000050				
	Beryllium (Be)-Total (mg/L)	<0.00010				
	Bismuth (Bi)-Total (mg/L)	<0.000050				
	Boron (B)-Total (mg/L)	<0.010				
	Cadmium (Cd)-Total (mg/L)	<0.0000050				
	Calcium (Ca)-Total (mg/L)	<0.050				
	Chromium (Cr)-Total (mg/L)	<0.00010				
	Cobalt (Co)-Total (mg/L)	<0.00010				
	Copper (Cu)-Total (mg/L)	<0.00050				
	Iron (Fe)-Total (mg/L)	<0.010				
	Lead (Pb)-Total (mg/L)	<0.000050				
	Lithium (Li)-Total (mg/L)	<0.0010				
	Magnesium (Mg)-Total (mg/L)	<0.10				
	Manganese (Mn)-Total (mg/L)	<0.00010				
	Mercury (Hg)-Total (mg/L)	<0.0000050				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1676392-1				
	Description	Water				
	Sampled Date					
	Sampled Time					
	Client ID	TRIP BLANK				
Grouping	**Analyte**					
WATER						
Total Metals	Molybdenum (Mo)-Total (mg/L)	<0.000050				
	Nickel (Ni)-Total (mg/L)	<0.00050				
	Phosphorus (P)-Total (mg/L)	<0.050				
	Potassium (K)-Total (mg/L)	<0.10				
	Selenium (Se)-Total (mg/L)	<0.000050				
	Silicon (Si)-Total (mg/L)	<0.050				
	Silver (Ag)-Total (mg/L)	<0.000010				
	Sodium (Na)-Total (mg/L)	<0.050				
	Strontium (Sr)-Total (mg/L)	<0.00020				
	Sulfur (S)-Total (mg/L)	<0.50				
	Thallium (Tl)-Total (mg/L)	<0.000010				
	Tin (Sn)-Total (mg/L)	<0.00010				
	Titanium (Ti)-Total (mg/L)	<0.00030				
	Uranium (U)-Total (mg/L)	<0.000010				
	Vanadium (V)-Total (mg/L)	<0.00050				
	Zinc (Zn)-Total (mg/L)	<0.0030				
	Zirconium (Zr)-Total (mg/L)	<0.00030				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Alkalinity, Total (as CaCO3)	B	L1676392-1
Duplicate	Bromide (Br)	DLM	L1676392-1
Certified Reference Material	Conductivity	LCS-H	L1676392-1
Matrix Spike	Sulfate (SO4)	MS-B	L1676392-1
Matrix Spike	Sulfate (SO4)	MS-B	L1676392-1
Matrix Spike	Total Organic Carbon	MS-B	L1676392-1
Matrix Spike	Total Organic Carbon	MS-B	L1676392-1
Matrix Spike	Total Organic Carbon	MS-B	L1676392-1
Matrix Spike	Ammonia, Total (as N)	MS-B	L1676392-1

Qualifiers for Individual Parameters Listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. All associated sample results are at least 5 times greater than blank levels and are considered reliable.
DLM	Detection Limit Adjusted due to sample matrix effects.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TITR-VA	Water	Alkalinity Species by Titration	APHA 2320 Alkalinity

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CARBONS-TOC-VA	Water	Total organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)".

CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA	Water	Total Metals in Water by ICPOES	EPA 3005A/6010B

Reference Information

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA	Water	Ammonia in Water by Fluorescence	APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-TOT-ICP-VA	Water	Total Sulfur in Water by ICPOES	EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA	Water	TDS (Calculated)	APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-LOW-WR	Water	Total Suspended Solids by Grav. (1 mg/L)	APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

VIC100-T-HARDNESS-VA	Water	Hardness from Total Metals	APHA 2340B

Custom Calculation for Hardness. Client is requesting when Total Metals are run, only Total metals are used for hardness calculation.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1676392-COFC

COC Number: 14 -

Page ____ of ____

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Alexco Environmental Group Inc.	Select Report Format: ☐PDF ☐EXCEL ☐EDD (DIGITAL)	R ☑Regular (Standard TAT if received by 3 pm - business days)
Contact:	Audrey Sanfacon	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	#3 Calcite Business Centre 151 Industrial Road, Whitehorse, YT Y1A 2V3	☐Criteria on Report - provide details below if box checked Select Distribution: ☐EMAIL ☐MAIL ☐FAX	E ☐Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT E2 ☐Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	668-6463	Email 1 or Fax nichole@accessconsulting.ca,asanfacon@accessco	Specify Date Required for E2,E or P:
		Email 2 kwoloshyn@alexcoresource.com	

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	Analysis Request
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐EMAIL ☐MAIL ☐FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	PO16375	Approver ID:	Cost Center:
Job #:	AKHM-14-03 Fish study - BELLEKENO EEM	GL Account:	Routing Code:
PO / AFE:	PO16375	Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-TITR-TOT-ONLY-VA	PH-PCT-VA, EC-PCT-VA, BR-L-IC-N-VA	ANIONS-ALL-IC-WR, TSS-LOW-WR	TDS-CALC-VA, IONBALANCE-VA	CARBONS-DOC-VA	NH3-F-VA	VIC100-MET-T-LOW-VA	VIC100-MET-D-LOW-VA	Turbidity	Number of Containers
							F/P	P		P	P	F/P		
	Trip blank	Aug-08	0:00	water	R	R	R	R	R	R	R	R	R	7

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)	SAMPLE CONDITION AS RECEIVED (lab use only)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	Rest Samples for fish study	Frozen ☐ SIF Observations Yes ☐ No ☐
Are samples for human drinking water use? ☐ Yes ☐ No		Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐
		Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
5.4					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	22 Sept 1	900 am		22 Sept 15	0900			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

APPENDIX B-3

Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
1	08-Aug	Ref	1	75.21	69.25	3.199	0.963	
2	08-Aug	Ref	2	88.78	81.64	5.193	0.954	
3	08-Aug	Ref	3	83.29	77.05	4.469	0.977	
4	08-Aug	Ref	4	87.80	80.46	5.024	0.965	
5	08-Aug	Ref	5	76.79	71.79	3.133	0.847	
6	08-Aug	Ref	6	85.15	79.71	4.477	0.884	
7	08-Aug	Ref	7	75.98	73.00	3.062	0.787	
8	08-Aug	Ref	8	82.16	77.12	4.346	0.948	
9	08-Aug	Ref	9	85.65	80.17	4.638	0.900	
10	08-Aug	Ref	10	81.60	74.64	4.229	1.017	
11	08-Aug	Ref	11	74.01	70.12	3.155	0.915	
12	08-Aug	Ref	12	83.94	78.84	4.528	0.924	
13	08-Aug	Ref	13	77.76	73.69	3.284	0.821	
14	08-Aug	Ref	14	87.21	80.64	4.990	0.952	
15	08-Aug	Ref	15	78.74	72.83	3.702	0.958	
16	08-Aug	Ref	16	71.25	66.26	2.482	0.853	
17	08-Aug	Ref	17	85.96	81.54	4.556	0.840	
18	08-Aug	Ref	18	79.63	75.11	3.687	0.870	
19	08-Aug	Ref	19	79.64	75.76	3.843	0.884	
20	08-Aug	Ref	20	71.21	67.39	2.679	0.875	
21	08-Aug	Ref	21	83.71	79.71	4.516	0.892	
22	08-Aug	Ref	22	82.09	75.88	3.941	0.902	
23	08-Aug	Ref	23	82.98	78.43	4.253	0.882	
24	08-Aug	Ref	24	83.75	78.39	4.632	0.962	
25	08-Aug	Ref	25	85.65	80.40	4.451	0.856	
26	08-Aug	Ref	26	77.90	72.62	3.273	0.855	
27	08-Aug	Ref	27	84.47	78.92	4.502	0.916	
28	08-Aug	Ref	28	80.91	75.73	4.004	0.922	
29	08-Aug	Ref	29	82.22	78.57	4.118	0.849	
30	08-Aug	Ref	30	83.62	79.09	4.750	0.960	
31	08-Aug	Ref	31	89.95	85.07	5.981	0.972	
32	08-Aug	Ref	32	79.61	74.30	3.750	0.914	
33	08-Aug	Ref	33	82.67	77.87	4.164	0.882	
34	08-Aug	Ref	34	82.48	78.52	4.065	0.840	
35	08-Aug	Ref	35	91.57	85.92	5.524	0.871	
36	08-Aug	Ref	36	77.94	73.18	3.285	0.838	
37	08-Aug	Ref	37	81.61	76.23	3.866	0.873	
38	08-Aug	Ref	38	81.05	77.74	3.904	0.831	
39	08-Aug	Ref	39	73.73	69.08	2.671	0.810	
40	08-Aug	Ref	40	88.01	83.30	4.774	0.826	
41	08-Aug	Ref	41	82.10	78.32	3.822	0.796	
42	08-Aug	Ref	42	80.49	76.41	3.890	0.872	
43	08-Aug	Ref	43	75.30	70.12	3.089	0.896	
44	08-Aug	Ref	44	86.28	81.05	4.324	0.812	
45	08-Aug	Ref	45	91.89	85.62	5.800	0.924	
46	08-Aug	Ref	46	83.57	79.32	4.363	0.874	
47	08-Aug	Ref	47	76.87	83.05	3.393	0.592	
48	08-Aug	Ref	48	70.94	68.01	2.569	0.817	
49	08-Aug	Ref	49	82.72	77.53	4.321	0.927	
50	08-Aug	Ref	50	77.86	73.79	4.439	1.105	Lordosis
51	08-Aug	Ref	51	76.33	72.15	3.309	0.881	
52	08-Aug	Ref	52	81.33	76.89	3.720	0.818	
53	08-Aug	Ref	53	69.85	65.90	2.477	0.866	
54	08-Aug	Ref	54	68.97	65.35	2.117	0.759	
55	08-Aug	Ref	55	80.25	75.05	3.706	0.877	
56	08-Aug	Ref	56	75.77	72.26	3.021	0.801	
57	08-Aug	Ref	57	80.55	76.67	3.910	0.868	
58	08-Aug	Ref	58	86.02	80.62	4.843	0.924	

APPENDIX B-3

Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
59	08-Aug	Ref	59	85.39	78.77	4.660	0.953	
60	08-Aug	Ref	60	84.59	79.64	4.439	0.879	
61	08-Aug	Ref	61	81.88	78.21	4.286	0.896	
62	08-Aug	Ref	62	78.91	75.08	3.742	0.884	
63	08-Aug	Ref	63	77.30	72.57	3.175	0.831	
64	08-Aug	Ref	64	82.79	77.98	4.159	0.877	
65	08-Aug	Ref	65	82.56	78.40	4.316	0.896	
66	08-Aug	Ref	66	76.76	72.38	3.258	0.859	
67	08-Aug	Ref	67	81.18	77.10	4.176	0.911	
68	08-Aug	Ref	68	74.75	71.36	2.864	0.788	
69	08-Aug	Ref	69	81.48	77.75	3.966	0.844	
70	08-Aug	Ref	70	90.86	84.90	5.306	0.867	
71	08-Aug	Ref	71	79.99	94.64	3.639	0.429	
72	08-Aug	Ref	72	89.10	83.71	4.864	0.829	
73	08-Aug	Ref	73	81.84	77.17	4.143	0.902	
74	08-Aug	Ref	74	84.22	79.19	4.799	0.966	Abraided tail
75	08-Aug	Ref	75	83.35	80.31	4.201	0.811	
76	08-Aug	Ref	226	78.99	74.06	3.706	0.912	
77	08-Aug	Ref	227	70.54	66.51	2.824	0.960	
78	08-Aug	Ref	228	78.17	75.28	3.699	0.867	
79	08-Aug	Ref	229	87.86	81.85	4.957	0.904	
80	08-Aug	Ref	230	70.88	67.16	2.578	0.851	
81	08-Aug	Ref	231	83.54	79.58	4.306	0.854	
82	08-Aug	Ref	232	83.72	78.98	4.175	0.847	
83	08-Aug	Ref	233	88.14	83.75	5.082	0.865	
84	08-Aug	Ref	234	74.81	71.50	3.088	0.845	
85	08-Aug	Ref	235	89.18	84.55	5.131	0.849	
86	08-Aug	Ref	236	81.35	77.77	3.876	0.824	
87	08-Aug	Ref	237	77.59	73.75	3.506	0.874	
88	08-Aug	Ref	238	76.21	70.98	3.144	0.879	
89	08-Aug	Ref	239	85.06	80.37	4.556	0.878	
90	08-Aug	Ref	240	67.24	62.23	2.293	0.951	
91	08-Aug	Ref	241	83.95	79.88	4.508	0.884	
92	08-Aug	Ref	242	82.10	77.77	4.034	0.858	
93	08-Aug	Ref	243	80.55	77.08	4.098	0.895	
94	08-Aug	Ref	244	84.72	81.29	4.661	0.868	
95	08-Aug	Ref	245	74.35	69.84	3.200	0.939	
96	08-Aug	Ref	246	84.92	80.22	4.423	0.857	
97	08-Aug	Ref	247	86.98	83.70	5.193	0.886	
98	08-Aug	Ref	248	77.45	72.59	3.522	0.921	
99	08-Aug	Ref	249	83.96	78.38	4.450	0.924	
100	08-Aug	Ref	250	75.63	70.87	3.310	0.930	
101	08-Aug	Ref	251	72.21	67.33	2.768	0.907	
102	08-Aug	Ref	252	88.17	83.17	5.365	0.933	
103	08-Aug	Ref	253	85.32	81.61	4.283	0.788	
104	08-Aug	Ref	254	77.52	73.65	3.309	0.828	
105	08-Aug	Ref	255	79.18	73.64	4.077	1.021	
106	08-Aug	Ref	256	76.55	71.77	3.345	0.905	
107	08-Aug	Ref	257	81.40	77.79	4.232	0.899	
108	08-Aug	Ref	258	76.64	71.73	3.504	0.949	
109	08-Aug	Ref	259	81.53	76.98	4.175	0.915	
110	08-Aug	Ref	260	80.49	75.62	3.577	0.827	
111	08-Aug	Ref	261	83.04	79.42	3.989	0.796	
112	08-Aug	Ref	262	81.05	75.85	3.665	0.840	
113	08-Aug	Ref	263	85.91	81.03	4.422	0.831	
114	08-Aug	Ref	264	93.47	89.73	6.088	0.843	
115	08-Aug	Ref	265	85.58	80.53	4.640	0.888	
116	08-Aug	Ref	266	85.37	80.29	4.325	0.836	

APPENDIX B-3

Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
117	08-Aug	Ref	267	90.48	85.21	5.540	0.895	
118	08-Aug	Ref	268	87.78	82.51	5.075	0.903	
119	08-Aug	Ref	269	81.16	77.14	3.769	0.821	
120	08-Aug	Ref	270	84.24	79.26	4.236	0.851	
121	08-Aug	Ref	271	92.69	86.76	5.917	0.906	
122	08-Aug	Ref	272	81.25	77.16	3.830	0.834	
123	08-Aug	Ref	273	86.89	81.14	4.951	0.927	
124	08-Aug	Ref	274	88.04	82.39	4.694	0.839	
125	08-Aug	Ref	275	83.01	78.15	4.102	0.859	
126	08-Aug	Ref	276	79.07	74.74	3.558	0.852	
127	08-Aug	Ref	277	74.17	70.66	3.008	0.853	
128	08-Aug	Ref	278	80.18	76.98	3.934	0.862	
129	08-Aug	Ref	279	85.09	81.94	4.349	0.790	
130	08-Aug	Ref	280	86.83	82.50	4.730	0.842	
131	08-Aug	Ref	281	76.90	73.80	3.560	0.886	
132	08-Aug	Ref	282	88.40	83.93	5.312	0.898	
133	08-Aug	Ref	283	77.48	74.15	3.316	0.813	
134	08-Aug	Ref	284	85.26	80.12	4.861	0.945	
135	08-Aug	Ref	285	80.10	75.85	3.830	0.878	
136	08-Aug	Ref	286	90.08	84.94	5.465	0.892	
137	08-Aug	Ref	287	88.14	85.83	5.190	0.821	
138	08-Aug	Ref	288	83.59	78.10	4.115	0.864	
139	08-Aug	Ref	289	80.79	75.97	3.955	0.902	
140	08-Aug	Ref	290	78.33	73.47	3.385	0.854	
141	08-Aug	Ref	291	78.80	75.44	3.615	0.842	
142	08-Aug	Ref	292	79.89	76.44	3.639	0.815	
143	08-Aug	Ref	293	85.30	79.37	4.832	0.966	
144	08-Aug	Ref	294	74.60	69.41	2.919	0.873	
145	08-Aug	Ref	295	68.86	65.40	2.236	0.799	
146	08-Aug	Ref	296	81.99	77.85	4.481	0.950	
147	08-Aug	Ref	297	84.07	80.21	4.713	0.913	
148	08-Aug	Ref	298	85.26	80.94	4.552	0.858	
149	08-Aug	Ref	299	89.97	85.08	4.875	0.792	
150	08-Aug	Ref	300	86.22	81.60	4.849	0.892	
151	08-Aug	Ref	301	84.27	79.98	4.525	0.884	
152	08-Aug	Ref	302	88.02	82.10	4.885	0.883	
153	08-Aug	Ref	303	81.47	77.49	4.155	0.893	
154	08-Aug	Ref	304	82.18	77.98	3.965	0.836	
155	08-Aug	Ref	305	85.14	81.03	4.820	0.906	
156	08-Aug	Ref	306	88.31	82.07	5.601	1.013	
157	08-Aug	Exp1	76	68.96	63.93	2.203	0.843	
158	08-Aug	Exp1	77	70.28	65.28	2.326	0.836	
159	08-Aug	Exp1	78	81.97	77.46	4.012	0.863	
160	08-Aug	Exp1	79	74.61	70.48	2.941	0.840	
161	08-Aug	Exp1	80	75.17	70.23	3.076	0.888	
162	08-Aug	Exp1	81	87.36	82.04	4.987	0.903	
163	08-Aug	Exp1	82	84.73	80.24	4.404	0.852	
164	08-Aug	Exp1	83	83.23	78.27	4.183	0.872	
165	08-Aug	Exp1	84	81.21	76.29	3.902	0.879	
166	08-Aug	Exp1	85	81.78	77.58	4.248	0.910	
167	08-Aug	Exp1	86	84.95	79.99	4.366	0.853	
168	08-Aug	Exp1	87	75.52	72.72	3.276	0.852	
169	08-Aug	Exp1	88	76.78	73.71	3.254	0.813	
170	08-Aug	Exp1	89	74.49	68.80	2.987	0.917	Abraided tail
171	08-Aug	Exp1	90	73.86	70.61	3.261	0.926	
172	08-Aug	Exp1	91	83.30	79.03	4.726	0.957	
173	08-Aug	Exp1	92	88.39	82.71	5.324	0.941	
174	08-Aug	Exp1	93	82.68	77.20	4.029	0.876	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
175	08-Aug	Exp1	94	89.79	83.57	5.406	0.926	
176	08-Aug	Exp1	95	91.33	84.06	5.734	0.965	
177	08-Aug	Exp1	96	91.51	86.24	5.841	0.911	
178	08-Aug	Exp1	97	84.90	80.45	4.508	0.866	
179	08-Aug	Exp1	98	91.33	87.02	5.614	0.852	
180	08-Aug	Exp1	99	64.05	61.18	1.716	0.749	
181	08-Aug	Exp1	100	68.22	63.32	2.300	0.906	
182	08-Aug	Exp1	101	83.63	80.58	4.069	0.778	
183	08-Aug	Exp1	102	77.35	73.60	3.369	0.845	
184	08-Aug	Exp1	103	83.89	78.53	4.258	0.879	
185	08-Aug	Exp1	104	91.25	85.66	6.161	0.980	
186	08-Aug	Exp1	105	70.28	65.55	2.332	0.828	
187	08-Aug	Exp1	106	86.40	81.33	4.721	0.878	
188	08-Aug	Exp1	107	89.28	84.89	5.436	0.889	
189	08-Aug	Exp1	108	83.48	78.26	4.148	0.865	
190	08-Aug	Exp1	109	82.62	77.93	4.194	0.886	
191	08-Aug	Exp1	110	85.76	79.76	4.738	0.934	
192	08-Aug	Exp1	111	77.91	72.40	3.271	0.862	
193	08-Aug	Exp1	112	84.35	78.67	4.419	0.908	
194	08-Aug	Exp1	113	79.25	74.86	3.358	0.800	
195	08-Aug	Exp1	114	82.71	76.99	4.255	0.932	
196	08-Aug	Exp1	115	87.38	82.34	5.132	0.919	
197	08-Aug	Exp1	116	83.08	78.42	4.328	0.897	
198	08-Aug	Exp1	117	77.26	72.78	3.486	0.904	Cut around mouth
199	08-Aug	Exp1	118	84.36	81.29	4.369	0.813	
200	08-Aug	Exp1	119	84.99	80.20	4.264	0.827	
201	08-Aug	Exp1	120	71.60	65.54	2.641	0.938	
202	08-Aug	Exp1	121	74.39	67.77	2.914	0.936	
203	08-Aug	Exp1	122	80.94	75.91	3.806	0.870	Abraided tail
204	08-Aug	Exp1	123	77.29	72.39	3.396	0.895	
205	08-Aug	Exp1	124	81.38	76.80	3.867	0.854	
206	08-Aug	Exp1	125	81.71	77.11	3.921	0.855	
207	08-Aug	Exp1	126	80.11	74.52	3.543	0.856	
208	08-Aug	Exp1	127	71.39	67.40	2.506	0.818	
209	08-Aug	Exp1	128	70.72	67.68	2.446	0.789	
210	08-Aug	Exp1	129	86.08	79.47	4.364	0.870	
211	08-Aug	Exp1	130	90.37	84.35	5.403	0.900	
212	08-Aug	Exp1	131	83.16	76.77	4.809	1.063	
213	08-Aug	Exp1	132	80.22	74.81	3.596	0.859	
214	08-Aug	Exp1	133	87.68	82.33	5.125	0.918	
215	08-Aug	Exp1	134	80.40	74.77	3.455	0.827	
216	08-Aug	Exp1	135	87.80	82.59	5.467	0.970	
217	08-Aug	Exp1	136	83.73	78.31	3.748	0.780	
218	08-Aug	Exp1	137	83.06	79.54	4.115	0.818	
219	08-Aug	Exp1	138	81.41	77.15	4.503	0.981	
220	08-Aug	Exp1	139	80.01	74.46	3.509	0.850	
221	08-Aug	Exp1	140	89.17	84.01	5.068	0.855	
222	08-Aug	Exp1	141	78.09	73.02	3.546	0.911	
223	08-Aug	Exp1	142	77.78	73.73	3.441	0.859	
224	08-Aug	Exp1	143	73.71	68.30	3.074	0.965	
225	08-Aug	Exp1	144	83.98	79.35	4.204	0.841	
226	08-Aug	Exp1	145	85.54	82.10	4.758	0.860	
227	08-Aug	Exp1	146	78.72	72.87	3.435	0.888	
228	08-Aug	Exp1	147	83.36	78.06	4.157	0.874	
229	08-Aug	Exp1	148	84.98	80.16	4.385	0.851	
230	08-Aug	Exp1	149	82.00	77.21	4.096	0.890	
231	08-Aug	Exp1	150	87.51	82.32	4.834	0.867	
232	08-Aug	Exp1	307	79.28	76.85	4.075	0.898	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
233	08-Aug	Exp1	308	80.72	74.70	4.141	0.993	
234	08-Aug	Exp1	309	87.77	81.65	5.073	0.932	
235	08-Aug	Exp1	310	85.75	80.61	4.649	0.888	
236	08-Aug	Exp1	311	76.77	73.81	3.179	0.791	
237	08-Aug	Exp1	312	75.22	72.11	3.477	0.927	
238	08-Aug	Exp1	313	79.94	74.77	3.861	0.924	
239	08-Aug	Exp1	314	60.98	57.85	1.515	0.783	
240	08-Aug	Exp1	315	71.52	66.98	2.894	0.963	
241	08-Aug	Exp1	316	60.43	55.51	1.609	0.941	
242	08-Aug	Exp1	317	69.22	64.61	2.464	0.914	
243	08-Aug	Exp1	318	77.88	73.09	3.680	0.942	
244	08-Aug	Exp1	319	78.51	72.74	3.482	0.905	
245	08-Aug	Exp1	320	79.71	74.02	3.542	0.873	
246	08-Aug	Exp1	321	79.35	74.67	3.517	0.845	
247	08-Aug	Exp1	322	80.64	73.92	3.867	0.957	323 was missed - no fish record
248	08-Aug	Exp1	324	77.70	72.73	3.274	0.851	
249	08-Aug	Exp1	325	82.14	75.53	3.643	0.845	
250	08-Aug	Exp1	326	80.41	75.32	4.050	0.948	
251	08-Aug	Exp1	327	85.26	80.55	4.255	0.814	
252	08-Aug	Exp1	328	87.63	82.53	5.175	0.921	
253	08-Aug	Exp1	329	87.88	80.94	5.226	0.986	
254	08-Aug	Exp1	330	83.62	78.09	4.259	0.894	
255	08-Aug	Exp1	331	84.19	79.05	4.522	0.915	
256	08-Aug	Exp1	332	82.37	78.30	4.696	0.978	
257	08-Aug	Exp1	333	70.26	66.92	2.554	0.852	
258	08-Aug	Exp1	334	83.79	78.11	4.588	0.963	
259	08-Aug	Exp1	335	84.32	78.01	4.160	0.876	
260	08-Aug	Exp1	336	87.86	82.00	4.990	0.905	
261	08-Aug	Exp1	337	79.74	75.64	3.524	0.814	
262	08-Aug	Exp1	338	76.68	73.75	3.338	0.832	
263	08-Aug	Exp1	339	79.76	75.49	3.794	0.882	
264	08-Aug	Exp1	340	77.82	73.85	3.349	0.832	
265	08-Aug	Exp1	341	77.83	72.78	3.360	0.872	
266	08-Aug	Exp1	342	91.58	85.28	5.862	0.945	
267	08-Aug	Exp1	343	82.62	77.49	4.118	0.885	
268	08-Aug	Exp1	344	76.15	72.24	2.936	0.779	
269	08-Aug	Exp1	345	87.07	83.56	4.667	0.800	
270	08-Aug	Exp1	346	79.75	76.07	3.761	0.854	
271	08-Aug	Exp1	347	81.89	77.41	4.103	0.885	
272	08-Aug	Exp1	348	78.73	73.96	3.422	0.846	
273	08-Aug	Exp1	349	83.75	80.47	4.170	0.800	
274	08-Aug	Exp1	350	82.82	78.58	3.945	0.813	
275	08-Aug	Exp1	351	80.03	75.32	3.907	0.914	
276	08-Aug	Exp1	352	80.63	77.53	3.730	0.800	
277	08-Aug	Exp1	353	84.06	79.97	4.101	0.802	
278	08-Aug	Exp1	354	77.82	74.41	3.342	0.811	
279	08-Aug	Exp1	355	83.80	78.64	4.058	0.834	
280	08-Aug	Exp1	356	77.26	73.81	3.491	0.868	
281	08-Aug	Exp1	357	76.20	72.23	3.127	0.830	
282	08-Aug	Exp1	358	85.61	81.82	4.818	0.880	
283	08-Aug	Exp1	359	84.85	79.13	4.562	0.921	
284	08-Aug	Exp1	360	85.92	80.85	4.521	0.855	
285	08-Aug	Exp1	361	80.85	77.83	3.851	0.817	
286	08-Aug	Exp1	362	87.88	82.64	5.084	0.901	
287	08-Aug	Exp1	363	80.79	76.27	3.785	0.853	
288	08-Aug	Exp1	364	81.90	76.41	4.044	0.906	
289	08-Aug	Exp1	365	82.64	78.55	4.072	0.840	
290	08-Aug	Exp1	366	83.21	79.07	4.505	0.911	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
291	08-Aug	Exp1	367	85.37	79.86	4.664	0.916	
292	08-Aug	Exp1	368	74.56	69.60	2.804	0.832	
293	08-Aug	Exp1	369	92.16	87.34	5.606	0.841	
294	08-Aug	Exp1	370	81.75	77.34	3.870	0.837	
295	08-Aug	Exp1	371	87.78	82.64	4.547	0.806	
296	08-Aug	Exp1	372	86.06	80.89	4.563	0.862	
297	08-Aug	Exp1	373	84.53	80.78	4.089	0.776	
298	08-Aug	Exp1	374	91.20	86.14	5.687	0.890	
299	08-Aug	Exp1	375	77.88	74.38	3.248	0.789	
300	08-Aug	Exp1	376	98.58	93.43	6.903	0.846	
301	08-Aug	Exp1	377	81.96	77.84	3.865	0.819	
302	08-Aug	Exp1	378	60.99	58.90	1.608	0.787	
303	08-Aug	Exp1	379	83.25	79.76	4.317	0.851	
304	08-Aug	Exp1	380	70.27	66.71	2.306	0.777	
305	08-Aug	Exp1	381	85.37	80.63	4.737	0.904	
306	08-Aug	Exp1	382	75.13	71.93	2.969	0.798	
307	08-Aug	Exp2	151	82.56	77.78	4.533	0.963	
308	08-Aug	Exp2	152	85.00	80.40	4.835	0.930	
309	08-Aug	Exp2	153	74.44	71.35	3.283	0.904	
310	08-Aug	Exp2	154	74.06	70.19	3.018	0.873	
311	08-Aug	Exp2	155	81.52	76.96	4.026	0.883	
312	08-Aug	Exp2	156	74.29	70.58	3.149	0.896	
313	08-Aug	Exp2	157	88.78	85.24	5.483	0.885	
314	08-Aug	Exp2	158	86.54	82.16	5.388	0.972	
315	08-Aug	Exp2	159	80.09	76.97	3.834	0.841	
316	08-Aug	Exp2	160	75.84	72.96	3.541	0.912	
317	08-Aug	Exp2	161	87.34	82.11	4.760	0.860	
318	08-Aug	Exp2	162	86.24	81.99	5.424	0.984	
319	08-Aug	Exp2	163	74.87	72.25	3.103	0.823	
320	08-Aug	Exp2	164	89.17	82.00	5.313	0.964	
321	08-Aug	Exp2	165	80.24	75.01	4.019	0.952	
322	08-Aug	Exp2	166	81.50	78.54	4.201	0.867	
323	08-Aug	Exp2	167	77.60	74.00	3.687	0.910	
324	08-Aug	Exp2	168	85.55	81.93	4.576	0.832	
325	08-Aug	Exp2	169	62.59	58.97	2.945	1.436	
326	08-Aug	Exp2	170	80.63	76.93	3.969	0.872	
327	08-Aug	Exp2	171	82.69	79.44	4.333	0.864	
328	08-Aug	Exp2	172	81.73	77.67	4.006	0.855	
329	08-Aug	Exp2	173	79.82	73.96	3.677	0.909	
330	08-Aug	Exp2	174	80.22	74.58	3.821	0.921	
331	08-Aug	Exp2	175	89.09	86.02	5.399	0.848	
332	08-Aug	Exp2	176	74.56	71.93	3.017	0.811	
333	08-Aug	Exp2	177	78.25	73.80	3.227	0.803	
334	08-Aug	Exp2	178	80.62	76.86	4.104	0.904	
335	08-Aug	Exp2	179	76.37	73.53	3.362	0.846	
336	08-Aug	Exp2	180	75.64	71.69	3.088	0.838	
337	08-Aug	Exp2	181	76.27	73.45	3.297	0.832	
338	08-Aug	Exp2	182	69.84	66.57	2.366	0.802	
339	08-Aug	Exp2	183	76.71	73.11	4.895	1.253	
340	08-Aug	Exp2	184	83.53	80.17	4.366	0.847	
341	08-Aug	Exp2	185	85.67	81.01	4.895	0.921	
342	08-Aug	Exp2	186	68.79	64.23	2.776	1.048	
343	08-Aug	Exp2	187	72.87	70.10	2.778	0.806	
344	08-Aug	Exp2	188	85.59	81.65	4.864	0.894	
345	08-Aug	Exp2	189	80.61	76.01	3.774	0.859	
346	08-Aug	Exp2	190	70.84	65.88	2.586	0.904	
347	08-Aug	Exp2	191	85.66	81.45	5.240	0.970	
348	08-Aug	Exp2	192	80.88	76.79	3.965	0.876	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
349	08-Aug	Exp2	193	82.93	78.10	4.267	0.896	
350	08-Aug	Exp2	194	72.34	69.72	2.817	0.831	
351	08-Aug	Exp2	195	91.49	86.28	6.016	0.937	
352	08-Aug	Exp2	196	70.41	67.98	2.318	0.738	
353	08-Aug	Exp2	197	77.62	74.77	3.319	0.794	
354	08-Aug	Exp2	198	77.58	73.15	3.460	0.884	
355	08-Aug	Exp2	199	80.21	76.31	3.718	0.837	
356	08-Aug	Exp2	200	85.87	81.50	5.201	0.961	
357	08-Aug	Exp2	201	84.08	79.22	4.521	0.909	
358	08-Aug	Exp2	202	87.10	82.75	4.711	0.831	
359	08-Aug	Exp2	203	83.47	78.89	4.455	0.907	
360	08-Aug	Exp2	204	85.93	79.18	4.674	0.942	
361	08-Aug	Exp2	205	74.44	71.95	3.298	0.885	
362	08-Aug	Exp2	206	82.21	76.19	3.997	0.904	
363	08-Aug	Exp2	207	79.50	76.45	3.857	0.863	
364	08-Aug	Exp2	208	88.01	81.87	5.188	0.945	
365	08-Aug	Exp2	209	86.15	80.32	4.859	0.938	
366	08-Aug	Exp2	210	81.69	79.92	3.902	0.764	
367	08-Aug	Exp2	211	71.25	66.64	2.620	0.885	
368	08-Aug	Exp2	212	85.93	81.15	4.854	0.908	
369	08-Aug	Exp2	213	59.64	54.43	2.484	1.540	
370	08-Aug	Exp2	214	88.12	84.03	5.588	0.942	
371	08-Aug	Exp2	215	80.08	76.58	4.425	0.985	
372	08-Aug	Exp2	216	81.73	77.91	4.348	0.919	
373	08-Aug	Exp2	217	79.20	73.79	3.560	0.886	
374	08-Aug	Exp2	218	79.73	74.84	4.353	1.038	
375	08-Aug	Exp2	219	84.23	80.06	4.575	0.892	
376	08-Aug	Exp2	220	80.01	76.04	4.068	0.925	
377	08-Aug	Exp2	221	76.47	72.55	3.385	0.886	
378	08-Aug	Exp2	222	81.60	76.54	3.857	0.860	
379	08-Aug	Exp2	223	73.72	69.37	2.931	0.878	
380	08-Aug	Exp2	224	77.79	74.86	3.617	0.862	
381	08-Aug	Exp2	225	72.01	66.59	2.749	0.931	
382	08-Aug	Exp2	383	84.98	79.68	4.613	0.912	
383	08-Aug	Exp2	384	85.46	79.56	4.337	0.861	
384	08-Aug	Exp2	385	89.93	84.45	5.075	0.843	
385	08-Aug	Exp2	386	82.43	75.76	4.261	0.980	
386	08-Aug	Exp2	387	83.40	78.17	4.013	0.840	
387	08-Aug	Exp2	388	80.50	75.37	3.818	0.892	
388	08-Aug	Exp2	389	80.49	76.03	3.850	0.876	
389	08-Aug	Exp2	390	84.51	79.25	4.625	0.929	
390	08-Aug	Exp2	391	80.02	75.46	3.417	0.795	
391	08-Aug	Exp2	392	82.43	77.41	4.583	0.988	
392	08-Aug	Exp2	393	83.88	77.14	4.299	0.937	
393	08-Aug	Exp2	394	66.89	61.18	2.088	0.912	
394	08-Aug	Exp2	395	83.65	78.13	4.308	0.903	
395	08-Aug	Exp2	396	74.52	69.60	3.118	0.925	
396	08-Aug	Exp2	397	78.85	74.00	3.316	0.818	
397	08-Aug	Exp2	398	79.88	73.31	3.574	0.907	
398	08-Aug	Exp2	399	77.25	73.40	3.485	0.881	
399	08-Aug	Exp2	400	82.35	77.14	4.229	0.921	
400	08-Aug	Exp2	401	91.37	85.79	5.602	0.887	
401	08-Aug	Exp2	402	78.92	73.83	3.658	0.909	
402	08-Aug	Exp2	403	89.35	83.27	5.173	0.896	
403	08-Aug	Exp2	404	83.27	78.36	4.189	0.871	
404	08-Aug	Exp2	405	85.59	79.94	4.352	0.852	
405	08-Aug	Exp2	406	84.88	78.24	4.407	0.920	
406	08-Aug	Exp2	407	81.43	75.43	4.128	0.962	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
407	08-Aug	Exp2	408	81.50	76.72	4.008	0.888	
408	08-Aug	Exp2	409	82.23	77.67	4.062	0.867	
409	08-Aug	Exp2	410	79.69	76.31	3.753	0.845	
410	08-Aug	Exp2	411	83.87	79.21	4.474	0.900	
411	08-Aug	Exp2	412	87.59	82.15	4.750	0.857	
412	08-Aug	Exp2	413	82.86	80.01	4.160	0.812	
413	08-Aug	Exp2	414	86.81	81.10	4.382	0.822	
414	08-Aug	Exp2	415	58.73	53.69	1.233	0.797	
415	08-Aug	Exp2	416	76.39	73.14	3.225	0.824	
416	08-Aug	Exp2	417	56.01	51.19	2.476	1.846	extended stomach
417	08-Aug	Exp2	418	82.07	77.50	3.699	0.795	
418	08-Aug	Exp2	419	87.08	82.43	4.925	0.879	
419	08-Aug	Exp2	420	82.44	78.54	3.998	0.825	
420	08-Aug	Exp2	421	88.04	83.43	5.217	0.898	
421	08-Aug	Exp2	422	90.15	85.51	5.048	0.807	
422	08-Aug	Exp2	423	77.28	71.24	3.337	0.923	
423	08-Aug	Exp2	424	86.14	80.53	4.734	0.906	
424	08-Aug	Exp2	425	81.63	76.43	3.964	0.888	
425	08-Aug	Exp2	426	79.01	74.83	3.335	0.796	
426	08-Aug	Exp2	427	82.96	76.99	4.055	0.889	
427	08-Aug	Exp2	428	75.71	71.36	3.056	0.841	
428	08-Aug	Exp2	429	80.02	75.11	3.628	0.856	
429	08-Aug	Exp2	430	83.82	78.60	4.378	0.902	
430	08-Aug	Exp2	431	86.70	79.54	4.818	0.957	
431	08-Aug	Exp2	432	75.28	70.75	3.010	0.850	
432	08-Aug	Exp2	433	86.19	80.79	4.630	0.878	
433	08-Aug	Exp2	434	75.28	80.92	4.639	0.876	
434	08-Aug	Exp2	435	86.61	80.55	4.634	0.887	
435	08-Aug	Exp2	436	87.62	81.91	4.467	0.813	
436	08-Aug	Exp2	437	84.65	78.96	4.423	0.898	
437	08-Aug	Exp2	438	85.41	79.82	4.742	0.932	
438	08-Aug	Exp2	439	88.43	82.27	5.119	0.919	
439	08-Aug	Exp2	440	87.59	79.53	4.831	0.960	
440	08-Aug	Exp2	441	87.43	83.06	4.750	0.829	
441	08-Aug	Exp2	442	78.48	72.52	3.269	0.857	
442	08-Aug	Exp2	443	77.88	72.57	3.812	0.997	
443	08-Aug	Exp2	444	73.57	68.11	3.053	0.966	
444	08-Aug	Exp2	445	83.16	75.94	3.887	0.888	
445	08-Aug	Exp2	446	89.69	82.99	6.077	1.063	
446	08-Aug	Exp2	447	87.14	82.66	5.085	0.900	
447	08-Aug	Exp2	448	75.17	69.97	3.068	0.896	
448	08-Aug	Exp2	449	86.80	80.63	4.727	0.902	
449	08-Aug	Exp2	450	79.56	75.76	3.821	0.879	
450	08-Aug	Exp2	451	85.99	78.36	4.540	0.944	
451	08-Aug	Exp2	452	86.47	80.50	4.733	0.907	
452	08-Aug	Exp2	453	85.89	80.05	4.178	0.814	
453	08-Aug	Exp2	454	83.06	78.79	4.029	0.824	
454	08-Aug	Exp2	455	81.12	76.64	4.070	0.904	
455	08-Aug	Exp2	456	78.61	73.88	3.520	0.873	
456	08-Aug	Exp2	457	84.23	78.29	4.132	0.861	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
1	31-Aug	Ref	1	72.83	69.42	2.864	0.856	
2	31-Aug	Ref	2	90.20	83.63	5.016	0.858	
3	31-Aug	Ref	3	91.51	84.70	5.937	0.977	
4	31-Aug	Ref	4	92.03	86.26	5.315	0.828	
5	31-Aug	Ref	5	89.16	75.48	4.846	1.127	left eye bleeding
6	31-Aug	Ref	6	89.62	82.91	4.810	0.844	
7	31-Aug	Ref	7	85.74	80.03	4.031	0.786	
8	31-Aug	Ref	8	73.15	66.85	2.576	0.862	
9	31-Aug	Ref	9	86.13	80.62	4.801	0.916	
10	31-Aug	Ref	10	85.43	79.03	4.060	0.823	
11	31-Aug	Ref	11	83.88	79.19	4.069	0.819	left eye red
12	31-Aug	Ref	12	88.56	82.55	4.974	0.884	
13	31-Aug	Ref	13	86.56	80.95	4.198	0.791	
14	31-Aug	Ref	14	90.96	85.40	4.811	0.772	
15	31-Aug	Ref	15	80.67	75.36	3.010	0.703	
16	31-Aug	Ref	16	76.19	70.68	2.695	0.763	
17	31-Aug	Ref	17	81.22	76.18	3.312	0.749	
18	31-Aug	Ref	18	87.90	81.55	4.528	0.835	
19	31-Aug	Ref	19	74.87	71.05	2.758	0.769	
20	31-Aug	Ref	20	89.31	83.49	4.868	0.836	
21	31-Aug	Ref	21	87.94	83.00	4.697	0.821	
22	31-Aug	Ref	22	91.95	85.10	5.840	0.948	
23	31-Aug	Ref	23	87.37	82.20	4.751	0.855	
24	31-Aug	Ref	24	89.42	85.19	5.327	0.862	
25	31-Aug	Ref	25	81.37	76.21	3.591	0.811	
26	31-Aug	Ref	26	84.64	79.81	4.382	0.862	
27	31-Aug	Ref	27	86.51	80.39	4.780	0.920	
28	31-Aug	Ref	28	76.99	73.66	3.269	0.818	
29	31-Aug	Ref	29	82.93	77.39	3.862	0.833	
30	31-Aug	Ref	30	88.55	83.56	5.071	0.869	
31	31-Aug	Ref	31	82.05	77.27	3.837	0.832	
32	31-Aug	Ref	32	85.65	80.46	4.371	0.839	
33	31-Aug	Ref	33	96.06	89.81	6.386	0.882	
34	31-Aug	Ref	34	92.82	86.55	5.352	0.825	
35	31-Aug	Ref	35	79.51	74.61	3.803	0.916	
36	31-Aug	Ref	36	91.00	86.22	5.599	0.874	
37	31-Aug	Ref	37	70.96	67.34	2.114	0.692	
38	31-Aug	Ref	38	92.99	87.01	5.142	0.781	
39	31-Aug	Ref	39	89.29	84.96	5.212	0.850	
40	31-Aug	Ref	40	85.56	80.12	4.207	0.818	
41	31-Aug	Ref	41	86.63	82.81	4.673	0.823	
42	31-Aug	Ref	42	93.65	87.08	5.724	0.867	
43	31-Aug	Ref	43	84.71	79.10	3.987	0.806	
44	31-Aug	Ref	44	88.75	83.34	4.711	0.814	
45	31-Aug	Ref	45	82.87	78.34	4.315	0.897	
46	31-Aug	Ref	46	89.86	84.03	4.977	0.839	
47	31-Aug	Ref	47	85.74	80.50	4.335	0.831	
48	31-Aug	Ref	48	81.00	76.62	3.470	0.771	
49	31-Aug	Ref	49	80.15	75.83	3.599	0.825	
50	31-Aug	Ref	50	89.74	84.30	5.152	0.860	
151	31-Aug	Ref	151	83.35	76.83	4.834	1.066	dead- was injured by syphon
51	31-Aug	Exp1	51	93.76	88.42	6.836	0.989	
52	31-Aug	Exp1	52	95.30	90.25	6.522	0.887	
53	31-Aug	Exp1	53	71.36	67.17	2.943	0.971	
54	31-Aug	Exp1	54	65.30	61.75	1.963	0.834	
55	31-Aug	Exp1	55	93.80	87.98	6.720	0.987	
56	31-Aug	Exp1	56	92.48	87.21	6.441	0.971	
57	31-Aug	Exp1	57	89.23	83.60	5.414	0.927	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
58	31-Aug	Exp1	58	87.30	81.84	4.778	0.872	
59	31-Aug	Exp1	59	90.91	85.51	5.935	0.949	
60	31-Aug	Exp1	60	91.62	86.78	6.534	1.000	
61	31-Aug	Exp1	61	86.94	81.49	4.884	0.903	
62	31-Aug	Exp1	62	73.37	69.61	3.031	0.899	
63	31-Aug	Exp1	63	91.32	84.68	5.636	0.928	
64	31-Aug	Exp1	64	85.72	81.11	4.898	0.918	
65	31-Aug	Exp1	65	86.15	80.04	4.278	0.834	
66	31-Aug	Exp1	66	89.80	84.23	5.657	0.947	
67	31-Aug	Exp1	67	90.10	84.42	5.723	0.951	
68	31-Aug	Exp1	68	91.79	84.41	6.122	1.018	
69	31-Aug	Exp1	69	80.65	75.83	3.917	0.898	
70	31-Aug	Exp1	70	89.96	85.21	5.758	0.931	
71	31-Aug	Exp1	71	72.88	69.10	2.683	0.813	
72	31-Aug	Exp1	72	83.00	78.22	3.963	0.828	
73	31-Aug	Exp1	73	95.64	90.63	6.978	0.937	
74	31-Aug	Exp1	74	102.33	95.79	8.106	0.922	
75	31-Aug	Exp1	75	90.19	84.14	5.608	0.941	
76	31-Aug	Exp1	76	88.98	82.36	5.327	0.954	
77	31-Aug	Exp1	77	80.40	75.46	3.948	0.919	
78	31-Aug	Exp1	78	88.35	82.97	4.667	0.817	
79	31-Aug	Exp1	79	83.34	78.44	4.486	0.929	
80	31-Aug	Exp1	80	82.68	79.33	4.295	0.860	
81	31-Aug	Exp1	81	80.04	75.85	3.973	0.910	
82	31-Aug	Exp1	82	88.19	83.94	5.062	0.856	
83	31-Aug	Exp1	83	91.35	86.43	5.822	0.902	
84	31-Aug	Exp1	84	87.83	84.48	5.282	0.876	
85	31-Aug	Exp1	85	87.80	82.10	5.047	0.912	
86	31-Aug	Exp1	86	81.50	77.72	3.949	0.841	
87	31-Aug	Exp1	87	89.36	83.92	5.388	0.912	
88	31-Aug	Exp1	88	83.59	79.61	4.250	0.842	
89	31-Aug	Exp1	89	64.94	60.06	2.110	0.974	
90	31-Aug	Exp1	90	84.83	80.55	4.985	0.954	
91	31-Aug	Exp1	91	82.19	77.25	4.031	0.874	
92	31-Aug	Exp1	92	90.06	84.87	5.955	0.974	
93	31-Aug	Exp1	93	94.84	88.89	6.135	0.873	
94	31-Aug	Exp1	94	86.80	81.83	5.218	0.952	
95	31-Aug	Exp1	95	88.28	83.68	5.208	0.889	
96	31-Aug	Exp1	96	84.87	81.39	4.482	0.831	
97	31-Aug	Exp1	97	85.44	80.10	4.419	0.860	
98	31-Aug	Exp1	98	89.85	83.75	5.098	0.868	
99	31-Aug	Exp1	99	95.37	89.64	6.842	0.950	
100	31-Aug	Exp1	100	87.19	82.71	4.881	0.863	
101	31-Aug	Exp2	101	95.64	89.97	6.688	0.918	
102	31-Aug	Exp2	102	99.04	91.49	7.729	1.009	
103	31-Aug	Exp2	103	69.58	64.53	2.765	1.029	
104	31-Aug	Exp2	104	84.21	76.12	4.349	0.986	
105	31-Aug	Exp2	105	82.28	77.58	4.592	0.983	
106	31-Aug	Exp2	106	93.88	87.59	6.191	0.921	
107	31-Aug	Exp2	107	85.09	79.07	4.902	0.992	
108	31-Aug	Exp2	108	94.68	88.50	6.824	0.984	right eye bloody
109	31-Aug	Exp2	109	86.85	80.91	5.104	0.964	
110	31-Aug	Exp2	110	93.22	86.00	7.023	1.104	
111	31-Aug	Exp2	111	93.38	86.30	6.280	0.977	
112	31-Aug	Exp2	112	81.83	75.20	4.441	1.044	
113	31-Aug	Exp2	113	93.69	86.32	6.583	1.024	
114	31-Aug	Exp2	114	91.36	84.96	5.789	0.944	
115	31-Aug	Exp2	115	93.36	87.01	6.099	0.926	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
116	31-Aug	Exp2	116	92.37	85.91	5.765	0.909	
117	31-Aug	Exp2	117	92.17	85.46	6.048	0.969	
118	31-Aug	Exp2	118	87.31	80.77	4.645	0.882	
119	31-Aug	Exp2	119	64.22	60.73	3.394	1.515	very stout in shape
120	31-Aug	Exp2	120	97.79	90.95	7.021	0.933	
121	31-Aug	Exp2	121	96.78	89.86	7.324	1.009	
122	31-Aug	Exp2	122	83.76	78.90	4.727	0.962	
123	31-Aug	Exp2	123	90.62	84.46	5.463	0.907	
124	31-Aug	Exp2	124	86.36	80.87	4.845	0.916	
125	31-Aug	Exp2	125	89.04	84.60	5.827	0.962	
126	31-Aug	Exp2	126	93.30	87.15	5.920	0.894	
127	31-Aug	Exp2	127	85.84	79.90	5.024	0.985	
128	31-Aug	Exp2	128	89.43	82.31	5.549	0.995	
129	31-Aug	Exp2	129	92.13	84.20	6.122	1.026	
130	31-Aug	Exp2	130	92.72	87.10	6.297	0.953	
131	31-Aug	Exp2	131	90.88	82.86	5.980	1.051	
132	31-Aug	Exp2	132	97.58	91.77	8.546	1.106	
133	31-Aug	Exp2	133	85.87	80.39	4.973	0.957	
134	31-Aug	Exp2	134	88.93	82.69	4.793	0.848	
135	31-Aug	Exp2	135	87.09	81.03	5.017	0.943	
136	31-Aug	Exp2	136	85.19	78.24	4.788	1.000	
137	31-Aug	Exp2	137	92.88	87.06	6.553	0.993	
138	31-Aug	Exp2	138	92.85	87.02	6.324	0.960	
139	31-Aug	Exp2	139	90.84	85.40	5.757	0.924	
140	31-Aug	Exp2	140	94.07	88.60	6.266	0.901	
141	31-Aug	Exp2	141	80.61	74.02	3.948	0.973	
142	31-Aug	Exp2	142	80.95	75.83	4.204	0.964	
143	31-Aug	Exp2	143	96.66	89.40	6.981	0.977	
144	31-Aug	Exp2	144	83.85	79.43	4.499	0.898	
145	31-Aug	Exp2	145	93.29	86.60	6.042	0.930	
146	31-Aug	Exp2	146	90.61	85.67	5.815	0.925	
147	31-Aug	Exp2	147	97.13	89.98	7.430	1.020	
148	31-Aug	Exp2	148	93.99	87.54	6.478	0.966	
149	31-Aug	Exp2	149	90.34	86.45	5.818	0.900	
150	31-Aug	Exp2	150	97.36	89.88	7.643	1.053	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
1	18-Sep	Ref	300	87.81	81.63	4.739	0.871	photo 429-430
2	18-Sep	Ref	301	79.78	73.61	3.236	0.811	
3	18-Sep	Ref	302	86.08	80.38	3.657	0.704	
4	18-Sep	Ref	303	82.11	76.75	3.378	0.747	
5	18-Sep	Ref	304	73.33	68.13	2.822	0.892	mark on right anterior, photo: 431
6	18-Sep	Ref	305	86.52	81.10	5.083	0.953	
7	18-Sep	Ref	306	85.34	80.04	3.682	0.718	
8	18-Sep	Ref	307	98.93	91.72	7.278	0.943	
9	18-Sep	Ref	308	86.68	82.28	5.132	0.921	
10	18-Sep	Ref	309	95.05	90.60	6.206	0.835	
11	18-Sep	Ref	310	86.84	84.28	4.810	0.803	bloody left eye
12	18-Sep	Ref	311	92.69	86.71	5.245	0.805	
13	18-Sep	Ref	312	76.11	72.48	2.747	0.721	
14	18-Sep	Ref	313	86.63	81.21	4.741	0.885	
15	18-Sep	Ref	314	92.22	87.57	6.447	0.960	
16	18-Sep	Ref	315	97.67	91.21	7.047	0.929	
17	18-Sep	Ref	316	68.62	65.42	1.991	0.711	
18	18-Sep	Ref	317	89.29	82.99	5.215	0.912	
19	18-Sep	Ref	318	91.24	86.84	5.498	0.840	syphon mark left anterior
20	18-Sep	Ref	319	91.97	85.52	5.739	0.918	bloody left eye photo: 432
21	18-Sep	Ref	320	89.65	84.36	5.636	0.939	
22	18-Sep	Ref	321	88.60	83.63	5.185	0.886	sychon mark left
23	18-Sep	Ref	322	83.65	80.71	4.417	0.840	
24	18-Sep	Ref	323	87.57	82.59	4.957	0.880	
25	18-Sep	Ref	324	83.93	77.93	4.376	0.925	
26	18-Sep	Ref	325	93.40	89.16	5.804	0.819	
27	18-Sep	Ref	326	76.48	73.00	4.565	1.173	scoliosis photo 433
28	18-Sep	Ref	327	88.87	84.08	5.311	0.894	
29	18-Sep	Ref	328	88.90	83.59	4.692	0.803	
30	18-Sep	Ref	329	87.67	84.30	5.611	0.937	
31	18-Sep	Ref	330	86.08	82.65	4.463	0.790	
32	18-Sep	Ref	331	76.70	71.46	2.958	0.811	
33	18-Sep	Ref	332	94.70	89.79	6.360	0.879	
34	18-Sep	Ref	333	94.11	90.42	6.033	0.816	
35	18-Sep	Ref	334	91.10	84.97	4.615	0.752	
36	18-Sep	Ref	335	83.16	77.69	3.784	0.807	photo 434
37	18-Sep	Ref	336	84.41	80.46	4.564	0.876	
38	18-Sep	Ref	337	85.60	81.17	4.275	0.799	
39	18-Sep	Ref	338	87.62	82.45	4.547	0.811	syphon mark + bloody left eye
40	18-Sep	Ref	339	85.58	80.21	3.846	0.745	
41	18-Sep	Ref	340	87.96	82.20	4.686	0.844	
42	18-Sep	Ref	341	87.81	82.20	4.671	0.841	photo 435-436
43	18-Sep	Ref	342	90.09	84.39	5.344	0.889	
44	18-Sep	Ref	343	77.51	73.96	3.132	0.774	
45	18-Sep	Ref	344	91.37	86.55	5.549	0.856	
46	18-Sep	Ref	345	90.74	86.35	5.068	0.787	
47	18-Sep	Ref	346	90.35	85.69	6.170	0.981	
48	18-Sep	Ref	347	92.01	97.09	5.687	0.621	
49	18-Sep	Ref	348	93.61	88.33	5.211	0.756	few scales missing
50	18-Sep	Ref	349	90.30	84.11	5.827	0.979	
51	18-Sep	Ref	350	93.12	88.58	6.238	0.898	
52	18-Sep	Ref	351	95.68	90.51	6.020	0.812	
53	18-Sep	Ref	352	84.69	81.32	4.871	0.906	
54	18-Sep	Ref	353	82.28	78.35	3.696	0.768	
55	18-Sep	Ref	354	84.87	80.53	3.833	0.734	
56	18-Sep	Ref	355	82.35	77.26	3.797	0.823	
57	18-Sep	Ref	356	85.51	80.55	4.268	0.817	
58	18-Sep	Ref	357	86.76	82.14	4.938	0.891	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
59	18-Sep	Ref	358	101.25	94.87	7.540	0.883	
60	18-Sep	Ref	359	101.39	95.30	7.966	0.920	
61	18-Sep	Ref	360	97.48	92.26	6.978	0.889	
62	18-Sep	Ref	361	88.85	85.07	4.818	0.783	syphon mark middle left
63	18-Sep	Ref	362	92.92	90.36	6.301	0.854	
64	18-Sep	Ref	363	98.36	92.87	7.110	0.888	
65	18-Sep	Ref	364	87.74	83.03	4.051	0.708	
66	18-Sep	Ref	365	85.92	81.24	4.115	0.767	Cloudy eyes photo 437
67	18-Sep	Ref	366	88.72	83.24	4.769	0.827	
68	18-Sep	Ref	367	80.55	76.99	3.054	0.669	
69	18-Sep	Ref	368	87.08	81.02	4.558	0.857	
70	18-Sep	Ref	369	97.88	91.22	7.200	0.949	
71	18-Sep	Ref	370	99.19	91.43	7.899	1.033	
72	18-Sep	Ref	371	91.67	85.81	4.977	0.788	
73	18-Sep	Ref	372	100.26	93.64	8.028	0.978	
74	18-Sep	Ref	373	100.64	93.30	7.766	0.956	
75	18-Sep	Ref	374	79.68	74.34	3.980	0.969	
76	18-Sep	Ref	375	101.83	94.08	7.648	0.918	
77	18-Sep	Ref	376	101.08	94.52	7.742	0.917	
78	18-Sep	Ref	377	92.93	86.81	6.185	0.945	
79	18-Sep	Ref	378	90.23	84.45	5.266	0.874	
80	18-Sep	Ref	379	99.79	92.32	7.245	0.921	
81	18-Sep	Ref	380	99.91	85.48	6.100	0.977	
82	18-Sep	Ref	381	99.68	92.72	7.833	0.983	Syphon mark left center
83	18-Sep	Ref	382	91.19	84.75	4.936	0.811	
84	18-Sep	Ref	383	96.04	89.55	6.583	0.917	
85	18-Sep	Ref	384	74.42	69.49	2.734	0.815	
86	18-Sep	Ref	385	94.99	87.12	6.167	0.933	Syphon mark left center
87	18-Sep	Ref	386	86.48	79.98	4.517	0.883	
88	18-Sep	Ref	387	89.06	82.39	5.228	0.935	
89	18-Sep	Ref	388	90.27	83.59	5.617	0.962	
90	18-Sep	Ref	389	102.90	96.14	7.911	0.890	
91	18-Sep	Ref	390	96.70	89.05	6.841	0.969	
92	18-Sep	Ref	391	94.60	89.07	5.859	0.829	
93	18-Sep	Ref	392	90.98	84.33	5.544	0.924	syphon mark 2x post left + 1x right post
94	18-Sep	Ref	393	86.91	81.24	4.487	0.837	
95	18-Sep	Ref	394	90.00	84.12	5.143	0.864	
96	18-Sep	Ref	395	84.74	79.83	4.409	0.867	
97	18-Sep	Ref	396	81.88	75.14	3.389	0.799	
98	18-Sep	Ref	397	83.87	76.34	4.164	0.936	
99	18-Sep	Ref	398	100.27	92.74	7.857	0.985	
100	18-Sep	Ref	399	97.28	91.12	6.955	0.919	
101	18-Sep	Ref	400	90.12	82.83	5.261	0.926	
102	18-Sep	Ref	401	96.24	88.16	6.112	0.892	
103	18-Sep	Ref	402	92.61	86.40	5.532	0.858	
104	18-Sep	Ref	403	85.64	78.85	3.885	0.792	
105	18-Sep	Ref	404	87.41	81.17	4.928	0.921	
106	18-Sep	Ref	405	77.05	72.13	3.020	0.805	
107	18-Sep	Ref	406	92.02	84.11	5.428	0.912	
108	18-Sep	Ref	407	89.19	81.91	5.204	0.947	Right bloody eye
109	18-Sep	Ref	408	96.68	90.44	6.102	0.825	
110	18-Sep	Ref	409	100.52	93.74	7.573	0.919	
111	18-Sep	Ref	410	91.02	82.87	4.619	0.812	Syphon left post
112	18-Sep	Ref	411	88.93	82.75	5.019	0.886	White mark (fungus?) top of skull; photo : 438
113	18-Sep	Ref	412	88.81	83.02	5.117	0.894	
114	18-Sep	Ref	413	85.71	78.46	3.690	0.764	
115	18-Sep	Ref	414	83.75	78.57	3.260	0.672	
116	18-Sep	Ref	415	87.28	80.57	4.716	0.902	Milky right pupil

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
117	18-Sep	Ref	416	91.91	86.38	5.345	0.829	
118	18-Sep	Ref	417	95.94	88.08	6.022	0.881	
119	18-Sep	Ref	418	100.56	92.07	7.159	0.917	
120	18-Sep	Ref	419	82.15	75.49	3.869	0.899	
121	18-Sep	Ref	420	85.11	77.94	4.343	0.917	Blood in left eye
122	18-Sep	Ref	421	94.85	88.35	7.030	1.019	
123	18-Sep	Ref	422	91.44	85.59	5.491	0.876	
124	18-Sep	Ref	423	88.61	82.86	4.976	0.875	
125	18-Sep	Ref	424	94.10	86.46	5.768	0.892	Bloody left eye
126	18-Sep	Ref	425	91.69	85.30	4.584	0.739	Both eyes bloody
127	18-Sep	Ref	426	87.46	80.54	4.533	0.868	
128	18-Sep	Ref	427	91.83	84.21	5.401	0.904	
129	18-Sep	Ref	428	85.12	79.36	4.172	0.835	
130	18-Sep	Ref	429	86.00	80.87	4.156	0.786	
131	18-Sep	Ref	430	92.20	84.79	5.985	0.982	
132	18-Sep	Ref	431	91.20	84.75	5.161	0.848	white right pupil, enlarged left eye also withish
133	18-Sep	Ref	432	93.46	87.61	5.910	0.879	
134	18-Sep	Ref	433	88.53	81.98	4.474	0.812	Syphon left ant +right post
135	18-Sep	Ref	434	88.50	82.65	4.379	0.776	
136	18-Sep	Ref	435	92.85	87.13	5.219	0.789	photo 439-440; syphon mark right ant mark
137	18-Sep	Ref	436	88.99	84.40	4.922	0.819	
138	18-Sep	Ref	437	95.70	88.87	5.881	0.838	White pupil right eye
139	18-Sep	Ref	438	94.03	88.29	5.478	0.796	
140	18-Sep	Ref	439	76.63	71.65	3.160	0.859	
141	18-Sep	Ref	440	74.05	68.85	2.696	0.826	
142	18-Sep	Ref	441	93.06	86.88	5.762	0.879	Bloody left eye
143	18-Sep	Ref	442	91.15	83.59	4.938	0.845	
144	18-Sep	Ref	443	101.00	93.75	8.178	0.993	
145	18-Sep	Ref	444	90.96	85.10	5.371	0.871	2 white eyes, left bloody
146	18-Sep	Ref	445	79.08	73.70	3.231	0.807	
147	18-Sep	Ref	446	92.96	85.02	5.932	0.965	Syphon left center
148	18-Sep	Ref	447	90.98	84.05	5.409	0.911	
149	18-Sep	Ref	448	82.90	76.93	3.900	0.857	Right eye white, left enlarged
150	18-Sep	Ref	449	90.21	83.24	4.180	0.725	
151	18-Sep	Ref	450	84.56	79.74	4.467	0.881	
152	18-Sep	Ref	451	76.58	71.80	3.304	0.893	Left white eye
153	18-Sep	Ref	452	76.27	71.62	3.038	0.827	2 bloody eyes
154	18-Sep	Ref	453	79.79	74.71	3.009	0.722	Syphon mark ant left, blood dot on left eye
155	18-Sep	Exp1	151	102.42	95.40	9.068	1.044	
156	18-Sep	Exp1	152	91.58	84.75	6.222	1.022	
157	18-Sep	Exp1	153	100.54	93.07	8.056	0.999	
158	18-Sep	Exp1	154	94.03	87.63	6.537	0.971	
159	18-Sep	Exp1	155	90.09	83.03	5.429	0.948	
160	18-Sep	Exp1	156	94.93	87.22	6.665	1.005	
161	18-Sep	Exp1	157	88.81	79.85	5.088	0.999	
162	18-Sep	Exp1	158	79.01	73.76	3.731	0.930	
163	18-Sep	Exp1	159	99.53	91.97	7.752	0.996	
164	18-Sep	Exp1	160	92.71	86.24	6.423	1.001	
165	18-Sep	Exp1	161	93.30	86.03	6.187	0.972	Bloody left eye
166	18-Sep	Exp1	162	99.26	92.70	8.218	1.032	
167	18-Sep	Exp1	163	98.74	90.96	7.686	1.021	
168	18-Sep	Exp1	164	93.95	86.50	5.878	0.908	
169	18-Sep	Exp1	165	89.53	82.25	5.173	0.930	
170	18-Sep	Exp1	166	86.87	80.33	4.938	0.953	
171	18-Sep	Exp1	167	85.95	79.46	4.788	0.954	syphon left ant
172	18-Sep	Exp1	168	96.90	90.86	7.304	0.974	
173	18-Sep	Exp1	169	100.71	92.97	7.651	0.952	
174	18-Sep	Exp1	170	94.01	86.37	6.665	1.034	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
175	18-Sep	Exp1	171	97.07	89.24	7.152	1.006	
176	18-Sep	Exp1	172	93.39	87.62	6.263	0.931	
177	18-Sep	Exp1	173	85.92	80.30	5.388	1.041	
178	18-Sep	Exp1	174	90.43	82.86	5.640	0.991	
179	18-Sep	Exp1	175	93.99	86.74	7.052	1.081	photo 424
180	18-Sep	Exp1	176	90.54	83.51	5.968	1.025	
181	18-Sep	Exp1	177	90.37	83.39	5.494	0.947	
182	18-Sep	Exp1	178	93.76	87.19	6.149	0.928	photo 425-426
183	18-Sep	Exp1	179	105.16	98.01	9.646	1.025	
184	18-Sep	Exp1	180	96.66	89.12	7.108	1.004	
185	18-Sep	Exp1	181	101.35	96.10	8.230	0.927	
186	18-Sep	Exp1	182	96.77	89.40	7.295	1.021	
187	18-Sep	Exp1	183	99.08	91.53	7.887	1.029	
188	18-Sep	Exp1	184	97.21	89.61	7.310	1.016	
189	18-Sep	Exp1	185	87.10	81.43	4.810	0.891	
190	18-Sep	Exp1	186	93.23	88.10	6.637	0.971	syphon left post
191	18-Sep	Exp1	187	86.53	80.81	4.943	0.937	
192	18-Sep	Exp1	188	75.92	69.59	3.233	0.959	
193	18-Sep	Exp1	189	93.58	85.05	6.599	1.073	
194	18-Sep	Exp1	190	95.94	88.95	7.257	1.031	
195	18-Sep	Exp1	191	95.73	90.23	6.841	0.931	
196	18-Sep	Exp1	192	74.76	69.94	3.354	0.980	syphon left ant, parr marks
197	18-Sep	Exp1	193	76.88	72.15	3.522	0.938	photo 427 red on tail
198	18-Sep	Exp1	194	77.03	71.15	3.152	0.875	
199	18-Sep	Exp1	195	94.82	88.48	6.353	0.917	
200	18-Sep	Exp1	196	99.07	92.05	7.787	0.998	
201	18-Sep	Exp1	197	97.43	90.89	7.002	0.933	
202	18-Sep	Exp1	198	90.77	85.58	5.866	0.936	
203	18-Sep	Exp1	199	97.00	89.92	7.517	1.034	
204	18-Sep	Exp1	200	88.30	81.54	5.060	0.933	
205	18-Sep	Exp1	201	107.64	100.09	10.253	1.023	
206	18-Sep	Exp1	202	88.96	81.75	5.233	0.958	
207	18-Sep	Exp1	203	89.32	84.31	5.267	0.879	
208	18-Sep	Exp1	204	99.77	93.04	7.862	0.976	
209	18-Sep	Exp1	205	100.47	93.50	8.030	0.982	
210	18-Sep	Exp1	206	93.28	86.71	5.714	0.876	
211	18-Sep	Exp1	207	93.91	87.17	6.785	1.024	
212	18-Sep	Exp1	208	94.44	87.88	6.497	0.957	syphon left pot
213	18-Sep	Exp1	209	101.33	93.09	7.697	0.954	
214	18-Sep	Exp1	210	94.30	88.19	7.066	1.030	
215	18-Sep	Exp1	211	87.11	81.13	4.898	0.917	
216	18-Sep	Exp1	212	89.09	82.91	5.217	0.915	
217	18-Sep	Exp1	213	93.68	87.65	6.649	0.987	some red on tail rays
218	18-Sep	Exp1	214	87.38	91.97	4.968	0.639	syphon left center
219	18-Sep	Exp1	215	102.74	94.41	9.295	1.105	abrasion ant left
220	18-Sep	Exp1	216	95.70	89.30	6.760	0.949	
221	18-Sep	Exp1	217	90.99	83.93	6.050	1.023	
222	18-Sep	Exp1	218	103.43	95.48	8.556	0.983	
223	18-Sep	Exp1	219	97.45	89.48	7.020	0.980	
224	18-Sep	Exp1	220	97.06	90.22	7.066	0.962	
225	18-Sep	Exp1	221	98.04	89.83	6.955	0.959	
226	18-Sep	Exp1	222	98.58	92.36	4.429	0.562	
227	18-Sep	Exp1	223	88.23	81.87	5.165	0.941	
228	18-Sep	Exp1	224	94.77	88.65	6.806	0.977	
229	18-Sep	Exp1	225	90.52	84.20	6.412	1.074	Syphon left center
230	18-Sep	Exp1	226	96.72	90.11	7.216	0.986	
231	18-Sep	Exp1	227	100.22	92.96	8.024	0.999	
232	18-Sep	Exp1	228	103.42	96.09	8.697	0.980	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
233	18-Sep	Exp1	229	101.00	93.02	7.903	0.982	
234	18-Sep	Exp1	230	97.73	91.01	7.529	0.999	
235	18-Sep	Exp1	231	79.60	73.90	3.798	0.941	
236	18-Sep	Exp1	232	68.48	62.96	2.612	1.047	
237	18-Sep	Exp1	233	89.62	89.19	6.680	0.942	
238	18-Sep	Exp1	234	87.21	79.67	4.758	0.941	
239	18-Sep	Exp1	235	100.16	94.02	8.804	1.059	
240	18-Sep	Exp1	236	91.64	87.27	6.579	0.990	
241	18-Sep	Exp1	237	97.83	92.43	7.832	0.992	
242	18-Sep	Exp1	238	92.78	87.27	6.137	0.923	
243	18-Sep	Exp1	239	89.25	83.18	5.631	0.978	
244	18-Sep	Exp1	240	92.20	87.45	7.135	1.067	
245	18-Sep	Exp1	241	93.15	87.65	6.497	0.965	
246	18-Sep	Exp1	242	79.89	75.32	4.256	0.996	
247	18-Sep	Exp1	243	95.14	90.16	7.257	0.990	
248	18-Sep	Exp1	244	93.73	88.38	6.513	0.943	
249	18-Sep	Exp1	245	99.20	93.27	7.820	0.964	
250	18-Sep	Exp1	246	102.66	93.89	8.250	0.997	
251	18-Sep	Exp1	247	90.13	84.57	6.103	1.009	
252	18-Sep	Exp1	248	96.81	91.36	7.484	0.981	
253	18-Sep	Exp1	249	99.03	93.37	7.809	0.959	
254	18-Sep	Exp1	250	96.58	91.21	6.948	0.916	
255	18-Sep	Exp1	251	94.30	89.30	6.786	0.953	
256	18-Sep	Exp1	252	89.10	84.39	5.626	0.936	white dot top of skull.
257	18-Sep	Exp1	253	68.86	65.37	2.635	0.943	
258	18-Sep	Exp1	254	96.87	91.28	7.035	0.925	
259	18-Sep	Exp1	255	86.68	81.08	4.953	0.929	
260	18-Sep	Exp1	256	106.79	99.54	10.032	1.017	
261	18-Sep	Exp1	257	88.52	81.47	5.336	0.987	
262	18-Sep	Exp1	258	88.66	83.30	5.285	0.914	
263	18-Sep	Exp1	259	95.03	89.32	7.172	1.006	
264	18-Sep	Exp1	260	89.55	83.85	6.179	1.048	
265	18-Sep	Exp1	261	88.51	84.26	5.309	0.887	
266	18-Sep	Exp1	262	98.23	92.63	7.740	0.974	
267	18-Sep	Exp1	263	88.00	82.59	5.702	1.012	
268	18-Sep	Exp1	264	89.38	85.53	5.870	0.938	
269	18-Sep	Exp1	265	99.67	94.27	7.534	0.899	
270	18-Sep	Exp1	266	81.26	77.42	3.843	0.828	
271	18-Sep	Exp1	267	97.00	92.71	6.966	0.874	
272	18-Sep	Exp1	268	89.04	83.62	5.792	0.991	
273	18-Sep	Exp1	269	74.66	69.05	2.917	0.886	
274	18-Sep	Exp1	270	83.71	77.81	4.569	0.970	
275	18-Sep	Exp1	271	102.28	97.50	9.108	0.983	
276	18-Sep	Exp1	272	75.01	70.56	3.559	1.013	
277	18-Sep	Exp1	273	99.73	94.73	8.115	0.955	
278	18-Sep	Exp1	274	93.30	87.93	6.701	0.986	
279	18-Sep	Exp1	275	90.89	85.77	6.162	0.977	
280	18-Sep	Exp1	276	99.99	93.34	8.735	1.074	
281	18-Sep	Exp1	277	90.24	85.15	5.920	0.959	
282	18-Sep	Exp1	278	85.77	80.21	4.970	0.963	
283	18-Sep	Exp1	279	89.27	84.21	5.582	0.935	
284	18-Sep	Exp1	280	87.14	80.76	5.417	1.028	
285	18-Sep	Exp1	281	74.69	71.96	3.580	0.961	
286	18-Sep	Exp1	282	67.21	63.74	2.576	0.995	
287	18-Sep	Exp1	283	96.07	91.99	7.354	0.945	
288	18-Sep	Exp1	284	91.56	85.92	6.223	0.981	
289	18-Sep	Exp1	285	82.11	77.53	4.286	0.920	
290	18-Sep	Exp1	286	90.44	84.40	5.979	0.994	

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
291	18-Sep	Exp1	287	105.88	100.15	9.468	0.943	
292	18-Sep	Exp1	288	103.95	97.68	8.829	0.947	
293	18-Sep	Exp1	289	93.43	87.06	6.892	1.044	
294	18-Sep	Exp1	290	89.32	85.56	5.587	0.892	
295	18-Sep	Exp1	291	100.24	94.47	8.659	1.027	
296	18-Sep	Exp1	292	90.38	84.76	6.056	0.995	
297	18-Sep	Exp1	293	94.60	89.40	7.300	1.022	
298	18-Sep	Exp1	294	94.99	90.10	6.694	0.915	
299	18-Sep	Exp1	295	87.61	82.66	5.257	0.931	
300	18-Sep	Exp1	296	99.77	92.52	8.745	1.104	
301	18-Sep	Exp1	297	100.06	94.52	8.275	0.980	
302	18-Sep	Exp2	1	94.12	84.37	6.252	1.041	found dead in tank
303	18-Sep	Exp2	2	87.02	79.51	5.038	1.002	found dead in tank
304	18-Sep	Exp2	3	76.25	70.60	2.881	0.819	photo 416-420
305	18-Sep	Exp2	4	98.96	92.01	6.651	0.854	
306	18-Sep	Exp2	5	88.43	82.77	5.479	0.966	
307	18-Sep	Exp2	6	84.89	79.68	4.229	0.836	
308	18-Sep	Exp2	7	94.84	88.11	6.252	0.914	
309	18-Sep	Exp2	8	93.61	86.93	5.590	0.851	
310	18-Sep	Exp2	9	88.68	81.84	4.919	0.897	
311	18-Sep	Exp2	10	101.74	94.52	7.286	0.863	photo 421
312	18-Sep	Exp2	11	101.19	93.36	6.691	0.822	
313	18-Sep	Exp2	12	65.78	59.69	3.150	1.481	football shape
314	18-Sep	Exp2	13	89.49	84.73	5.401	0.888	
315	18-Sep	Exp2	14	91.60	84.99	5.910	0.963	
316	18-Sep	Exp2	15	93.68	88.22	5.932	0.864	
317	18-Sep	Exp2	16	95.60	89.69	5.680	0.787	
318	18-Sep	Exp2	17	80.90	75.38	3.494	0.816	
319	18-Sep	Exp2	18	96.77	89.80	6.489	0.896	
320	18-Sep	Exp2	19	98.45	91.49	6.539	0.854	
321	18-Sep	Exp2	20	92.14	86.20	5.091	0.795	
322	18-Sep	Exp2	21	92.06	85.69	5.780	0.919	
323	18-Sep	Exp2	22	95.70	84.40	6.595	1.097	
324	18-Sep	Exp2	23	90.82	85.23	5.245	0.847	
325	18-Sep	Exp2	24	89.55	84.49	5.190	0.861	
326	18-Sep	Exp2	25	91.97	85.94	5.443	0.858	syphon scar on right photo 422
327	18-Sep	Exp2	26	94.52	89.44	6.890	0.963	
328	18-Sep	Exp2	27	91.45	85.39	5.213	0.837	
329	18-Sep	Exp2	28	84.73	79.66	3.913	0.774	
330	18-Sep	Exp2	29	98.59	92.05	6.459	0.828	
331	18-Sep	Exp2	30	86.64	81.31	4.147	0.771	
332	18-Sep	Exp2	31	103.14	96.19	7.701	0.865	syphon mark on left
333	18-Sep	Exp2	32	93.84	87.09	5.141	0.778	syphon mark on right
334	18-Sep	Exp2	33	86.48	81.04	4.541	0.853	
335	18-Sep	Exp2	34	92.22	85.58	5.371	0.857	
336	18-Sep	Exp2	35	93.90	88.16	5.460	0.797	
337	18-Sep	Exp2	36	98.33	93.15	5.946	0.736	
338	18-Sep	Exp2	37	95.19	88.35	5.634	0.817	syphon mark left under dorsal
339	18-Sep	Exp2	38	88.69	83.06	5.594	0.976	
340	18-Sep	Exp2	39	90.86	86.01	5.437	0.855	
341	18-Sep	Exp2	40	83.93	79.41	4.227	0.844	syphon scar both sides
342	18-Sep	Exp2	41	89.87	84.06	5.322	0.896	
343	18-Sep	Exp2	42	98.57	91.77	7.239	0.937	
344	18-Sep	Exp2	43	60.64	57.98	1.417	0.727	
345	18-Sep	Exp2	44	99.45	92.63	7.524	0.947	
346	18-Sep	Exp2	45	92.14	86.25	5.329	0.831	
347	18-Sep	Exp2	46	92.41	86.42	5.394	0.836	Scar behind head top left
348	18-Sep	Exp2	47	85.85	80.86	4.349	0.823	syphon mark both sides

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Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
349	18-Sep	Exp2	48	86.86	81.56	4.297	0.792	syphon mark left under dorsal
350	18-Sep	Exp2	49	98.68	91.78	6.545	0.847	syphon mark both sides
351	18-Sep	Exp2	50	90.60	84.51	4.989	0.827	abrasion mark on right
352	18-Sep	Exp2	51	91.96	85.80	5.035	0.797	
353	18-Sep	Exp2	52	91.68	86.44	5.022	0.778	
354	18-Sep	Exp2	53	92.53	86.22	5.474	0.854	syphon mark on right
355	18-Sep	Exp2	54	98.24	90.42	6.392	0.865	
356	18-Sep	Exp2	55	88.42	82.97	4.656	0.815	
357	18-Sep	Exp2	56	81.89	77.16	3.559	0.775	
358	18-Sep	Exp2	57	99.75	92.14	6.557	0.838	
359	18-Sep	Exp2	58	88.77	84.40	4.430	0.737	
360	18-Sep	Exp2	59	91.85	86.09	5.003	0.784	
361	18-Sep	Exp2	60	95.80	90.48	5.877	0.793	syphon mark on left
362	18-Sep	Exp2	61	95.52	90.18	5.912	0.806	syphon mark on left
363	18-Sep	Exp2	62	101.96	95.66	7.583	0.866	scales missing behind head
364	18-Sep	Exp2	63	66.06	62.57	3.289	1.343	stunted
365	18-Sep	Exp2	64	87.80	82.71	4.284	0.757	white dot on see through brain area
366	18-Sep	Exp2	65	86.90	81.05	4.291	0.806	
367	18-Sep	Exp2	66	96.99	90.80	6.629	0.886	syphon mark on left
368	18-Sep	Exp2	67	89.76	83.55	4.689	0.804	
369	18-Sep	Exp2	68	93.21	87.74	5.575	0.825	
370	18-Sep	Exp2	69	89.57	84.33	5.633	0.939	
371	18-Sep	Exp2	70	87.10	82.90	4.733	0.831	
372	18-Sep	Exp2	71	86.44	82.07	4.713	0.853	
373	18-Sep	Exp2	72	80.59	76.11	3.773	0.856	syphon mark on right
374	18-Sep	Exp2	73	90.00	84.44	5.407	0.898	
375	18-Sep	Exp2	74	86.89	81.42	4.161	0.771	
376	18-Sep	Exp2	75	89.21	84.97	4.701	0.766	
377	18-Sep	Exp2	76	98.11	92.12	6.931	0.887	
378	18-Sep	Exp2	77	93.36	87.99	5.447	0.800	
379	18-Sep	Exp2	78	96.59	90.16	6.252	0.853	
380	18-Sep	Exp2	79	98.76	93.32	6.196	0.762	
381	18-Sep	Exp2	80	90.17	84.07	4.620	0.778	
382	18-Sep	Exp2	81	85.23	80.65	4.796	0.914	
383	18-Sep	Exp2	82	88.57	82.93	4.786	0.839	
384	18-Sep	Exp2	83	88.06	82.29	4.230	0.759	
385	18-Sep	Exp2	84	92.32	86.37	5.368	0.833	
386	18-Sep	Exp2	85	96.89	89.59	6.247	0.869	
387	18-Sep	Exp2	86	94.55	88.31	5.468	0.794	
388	18-Sep	Exp2	87	93.04	87.83	5.229	0.772	
389	18-Sep	Exp2	88	93.42	88.18	5.616	0.819	
390	18-Sep	Exp2	89	72.85	68.26	2.817	0.886	
391	18-Sep	Exp2	90	101.39	94.68	6.557	0.773	
392	18-Sep	Exp2	91	89.49	84.37	4.903	0.816	
393	18-Sep	Exp2	92	92.15	85.89	5.391	0.851	
394	18-Sep	Exp2	93	93.80	88.26	5.370	0.781	
395	18-Sep	Exp2	94	76.98	71.66	3.275	0.890	
396	18-Sep	Exp2	95	97.00	90.33	6.685	0.907	
397	18-Sep	Exp2	96	100.68	94.40	6.705	0.797	
398	18-Sep	Exp2	97	94.45	89.39	5.105	0.715	
399	18-Sep	Exp2	98	94.81	88.33	5.656	0.821	
400	18-Sep	Exp2	99	97.68	90.87	6.116	0.815	
401	18-Sep	Exp2	100	91.47	86.25	5.778	0.901	
402	18-Sep	Exp2	101	94.65	88.96	6.196	0.880	
403	18-Sep	Exp2	102	94.20	87.79	5.505	0.814	
404	18-Sep	Exp2	103	96.40	91.51	6.474	0.845	
405	18-Sep	Exp2	104	90.91	87.49	4.990	0.745	
406	18-Sep	Exp2	105	98.04	92.02	6.552	0.841	

APPENDIX B-3

Fish Laboratory Exposure Data

FishID	Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	K (Fultons)	Observations
407	18-Sep	Exp2	106	98.36	91.59	6.630	0.863	
408	18-Sep	Exp2	107	95.41	89.56	5.489	0.764	
409	18-Sep	Exp2	108	93.37	87.77	5.541	0.820	
410	18-Sep	Exp2	109	89.85	84.55	5.412	0.895	
411	18-Sep	Exp2	110	95.34	91.36	missed		syphon mark central
412	18-Sep	Exp2	111	96.27	89.35	6.241	0.875	
413	18-Sep	Exp2	112	95.32	88.26	5.727	0.833	
414	18-Sep	Exp2	113	96.91	91.51	6.498	0.848	
415	18-Sep	Exp2	114	95.80	89.44	5.675	0.793	syphon mark right central
416	18-Sep	Exp2	115	88.20	83.30	4.878	0.844	
417	18-Sep	Exp2	116	90.10	85.08	5.111	0.830	scar behind gill left
418	18-Sep	Exp2	117	84.44	79.50	3.846	0.765	
419	18-Sep	Exp2	118	100.22	94.56	7.680	0.908	
420	18-Sep	Exp2	119	98.38	91.30	6.281	0.825	
421	18-Sep	Exp2	120	93.98	89.96	5.638	0.774	
422	18-Sep	Exp2	121	97.86	90.98	6.490	0.862	
423	18-Sep	Exp2	122	98.26	92.07	6.370	0.816	syphon mark right central
424	18-Sep	Exp2	123	88.08	82.51	4.585	0.816	
425	18-Sep	Exp2	124	90.09	84.08	4.443	0.747	
426	18-Sep	Exp2	125	87.05	81.80	4.365	0.797	
427	18-Sep	Exp2	126	93.36	88.42	5.382	0.779	
428	18-Sep	Exp2	127	96.23	90.35	6.097	0.827	
429	18-Sep	Exp2	128	93.94	88.08	5.208	0.762	
430	18-Sep	Exp2	129	100.78	95.15	7.571	0.879	
431	18-Sep	Exp2	130	84.50	84.14	missed		
432	18-Sep	Exp2	131	89.10	83.55	4.476	0.767	
433	18-Sep	Exp2	132	98.33	91.74	6.084	0.788	
434	18-Sep	Exp2	133	96.41	90.22	5.952	0.811	
435	18-Sep	Exp2	134	96.86	89.48	6.401	0.893	
436	18-Sep	Exp2	135	89.70	84.24	4.888	0.818	
437	18-Sep	Exp2	136	88.38	81.73	4.256	0.780	
438	18-Sep	Exp2	137	101.54	94.74	6.588	0.775	
439	18-Sep	Exp2	138	95.18	88.25	5.667	0.825	small abrasion left
440	18-Sep	Exp2	139	102.82	94.67	6.678	0.787	abrasion mark on right
441	18-Sep	Exp2	140	87.09	81.29	4.516	0.841	
442	18-Sep	Exp2	141	57.67	53.18	2.092	1.391	football shape
443	18-Sep	Exp2	143	91.76	85.07	4.988	0.810	
444	18-Sep	Exp2	144	94.06	87.34	5.463	0.820	
445	18-Sep	Exp2	145	96.96	89.76	6.021	0.833	
446	18-Sep	Exp2	146	94.92	88.07	5.760	0.843	syphon mark left central
447	18-Sep	Exp2	147	90.83	84.96	5.671	0.925	
448	18-Sep	Exp2	148	90.83	84.27	5.135	0.858	syphon ant right
449	18-Sep	Exp2	149	94.77	88.77	5.633	0.805	
450	18-Sep	Exp2	150	91.16	84.24	4.710	0.788	
451	18-Sep	Exp2	151	90.65	84.20	4.804	0.805	

APENDIX B-3. List of abnormalities encountered during the measuring events.

Date	Tank	Fish #	TL (mm)	FL (mm)	Weight (g)	Observations
08-Aug	Ref	50	77.86	73.79	4.439	Lordosis
08-Aug	Exp2	417	56.01	51.19	2.476	Extended stomach (stout)
18-Sep	Ref	310	86.84	84.28	4.810	Bloody left eye
18-Sep	Ref	319	91.97	85.52	5.739	Bloody left eye photo: 432
18-Sep	Ref	326	76.48	73.00	4.565	Scoliosis photo 433
18-Sep	Ref	338	87.62	82.45	4.547	Syphon mark + bloody left eye
18-Sep	Ref	365	85.92	81.24	4.115	Cloudy eyes photo 437
18-Sep	Ref	407	89.19	81.91	5.204	Right bloody eye
18-Sep	Ref	411	88.93	82.75	5.019	White mark (fungus?) top of skull; photo : 438
18-Sep	Ref	415	87.28	80.57	4.716	Milky right pupil
18-Sep	Ref	420	85.11	77.94	4.343	Blood in left eye
18-Sep	Ref	424	94.10	86.46	5.768	Bloody left eye
18-Sep	Ref	425	91.69	85.30	4.584	Both eyes bloody
18-Sep	Ref	431	91.20	84.75	5.161	White right pupil, enlarged left eye also whitish
18-Sep	Ref	437	95.70	88.87	5.881	White pupil right eye
18-Sep	Ref	441	93.06	86.88	5.762	Bloody left eye
18-Sep	Ref	444	90.96	85.10	5.371	2 white eyes, left bloody
18-Sep	Ref	448	82.90	76.93	3.900	Right eye white, left enlarged
18-Sep	Ref	451	76.58	71.80	3.304	Left white eye
18-Sep	Ref	452	76.27	71.62	3.038	2 bloody eyes
18-Sep	Ref	453	79.79	74.71	3.009	Syphon mark ant left, blood dot on left eye
18-Sep	Exp1	161	93.30	86.03	6.187	Bloody left eye
18-Sep	Exp1	252	89.10	84.39	5.626	White dot top of skull.
18-Sep	Exp2	12	65.78	59.69	3.150	Football shape
18-Sep	Exp2	50	90.60	84.51	4.989	Abrasion mark on right
18-Sep	Exp2	62	101.96	95.66	7.583	Scales missing behind head
18-Sep	Exp2	63	66.06	62.57	3.289	Stunted
18-Sep	Exp2	64	87.80	82.71	4.284	White dot on see through brain area
18-Sep	Exp2	116	90.10	85.08	5.111	Scar behind gill left
18-Sep	Exp2	138	95.18	88.25	5.667	Small abrasion left
18-Sep	Exp2	139	102.82	94.67	6.678	Abrasion mark on right
18-Sep	Exp2	141	57.67	53.18	2.092	Football shape

APPENDIX B-4
Fish Tissue Descriptive Statistics

Parameter *	Treatment	n	Mean	Median	Standard Error	Standard Deviation	Minimum	Maximum	95% Confidence Interval of the mean		Normal Distribution ?	Equality of variances?	Outliers removed
									Lower Bound	Upper Bound			
Aluminum	Reference	10	0.776	0.5	0.19046259	0.60229561	0.5	2.21	0.34514	1.20686	No		
	Exposure 1	10	1.456	1.525	0.20791665	0.65749018	0.5	2.55	0.9857	1.9263	Yes	Yes	
	Exposure 2	10	1.642	1.805	0.25286711	0.79963603	0.5	3.1	1.07	2.214	Yes		
Arsenic	Reference	10	1.3127	1.29	0.07384188	0.23350853	0.857	1.75	1.1457	1.4797	Yes		
	Exposure 1	10	1.457	1.5	0.03672874	0.11614646	1.21	1.57	1.3739	1.5401	Yes	Yes	
	Exposure 2	10	1.377	1.375	0.05531827	0.17493173	1.17	1.69	1.2519	1.5021	Yes		
Barium	Reference	10	0.2707	0.2585	0.01746237	0.05522087	0.176	0.352	0.2312	0.3102	Yes		
	Exposure 1	10	0.2037	0.173	0.02090776	0.06611614	0.136	0.336	0.1564	0.251	Yes	Yes	
	Exposure 2	10	0.252	0.243	0.01671991	0.05287301	0.169	0.35	0.21418	0.28982	Yes		
Cadmium	Reference	10	0.08292	0.07905	0.00658942	0.02083756	0.0594	0.115	0.068014	0.097826	Yes		
	Exposure 1	10	0.05758	0.05465	0.00508348	0.01607536	0.0394	0.0891	0.04608	0.06908	Yes	Yes	
	Exposure 2	10	0.15316	0.174	0.01784974	0.05644585	0.0491	0.22	0.11278	0.19354	No		
Calcium	Reference	10	4531	4490	389.664956	1232.22878	2910	7420	3649.5	5412.5	Yes		
	Exposure 1	9	4420	4210	177.647	532.94	3920	5210	4010.3	4829.7	No	Yes	FishID 11
	Exposure 2	10	4906	4915	106.66875	337.316205	4300	5450	4664.7	5147.3	Yes		
Cesium	Reference	9	0.00881	0.009133	0.0001236	0.00037081	0.0087	0.0097	0.008848	0.009418	Yes		FishID 3
	Exposure 1	10	0.0104	0.0104	0.00018738	0.00059255	0.0093	0.0113	0.009976	0.010824	Yes	Yes	
	Exposure 2	10	0.00969	0.00985	0.00018406	0.00058205	0.0087	0.0104	0.009274	0.010106	Yes		
Chromium	Reference	10	0.0269	0.02	0.00395376	0.01250289	0.02	0.051	0.017956	0.035844	No		
	Exposure 1	10	0.023	0.02	0.0028519	0.0090185	0.012	0.04	0.016549	0.029451	Yes	Yes	
	Exposure 2	10	0.0224	0.02	0.00201219	0.00636309	0.015	0.037	0.017848	0.026952	No		
Cobalt	Reference	10	0.01422	0.01315	0.00129964	0.00410983	0.0106	0.0245	0.01128	0.01716	No		
	Exposure 1	10	0.01821	0.018	0.00074229	0.00234732	0.0146	0.022	0.016531	0.019889	Yes	Yes	
	Exposure 2	10	0.01563	0.01685	0.00127227	0.00402328	0.0101	0.0217	0.012752	0.018508	Yes		
Copper	Reference	10	4.391	4.295	0.30214584	0.95546905	3.07	6.33	3.7075	5.0745	Yes		
	Exposure 1	10	2.951	2.725	0.2933161	0.92754694	2.08	5.36	2.2875	3.6145	No	Yes	
	Exposure 2	10	3.74	3.655	0.27867145	0.88123651	2.38	5.1	3.1096	4.3704	Yes		
Iron	Reference	10	18.04	18	1.12409964	3.55471518	13.7	26.9	15.497	20.583	No		
	Exposure 1	10	18.38	18.15	0.67376224	2.13062328	15.6	22.5	16.856	19.904	Yes	Yes	
	Exposure 2	10	19.64	18.7	1.05537776	3.33739752	14.5	24.4	17.253	22.027	Yes		
Lead	Reference	10	0.04421	0.03315	0.00542473	0.01715449	0.0288	0.076	0.031938	0.056482	No		
	Exposure 1	10	0.03067	0.03245	0.00143256	0.00453016	0.0245	0.036	0.027429	0.033911	Yes	No	
	Exposure 2	10	0.04299	0.04335	0.00430925	0.01362705	0.021	0.063	0.033242	0.054446	Yes		
Magnesium	Reference	9	275.7	271	8.53912564	25.6173769	246	335	255.98	295.36	No		FishID 5
	Exposure 1	10	294.2	295.5	7.55689531	23.8970012	269	350	277.11	311.29	Yes	Yes	
	Exposure 2	10	282.5	277	7.93900358	25.1053337	245	327	264.54	300.46	Yes		
Manganese	Reference	10	1.3024	1.11	0.1783278	0.56392202	0.722	2.06	0.899	1.7058	No		
	Exposure 1	10	1.2639	1.295	0.12531546	0.39628229	0.704	2.03	0.9804	1.5474	Yes	No	
	Exposure 2	10	1.0394	1.0115	0.08904645	0.28158961	0.666	1.5	0.838	1.2408	Yes		
Mercury	Reference	10	0.02019	0.02	0.00052714	0.00166697	0.0183	0.0225	0.018998	0.021382	Yes		
	Exposure 1	10	0.01867	0.01835	0.00092509	0.00292539	0.0154	0.0237	0.016577	0.020763	Yes	Yes	
	Exposure 2	10	0.02157	0.0224	0.00087471	0.00276608	0.0171	0.026	0.019591	0.023549	Yes		

APPENDIX B-4
Fish Tissue Descriptive Statistics

Parameter *	Treatment	n	Mean	Median	Standard Error	Standard Deviation	Minimum	Maximum	95% Confidence Interval of the mean		Normal Distribution ?	Equality of variances?	Outliers removed
									Lower Bound	Upper Bound			
Molybdenum	Reference	10	0.0121	0.01195	0.00035901	0.00113529	0.0105	0.014	0.011288	0.012912	Yes		
	Exposure 1	9	0.012867	0.0122	0.00055202	0.00165605	0.0111	0.0159	0.011594	0.01414	Yes	Yes	FishID 11
	Exposure 2	10	0.01154	0.0117	0.00029896	0.0009454	0.0099	0.0131	0.010864	0.012216	Yes		
Phosphorus	Reference	10	4690	4520	274.351761	867.576446	3560	6170	4069.4	5310.6	Yes		
	Exposure 1	10	4866	4735	217.869482	688.963795	4300	6760	4373.1	5358.9	No	Yes	
	Exposure 2	10	4695	4650	133.468681	422.065029	4090	5390	4393.1	4996.9	Yes		
Potassium	Reference	10	3200	3175	137.493434	434.792415	2430	4150	2889	3511	Yes		
	Exposure 1	10	3539	3580	71.0625702	224.719578	3200	3850	3378.2	3699.8	Yes	Yes	
	Exposure 2	10	3226	3140	88.2697885	279.13358	2810	3750	3026.3	3425.7	Yes		
Rubidium	Reference	10	0.8904	0.8585	0.0452146	0.14298112	0.66	1.19	0.78812	0.99268	Yes		
	Exposure 1	10	1.145	1.18	0.02845074	0.08996913	1.01	1.25	1.0806	1.2094	Yes	Yes	
	Exposure 2	10	0.9493	0.953	0.03690711	0.11671052	0.797	1.1	0.86581	1.03279	Yes		
Selenium	Reference	10	0.2898	0.282	0.00708488	0.02240436	0.266	0.334	0.27377	0.30583	Yes		
	Exposure 1	10	0.3287	0.335	0.00726032	0.02295914	0.285	0.353	0.31228	0.34512	Yes	Yes	
	Exposure 2	10	0.3128	0.316	0.00872519	0.02759146	0.273	0.346	0.29306	0.33254	Yes		
Silver	Reference	10	0.0008	0.0005	0.00012472	0.00039441	0.0005	0.0014	0.000518	0.001082	No		
	Exposure 1	9	0.000656	0.0005	0.00010289	0.00030867	0.0005	0.0012	0.000418	0.000893	No	Yes	FishID 18
	Exposure 2	10	0.00056	0.0005	0.00006	0.00018974	0.0005	0.0011	0.000424	0.000696	No		
Sodium	Reference	9	820.9	825	19.0565273	57.169582	725	926	776.94	864.83	Yes		FishID 5
	Exposure 1	10	892.5	866	25.9783029	82.1506069	785	1020	833.73	951.27	Yes	Yes	
	Exposure 2	10	808.9	791	31.5021869	99.6186618	679	943	737.64	880.16	Yes		
Strontium	Reference	10	4.481	4.33	0.28594658	0.90424247	3.31	6.59	3.8341	5.1279	Yes		
	Exposure 1	10	4.29	3.805	0.29768365	0.94135836	3.63	6.6	3.6166	4.9682	No	Yes	
	Exposure 2	10	4.612	4.64	0.13737863	0.43442938	3.66	5.17	4.3012	4.9228	Yes		
Thallium	Reference	10	0.011411	0.0116	0.00037778	0.00119466	0.00921	0.0132	0.010556	0.012266	Yes		
	Exposure 1	9	0.013089	0.0129	0.00040908	0.00122724	0.0117	0.0161	0.012146	0.014032	Yes	Yes	FishID 11
	Exposure 2	10	0.01176	0.01165	0.00026297	0.0008316	0.0105	0.0131	0.011165	0.012355	Yes		
Tin	Reference	9	0.070333	0.077	0.00613279	0.01839837	0.046	0.105	0.056191	0.084476	Yes		FishID 6
	Exposure 1	10	0.0733	0.0745	0.00317648	0.0100449	0.054	0.088	0.066114	0.080486	Yes	Yes	
	Exposure 2	10	0.0866	0.093	0.00627907	0.01985615	0.042	0.104	0.072396	0.100804	Yes		
Uranium	Reference	10	0.015412	0.01259	0.00438428	0.00167789	0.00189	0.0469	0.005494	0.02533	Yes		
	Exposure 1	10	0.019194	0.0155	0.00336527	0.01064192	0.00709	0.0414	0.011581	0.026807	Yes	Yes	
	Exposure 2	10	0.010553	0.00715	0.00268162	0.00848003	0.00197	0.025	0.004487	0.016619	Yes		
Vanadium	Reference	10	0.049	0.05	0.00508593	0.01608312	0.028	0.082	0.037495	0.060505	Yes		
	Exposure 1	10	0.0624	0.061	0.00500267	0.01581982	0.041	0.091	0.051083	0.073717	Yes	Yes	
	Exposure 2	10	0.0531	0.0485	0.00309282	0.00978037	0.044	0.076	0.046104	0.060096	No		
Zinc	Reference	10	38.13	36.35	1.94325329	6.14510645	27.3	46.8	33.734	42.526	Yes		
	Exposure 1	10	36.69	36.4	0.9041202	2.85907911	33	42.4	34.645	38.735	Yes	Yes	
	Exposure 2	10	38.19	37.5	1.00093845	3.1652453	33	43.5	35.926	40.454	Yes		

* Beryllium, Bismuth, Boron, Lithium, Tellurium and Zirconium were removed from the analysis as all samples for all treatments were below the detection limits. Antimony and Nickel were removed from the analysis because 29 out of 30 results had all results below DL.

APPENDIX B-4
Fish Tissue Results Statistical Comparisons

Parameter *	Pairwise comparisons	Test **	Significant Difference?	p-value	Power	Magnitude of difference (# of Ref1 SDs)
Aluminum	Ref - Exp1	ANOVA	Yes	0.090	0.871	1.129
		Mann-Whitney	Yes	0.038	-	1.702
	Ref - Exp2	ANOVA	Yes	0.024	0.871	1.438
		Mann-Whitney	Yes	0.026	-	2.167
	Exp1 - Exp2	ANOVA	No	0.821	0.871	-
		Mann-Whitney	No	0.569	-	-
Arsenic	All 3 sites	ANOVA	No	0.222	0.306	-
Barium	Ref - Exp1	ANOVA	Yes	0.041		-1.213
	Ref - Exp2	ANOVA	No	0.756	0.749	-
	Exp1 - Exp2	ANOVA	No	0.173		-
Cadmium	Ref - Exp1	ANOVA	No	0.273	1.000	-
		Mann-Whitney	Yes	0.007	-	-1.171
	Ref - Exp2	ANOVA	Yes	0.000	1.000	3.371
		Mann-Whitney	Yes	0.026	-	4.557
	Exp1 - Exp2	ANOVA	Yes	0.000	1.000	4.587
		Mann-Whitney	Yes	0.004	-	5.728
Calcium	All 3 sites	ANOVA	No	0.395	0.487	-
	Ref - Exp1	Mann-Whitney	No	1.000	-	-
	Ref - Exp2	Mann-Whitney	Yes	0.064	-	0.345
	Exp1 - Exp2	Mann-Whitney	Yes	0.072	-	0.572
Cesium	Ref - Exp1	ANOVA	Yes	0.000		4.288
	Ref - Exp2	ANOVA	Yes	0.076	1.000	2.373
	Exp1 - Exp2	ANOVA	Yes	0.016		-1.915
Chromium	All 3 sites	ANOVA	No	0.533	0.17	-
	All 3 sites	Kruskal-Wallis	No	0.737	-	-
Cobalt	Ref - Exp1	ANOVA	Yes	0.049	0.572	0.971
		Mann-Whitney	Yes	0.006	-	1.180
	Ref - Exp2	ANOVA	No	0.658	0.572	-
		Mann-Whitney	No	0.427	-	-
	Exp1 - Exp2	ANOVA	No	0.259	0.572	-
		Mann-Whitney	No	0.186	-	-

APPENDIX B-4
Fish Tissue Results Statistical Comparisons

Parameter *	Pairwise comparisons	Test **	Significant Difference?	p-value	Power	Magnitude of difference (# of Ref1 SDs)
Copper	Ref - Exp1	ANOVA	Yes	0.005	0.899	-1.507
		Mann-Whitney	Yes	0.002	-	-1.643
	Ref - Exp2	ANOVA	No	0.272	0.899	-
		Mann-Whitney	No	0.141	-	-
	Exp1 - Exp2	ANOVA	No	0.154	0.899	-
		Mann-Whitney	Yes	0.041	-	0.973
Iron	All 3 sites	ANOVA	No	0.481	0.210	-
	All 3 sites	Kruskal-Wallis	No	0.453	-	-
Lead	Ref - Exp1	ANOVA	Yes	0.067	0.429	-0.789
		Mann-Whitney	No	0.427	-	-
	Ref - Exp2	ANOVA	No	0.976	0.429	-
		Mann-Whitney	No	0.308	-	-
	Exp1 - Exp2	ANOVA	No	0.102	0.429	-
		Mann-Whitney	No	0.449	-	-
Magnesium	All 3 sites	ANOVA	No	0.274	0.349	-
	All 3 sites	Kruskal-Wallis	No	0.145	-	-
Manganese	All 3 sites	ANOVA	No	0.350	0.217	-
	All 3 sites	Kruskal-Wallis	No	0.558	-	-
Mercury	Ref - Exp1	ANOVA	No	0.380		-
	Ref - Exp2	ANOVA	No	0.448	0.960	-
	Exp1 - Exp2	ANOVA	Yes	0.040		1.740
Molybdenum	Ref - Exp1	ANOVA	No	0.397		-
	Ref - Exp2	ANOVA	No	0.590	0.673	-
	Exp1 - Exp2	ANOVA	Yes	0.076		-1.169
Phosphorus	All 3 sites	ANOVA	No	0.808	0.122	-
	All 3 sites	Kruskal-Wallis	No	0.664	-	-
Potassium	Ref - Exp1	ANOVA	Yes	0.069		0.780
	Ref - Exp2	ANOVA	No	0.983	0.422	-
	Exp1 - Exp2	ANOVA	Yes	0.098		-0.720
Rubidium	Ref - Exp1	ANOVA	Yes	0.000		1.781
	Ref - Exp2	ANOVA	No	0.516	0.967	-

APPENDIX B-4
Fish Tissue Results Statistical Comparisons

Parameter *	Pairwise comparisons	Test **	Significant Difference?	p-value	Power	Magnitude of difference (# of Ref1 SDs)
	Exp1 - Exp2	ANOVA	Yes	0.003		-1.369
Selenium	Ref - Exp1	ANOVA	Yes	0.004		1.736
	Ref - Exp2	ANOVA	No	0.108	0.960	-
	Exp1 - Exp2	ANOVA	No	0.328		-
Silver	All 3 sites	ANOVA	No	0.236	0.279	-
	All 3 sites	Kruskal-Wallis	No	0.234	-	-
Sodium	Ref - Exp1	ANOVA	No	0.161		-
	Ref - Exp2	ANOVA	No	0.946	0.827	-
	Exp1 - Exp2	ANOVA	Yes	0.078		-1.462
Strontium	All 3 sites	ANOVA	No	0.664	0.168	-
	All 3 sites	Kruskal-Wallis	No	0.250	-	-
Thallium	Ref - Exp1	ANOVA	Yes	0.007		1.404
	Ref - Exp2	ANOVA	No	0.758	0.816	-
	Exp1 - Exp2	ANOVA	Yes	0.035		-1.112
Tin	Ref - Exp1	ANOVA	No	0.920		-
	Ref - Exp2	ANOVA	No	0.103	0.465	-
	Exp1 - Exp2	ANOVA	No	0.192		-
Uranium	All 3 sites	ANOVA	No	0.243	1.000	-
Vanadium	All 3 sites	ANOVA	No	0.116	0.463	-
	All 3 sites	Kruskal-Wallis	No	0.123	-	-
Zinc	All 3 sites	ANOVA	No	0.683	0.132	-

* Beryllium, Bismuth, Boron, Lithium, Tellurium and Zirconium were removed from the analysis as all samples for all sites were below the detection limits.
Antimony and Nickel were removed from the analysis because 29 out of 30 results had all results below DL.

** Minimum effect size detectable for ANOVA = 1.51 Ref SDs

APPENDIX B-4
Fish Tissue Analysis Laroratory Results

Report To	Audrey Sanfacon, Alexco Environmental Group Inc. #3 Calcite Business Centre 151 Industrial Road Whitehorse, YT Y1A 2V3	**Date Received** **Report Date** **Report Revision** **Version**	3-Nov-2015 14:15 4-Jan-2016 18:10 2 FINAL
Client Phone	867-668-6463		

Certificate of Analysis

Lab Work Order #	L1697526
Project P.O. #	16950
Job Reference	AKHM-14-03
Legal Site Description	
C of C Numbers	1 2 3

Case Narrative/Comments

4-JAN-2016 Please note, the weights of the tissue before homogenization can be found at the end of the attachment.

Ariel Tang, B.Sc.
Account Manager

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APPENDIX B-4
Fish Tissue Analysis Laroratory Results

Sample Summary L1697526

Job Reference	AKHM-14-03
Report To	Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received	3-Nov-2015 14:15
Report Date	4-Jan-2016 18:10
Report Version	2

Sample Details

ALS Sample ID	Client Sample ID	Matrix	Date Sampled	Time Sampled	Qualifier
L1697526-1	REF-1	Tissue	18-Sep-15	00:00	
L1697526-2	REF-2	Tissue	18-Sep-15	00:00	
L1697526-3	REF-3	Tissue	18-Sep-15	00:00	
L1697526-4	REF-4	Tissue	18-Sep-15	00:00	
L1697526-5	REF-5	Tissue	18-Sep-15	00:00	
L1697526-6	REF-6	Tissue	18-Sep-15	00:00	
L1697526-7	REF-7	Tissue	18-Sep-15	00:00	
L1697526-8	REF-8	Tissue	18-Sep-15	00:00	
L1697526-9	REF-9	Tissue	18-Sep-15	00:00	
L1697526-10	REF-10	Tissue	18-Sep-15	00:00	
L1697526-11	EXP1-1	Tissue	18-Sep-15	00:00	
L1697526-12	EXP1-2	Tissue	18-Sep-15	00:00	
L1697526-13	EXP1-3	Tissue	18-Sep-15	00:00	
L1697526-14	EXP1-4	Tissue	18-Sep-15	00:00	
L1697526-15	EXP1-5	Tissue	18-Sep-15	00:00	
L1697526-16	EXP1-6	Tissue	18-Sep-15	00:00	
L1697526-17	EXP1-7	Tissue	18-Sep-15	00:00	
L1697526-18	EXP1-8	Tissue	18-Sep-15	00:00	
L1697526-19	EXP1-9	Tissue	18-Sep-15	00:00	
L1697526-20	EXP1-10	Tissue	18-Sep-15	00:00	
L1697526-21	EXP2-1	Tissue	18-Sep-15	00:00	
L1697526-22	EXP2-2	Tissue	18-Sep-15	00:00	
L1697526-23	EXP2-3	Tissue	18-Sep-15	00:00	
L1697526-24	EXP2-4	Tissue	18-Sep-15	00:00	
L1697526-25	EXP2-5	Tissue	18-Sep-15	00:00	
L1697526-26	EXP2-6	Tissue	18-Sep-15	00:00	
L1697526-27	EXP2-7	Tissue	18-Sep-15	00:00	
L1697526-28	EXP2-8	Tissue	18-Sep-15	00:00	
L1697526-29	EXP2-9	Tissue	18-Sep-15	00:00	
L1697526-30	EXP2-10	Tissue	18-Sep-15	00:00	

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Physical Tests (Tissue)																
% Moisture	L1697526-1	REF-1	MOISTURE-TISS-VA	72.1	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	4.65	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	1.30	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.936	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.261	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.361	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.101	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	14500	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	4060	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.0341	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.0095	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.041	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.0115	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	11.0	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	3.07	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	55.3	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	15.4	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.213	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.059	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	990	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	277	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	2.93	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.819	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-1	REF-1	HG-DRY-MICR-CVAF-VA	0.0715	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-1	REF-1	HG-WET-MICR-CVAF-VA	0.0200	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<0.040	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.0105	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	15700	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	4380	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	11800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	3290	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	3.22	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.900	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.96	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.268	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-1	REF-1	AG-DRY-MICR-HRMS-VA	0.0051	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-1	REF-1	AG-WET-MICR-HRMS-VA	0.0014	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	2960	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	828	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	14.8	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	4.13	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Tellurium (Te)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.0429	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.0120	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.16	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.046	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.0068	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.00189	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	0.10	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	0.028	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	131	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	36.7	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-1	REF-1	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-1	REF-1	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-2	REF-2	MOISTURE-TISS-VA	74.2	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	4.91	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	1.27	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	1.05	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.271	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	0.446	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.115	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	16400	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	4240	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	0.0344	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.0089	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	0.046	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.0118	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	20.9	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	5.40	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	70.1	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	18.1	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	0.124	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.032	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	1050	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	271	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	7.95	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	2.06	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-2	REF-2	HG-DRY-MICR-CVAF-VA	0.0706	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-2	REF-2	HG-WET-MICR-CVAF-VA	0.0183	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	0.049	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.0125	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	17500	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	4520	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Potassium (K)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	12600	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	3270	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	3.34	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.863	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	1.16	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.299	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-2	REF-2	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-2	REF-2	AG-WET-MICR-HRMS-VA	0.0012	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	3330	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	861	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	16.2	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	4.19	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	0.0445	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.0115	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	0.30	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.077	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	0.0324	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.00838	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	0.19	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	0.049	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	147	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	38.1	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-2	REF-2	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-2	REF-2	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-3	REF-3	MOISTURE-TISS-VA	72.8	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	3.15	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.857	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	1.29	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.352	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	0.297	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.0808	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	17600	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	4790	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	0.0218	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.0059	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.051	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	0.053	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.0144	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	15.8	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	4.31	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	57.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	15.5	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	0.278	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.076	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Lithium (Li)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	987	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	269	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	7.43	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	2.02	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-3	REF-3	HG-DRY-MICR-CVAF-VA	0.0675	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-3	REF-3	HG-WET-MICR-CVAF-VA	0.0184	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	0.046	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.0126	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	16600	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	4520	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	8930	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	2430	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	2.43	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.660	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	1.00	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.274	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-3	REF-3	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-3	REF-3	AG-WET-MICR-HRMS-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	3030	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	825	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	14.5	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	3.95	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	0.0387	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.0105	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	0.28	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.077	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	0.172	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.0469	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	0.22	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	0.059	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	129	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	35.2	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-3	REF-3	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-3	REF-3	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-4	REF-4	MOISTURE-TISS-VA	74.2	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	4.57	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	1.18	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.681	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.176	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.376	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.0969	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	11300	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	2910	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Cesium (Cs)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.0344	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.0089	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.053	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.0137	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	14.2	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	3.66	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	69.8	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	18.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.119	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.031	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	981	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	253	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	2.80	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.722	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-4	REF-4	HG-DRY-MICR-CVAF-VA	0.0801	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-4	REF-4	HG-WET-MICR-CVAF-VA	0.0206	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.054	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.0140	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	13800	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	3560	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	11900	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	3060	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	3.10	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.798	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	1.06	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.274	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-4	REF-4	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-4	REF-4	AG-WET-MICR-HRMS-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	3300	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	849	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	14.4	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	3.71	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.0423	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.0109	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.25	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.064	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.0651	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.0168	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	0.21	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	0.054	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	138	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	35.6	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-4	REF-4	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-4	REF-4	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-5	REF-5	MOISTURE-TISS-VA	74.0	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	8.5	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	2.21	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	6.73	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Arsenic (As)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	1.75	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	1.28	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.333	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.298	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.0773	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	19000	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	4940	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.0333	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.0087	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.188	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.049	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.094	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.0245	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	16.5	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	4.28	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	72.8	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	18.9	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.124	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.0323	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	1490	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	389	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	6.65	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	1.73	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-5	REF-5	HG-DRY-CVAFS-N-VA	0.0733	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-5	REF-5	HG-WET-CVAFS-N-VA	0.0191	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.044	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.0115	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	23500	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	6110	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	16000	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	4150	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	4.59	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	1.19	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	1.21	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.314	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-5	REF-5	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-5	REF-5	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	4930	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	1280	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	19.0	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	4.93	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.0487	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.0126	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.30	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.078	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.107	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.0278	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	0.31	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	0.082	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	177	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Zinc (Zn)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	46.0	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-5	REF-5	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-5	REF-5	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-6	REF-6	MOISTURE-TISS-VA	70.4	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.016	0.010	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.0048	0.0020	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	4.42	0.030	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	1.31	0.0060	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	1.14	0.050	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.337	0.010	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.366	0.010	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.108	0.0020	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	25100	20	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	7420	4.0	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.0318	0.0050	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.0094	0.0010	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.050	0.020	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.0147	0.0040	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	16.4	0.20	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	4.86	0.040	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	64.4	5.0	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	19.0	1.0	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.200	0.050	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.059	0.010	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	×	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	1130	2.0	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	335	0.40	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	6.45	0.050	mg/kg		18-Sep-15	00:00	02-Dec-15	08-Dec-15	416081	×	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	1.91	0.010	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	08-Dec-15	416081	×	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-6	REF-6	HG-DRY-MICR-CVAF-VA	0.0626	0.0050	mg/kg		18-Sep-15	00:00	02-Dec-15	05-Dec-15	416081	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-6	REF-6	HG-WET-MICR-CVAF-VA	0.0185	0.0010	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	05-Dec-15	416081	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<0.040	0.040	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.0117	0.0080	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	20900	10	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	6170	2.0	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	10400	20	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	3080	4.0	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	3.06	0.050	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.905	0.010	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.95	0.10	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.282	0.020	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-6	REF-6	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-6	REF-6	AG-WET-MICR-HRMS-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	2610	20	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	773	4.0	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Strontium (Sr)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	22.3	0.10	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	6.59	0.020	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.0445	0.0020	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.0132	0.00040	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.91	0.10	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.271	0.020	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.0241	0.0020	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.00713	0.00040	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	0.20	0.10	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	0.059	0.020	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	158	1.0	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	46.8	0.20	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-6	REF-6	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-6	REF-6	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	02-Dec-15	04-Dec-15	416081	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-7	REF-7	MOISTURE-TISS-VA	72.3	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	4.38	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	1.21	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.810	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.224	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.221	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.0612	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	15000	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	4140	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.0314	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.0087	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.046	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.0126	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	13.9	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	3.84	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	49.5	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	13.7	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.122	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.034	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	955	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	265	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	2.77	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.766	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-7	REF-7	HG-DRY-MICR-CVAF-VA	0.0811	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-7	REF-7	HG-WET-MICR-CVAF-VA	0.0225	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.044	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.0122	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Nickel (Ni)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	15500	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	4300	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	10800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	3000	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	3.06	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.848	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	1.02	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.282	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-7	REF-7	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-7	REF-7	AG-WET-MICR-HRMS-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	2850	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	788	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	16.1	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	4.47	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.0421	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.0117	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.29	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.080	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.0231	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.00641	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	0.15	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	0.042	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	130	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	36.0	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-7	REF-7	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-7	REF-7	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-8	REF-8	MOISTURE-TISS-VA	75.4	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	5.19	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	1.28	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.979	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.241	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.254	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.0626	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	12900	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	3180	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.0396	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.0097	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.043	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.0106	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	18.4	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	4.54	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	68.4	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	16.9	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Lead (Pb)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.127	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.031	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	999	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	246	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	3.15	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.777	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-8	REF-8	HG-DRY-MICR-CVAF-VA	0.0893	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-8	REF-8	HG-WET-MICR-CVAF-VA	0.0220	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.046	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.0114	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	15100	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	3730	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	12100	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	2980	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	3.40	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.836	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	1.08	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.266	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-8	REF-8	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-8	REF-8	AG-WET-MICR-HRMS-VA	0.0011	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	2940	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	725	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	13.4	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	3.31	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.0374	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.00921	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.23	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.057	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.0730	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.0180	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	0.12	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	0.031	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	111	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	27.3	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-8	REF-8	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-8	REF-8	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-9	REF-9	MOISTURE-TISS-VA	74.6	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	6.1	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	1.55	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	5.95	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	1.51	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	1.01	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.256	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.264	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Cadmium (Cd)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.0670	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	19300	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	4890	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.0353	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.0090	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.115	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.029	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.067	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.0171	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	14.3	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	3.62	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	70.7	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	18.0	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.113	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.0288	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	1130	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	288	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	4.07	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	1.03	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-9	REF-9	HG-DRY-CVAFS-N-VA	0.0787	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-9	REF-9	HG-WET-CVAFS-N-VA	0.0200	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.043	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.0109	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	19400	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	4940	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	13600	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	3450	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	4.12	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	1.05	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	1.20	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.305	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-9	REF-9	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-9	REF-9	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	3640	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	926	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	17.9	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	4.55	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.0404	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.0103	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.41	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.105	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.0744	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.0189	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	0.20	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	0.051	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	136	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	34.4	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-9	REF-9	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-9	REF-9	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-10	REF-10	MOISTURE-TISS-VA	71.8	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Antimony (Sb)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	5.19	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	1.46	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.908	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.256	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.211	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.0594	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	16800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	4740	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.0333	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.0094	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.040	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.0113	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	22.5	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	6.33	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	95.5	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	26.9	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.210	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.059	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	982	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	277	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	4.24	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	1.19	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-10	REF-10	HG-DRY-MICR-CVAF-VA	0.0797	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-10	REF-10	HG-WET-MICR-CVAF-VA	0.0225	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.049	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.0137	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	16600	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	4670	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	11700	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	3290	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	3.03	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.854	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	1.19	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.334	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-10	REF-10	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-10	REF-10	AG-WET-MICR-HRMS-VA	0.0013	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	2890	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	813	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	17.7	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	4.98	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.0434	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.0122	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.17	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.049	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.0068	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.00191	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Vanadium (V)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	0.12	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	0.035	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	160	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	45.2	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-10	REF-10	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-10	REF-10	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-11	EXP1-1	MOISTURE-TISS-VA	73.3	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	5.05	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	1.35	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	1.26	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.336	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	0.334	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.0891	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	30200	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	8050	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	0.0406	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.0108	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	0.055	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.0146	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	20.1	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	5.36	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	84.2	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	22.5	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	0.136	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.036	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	1310	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	350	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	6.39	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	1.70	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-11	EXP1-1	HG-DRY-MICR-CVAF-VA	0.0576	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-11	EXP1-1	HG-WET-MICR-CVAF-VA	0.0154	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	0.073	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.0196	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	25300	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	6760	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	12600	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	3370	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	3.79	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	1.01	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	1.31	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.350	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-11	EXP1-1	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Silver (Ag)-Total	L1697526-11	EXP1-1	AG-WET-MICR-HRMS-VA	0.0012	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	3210	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	856	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	24.7	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	6.60	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	0.0727	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.0194	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	0.32	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.085	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	0.0563	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.0150	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	0.31	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	0.084	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	159	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	42.4	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-11	EXP1-1	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-11	EXP1-1	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-12	EXP1-2	MOISTURE-TISS-VA	74.6	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	7.9	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	2.02	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	6.05	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	1.54	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.662	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.168	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.303	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.0770	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	15400	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	3920	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.0416	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.0106	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.081	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.021	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.080	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.0204	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	12.0	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	3.06	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	70.9	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	18.0	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.141	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.0359	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	1170	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	296	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	4.06	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	1.03	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-12	EXP1-2	HG-DRY-CVAFS-N-VA	0.0932	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-12	EXP1-2	HG-WET-CVAFS-N-VA	0.0237	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Molybdenum (Mo)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.044	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.0111	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	18500	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	4710	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	15000	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	3810	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	4.90	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	1.25	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	1.39	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.353	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-12	EXP1-2	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-12	EXP1-2	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	3570	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	907	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	14.9	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	3.78	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.0490	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.0125	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.25	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.063	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.0682	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.0173	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	0.25	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	0.063	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	148	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	37.5	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-12	EXP1-2	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-12	EXP1-2	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-13	EXP1-3	MOISTURE-TISS-VA	69.7	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	4.54	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	1.38	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.934	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.283	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.193	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.0586	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	17200	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	5210	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.0361	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.0109	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.049	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.0150	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	11.2	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Copper (Cu)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	3.40	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	60.4	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	18.3	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.110	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.033	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	1010	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	307	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	6.68	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	2.03	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-13	EXP1-3	HG-DRY-MICR-CVAF-VA	0.0759	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-13	EXP1-3	HG-WET-MICR-CVAF-VA	0.0230	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.046	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.0141	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	16100	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	4870	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	11800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	3580	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	3.40	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	1.03	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	1.16	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.351	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-13	EXP1-3	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-13	EXP1-3	AG-WET-MICR-HRMS-VA	0.0012	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	2890	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	876	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	16.4	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	4.97	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.0532	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.0161	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.18	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.054	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.0234	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.00709	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	0.13	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	0.041	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	131	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	39.7	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-13	EXP1-3	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-13	EXP1-3	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-14	EXP1-4	MOISTURE-TISS-VA	74.3	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	6.4	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	1.66	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	6.10	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	1.57	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.635	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.163	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Boron (B)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.174	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.0449	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	15200	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	3920	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.0398	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.0102	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.073	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.019	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.072	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.0185	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	9.79	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	2.52	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	64.3	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	16.5	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.095	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.0245	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	1180	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	303	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	3.71	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.953	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-14	EXP1-4	HG-DRY-CVAFS-N-VA	0.0615	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-14	EXP1-4	HG-WET-CVAFS-N-VA	0.0158	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.044	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.0114	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	18500	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	4760	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	15000	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	3850	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	4.74	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	1.22	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	1.18	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.303	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-14	EXP1-4	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-14	EXP1-4	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	3770	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	970	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	14.4	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	3.71	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.0500	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.0129	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.27	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.070	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.0576	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.0148	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	0.24	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	0.062	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	139	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	35.8	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-14	EXP1-4	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-14	EXP1-4	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-15	EXP1-5	MOISTURE-TISS-VA	74.5	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	4.1	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	1.05	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	5.95	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	1.52	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.641	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.164	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.218	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.0556	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	16500	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	4210	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.0422	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.0108	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.078	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.020	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.081	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.0206	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	10.1	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	2.57	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	78.2	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	20.0	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.125	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.0319	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	1160	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	295	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	3.49	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.892	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-15	EXP1-5	HG-DRY-CVAFS-N-VA	0.0759	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-15	EXP1-5	HG-WET-CVAFS-N-VA	0.0194	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.057	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.0147	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	18800	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	4810	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	14400	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	3670	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	4.77	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	1.22	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	1.32	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.338	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-15	EXP1-5	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-15	EXP1-5	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	3990	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	1020	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	16.2	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	4.14	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.0514	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.0131	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.27	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Tin (Sn)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.069	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.0626	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.0160	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	0.23	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	0.060	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	149	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	37.9	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-15	EXP1-5	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-15	EXP1-5	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-16	EXP1-6	MOISTURE-TISS-VA	72.0	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	4.4	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	1.24	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	5.58	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	1.56	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.487	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.136	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.141	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.0394	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	15300	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	4270	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.0403	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.0113	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	<0.050	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.014	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.061	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.0172	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	10.1	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	2.83	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	58.2	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	16.3	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.090	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.0253	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	982	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	274	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	2.52	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.704	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-16	EXP1-6	HG-DRY-CVAFS-N-VA	0.0720	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-16	EXP1-6	HG-WET-CVAFS-N-VA	0.0201	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.043	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.0120	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	16000	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	4470	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	12800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	3580	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	4.20	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	1.17	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Selenium (Se)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	1.19	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.332	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-16	EXP1-6	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-16	EXP1-6	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	2810	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	785	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	13.4	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	3.74	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.0469	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.0131	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.26	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.073	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.0454	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.0127	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	0.18	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	0.049	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	118	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	33.0	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-16	EXP1-6	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-16	EXP1-6	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-17	EXP1-7	MOISTURE-TISS-VA	75.6	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	7.1	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	1.73	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	4.94	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	1.21	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.860	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.210	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.277	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.0675	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	20800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	5090	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.0380	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.0093	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.163	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.040	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.090	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.0220	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	11.5	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	2.81	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	80.1	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	19.5	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.141	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.0343	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	1110	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	270	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	5.05	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Manganese (Mn)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	1.23	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-17	EXP1-7	HG-DRY-CVAFS-N-VA	0.0755	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-17	EXP1-7	HG-WET-CVAFS-N-VA	0.0184	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.065	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.0159	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	19600	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	4780	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	13100	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	3200	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	4.21	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	1.03	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	1.39	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.339	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-17	EXP1-7	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-17	EXP1-7	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	3470	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	847	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	19.7	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	4.80	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.0478	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.0117	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.31	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.076	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.170	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.0414	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	0.37	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	0.091	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	144	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	35.1	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-17	EXP1-7	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-17	EXP1-7	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-18	EXP1-8	MOISTURE-TISS-VA	73.6	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	7.3	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	1.92	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	5.38	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	1.42	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.957	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.253	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.203	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.0537	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	19000	20	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	5030	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.0381	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.0101	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.106	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.028	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Cobalt (Co)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.068	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.0179	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	8.47	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	2.24	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	64.8	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	17.1	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.125	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.0330	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	1020	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	269	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	5.16	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	1.36	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-18	EXP1-8	HG-DRY-CVAFS-N-VA	0.0613	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-18	EXP1-8	HG-WET-CVAFS-N-VA	0.0162	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.046	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.0122	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.047	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	16300	10	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	4300	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	12100	20	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	3200	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	4.28	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	1.13	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	1.08	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.285	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-18	EXP1-8	AG-DRY-CCMS-N-VA	0.0109	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-18	EXP1-8	AG-WET-CCMS-N-VA	0.0029	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	3200	20	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	845	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	14.5	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	3.83	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.0482	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.0127	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.33	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.088	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.105	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.0277	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	0.22	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	0.057	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	132	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	34.9	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-18	EXP1-8	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-18	EXP1-8	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-19	EXP1-9	MOISTURE-TISS-VA	75.0	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	5.6	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	1.39	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	5.95	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	1.48	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.713	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.178	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Beryllium (Be)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.195	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.0488	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	16000	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	4000	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.0391	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.0098	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.144	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.036	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.072	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.0181	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	10.6	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	2.64	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	80.1	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	20.0	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.105	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.0263	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	1190	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	296	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	5.55	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	1.38	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-19	EXP1-9	HG-DRY-CVAFS-N-VA	0.0732	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-19	EXP1-9	HG-WET-CVAFS-N-VA	0.0183	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.051	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.0127	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	18800	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	4700	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	14500	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	3610	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	4.79	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	1.20	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	1.31	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.328	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-19	EXP1-9	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-19	EXP1-9	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	4060	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	1010	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	14.8	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	3.70	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.0535	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.0133	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.30	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.076	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.122	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.0303	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	0.28	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	0.070	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	148	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	37.0	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-19	EXP1-9	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-19	EXP1-9	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Physical Tests (Tissue)																
% Moisture	L1697526-20	EXP1-10	MOISTURE-TISS-VA	73.3	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	9.6	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	2.55	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	5.76	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	1.54	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.547	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.146	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.154	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.0412	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	15500	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	4130	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.0382	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.0102	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	<0.050	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.012	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.067	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.0178	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	7.78	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	2.08	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	58.3	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	15.6	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.099	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.0265	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	1060	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	282	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	5.11	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	1.36	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-20	EXP1-10	HG-DRY-CVAFS-N-VA	0.0614	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-20	EXP1-10	HG-WET-CVAFS-N-VA	0.0164	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.044	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.0117	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	16900	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	4500	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	13200	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	3520	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	4.44	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	1.19	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	1.15	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.308	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-20	EXP1-10	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-20	EXP1-10	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	3030	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	809	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	13.6	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	3.63	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Thallium (Tl)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.0464	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.0124	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.30	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.079	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.0362	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.00965	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	0.18	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	0.047	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	126	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	33.6	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-20	EXP1-10	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-20	EXP1-10	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-21	EXP2-1	MOISTURE-TISS-VA	77.4	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	5.39	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	1.22	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	1.26	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.285	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	0.752	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.170	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	24100	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	5450	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	0.0424	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.0096	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	0.051	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.0114	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	16.7	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	3.76	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	84.4	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	19.1	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	0.188	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.042	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	1310	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	295	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	6.18	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	1.40	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-21	EXP2-1	HG-DRY-MICR-CVAF-VA	0.101	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-21	EXP2-1	HG-WET-MICR-CVAF-VA	0.0227	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	0.047	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.0106	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	21700	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	4900	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	13600	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Potassium (K)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	3070	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	3.65	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.825	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	1.25	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.282	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-21	EXP2-1	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-21	EXP2-1	AG-WET-MICR-HRMS-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	3850	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	870	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	21.3	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	4.80	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	0.0582	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.0131	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	0.41	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.094	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	0.0121	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.00273	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	0.19	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	0.044	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	176	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	39.8	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-21	EXP2-1	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-21	EXP2-1	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-22	EXP2-2	MOISTURE-TISS-VA	73.5	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	6.8	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	1.81	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	5.72	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	1.52	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.636	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.169	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.185	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.0491	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	18200	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	4830	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.0388	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.0103	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.063	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.017	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.060	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.0160	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	8.98	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	2.38	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	54.8	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	14.5	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.088	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.0233	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Magnesium (Mg)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	1070	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	284	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	4.16	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	1.10	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-22	EXP2-2	HG-DRY-CVAFS-N-VA	0.0644	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-22	EXP2-2	HG-WET-CVAFS-N-VA	0.0171	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.042	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.0111	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	17900	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	4750	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	12400	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	3280	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	3.92	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	1.04	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	1.16	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.306	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-22	EXP2-2	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-22	EXP2-2	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	2760	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	731	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	16.5	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	4.36	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.0425	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.0113	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.34	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.090	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.0563	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.0149	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	0.18	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	0.047	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	125	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	33.0	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-22	EXP2-2	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-22	EXP2-2	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-23	EXP2-3	MOISTURE-TISS-VA	74.6	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	7.7	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	1.95	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	5.40	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	1.37	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.955	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.242	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.577	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.146	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	18800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	4780	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.0395	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Cesium (Cs)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.0100	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.147	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.037	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.071	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.0180	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	13.3	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	3.37	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	92.8	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	23.6	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.176	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.0447	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	1060	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	269	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	3.46	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.877	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-23	EXP2-3	HG-DRY-CVAFS-N-VA	0.0891	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-23	EXP2-3	HG-WET-CVAFS-N-VA	0.0226	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.043	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.0108	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	17600	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	4470	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	12300	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	3120	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	3.82	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.969	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	1.34	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.341	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-23	EXP2-3	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-23	EXP2-3	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	2790	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	707	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	17.7	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	4.48	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.0440	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.0112	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.41	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.104	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.0344	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.00873	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	0.22	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	0.056	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	147	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	37.3	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-23	EXP2-3	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-23	EXP2-3	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-24	EXP2-4	MOISTURE-TISS-VA	77.1	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	13.7	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	3.1	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	5.21	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	1.19	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Barium (Ba)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	1.53	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.350	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	0.960	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.220	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	21900	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	5020	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	0.0403	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.0092	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	0.050	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.0114	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	22.0	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	5.04	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	106	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	24.4	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	0.276	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.063	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	1160	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	266	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	2.91	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.666	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-24	EXP2-4	HG-DRY-MICR-CVAF-VA	0.0897	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-24	EXP2-4	HG-WET-MICR-CVAF-VA	0.0205	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	0.052	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.0120	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	18400	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	4210	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	13400	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	3060	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	3.54	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.812	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	1.36	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.311	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-24	EXP2-4	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-24	EXP2-4	AG-WET-MICR-HRMS-VA	0.0011	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	3220	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	738	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	22.6	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	5.17	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	0.0547	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.0125	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	0.29	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.067	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	0.0243	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.00557	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	0.20	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	0.046	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	177	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	40.6	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Zirconium (Zr)-Total	L1697526-24	EXP2-4	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-24	EXP2-4	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-25	EXP2-5	MOISTURE-TISS-VA	77.4	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	8.0	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	1.80	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	6.22	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	1.41	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.803	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.181	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.241	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.0545	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	21300	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	4810	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.0449	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.0101	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.103	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.023	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.081	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.0183	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	11.7	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	2.64	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	72.8	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	16.4	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.093	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.0210	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	1180	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	266	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	3.41	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.770	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-25	EXP2-5	HG-DRY-CVAFS-N-VA	0.0773	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-25	EXP2-5	HG-WET-CVAFS-N-VA	0.0175	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.055	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.0123	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	20000	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	4520	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	14400	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	3250	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	4.54	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	1.03	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	1.42	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.321	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-25	EXP2-5	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-25	EXP2-5	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	3690	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	833	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	19.5	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Strontium (Sr)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	4.41	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.0571	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.0129	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.41	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.092	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.103	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.0232	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	0.27	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	0.061	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	154	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	34.7	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-25	EXP2-5	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-25	EXP2-5	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-26	EXP2-6	MOISTURE-TISS-VA	76.9	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	7.9	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	1.83	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	6.79	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	1.57	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	1.04	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.240	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.764	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.176	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	21700	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	5000	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.0425	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.0098	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.127	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.029	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.094	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.0217	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	17.6	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	4.05	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	99.4	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	22.9	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.167	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.0384	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	1420	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	327	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	6.50	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	1.50	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-26	EXP2-6	HG-DRY-CVAFS-N-VA	0.0993	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-26	EXP2-6	HG-WET-CVAFS-N-VA	0.0229	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.053	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.0122	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Phosphorus (P)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	23000	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	5300	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	15800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	3640	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	4.76	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	1.10	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	1.50	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.346	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-26	EXP2-6	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-26	EXP2-6	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	4090	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	943	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	20.8	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	4.80	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.0506	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.0117	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.32	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.075	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.108	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.0250	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	0.33	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	0.076	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	189	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	43.5	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-26	EXP2-6	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-26	EXP2-6	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-27	EXP2-7	MOISTURE-TISS-VA	76.0	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	6.4	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	1.5	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	5.23	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	1.25	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	1.02	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.244	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	0.781	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.187	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	18800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	4520	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	0.0432	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.0104	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	0.051	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.0123	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	21.3	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	5.10	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	74.7	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	17.9	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	0.159	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Lead (Pb)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.038	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	1150	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	275	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	4.35	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	1.04	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-27	EXP2-7	HG-DRY-MICR-CVAF-VA	0.108	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-27	EXP2-7	HG-WET-MICR-CVAF-VA	0.0260	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	0.048	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.0116	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	19000	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	4550	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	13000	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	3120	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	3.68	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.883	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	1.16	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.279	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-27	EXP2-7	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-27	EXP2-7	AG-WET-MICR-HRMS-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	3120	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	749	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	15.3	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	3.66	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	0.0487	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.0117	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	0.18	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.042	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	0.0082	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.00197	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	0.20	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	0.048	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	153	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	36.8	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-27	EXP2-7	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-27	EXP2-7	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-28	EXP2-8	MOISTURE-TISS-VA	74.4	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	9.2	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	2.35	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	6.60	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	1.69	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	1.07	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.275	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.690	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.177	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Calcium (Ca)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	20500	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	5260	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.0388	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.0099	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.091	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.023	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.076	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.0194	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	15.6	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	4.00	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	85.2	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	21.8	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.226	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.0578	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	1250	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	319	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	4.98	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	1.28	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-28	EXP2-8	HG-DRY-CVAFS-N-VA	0.0793	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-28	EXP2-8	HG-WET-CVAFS-N-VA	0.0203	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.046	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.0118	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	21000	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	5390	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	14600	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	3750	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	4.29	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	1.10	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	1.27	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.324	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-28	EXP2-8	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-28	EXP2-8	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	3660	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	937	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	19.5	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	4.99	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.0454	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.0116	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.40	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.103	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.0576	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.0148	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	0.22	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	0.057	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	162	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	41.4	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-28	EXP2-8	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-28	EXP2-8	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-29	EXP2-9	MOISTURE-TISS-VA	77.2	0.25	%		18-Sep-15	00:00		25-Nov-15	412926	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<5.0	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<1.0	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Antimony (Sb)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	5.10	0.030	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	1.17	0.0060	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	×	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	1.28	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.292	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	0.789	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.180	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	18800	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	4300	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	0.0379	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.0087	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	0.044	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.0101	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	15.4	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	3.51	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	76.4	5.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	17.5	1.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	0.215	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.049	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	1070	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	245	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	4.30	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.983	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-29	EXP2-9	HG-DRY-MICR-CVAF-VA	0.0970	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-29	EXP2-9	HG-WET-MICR-CVAF-VA	0.0222	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	0.057	0.040	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.0131	0.0080	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	17900	10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	4090	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	12300	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	2810	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	3.49	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.797	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	1.20	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.273	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-29	EXP2-9	AG-DRY-MICR-HRMS-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-29	EXP2-9	AG-WET-MICR-HRMS-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	2970	20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	679	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	19.6	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	4.48	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	0.0462	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.0105	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	0.46	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.104	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	0.0216	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.00493	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	0.20	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Vanadium (V)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	0.047	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	162	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	37.1	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-29	EXP2-9	MET-DRY-MICR-HRMS-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-29	EXP2-9	MET-WET-MICR-HRMS-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	02-Dec-15	412925	✓	✓	Tissue	Metals
Physical Tests (Tissue)																
% Moisture	L1697526-30	EXP2-10	MOISTURE-TISS-VA	76.9	0.25	%		18-Sep-15	00:00		25-Nov-15	412322	✓	✓	Tissue	Physical Tests
Metals (Tissue)																
Aluminum (Al)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	4.7	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Aluminum (Al)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	1.08	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Antimony (Sb)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	6.00	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Arsenic (As)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	1.38	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	1.05	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Barium (Ba)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.242	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Beryllium (Be)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	<0.010	0.010	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Bismuth (Bi)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	<0.0020	0.0020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	<1.0	1.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Boron (B)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	<0.20	0.20	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.745	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cadmium (Cd)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.172	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	22000	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Calcium (Ca)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	5090	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.0385	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cesium (Cs)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.0089	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.063	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Chromium (Cr)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.015	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.077	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Cobalt (Co)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.0177	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	15.4	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Copper (Cu)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	3.55	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	79.1	3.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Iron (Fe)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	18.3	0.60	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.228	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lead (Pb)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.0527	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	<0.50	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Lithium (Li)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	<0.10	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	1210	2.0	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Magnesium (Mg)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	279	0.40	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	3.37	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Manganese (Mn)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.778	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-30	EXP2-10	HG-DRY-CVAFS-N-VA	0.104	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Mercury (Hg)-Total	L1697526-30	EXP2-10	HG-WET-CVAFS-N-VA	0.0239	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	04-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.043	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Molybdenum (Mo)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.0099	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Nickel (Ni)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	20700	10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Phosphorus (P)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	4770	2.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	13700	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Potassium (K)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	3160	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	4.06	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Rubidium (Rb)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.937	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	1.50	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Selenium (Se)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.345	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-30	EXP2-10	AG-DRY-CCMS-N-VA	<0.0050	0.0050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Silver (Ag)-Total	L1697526-30	EXP2-10	AG-WET-CCMS-N-VA	<0.0010	0.0010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Results of Analysis L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Parameter	ALS ID	Client Sample ID	ALS Test Code	Results	Detection Limit	Units	Qual	Date Sampled	Time Sampled	Prep Date	Analysis Date	QC Lot	QC Eval	Hold Time Eval	Matrix	Class
Sodium (Na)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	3910	20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Sodium (Na)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	902	4.0	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	21.5	0.050	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Strontium (Sr)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	4.97	0.010	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	<0.020	0.020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tellurium (Te)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	<0.0040	0.0040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.0481	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Thallium (Tl)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.0111	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.41	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Tin (Sn)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.095	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.0160	0.0020	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Uranium (U)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.00370	0.00040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	0.21	0.10	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Vanadium (V)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	0.049	0.020	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	164	0.50	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zinc (Zn)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	37.7	0.10	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-30	EXP2-10	MET-DRY-CCMS-N-VA	<0.20	0.20	mg/kg		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals
Zirconium (Zr)-Total	L1697526-30	EXP2-10	MET-WET-CCMS-N-VA	<0.040	0.040	mg/kg wwt		18-Sep-15	00:00	03-Dec-15	03-Dec-15	414979	✓	✓	Tissue	Metals

Evaluation Legend

✓ QC Lot met ALS Data Quality Objectives or Test result met ALS Hold Time Recommendations
✖ QC Lot did not meet ALS Data Quality Objectives or Test result did not meet ALS Hold Time Recommendations

Duplicates L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Physical Tests (Tissue)																	
WG2220532-6	L1697526-6	REF-6	DUP	412322	% Moisture	70.4	70.9	0.25	%	0.7	20	-			✓	Tissue	Physical Tests
WG2221305-1	L1697526-2	REF-2	DUP	412926	% Moisture	74.2	73.3	0.25	%	1.1	20	-			✓	Tissue	Physical Tests
Metals (Tissue)																	
WG2221303-3	L1697526-2	REF-2	DUP	412925	Aluminum (Al)-Total	<5.0	<5.0	5.0	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Aluminum (Al)-Total	4.4	3.7	2.0	mg/kg	19	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Aluminum (Al)-Total	<5.0	<5.0	5.0	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Aluminum (Al)-Total	<1.0	<1.0	1.0	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Aluminum (Al)-Total	1.24	1.02	0.40	mg/kg wwt	19	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Aluminum (Al)-Total	<1.0	<1.0	1.0	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Antimony (Sb)-Total	<0.010	<0.010	0.010	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Antimony (Sb)-Total	<0.010	<0.010	0.010	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Antimony (Sb)-Total	0.016	<0.010	0.010	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Antimony (Sb)-Total	<0.0020	<0.0020	0.0020	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Antimony (Sb)-Total	<0.0020	<0.0020	0.0020	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Antimony (Sb)-Total	0.0048	0.0024	0.0020	mg/kg wwt	-		0.0025	0.004		✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Arsenic (As)-Total	4.91	4.56	0.030	mg/kg	7.5	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Arsenic (As)-Total	5.58	6.21	0.020	mg/kg	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Arsenic (As)-Total	4.42	4.98	0.030	mg/kg	12	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Arsenic (As)-Total	1.27	1.18	0.0060	mg/kg wwt	7.5	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Arsenic (As)-Total	1.56	1.74	0.0040	mg/kg wwt	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Arsenic (As)-Total	1.31	1.47	0.0060	mg/kg wwt	12	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Barium (Ba)-Total	1.05	0.969	0.050	mg/kg	8	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Barium (Ba)-Total	0.487	0.561	0.050	mg/kg	14	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Barium (Ba)-Total	1.14	0.941	0.050	mg/kg	19	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Barium (Ba)-Total	0.271	0.250	0.010	mg/kg wwt	8	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Barium (Ba)-Total	0.136	0.157	0.010	mg/kg wwt	14	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Barium (Ba)-Total	0.337	0.278	0.010	mg/kg wwt	19	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Beryllium (Be)-Total	<0.010	<0.010	0.010	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Beryllium (Be)-Total	<0.010	<0.010	0.010	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Beryllium (Be)-Total	<0.010	<0.010	0.010	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Beryllium (Be)-Total	<0.0020	<0.0020	0.0020	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Beryllium (Be)-Total	<0.0020	<0.0020	0.0020	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Beryllium (Be)-Total	<0.0020	<0.0020	0.0020	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Bismuth (Bi)-Total	<0.010	<0.010	0.010	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Bismuth (Bi)-Total	<0.010	<0.010	0.010	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Bismuth (Bi)-Total	<0.010	<0.010	0.010	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Bismuth (Bi)-Total	<0.0020	<0.0020	0.0020	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Bismuth (Bi)-Total	<0.0020	<0.0020	0.0020	mg/kg wwt	N/A	40	-			✓	Tissue	Metals

Duplicates L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
WG2225498-3	L1697526-6	REF-6	DUP	416081	Bismuth (Bi)-Total	<0.0020	<0.0020	0.0020	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Boron (B)-Total	<1.0	<1.0	1.0	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Boron (B)-Total	<1.0	<1.0	1.0	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Boron (B)-Total	<1.0	<1.0	1.0	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Boron (B)-Total	<0.20	<0.20	0.20	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Boron (B)-Total	<0.20	<0.20	0.20	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Boron (B)-Total	<0.20	<0.20	0.20	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Cadmium (Cd)-Total	0.446	0.398	0.010	mg/kg	11	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Cadmium (Cd)-Total	0.141	0.181	0.0050	mg/kg	25	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Cadmium (Cd)-Total	0.366	0.270	0.010	mg/kg	30	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Cadmium (Cd)-Total	0.115	0.103	0.0020	mg/kg wwt	11	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Cadmium (Cd)-Total	0.0394	0.0506	0.0010	mg/kg wwt	25	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Cadmium (Cd)-Total	0.108	0.0798	0.0020	mg/kg wwt	30	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Calcium (Ca)-Total	16400	18100	20	mg/kg	10	60	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Calcium (Ca)-Total	15300	15200	20	mg/kg	0.2	60	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Calcium (Ca)-Total	25100	18500	20	mg/kg	30	60	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Calcium (Ca)-Total	4240	4690	4.0	mg/kg wwt	10	60	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Calcium (Ca)-Total	4270	4260	4.0	mg/kg wwt	0.2	60	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Calcium (Ca)-Total	7420	5480	4.0	mg/kg wwt	30	60	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Cesium (Cs)-Total	0.0344	0.0359	0.0050	mg/kg	4.2	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Cesium (Cs)-Total	0.0403	0.0412	0.0050	mg/kg	2.2	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Cesium (Cs)-Total	0.0318	0.0334	0.0050	mg/kg	5.1	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Cesium (Cs)-Total	0.0089	0.0093	0.0010	mg/kg wwt	4.2	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Cesium (Cs)-Total	0.0113	0.0115	0.0010	mg/kg wwt	2.2	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Cesium (Cs)-Total	0.0094	0.0099	0.0010	mg/kg wwt	5.1	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Chromium (Cr)-Total	<0.20	<0.20	0.20	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Chromium (Cr)-Total	<0.050	0.058	0.050	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Chromium (Cr)-Total	<0.20	<0.20	0.20	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Chromium (Cr)-Total	<0.040	<0.040	0.040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Chromium (Cr)-Total	0.014	0.016	0.010	mg/kg wwt	16	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Chromium (Cr)-Total	<0.040	<0.040	0.040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Cobalt (Co)-Total	0.046	0.044	0.020	mg/kg	4.4	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Cobalt (Co)-Total	0.061	0.070	0.020	mg/kg	13	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Cobalt (Co)-Total	0.050	0.062	0.020	mg/kg	22	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Cobalt (Co)-Total	0.0118	0.0113	0.0040	mg/kg wwt	4.4	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Cobalt (Co)-Total	0.0172	0.0196	0.0040	mg/kg wwt	13	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Cobalt (Co)-Total	0.0147	0.0183	0.0040	mg/kg wwt	22	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Copper (Cu)-Total	20.9	15.1	0.20	mg/kg	32	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Copper (Cu)-Total	10.1	11.5	0.10	mg/kg	13	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Copper (Cu)-Total	16.4	19.8	0.20	mg/kg	19	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Copper (Cu)-Total	5.40	3.91	0.040	mg/kg wwt	32	40	-			✓	Tissue	Metals

Duplicates L1697526

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Report Version 2

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Copper (Cu)-Total	2.83	3.21	0.020	mg/kg wwt	13	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Copper (Cu)-Total	4.86	5.86	0.040	mg/kg wwt	19	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Iron (Fe)-Total	70.1	67.2	5.0	mg/kg	4.3	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Iron (Fe)-Total	58.2	73.4	3.0	mg/kg	23	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Iron (Fe)-Total	64.4	65.9	5.0	mg/kg	2.3	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Iron (Fe)-Total	18.1	17.4	1.0	mg/kg wwt	4.3	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Iron (Fe)-Total	16.3	20.5	0.60	mg/kg wwt	23	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Iron (Fe)-Total	19.0	19.5	1.0	mg/kg wwt	2.3	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Lead (Pb)-Total	0.124	0.106	0.050	mg/kg	15	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Lead (Pb)-Total	0.090	0.097	0.020	mg/kg	7.2	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Lead (Pb)-Total	0.200	0.112	0.050	mg/kg	-		0.087	0.1		✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Lead (Pb)-Total	0.032	0.028	0.010	mg/kg wwt	15	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Lead (Pb)-Total	0.0253	0.0272	0.0040	mg/kg wwt	7.2	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Lead (Pb)-Total	0.059	0.033	0.010	mg/kg wwt	0.026	0.02	-		DUP-H	×	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Lithium (Li)-Total	<0.50	<0.50	0.50	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Lithium (Li)-Total	<0.50	<0.50	0.50	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Lithium (Li)-Total	<0.50	<0.50	0.50	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Lithium (Li)-Total	<0.10	<0.10	0.10	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Lithium (Li)-Total	<0.10	<0.10	0.10	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Lithium (Li)-Total	<0.10	<0.10	0.10	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Magnesium (Mg)-Total	1050	1020	2.0	mg/kg	2.8	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Magnesium (Mg)-Total	982	1090	2.0	mg/kg	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Magnesium (Mg)-Total	1130	1080	2.0	mg/kg	4.4	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Magnesium (Mg)-Total	271	263	0.40	mg/kg wwt	2.8	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Magnesium (Mg)-Total	274	305	0.40	mg/kg wwt	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Magnesium (Mg)-Total	335	321	0.40	mg/kg wwt	4.4	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Manganese (Mn)-Total	7.95	8.67	0.050	mg/kg	8.6	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Manganese (Mn)-Total	2.52	2.95	0.050	mg/kg	16	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Manganese (Mn)-Total	6.45	4.26	0.050	mg/kg	41	40	-		DUP-H	×	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Manganese (Mn)-Total	2.06	2.24	0.010	mg/kg wwt	8.6	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Manganese (Mn)-Total	0.704	0.824	0.010	mg/kg wwt	16	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Manganese (Mn)-Total	1.91	1.26	0.010	mg/kg wwt	41	40	-		DUP-H	×	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Mercury (Hg)-Total	0.0706	0.0678	0.0050	mg/kg	4	30	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Mercury (Hg)-Total	0.0720	0.0735	0.0050	mg/kg	2	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Mercury (Hg)-Total	0.0626	0.0569	0.0050	mg/kg	9.6	30	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Mercury (Hg)-Total	0.0183	0.0175	0.0010	mg/kg wwt	4	30	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Mercury (Hg)-Total	0.0201	0.0205	0.0010	mg/kg wwt	2	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Mercury (Hg)-Total	0.0185	0.0168	0.0010	mg/kg wwt	9.6	30	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Molybdenum (Mo)-Total	0.049	0.047	0.040	mg/kg	4.2	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Molybdenum (Mo)-Total	0.043	0.042	0.020	mg/kg	2.6	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Molybdenum (Mo)-Total	<0.040	0.052	0.040	mg/kg	N/A	40	-			✓	Tissue	Metals

Duplicates L1697526

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Report Version 2

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
WG2221303-3	L1697526-2	REF-2	DUP	412925	Molybdenum (Mo)-Total	0.0125	0.0120	0.0080	mg/kg wwt	4.2	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Molybdenum (Mo)-Total	0.0120	0.0117	0.0040	mg/kg wwt	2.6	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Molybdenum (Mo)-Total	0.0117	0.0153	0.0080	mg/kg wwt	27	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Nickel (Ni)-Total	<0.20	<0.20	0.20	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Nickel (Ni)-Total	<0.20	<0.20	0.20	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Nickel (Ni)-Total	<0.20	<0.20	0.20	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Nickel (Ni)-Total	<0.040	<0.040	0.040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Nickel (Ni)-Total	<0.040	<0.040	0.040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Nickel (Ni)-Total	<0.040	<0.040	0.040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Phosphorus (P)-Total	17500	18000	10	mg/kg	2.9	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Phosphorus (P)-Total	16000	17600	10	mg/kg	9.6	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Phosphorus (P)-Total	20900	18300	10	mg/kg	13	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Phosphorus (P)-Total	4520	4650	2.0	mg/kg wwt	2.9	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Phosphorus (P)-Total	4470	4920	2.0	mg/kg wwt	9.6	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Phosphorus (P)-Total	6170	5410	2.0	mg/kg wwt	13	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Potassium (K)-Total	12600	12000	20	mg/kg	5.4	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Potassium (K)-Total	12800	14200	20	mg/kg	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Potassium (K)-Total	10400	11100	20	mg/kg	6.2	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Potassium (K)-Total	3270	3090	4.0	mg/kg wwt	5.4	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Potassium (K)-Total	3580	3980	4.0	mg/kg wwt	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Potassium (K)-Total	3080	3280	4.0	mg/kg wwt	6.2	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Rubidium (Rb)-Total	3.34	3.29	0.050	mg/kg	1.4	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Rubidium (Rb)-Total	4.20	4.71	0.050	mg/kg	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Rubidium (Rb)-Total	3.06	3.30	0.050	mg/kg	7.4	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Rubidium (Rb)-Total	0.863	0.852	0.010	mg/kg wwt	1.4	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Rubidium (Rb)-Total	1.17	1.32	0.010	mg/kg wwt	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Rubidium (Rb)-Total	0.905	0.975	0.010	mg/kg wwt	7.4	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Selenium (Se)-Total	1.16	1.03	0.10	mg/kg	12	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Selenium (Se)-Total	1.19	1.20	0.050	mg/kg	1	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Selenium (Se)-Total	0.95	1.08	0.10	mg/kg	13	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Selenium (Se)-Total	0.299	0.266	0.020	mg/kg wwt	12	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Selenium (Se)-Total	0.332	0.335	0.010	mg/kg wwt	1	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Selenium (Se)-Total	0.282	0.321	0.020	mg/kg wwt	13	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Silver (Ag)-Total	<0.0050	<0.0050	0.0050	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Silver (Ag)-Total	<0.0050	<0.0050	0.0050	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Silver (Ag)-Total	<0.0050	<0.0050	0.0050	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Silver (Ag)-Total	0.0012	<0.0010	0.0010	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Silver (Ag)-Total	<0.0010	<0.0010	0.0010	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Silver (Ag)-Total	<0.0010	0.0014	0.0010	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Sodium (Na)-Total	3330	2990	20	mg/kg	11	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Sodium (Na)-Total	2810	3110	20	mg/kg	10	40	-			✓	Tissue	Metals

Duplicates L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
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ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
WG2225498-3	L1697526-6	REF-6	DUP	416081	Sodium (Na)-Total	2610	2750	20	mg/kg	4.9	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Sodium (Na)-Total	861	773	4.0	mg/kg wwt	11	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Sodium (Na)-Total	785	869	4.0	mg/kg wwt	10	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Sodium (Na)-Total	773	812	4.0	mg/kg wwt	4.9	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Strontium (Sr)-Total	16.2	17.2	0.10	mg/kg	5.9	60	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Strontium (Sr)-Total	13.4	13.0	0.050	mg/kg	2.6	60	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Strontium (Sr)-Total	22.3	16.9	0.10	mg/kg	27	60	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Strontium (Sr)-Total	4.19	4.44	0.020	mg/kg wwt	5.9	60	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Strontium (Sr)-Total	3.74	3.65	0.010	mg/kg wwt	2.6	60	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Strontium (Sr)-Total	6.59	5.00	0.020	mg/kg wwt	27	60	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Tellurium (Te)-Total	<0.020	<0.020	0.020	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Tellurium (Te)-Total	<0.020	<0.020	0.020	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Tellurium (Te)-Total	<0.020	<0.020	0.020	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Tellurium (Te)-Total	<0.0040	<0.0040	0.0040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Tellurium (Te)-Total	<0.0040	<0.0040	0.0040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Tellurium (Te)-Total	<0.0040	<0.0040	0.0040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Thallium (Tl)-Total	0.0445	0.0437	0.0020	mg/kg	1.8	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Thallium (Tl)-Total	0.0469	0.0477	0.0020	mg/kg	1.8	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Thallium (Tl)-Total	0.0445	0.0475	0.0020	mg/kg	6.6	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Thallium (Tl)-Total	0.0115	0.0113	0.00040	mg/kg wwt	1.8	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Thallium (Tl)-Total	0.0131	0.0133	0.00040	mg/kg wwt	1.8	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Thallium (Tl)-Total	0.0132	0.0141	0.00040	mg/kg wwt	6.6	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Tin (Sn)-Total	0.30	0.29	0.10	mg/kg	1.1	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Tin (Sn)-Total	0.26	0.29	0.10	mg/kg	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Tin (Sn)-Total	0.91	0.74	0.10	mg/kg	22	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Tin (Sn)-Total	0.077	0.076	0.020	mg/kg wwt	1.1	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Tin (Sn)-Total	0.073	0.081	0.020	mg/kg wwt	11	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Tin (Sn)-Total	0.271	0.218	0.020	mg/kg wwt	22	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Uranium (U)-Total	0.0324	0.0323	0.0020	mg/kg	0.2	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Uranium (U)-Total	0.0454	0.0646	0.0020	mg/kg	35	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Uranium (U)-Total	0.0241	0.0168	0.0020	mg/kg	36	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Uranium (U)-Total	0.00838	0.00836	0.00040	mg/kg wwt	0.2	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Uranium (U)-Total	0.0127	0.0180	0.00040	mg/kg wwt	35	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Uranium (U)-Total	0.00713	0.00496	0.00040	mg/kg wwt	36	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Vanadium (V)-Total	0.19	0.18	0.10	mg/kg	2.3	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Vanadium (V)-Total	0.18	0.19	0.10	mg/kg	8.9	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Vanadium (V)-Total	0.20	0.20	0.10	mg/kg	2.8	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Vanadium (V)-Total	0.049	0.047	0.020	mg/kg wwt	2.3	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Vanadium (V)-Total	0.049	0.054	0.020	mg/kg wwt	8.9	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Vanadium (V)-Total	0.059	0.060	0.020	mg/kg wwt	2.8	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Zinc (Zn)-Total	147	127	1.0	mg/kg	15	40	-			✓	Tissue	Metals

Duplicates L1697526

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Report Version 2

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Zinc (Zn)-Total	118	137	0.50	mg/kg	14	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Zinc (Zn)-Total	158	150	1.0	mg/kg	5.6	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Zinc (Zn)-Total	38.1	32.9	0.20	mg/kg wwt	15	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Zinc (Zn)-Total	33.0	38.2	0.10	mg/kg wwt	14	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Zinc (Zn)-Total	46.8	44.2	0.20	mg/kg wwt	5.6	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Zirconium (Zr)-Total	<0.20	<0.20	0.20	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Zirconium (Zr)-Total	<0.20	<0.20	0.20	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Zirconium (Zr)-Total	<0.20	<0.20	0.20	mg/kg	N/A	40	-			✓	Tissue	Metals
WG2221303-3	L1697526-2	REF-2	DUP	412925	Zirconium (Zr)-Total	<0.040	<0.040	0.040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2224022-2	L1697526-16	EXP1-6	DUP	414979	Zirconium (Zr)-Total	<0.040	<0.040	0.040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals
WG2225498-3	L1697526-6	REF-6	DUP	416081	Zirconium (Zr)-Total	<0.040	<0.040	0.040	mg/kg wwt	N/A	40	-			✓	Tissue	Metals

Qualifier Legend

DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.

Evaluation Legend

✓	QC Lot met ALS Data Quality Objectives
✘	QC Lot did not meet ALS Data Quality Objectives

Quality Control L1697526

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Metals (Tissue)													
CRM	Aluminum (Al)-Total	414979	WG2224022-7	182	166	mg/kg	109.4	70-130	%		✓	Tissue	Metals
CRM	Aluminum (Al)-Total	414979	WG2224022-7	182	166	mg/kg wwt	109.4	70-130	%		✓	Tissue	Metals
CRM	Antimony (Sb)-Total	412925	WG2221303-4	<0.010	0.00766	mg/kg	0.007	0-.018	mg/kg		✓	Tissue	Metals
CRM	Antimony (Sb)-Total	414979	WG2224022-3	<0.010	0.00766	mg/kg	0.009	0-.018	mg/kg		✓	Tissue	Metals
CRM	Antimony (Sb)-Total	414979	WG2224022-7	0.018	0.02	mg/kg	0.018	.01-.03	mg/kg		✓	Tissue	Metals
CRM	Antimony (Sb)-Total	416081	WG2225498-4	<0.010	0.00766	mg/kg	0.009	0-.018	mg/kg		✓	Tissue	Metals
CRM	Antimony (Sb)-Total	412925	WG2221303-4	0.0071	0.00766	mg/kg wwt	0.0071	0-.0177	mg/kg wwt		✓	Tissue	Metals
CRM	Antimony (Sb)-Total	414979	WG2224022-3	0.0088	0.00766	mg/kg wwt	0.0088	0-.0177	mg/kg wwt		✓	Tissue	Metals
CRM	Antimony (Sb)-Total	414979	WG2224022-7	0.0180	0.02	mg/kg wwt	0.0180	.01-.03	mg/kg wwt		✓	Tissue	Metals
CRM	Antimony (Sb)-Total	416081	WG2225498-4	0.0093	0.00766	mg/kg wwt	0.0093	0-.0177	mg/kg wwt		✓	Tissue	Metals
CRM	Arsenic (As)-Total	412925	WG2221303-4	7.26	7.65	mg/kg	94.9	70-130	%		✓	Tissue	Metals
CRM	Arsenic (As)-Total	414979	WG2224022-3	7.33	7.65	mg/kg	95.9	70-130	%		✓	Tissue	Metals
CRM	Arsenic (As)-Total	416081	WG2225498-4	6.44	7.65	mg/kg	84.2	70-130	%		✓	Tissue	Metals
CRM	Arsenic (As)-Total	412925	WG2221303-4	7.26	7.65	mg/kg wwt	94.9	70-130	%		✓	Tissue	Metals
CRM	Arsenic (As)-Total	414979	WG2224022-3	7.33	7.65	mg/kg wwt	95.9	70-130	%		✓	Tissue	Metals
CRM	Arsenic (As)-Total	416081	WG2225498-4	6.44	7.65	mg/kg wwt	84.2	70-130	%		✓	Tissue	Metals
CRM	Barium (Ba)-Total	412925	WG2221303-4	6.35	7.06	mg/kg	89.9	70-130	%		✓	Tissue	Metals
CRM	Barium (Ba)-Total	414979	WG2224022-3	6.60	7.06	mg/kg	93.5	70-130	%		✓	Tissue	Metals
CRM	Barium (Ba)-Total	414979	WG2224022-7	120	124	mg/kg	97.0	70-130	%		✓	Tissue	Metals
CRM	Barium (Ba)-Total	416081	WG2225498-4	6.49	7.06	mg/kg	91.9	70-130	%		✓	Tissue	Metals
CRM	Barium (Ba)-Total	412925	WG2221303-4	6.35	7.06	mg/kg wwt	89.9	70-130	%		✓	Tissue	Metals
CRM	Barium (Ba)-Total	414979	WG2224022-3	6.60	7.06	mg/kg wwt	93.5	70-130	%		✓	Tissue	Metals
CRM	Barium (Ba)-Total	414979	WG2224022-7	120	124	mg/kg wwt	97.0	70-130	%		✓	Tissue	Metals
CRM	Barium (Ba)-Total	416081	WG2225498-4	6.49	7.06	mg/kg wwt	91.9	70-130	%		✓	Tissue	Metals
CRM	Boron (B)-Total	412925	WG2221303-4	5.3	4.5	mg/kg	117.2	70-130	%		✓	Tissue	Metals
CRM	Boron (B)-Total	414979	WG2224022-3	4.2	4.5	mg/kg	92.7	70-130	%		✓	Tissue	Metals
CRM	Boron (B)-Total	414979	WG2224022-7	25.6	29	mg/kg	88.3	70-130	%		✓	Tissue	Metals
CRM	Boron (B)-Total	416081	WG2225498-4	4.6	4.5	mg/kg	101.4	70-130	%		✓	Tissue	Metals
CRM	Boron (B)-Total	412925	WG2221303-4	5.27	4.5	mg/kg wwt	117.2	70-130	%		✓	Tissue	Metals
CRM	Boron (B)-Total	414979	WG2224022-3	4.17	4.5	mg/kg wwt	92.7	70-130	%		✓	Tissue	Metals
CRM	Boron (B)-Total	414979	WG2224022-7	25.6	29	mg/kg wwt	88.3	70-130	%		✓	Tissue	Metals
CRM	Boron (B)-Total	416081	WG2225498-4	4.56	4.5	mg/kg wwt	101.4	70-130	%		✓	Tissue	Metals
CRM	Cadmium (Cd)-Total	412925	WG2221303-4	3.06	2.48	mg/kg	123.4	70-130	%		✓	Tissue	Metals
CRM	Cadmium (Cd)-Total	414979	WG2224022-3	2.35	2.48	mg/kg	94.8	70-130	%		✓	Tissue	Metals
CRM	Cadmium (Cd)-Total	416081	WG2225498-4	3.03	2.48	mg/kg	122.3	70-130	%		✓	Tissue	Metals
CRM	Cadmium (Cd)-Total	412925	WG2221303-4	3.06	2.48	mg/kg wwt	123.4	70-130	%		✓	Tissue	Metals
CRM	Cadmium (Cd)-Total	414979	WG2224022-3	2.35	2.48	mg/kg wwt	94.8	70-130	%		✓	Tissue	Metals
CRM	Cadmium (Cd)-Total	416081	WG2225498-4	3.03	2.48	mg/kg wwt	122.3	70-130	%		✓	Tissue	Metals

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
CRM	Calcium (Ca)-Total	412925	WG2221303-4	946	838	mg/kg	112.9	70-130	%		✓	Tissue	Metals
CRM	Calcium (Ca)-Total	414979	WG2224022-3	750	838	mg/kg	89.5	70-130	%		✓	Tissue	Metals
CRM	Calcium (Ca)-Total	414979	WG2224022-7	14900	15600	mg/kg	95.6	70-130	%		✓	Tissue	Metals
CRM	Calcium (Ca)-Total	416081	WG2225498-4	944	838	mg/kg	112.6	70-130	%		✓	Tissue	Metals
CRM	Calcium (Ca)-Total	412925	WG2221303-4	946	838	mg/kg wwt	112.9	70-130	%		✓	Tissue	Metals
CRM	Calcium (Ca)-Total	414979	WG2224022-3	750	838	mg/kg wwt	89.5	70-130	%		✓	Tissue	Metals
CRM	Calcium (Ca)-Total	414979	WG2224022-7	14900	15600	mg/kg wwt	95.6	70-130	%		✓	Tissue	Metals
CRM	Calcium (Ca)-Total	416081	WG2225498-4	944	838	mg/kg wwt	112.6	70-130	%		✓	Tissue	Metals
CRM	Cesium (Cs)-Total	414979	WG2224022-7	0.0618	0.0714	mg/kg	86.6	70-130	%		✓	Tissue	Metals
CRM	Cesium (Cs)-Total	414979	WG2224022-7	0.0618	0.0714	mg/kg wwt	86.6	70-130	%		✓	Tissue	Metals
CRM	Chromium (Cr)-Total	412925	WG2221303-4	0.25	0.26	mg/kg	0.25	.06-.46	mg/kg		✓	Tissue	Metals
CRM	Chromium (Cr)-Total	414979	WG2224022-3	0.226	0.26	mg/kg	87.1	70-130	%		✓	Tissue	Metals
CRM	Chromium (Cr)-Total	414979	WG2224022-7	0.589	0.674	mg/kg	87.4	70-130	%		✓	Tissue	Metals
CRM	Chromium (Cr)-Total	416081	WG2225498-4	0.23	0.26	mg/kg	0.23	.06-.46	mg/kg		✓	Tissue	Metals
CRM	Chromium (Cr)-Total	412925	WG2221303-4	0.250	0.26	mg/kg wwt	0.250	.06-.46	mg/kg wwt		✓	Tissue	Metals
CRM	Chromium (Cr)-Total	414979	WG2224022-3	0.226	0.26	mg/kg wwt	87.1	70-130	%		✓	Tissue	Metals
CRM	Chromium (Cr)-Total	414979	WG2224022-7	0.589	0.674	mg/kg wwt	87.4	70-130	%		✓	Tissue	Metals
CRM	Chromium (Cr)-Total	416081	WG2225498-4	0.234	0.26	mg/kg wwt	0.234	.06-.46	mg/kg wwt		✓	Tissue	Metals
CRM	Cobalt (Co)-Total	412925	WG2221303-4	0.263	0.371	mg/kg	70.9	70-130	%		✓	Tissue	Metals
CRM	Cobalt (Co)-Total	414979	WG2224022-3	0.350	0.371	mg/kg	94.4	70-130	%		✓	Tissue	Metals
CRM	Cobalt (Co)-Total	414979	WG2224022-7	0.052	0.0539	mg/kg	0.052	.034-.074	mg/kg		✓	Tissue	Metals
CRM	Cobalt (Co)-Total	416081	WG2225498-4	0.324	0.371	mg/kg	87.2	70-130	%		✓	Tissue	Metals
CRM	Cobalt (Co)-Total	412925	WG2221303-4	0.263	0.371	mg/kg wwt	70.9	70-130	%		✓	Tissue	Metals
CRM	Cobalt (Co)-Total	414979	WG2224022-3	0.350	0.371	mg/kg wwt	94.4	70-130	%		✓	Tissue	Metals
CRM	Cobalt (Co)-Total	414979	WG2224022-7	0.0521	0.0539	mg/kg wwt	0.0521	.0339-.0739	mg/kg wwt		✓	Tissue	Metals
CRM	Cobalt (Co)-Total	416081	WG2225498-4	0.324	0.371	mg/kg wwt	87.2	70-130	%		✓	Tissue	Metals
CRM	Copper (Cu)-Total	412925	WG2221303-4	59.9	71.6	mg/kg	83.7	70-130	%		✓	Tissue	Metals
CRM	Copper (Cu)-Total	414979	WG2224022-3	67.9	71.6	mg/kg	94.8	70-130	%		✓	Tissue	Metals
CRM	Copper (Cu)-Total	414979	WG2224022-7	3.43	3.3	mg/kg	103.9	70-130	%		✓	Tissue	Metals
CRM	Copper (Cu)-Total	416081	WG2225498-4	74.5	71.6	mg/kg	104.1	70-130	%		✓	Tissue	Metals
CRM	Copper (Cu)-Total	412925	WG2221303-4	59.9	71.6	mg/kg wwt	83.7	70-130	%		✓	Tissue	Metals
CRM	Copper (Cu)-Total	414979	WG2224022-3	67.9	71.6	mg/kg wwt	94.8	70-130	%		✓	Tissue	Metals
CRM	Copper (Cu)-Total	414979	WG2224022-7	3.43	3.3	mg/kg wwt	103.9	70-130	%		✓	Tissue	Metals
CRM	Copper (Cu)-Total	416081	WG2225498-4	74.5	71.6	mg/kg wwt	104.1	70-130	%		✓	Tissue	Metals
CRM	Iron (Fe)-Total	412925	WG2221303-4	196	185	mg/kg	105.8	70-130	%		✓	Tissue	Metals
CRM	Iron (Fe)-Total	414979	WG2224022-3	168	185	mg/kg	91.1	70-130	%		✓	Tissue	Metals
CRM	Iron (Fe)-Total	414979	WG2224022-7	181	186	mg/kg	97.2	70-130	%		✓	Tissue	Metals
CRM	Iron (Fe)-Total	416081	WG2225498-4	177	185	mg/kg	95.7	70-130	%		✓	Tissue	Metals
CRM	Iron (Fe)-Total	412925	WG2221303-4	196	185	mg/kg wwt	105.8	70-130	%		✓	Tissue	Metals
CRM	Iron (Fe)-Total	414979	WG2224022-3	168	185	mg/kg wwt	91.1	70-130	%		✓	Tissue	Metals

APPENDIX B-4
Fish Tissue Analysis Laroratory Results

Quality Control L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
CRM	Iron (Fe)-Total	414979	WG2224022-7	181	186	mg/kg wwt	97.2	70-130	%		✓	Tissue	Metals
CRM	Iron (Fe)-Total	416081	WG2225498-4	177	185	mg/kg wwt	95.7	70-130	%		✓	Tissue	Metals
CRM	Lead (Pb)-Total	412925	WG2221303-4	0.295	0.282	mg/kg	104.8	70-130	%		✓	Tissue	Metals
CRM	Lead (Pb)-Total	414979	WG2224022-3	0.274	0.282	mg/kg	97.0	70-130	%		✓	Tissue	Metals
CRM	Lead (Pb)-Total	414979	WG2224022-7	0.774	0.79	mg/kg	97.9	70-130	%		✓	Tissue	Metals
CRM	Lead (Pb)-Total	416081	WG2225498-4	0.276	0.282	mg/kg	97.9	70-130	%		✓	Tissue	Metals
CRM	Lead (Pb)-Total	412925	WG2221303-4	0.295	0.282	mg/kg wwt	104.8	70-130	%		✓	Tissue	Metals
CRM	Lead (Pb)-Total	414979	WG2224022-3	0.274	0.282	mg/kg wwt	97.0	70-130	%		✓	Tissue	Metals
CRM	Lead (Pb)-Total	414979	WG2224022-7	0.774	0.79	mg/kg wwt	97.9	70-130	%		✓	Tissue	Metals
CRM	Lead (Pb)-Total	416081	WG2225498-4	0.276	0.282	mg/kg wwt	97.9	70-130	%		✓	Tissue	Metals
CRM	Magnesium (Mg)-Total	412925	WG2221303-4	1150	1090	mg/kg	105.5	70-130	%		✓	Tissue	Metals
CRM	Magnesium (Mg)-Total	414979	WG2224022-3	1040	1090	mg/kg	96.3	70-130	%		✓	Tissue	Metals
CRM	Magnesium (Mg)-Total	414979	WG2224022-7	4300	4320	mg/kg	99.6	70-130	%		✓	Tissue	Metals
CRM	Magnesium (Mg)-Total	416081	WG2225498-4	999	1090	mg/kg	92.1	70-130	%		✓	Tissue	Metals
CRM	Magnesium (Mg)-Total	412925	WG2221303-4	1150	1090	mg/kg wwt	105.5	70-130	%		✓	Tissue	Metals
CRM	Magnesium (Mg)-Total	414979	WG2224022-3	1040	1090	mg/kg wwt	96.3	70-130	%		✓	Tissue	Metals
CRM	Magnesium (Mg)-Total	414979	WG2224022-7	4300	4320	mg/kg wwt	99.6	70-130	%		✓	Tissue	Metals
CRM	Magnesium (Mg)-Total	416081	WG2225498-4	999	1090	mg/kg wwt	92.1	70-130	%		✓	Tissue	Metals
CRM	Manganese (Mn)-Total	412925	WG2221303-4	18.8	18.5	mg/kg	101.4	70-130	%		✓	Tissue	Metals
CRM	Manganese (Mn)-Total	414979	WG2224022-3	16.9	18.5	mg/kg	91.4	70-130	%		✓	Tissue	Metals
CRM	Manganese (Mn)-Total	414979	WG2224022-7	90.5	98	mg/kg	92.3	70-130	%		✓	Tissue	Metals
CRM	Manganese (Mn)-Total	416081	WG2225498-4	18.6	18.5	mg/kg	100.5	70-130	%		✓	Tissue	Metals
CRM	Manganese (Mn)-Total	412925	WG2221303-4	18.8	18.5	mg/kg wwt	101.4	70-130	%		✓	Tissue	Metals
CRM	Manganese (Mn)-Total	414979	WG2224022-3	16.9	18.5	mg/kg wwt	91.4	70-130	%		✓	Tissue	Metals
CRM	Manganese (Mn)-Total	414979	WG2224022-7	90.5	98	mg/kg wwt	92.3	70-130	%		✓	Tissue	Metals
CRM	Manganese (Mn)-Total	416081	WG2225498-4	18.6	18.5	mg/kg wwt	100.5	70-130	%		✓	Tissue	Metals
CRM	Mercury (Hg)-Total	412925	WG2221303-4	0.0352	0.0371	mg/kg	95.0	70-130	%		✓	Tissue	Metals
CRM	Mercury (Hg)-Total	414979	WG2224022-3	0.0321	0.0371	mg/kg	86.6	70-130	%		✓	Tissue	Metals
CRM	Mercury (Hg)-Total	414979	WG2224022-7	0.0303	0.031	mg/kg	97.9	70-130	%		✓	Tissue	Metals
CRM	Mercury (Hg)-Total	416081	WG2225498-4	0.0390	0.0371	mg/kg	105.2	70-130	%		✓	Tissue	Metals
CRM	Mercury (Hg)-Total	412925	WG2221303-4	0.0352	0.0371	mg/kg wwt	95.0	70-130	%		✓	Tissue	Metals
CRM	Mercury (Hg)-Total	414979	WG2224022-3	0.0321	0.0371	mg/kg wwt	86.6	70-130	%		✓	Tissue	Metals
CRM	Mercury (Hg)-Total	414979	WG2224022-7	0.0303	0.031	mg/kg wwt	97.9	70-130	%		✓	Tissue	Metals
CRM	Mercury (Hg)-Total	416081	WG2225498-4	0.0390	0.0371	mg/kg wwt	105.2	70-130	%		✓	Tissue	Metals
CRM	Molybdenum (Mo)-Total	412925	WG2221303-4	0.163	0.172	mg/kg	94.7	70-130	%		✓	Tissue	Metals
CRM	Molybdenum (Mo)-Total	414979	WG2224022-3	0.171	0.172	mg/kg	99.6	70-130	%		✓	Tissue	Metals
CRM	Molybdenum (Mo)-Total	414979	WG2224022-7	0.041	0.0464	mg/kg	0.041	.026-.066	mg/kg		✓	Tissue	Metals
CRM	Molybdenum (Mo)-Total	416081	WG2225498-4	0.212	0.172	mg/kg	123.1	70-130	%		✓	Tissue	Metals
CRM	Molybdenum (Mo)-Total	412925	WG2221303-4	0.163	0.172	mg/kg wwt	94.7	70-130	%		✓	Tissue	Metals
CRM	Molybdenum (Mo)-Total	414979	WG2224022-3	0.171	0.172	mg/kg wwt	99.6	70-130	%		✓	Tissue	Metals

Quality Control L1697526

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
CRM	Molybdenum (Mo)-Total	414979	WG2224022-7	0.0409	0.0464	mg/kg wwt	0.0409	.0264-.0664	mg/kg wwt		✓	Tissue	Metals
CRM	Molybdenum (Mo)-Total	416081	WG2225498-4	0.212	0.172	mg/kg wwt	123.1	70-130	%		✓	Tissue	Metals
CRM	Nickel (Ni)-Total	412925	WG2221303-4	1.00	0.935	mg/kg	107.0	70-130	%		✓	Tissue	Metals
CRM	Nickel (Ni)-Total	414979	WG2224022-3	0.90	0.935	mg/kg	96.0	70-130	%		✓	Tissue	Metals
CRM	Nickel (Ni)-Total	414979	WG2224022-7	0.56	0.473	mg/kg	0.56	.27-.67	mg/kg		✓	Tissue	Metals
CRM	Nickel (Ni)-Total	416081	WG2225498-4	0.88	0.935	mg/kg	93.7	70-130	%		✓	Tissue	Metals
CRM	Nickel (Ni)-Total	412925	WG2221303-4	1.00	0.935	mg/kg wwt	107.0	70-130	%		✓	Tissue	Metals
CRM	Nickel (Ni)-Total	414979	WG2224022-3	0.897	0.935	mg/kg wwt	96.0	70-130	%		✓	Tissue	Metals
CRM	Nickel (Ni)-Total	414979	WG2224022-7	0.560	0.473	mg/kg wwt	0.560	.273-.673	mg/kg wwt		✓	Tissue	Metals
CRM	Nickel (Ni)-Total	416081	WG2225498-4	0.876	0.935	mg/kg wwt	93.7	70-130	%		✓	Tissue	Metals
CRM	Phosphorus (P)-Total	412925	WG2221303-4	7680	7120	mg/kg	107.8	70-130	%		✓	Tissue	Metals
CRM	Phosphorus (P)-Total	414979	WG2224022-3	6900	7120	mg/kg	96.9	70-130	%		✓	Tissue	Metals
CRM	Phosphorus (P)-Total	414979	WG2224022-7	1360	1370	mg/kg	99.4	70-130	%		✓	Tissue	Metals
CRM	Phosphorus (P)-Total	416081	WG2225498-4	6990	7120	mg/kg	98.2	70-130	%		✓	Tissue	Metals
CRM	Phosphorus (P)-Total	412925	WG2221303-4	7680	7120	mg/kg wwt	107.8	70-130	%		✓	Tissue	Metals
CRM	Phosphorus (P)-Total	414979	WG2224022-3	6900	7120	mg/kg wwt	96.9	70-130	%		✓	Tissue	Metals
CRM	Phosphorus (P)-Total	414979	WG2224022-7	1360	1370	mg/kg wwt	99.4	70-130	%		✓	Tissue	Metals
CRM	Phosphorus (P)-Total	416081	WG2225498-4	6990	7120	mg/kg wwt	98.2	70-130	%		✓	Tissue	Metals
CRM	Potassium (K)-Total	412925	WG2221303-4	5550	6520	mg/kg	85.1	70-130	%		✓	Tissue	Metals
CRM	Potassium (K)-Total	414979	WG2224022-3	6130	6520	mg/kg	94.0	70-130	%		✓	Tissue	Metals
CRM	Potassium (K)-Total	414979	WG2224022-7	23600	24300	mg/kg	97.2	70-130	%		✓	Tissue	Metals
CRM	Potassium (K)-Total	416081	WG2225498-4	5470	6520	mg/kg	84.0	70-130	%		✓	Tissue	Metals
CRM	Potassium (K)-Total	412925	WG2221303-4	5550	6520	mg/kg wwt	85.1	70-130	%		✓	Tissue	Metals
CRM	Potassium (K)-Total	414979	WG2224022-3	6130	6520	mg/kg wwt	94.0	70-130	%		✓	Tissue	Metals
CRM	Potassium (K)-Total	414979	WG2224022-7	23600	24300	mg/kg wwt	97.2	70-130	%		✓	Tissue	Metals
CRM	Potassium (K)-Total	416081	WG2225498-4	5470	6520	mg/kg wwt	84.0	70-130	%		✓	Tissue	Metals
CRM	Rubidium (Rb)-Total	412925	WG2221303-4	2.62	2.97	mg/kg	88.1	70-130	%		✓	Tissue	Metals
CRM	Rubidium (Rb)-Total	414979	WG2224022-3	3.01	2.97	mg/kg	101.2	70-130	%		✓	Tissue	Metals
CRM	Rubidium (Rb)-Total	414979	WG2224022-7	18.3	19.7	mg/kg	92.8	70-130	%		✓	Tissue	Metals
CRM	Rubidium (Rb)-Total	416081	WG2225498-4	2.75	2.97	mg/kg	92.6	70-130	%		✓	Tissue	Metals
CRM	Rubidium (Rb)-Total	412925	WG2221303-4	2.62	2.97	mg/kg wwt	88.1	70-130	%		✓	Tissue	Metals
CRM	Rubidium (Rb)-Total	414979	WG2224022-3	3.01	2.97	mg/kg wwt	101.2	70-130	%		✓	Tissue	Metals
CRM	Rubidium (Rb)-Total	414979	WG2224022-7	18.3	19.7	mg/kg wwt	92.8	70-130	%		✓	Tissue	Metals
CRM	Rubidium (Rb)-Total	416081	WG2225498-4	2.75	2.97	mg/kg wwt	92.6	70-130	%		✓	Tissue	Metals
CRM	Selenium (Se)-Total	412925	WG2221303-4	2.00	2.06	mg/kg	97.3	70-130	%		✓	Tissue	Metals
CRM	Selenium (Se)-Total	414979	WG2224022-3	2.00	2.06	mg/kg	97.1	70-130	%		✓	Tissue	Metals
CRM	Selenium (Se)-Total	414979	WG2224022-7	0.119	0.12	mg/kg	0.119	.07-.17	mg/kg		✓	Tissue	Metals
CRM	Selenium (Se)-Total	416081	WG2225498-4	1.98	2.06	mg/kg	96.3	70-130	%		✓	Tissue	Metals
CRM	Selenium (Se)-Total	412925	WG2221303-4	2.00	2.06	mg/kg wwt	97.3	70-130	%		✓	Tissue	Metals
CRM	Selenium (Se)-Total	414979	WG2224022-3	2.00	2.06	mg/kg wwt	97.1	70-130	%		✓	Tissue	Metals

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
CRM	Selenium (Se)-Total	414979	WG2224022-7	0.119	0.12	mg/kg wwt	0.119	.07-.17	mg/kg wwt		✓	Tissue	Metals
CRM	Selenium (Se)-Total	416081	WG2225498-4	1.98	2.06	mg/kg wwt	96.3	70-130	%		✓	Tissue	Metals
CRM	Silver (Ag)-Total	412925	WG2221303-4	0.742	0.666	mg/kg	111.4	70-130	%		✓	Tissue	Metals
CRM	Silver (Ag)-Total	414979	WG2224022-3	0.577	0.666	mg/kg	86.7	70-130	%		✓	Tissue	Metals
CRM	Silver (Ag)-Total	416081	WG2225498-4	0.597	0.666	mg/kg	89.6	70-130	%		✓	Tissue	Metals
CRM	Silver (Ag)-Total	412925	WG2221303-4	0.742	0.666	mg/kg wwt	111.4	70-130	%		✓	Tissue	Metals
CRM	Silver (Ag)-Total	414979	WG2224022-3	0.577	0.666	mg/kg wwt	86.7	70-130	%		✓	Tissue	Metals
CRM	Silver (Ag)-Total	416081	WG2225498-4	0.597	0.666	mg/kg wwt	89.6	70-130	%		✓	Tissue	Metals
CRM	Sodium (Na)-Total	412925	WG2221303-4	2700	3300	mg/kg	81.7	70-130	%		✓	Tissue	Metals
CRM	Sodium (Na)-Total	414979	WG2224022-3	3100	3300	mg/kg	93.9	70-130	%		✓	Tissue	Metals
CRM	Sodium (Na)-Total	414979	WG2224022-7	25	32.2	mg/kg	25	12-52	mg/kg		✓	Tissue	Metals
CRM	Sodium (Na)-Total	416081	WG2225498-4	2740	3300	mg/kg	82.9	70-130	%		✓	Tissue	Metals
CRM	Sodium (Na)-Total	412925	WG2221303-4	2700	3300	mg/kg wwt	81.7	70-130	%		✓	Tissue	Metals
CRM	Sodium (Na)-Total	414979	WG2224022-3	3100	3300	mg/kg wwt	93.9	70-130	%		✓	Tissue	Metals
CRM	Sodium (Na)-Total	414979	WG2224022-7	24.7	32.2	mg/kg wwt	24.7	12.2-52.2	mg/kg wwt		✓	Tissue	Metals
CRM	Sodium (Na)-Total	416081	WG2225498-4	2740	3300	mg/kg wwt	82.9	70-130	%		✓	Tissue	Metals
CRM	Strontium (Sr)-Total	412925	WG2221303-4	6.88	6.8	mg/kg	101.1	70-130	%		✓	Tissue	Metals
CRM	Strontium (Sr)-Total	414979	WG2224022-3	5.89	6.8	mg/kg	86.6	70-130	%		✓	Tissue	Metals
CRM	Strontium (Sr)-Total	414979	WG2224022-7	51.6	53	mg/kg	97.3	70-130	%		✓	Tissue	Metals
CRM	Strontium (Sr)-Total	416081	WG2225498-4	6.43	6.8	mg/kg	94.6	70-130	%		✓	Tissue	Metals
CRM	Strontium (Sr)-Total	412925	WG2221303-4	6.88	6.8	mg/kg wwt	101.1	70-130	%		✓	Tissue	Metals
CRM	Strontium (Sr)-Total	414979	WG2224022-3	5.89	6.8	mg/kg wwt	86.6	70-130	%		✓	Tissue	Metals
CRM	Strontium (Sr)-Total	414979	WG2224022-7	51.6	53	mg/kg wwt	97.3	70-130	%		✓	Tissue	Metals
CRM	Strontium (Sr)-Total	416081	WG2225498-4	6.43	6.8	mg/kg wwt	94.6	70-130	%		✓	Tissue	Metals
CRM	Thallium (Tl)-Total	414979	WG2224022-7	0.0181	0.0187	mg/kg	96.8	70-130	%		✓	Tissue	Metals
CRM	Thallium (Tl)-Total	414979	WG2224022-7	0.0181	0.0187	mg/kg wwt	96.8	70-130	%		✓	Tissue	Metals
CRM	Tin (Sn)-Total	414979	WG2224022-7	<0.10	0.108	mg/kg	0.09	.01-.21	mg/kg		✓	Tissue	Metals
CRM	Tin (Sn)-Total	414979	WG2224022-7	0.093	0.108	mg/kg wwt	0.093	.008-.208	mg/kg wwt		✓	Tissue	Metals
CRM	Uranium (U)-Total	412925	WG2221303-4	0.252	0.255	mg/kg	98.7	70-130	%		✓	Tissue	Metals
CRM	Uranium (U)-Total	414979	WG2224022-3	0.228	0.255	mg/kg	89.3	70-130	%		✓	Tissue	Metals
CRM	Uranium (U)-Total	414979	WG2224022-7	0.0091	0.00914	mg/kg	99.8	70-130	%		✓	Tissue	Metals
CRM	Uranium (U)-Total	416081	WG2225498-4	0.194	0.255	mg/kg	75.9	70-130	%		✓	Tissue	Metals
CRM	Uranium (U)-Total	412925	WG2221303-4	0.252	0.255	mg/kg wwt	98.7	70-130	%		✓	Tissue	Metals
CRM	Uranium (U)-Total	414979	WG2224022-3	0.228	0.255	mg/kg wwt	89.3	70-130	%		✓	Tissue	Metals
CRM	Uranium (U)-Total	414979	WG2224022-7	0.00912	0.00914	mg/kg wwt	99.8	70-130	%		✓	Tissue	Metals
CRM	Uranium (U)-Total	416081	WG2225498-4	0.194	0.255	mg/kg wwt	75.9	70-130	%		✓	Tissue	Metals
CRM	Vanadium (V)-Total	412925	WG2221303-4	0.40	0.445	mg/kg	90.4	70-130	%		✓	Tissue	Metals
CRM	Vanadium (V)-Total	414979	WG2224022-3	0.44	0.445	mg/kg	98.3	70-130	%		✓	Tissue	Metals
CRM	Vanadium (V)-Total	414979	WG2224022-7	0.27	0.265	mg/kg	0.27	.17-.37	mg/kg		✓	Tissue	Metals
CRM	Vanadium (V)-Total	416081	WG2225498-4	0.37	0.445	mg/kg	83.1	70-130	%		✓	Tissue	Metals

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
CRM	Vanadium (V)-Total	412925	WG2221303-4	0.402	0.445	mg/kg wwt	90.4	70-130	%		✓	Tissue	Metals
CRM	Vanadium (V)-Total	414979	WG2224022-3	0.437	0.445	mg/kg wwt	98.3	70-130	%		✓	Tissue	Metals
CRM	Vanadium (V)-Total	414979	WG2224022-7	0.267	0.265	mg/kg wwt	0.267	.165-.365	mg/kg wwt		✓	Tissue	Metals
CRM	Vanadium (V)-Total	416081	WG2225498-4	0.370	0.445	mg/kg wwt	83.1	70-130	%		✓	Tissue	Metals
CRM	Zinc (Zn)-Total	412925	WG2221303-4	1240	1420	mg/kg	87.2	70-130	%		✓	Tissue	Metals
CRM	Zinc (Zn)-Total	414979	WG2224022-3	1280	1420	mg/kg	90.4	70-130	%		✓	Tissue	Metals
CRM	Zinc (Zn)-Total	414979	WG2224022-7	17.3	16.4	mg/kg	105.5	70-130	%		✓	Tissue	Metals
CRM	Zinc (Zn)-Total	416081	WG2225498-4	1160	1420	mg/kg	81.5	70-130	%		✓	Tissue	Metals
CRM	Zinc (Zn)-Total	412925	WG2221303-4	1240	1420	mg/kg wwt	87.2	70-130	%		✓	Tissue	Metals
CRM	Zinc (Zn)-Total	414979	WG2224022-3	1280	1420	mg/kg wwt	90.4	70-130	%		✓	Tissue	Metals
CRM	Zinc (Zn)-Total	414979	WG2224022-7	17.3	16.4	mg/kg wwt	105.5	70-130	%		✓	Tissue	Metals
CRM	Zinc (Zn)-Total	416081	WG2225498-4	1160	1420	mg/kg wwt	81.5	70-130	%		✓	Tissue	Metals
LCS	Aluminum (Al)-Total	412925	WG2221303-5	80.2	100	mg/kg	80.2	70-130	%		✓	Tissue	Metals
LCS	Aluminum (Al)-Total	414979	WG2224022-4	103	100	mg/kg	102.6	70-130	%		✓	Tissue	Metals
LCS	Aluminum (Al)-Total	416081	WG2225498-5	82.6	100	mg/kg	82.6	70-130	%		✓	Tissue	Metals
LCS	Aluminum (Al)-Total	412925	WG2221303-5	16.0	20	mg/kg wwt	80.2	70-130	%		✓	Tissue	Metals
LCS	Aluminum (Al)-Total	414979	WG2224022-4	20.5	20	mg/kg wwt	102.6	70-130	%		✓	Tissue	Metals
LCS	Aluminum (Al)-Total	416081	WG2225498-5	16.5	20	mg/kg wwt	82.6	70-130	%		✓	Tissue	Metals
LCS	Antimony (Sb)-Total	412925	WG2221303-5	39.6	50	mg/kg	79.2	70-130	%		✓	Tissue	Metals
LCS	Antimony (Sb)-Total	414979	WG2224022-4	46.5	50	mg/kg	93.0	70-130	%		✓	Tissue	Metals
LCS	Antimony (Sb)-Total	416081	WG2225498-5	37.0	50	mg/kg	73.9	70-130	%		✓	Tissue	Metals
LCS	Antimony (Sb)-Total	412925	WG2221303-5	7.92	10	mg/kg wwt	79.2	70-130	%		✓	Tissue	Metals
LCS	Antimony (Sb)-Total	414979	WG2224022-4	9.30	10	mg/kg wwt	93.0	70-130	%		✓	Tissue	Metals
LCS	Antimony (Sb)-Total	416081	WG2225498-5	7.39	10	mg/kg wwt	73.9	70-130	%		✓	Tissue	Metals
LCS	Arsenic (As)-Total	412925	WG2221303-5	63.0	50	mg/kg	126.0	70-130	%		✓	Tissue	Metals
LCS	Arsenic (As)-Total	414979	WG2224022-4	49.1	50	mg/kg	98.1	70-130	%		✓	Tissue	Metals
LCS	Arsenic (As)-Total	416081	WG2225498-5	50.2	50	mg/kg	100.4	70-130	%		✓	Tissue	Metals
LCS	Arsenic (As)-Total	412925	WG2221303-5	12.6	10	mg/kg wwt	126.0	70-130	%		✓	Tissue	Metals
LCS	Arsenic (As)-Total	414979	WG2224022-4	9.81	10	mg/kg wwt	98.1	70-130	%		✓	Tissue	Metals
LCS	Arsenic (As)-Total	416081	WG2225498-5	10.0	10	mg/kg wwt	100.4	70-130	%		✓	Tissue	Metals
LCS	Barium (Ba)-Total	412925	WG2221303-5	12.1	12.5	mg/kg	97.1	70-130	%		✓	Tissue	Metals
LCS	Barium (Ba)-Total	414979	WG2224022-4	12.1	12.5	mg/kg	96.8	70-130	%		✓	Tissue	Metals
LCS	Barium (Ba)-Total	416081	WG2225498-5	13.6	12.5	mg/kg	108.4	70-130	%		✓	Tissue	Metals
LCS	Barium (Ba)-Total	412925	WG2221303-5	2.43	2.5	mg/kg wwt	97.1	70-130	%		✓	Tissue	Metals
LCS	Barium (Ba)-Total	414979	WG2224022-4	2.42	2.5	mg/kg wwt	96.8	70-130	%		✓	Tissue	Metals
LCS	Barium (Ba)-Total	416081	WG2225498-5	2.71	2.5	mg/kg wwt	108.4	70-130	%		✓	Tissue	Metals
LCS	Beryllium (Be)-Total	412925	WG2221303-5	4.91	5	mg/kg	98.3	70-130	%		✓	Tissue	Metals
LCS	Beryllium (Be)-Total	414979	WG2224022-4	4.84	5	mg/kg	96.8	70-130	%		✓	Tissue	Metals
LCS	Beryllium (Be)-Total	416081	WG2225498-5	5.61	5	mg/kg	112.1	70-130	%		✓	Tissue	Metals
LCS	Beryllium (Be)-Total	412925	WG2221303-5	0.983	1	mg/kg wwt	98.3	70-130	%		✓	Tissue	Metals

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
LCS	Beryllium (Be)-Total	414979	WG2224022-4	0.968	1	mg/kg wwt	96.8	70-130	%		✓	Tissue	Metals
LCS	Beryllium (Be)-Total	416081	WG2225498-5	1.12	1	mg/kg wwt	112.1	70-130	%		✓	Tissue	Metals
LCS	Bismuth (Bi)-Total	412925	WG2221303-5	53.4	50	mg/kg	106.7	70-130	%		✓	Tissue	Metals
LCS	Bismuth (Bi)-Total	414979	WG2224022-4	47.4	50	mg/kg	94.8	70-130	%		✓	Tissue	Metals
LCS	Bismuth (Bi)-Total	416081	WG2225498-5	49.0	50	mg/kg	98.0	70-130	%		✓	Tissue	Metals
LCS	Bismuth (Bi)-Total	412925	WG2221303-5	10.7	10	mg/kg wwt	106.7	70-130	%		✓	Tissue	Metals
LCS	Bismuth (Bi)-Total	414979	WG2224022-4	9.48	10	mg/kg wwt	94.8	70-130	%		✓	Tissue	Metals
LCS	Bismuth (Bi)-Total	416081	WG2225498-5	9.80	10	mg/kg wwt	98.0	70-130	%		✓	Tissue	Metals
LCS	Boron (B)-Total	412925	WG2221303-5	38.3	50	mg/kg	76.6	70-130	%		✓	Tissue	Metals
LCS	Boron (B)-Total	414979	WG2224022-4	47.0	50	mg/kg	94.0	70-130	%		✓	Tissue	Metals
LCS	Boron (B)-Total	416081	WG2225498-5	46.7	50	mg/kg	93.5	70-130	%		✓	Tissue	Metals
LCS	Boron (B)-Total	412925	WG2221303-5	7.66	10	mg/kg wwt	76.6	70-130	%		✓	Tissue	Metals
LCS	Boron (B)-Total	414979	WG2224022-4	9.40	10	mg/kg wwt	94.0	70-130	%		✓	Tissue	Metals
LCS	Boron (B)-Total	416081	WG2225498-5	9.35	10	mg/kg wwt	93.5	70-130	%		✓	Tissue	Metals
LCS	Cadmium (Cd)-Total	412925	WG2221303-5	4.96	5	mg/kg	99.2	70-130	%		✓	Tissue	Metals
LCS	Cadmium (Cd)-Total	414979	WG2224022-4	4.77	5	mg/kg	95.3	70-130	%		✓	Tissue	Metals
LCS	Cadmium (Cd)-Total	416081	WG2225498-5	5.92	5	mg/kg	118.3	70-130	%		✓	Tissue	Metals
LCS	Cadmium (Cd)-Total	412925	WG2221303-5	0.992	1	mg/kg wwt	99.2	70-130	%		✓	Tissue	Metals
LCS	Cadmium (Cd)-Total	414979	WG2224022-4	0.953	1	mg/kg wwt	95.3	70-130	%		✓	Tissue	Metals
LCS	Cadmium (Cd)-Total	416081	WG2225498-5	1.18	1	mg/kg wwt	118.3	70-130	%		✓	Tissue	Metals
LCS	Calcium (Ca)-Total	412925	WG2221303-5	2530	2500	mg/kg	101.0	70-130	%		✓	Tissue	Metals
LCS	Calcium (Ca)-Total	414979	WG2224022-4	2370	2500	mg/kg	94.9	70-130	%		✓	Tissue	Metals
LCS	Calcium (Ca)-Total	416081	WG2225498-5	2530	2500	mg/kg	101.1	70-130	%		✓	Tissue	Metals
LCS	Calcium (Ca)-Total	412925	WG2221303-5	505	500	mg/kg wwt	101.0	70-130	%		✓	Tissue	Metals
LCS	Calcium (Ca)-Total	414979	WG2224022-4	475	500	mg/kg wwt	94.9	70-130	%		✓	Tissue	Metals
LCS	Calcium (Ca)-Total	416081	WG2225498-5	505	500	mg/kg wwt	101.1	70-130	%		✓	Tissue	Metals
LCS	Cesium (Cs)-Total	412925	WG2221303-5	2.28	2.5	mg/kg	91.0	70-130	%		✓	Tissue	Metals
LCS	Cesium (Cs)-Total	414979	WG2224022-4	2.35	2.5	mg/kg	94.1	70-130	%		✓	Tissue	Metals
LCS	Cesium (Cs)-Total	416081	WG2225498-5	2.29	2.5	mg/kg	91.5	70-130	%		✓	Tissue	Metals
LCS	Cesium (Cs)-Total	412925	WG2221303-5	0.455	0.5	mg/kg wwt	91.0	70-130	%		✓	Tissue	Metals
LCS	Cesium (Cs)-Total	414979	WG2224022-4	0.471	0.5	mg/kg wwt	94.1	70-130	%		✓	Tissue	Metals
LCS	Cesium (Cs)-Total	416081	WG2225498-5	0.458	0.5	mg/kg wwt	91.5	70-130	%		✓	Tissue	Metals
LCS	Chromium (Cr)-Total	412925	WG2221303-5	12.0	12.5	mg/kg	96.0	70-130	%		✓	Tissue	Metals
LCS	Chromium (Cr)-Total	414979	WG2224022-4	12.2	12.5	mg/kg	98.0	70-130	%		✓	Tissue	Metals
LCS	Chromium (Cr)-Total	416081	WG2225498-5	11.1	12.5	mg/kg	88.8	70-130	%		✓	Tissue	Metals
LCS	Chromium (Cr)-Total	412925	WG2221303-5	2.40	2.5	mg/kg wwt	96.0	70-130	%		✓	Tissue	Metals
LCS	Chromium (Cr)-Total	414979	WG2224022-4	2.45	2.5	mg/kg wwt	98.0	70-130	%		✓	Tissue	Metals
LCS	Chromium (Cr)-Total	416081	WG2225498-5	2.22	2.5	mg/kg wwt	88.8	70-130	%		✓	Tissue	Metals
LCS	Cobalt (Co)-Total	412925	WG2221303-5	13.3	12.5	mg/kg	106.3	70-130	%		✓	Tissue	Metals
LCS	Cobalt (Co)-Total	414979	WG2224022-4	12.2	12.5	mg/kg	97.4	70-130	%		✓	Tissue	Metals

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
LCS	Cobalt (Co)-Total	416081	WG2225498-5	9.42	12.5	mg/kg	75.3	70-130	%		✓	Tissue	Metals
LCS	Cobalt (Co)-Total	412925	WG2221303-5	2.66	2.5	mg/kg wwt	106.3	70-130	%		✓	Tissue	Metals
LCS	Cobalt (Co)-Total	414979	WG2224022-4	2.44	2.5	mg/kg wwt	97.4	70-130	%		✓	Tissue	Metals
LCS	Cobalt (Co)-Total	416081	WG2225498-5	1.88	2.5	mg/kg wwt	75.3	70-130	%		✓	Tissue	Metals
LCS	Copper (Cu)-Total	412925	WG2221303-5	13.4	12.5	mg/kg	107.3	70-130	%		✓	Tissue	Metals
LCS	Copper (Cu)-Total	414979	WG2224022-4	12.0	12.5	mg/kg	95.8	70-130	%		✓	Tissue	Metals
LCS	Copper (Cu)-Total	416081	WG2225498-5	11.5	12.5	mg/kg	92.3	70-130	%		✓	Tissue	Metals
LCS	Copper (Cu)-Total	412925	WG2221303-5	2.68	2.5	mg/kg wwt	107.3	70-130	%		✓	Tissue	Metals
LCS	Copper (Cu)-Total	414979	WG2224022-4	2.39	2.5	mg/kg wwt	95.8	70-130	%		✓	Tissue	Metals
LCS	Copper (Cu)-Total	416081	WG2225498-5	2.31	2.5	mg/kg wwt	92.3	70-130	%		✓	Tissue	Metals
LCS	Iron (Fe)-Total	412925	WG2221303-5	51.9	50	mg/kg	103.8	70-130	%		✓	Tissue	Metals
LCS	Iron (Fe)-Total	414979	WG2224022-4	47.5	50	mg/kg	94.9	70-130	%		✓	Tissue	Metals
LCS	Iron (Fe)-Total	416081	WG2225498-5	41.4	50	mg/kg	82.7	70-130	%		✓	Tissue	Metals
LCS	Iron (Fe)-Total	412925	WG2221303-5	10.4	10	mg/kg wwt	103.8	70-130	%		✓	Tissue	Metals
LCS	Iron (Fe)-Total	414979	WG2224022-4	9.49	10	mg/kg wwt	94.9	70-130	%		✓	Tissue	Metals
LCS	Iron (Fe)-Total	416081	WG2225498-5	8.27	10	mg/kg wwt	82.7	70-130	%		✓	Tissue	Metals
LCS	Lead (Pb)-Total	412925	WG2221303-5	20.0	25	mg/kg	79.8	70-130	%		✓	Tissue	Metals
LCS	Lead (Pb)-Total	414979	WG2224022-4	23.9	25	mg/kg	95.5	70-130	%		✓	Tissue	Metals
LCS	Lead (Pb)-Total	416081	WG2225498-5	18.2	25	mg/kg	72.6	70-130	%		✓	Tissue	Metals
LCS	Lead (Pb)-Total	412925	WG2221303-5	3.99	5	mg/kg wwt	79.8	70-130	%		✓	Tissue	Metals
LCS	Lead (Pb)-Total	414979	WG2224022-4	4.78	5	mg/kg wwt	95.5	70-130	%		✓	Tissue	Metals
LCS	Lead (Pb)-Total	416081	WG2225498-5	3.63	5	mg/kg wwt	72.6	70-130	%		✓	Tissue	Metals
LCS	Lithium (Li)-Total	412925	WG2221303-5	12.0	12.5	mg/kg	96.1	70-130	%		✓	Tissue	Metals
LCS	Lithium (Li)-Total	414979	WG2224022-4	12.1	12.5	mg/kg	97.1	70-130	%		✓	Tissue	Metals
LCS	Lithium (Li)-Total	416081	WG2225498-5	13.6	12.5	mg/kg	108.4	70-130	%		✓	Tissue	Metals
LCS	Lithium (Li)-Total	412925	WG2221303-5	2.40	2.5	mg/kg wwt	96.1	70-130	%		✓	Tissue	Metals
LCS	Lithium (Li)-Total	414979	WG2224022-4	2.43	2.5	mg/kg wwt	97.1	70-130	%		✓	Tissue	Metals
LCS	Lithium (Li)-Total	416081	WG2225498-5	2.71	2.5	mg/kg wwt	108.4	70-130	%		✓	Tissue	Metals
LCS	Magnesium (Mg)-Total	412925	WG2221303-5	2600	2500	mg/kg	103.8	70-130	%		✓	Tissue	Metals
LCS	Magnesium (Mg)-Total	414979	WG2224022-4	2540	2500	mg/kg	101.7	70-130	%		✓	Tissue	Metals
LCS	Magnesium (Mg)-Total	416081	WG2225498-5	2340	2500	mg/kg	93.6	70-130	%		✓	Tissue	Metals
LCS	Magnesium (Mg)-Total	412925	WG2221303-5	519	500	mg/kg wwt	103.8	70-130	%		✓	Tissue	Metals
LCS	Magnesium (Mg)-Total	414979	WG2224022-4	509	500	mg/kg wwt	101.7	70-130	%		✓	Tissue	Metals
LCS	Magnesium (Mg)-Total	416081	WG2225498-5	468	500	mg/kg wwt	93.6	70-130	%		✓	Tissue	Metals
LCS	Manganese (Mn)-Total	412925	WG2221303-5	15.4	12.5	mg/kg	123.1	70-130	%		✓	Tissue	Metals
LCS	Manganese (Mn)-Total	414979	WG2224022-4	12.2	12.5	mg/kg	97.5	70-130	%		✓	Tissue	Metals
LCS	Manganese (Mn)-Total	416081	WG2225498-5	14.3	12.5	mg/kg	114.5	70-130	%		✓	Tissue	Metals
LCS	Manganese (Mn)-Total	412925	WG2221303-5	3.08	2.5	mg/kg wwt	123.1	70-130	%		✓	Tissue	Metals
LCS	Manganese (Mn)-Total	414979	WG2224022-4	2.44	2.5	mg/kg wwt	97.5	70-130	%		✓	Tissue	Metals
LCS	Manganese (Mn)-Total	416081	WG2225498-5	2.86	2.5	mg/kg wwt	114.5	70-130	%		✓	Tissue	Metals

APPENDIX B-4
Fish Tissue Analysis Laroratory Results

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
LCS	Mercury (Hg)-Total	412925	WG2221303-5	0.105	0.1	mg/kg	105.1	70-130	%		✓	Tissue	Metals
LCS	Mercury (Hg)-Total	414979	WG2224022-4	0.111	0.1	mg/kg	111.0	70-130	%		✓	Tissue	Metals
LCS	Mercury (Hg)-Total	416081	WG2225498-5	0.120	0.1	mg/kg	119.5	70-130	%		✓	Tissue	Metals
LCS	Mercury (Hg)-Total	412925	WG2221303-5	0.0210	0.02	mg/kg wwt	105.1	70-130	%		✓	Tissue	Metals
LCS	Mercury (Hg)-Total	414979	WG2224022-4	0.0222	0.02	mg/kg wwt	111.0	70-130	%		✓	Tissue	Metals
LCS	Mercury (Hg)-Total	416081	WG2225498-5	0.0239	0.02	mg/kg wwt	119.5	70-130	%		✓	Tissue	Metals
LCS	Molybdenum (Mo)-Total	412925	WG2221303-5	11.6	12.5	mg/kg	92.6	70-130	%		✓	Tissue	Metals
LCS	Molybdenum (Mo)-Total	414979	WG2224022-4	11.7	12.5	mg/kg	93.6	70-130	%		✓	Tissue	Metals
LCS	Molybdenum (Mo)-Total	416081	WG2225498-5	11.7	12.5	mg/kg	93.6	70-130	%		✓	Tissue	Metals
LCS	Molybdenum (Mo)-Total	412925	WG2221303-5	2.32	2.5	mg/kg wwt	92.6	70-130	%		✓	Tissue	Metals
LCS	Molybdenum (Mo)-Total	414979	WG2224022-4	2.34	2.5	mg/kg wwt	93.6	70-130	%		✓	Tissue	Metals
LCS	Molybdenum (Mo)-Total	416081	WG2225498-5	2.34	2.5	mg/kg wwt	93.6	70-130	%		✓	Tissue	Metals
LCS	Nickel (Ni)-Total	412925	WG2221303-5	26.6	25	mg/kg	106.6	70-130	%		✓	Tissue	Metals
LCS	Nickel (Ni)-Total	414979	WG2224022-4	24.5	25	mg/kg	98.1	70-130	%		✓	Tissue	Metals
LCS	Nickel (Ni)-Total	416081	WG2225498-5	26.7	25	mg/kg	106.7	70-130	%		✓	Tissue	Metals
LCS	Nickel (Ni)-Total	412925	WG2221303-5	5.33	5	mg/kg wwt	106.6	70-130	%		✓	Tissue	Metals
LCS	Nickel (Ni)-Total	414979	WG2224022-4	4.90	5	mg/kg wwt	98.1	70-130	%		✓	Tissue	Metals
LCS	Nickel (Ni)-Total	416081	WG2225498-5	5.34	5	mg/kg wwt	106.7	70-130	%		✓	Tissue	Metals
LCS	Phosphorus (P)-Total	414979	WG2224022-4	138	125	mg/kg	110.6	70-130	%		✓	Tissue	Metals
LCS	Phosphorus (P)-Total	414979	WG2224022-4	27.7	25	mg/kg wwt	110.6	70-130	%		✓	Tissue	Metals
LCS	Potassium (K)-Total	412925	WG2221303-5	2110	2500	mg/kg	84.5	70-130	%		✓	Tissue	Metals
LCS	Potassium (K)-Total	414979	WG2224022-4	2560	2500	mg/kg	102.3	70-130	%		✓	Tissue	Metals
LCS	Potassium (K)-Total	416081	WG2225498-5	2310	2500	mg/kg	92.4	70-130	%		✓	Tissue	Metals
LCS	Potassium (K)-Total	412925	WG2221303-5	422	500	mg/kg wwt	84.5	70-130	%		✓	Tissue	Metals
LCS	Potassium (K)-Total	414979	WG2224022-4	511	500	mg/kg wwt	102.3	70-130	%		✓	Tissue	Metals
LCS	Potassium (K)-Total	416081	WG2225498-5	462	500	mg/kg wwt	92.4	70-130	%		✓	Tissue	Metals
LCS	Rubidium (Rb)-Total	412925	WG2221303-5	4.66	5	mg/kg	93.2	70-130	%		✓	Tissue	Metals
LCS	Rubidium (Rb)-Total	414979	WG2224022-4	4.85	5	mg/kg	96.9	70-130	%		✓	Tissue	Metals
LCS	Rubidium (Rb)-Total	416081	WG2225498-5	4.57	5	mg/kg	91.4	70-130	%		✓	Tissue	Metals
LCS	Rubidium (Rb)-Total	412925	WG2221303-5	0.932	1	mg/kg wwt	93.2	70-130	%		✓	Tissue	Metals
LCS	Rubidium (Rb)-Total	414979	WG2224022-4	0.969	1	mg/kg wwt	96.9	70-130	%		✓	Tissue	Metals
LCS	Rubidium (Rb)-Total	416081	WG2225498-5	0.914	1	mg/kg wwt	91.4	70-130	%		✓	Tissue	Metals
LCS	Selenium (Se)-Total	412925	WG2221303-5	52.0	50	mg/kg	104.0	70-130	%		✓	Tissue	Metals
LCS	Selenium (Se)-Total	414979	WG2224022-4	48.7	50	mg/kg	97.4	70-130	%		✓	Tissue	Metals
LCS	Selenium (Se)-Total	416081	WG2225498-5	48.6	50	mg/kg	97.1	70-130	%		✓	Tissue	Metals
LCS	Selenium (Se)-Total	412925	WG2221303-5	10.4	10	mg/kg wwt	104.0	70-130	%		✓	Tissue	Metals
LCS	Selenium (Se)-Total	414979	WG2224022-4	9.74	10	mg/kg wwt	97.4	70-130	%		✓	Tissue	Metals
LCS	Selenium (Se)-Total	416081	WG2225498-5	9.71	10	mg/kg wwt	97.1	70-130	%		✓	Tissue	Metals
LCS	Silver (Ag)-Total	412925	WG2221303-5	3.78	5	mg/kg	75.6	70-130	%		✓	Tissue	Metals
LCS	Silver (Ag)-Total	414979	WG2224022-4	4.13	5	mg/kg	82.5	70-130	%		✓	Tissue	Metals

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
LCS	Silver (Ag)-Total	416081	WG2225498-5	4.11	5	mg/kg	82.2	70-130	%		✓	Tissue	Metals
LCS	Silver (Ag)-Total	412925	WG2221303-5	0.756	1	mg/kg wwt	75.6	70-130	%		✓	Tissue	Metals
LCS	Silver (Ag)-Total	414979	WG2224022-4	0.825	1	mg/kg wwt	82.5	70-130	%		✓	Tissue	Metals
LCS	Silver (Ag)-Total	416081	WG2225498-5	0.822	1	mg/kg wwt	82.2	70-130	%		✓	Tissue	Metals
LCS	Sodium (Na)-Total	412925	WG2221303-5	2450	2500	mg/kg	97.9	70-130	%		✓	Tissue	Metals
LCS	Sodium (Na)-Total	414979	WG2224022-4	2530	2500	mg/kg	101.3	70-130	%		✓	Tissue	Metals
LCS	Sodium (Na)-Total	416081	WG2225498-5	2290	2500	mg/kg	91.7	70-130	%		✓	Tissue	Metals
LCS	Sodium (Na)-Total	412925	WG2221303-5	489	500	mg/kg wwt	97.9	70-130	%		✓	Tissue	Metals
LCS	Sodium (Na)-Total	414979	WG2224022-4	506	500	mg/kg wwt	101.3	70-130	%		✓	Tissue	Metals
LCS	Sodium (Na)-Total	416081	WG2225498-5	458	500	mg/kg wwt	91.7	70-130	%		✓	Tissue	Metals
LCS	Strontium (Sr)-Total	412925	WG2221303-5	14.2	12.5	mg/kg	113.8	70-130	%		✓	Tissue	Metals
LCS	Strontium (Sr)-Total	414979	WG2224022-4	11.5	12.5	mg/kg	92.1	70-130	%		✓	Tissue	Metals
LCS	Strontium (Sr)-Total	416081	WG2225498-5	12.6	12.5	mg/kg	100.6	70-130	%		✓	Tissue	Metals
LCS	Strontium (Sr)-Total	412925	WG2221303-5	2.84	2.5	mg/kg wwt	113.8	70-130	%		✓	Tissue	Metals
LCS	Strontium (Sr)-Total	414979	WG2224022-4	2.30	2.5	mg/kg wwt	92.1	70-130	%		✓	Tissue	Metals
LCS	Strontium (Sr)-Total	416081	WG2225498-5	2.51	2.5	mg/kg wwt	100.6	70-130	%		✓	Tissue	Metals
LCS	Tellurium (Te)-Total	412925	WG2221303-5	5.47	5	mg/kg	109.5	70-130	%		✓	Tissue	Metals
LCS	Tellurium (Te)-Total	414979	WG2224022-4	4.68	5	mg/kg	93.6	70-130	%		✓	Tissue	Metals
LCS	Tellurium (Te)-Total	416081	WG2225498-5	4.96	5	mg/kg	99.2	70-130	%		✓	Tissue	Metals
LCS	Tellurium (Te)-Total	412925	WG2221303-5	1.09	1	mg/kg wwt	109.5	70-130	%		✓	Tissue	Metals
LCS	Tellurium (Te)-Total	414979	WG2224022-4	0.936	1	mg/kg wwt	93.6	70-130	%		✓	Tissue	Metals
LCS	Tellurium (Te)-Total	416081	WG2225498-5	0.992	1	mg/kg wwt	99.2	70-130	%		✓	Tissue	Metals
LCS	Thallium (Tl)-Total	412925	WG2221303-5	42.7	50	mg/kg	85.4	70-130	%		✓	Tissue	Metals
LCS	Thallium (Tl)-Total	414979	WG2224022-4	47.0	50	mg/kg	93.9	70-130	%		✓	Tissue	Metals
LCS	Thallium (Tl)-Total	416081	WG2225498-5	40.0	50	mg/kg	80.1	70-130	%		✓	Tissue	Metals
LCS	Thallium (Tl)-Total	412925	WG2221303-5	8.54	10	mg/kg wwt	85.4	70-130	%		✓	Tissue	Metals
LCS	Thallium (Tl)-Total	414979	WG2224022-4	9.39	10	mg/kg wwt	93.9	70-130	%		✓	Tissue	Metals
LCS	Thallium (Tl)-Total	416081	WG2225498-5	8.01	10	mg/kg wwt	80.1	70-130	%		✓	Tissue	Metals
LCS	Tin (Sn)-Total	412925	WG2221303-5	23.3	25	mg/kg	93.4	70-130	%		✓	Tissue	Metals
LCS	Tin (Sn)-Total	414979	WG2224022-4	23.4	25	mg/kg	93.4	70-130	%		✓	Tissue	Metals
LCS	Tin (Sn)-Total	416081	WG2225498-5	22.9	25	mg/kg	91.5	70-130	%		✓	Tissue	Metals
LCS	Tin (Sn)-Total	412925	WG2221303-5	4.67	5	mg/kg wwt	93.4	70-130	%		✓	Tissue	Metals
LCS	Tin (Sn)-Total	414979	WG2224022-4	4.67	5	mg/kg wwt	93.4	70-130	%		✓	Tissue	Metals
LCS	Tin (Sn)-Total	416081	WG2225498-5	4.57	5	mg/kg wwt	91.5	70-130	%		✓	Tissue	Metals
LCS	Uranium (U)-Total	412925	WG2221303-5	0.276	0.25	mg/kg	110.6	70-130	%		✓	Tissue	Metals
LCS	Uranium (U)-Total	414979	WG2224022-4	0.230	0.25	mg/kg	92.1	70-130	%		✓	Tissue	Metals
LCS	Uranium (U)-Total	416081	WG2225498-5	0.228	0.25	mg/kg	91.3	70-130	%		✓	Tissue	Metals
LCS	Uranium (U)-Total	412925	WG2221303-5	0.0553	0.05	mg/kg wwt	110.6	70-130	%		✓	Tissue	Metals
LCS	Uranium (U)-Total	414979	WG2224022-4	0.0461	0.05	mg/kg wwt	92.1	70-130	%		✓	Tissue	Metals
LCS	Uranium (U)-Total	416081	WG2225498-5	0.0457	0.05	mg/kg wwt	91.3	70-130	%		✓	Tissue	Metals

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
LCS	Vanadium (V)-Total	412925	WG2221303-5	22.5	25	mg/kg	89.9	70-130	%		✓	Tissue	Metals
LCS	Vanadium (V)-Total	414979	WG2224022-4	25.4	25	mg/kg	101.5	70-130	%		✓	Tissue	Metals
LCS	Vanadium (V)-Total	416081	WG2225498-5	32.0	25	mg/kg	128.1	70-130	%		✓	Tissue	Metals
LCS	Vanadium (V)-Total	412925	WG2221303-5	4.49	5	mg/kg wwt	89.9	70-130	%		✓	Tissue	Metals
LCS	Vanadium (V)-Total	414979	WG2224022-4	5.08	5	mg/kg wwt	101.5	70-130	%		✓	Tissue	Metals
LCS	Vanadium (V)-Total	416081	WG2225498-5	6.41	5	mg/kg wwt	128.1	70-130	%		✓	Tissue	Metals
LCS	Zinc (Zn)-Total	412925	WG2221303-5	24.5	25	mg/kg	97.8	70-130	%		✓	Tissue	Metals
LCS	Zinc (Zn)-Total	414979	WG2224022-4	23.1	25	mg/kg	92.4	70-130	%		✓	Tissue	Metals
LCS	Zinc (Zn)-Total	416081	WG2225498-5	26.8	25	mg/kg	107.4	70-130	%		✓	Tissue	Metals
LCS	Zinc (Zn)-Total	412925	WG2221303-5	4.89	5	mg/kg wwt	97.8	70-130	%		✓	Tissue	Metals
LCS	Zinc (Zn)-Total	414979	WG2224022-4	4.62	5	mg/kg wwt	92.4	70-130	%		✓	Tissue	Metals
LCS	Zinc (Zn)-Total	416081	WG2225498-5	5.37	5	mg/kg wwt	107.4	70-130	%		✓	Tissue	Metals
LCS	Zirconium (Zr)-Total	412925	WG2221303-5	5.20	5	mg/kg	104.0	70-130	%		✓	Tissue	Metals
LCS	Zirconium (Zr)-Total	414979	WG2224022-4	4.08	5	mg/kg	81.7	70-130	%		✓	Tissue	Metals
LCS	Zirconium (Zr)-Total	416081	WG2225498-5	4.96	5	mg/kg	99.1	70-130	%		✓	Tissue	Metals
LCS	Zirconium (Zr)-Total	412925	WG2221303-5	1.04	1	mg/kg wwt	104.0	70-130	%		✓	Tissue	Metals
LCS	Zirconium (Zr)-Total	414979	WG2224022-4	0.817	1	mg/kg wwt	81.7	70-130	%		✓	Tissue	Metals
LCS	Zirconium (Zr)-Total	416081	WG2225498-5	0.991	1	mg/kg wwt	99.1	70-130	%		✓	Tissue	Metals
MB	Aluminum (Al)-Total	412925	WG2221303-1	<5.0		mg/kg	-	<5.0	mg/kg		✓	Tissue	Metals
MB	Aluminum (Al)-Total	412925	WG2221303-2	<5.0		mg/kg	-	<5.0	mg/kg		✓	Tissue	Metals
MB	Aluminum (Al)-Total	414979	WG2224022-1	<2.0		mg/kg	-	<2.0	mg/kg		✓	Tissue	Metals
MB	Aluminum (Al)-Total	416081	WG2225498-1	<5.0		mg/kg	-	<5.0	mg/kg		✓	Tissue	Metals
MB	Aluminum (Al)-Total	416081	WG2225498-2	<5.0		mg/kg	-	<5.0	mg/kg		✓	Tissue	Metals
MB	Aluminum (Al)-Total	412925	WG2221303-1	<1.0		mg/kg wwt	-	<1.0	mg/kg wwt		✓	Tissue	Metals
MB	Aluminum (Al)-Total	412925	WG2221303-2	<1.0		mg/kg wwt	-	<1.0	mg/kg wwt		✓	Tissue	Metals
MB	Aluminum (Al)-Total	414979	WG2224022-1	<0.40		mg/kg wwt	-	<0.40	mg/kg wwt		✓	Tissue	Metals
MB	Aluminum (Al)-Total	416081	WG2225498-1	<1.0		mg/kg wwt	-	<1.0	mg/kg wwt		✓	Tissue	Metals
MB	Aluminum (Al)-Total	416081	WG2225498-2	<1.0		mg/kg wwt	-	<1.0	mg/kg wwt		✓	Tissue	Metals
MB	Antimony (Sb)-Total	412925	WG2221303-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Antimony (Sb)-Total	412925	WG2221303-2	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Antimony (Sb)-Total	414979	WG2224022-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Antimony (Sb)-Total	416081	WG2225498-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Antimony (Sb)-Total	416081	WG2225498-2	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Antimony (Sb)-Total	412925	WG2221303-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Antimony (Sb)-Total	412925	WG2221303-2	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Antimony (Sb)-Total	414979	WG2224022-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Antimony (Sb)-Total	416081	WG2225498-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Antimony (Sb)-Total	416081	WG2225498-2	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Arsenic (As)-Total	412925	WG2221303-1	0.032		mg/kg	-	<0.030	mg/kg	MB-LOR	×	Tissue	Metals
MB	Arsenic (As)-Total	412925	WG2221303-2	0.039		mg/kg	-	<0.030	mg/kg	MB-LOR	×	Tissue	Metals

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Arsenic (As)-Total	414979	WG2224022-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Arsenic (As)-Total	416081	WG2225498-1	<0.030		mg/kg	-	<0.030	mg/kg		✓	Tissue	Metals
MB	Arsenic (As)-Total	416081	WG2225498-2	<0.030		mg/kg	-	<0.030	mg/kg		✓	Tissue	Metals
MB	Arsenic (As)-Total	412925	WG2221303-1	0.0065		mg/kg wwt	-	<0.0060	mg/kg wwt	MB-LOR	×	Tissue	Metals
MB	Arsenic (As)-Total	412925	WG2221303-2	0.0079		mg/kg wwt	-	<0.0060	mg/kg wwt	MB-LOR	×	Tissue	Metals
MB	Arsenic (As)-Total	414979	WG2224022-1	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Arsenic (As)-Total	416081	WG2225498-1	<0.0060		mg/kg wwt	-	<0.0060	mg/kg wwt		✓	Tissue	Metals
MB	Arsenic (As)-Total	416081	WG2225498-2	<0.0060		mg/kg wwt	-	<0.0060	mg/kg wwt		✓	Tissue	Metals
MB	Barium (Ba)-Total	412925	WG2221303-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Barium (Ba)-Total	412925	WG2221303-2	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Barium (Ba)-Total	414979	WG2224022-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Barium (Ba)-Total	416081	WG2225498-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Barium (Ba)-Total	416081	WG2225498-2	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Barium (Ba)-Total	412925	WG2221303-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Barium (Ba)-Total	412925	WG2221303-2	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Barium (Ba)-Total	414979	WG2224022-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Barium (Ba)-Total	416081	WG2225498-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Barium (Ba)-Total	416081	WG2225498-2	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Beryllium (Be)-Total	412925	WG2221303-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Beryllium (Be)-Total	412925	WG2221303-2	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Beryllium (Be)-Total	414979	WG2224022-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Beryllium (Be)-Total	416081	WG2225498-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Beryllium (Be)-Total	416081	WG2225498-2	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Beryllium (Be)-Total	412925	WG2221303-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Beryllium (Be)-Total	412925	WG2221303-2	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Beryllium (Be)-Total	414979	WG2224022-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Beryllium (Be)-Total	416081	WG2225498-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Beryllium (Be)-Total	416081	WG2225498-2	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	412925	WG2221303-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	412925	WG2221303-2	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	414979	WG2224022-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	416081	WG2225498-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	416081	WG2225498-2	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	412925	WG2221303-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	412925	WG2221303-2	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	414979	WG2224022-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	416081	WG2225498-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Bismuth (Bi)-Total	416081	WG2225498-2	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Boron (B)-Total	412925	WG2221303-1	<1.0		mg/kg	-	<1.0	mg/kg		✓	Tissue	Metals
MB	Boron (B)-Total	412925	WG2221303-2	<1.0		mg/kg	-	<1.0	mg/kg		✓	Tissue	Metals

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Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Boron (B)-Total	414979	WG2224022-1	<1.0		mg/kg	-	<1.0	mg/kg		✓	Tissue	Metals
MB	Boron (B)-Total	416081	WG2225498-1	<1.0		mg/kg	-	<1.0	mg/kg		✓	Tissue	Metals
MB	Boron (B)-Total	416081	WG2225498-2	<1.0		mg/kg	-	<1.0	mg/kg		✓	Tissue	Metals
MB	Boron (B)-Total	412925	WG2221303-1	<0.20		mg/kg wwt	-	<0.20	mg/kg wwt		✓	Tissue	Metals
MB	Boron (B)-Total	412925	WG2221303-2	<0.20		mg/kg wwt	-	<0.20	mg/kg wwt		✓	Tissue	Metals
MB	Boron (B)-Total	414979	WG2224022-1	<0.20		mg/kg wwt	-	<0.20	mg/kg wwt		✓	Tissue	Metals
MB	Boron (B)-Total	416081	WG2225498-1	<0.20		mg/kg wwt	-	<0.20	mg/kg wwt		✓	Tissue	Metals
MB	Boron (B)-Total	416081	WG2225498-2	<0.20		mg/kg wwt	-	<0.20	mg/kg wwt		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	412925	WG2221303-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	412925	WG2221303-2	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	414979	WG2224022-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	416081	WG2225498-1	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	416081	WG2225498-2	<0.010		mg/kg	-	<0.010	mg/kg		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	412925	WG2221303-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	412925	WG2221303-2	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	414979	WG2224022-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	416081	WG2225498-1	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Cadmium (Cd)-Total	416081	WG2225498-2	<0.0020		mg/kg wwt	-	<0.0020	mg/kg wwt		✓	Tissue	Metals
MB	Calcium (Ca)-Total	412925	WG2221303-1	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Calcium (Ca)-Total	412925	WG2221303-2	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Calcium (Ca)-Total	414979	WG2224022-1	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Calcium (Ca)-Total	416081	WG2225498-1	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Calcium (Ca)-Total	416081	WG2225498-2	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Calcium (Ca)-Total	412925	WG2221303-1	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Calcium (Ca)-Total	412925	WG2221303-2	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Calcium (Ca)-Total	414979	WG2224022-1	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Calcium (Ca)-Total	416081	WG2225498-1	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Calcium (Ca)-Total	416081	WG2225498-2	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Cesium (Cs)-Total	412925	WG2221303-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Cesium (Cs)-Total	412925	WG2221303-2	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Cesium (Cs)-Total	414979	WG2224022-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Cesium (Cs)-Total	416081	WG2225498-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Cesium (Cs)-Total	416081	WG2225498-2	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Cesium (Cs)-Total	412925	WG2221303-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Cesium (Cs)-Total	412925	WG2221303-2	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Cesium (Cs)-Total	414979	WG2224022-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Cesium (Cs)-Total	416081	WG2225498-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Cesium (Cs)-Total	416081	WG2225498-2	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Chromium (Cr)-Total	412925	WG2221303-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Chromium (Cr)-Total	412925	WG2221303-2	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals

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Date Received 3-Nov-2015 14:15
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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Chromium (Cr)-Total	414979	WG2224022-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Chromium (Cr)-Total	416081	WG2225498-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Chromium (Cr)-Total	416081	WG2225498-2	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Chromium (Cr)-Total	412925	WG2221303-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Chromium (Cr)-Total	412925	WG2221303-2	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Chromium (Cr)-Total	414979	WG2224022-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Chromium (Cr)-Total	416081	WG2225498-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Chromium (Cr)-Total	416081	WG2225498-2	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Cobalt (Co)-Total	412925	WG2221303-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Cobalt (Co)-Total	412925	WG2221303-2	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Cobalt (Co)-Total	414979	WG2224022-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Cobalt (Co)-Total	416081	WG2225498-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Cobalt (Co)-Total	416081	WG2225498-2	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Cobalt (Co)-Total	412925	WG2221303-1	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Cobalt (Co)-Total	412925	WG2221303-2	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Cobalt (Co)-Total	414979	WG2224022-1	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Cobalt (Co)-Total	416081	WG2225498-1	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Cobalt (Co)-Total	416081	WG2225498-2	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Copper (Cu)-Total	412925	WG2221303-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Copper (Cu)-Total	412925	WG2221303-2	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Copper (Cu)-Total	414979	WG2224022-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Copper (Cu)-Total	416081	WG2225498-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Copper (Cu)-Total	416081	WG2225498-2	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Copper (Cu)-Total	412925	WG2221303-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Copper (Cu)-Total	412925	WG2221303-2	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Copper (Cu)-Total	414979	WG2224022-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Copper (Cu)-Total	416081	WG2225498-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Copper (Cu)-Total	416081	WG2225498-2	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Iron (Fe)-Total	412925	WG2221303-1	<5.0		mg/kg	-	<5.0	mg/kg		✓	Tissue	Metals
MB	Iron (Fe)-Total	412925	WG2221303-2	<5.0		mg/kg	-	<5.0	mg/kg		✓	Tissue	Metals
MB	Iron (Fe)-Total	414979	WG2224022-1	<3.0		mg/kg	-	<3.0	mg/kg		✓	Tissue	Metals
MB	Iron (Fe)-Total	416081	WG2225498-1	<5.0		mg/kg	-	<5.0	mg/kg		✓	Tissue	Metals
MB	Iron (Fe)-Total	416081	WG2225498-2	<5.0		mg/kg	-	<5.0	mg/kg		✓	Tissue	Metals
MB	Iron (Fe)-Total	412925	WG2221303-1	<1.0		mg/kg wwt	-	<1.0	mg/kg wwt		✓	Tissue	Metals
MB	Iron (Fe)-Total	412925	WG2221303-2	<1.0		mg/kg wwt	-	<1.0	mg/kg wwt		✓	Tissue	Metals
MB	Iron (Fe)-Total	414979	WG2224022-1	<0.60		mg/kg wwt	-	<0.60	mg/kg wwt		✓	Tissue	Metals
MB	Iron (Fe)-Total	416081	WG2225498-1	<1.0		mg/kg wwt	-	<1.0	mg/kg wwt		✓	Tissue	Metals
MB	Iron (Fe)-Total	416081	WG2225498-2	<1.0		mg/kg wwt	-	<1.0	mg/kg wwt		✓	Tissue	Metals
MB	Lead (Pb)-Total	412925	WG2221303-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Lead (Pb)-Total	412925	WG2221303-2	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals

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Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Lead (Pb)-Total	414979	WG2224022-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Lead (Pb)-Total	416081	WG2225498-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Lead (Pb)-Total	416081	WG2225498-2	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Lead (Pb)-Total	412925	WG2221303-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Lead (Pb)-Total	412925	WG2221303-2	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Lead (Pb)-Total	414979	WG2224022-1	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Lead (Pb)-Total	416081	WG2225498-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Lead (Pb)-Total	416081	WG2225498-2	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Lithium (Li)-Total	412925	WG2221303-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Tissue	Metals
MB	Lithium (Li)-Total	412925	WG2221303-2	<0.50		mg/kg	-	<0.50	mg/kg		✓	Tissue	Metals
MB	Lithium (Li)-Total	414979	WG2224022-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Tissue	Metals
MB	Lithium (Li)-Total	416081	WG2225498-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Tissue	Metals
MB	Lithium (Li)-Total	416081	WG2225498-2	<0.50		mg/kg	-	<0.50	mg/kg		✓	Tissue	Metals
MB	Lithium (Li)-Total	412925	WG2221303-1	<0.10		mg/kg wwt	-	<0.10	mg/kg wwt		✓	Tissue	Metals
MB	Lithium (Li)-Total	412925	WG2221303-2	<0.10		mg/kg wwt	-	<0.10	mg/kg wwt		✓	Tissue	Metals
MB	Lithium (Li)-Total	414979	WG2224022-1	<0.10		mg/kg wwt	-	<0.10	mg/kg wwt		✓	Tissue	Metals
MB	Lithium (Li)-Total	416081	WG2225498-1	<0.10		mg/kg wwt	-	<0.10	mg/kg wwt		✓	Tissue	Metals
MB	Lithium (Li)-Total	416081	WG2225498-2	<0.10		mg/kg wwt	-	<0.10	mg/kg wwt		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	412925	WG2221303-1	<2.0		mg/kg	-	<2.0	mg/kg		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	412925	WG2221303-2	<2.0		mg/kg	-	<2.0	mg/kg		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	414979	WG2224022-1	<2.0		mg/kg	-	<2.0	mg/kg		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	416081	WG2225498-1	<2.0		mg/kg	-	<2.0	mg/kg		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	416081	WG2225498-2	<2.0		mg/kg	-	<2.0	mg/kg		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	412925	WG2221303-1	<0.40		mg/kg wwt	-	<0.40	mg/kg wwt		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	412925	WG2221303-2	<0.40		mg/kg wwt	-	<0.40	mg/kg wwt		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	414979	WG2224022-1	<0.40		mg/kg wwt	-	<0.40	mg/kg wwt		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	416081	WG2225498-1	<0.40		mg/kg wwt	-	<0.40	mg/kg wwt		✓	Tissue	Metals
MB	Magnesium (Mg)-Total	416081	WG2225498-2	<0.40		mg/kg wwt	-	<0.40	mg/kg wwt		✓	Tissue	Metals
MB	Manganese (Mn)-Total	412925	WG2221303-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Manganese (Mn)-Total	412925	WG2221303-2	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Manganese (Mn)-Total	414979	WG2224022-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Manganese (Mn)-Total	416081	WG2225498-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Manganese (Mn)-Total	416081	WG2225498-2	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Manganese (Mn)-Total	412925	WG2221303-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Manganese (Mn)-Total	412925	WG2221303-2	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Manganese (Mn)-Total	414979	WG2224022-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Manganese (Mn)-Total	416081	WG2225498-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Manganese (Mn)-Total	416081	WG2225498-2	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Mercury (Hg)-Total	412925	WG2221303-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Mercury (Hg)-Total	412925	WG2221303-2	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals

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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Mercury (Hg)-Total	414979	WG2224022-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Mercury (Hg)-Total	416081	WG2225498-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Mercury (Hg)-Total	416081	WG2225498-2	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Mercury (Hg)-Total	412925	WG2221303-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Mercury (Hg)-Total	412925	WG2221303-2	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Mercury (Hg)-Total	414979	WG2224022-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Mercury (Hg)-Total	416081	WG2225498-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Mercury (Hg)-Total	416081	WG2225498-2	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	412925	WG2221303-1	<0.040		mg/kg	-	<0.040	mg/kg		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	412925	WG2221303-2	<0.040		mg/kg	-	<0.040	mg/kg		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	414979	WG2224022-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	416081	WG2225498-1	<0.040		mg/kg	-	<0.040	mg/kg		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	416081	WG2225498-2	<0.040		mg/kg	-	<0.040	mg/kg		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	412925	WG2221303-1	<0.0080		mg/kg wwt	-	<0.0080	mg/kg wwt		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	412925	WG2221303-2	<0.0080		mg/kg wwt	-	<0.0080	mg/kg wwt		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	414979	WG2224022-1	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	416081	WG2225498-1	<0.0080		mg/kg wwt	-	<0.0080	mg/kg wwt		✓	Tissue	Metals
MB	Molybdenum (Mo)-Total	416081	WG2225498-2	<0.0080		mg/kg wwt	-	<0.0080	mg/kg wwt		✓	Tissue	Metals
MB	Nickel (Ni)-Total	412925	WG2221303-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Nickel (Ni)-Total	412925	WG2221303-2	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Nickel (Ni)-Total	414979	WG2224022-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Nickel (Ni)-Total	416081	WG2225498-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Nickel (Ni)-Total	416081	WG2225498-2	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Nickel (Ni)-Total	412925	WG2221303-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Nickel (Ni)-Total	412925	WG2221303-2	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Nickel (Ni)-Total	414979	WG2224022-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Nickel (Ni)-Total	416081	WG2225498-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Nickel (Ni)-Total	416081	WG2225498-2	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Phosphorus (P)-Total	412925	WG2221303-1	<10		mg/kg	-	<10	mg/kg		✓	Tissue	Metals
MB	Phosphorus (P)-Total	412925	WG2221303-2	<10		mg/kg	-	<10	mg/kg		✓	Tissue	Metals
MB	Phosphorus (P)-Total	414979	WG2224022-1	<10		mg/kg	-	<10	mg/kg		✓	Tissue	Metals
MB	Phosphorus (P)-Total	416081	WG2225498-1	<10		mg/kg	-	<10	mg/kg		✓	Tissue	Metals
MB	Phosphorus (P)-Total	416081	WG2225498-2	<10		mg/kg	-	<10	mg/kg		✓	Tissue	Metals
MB	Phosphorus (P)-Total	412925	WG2221303-1	<2.0		mg/kg wwt	-	<2.0	mg/kg wwt		✓	Tissue	Metals
MB	Phosphorus (P)-Total	412925	WG2221303-2	<2.0		mg/kg wwt	-	<2.0	mg/kg wwt		✓	Tissue	Metals
MB	Phosphorus (P)-Total	414979	WG2224022-1	<2.0		mg/kg wwt	-	<2.0	mg/kg wwt		✓	Tissue	Metals
MB	Phosphorus (P)-Total	416081	WG2225498-1	<2.0		mg/kg wwt	-	<2.0	mg/kg wwt		✓	Tissue	Metals
MB	Phosphorus (P)-Total	416081	WG2225498-2	<2.0		mg/kg wwt	-	<2.0	mg/kg wwt		✓	Tissue	Metals
MB	Potassium (K)-Total	412925	WG2221303-1	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Potassium (K)-Total	412925	WG2221303-2	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals

Quality Control L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Potassium (K)-Total	414979	WG2224022-1	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Potassium (K)-Total	416081	WG2225498-1	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Potassium (K)-Total	416081	WG2225498-2	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Potassium (K)-Total	412925	WG2221303-1	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Potassium (K)-Total	412925	WG2221303-2	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Potassium (K)-Total	414979	WG2224022-1	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Potassium (K)-Total	416081	WG2225498-1	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Potassium (K)-Total	416081	WG2225498-2	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	412925	WG2221303-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	412925	WG2221303-2	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	414979	WG2224022-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	416081	WG2225498-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	416081	WG2225498-2	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	412925	WG2221303-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	412925	WG2221303-2	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	414979	WG2224022-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	416081	WG2225498-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Rubidium (Rb)-Total	416081	WG2225498-2	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Selenium (Se)-Total	412925	WG2221303-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Selenium (Se)-Total	412925	WG2221303-2	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Selenium (Se)-Total	414979	WG2224022-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Selenium (Se)-Total	416081	WG2225498-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Selenium (Se)-Total	416081	WG2225498-2	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Selenium (Se)-Total	412925	WG2221303-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Selenium (Se)-Total	412925	WG2221303-2	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Selenium (Se)-Total	414979	WG2224022-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Selenium (Se)-Total	416081	WG2225498-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Selenium (Se)-Total	416081	WG2225498-2	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Silver (Ag)-Total	412925	WG2221303-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Silver (Ag)-Total	412925	WG2221303-2	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Silver (Ag)-Total	414979	WG2224022-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Silver (Ag)-Total	416081	WG2225498-1	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Silver (Ag)-Total	416081	WG2225498-2	<0.0050		mg/kg	-	<0.0050	mg/kg		✓	Tissue	Metals
MB	Silver (Ag)-Total	412925	WG2221303-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Silver (Ag)-Total	412925	WG2221303-2	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Silver (Ag)-Total	414979	WG2224022-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Silver (Ag)-Total	416081	WG2225498-1	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Silver (Ag)-Total	416081	WG2225498-2	<0.0010		mg/kg wwt	-	<0.0010	mg/kg wwt		✓	Tissue	Metals
MB	Sodium (Na)-Total	412925	WG2221303-1	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Sodium (Na)-Total	412925	WG2221303-2	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals

Quality Control L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Sodium (Na)-Total	414979	WG2224022-1	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Sodium (Na)-Total	416081	WG2225498-1	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Sodium (Na)-Total	416081	WG2225498-2	<20		mg/kg	-	<20	mg/kg		✓	Tissue	Metals
MB	Sodium (Na)-Total	412925	WG2221303-1	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Sodium (Na)-Total	412925	WG2221303-2	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Sodium (Na)-Total	414979	WG2224022-1	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Sodium (Na)-Total	416081	WG2225498-1	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Sodium (Na)-Total	416081	WG2225498-2	<4.0		mg/kg wwt	-	<4.0	mg/kg wwt		✓	Tissue	Metals
MB	Strontium (Sr)-Total	412925	WG2221303-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Strontium (Sr)-Total	412925	WG2221303-2	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Strontium (Sr)-Total	414979	WG2224022-1	<0.050		mg/kg	-	<0.050	mg/kg		✓	Tissue	Metals
MB	Strontium (Sr)-Total	416081	WG2225498-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Strontium (Sr)-Total	416081	WG2225498-2	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Strontium (Sr)-Total	412925	WG2221303-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Strontium (Sr)-Total	412925	WG2221303-2	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Strontium (Sr)-Total	414979	WG2224022-1	<0.010		mg/kg wwt	-	<0.010	mg/kg wwt		✓	Tissue	Metals
MB	Strontium (Sr)-Total	416081	WG2225498-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Strontium (Sr)-Total	416081	WG2225498-2	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Tellurium (Te)-Total	412925	WG2221303-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Tellurium (Te)-Total	412925	WG2221303-2	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Tellurium (Te)-Total	414979	WG2224022-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Tellurium (Te)-Total	416081	WG2225498-1	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Tellurium (Te)-Total	416081	WG2225498-2	<0.020		mg/kg	-	<0.020	mg/kg		✓	Tissue	Metals
MB	Tellurium (Te)-Total	412925	WG2221303-1	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Tellurium (Te)-Total	412925	WG2221303-2	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Tellurium (Te)-Total	414979	WG2224022-1	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Tellurium (Te)-Total	416081	WG2225498-1	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Tellurium (Te)-Total	416081	WG2225498-2	<0.0040		mg/kg wwt	-	<0.0040	mg/kg wwt		✓	Tissue	Metals
MB	Thallium (Tl)-Total	412925	WG2221303-1	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Thallium (Tl)-Total	412925	WG2221303-2	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Thallium (Tl)-Total	414979	WG2224022-1	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Thallium (Tl)-Total	416081	WG2225498-1	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Thallium (Tl)-Total	416081	WG2225498-2	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Thallium (Tl)-Total	412925	WG2221303-1	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Thallium (Tl)-Total	412925	WG2221303-2	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Thallium (Tl)-Total	414979	WG2224022-1	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Thallium (Tl)-Total	416081	WG2225498-1	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Thallium (Tl)-Total	416081	WG2225498-2	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Tin (Sn)-Total	412925	WG2221303-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Tin (Sn)-Total	412925	WG2221303-2	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals

Quality Control L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Tin (Sn)-Total	414979	WG2224022-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Tin (Sn)-Total	416081	WG2225498-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Tin (Sn)-Total	416081	WG2225498-2	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Tin (Sn)-Total	412925	WG2221303-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Tin (Sn)-Total	412925	WG2221303-2	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Tin (Sn)-Total	414979	WG2224022-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Tin (Sn)-Total	416081	WG2225498-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Tin (Sn)-Total	416081	WG2225498-2	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Uranium (U)-Total	412925	WG2221303-1	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Uranium (U)-Total	412925	WG2221303-2	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Uranium (U)-Total	414979	WG2224022-1	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Uranium (U)-Total	416081	WG2225498-1	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Uranium (U)-Total	416081	WG2225498-2	<0.0020		mg/kg	-	<0.0020	mg/kg		✓	Tissue	Metals
MB	Uranium (U)-Total	412925	WG2221303-1	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Uranium (U)-Total	412925	WG2221303-2	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Uranium (U)-Total	414979	WG2224022-1	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Uranium (U)-Total	416081	WG2225498-1	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Uranium (U)-Total	416081	WG2225498-2	<0.00040		mg/kg wwt	-	<0.00040	mg/kg wwt		✓	Tissue	Metals
MB	Vanadium (V)-Total	412925	WG2221303-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Vanadium (V)-Total	412925	WG2221303-2	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Vanadium (V)-Total	414979	WG2224022-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Vanadium (V)-Total	416081	WG2225498-1	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Vanadium (V)-Total	416081	WG2225498-2	<0.10		mg/kg	-	<0.10	mg/kg		✓	Tissue	Metals
MB	Vanadium (V)-Total	412925	WG2221303-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Vanadium (V)-Total	412925	WG2221303-2	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Vanadium (V)-Total	414979	WG2224022-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Vanadium (V)-Total	416081	WG2225498-1	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Vanadium (V)-Total	416081	WG2225498-2	<0.020		mg/kg wwt	-	<0.020	mg/kg wwt		✓	Tissue	Metals
MB	Zinc (Zn)-Total	412925	WG2221303-1	<1.0		mg/kg	-	<1.0	mg/kg		✓	Tissue	Metals
MB	Zinc (Zn)-Total	412925	WG2221303-2	<1.0		mg/kg	-	<1.0	mg/kg		✓	Tissue	Metals
MB	Zinc (Zn)-Total	414979	WG2224022-1	<0.50		mg/kg	-	<0.50	mg/kg		✓	Tissue	Metals
MB	Zinc (Zn)-Total	416081	WG2225498-1	<1.0		mg/kg	-	<1.0	mg/kg		✓	Tissue	Metals
MB	Zinc (Zn)-Total	416081	WG2225498-2	<1.0		mg/kg	-	<1.0	mg/kg		✓	Tissue	Metals
MB	Zinc (Zn)-Total	412925	WG2221303-1	<0.20		mg/kg wwt	-	<0.20	mg/kg wwt		✓	Tissue	Metals
MB	Zinc (Zn)-Total	412925	WG2221303-2	<0.20		mg/kg wwt	-	<0.20	mg/kg wwt		✓	Tissue	Metals
MB	Zinc (Zn)-Total	414979	WG2224022-1	<0.10		mg/kg wwt	-	<0.10	mg/kg wwt		✓	Tissue	Metals
MB	Zinc (Zn)-Total	416081	WG2225498-1	<0.20		mg/kg wwt	-	<0.20	mg/kg wwt		✓	Tissue	Metals
MB	Zinc (Zn)-Total	416081	WG2225498-2	<0.20		mg/kg wwt	-	<0.20	mg/kg wwt		✓	Tissue	Metals
MB	Zirconium (Zr)-Total	412925	WG2221303-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Zirconium (Zr)-Total	412925	WG2221303-2	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals

APPENDIX B-4
Fish Tissue Analysis Laroratory Results

Quality Control L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
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QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
MB	Zirconium (Zr)-Total	414979	WG2224022-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Zirconium (Zr)-Total	416081	WG2225498-1	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Zirconium (Zr)-Total	416081	WG2225498-2	<0.20		mg/kg	-	<0.20	mg/kg		✓	Tissue	Metals
MB	Zirconium (Zr)-Total	412925	WG2221303-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Zirconium (Zr)-Total	412925	WG2221303-2	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Zirconium (Zr)-Total	414979	WG2224022-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Zirconium (Zr)-Total	416081	WG2225498-1	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals
MB	Zirconium (Zr)-Total	416081	WG2225498-2	<0.040		mg/kg wwt	-	<0.040	mg/kg wwt		✓	Tissue	Metals

Qualifier Legend

MB-LOR Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.

Evaluation Legend

✓ QC Lot met ALS Data Quality Objectives
✖ QC Lot did not meet ALS Data Quality Objectives

APPENDIX B-4
Fish Tissue Analysis Laroratory Results

Methodology L1697526

Job Reference	AKHM-14-03
Report To	Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received	3-Nov-2015 14:15
Report Date	4-Jan-2016 18:10
Report Version	2

ALS Test Code	ALS Test Description	Lab Location	Matrix	Method Reference	Methodology Description
Physical Tests (Tissue)					
MOISTURE-TISS-VA	% Moisture in Tissues	Vancouver	Tissue	ASTM D2974-00 Method A	This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.
Metals (Tissue)					
AG-DRY-CCMS-N-VA	Silver in Tissue by CRC ICPMS (DRY)	Vancouver	Tissue	EPA 200.3/6020A	This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A). Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
AG-DRY-MICR-HRMS-VA	Silver in Tissue by HR-ICPMS Micro (DRY)	Vancouver	Tissue	EPA 200.3/200.8	Trace metals in tissue are analyzed by high resolution inductively coupled plasma mass spectrometry (HR-ICPMS) modified from US EPA Method 200.8, (Revision 5.5). The sample preparation procedure is modified from US EPA 200.3. Analytical results are reported on dry weight basis.
AG-WET-CCMS-N-VA	Silver in Tissue by CRC ICPMS (WET)	Vancouver	Tissue	EPA 200.3/6020A	This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A). Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
AG-WET-MICR-HRMS-VA	Silver in Tissue by HR-ICPMS Micro (WET)	Vancouver	Tissue	EPA 200.3/200.8	Trace metals in tissue are analyzed by high resolution inductively coupled plasma mass spectrometry (HR-ICPMS) modified from US EPA Method 200.8, (Revision 5.5). The sample preparation procedure is modified from US EPA 200.3. Analytical results are reported on wet weight basis.

Methodology L1697526

Job Reference	AKHM-14-03
Report To	Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received	3-Nov-2015 14:15
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ALS Test Code	ALS Test Description	Lab Location	Matrix	Method Reference	Methodology Description
HG-DRY-CVAFS-N-VA	Mercury in Tissue by CVAFS (DRY)	Vancouver	Tissue	EPA 200.3, EPA 245.7	This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Analysis is by atomic fluorescence spectrophotometry or atomic absorption spectrophotometry, adapted from US EPA Method 245.7.
HG-DRY-MICR-CVAF-VA	Mercury in Tissue by CVAFS Micro (DRY)	Vancouver	Tissue	EPA 200.3, EPA 245.7	This method is adapted from US EPA Method 200.3 "Sample Procedures for Spectrochemical Determination of Total Recoverable Elements in Biological Tissues" (1996). Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with repeated additions of hydrogen peroxide. Analysis is by atomic fluorescence spectrophotometry or atomic absorption spectrophotometry, adapted from US EPA Method 245.7.
HG-WET-CVAFS-N-VA	Mercury in Tissue by CVAFS (WET)	Vancouver	Tissue	EPA 200.3, EPA 245.7	This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Analysis is by atomic fluorescence spectrophotometry or atomic absorption spectrophotometry, adapted from US EPA Method 245.7.
HG-WET-MICR-CVAF-VA	Mercury in Tissue by CVAFS Micro (WET)	Vancouver	Tissue	EPA 200.3, EPA 245.7	This method is adapted from US EPA Method 200.3 "Sample Procedures for Spectrochemical Determination of Total Recoverable Elements in Biological Tissues" (1996). Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with repeated additions of hydrogen peroxide. Analysis is by atomic fluorescence spectrophotometry or atomic absorption spectrophotometry, adapted from US EPA Method 245.7.
MET-DRY-CCMS-N-VA	Metals in Tissue by CRC ICPMS (DRY)	Vancouver	Tissue	EPA 200.3/6020A	This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A). Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

Methodology L1697526

Job Reference	AKHM-14-03
Report To	Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received	3-Nov-2015 14:15
Report Date	4-Jan-2016 18:10
Report Version	2

ALS Test Code	ALS Test Description	Lab Location	Matrix	Method Reference	Methodology Description
MET-DRY-MICR-HRMS-VA	Metals in Tissue by HR-ICPMS Micro (DRY)	Vancouver	Tissue	EPA 200.3/200.8	Trace metals in tissue are analyzed by high resolution inductively coupled plasma mass spectrometry (HR-ICPMS) modified from US EPA Method 200.8, (Revision 5.5). The sample preparation procedure is modified from US EPA 200.3. Analytical results are reported on dry weight basis. Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
MET-WET-CCMS-N-VA	Metals in Tissue by CRC ICPMS (WET)	Vancouver	Tissue	EPA 200.3/6020A	This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A). Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
MET-WET-MICR-HRMS-VA	Metals in Tissue by HR-ICPMS Micro (WET)	Vancouver	Tissue	EPA 200.3/200.8	Trace metals in tissue are analyzed by high resolution inductively coupled plasma mass spectrometry (HR-ICPMS) modified from US EPA Method 200.8, (Revision 5.5). The sample preparation procedure is modified from US EPA 200.3. Analytical results are reported on wet weight basis. Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

Detection Limits L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
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Client Sample ID		REF-1	REF-2	REF-3	REF-4	REF-5	REF-6	REF-7	REF-8	REF-9	REF-10	EXP1-1	EXP1-2	EXP1-3	EXP1-4	EXP1-5	EXP1-6	EXP1-7
Date Sampled		18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015
Time Sampled		0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
ALS Sample ID		L1697526-1	L1697526-2	L1697526-3	L1697526-4	L1697526-5	L1697526-6	L1697526-7	L1697526-8	L1697526-9	L1697526-10	L1697526-11	L1697526-12	L1697526-13	L1697526-14	L1697526-15	L1697526-16	L1697526-17
Parameter	Units	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue
Physical Tests (Tissue)																		
% Moisture	%	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Metals (Tissue)																		
Aluminum (Al)-Total	mg/kg	5.0	5.0	5.0	5.0	2.0	5.0	5.0	5.0	2.0	5.0	5.0	2.0	5.0	2.0	2.0	2.0	2.0
Aluminum (Al)-Total	mg/kg wwt	1.0	1.0	1.0	1.0	0.40	1.0	1.0	1.0	0.40	1.0	1.0	0.40	1.0	0.40	0.40	0.40	0.40
Antimony (Sb)-Total	mg/kg	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Antimony (Sb)-Total	mg/kg wwt	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Arsenic (As)-Total	mg/kg	0.030	0.030	0.030	0.030	0.020	0.030	0.030	0.030	0.020	0.030	0.030	0.020	0.030	0.020	0.020	0.020	0.020
Arsenic (As)-Total	mg/kg wwt	0.0060	0.0060	0.0060	0.0060	0.0040	0.0060	0.0060	0.0060	0.0040	0.0060	0.0060	0.0040	0.0060	0.0040	0.0040	0.0040	0.0040
Barium (Ba)-Total	mg/kg	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
Barium (Ba)-Total	mg/kg wwt	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Beryllium (Be)-Total	mg/kg	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Beryllium (Be)-Total	mg/kg wwt	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Bismuth (Bi)-Total	mg/kg	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Bismuth (Bi)-Total	mg/kg wwt	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Boron (B)-Total	mg/kg	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Boron (B)-Total	mg/kg wwt	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Cadmium (Cd)-Total	mg/kg	0.010	0.010	0.010	0.010	0.0050	0.010	0.010	0.010	0.0050	0.010	0.010	0.0050	0.010	0.0050	0.0050	0.0050	0.0050
Cadmium (Cd)-Total	mg/kg wwt	0.0020	0.0020	0.0020	0.0020	0.0010	0.0020	0.0020	0.0020	0.0010	0.0020	0.0020	0.0010	0.0020	0.0010	0.0010	0.0010	0.0010
Calcium (Ca)-Total	mg/kg	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Calcium (Ca)-Total	mg/kg wwt	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Cesium (Cs)-Total	mg/kg	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Cesium (Cs)-Total	mg/kg wwt	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
Chromium (Cr)-Total	mg/kg	0.20	0.20	0.20	0.20	0.050	0.20	0.20	0.20	0.050	0.20	0.20	0.050	0.20	0.050	0.050	0.050	0.050
Chromium (Cr)-Total	mg/kg wwt	0.040	0.040	0.040	0.040	0.010	0.040	0.040	0.040	0.010	0.040	0.040	0.010	0.040	0.010	0.010	0.010	0.010
Cobalt (Co)-Total	mg/kg	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Cobalt (Co)-Total	mg/kg wwt	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040
Copper (Cu)-Total	mg/kg	0.20	0.20	0.20	0.20	0.10	0.20	0.20	0.20	0.10	0.20	0.20	0.10	0.20	0.10	0.10	0.10	0.10
Copper (Cu)-Total	mg/kg wwt	0.040	0.040	0.040	0.040	0.020	0.040	0.040	0.040	0.020	0.040	0.040	0.020	0.040	0.020	0.020	0.020	0.020
Iron (Fe)-Total	mg/kg	5.0	5.0	5.0	5.0	3.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Iron (Fe)-Total	mg/kg wwt	1.0	1.0	1.0	1.0	0.60	1.0	1.0	1.0	0.60	1.0	1.0	0.60	1.0	0.60	0.60	0.60	0.60
Lead (Pb)-Total	mg/kg	0.050	0.050	0.050	0.050	0.020	0.050	0.050	0.050	0.020	0.050	0.050	0.020	0.050	0.020	0.020	0.020	0.020
Lead (Pb)-Total	mg/kg wwt	0.010	0.010	0.010	0.010	0.0040	0.010	0.010	0.010	0.0040	0.010	0.010	0.0040	0.010	0.0040	0.0040	0.0040	0.0040
Lithium (Li)-Total	mg/kg	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Lithium (Li)-Total	mg/kg wwt	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Magnesium (Mg)-Total	mg/kg	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Magnesium (Mg)-Total	mg/kg wwt	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Manganese (Mn)-Total	mg/kg	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
Manganese (Mn)-Total	mg/kg wwt	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Mercury (Hg)-Total	mg/kg	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Mercury (Hg)-Total	mg/kg wwt	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
Molybdenum (Mo)-Total	mg/kg	0.040	0.040	0.040	0.040	0.020	0.040	0.040	0.040	0.020	0.040	0.040	0.020	0.040	0.020	0.020	0.020	0.020
Molybdenum (Mo)-Total	mg/kg wwt	0.0080	0.0080	0.0080	0.0080	0.0040	0.0080	0.0080	0.0080	0.0040	0.0080	0.0080	0.0040	0.0080	0.0040	0.0040	0.0040	0.0040
Nickel (Ni)-Total	mg/kg	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Nickel (Ni)-Total	mg/kg wwt	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
Phosphorus (P)-Total	mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Phosphorus (P)-Total	mg/kg wwt	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

Detection Limits L169752(

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexcc
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Client Sample ID		EXP1-8	EXP1-9	EXP1-10	EXP2-1	EXP2-2	EXP2-3	EXP2-4	EXP2-5	EXP2-6	EXP2-7	EXP2-8	EXP2-9	EXP2-10
Date Sampled		18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015
Time Sampled		0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
ALS Sample ID		L1697526-18	L1697526-19	L1697526-20	L1697526-21	L1697526-22	L1697526-23	L1697526-24	L1697526-25	L1697526-26	L1697526-27	L1697526-28	L1697526-29	L1697526-30
Parameter	Units	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue
Physical Tests (Tissue)														
% Moisture	%	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Metals (Tissue)														
Aluminum (Al)-Total	mg/kg	2.0	2.0	2.0	5.0	2.0	2.0	5.0	2.0	2.0	5.0	2.0	5.0	2.0
Aluminum (Al)-Total	mg/kg wwt	0.40	0.40	0.40	1.0	0.40	0.40	1.0	0.40	0.40	1.0	0.40	1.0	0.40
Antimony (Sb)-Total	mg/kg	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Antimony (Sb)-Total	mg/kg wwt	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Arsenic (As)-Total	mg/kg	0.020	0.020	0.020	0.030	0.020	0.020	0.030	0.020	0.020	0.030	0.020	0.030	0.020
Arsenic (As)-Total	mg/kg wwt	0.0040	0.0040	0.0040	0.0060	0.0040	0.0040	0.0060	0.0040	0.0040	0.0060	0.0040	0.0060	0.0040
Barium (Ba)-Total	mg/kg	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
Barium (Ba)-Total	mg/kg wwt	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Beryllium (Be)-Total	mg/kg	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Beryllium (Be)-Total	mg/kg wwt	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Bismuth (Bi)-Total	mg/kg	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Bismuth (Bi)-Total	mg/kg wwt	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Boron (B)-Total	mg/kg	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Boron (B)-Total	mg/kg wwt	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Cadmium (Cd)-Total	mg/kg	0.0050	0.0050	0.0050	0.010	0.0050	0.0050	0.010	0.0050	0.0050	0.010	0.0050	0.010	0.0050
Cadmium (Cd)-Total	mg/kg wwt	0.0010	0.0010	0.0010	0.0020	0.0010	0.0010	0.0020	0.0010	0.0010	0.0020	0.0010	0.0020	0.0010
Calcium (Ca)-Total	mg/kg	20	20	20	20	20	20	20	20	20	20	20	20	20
Calcium (Ca)-Total	mg/kg wwt	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Cesium (Cs)-Total	mg/kg	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Cesium (Cs)-Total	mg/kg wwt	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
Chromium (Cr)-Total	mg/kg	0.050	0.050	0.050	0.20	0.050	0.050	0.20	0.050	0.050	0.20	0.050	0.20	0.050
Chromium (Cr)-Total	mg/kg wwt	0.010	0.010	0.010	0.040	0.010	0.010	0.040	0.010	0.010	0.040	0.010	0.040	0.010
Cobalt (Co)-Total	mg/kg	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Cobalt (Co)-Total	mg/kg wwt	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040
Copper (Cu)-Total	mg/kg	0.10	0.10	0.10	0.20	0.10	0.10	0.20	0.10	0.10	0.20	0.10	0.20	0.10
Copper (Cu)-Total	mg/kg wwt	0.020	0.020	0.020	0.040	0.020	0.020	0.040	0.020	0.020	0.040	0.020	0.040	0.020
Iron (Fe)-Total	mg/kg	3.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	5.0	3.0
Iron (Fe)-Total	mg/kg wwt	0.60	0.60	0.60	1.0	0.60	0.60	1.0	0.60	0.60	1.0	0.60	1.0	0.60
Lead (Pb)-Total	mg/kg	0.020	0.020	0.020	0.050	0.020	0.020	0.050	0.020	0.020	0.050	0.020	0.050	0.020
Lead (Pb)-Total	mg/kg wwt	0.0040	0.0040	0.0040	0.010	0.0040	0.0040	0.010	0.0040	0.0040	0.010	0.0040	0.010	0.0040
Lithium (Li)-Total	mg/kg	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Lithium (Li)-Total	mg/kg wwt	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Magnesium (Mg)-Total	mg/kg	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Magnesium (Mg)-Total	mg/kg wwt	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Manganese (Mn)-Total	mg/kg	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
Manganese (Mn)-Total	mg/kg wwt	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Mercury (Hg)-Total	mg/kg	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Mercury (Hg)-Total	mg/kg wwt	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
Molybdenum (Mo)-Total	mg/kg	0.020	0.020	0.020	0.040	0.020	0.020	0.040	0.020	0.020	0.040	0.020	0.040	0.020
Molybdenum (Mo)-Total	mg/kg wwt	0.0040	0.0040	0.0040	0.0080	0.0040	0.0040	0.0080	0.0040	0.0040	0.0080	0.0040	0.0080	0.0040
Nickel (Ni)-Total	mg/kg	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Nickel (Ni)-Total	mg/kg wwt	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
Phosphorus (P)-Total	mg/kg	10	10	10	10	10	10	10	10	10	10	10	10	10
Phosphorus (P)-Total	mg/kg wwt	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

Detection Limits L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco Environmental Group Inc.
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Client Sample ID		REF-1	REF-2	REF-3	REF-4	REF-5	REF-6	REF-7	REF-8	REF-9	REF-10	EXP1-1	EXP1-2	EXP1-3	EXP1-4	EXP1-5	EXP1-6	EXP1-7
Date Sampled		18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015
Time Sampled		0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
ALS Sample ID		L1697526-1	L1697526-2	L1697526-3	L1697526-4	L1697526-5	L1697526-6	L1697526-7	L1697526-8	L1697526-9	L1697526-10	L1697526-11	L1697526-12	L1697526-13	L1697526-14	L1697526-15	L1697526-16	L1697526-17
Parameter	Units	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue
Potassium (K)-Total	mg/kg	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Potassium (K)-Total	mg/kg wwt	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Rubidium (Rb)-Total	mg/kg	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
Rubidium (Rb)-Total	mg/kg wwt	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Selenium (Se)-Total	mg/kg	0.10	0.10	0.10	0.10	0.050	0.10	0.10	0.10	0.050	0.10	0.10	0.050	0.10	0.050	0.050	0.050	0.050
Selenium (Se)-Total	mg/kg wwt	0.020	0.020	0.020	0.020	0.010	0.020	0.020	0.020	0.010	0.020	0.020	0.010	0.020	0.010	0.010	0.010	0.010
Silver (Ag)-Total	mg/kg	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Silver (Ag)-Total	mg/kg wwt	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
Sodium (Na)-Total	mg/kg	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Sodium (Na)-Total	mg/kg wwt	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Strontium (Sr)-Total	mg/kg	0.10	0.10	0.10	0.10	0.050	0.10	0.10	0.10	0.050	0.10	0.10	0.050	0.10	0.050	0.050	0.050	0.050
Strontium (Sr)-Total	mg/kg wwt	0.020	0.020	0.020	0.020	0.010	0.020	0.020	0.020	0.010	0.020	0.020	0.010	0.020	0.010	0.010	0.010	0.010
Tellurium (Te)-Total	mg/kg	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Tellurium (Te)-Total	mg/kg wwt	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040
Thallium (Tl)-Total	mg/kg	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Thallium (Tl)-Total	mg/kg wwt	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040
Tin (Sn)-Total	mg/kg	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Tin (Sn)-Total	mg/kg wwt	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Uranium (U)-Total	mg/kg	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Uranium (U)-Total	mg/kg wwt	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040
Vanadium (V)-Total	mg/kg	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vanadium (V)-Total	mg/kg wwt	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Zinc (Zn)-Total	mg/kg	1.0	1.0	1.0	1.0	0.50	1.0	1.0	1.0	0.50	1.0	1.0	0.50	1.0	0.50	0.50	0.50	0.50
Zinc (Zn)-Total	mg/kg wwt	0.20	0.20	0.20	0.20	0.10	0.20	0.20	0.20	0.10	0.20	0.20	0.10	0.20	0.10	0.10	0.10	0.10
Zirconium (Zr)-Total	mg/kg	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Zirconium (Zr)-Total	mg/kg wwt	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040

Detection Limits L1697526

Job Reference AKHM-14-03
Report To Audrey Sanfacon, Alexco
Date Received 3-Nov-2015 14:15
Report Date 4-Jan-2016 18:10
Report Version 2

Client Sample ID		EXP1-8	EXP1-9	EXP1-10	EXP2-1	EXP2-2	EXP2-3	EXP2-4	EXP2-5	EXP2-6	EXP2-7	EXP2-8	EXP2-9	EXP2-10
Date Sampled		18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015	18-Sep-2015
Time Sampled		0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
ALS Sample ID		L1697526-18	L1697526-19	L1697526-20	L1697526-21	L1697526-22	L1697526-23	L1697526-24	L1697526-25	L1697526-26	L1697526-27	L1697526-28	L1697526-29	L1697526-30
Parameter	Units	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue	Tissue
Potassium (K)-Total	mg/kg	20	20	20	20	20	20	20	20	20	20	20	20	20
Potassium (K)-Total	mg/kg wwt	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Rubidium (Rb)-Total	mg/kg	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
Rubidium (Rb)-Total	mg/kg wwt	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Selenium (Se)-Total	mg/kg	0.050	0.050	0.050	0.10	0.050	0.050	0.10	0.050	0.050	0.10	0.050	0.10	0.050
Selenium (Se)-Total	mg/kg wwt	0.010	0.010	0.010	0.020	0.010	0.010	0.020	0.010	0.010	0.020	0.010	0.020	0.010
Silver (Ag)-Total	mg/kg	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Silver (Ag)-Total	mg/kg wwt	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
Sodium (Na)-Total	mg/kg	20	20	20	20	20	20	20	20	20	20	20	20	20
Sodium (Na)-Total	mg/kg wwt	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Strontium (Sr)-Total	mg/kg	0.050	0.050	0.050	0.10	0.050	0.050	0.10	0.050	0.050	0.10	0.050	0.10	0.050
Strontium (Sr)-Total	mg/kg wwt	0.010	0.010	0.010	0.020	0.010	0.010	0.020	0.010	0.010	0.020	0.010	0.020	0.010
Tellurium (Te)-Total	mg/kg	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Tellurium (Te)-Total	mg/kg wwt	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040
Thallium (Tl)-Total	mg/kg	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Thallium (Tl)-Total	mg/kg wwt	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040
Tin (Sn)-Total	mg/kg	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Tin (Sn)-Total	mg/kg wwt	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Uranium (U)-Total	mg/kg	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
Uranium (U)-Total	mg/kg wwt	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040	0.00040
Vanadium (V)-Total	mg/kg	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vanadium (V)-Total	mg/kg wwt	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
Zinc (Zn)-Total	mg/kg	0.50	0.50	0.50	1.0	0.50	0.50	1.0	0.50	0.50	1.0	0.50	1.0	0.50
Zinc (Zn)-Total	mg/kg wwt	0.10	0.10	0.10	0.20	0.10	0.10	0.20	0.10	0.10	0.20	0.10	0.20	0.10
Zirconium (Zr)-Total	mg/kg	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Zirconium (Zr)-Total	mg/kg wwt	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040

Alexco Environmental Group Inc.
ATTN: Audrey Sanfacon
#3 Calcite Business Centre
151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 03-NOV-15
Report Date: 04-JAN-16 18:10 (MT)
Version: FINAL REV. 2

Client Phone: 867-668-6463

Certificate of Analysis

Lab Work Order #: L1697526

Project P.O. #: 16950
Job Reference: AKHM-14-03
C of C Numbers: 1, 2, 3
Legal Site Desc:

Comments:

4-JAN-2016 Please note, the weights of the tissue before homogenization can be found at the end of the attachment.

Ariel Tang, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1697526-1 Tissue 18-SEP-15 REF-1	L1697526-2 Tissue 18-SEP-15 REF-2	L1697526-3 Tissue 18-SEP-15 REF-3	L1697526-4 Tissue 18-SEP-15 REF-4	L1697526-5 Tissue 18-SEP-15 REF-5
TISSUE						
Physical Tests	% Moisture (%)	72.1	74.2	72.8	74.2	74.0
Metals	Aluminum (Al)-Total (mg/kg)	<5.0	<5.0	<5.0	<5.0	8.5
	Aluminum (Al)-Total (mg/kg wwt)	<1.0	<1.0	<1.0	<1.0	2.21
	Antimony (Sb)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Antimony (Sb)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Arsenic (As)-Total (mg/kg)	4.65	4.91	3.15	4.57	6.73
	Arsenic (As)-Total (mg/kg wwt)	1.30	1.27	0.857	1.18	1.75
	Barium (Ba)-Total (mg/kg)	0.936	1.05	1.29	0.681	1.28
	Barium (Ba)-Total (mg/kg wwt)	0.261	0.271	0.352	0.176	0.333
	Beryllium (Be)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Beryllium (Be)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Bismuth (Bi)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Bismuth (Bi)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Boron (B)-Total (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Boron (B)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.20
	Cadmium (Cd)-Total (mg/kg)	0.361	0.446	0.297	0.376	0.298
	Cadmium (Cd)-Total (mg/kg wwt)	0.101	0.115	0.0808	0.0969	0.0773
	Calcium (Ca)-Total (mg/kg)	14500	16400	17600	11300	19000
	Calcium (Ca)-Total (mg/kg wwt)	4060	4240	4790	2910	4940
	Cesium (Cs)-Total (mg/kg)	0.0341	0.0344	0.0218	0.0344	0.0333
	Cesium (Cs)-Total (mg/kg wwt)	0.0095	0.0089	0.0059	0.0089	0.0087
	Chromium (Cr)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	0.188
	Chromium (Cr)-Total (mg/kg wwt)	<0.040	<0.040	0.051	<0.040	0.049
	Cobalt (Co)-Total (mg/kg)	0.041	0.046	0.053	0.053	0.094
	Cobalt (Co)-Total (mg/kg wwt)	0.0115	0.0118	0.0144	0.0137	0.0245
	Copper (Cu)-Total (mg/kg)	11.0	20.9	15.8	14.2	16.5
	Copper (Cu)-Total (mg/kg wwt)	3.07	5.40	4.31	3.66	4.28
	Iron (Fe)-Total (mg/kg)	55.3	70.1	57.0	69.8	72.8
	Iron (Fe)-Total (mg/kg wwt)	15.4	18.1	15.5	18.0	18.9
	Lead (Pb)-Total (mg/kg)	0.213	0.124	0.278	0.119	0.124
	Lead (Pb)-Total (mg/kg wwt)	0.059	0.032	0.076	0.031	0.0323
	Lithium (Li)-Total (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
	Magnesium (Mg)-Total (mg/kg)	990	1050	987	981	1490
	Magnesium (Mg)-Total (mg/kg wwt)	277	271	269	253	389
	Manganese (Mn)-Total (mg/kg)	2.93	7.95	7.43	2.80	6.65
	Manganese (Mn)-Total (mg/kg wwt)	0.819	2.06	2.02	0.722	1.73

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1697526-6 Tissue 18-SEP-15 REF-6	L1697526-7 Tissue 18-SEP-15 REF-7	L1697526-8 Tissue 18-SEP-15 REF-8	L1697526-9 Tissue 18-SEP-15 REF-9	L1697526-10 Tissue 18-SEP-15 REF-10
TISSUE						
Physical Tests	% Moisture (%)	70.4	72.3	75.4	74.6	71.8
Metals	Aluminum (Al)-Total (mg/kg)	<5.0	<5.0	<5.0	6.1	<5.0
	Aluminum (Al)-Total (mg/kg wwt)	<1.0	<1.0	<1.0	1.55	<1.0
	Antimony (Sb)-Total (mg/kg)	0.016	<0.010	<0.010	<0.010	<0.010
	Antimony (Sb)-Total (mg/kg wwt)	0.0048	<0.0020	<0.0020	<0.0020	<0.0020
	Arsenic (As)-Total (mg/kg)	4.42	4.38	5.19	5.95	5.19
	Arsenic (As)-Total (mg/kg wwt)	1.31	1.21	1.28	1.51	1.46
	Barium (Ba)-Total (mg/kg)	1.14	0.810	0.979	1.01	0.908
	Barium (Ba)-Total (mg/kg wwt)	0.337	0.224	0.241	0.256	0.256
	Beryllium (Be)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Beryllium (Be)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Bismuth (Bi)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Bismuth (Bi)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Boron (B)-Total (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Boron (B)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.20
	Cadmium (Cd)-Total (mg/kg)	0.366	0.221	0.254	0.264	0.211
	Cadmium (Cd)-Total (mg/kg wwt)	0.108	0.0612	0.0626	0.0670	0.0594
	Calcium (Ca)-Total (mg/kg)	25100	15000	12900	19300	16800
	Calcium (Ca)-Total (mg/kg wwt)	7420	4140	3180	4890	4740
	Cesium (Cs)-Total (mg/kg)	0.0318	0.0314	0.0396	0.0353	0.0333
	Cesium (Cs)-Total (mg/kg wwt)	0.0094	0.0087	0.0097	0.0090	0.0094
	Chromium (Cr)-Total (mg/kg)	<0.20	<0.20	<0.20	0.115	<0.20
	Chromium (Cr)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	0.029	<0.040
	Cobalt (Co)-Total (mg/kg)	0.050	0.046	0.043	0.067	0.040
	Cobalt (Co)-Total (mg/kg wwt)	0.0147	0.0126	0.0106	0.0171	0.0113
	Copper (Cu)-Total (mg/kg)	16.4	13.9	18.4	14.3	22.5
	Copper (Cu)-Total (mg/kg wwt)	4.86	3.84	4.54	3.62	6.33
	Iron (Fe)-Total (mg/kg)	64.4	49.5	68.4	70.7	95.5
	Iron (Fe)-Total (mg/kg wwt)	19.0	13.7	16.9	18.0	26.9
	Lead (Pb)-Total (mg/kg)	0.200	0.122	0.127	0.113	0.210
	Lead (Pb)-Total (mg/kg wwt)	0.059	0.034	0.031	0.0288	0.059
	Lithium (Li)-Total (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
	Magnesium (Mg)-Total (mg/kg)	1130	955	999	1130	982
	Magnesium (Mg)-Total (mg/kg wwt)	335	265	246	288	277
	Manganese (Mn)-Total (mg/kg)	6.45	2.77	3.15	4.07	4.24
	Manganese (Mn)-Total (mg/kg wwt)	1.91	0.766	0.777	1.03	1.19

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1697526-11 Tissue 18-SEP-15 EXP1-1	L1697526-12 Tissue 18-SEP-15 EXP1-2	L1697526-13 Tissue 18-SEP-15 EXP1-3	L1697526-14 Tissue 18-SEP-15 EXP1-4	L1697526-15 Tissue 18-SEP-15 EXP1-5
Sample ID / Description / Sampled Date / Sampled Time / Client ID						
TISSUE						
Physical Tests	% Moisture (%)	73.3	74.6	69.7	74.3	74.5
Metals	Aluminum (Al)-Total (mg/kg)	<5.0	7.9	<5.0	6.4	4.1
	Aluminum (Al)-Total (mg/kg wwt)	<1.0	2.02	<1.0	1.66	1.05
	Antimony (Sb)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Antimony (Sb)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Arsenic (As)-Total (mg/kg)	5.05	6.05	4.54	6.10	5.95
	Arsenic (As)-Total (mg/kg wwt)	1.35	1.54	1.38	1.57	1.52
	Barium (Ba)-Total (mg/kg)	1.26	0.662	0.934	0.635	0.641
	Barium (Ba)-Total (mg/kg wwt)	0.336	0.168	0.283	0.163	0.164
	Beryllium (Be)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Beryllium (Be)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Bismuth (Bi)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Bismuth (Bi)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Boron (B)-Total (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Boron (B)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.20
	Cadmium (Cd)-Total (mg/kg)	0.334	0.303	0.193	0.174	0.218
	Cadmium (Cd)-Total (mg/kg wwt)	0.0891	0.0770	0.0586	0.0449	0.0556
	Calcium (Ca)-Total (mg/kg)	30200	15400	17200	15200	16500
	Calcium (Ca)-Total (mg/kg wwt)	8050	3920	5210	3920	4210
	Cesium (Cs)-Total (mg/kg)	0.0406	0.0416	0.0361	0.0398	0.0422
	Cesium (Cs)-Total (mg/kg wwt)	0.0108	0.0106	0.0109	0.0102	0.0108
	Chromium (Cr)-Total (mg/kg)	<0.20	0.081	<0.20	0.073	0.078
	Chromium (Cr)-Total (mg/kg wwt)	<0.040	0.021	<0.040	0.019	0.020
	Cobalt (Co)-Total (mg/kg)	0.055	0.080	0.049	0.072	0.081
	Cobalt (Co)-Total (mg/kg wwt)	0.0146	0.0204	0.0150	0.0185	0.0206
	Copper (Cu)-Total (mg/kg)	20.1	12.0	11.2	9.79	10.1
	Copper (Cu)-Total (mg/kg wwt)	5.36	3.06	3.40	2.52	2.57
	Iron (Fe)-Total (mg/kg)	84.2	70.9	60.4	64.3	78.2
	Iron (Fe)-Total (mg/kg wwt)	22.5	18.0	18.3	16.5	20.0
	Lead (Pb)-Total (mg/kg)	0.136	0.141	0.110	0.095	0.125
	Lead (Pb)-Total (mg/kg wwt)	0.036	0.0359	0.033	0.0245	0.0319
	Lithium (Li)-Total (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
	Magnesium (Mg)-Total (mg/kg)	1310	1170	1010	1180	1160
	Magnesium (Mg)-Total (mg/kg wwt)	350	296	307	303	295
	Manganese (Mn)-Total (mg/kg)	6.39	4.06	6.68	3.71	3.49
	Manganese (Mn)-Total (mg/kg wwt)	1.70	1.03	2.03	0.953	0.892

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1697526-16	L1697526-17	L1697526-18	L1697526-19	L1697526-20
Description	Tissue	Tissue	Tissue	Tissue	Tissue
Sampled Date	18-SEP-15	18-SEP-15	18-SEP-15	18-SEP-15	18-SEP-15
Sampled Time					
Client ID	EXP1-6	EXP1-7	EXP1-8	EXP1-9	EXP1-10
Grouping / **Analyte**					
TISSUE					
Physical Tests % Moisture (%)	72.0	75.6	73.6	75.0	73.3
Metals Aluminum (Al)-Total (mg/kg)	4.4	7.1	7.3	5.6	9.6
Aluminum (Al)-Total (mg/kg wwt)	1.24	1.73	1.92	1.39	2.55
Antimony (Sb)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Antimony (Sb)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic (As)-Total (mg/kg)	5.58	4.94	5.38	5.95	5.76
Arsenic (As)-Total (mg/kg wwt)	1.56	1.21	1.42	1.48	1.54
Barium (Ba)-Total (mg/kg)	0.487	0.860	0.957	0.713	0.547
Barium (Ba)-Total (mg/kg wwt)	0.136	0.210	0.253	0.178	0.146
Beryllium (Be)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Beryllium (Be)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Bismuth (Bi)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Bismuth (Bi)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Boron (B)-Total (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
Boron (B)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium (Cd)-Total (mg/kg)	0.141	0.277	0.203	0.195	0.154
Cadmium (Cd)-Total (mg/kg wwt)	0.0394	0.0675	0.0537	0.0488	0.0412
Calcium (Ca)-Total (mg/kg)	15300	20800	19000	16000	15500
Calcium (Ca)-Total (mg/kg wwt)	4270	5090	5030	4000	4130
Cesium (Cs)-Total (mg/kg)	0.0403	0.0380	0.0381	0.0391	0.0382
Cesium (Cs)-Total (mg/kg wwt)	0.0113	0.0093	0.0101	0.0098	0.0102
Chromium (Cr)-Total (mg/kg)	<0.050	0.163	0.106	0.144	<0.050
Chromium (Cr)-Total (mg/kg wwt)	0.014	0.040	0.028	0.036	0.012
Cobalt (Co)-Total (mg/kg)	0.061	0.090	0.068	0.072	0.067
Cobalt (Co)-Total (mg/kg wwt)	0.0172	0.0220	0.0179	0.0181	0.0178
Copper (Cu)-Total (mg/kg)	10.1	11.5	8.47	10.6	7.78
Copper (Cu)-Total (mg/kg wwt)	2.83	2.81	2.24	2.64	2.08
Iron (Fe)-Total (mg/kg)	58.2	80.1	64.8	80.1	58.3
Iron (Fe)-Total (mg/kg wwt)	16.3	19.5	17.1	20.0	15.6
Lead (Pb)-Total (mg/kg)	0.090	0.141	0.125	0.105	0.099
Lead (Pb)-Total (mg/kg wwt)	0.0253	0.0343	0.0330	0.0263	0.0265
Lithium (Li)-Total (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
Magnesium (Mg)-Total (mg/kg)	982	1110	1020	1190	1060
Magnesium (Mg)-Total (mg/kg wwt)	274	270	269	296	282
Manganese (Mn)-Total (mg/kg)	2.52	5.05	5.16	5.55	5.11
Manganese (Mn)-Total (mg/kg wwt)	0.704	1.23	1.36	1.38	1.36

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1697526-21 Tissue 18-SEP-15 EXP2-1	L1697526-22 Tissue 18-SEP-15 EXP2-2	L1697526-23 Tissue 18-SEP-15 EXP2-3	L1697526-24 Tissue 18-SEP-15 EXP2-4	L1697526-25 Tissue 18-SEP-15 EXP2-5
Sample ID / Description / Sampled Date / Sampled Time / Client ID						
TISSUE						
Physical Tests	% Moisture (%)	77.4	73.5	74.6	77.1	77.4
Metals	Aluminum (Al)-Total (mg/kg)	<5.0	6.8	7.7	13.7	8.0
	Aluminum (Al)-Total (mg/kg wwt)	<1.0	1.81	1.95	3.1	1.80
	Antimony (Sb)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Antimony (Sb)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Arsenic (As)-Total (mg/kg)	5.39	5.72	5.40	5.21	6.22
	Arsenic (As)-Total (mg/kg wwt)	1.22	1.52	1.37	1.19	1.41
	Barium (Ba)-Total (mg/kg)	1.26	0.636	0.955	1.53	0.803
	Barium (Ba)-Total (mg/kg wwt)	0.285	0.169	0.242	0.350	0.181
	Beryllium (Be)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Beryllium (Be)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Bismuth (Bi)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
	Bismuth (Bi)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Boron (B)-Total (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
	Boron (B)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.20
	Cadmium (Cd)-Total (mg/kg)	0.752	0.185	0.577	0.960	0.241
	Cadmium (Cd)-Total (mg/kg wwt)	0.170	0.0491	0.146	0.220	0.0545
	Calcium (Ca)-Total (mg/kg)	24100	18200	18800	21900	21300
	Calcium (Ca)-Total (mg/kg wwt)	5450	4830	4780	5020	4810
	Cesium (Cs)-Total (mg/kg)	0.0424	0.0388	0.0395	0.0403	0.0449
	Cesium (Cs)-Total (mg/kg wwt)	0.0096	0.0103	0.0100	0.0092	0.0101
	Chromium (Cr)-Total (mg/kg)	<0.20	0.063	0.147	<0.20	0.103
	Chromium (Cr)-Total (mg/kg wwt)	<0.040	0.017	0.037	<0.040	0.023
	Cobalt (Co)-Total (mg/kg)	0.051	0.060	0.071	0.050	0.081
	Cobalt (Co)-Total (mg/kg wwt)	0.0114	0.0160	0.0180	0.0114	0.0183
	Copper (Cu)-Total (mg/kg)	16.7	8.98	13.3	22.0	11.7
	Copper (Cu)-Total (mg/kg wwt)	3.76	2.38	3.37	5.04	2.64
	Iron (Fe)-Total (mg/kg)	84.4	54.8	92.8	106	72.8
	Iron (Fe)-Total (mg/kg wwt)	19.1	14.5	23.6	24.4	16.4
	Lead (Pb)-Total (mg/kg)	0.188	0.088	0.176	0.276	0.093
	Lead (Pb)-Total (mg/kg wwt)	0.042	0.0233	0.0447	0.063	0.0210
	Lithium (Li)-Total (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
	Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
	Magnesium (Mg)-Total (mg/kg)	1310	1070	1060	1160	1180
	Magnesium (Mg)-Total (mg/kg wwt)	295	284	269	266	266
	Manganese (Mn)-Total (mg/kg)	6.18	4.16	3.46	2.91	3.41
	Manganese (Mn)-Total (mg/kg wwt)	1.40	1.10	0.877	0.666	0.770

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1697526-26	L1697526-27	L1697526-28	L1697526-29	L1697526-30
Description	Tissue	Tissue	Tissue	Tissue	Tissue
Sampled Date	18-SEP-15	18-SEP-15	18-SEP-15	18-SEP-15	18-SEP-15
Sampled Time					
Client ID	EXP2-6	EXP2-7	EXP2-8	EXP2-9	EXP2-10
Grouping / **Analyte**					
TISSUE					
Physical Tests % Moisture (%)	76.9	76.0	74.4	77.2	76.9
Metals Aluminum (Al)-Total (mg/kg)	7.9	6.4	9.2	<5.0	4.7
Aluminum (Al)-Total (mg/kg wwt)	1.83	1.5	2.35	<1.0	1.08
Antimony (Sb)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Antimony (Sb)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic (As)-Total (mg/kg)	6.79	5.23	6.60	5.10	6.00
Arsenic (As)-Total (mg/kg wwt)	1.57	1.25	1.69	1.17	1.38
Barium (Ba)-Total (mg/kg)	1.04	1.02	1.07	1.28	1.05
Barium (Ba)-Total (mg/kg wwt)	0.240	0.244	0.275	0.292	0.242
Beryllium (Be)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Beryllium (Be)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Bismuth (Bi)-Total (mg/kg)	<0.010	<0.010	<0.010	<0.010	<0.010
Bismuth (Bi)-Total (mg/kg wwt)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Boron (B)-Total (mg/kg)	<1.0	<1.0	<1.0	<1.0	<1.0
Boron (B)-Total (mg/kg wwt)	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium (Cd)-Total (mg/kg)	0.764	0.781	0.690	0.789	0.745
Cadmium (Cd)-Total (mg/kg wwt)	0.176	0.187	0.177	0.180	0.172
Calcium (Ca)-Total (mg/kg)	21700	18800	20500	18800	22000
Calcium (Ca)-Total (mg/kg wwt)	5000	4520	5260	4300	5090
Cesium (Cs)-Total (mg/kg)	0.0425	0.0432	0.0388	0.0379	0.0385
Cesium (Cs)-Total (mg/kg wwt)	0.0098	0.0104	0.0099	0.0087	0.0089
Chromium (Cr)-Total (mg/kg)	0.127	<0.20	0.091	<0.20	0.063
Chromium (Cr)-Total (mg/kg wwt)	0.029	<0.040	0.023	<0.040	0.015
Cobalt (Co)-Total (mg/kg)	0.094	0.051	0.076	0.044	0.077
Cobalt (Co)-Total (mg/kg wwt)	0.0217	0.0123	0.0194	0.0101	0.0177
Copper (Cu)-Total (mg/kg)	17.6	21.3	15.6	15.4	15.4
Copper (Cu)-Total (mg/kg wwt)	4.05	5.10	4.00	3.51	3.55
Iron (Fe)-Total (mg/kg)	99.4	74.7	85.2	76.4	79.1
Iron (Fe)-Total (mg/kg wwt)	22.9	17.9	21.8	17.5	18.3
Lead (Pb)-Total (mg/kg)	0.167	0.159	0.226	0.215	0.228
Lead (Pb)-Total (mg/kg wwt)	0.0384	0.038	0.0578	0.049	0.0527
Lithium (Li)-Total (mg/kg)	<0.50	<0.50	<0.50	<0.50	<0.50
Lithium (Li)-Total (mg/kg wwt)	<0.10	<0.10	<0.10	<0.10	<0.10
Magnesium (Mg)-Total (mg/kg)	1420	1150	1250	1070	1210
Magnesium (Mg)-Total (mg/kg wwt)	327	275	319	245	279
Manganese (Mn)-Total (mg/kg)	6.50	4.35	4.98	4.30	3.37
Manganese (Mn)-Total (mg/kg wwt)	1.50	1.04	1.28	0.983	0.778

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1697526-1	L1697526-2	L1697526-3	L1697526-4	L1697526-5
Description	Tissue	Tissue	Tissue	Tissue	Tissue
Sampled Date	18-SEP-15	18-SEP-15	18-SEP-15	18-SEP-15	18-SEP-15
Sampled Time					
Client ID	REF-1	REF-2	REF-3	REF-4	REF-5
Grouping / **Analyte**					
TISSUE					
Metals Mercury (Hg)-Total (mg/kg)	0.0715	0.0706	0.0675	0.0801	0.0733
Mercury (Hg)-Total (mg/kg wwt)	0.0200	0.0183	0.0184	0.0206	0.0191
Molybdenum (Mo)-Total (mg/kg)	<0.040	0.049	0.046	0.054	0.044
Molybdenum (Mo)-Total (mg/kg wwt)	0.0105	0.0125	0.0126	0.0140	0.0115
Nickel (Ni)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel (Ni)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040
Phosphorus (P)-Total (mg/kg)	15700	17500	16600	13800	23500
Phosphorus (P)-Total (mg/kg wwt)	4380	4520	4520	3560	6110
Potassium (K)-Total (mg/kg)	11800	12600	8930	11900	16000
Potassium (K)-Total (mg/kg wwt)	3290	3270	2430	3060	4150
Rubidium (Rb)-Total (mg/kg)	3.22	3.34	2.43	3.10	4.59
Rubidium (Rb)-Total (mg/kg wwt)	0.900	0.863	0.660	0.798	1.19
Selenium (Se)-Total (mg/kg)	0.96	1.16	1.00	1.06	1.21
Selenium (Se)-Total (mg/kg wwt)	0.268	0.299	0.274	0.274	0.314
Silver (Ag)-Total (mg/kg)	0.0051	<0.0050	<0.0050	<0.0050	<0.0050
Silver (Ag)-Total (mg/kg wwt)	0.0014	0.0012	<0.0010	<0.0010	<0.0010
Sodium (Na)-Total (mg/kg)	2960	3330	3030	3300	4930
Sodium (Na)-Total (mg/kg wwt)	828	861	825	849	1280
Strontium (Sr)-Total (mg/kg)	14.8	16.2	14.5	14.4	19.0
Strontium (Sr)-Total (mg/kg wwt)	4.13	4.19	3.95	3.71	4.93
Tellurium (Te)-Total (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
Tellurium (Te)-Total (mg/kg wwt)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Thallium (Tl)-Total (mg/kg)	0.0429	0.0445	0.0387	0.0423	0.0487
Thallium (Tl)-Total (mg/kg wwt)	0.0120	0.0115	0.0105	0.0109	0.0126
Tin (Sn)-Total (mg/kg)	0.16	0.30	0.28	0.25	0.30
Tin (Sn)-Total (mg/kg wwt)	0.046	0.077	0.077	0.064	0.078
Uranium (U)-Total (mg/kg)	0.0068	0.0324	0.172	0.0651	0.107
Uranium (U)-Total (mg/kg wwt)	0.00189	0.00838	0.0469	0.0168	0.0278
Vanadium (V)-Total (mg/kg)	0.10	0.19	0.22	0.21	0.31
Vanadium (V)-Total (mg/kg wwt)	0.028	0.049	0.059	0.054	0.082
Zinc (Zn)-Total (mg/kg)	131	147	129	138	177
Zinc (Zn)-Total (mg/kg wwt)	36.7	38.1	35.2	35.6	46.0
Zirconium (Zr)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
Zirconium (Zr)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1697526-6 Tissue 18-SEP-15 REF-6	L1697526-7 Tissue 18-SEP-15 REF-7	L1697526-8 Tissue 18-SEP-15 REF-8	L1697526-9 Tissue 18-SEP-15 REF-9	L1697526-10 Tissue 18-SEP-15 REF-10
TISSUE						
Metals	Mercury (Hg)-Total (mg/kg)	0.0626	0.0811	0.0893	0.0787	0.0797
	Mercury (Hg)-Total (mg/kg wwt)	0.0185	0.0225	0.0220	0.0200	0.0225
	Molybdenum (Mo)-Total (mg/kg)	<0.040	0.044	0.046	0.043	0.049
	Molybdenum (Mo)-Total (mg/kg wwt)	0.0117	0.0122	0.0114	0.0109	0.0137
	Nickel (Ni)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Nickel (Ni)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040
	Phosphorus (P)-Total (mg/kg)	20900	15500	15100	19400	16600
	Phosphorus (P)-Total (mg/kg wwt)	6170	4300	3730	4940	4670
	Potassium (K)-Total (mg/kg)	10400	10800	12100	13600	11700
	Potassium (K)-Total (mg/kg wwt)	3080	3000	2980	3450	3290
	Rubidium (Rb)-Total (mg/kg)	3.06	3.06	3.40	4.12	3.03
	Rubidium (Rb)-Total (mg/kg wwt)	0.905	0.848	0.836	1.05	0.854
	Selenium (Se)-Total (mg/kg)	0.95	1.02	1.08	1.20	1.19
	Selenium (Se)-Total (mg/kg wwt)	0.282	0.282	0.266	0.305	0.334
	Silver (Ag)-Total (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Silver (Ag)-Total (mg/kg wwt)	<0.0010	<0.0010	0.0011	<0.0010	0.0013
	Sodium (Na)-Total (mg/kg)	2610	2850	2940	3640	2890
	Sodium (Na)-Total (mg/kg wwt)	773	788	725	926	813
	Strontium (Sr)-Total (mg/kg)	22.3	16.1	13.4	17.9	17.7
	Strontium (Sr)-Total (mg/kg wwt)	6.59	4.47	3.31	4.55	4.98
	Tellurium (Te)-Total (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	Tellurium (Te)-Total (mg/kg wwt)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Thallium (Tl)-Total (mg/kg)	0.0445	0.0421	0.0374	0.0404	0.0434
	Thallium (Tl)-Total (mg/kg wwt)	0.0132	0.0117	0.00921	0.0103	0.0122
	Tin (Sn)-Total (mg/kg)	0.91	0.29	0.23	0.41	0.17
	Tin (Sn)-Total (mg/kg wwt)	0.271	0.080	0.057	0.105	0.049
	Uranium (U)-Total (mg/kg)	0.0241	0.0231	0.0730	0.0744	0.0068
	Uranium (U)-Total (mg/kg wwt)	0.00713	0.00641	0.0180	0.0189	0.00191
	Vanadium (V)-Total (mg/kg)	0.20	0.15	0.12	0.20	0.12
	Vanadium (V)-Total (mg/kg wwt)	0.059	0.042	0.031	0.051	0.035
	Zinc (Zn)-Total (mg/kg)	158	130	111	136	160
	Zinc (Zn)-Total (mg/kg wwt)	46.8	36.0	27.3	34.4	45.2
	Zirconium (Zr)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Zirconium (Zr)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1697526-11	L1697526-12	L1697526-13	L1697526-14	L1697526-15
Description	Tissue	Tissue	Tissue	Tissue	Tissue
Sampled Date	18-SEP-15	18-SEP-15	18-SEP-15	18-SEP-15	18-SEP-15
Sampled Time					
Client ID	EXP1-1	EXP1-2	EXP1-3	EXP1-4	EXP1-5
Grouping / **Analyte**					
TISSUE					
Metals Mercury (Hg)-Total (mg/kg)	0.0576	0.0932	0.0759	0.0615	0.0759
Mercury (Hg)-Total (mg/kg wwt)	0.0154	0.0237	0.0230	0.0158	0.0194
Molybdenum (Mo)-Total (mg/kg)	0.073	0.044	0.046	0.044	0.057
Molybdenum (Mo)-Total (mg/kg wwt)	0.0196	0.0111	0.0141	0.0114	0.0147
Nickel (Ni)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel (Ni)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040
Phosphorus (P)-Total (mg/kg)	25300	18500	16100	18500	18800
Phosphorus (P)-Total (mg/kg wwt)	6760	4710	4870	4760	4810
Potassium (K)-Total (mg/kg)	12600	15000	11800	15000	14400
Potassium (K)-Total (mg/kg wwt)	3370	3810	3580	3850	3670
Rubidium (Rb)-Total (mg/kg)	3.79	4.90	3.40	4.74	4.77
Rubidium (Rb)-Total (mg/kg wwt)	1.01	1.25	1.03	1.22	1.22
Selenium (Se)-Total (mg/kg)	1.31	1.39	1.16	1.18	1.32
Selenium (Se)-Total (mg/kg wwt)	0.350	0.353	0.351	0.303	0.338
Silver (Ag)-Total (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Silver (Ag)-Total (mg/kg wwt)	0.0012	<0.0010	0.0012	<0.0010	<0.0010
Sodium (Na)-Total (mg/kg)	3210	3570	2890	3770	3990
Sodium (Na)-Total (mg/kg wwt)	856	907	876	970	1020
Strontium (Sr)-Total (mg/kg)	24.7	14.9	16.4	14.4	16.2
Strontium (Sr)-Total (mg/kg wwt)	6.60	3.78	4.97	3.71	4.14
Tellurium (Te)-Total (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
Tellurium (Te)-Total (mg/kg wwt)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Thallium (Tl)-Total (mg/kg)	0.0727	0.0490	0.0532	0.0500	0.0514
Thallium (Tl)-Total (mg/kg wwt)	0.0194	0.0125	0.0161	0.0129	0.0131
Tin (Sn)-Total (mg/kg)	0.32	0.25	0.18	0.27	0.27
Tin (Sn)-Total (mg/kg wwt)	0.085	0.063	0.054	0.070	0.069
Uranium (U)-Total (mg/kg)	0.0563	0.0682	0.0234	0.0576	0.0626
Uranium (U)-Total (mg/kg wwt)	0.0150	0.0173	0.00709	0.0148	0.0160
Vanadium (V)-Total (mg/kg)	0.31	0.25	0.13	0.24	0.23
Vanadium (V)-Total (mg/kg wwt)	0.084	0.063	0.041	0.062	0.060
Zinc (Zn)-Total (mg/kg)	159	148	131	139	149
Zinc (Zn)-Total (mg/kg wwt)	42.4	37.5	39.7	35.8	37.9
Zirconium (Zr)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
Zirconium (Zr)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1697526-16 Tissue 18-SEP-15 EXP1-6	L1697526-17 Tissue 18-SEP-15 EXP1-7	L1697526-18 Tissue 18-SEP-15 EXP1-8	L1697526-19 Tissue 18-SEP-15 EXP1-9	L1697526-20 Tissue 18-SEP-15 EXP1-10
TISSUE						
Metals	Mercury (Hg)-Total (mg/kg)	0.0720	0.0755	0.0613	0.0732	0.0614
	Mercury (Hg)-Total (mg/kg wwt)	0.0201	0.0184	0.0162	0.0183	0.0164
	Molybdenum (Mo)-Total (mg/kg)	0.043	0.065	0.046	0.051	0.044
	Molybdenum (Mo)-Total (mg/kg wwt)	0.0120	0.0159	0.0122	0.0127	0.0117
	Nickel (Ni)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Nickel (Ni)-Total (mg/kg wwt)	<0.040	<0.040	0.047	<0.040	<0.040
	Phosphorus (P)-Total (mg/kg)	16000	19600	16300	18800	16900
	Phosphorus (P)-Total (mg/kg wwt)	4470	4780	4300	4700	4500
	Potassium (K)-Total (mg/kg)	12800	13100	12100	14500	13200
	Potassium (K)-Total (mg/kg wwt)	3580	3200	3200	3610	3520
	Rubidium (Rb)-Total (mg/kg)	4.20	4.21	4.28	4.79	4.44
	Rubidium (Rb)-Total (mg/kg wwt)	1.17	1.03	1.13	1.20	1.19
	Selenium (Se)-Total (mg/kg)	1.19	1.39	1.08	1.31	1.15
	Selenium (Se)-Total (mg/kg wwt)	0.332	0.339	0.285	0.328	0.308
	Silver (Ag)-Total (mg/kg)	<0.0050	<0.0050	0.0109	<0.0050	<0.0050
	Silver (Ag)-Total (mg/kg wwt)	<0.0010	<0.0010	0.0029	<0.0010	<0.0010
	Sodium (Na)-Total (mg/kg)	2810	3470	3200	4060	3030
	Sodium (Na)-Total (mg/kg wwt)	785	847	845	1010	809
	Strontium (Sr)-Total (mg/kg)	13.4	19.7	14.5	14.8	13.6
	Strontium (Sr)-Total (mg/kg wwt)	3.74	4.80	3.83	3.70	3.63
	Tellurium (Te)-Total (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	Tellurium (Te)-Total (mg/kg wwt)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Thallium (Tl)-Total (mg/kg)	0.0469	0.0478	0.0482	0.0535	0.0464
	Thallium (Tl)-Total (mg/kg wwt)	0.0131	0.0117	0.0127	0.0133	0.0124
	Tin (Sn)-Total (mg/kg)	0.26	0.31	0.33	0.30	0.30
	Tin (Sn)-Total (mg/kg wwt)	0.073	0.076	0.088	0.076	0.079
	Uranium (U)-Total (mg/kg)	0.0454	0.170	0.105	0.122	0.0362
	Uranium (U)-Total (mg/kg wwt)	0.0127	0.0414	0.0277	0.0303	0.00965
	Vanadium (V)-Total (mg/kg)	0.18	0.37	0.22	0.28	0.18
	Vanadium (V)-Total (mg/kg wwt)	0.049	0.091	0.057	0.070	0.047
	Zinc (Zn)-Total (mg/kg)	118	144	132	148	126
	Zinc (Zn)-Total (mg/kg wwt)	33.0	35.1	34.9	37.0	33.6
	Zirconium (Zr)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Zirconium (Zr)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1697526-21 Tissue 18-SEP-15 EXP2-1	L1697526-22 Tissue 18-SEP-15 EXP2-2	L1697526-23 Tissue 18-SEP-15 EXP2-3	L1697526-24 Tissue 18-SEP-15 EXP2-4	L1697526-25 Tissue 18-SEP-15 EXP2-5
TISSUE						
Metals	Mercury (Hg)-Total (mg/kg)	0.101	0.0644	0.0891	0.0897	0.0773
	Mercury (Hg)-Total (mg/kg wwt)	0.0227	0.0171	0.0226	0.0205	0.0175
	Molybdenum (Mo)-Total (mg/kg)	0.047	0.042	0.043	0.052	0.055
	Molybdenum (Mo)-Total (mg/kg wwt)	0.0106	0.0111	0.0108	0.0120	0.0123
	Nickel (Ni)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Nickel (Ni)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040
	Phosphorus (P)-Total (mg/kg)	21700	17900	17600	18400	20000
	Phosphorus (P)-Total (mg/kg wwt)	4900	4750	4470	4210	4520
	Potassium (K)-Total (mg/kg)	13600	12400	12300	13400	14400
	Potassium (K)-Total (mg/kg wwt)	3070	3280	3120	3060	3250
	Rubidium (Rb)-Total (mg/kg)	3.65	3.92	3.82	3.54	4.54
	Rubidium (Rb)-Total (mg/kg wwt)	0.825	1.04	0.969	0.812	1.03
	Selenium (Se)-Total (mg/kg)	1.25	1.16	1.34	1.36	1.42
	Selenium (Se)-Total (mg/kg wwt)	0.282	0.306	0.341	0.311	0.321
	Silver (Ag)-Total (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Silver (Ag)-Total (mg/kg wwt)	<0.0010	<0.0010	<0.0010	0.0011	<0.0010
	Sodium (Na)-Total (mg/kg)	3850	2760	2790	3220	3690
	Sodium (Na)-Total (mg/kg wwt)	870	731	707	738	833
	Strontium (Sr)-Total (mg/kg)	21.3	16.5	17.7	22.6	19.5
	Strontium (Sr)-Total (mg/kg wwt)	4.80	4.36	4.48	5.17	4.41
	Tellurium (Te)-Total (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	Tellurium (Te)-Total (mg/kg wwt)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Thallium (Tl)-Total (mg/kg)	0.0582	0.0425	0.0440	0.0547	0.0571
	Thallium (Tl)-Total (mg/kg wwt)	0.0131	0.0113	0.0112	0.0125	0.0129
	Tin (Sn)-Total (mg/kg)	0.41	0.34	0.41	0.29	0.41
	Tin (Sn)-Total (mg/kg wwt)	0.094	0.090	0.104	0.067	0.092
	Uranium (U)-Total (mg/kg)	0.0121	0.0563	0.0344	0.0243	0.103
	Uranium (U)-Total (mg/kg wwt)	0.00273	0.0149	0.00873	0.00557	0.0232
	Vanadium (V)-Total (mg/kg)	0.19	0.18	0.22	0.20	0.27
	Vanadium (V)-Total (mg/kg wwt)	0.044	0.047	0.056	0.046	0.061
	Zinc (Zn)-Total (mg/kg)	176	125	147	177	154
	Zinc (Zn)-Total (mg/kg wwt)	39.8	33.0	37.3	40.6	34.7
	Zirconium (Zr)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Zirconium (Zr)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1697526-26 Tissue 18-SEP-15 EXP2-6	L1697526-27 Tissue 18-SEP-15 EXP2-7	L1697526-28 Tissue 18-SEP-15 EXP2-8	L1697526-29 Tissue 18-SEP-15 EXP2-9	L1697526-30 Tissue 18-SEP-15 EXP2-10
TISSUE						
Metals	Mercury (Hg)-Total (mg/kg)	0.0993	0.108	0.0793	0.0970	0.104
	Mercury (Hg)-Total (mg/kg wwt)	0.0229	0.0260	0.0203	0.0222	0.0239
	Molybdenum (Mo)-Total (mg/kg)	0.053	0.048	0.046	0.057	0.043
	Molybdenum (Mo)-Total (mg/kg wwt)	0.0122	0.0116	0.0118	0.0131	0.0099
	Nickel (Ni)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Nickel (Ni)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040
	Phosphorus (P)-Total (mg/kg)	23000	19000	21000	17900	20700
	Phosphorus (P)-Total (mg/kg wwt)	5300	4550	5390	4090	4770
	Potassium (K)-Total (mg/kg)	15800	13000	14600	12300	13700
	Potassium (K)-Total (mg/kg wwt)	3640	3120	3750	2810	3160
	Rubidium (Rb)-Total (mg/kg)	4.76	3.68	4.29	3.49	4.06
	Rubidium (Rb)-Total (mg/kg wwt)	1.10	0.883	1.10	0.797	0.937
	Selenium (Se)-Total (mg/kg)	1.50	1.16	1.27	1.20	1.50
	Selenium (Se)-Total (mg/kg wwt)	0.346	0.279	0.324	0.273	0.345
	Silver (Ag)-Total (mg/kg)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Silver (Ag)-Total (mg/kg wwt)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Sodium (Na)-Total (mg/kg)	4090	3120	3660	2970	3910
	Sodium (Na)-Total (mg/kg wwt)	943	749	937	679	902
	Strontium (Sr)-Total (mg/kg)	20.8	15.3	19.5	19.6	21.5
	Strontium (Sr)-Total (mg/kg wwt)	4.80	3.66	4.99	4.48	4.97
	Tellurium (Te)-Total (mg/kg)	<0.020	<0.020	<0.020	<0.020	<0.020
	Tellurium (Te)-Total (mg/kg wwt)	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	Thallium (Tl)-Total (mg/kg)	0.0506	0.0487	0.0454	0.0462	0.0481
	Thallium (Tl)-Total (mg/kg wwt)	0.0117	0.0117	0.0116	0.0105	0.0111
	Tin (Sn)-Total (mg/kg)	0.32	0.18	0.40	0.46	0.41
	Tin (Sn)-Total (mg/kg wwt)	0.075	0.042	0.103	0.104	0.095
	Uranium (U)-Total (mg/kg)	0.108	0.0082	0.0576	0.0216	0.0160
	Uranium (U)-Total (mg/kg wwt)	0.0250	0.00197	0.0148	0.00493	0.00370
	Vanadium (V)-Total (mg/kg)	0.33	0.20	0.22	0.20	0.21
	Vanadium (V)-Total (mg/kg wwt)	0.076	0.048	0.057	0.047	0.049
	Zinc (Zn)-Total (mg/kg)	189	153	162	162	164
	Zinc (Zn)-Total (mg/kg wwt)	43.5	36.8	41.4	37.1	37.7
	Zirconium (Zr)-Total (mg/kg)	<0.20	<0.20	<0.20	<0.20	<0.20
	Zirconium (Zr)-Total (mg/kg wwt)	<0.040	<0.040	<0.040	<0.040	<0.040

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Lead (Pb)-Total	DUP-H	L1697526-6
Duplicate	Manganese (Mn)-Total	DUP-H	L1697526-6
Duplicate	Manganese (Mn)-Total	DUP-H	L1697526-6
Method Blank	Arsenic (As)-Total	MB-LOR	L1697526-1, -10, -11, -13, -2, -21, -24, -27, -29, -3, -4, -7, -8
Method Blank	Arsenic (As)-Total	MB-LOR	L1697526-1, -10, -11, -13, -2, -21, -24, -27, -29, -3, -4, -7, -8
Method Blank	Arsenic (As)-Total	MB-LOR	L1697526-1, -10, -11, -13, -2, -21, -24, -27, -29, -3, -4, -7, -8
Method Blank	Arsenic (As)-Total	MB-LOR	L1697526-1, -10, -11, -13, -2, -21, -24, -27, -29, -3, -4, -7, -8

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
AG-DRY-CCMS-N-VA	Tissue	Silver in Tissue by CRC ICPMS (DRY)	EPA 200.3/6020A

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

AG-DRY-MICR-HRMS-VA	Tissue	Silver in Tissue by HR-ICPMS Micro (DRY)	EPA 200.3/200.8

Trace metals in tissue are analyzed by high resolution inductively coupled plasma mass spectrometry (HR-ICPMS) modified from US EPA Method 200.8, (Revision 5.5). The sample preparation procedure is modified from US EPA 200.3. Analytical results are reported on dry weight basis.

AG-WET-CCMS-N-VA	Tissue	Silver in Tissue by CRC ICPMS (WET)	EPA 200.3/6020A

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

AG-WET-MICR-HRMS-VA	Tissue	Silver in Tissue by HR-ICPMS Micro (WET)	EPA 200.3/200.8

Trace metals in tissue are analyzed by high resolution inductively coupled plasma mass spectrometry (HR-ICPMS) modified from US EPA Method 200.8, (Revision 5.5). The sample preparation procedure is modified from US EPA 200.3. Analytical results are reported on wet weight basis.

HG-DRY-CVAFS-N-VA	Tissue	Mercury in Tissue by CVAFS (DRY)	EPA 200.3, EPA 245.7

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Analysis is by atomic fluorescence spectrophotometry or atomic absorption spectrophotometry, adapted from US EPA Method 245.7.

HG-DRY-MICR-CVAF-VA	Tissue	Mercury in Tissue by CVAFS Micro (DRY)	EPA 200.3, EPA 245.7

This method is adapted from US EPA Method 200.3 "Sample Procedures for Spectrochemical Determination of Total Recoverable Elements in Biological Tissues" (1996). Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with repeated additions of hydrogen peroxide. Analysis is by atomic fluorescence spectrophotometry or atomic absorption spectrophotometry, adapted from US EPA Method 245.7.

HG-WET-CVAFS-N-VA	Tissue	Mercury in Tissue by CVAFS (WET)	EPA 200.3, EPA 245.7

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Analysis is by atomic fluorescence spectrophotometry or atomic absorption spectrophotometry, adapted from US EPA Method 245.7.

HG-WET-MICR-CVAF-VA	Tissue	Mercury in Tissue by CVAFS Micro (WET)	EPA 200.3, EPA 245.7

This method is adapted from US EPA Method 200.3 "Sample Procedures for Spectrochemical Determination of Total Recoverable Elements in Biological Tissues" (1996). Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in

Reference Information

combination with repeated additions of hydrogen peroxide. Analysis is by atomic fluorescence spectrophotometry or atomic absorption spectrophotometry, adapted from US EPA Method 245.7.

MET-DRY-CCMS-N-VA Tissue Metals in Tissue by CRC ICPMS (DRY) EPA 200.3/6020A

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

MET-DRY-MICR-HRMS-VA Tissue Metals in Tissue by HR-ICPMS Micro (DRY) EPA 200.3/200.8

Trace metals in tissue are analyzed by high resolution inductively coupled plasma mass spectrometry (HR-ICPMS) modified from US EPA Method 200.8, (Revision 5.5). The sample preparation procedure is modified from US EPA 200.3. Analytical results are reported on dry weight basis.

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

MET-WET-CCMS-N-VA Tissue Metals in Tissue by CRC ICPMS (WET) EPA 200.3/6020A

This method is conducted following British Columbia Lab Manual method "Metals in Animal Tissue and Vegetation (Biota) - Prescriptive". Tissue samples are homogenized and sub-sampled prior to hotblock digestion with nitric and hydrochloric acids, in combination with addition of hydrogen peroxide. Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

MET-WET-MICR-HRMS-VA Tissue Metals in Tissue by HR-ICPMS Micro (WET) EPA 200.3/200.8

Trace metals in tissue are analyzed by high resolution inductively coupled plasma mass spectrometry (HR-ICPMS) modified from US EPA Method 200.8, (Revision 5.5). The sample preparation procedure is modified from US EPA 200.3. Analytical results are reported on wet weight basis.

Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

MOISTURE-TISS-VA Tissue % Moisture in Tissues ASTM D2974-00 Method A

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location

Chain of Custody Numbers:

1 2 3

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Sample #	Client ID	Jar Weight (g)	Jar + Tissue Weight (g)	Tissue Only Weight (g)
1	REF-1	80.122	83.64	3.518
2	REF-2	80.614	85.066	4.452
3	REF-3	80.104	82.686	2.582
4	REF-4	79.925	84.493	4.568
5	REF-5	80.914	87.908	6.994
6	REF-6	80.047	84.948	4.901
7	REF-7	80.152	84.67	4.518
8	REF-8	80.127	84.651	4.524
9	REF-9	80.254	86.052	5.798
10	REF-10	80.082	82.678	2.596
11	EXP1-1	80.055	85.509	5.454
12	EXP1-2	80.366	88.283	7.917
13	EXP1-3	80.493	82.76	2.267
14	EXP1-4	80.712	88.136	7.424
15	EXP1-5	80.066	87.143	7.077
16	EXP1-6	80.666	88.013	7.347
17	EXP1-7	80.952	87.191	6.239
18	EXP1-8	80.826	86.64	5.814
19	EXP1-9	80.11	86.621	6.511
20	EXP1-10	80.203	86.599	6.396
21	EXP2-1	80.855	85.065	4.21
22	EXP2-2	80.898	87.246	6.348
23	EXP2-3	81.005	85.613	4.608
24	EXP2-4	80.096	85.273	5.177
25	EXP2-5	79.79	86.057	6.267
26	EXP2-6	79.879	86.429	6.55
27	EXP2-7	80.463	85.675	5.212
28	EXP2-8	79.786	86.203	6.417
29	EXP2-9	79.916	84.141	4.225
30	EXP2-10	80.468	86.134	5.666

CHAIN OF CUSTODY

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ALS Laboratory: please tick →

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ORANGE 4/13 Geary I Ph 02 4423 2063 E. no

PERTH 10 Hod Way N. Ph 08 9209 7655 E. samples.perth@alsglobal.com

NSW 2164 .com 4818 sglobal.com , NSW 2500 Ph 02 4225 3125 E: portkembla@alsglobal.com

L1697526-COFC

CLIENT: Alexco Environmental Group	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Standard TAT (List due date):						FOR LABORATORY USE ONLY (Circle)	
OFFICE: Whitehorse		☐ Non Standard or urgent TAT (List due date):						Custody Seal Intact?	Yes No N/A
AKHM-14-03	ALS QUOTE NO.: Q53279	COC SEQUENCE NUMBER (Circle)						Free Ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER: PO # 16950		COC:	1 2 3 4 5 6 7					Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Audrey Sanfacon	CONTACT PH:867-668-6463	OF:	1 2 3 4 5 6 7					Other comment:	

SAMPLER: AS/CH	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	AS	2:15PM		
Email Reports to (will default to PM if no other addresses are listed): asanfacon@accessconsulting.ca		DATE/TIME: 3 Nov '15	DATE/TIME: 3-NOV-15 -1.5	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed): ap@alexcoenvironemntal.com					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	Silver dry	Silver dry	Mercury wet	Mercury dry	Metals wet	Metals dry	Metals wet		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	Ref-1	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Ref-2	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Ref-3	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Ref-4	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Ref-5	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Ref-6	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Ref-7	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Ref-8	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Ref-9	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Ref-10	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-1	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-2	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Shafee Nov. 4/ 1420/ 3.1, 2.1

L1697526-COFC

CHAIN OF CUSTODY

ALS Laboratory: please tick →

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WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

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CLIENT: Alexco Environmental Group	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
AKHM-14-03	ALS QUOTE NO.: Q53279	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Audrey Sanfacon CONTACT PH:867-668-6463	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AS/CH	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	AS			
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	Silver dry	Silver dry	Mercury wet	Mercury dry	Metals wet	Metals dry	Metals wet		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	Exp1-2	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-3	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-4	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-5	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-6	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-7	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-8	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-9	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp1-10	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp2-1	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp2-2	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp2-3	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Shefel/Nov.4/1420/3.1,2.1

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2184

CHAIN OF CUSTODY

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TOWNSVILLE Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Alexco Environmental Group	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
AKHM-14-03	ALS QUOTE NO.: Q53279	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Audrey Sanfacon	CONTACT PH:867-668-6463	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: ASICH	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	AS	
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):		RELINQUISHED BY:	RECEIVED BY:
		DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	Silver dry	Silver dry	Mercury wet	Mercury dry	Metals wet	Metals dry	Metals wet		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	Exp2-4	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp2-5	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp2-6	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp2-7	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp2-8	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp2-9	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		
	Exp2-10	Sept 18th 2015	Tissue			x	x	x	x	x	x	x		

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Shafee/Nov. 4/1420/ 3.1, 2.1

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MELBOURNE 24 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

MURRAY 27 Sydney Road Murray NSW 2650 Ph: 02 6372 6735 E: murray.mail@alsglobal.com

NEWMA 4/13 Geary Place North Newmarket NSW 2561 Ph: 02 4257 2011 E: newman@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

21 / 218 Wood Street Mayfield NSW 2304 E: samples.newcastle@alsglobal.com

TOWNSVILLE 14-15 Desma Court Garbutt QLD 4814 Ph: 07 4796 0600 E: townsville@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: port.kembla@alsglobal.com

CLIENT: Alexco Environmental Group	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
OFFICE:	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes / No / N/A
AKHM-14-03	ALS QUOTE NO.: Q53279	Free ice / frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER: PO # 16950	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Audrey Sanfacon CONTACT PH:867-668-6463	OF: 1 2 3 4 5 6 7	Other comment:	

SAMPLER: AS/CH	SAMPLER MOBILE:	RELINQUISHED BY: AS	RECEIVED BY: Whitehorse
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	DATE/TIME: 3 Nov 2015	DATE/TIME: 2:15pm 3-NOV-15 -1.5°C
Email Reports to (will default to PM if no other addresses are listed): asanfacon@accessconsulting.ca			
Email Invoice to (will default to PM if no other addresses are listed): ap@alexcoenvironmental.com			

RELINQUISHED BY:	RECEIVED BY:
DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	Silver wet	Silver dry	Mercury wet	Mercury dry	Metals wet	Metals dry			Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	Ref-1	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Ref-2	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Ref-3	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Ref-4	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Ref-5	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Ref-6	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Ref-7	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Ref-8	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Ref-9	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Ref-10	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Exp1-1	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Exp1-2	Sept 18th 2015	Tissue			x	x	x	x	x	x			
					TOTAL									

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

L1697526

L1697526-COFC

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

GLADSTONE 30 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6374 4735 E: mudgee.mail@alsglobal.com

NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4958 9435 E: samples.newcastle@alsglobal.com

ORANGE 1/13 Geary Place North Orange NSW 2541 Ph: 02 6393 2063 E: orange@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7555 E: samples.perth@alsglobal.com

SYDNEY ... NSW 2161 Ph: 02 8784 4555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: samples.wollongong@alsglobal.com

CLIENT: Alexco Environmental Group	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
AKHM-14-03	ALS QUOTE NO.: Q53279	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt. °C
PROJECT MANAGER: Audrey Sanfacon	CONTACT PH:867-668-6463	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AS/CH	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	AS			
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	Silver wet	Silver dry	Mercury wet	Mercury dry	Metals wet	Metals dry			Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	Exp1-2	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp1-3	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp1-4	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp1-5	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp1-6	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp1-7	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp1-8	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp1-9	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp1-10	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp2-1	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp2-2	Sept 16th 2015	Tissue			x	x	x	x	x	x			
	Exp2-3	Sept 16th 2015	Tissue			x	x	x	x	x	x			
				TOTAL										

Water Container Codes: P = Unpreserved Plastic, N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved, AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

L1697526

L1697526-COFC

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

ADELAIDE 21 Chemin Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

ASPLEASANT 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

MACKAY 78 Whittle Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 24 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

NEWCASTLE 5 Rose Ph: 02 4968 9433 F: [illegible]

SYDNEY 277 Woo Ph: 02 8784 8555 E: [illegible]

TOWNSVILLE 14-15 Desma Ph: 07 4796 0600 F: [illegible]

WAGGA WAGGA 1 Ph: 02 6922 4555 E: samples.wagga@alsglobal.com

WEIPA 11 Rod Way Weipa QLD 4795 Ph: 07 4030 1100 E: weipa@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: +61 8 9209 7655 E: samples.perth@alsglobal.com

Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Alexco Environmental Group	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
AKHM-14-03	ALS QUOTE NO.: Q53279	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt °C
PROJECT MANAGER: Audrey Sanfacon	CONTACT PH:867-668-6463	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AS/CH	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	AS			
Email Reports to *(will default to PM if no other addresses are listed)*:		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to *(will default to PM if no other addresses are listed)*:					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES *(NB. Suite Codes must be listed to attract suite price)* Where Metals are required, specify Total *(unfiltered bottle required)* or Dissolved *(field filtered bottle required)*.								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL CONTAINERS	Silver wet	Silver dry	Mercury wet	Mercury dry	Metals wet	Metals dry			*Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.*
	Exp2-4	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Exp2-5	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Exp2-6	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Exp2-7	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Exp2-8	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Exp2-9	Sept 18th 2015	Tissue			x	x	x	x	x	x			
	Exp2-10	Sept 18th 2015	Tissue			x	x	x	x	x	x			
				[redacted] TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

APPENDIX C

TRACER STUDY RESULTS

Ozark UNDERGROUND LABORATORY 1572 Aley Lane • Protem, MO 65733 • (417) 785-4289 • fax (417) 785-4290 • contact@ozarkundergroundlab.com

Certificate of Analysis

Date of certificate: October 5, 2015
Client: Access Consulting
#3 Calcite Business Centre
151 Industrial Road
Whitehorse, YT Y1A 2V3, Canada
Project name: Bellekeno Mine - EEM Effluent Pathway Study
Project number: AHKM-14-03, PO# 16838
Contact people: Anthony Bier (abier@accessconsulting.ca)
David Petkovich (david@accessconsulting.ca)
Kai Woloshyn (kwoloshyn@alexcoresource.com)

Samples collected by: A. Bier and A. MacPhail
Date samples shipped: September 21, 2015
Date samples rec'd at OUL: September 25, 2015
Date analyzed by OUL: October 2, 2015
Included with certificate of analysis: Table of results, copies of sample collection data sheet and analysis graphs

Results for charcoal and water samples analyzed for the presence of fluorescein dye.
Peak wavelengths are reported in nanometers (nm); dye concentrations are reported in parts per billion (ppb).
All results are for charcoal unless otherwise indicated.

OUL Number	Station Number	Station Name	Date/Time Placed d/m/yy hhmm	Date/Time Collected d/m/yy hhmm	Fluorescein Results	
					Peak (nm)	Conc. (ppb)
B0166	1	TS-01	15/9/15 1630	19/9/15 0820	ND	
B0167	2	TS-02	15/9/15 1640	19/9/15 0826	ND	
B0168	3	TS-03	15/9/15 1650	19/9/15 0833	ND	
B0169	4	TS-04	15/9/15 1700	19/9/15 0840	ND	
B0170	5	TS-05	15/9/15 1710	19/9/15 0847	ND	
B0171	6	TS-06	15/9/15 1720	19/9/15 0854	514.2 *	0.349
B0172	7	TS-07	15/9/15 1730	19/9/15 0904	ND	
B0173	8	TS-08	15/9/15 1740	19/9/15 0909	514.6	0.874
B0174	9	TS-09	15/9/15 1750	19/9/15 0914	515.6	9.70
B0175	10	TS-10	15/9/15 1800	19/9/15 0920	515.4	10.3
B0427	8	TS-08	**Water**	19/9/15 0909	ND	
B0428	9	TS-09	**Water**	19/9/15 0914	506.4 (1)	0.012
B0429	10	TS-10	**Water**	19/9/15 0920	506.4 (1)	0.014

Note: Dye concentrations are based upon standards used at the OUL. The standard concentrations are based upon the as sold weight of the dye that the OUL uses. If the client is not using OUL dyes, the client should provide the OUL with a sample of the dye to compare to the OUL dyes.

Footnotes: ND = No dye detected

* = A fluorescence peak is present that does not meet all the criteria for a positive dye result. However, it has been calculated as though it was the tracer dye.

(1) = A fluorescence peak is present that does not meet all the criteria for this dye. However, it has been calculated as a positive dye result because dye was present in the corresponding charcoal sampler.

Thomas J. Aley, PHG and RG

Thomas Aley

F:\docs\COA\Access Consulting\AccessConsulting_BellekenoMine_01

OZARK UNDERGROUND LABORATORY, INC.

1572 Aley Lane Protem, MO 65733 (417) 785-4289 fax (417) 785-4290 email: oul@tri-lakes.net

SAMPLE COLLECTION DATA SHEET for FLUORESCENCE ANALYSIS

Project: AKHM-14-03 (EEM Tracer Study) Week No: 1 Samples Collected By: A. Bier & A. MacPhail

Samples Shipped By: Access Consulting / Alexco Environmental Group Samples Received By: J. Sterrett, OUL

Date Samples Shipped: 21/09/2015 Date Samples Received: 25/9/2015 Time Samples Received: 12:45 Return Cooler? Yes ____ No ✓

Bill to: Alexco Environmental Group. Send Results to: qbier@accessconsulting.ca.

Analyze for: Fluorescein ✓ Eosine ____ Rhodamine WT ____ Other ____ Ship cooler to: N/A

OUL use only		Please indicate stations where dye was visible in the field for field technician use - use black ink only						OUL use only
# CHAR REC'D	LAB NUMBER	STATION NUMBER 1-4 Numbers	STATION NAME	PLACED		COLLECTED		# WATER REC'D
				DATE	TIME	DATE	TIME	
2	BØ1166	1	TS-01	15/09/2015	~1630h	19/09/2015	0820h	1
2	BØ1167	2	TS-02	15/09/2015	~1640h	19/09/2015	0826h	1
2	BØ1168	3	TS-03	15/09/2015	~1650h	19/09/2015	0833h	1
2	BØ1169	4	TS-04	15/09/2015	~1700h	19/09/2015	0840h	1
2	BØ1170	5	TS-05	15/09/2015	~1710h	19/09/2015	0847h	1
2	BØ171	6	TS-06	15/09/2015	~1720h	19/09/2015	0854h	1
2	BØ172	7	TS-07	15/09/2015	~1730h	19/09/2015	0904h	1
2	BØ173	8	TS-08	15/09/2015	~1740h	19/09/2015	0908h	1
2	BØ174	9	TS-09	15/09/2015	~1750h	19/09/2015	0914h	1
2	BØ175	10	TS-10	15/09/2015	~1800h	19/09/2015	0920h.	1

COMMENTS: Dye (2Lb Fluorescein) deployed 15/09/2015 @ 1830h after all samples had been placed.
OUL Project 1448 Analyzed 10/2/15 By MR/OUL

This sheet filled out by OUL staff? Yes ____ No X Charts for samples on this page proofed by OUL: CA

OZARK UNDERGROUND LABORATORY, INC.

1572 Aley Lane Protem, MO 65733 (417) 785-4289 fax (417) 785-4290 email: oul@tri-lakes.net

SAMPLE COLLECTION DATA SHEET for FLUORESCENCE ANALYSIS

Project: AKHM-14-03 (EEM Tracer Study) Week No: 1 Samples Collected By: A. Bier & A. MacPhail

Samples Shipped By: Access Consulting / Alerco Environmental Group Samples Received By: J. Stevinson, OUL

Date Samples Shipped: 21/09/2015 Date Samples Received: 25/9/2015 Time Samples Received: 12.45 Return Cooler? Yes ____ No ✓

Bill to: Alerco Environmental Group. Send Results to: abier@accessconsulting.ca.

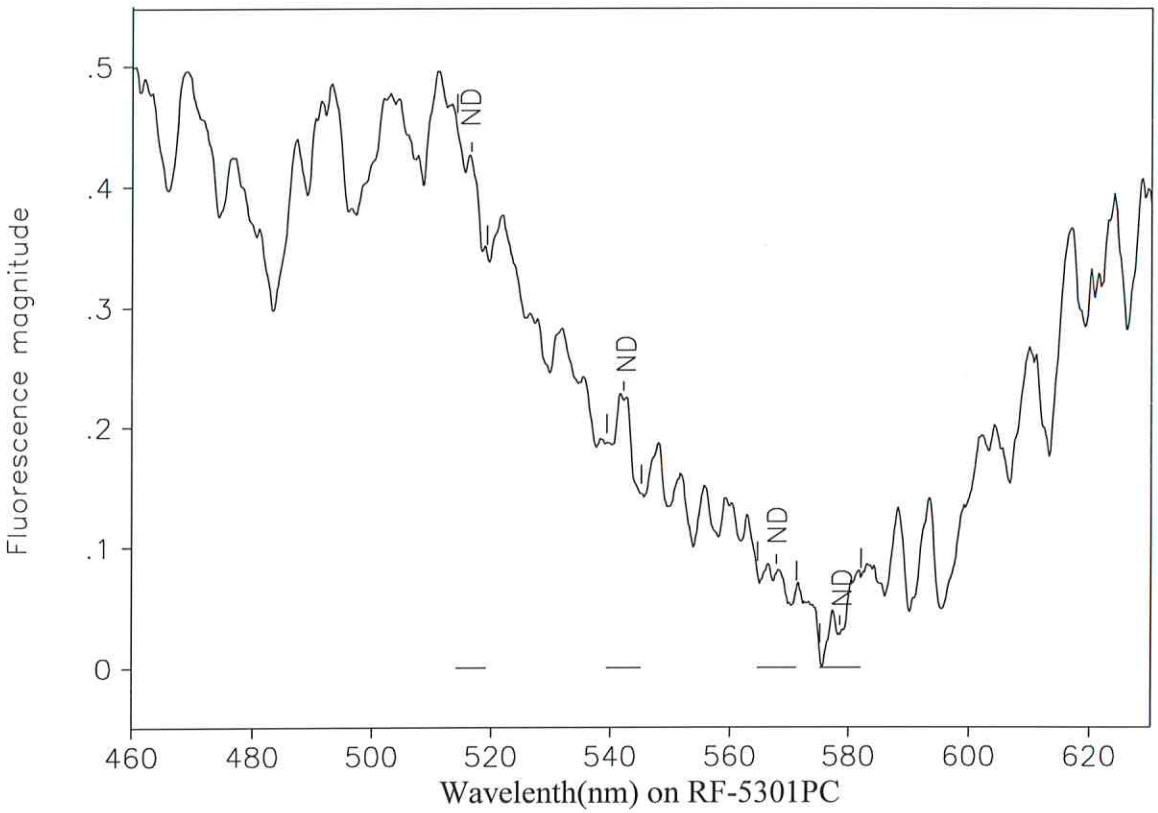
Analyze for: Fluorescein ✓ Eosine ____ Rhodamine WT ____ Other ____ Ship cooler to: N/A

OUL use only		Please indicate stations where dye was visible in the field for field technician use - use black ink only						OUL use only
# CHAR REC'D	LAB NUMBER	STATION NUMBER 1-4 Numbers	STATION NAME	PLACED DATE	PLACED TIME	COLLECTED DATE	COLLECTED TIME	# WATER REC'D
2		1	TS-01	15/09/2015	~1630h	19/09/2015	0820h	1
2		2	TS-02	15/09/2015	~1640h	19/09/2015	0826h	1
2		3	TS-03	15/09/2015	~1650h	19/09/2015	0833h	1
2		4	TS-04	15/09/2015	~1700h	19/09/2015	0840h	1
2		5	TS-05	15/09/2015	~1710h	19/09/2015	0847h	1
2		6	TS-06	15/09/2015	~1720h	19/09/2015	0854h	1
2		7	TS-07	15/09/2015	~1730h	19/09/2015	0904h	1
2	B0427	8	TS-08	15/09/2015	~1740h	19/09/2015	0908h	1
2	B0428	9	TS-09	15/09/2015	~1750h	19/09/2015	0914h	1
2	B0429	10	TS-10	15/09/2015	~1800h	19/09/2015	0920h.	1

COMMENTS: Dye (2Lb Fluorescein) deployed 15/09/2015 @ 1830h after all samples had been placed.
Analysed 10/2/15 by MR/Cal

This sheet filled out by OUL staff? Yes ____ No X Charts for samples on this page proofed by OUL: CC

Ozark Underground Laboratory



Station 1: TS-01
OUL Number: B0166
Matrix: Elutant
Date Placed: 9/15/15 1630

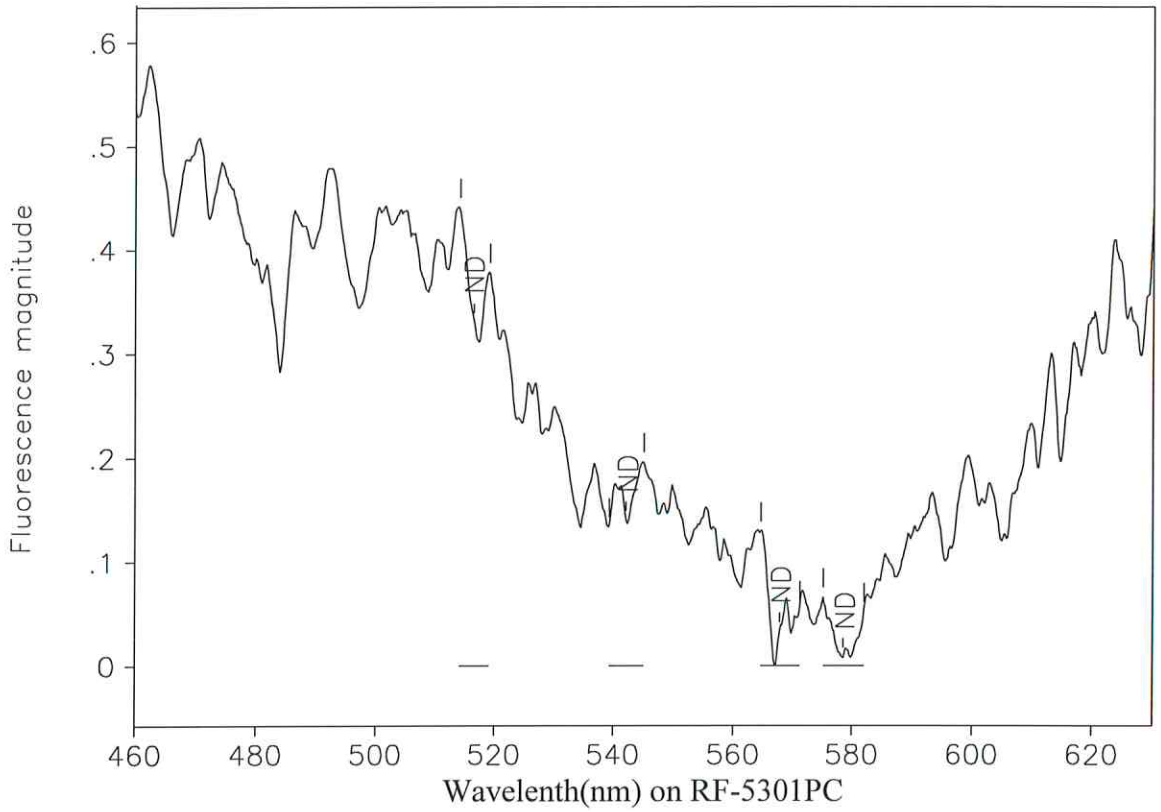
Analyzed: 10/2/15
Duration: 3.66 days
Date collected: 9/19/15 0820

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 2: TS-02
OUL Number: B0167
Matrix: Elutant
Date Placed: 9/15/15 1640

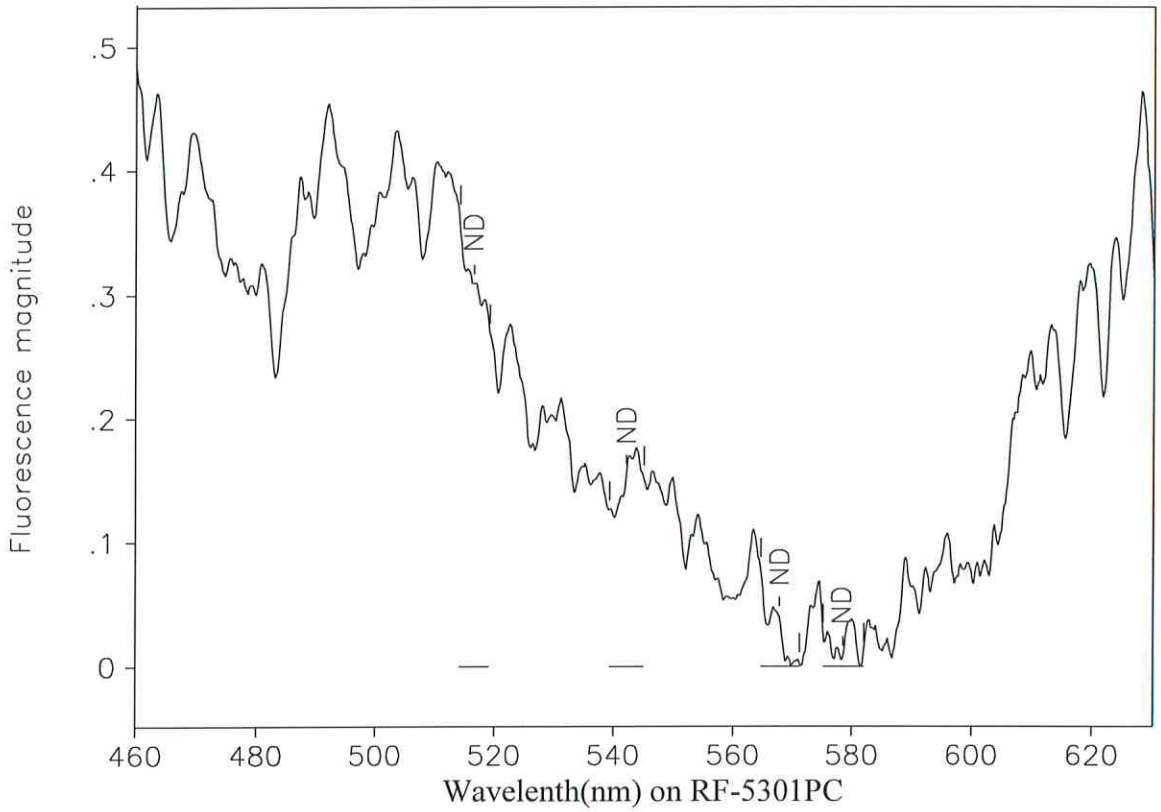
Analyzed: 10/2/15
Duration: 3.66 days
Date collected: 9/19/15 0826

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 3: TS-03
OUL Number: B0168
Matrix: Elutant
Date Placed: 9/15/15 1650

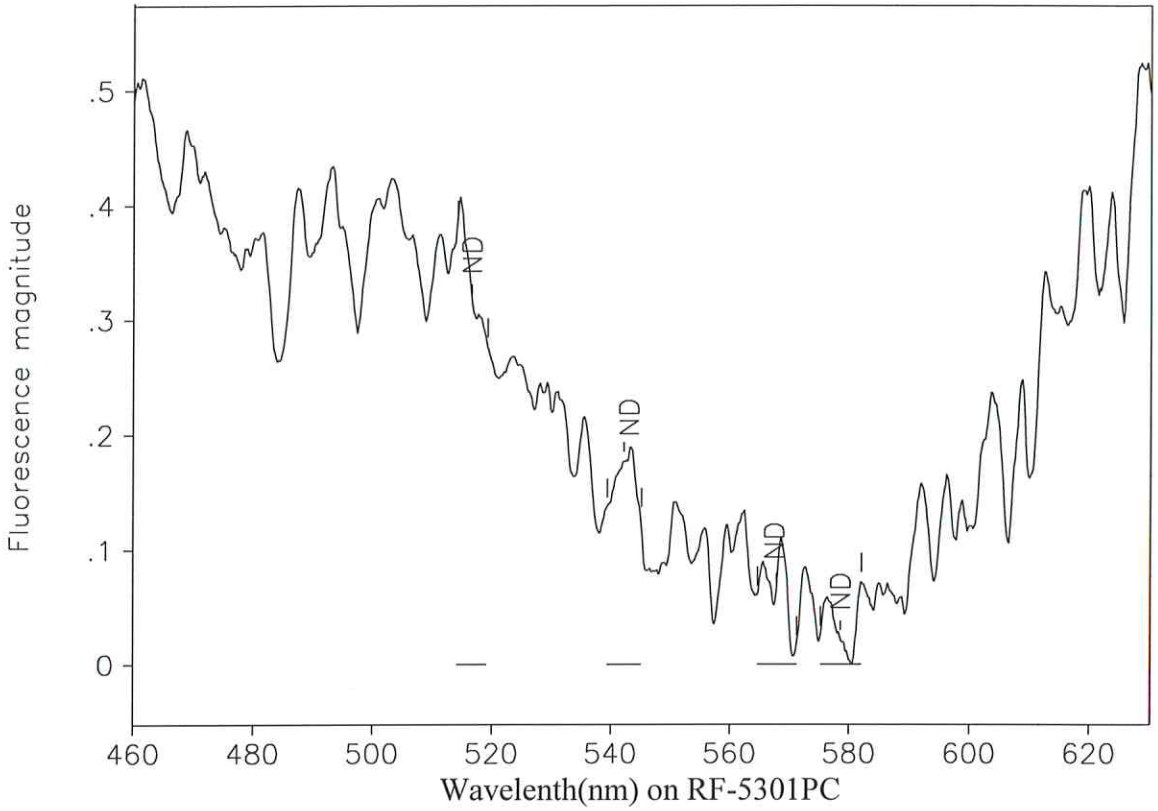
Analyzed: 10/2/15
Duration: 3.65 days
Date collected: 9/19/15 0833

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 4: TS-04
OUL Number: B0169
Matrix: Elutant
Date Placed: 9/15/15 1700

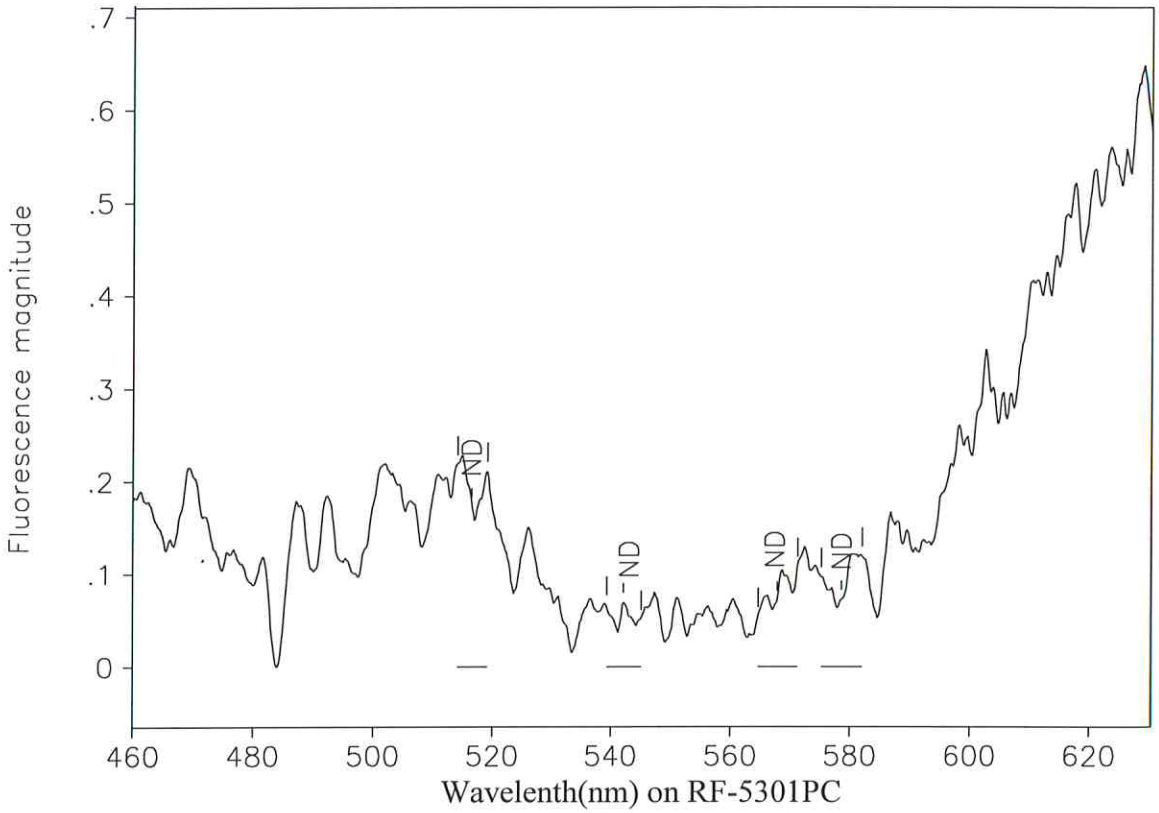
Analyzed: 10/2/15
Duration: 3.65 days
Date collected: 9/19/15 0840

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 5: TS-05
OUL Number: B0170
Matrix: Elutant
Date Placed: 9/15/15 1710

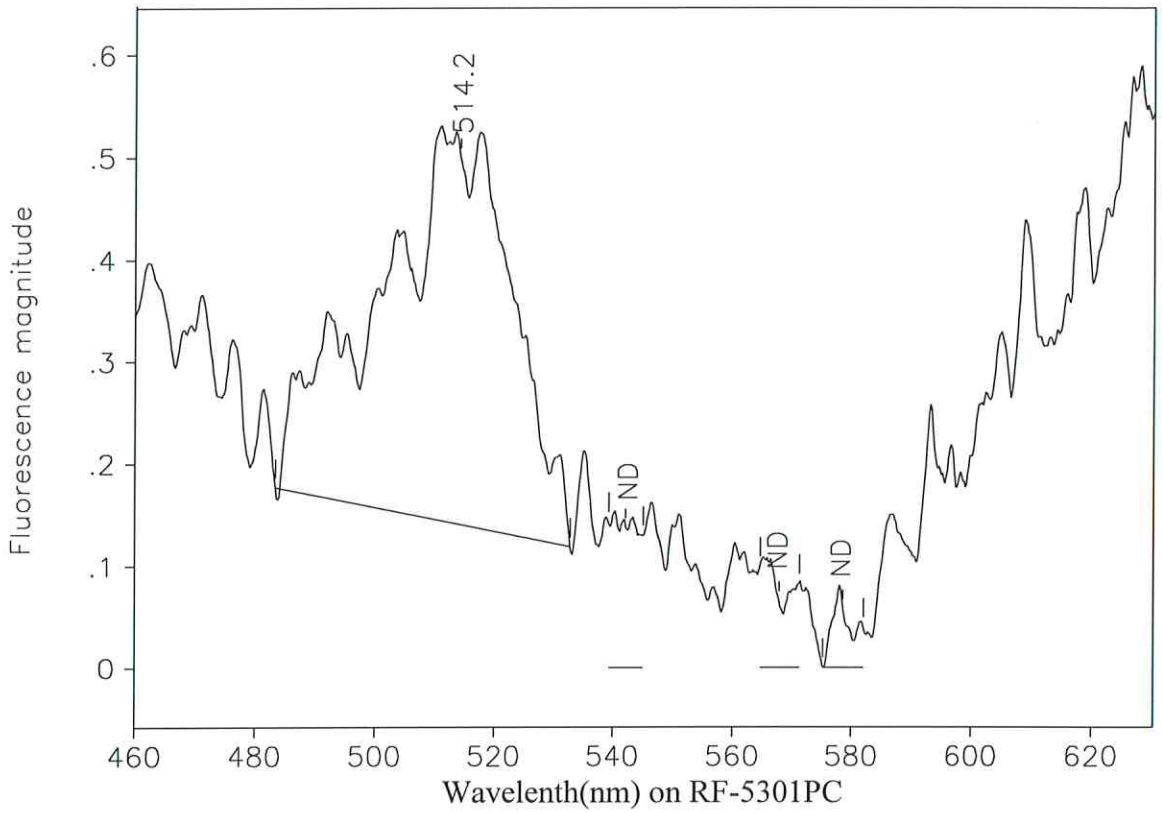
Analyzed: 10/2/15
Duration: 3.65 days
Date collected: 9/19/15 0847

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 6: TS-06
OUL Number: B0171
Matrix: Elutant
Date Placed: 9/15/15 1720

Analyzed: 10/2/15
Duration: 3.65 days
Date collected: 9/19/15 0854

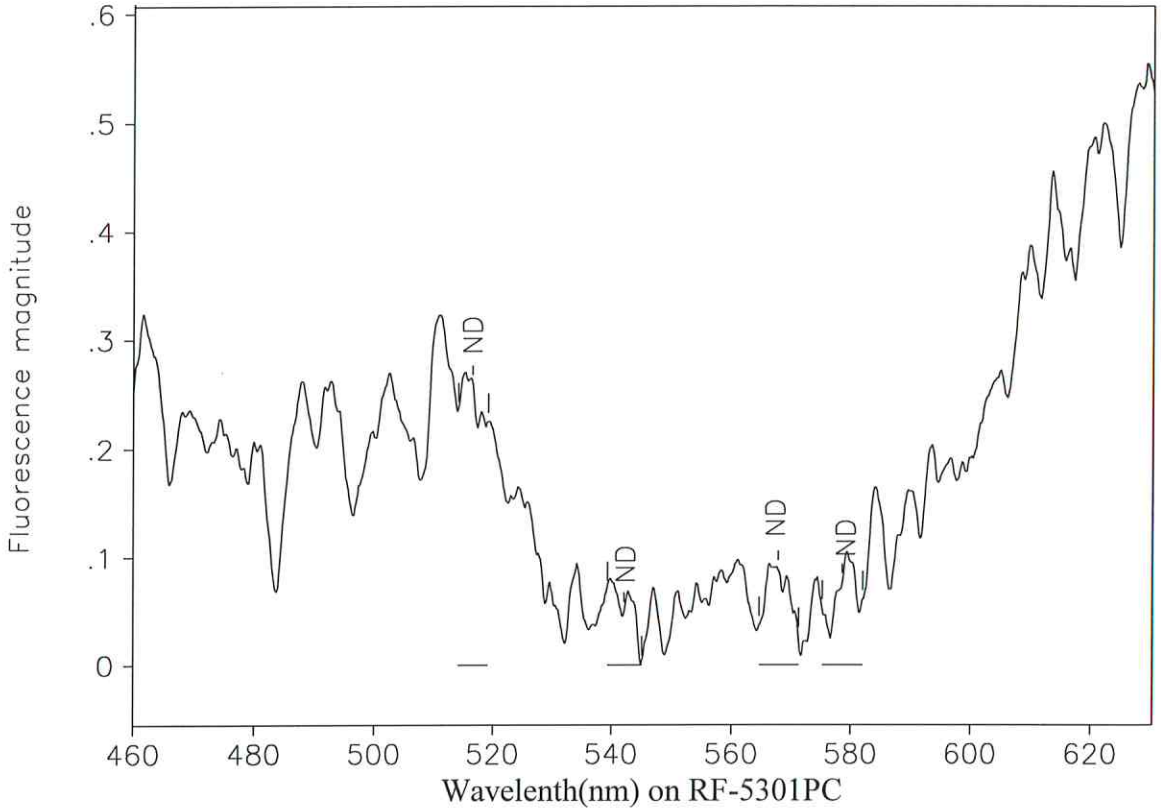
Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.	
514.2	483.4	532.8	0.36	10.23	0.096	0.349	Fl
542.1	539.3	545.1	0.00	0.00		ND	
567.8	564.6	571.2	0.00	0.00		ND	
578.5	575.2	582.0	0.00	0.00		ND	

Peaks close to the normal range of tracer dyes:

Ca
OUL

Ozark Underground Laboratory



Station 7: TS-07
OUL Number: B0172
Matrix: Elutant
Date Placed: 9/15/15 1730

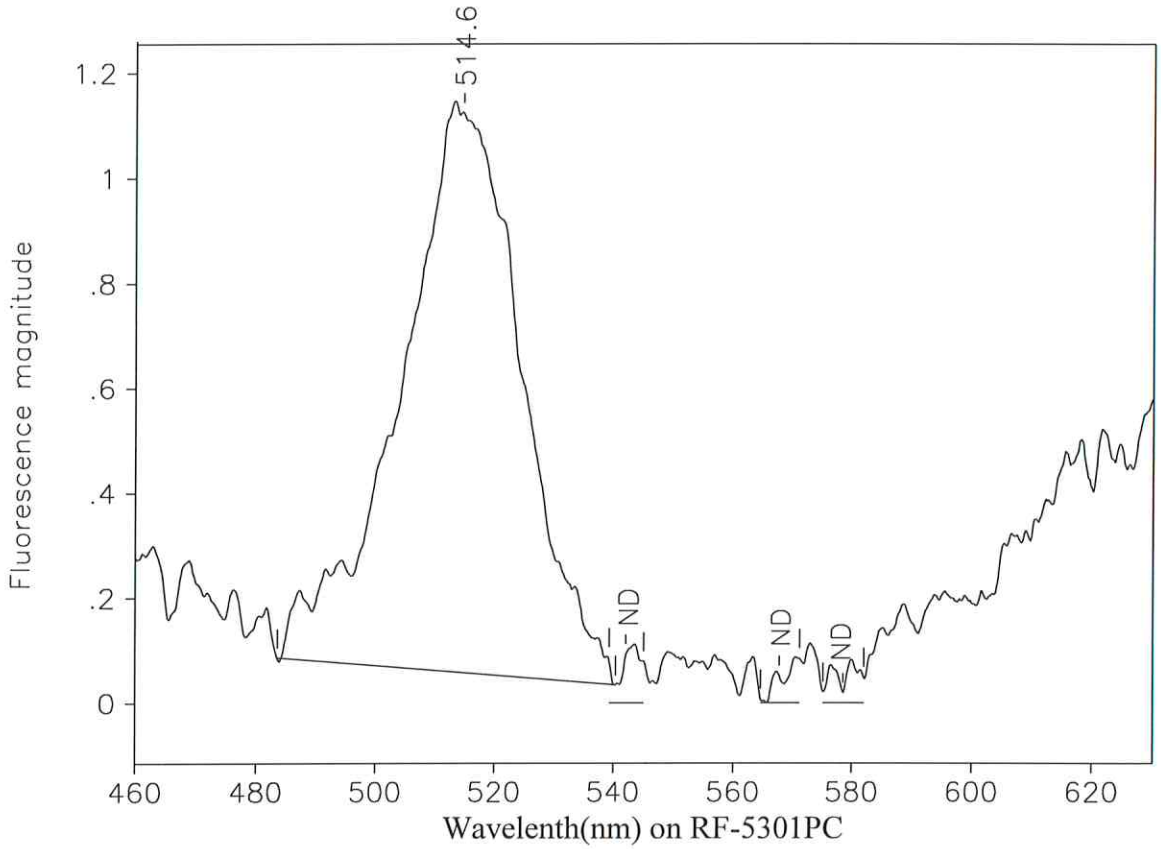
Analyzed: 10/2/15
Duration: 3.65 days
Date collected: 9/19/15 0904

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



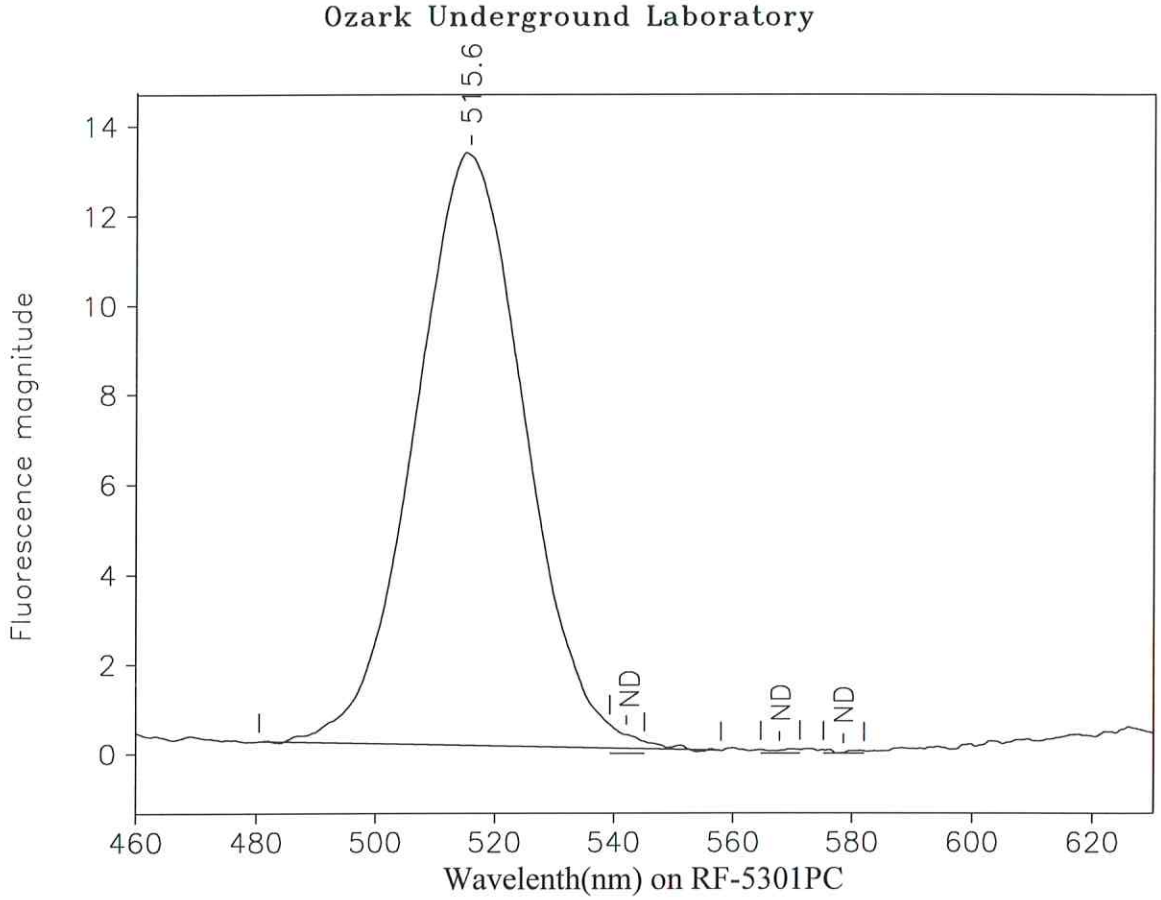
Station 8: TS-08
OUL Number: B0173
Matrix: Elutant
Date Placed: 9/15/15 1740

Analyzed: 10/2/15
Duration: 3.65 days
Date collected: 9/19/15 0909

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
514.6	483.6	540.4	1.07	25.59	0.239	0.874 Fl
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:



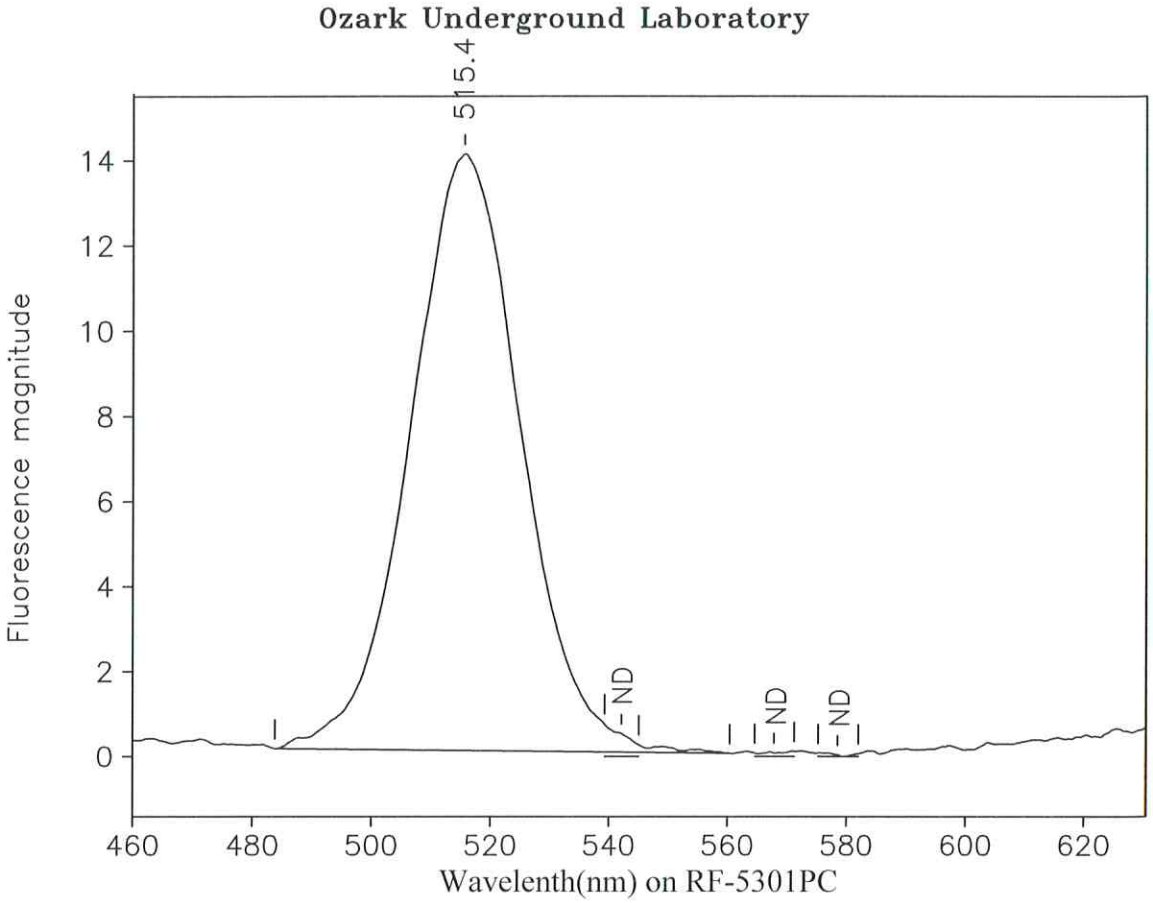
Station 9: TS-09
OUL Number: B0174
Matrix: Elutant
Date Placed: 9/15/15 1750

Analyzed: 10/2/15
Duration: 3.64 days
Date collected: 9/19/15 0914

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
515.6	480.5	558.0	13.19	284.18	2.66	9.70 Fl
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:



Station 10: TS-10
OUL Number: B0175
Matrix: Elutant
Date Placed: 9/15/15 1800

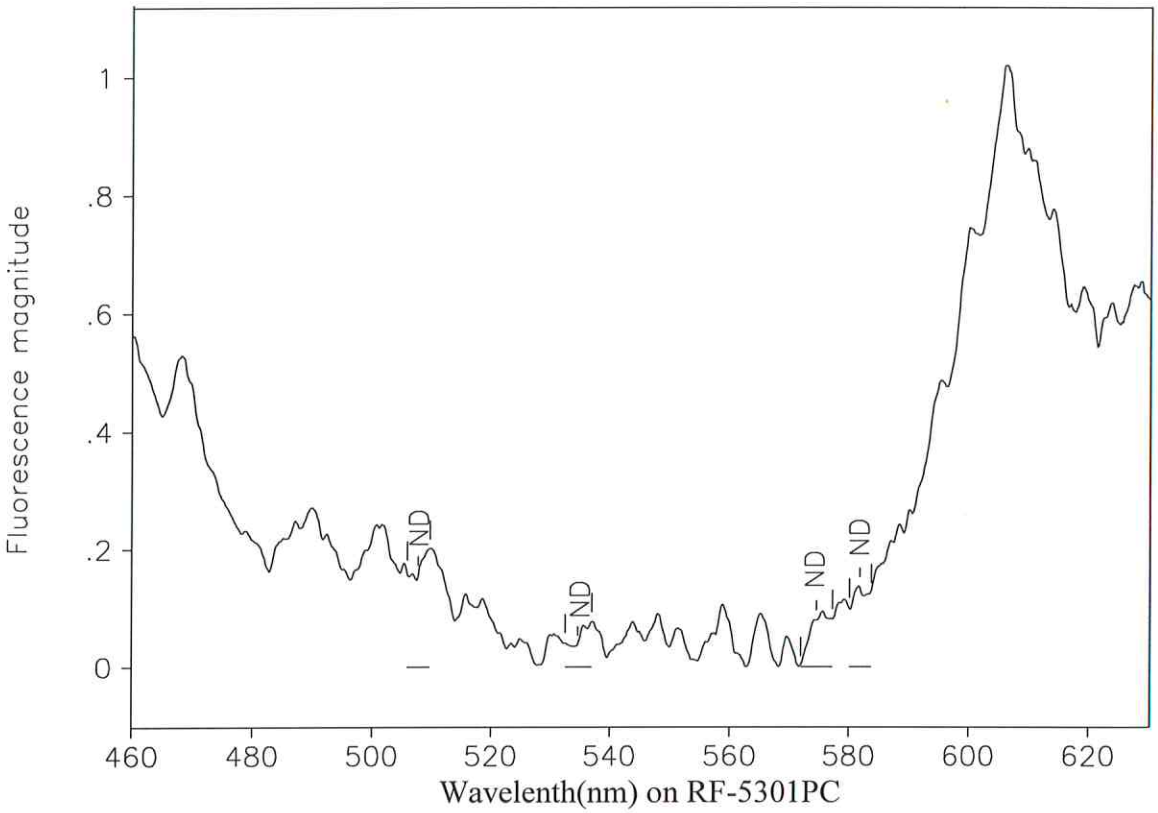
Analyzed: 10/2/15
Duration: 3.64 days
Date collected: 9/19/15 0920

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
515.4	483.8	560.4	14.01	303.03	2.84	10.3 Fl
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



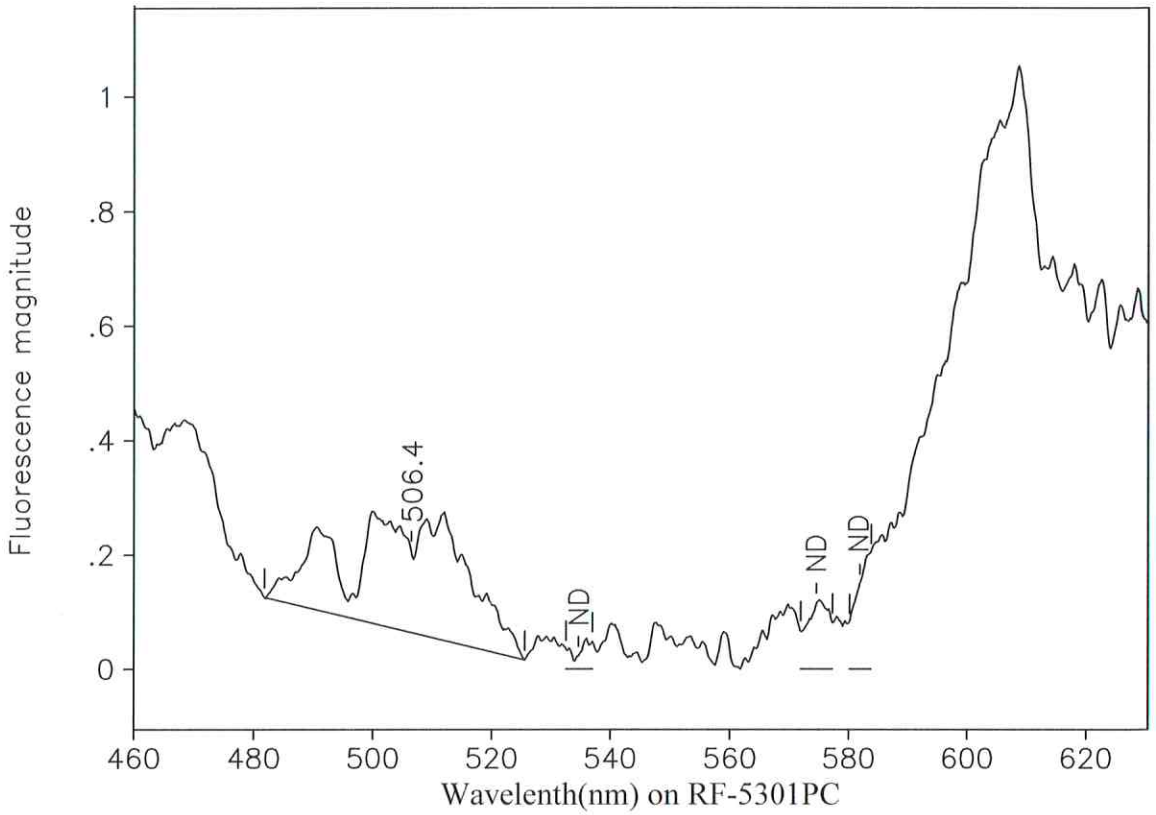
Station 8: TS-08
OUL Number: B0427 Analyzed: 10/2/15
Matrix: Water
Date collected: 9/19/15 0909

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc.
507.7	505.9	509.7	0.00	0.00	ND
534.6	532.5	537.0	0.00	0.00	ND
574.5	571.9	577.2	0.00	0.00	ND
581.8	580.1	583.7	0.00	0.00	ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 9: TS-09
OUL Number: B0428 Analyzed: 10/2/15
Matrix: Water
Date collected: 9/19/15 0914

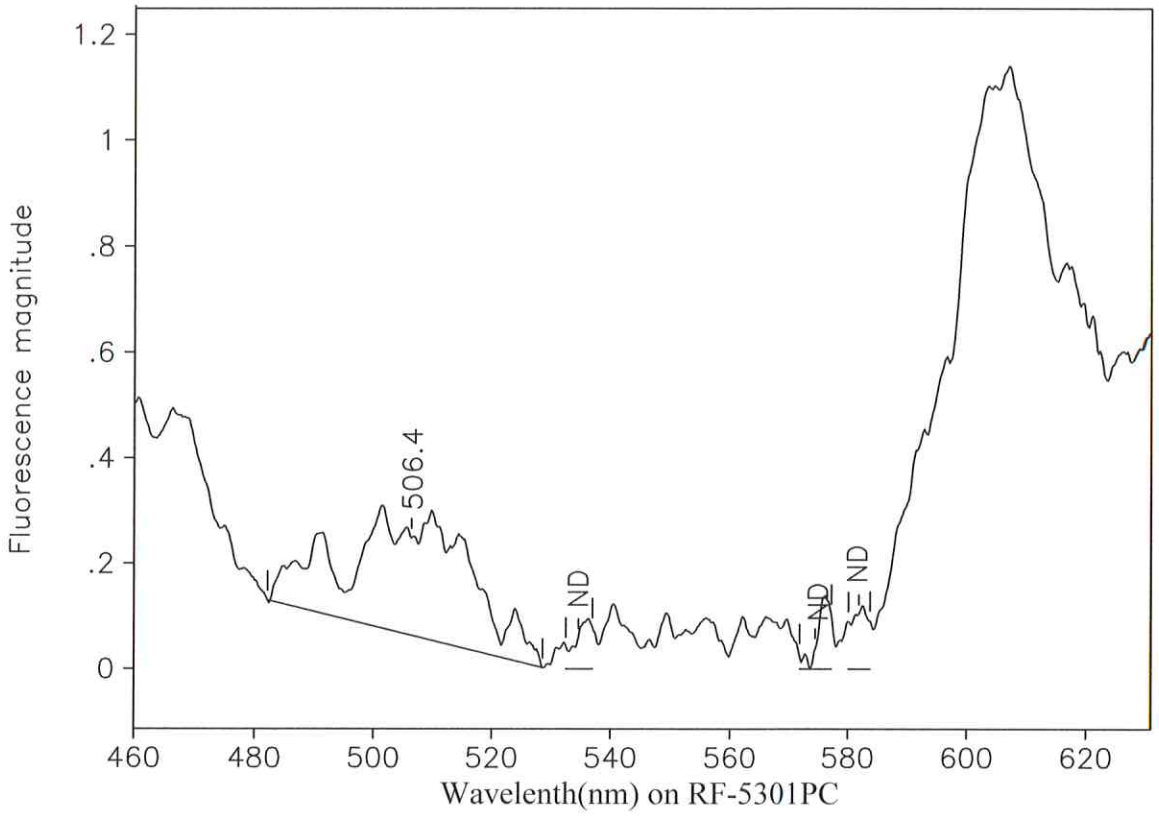
Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc.
506.4	481.8	525.6	0.14	4.89	0.012 Fl (1)
534.6	532.5	537.0	0.00	0.00	ND
574.5	571.9	577.2	0.00	0.00	ND
581.8	580.1	583.7	0.00	0.00	ND

Peaks close to the normal range of tracer dyes:

CA/OUL

Ozark Underground Laboratory



Station 10: TS-10
OUL Number: B0429 Analyzed: 10/2/15
Matrix: Water
Date collected: 9/19/15 0920

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc.
506.4	482.2	528.6	0.18	5.75	0.014 Fl
534.6	532.5	537.0	0.00	0.00	ND
574.5	571.9	577.2	0.00	0.00	ND
581.8	580.1	583.7	0.00	0.00	ND

Peaks close to the normal range of tracer dyes:

(1)

CC/OUL

Ozark UNDERGROUND LABORATORY 1572 Aley Lane • Protem, MO 65733 • (417) 785-4289 • fax (417) 785-4290 • contact@ozarkundergroundlab.com

Certificate of Analysis
Revised

Date of revised certificate: November 4, 2015
Date of original certificate: November 2, 2015
Client: Access Consulting
3 Calcite Business Centre
151 Industrial Road
Whitehorse, YT Y1A 2V3 Canada
Project name: Bellekeno Mine
EEM Effluent Pathway Study
Project number: AHKM-14-03 / PO # 16838
Contact people: Anthony Bier (abier@accessconsulting.ca)
David Petkovich (david@accessconsulting.ca)
Kai Woloshyn (kwoloshyn@alexcoresource.com)

Samples collected by: Charles Byslak
Date samples shipped: October 14, 2015
Date samples rec'd at OUL: October 21, 2015
Date analyzed by OUL: October 30
and November 2, 2015
Included with certificate of analysis: Table of results, copies of sample collection data sheet, discrepancy sheet and analysis graphs

Results for charcoal and water samples analyzed for the presence of fluorescein dye.
Peak wavelengths are reported in nanometers (nm); dye concentrations are reported in parts per billion (ppb).
All results are for charcoal unless indicated otherwise.

OUL Number	Station Number	Station Name	Date/Time Placed	Date/Time Collected	Fluorescein	
					Peak (nm)	Conc (ppb)
			d/m/yy	d/m/yy		
B1217	1	TS-01	19/9/15 0820	9/10/15 1454	ND	
B1218	2	TS-02	19/9/15 0826	9/10/15 1458	ND	
B1219	3	TS-03	19/9/15 0833	9/10/15 1505	ND	
B1220	Laboratory control charcoal blank					
B1221	4	TS-04	19/9/15 0840	9/10/15 1510	ND	
B1222	5	TS-05	19/9/15 0847	9/10/15 1518	ND	
B1223	6	TS-06	19/9/15 0854	9/10/15 1533	513.8	0.525
B1224	7	TS-07	19/9/15 0904	9/10/15 1547	513.2 *	0.468
B1225	8	TS-08	19/9/15 0909	9/10/15 1555	514.4	0.994
B1226	9	TS-09	19/9/15 0914	9/10/15 1600	515.2	1.87
B1227	10	TS-10	19/9/15 0920	9/10/15 1605	515.2	2.71
B1338	6	TS-06	**Water**	9/10/15 1533	ND	
B1339	8	TS-08	**Water**	9/10/15 1555	ND	
B1340	Laboratory control water blank					
B1341	9	TS-09	**Water**	9/10/15 1600	ND	
B1342	10	TS-10	**Water**	9/10/15 1605	ND	

Note: Dye concentrations are based upon standards used at the OUL. The standard concentrations are based upon the as sold weight of the dye that the OUL uses. If the client is not using OUL dyes, the client should provide the OUL with a sample of the dye to compare to the OUL dyes.
Footnote: ND = No dye detected
* = A fluorescence peak is present that does not meet all the criteria for a positive dye result. However it has been calculated as though it was the tracer dye.

Thomas J. Aley, PHG and RG
Thomas Aley

F:\docs\COA\Access Consulting\AccessConsulting_BellekenoMine_02revised

OZARK UNDERGROUND LABORATORY, INC.

1572 Aley Lane Protem, MO 65733 (417) 785-4289 fax (417) 785-4290 email: oul@tri-lakes.net

(*) Actual ship date: 10/09/15

SAMPLE COLLECTION DATA SHEET for FLUORESCENCE ANALYSIS

Project: AKHM-14-03 (EEIM Tracer Study) Week No: 5 Samples Collected By: Cavicks Blyskl

Samples Shipped By: Anthony Bier - Alexco Environmental Group Samples Received By: N. Keith OUL

Date Samples Shipped: 14 / 10 / 2015 (*) Date Samples Received: 10 / 21 / 15 Time Samples Received: 14 : 30 Return Cooler? Yes ____ No X

Bill to: Alexco Environmental Group Send Results to: Alexco Environmental Group; Abier@accessconsulting.cs (867) 668 6463

Analyze for: Fluorescein X Eosine ____ Rhodamine WT ____ Other ____ Ship cooler to: ____

OUL use only		Please indicate stations where dye was visible in the field for field technician use - use black ink only						OUL use only
# CHAR REC'D	LAB NUMBER char	STATION NUMBER 1-4 Numbers	STATION NAME	PLACED DATE	PLACED TIME	COLLECTED DATE	COLLECTED TIME	# WATER REC'D
2	B1217	1	TS-01	19/09/2015	0820h	09/10/2015	1454h	1
2	B1218	2	TS-02	19/09/2015	0826h	09/10/2015	1458h	1
2	B1219	3	TS-03	19/09/2015	0835h	09/10/2015	1505h	1
2	B1221	4	TS-04	19/09/2015	0840h	09/10/2015	1510h	1
2	B1222	5	TS-05	19/09/2015	0847h	09/10/2015	1518h	1
2	B1223	6	TS-06	19/09/2015	0854h	09/10/2015	1536h	1
2	B1224	7	TS-07	19/09/2015	0904h	09/10/2015	1547h	1
2	B1225	8	TS-08	19/09/2015	0909h	09/10/2015	~~1558h~~ 1555 (*) MC	1
2	B1226	9	TS-09	19/09/2015	0914h	09/10/2015	1600h	1
2	B1227	10	TS-10	19/09/2015	0920h	09/10/2015	1605h	1

COMMENTS: 2nd Round of carbon samplers; 2Lbs of Fluorescein placed 15/09/2015 @ 0830h (*) See discrepancy sheet.
B1220 = OUL charcoal blank OUL Project # 1448 analyzed 10/30/15 by MC/OUL

This sheet filled out by OUL staff? Yes ____ No X Charts for samples on this page proofed by OUL: MC

OZARK UNDERGROUND LABORATORY, INC.

1572 Aley Lane Protem, MO 65733 (417) 785-4289 fax (417) 785-4290 email: oul@tri-lakes.net

SAMPLE COLLECTION DATA SHEET for FLUORESCENCE ANALYSIS

(*) Actual ship date: 10/19/15

Project: AKAM-14-03 (EEM Tracer Study) Week No: 5 Samples Collected By: Charles Bitsak

Samples Shipped By: Anthony Bier - Alexco Environmental Group Samples Received By: N. Keith OUL

Date Samples Shipped: 14 / 10 / 2015 (*) Date Samples Received: 10 / 21 / 15 Time Samples Received: 14 : 30 Return Cooler? Yes ___ No X

Bill to: Alexco Environmental Group Send Results to: Alexco Environmental Group; Abier@accessconsulting.cc (867) 668 6463

Analyze for: Fluorescein X Eosine ___ Rhodamine WT ___ Other ___ Ship cooler to: ___

OUL use only		Please indicate stations where dye was visible in the field for field technician use - use black ink only						OUL use only
# CHAR REC'D	LAB NUMBER	STATION NUMBER 1-4 Numbers	STATION NAME	PLACED DATE	PLACED TIME	COLLECTED DATE	COLLECTED TIME	# WATER REC'D
2		1	TS-01	19/09/2015	0820h	09/10/2015	1454h	1
2		2	TS-02	19/09/2015	0824h	09/10/2015	1458h	1
2		3	TS-03	19/09/2015	0835h	09/10/2015	1505h	1
2		4	TS-04	19/09/2015	0840h	09/10/2015	1510h	1
2		5	TS-05	19/09/2015	0847h	09/10/2015	1518h	1
2	B1338	6	TS-06	19/09/2015	0854h	09/10/2015	1523h	1
2		7	TS-07	19/09/2015	0904h	09/10/2015	1547h	1
2	B1339	8	TS-08	19/09/2015	0909h	09/10/2015	~~1600h~~ 1595	1
2	B1341	9	TS-09	19/09/2015	0914h	09/10/2015	1600h	1
2	B1342	10	TS-10	19/09/2015	0920h	09/10/2015	1605h	1

COMMENTS: 2nd Round of carbon samplers; 2lbs of Fluorescein placed 15/09/2015 @ 0830h Oul water Blank B1340

BL project #1448 Analyzed 11/2/15 by Rebecca Scott/ou

This sheet filled out by OUL staff? Yes ___ No X Charts for samples on this page proofed by OUL: DC

Ozark Underground Laboratory, Inc.

DISCREPANCIES BETWEEN CHAIN-OF-CUSTODY SHEETS AND ACTUAL SAMPLES RECEIVED Page 1 of 1

Company & Project Name: Alexico / Access Consulting – EEM Trace **Date Rec'd by OUL:** 10/21/15 **Wk #** 5

Lab #	Sta #	Station Name	Date Pulled	Problem	Solution
	8	TS-08	09/10/2015	Collection time on COC is 1558. Collection time noted on samples is 1555.	Use time of 1555 as noted on the sample per A. Bier.

Comments:

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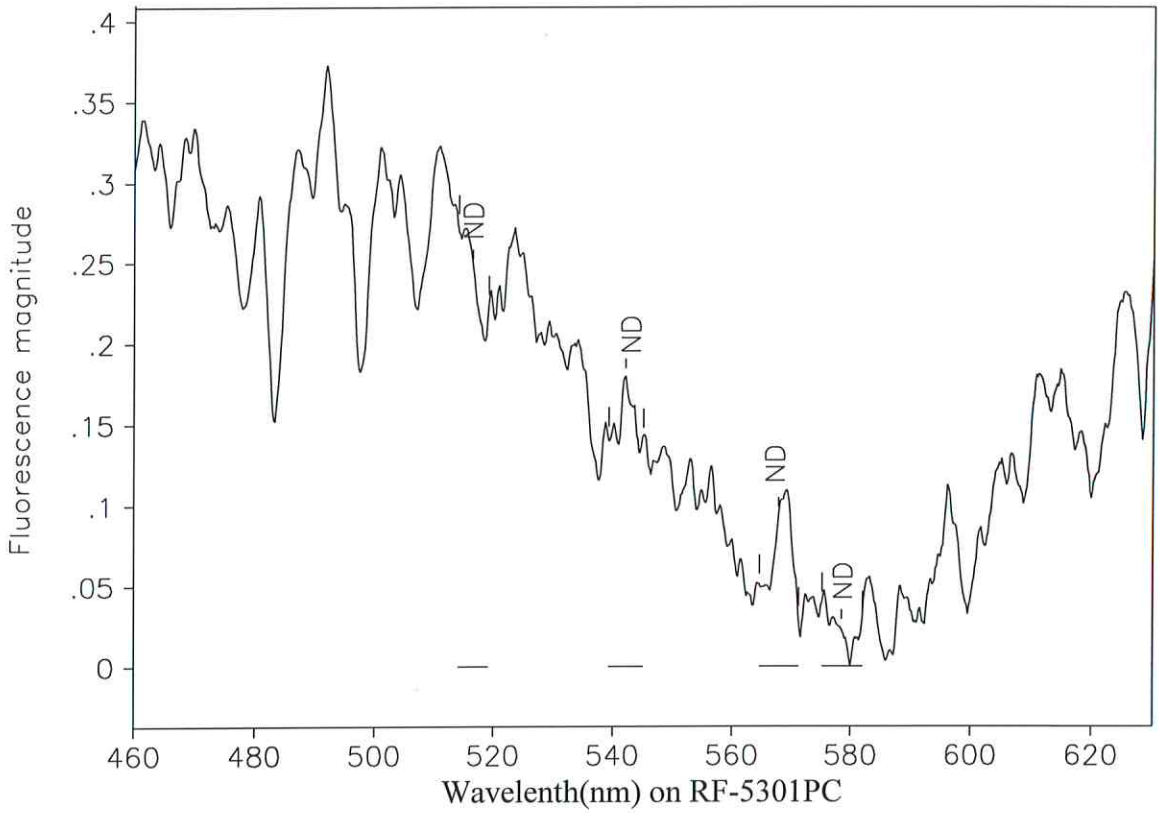
rev. 12/28/99

Ozark Underground Laboratory



Station 1: TS-01
OUL Number: B1217
Matrix: Elutant
Date Placed: 9/19/15 0820

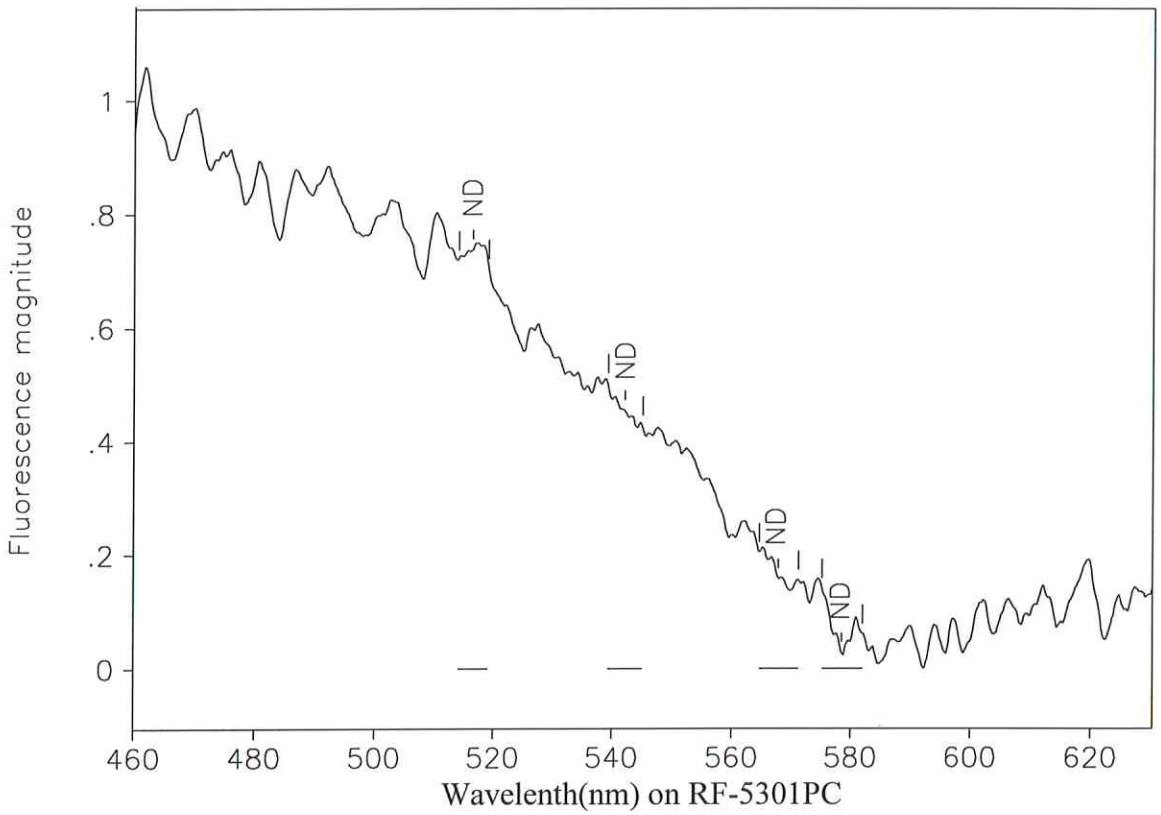
Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1454

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 2: TS-02
OUL Number: B1218
Matrix: Elutant
Date Placed: 9/19/15 0826

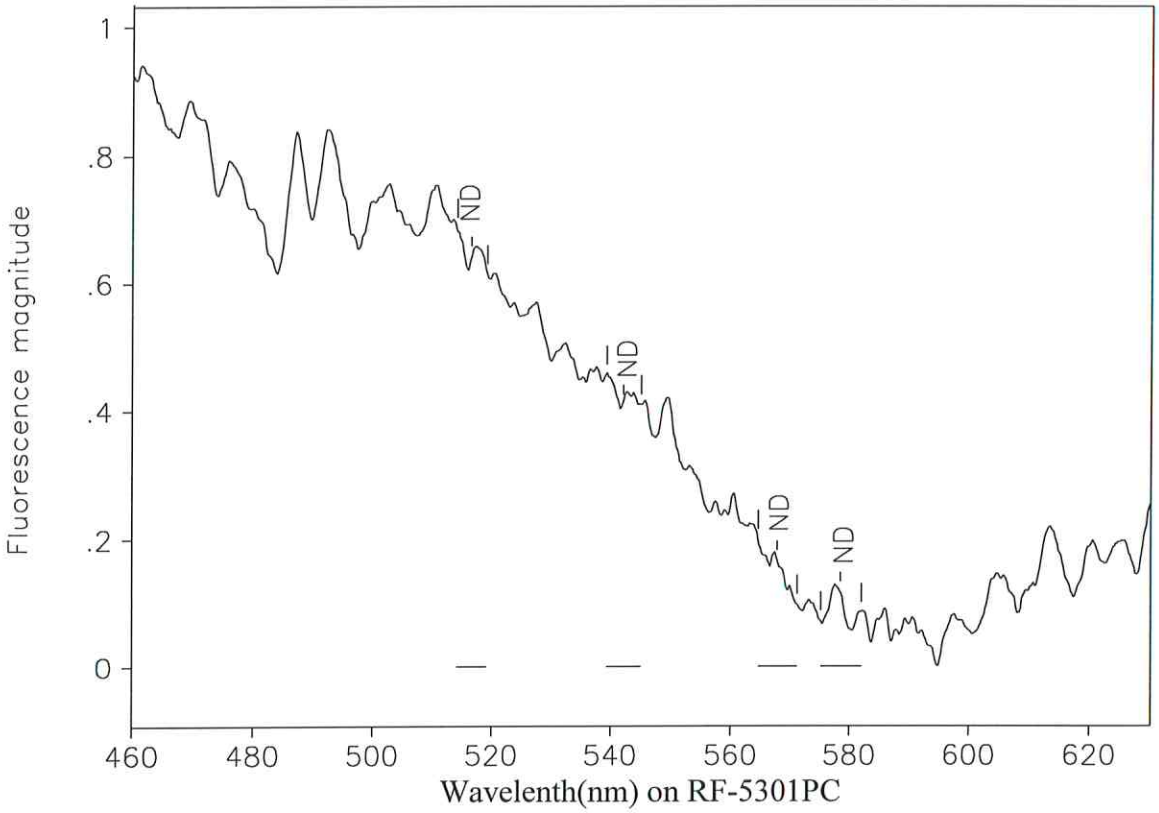
Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1458

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 3: TS-03
OUL Number: B1219
Matrix: Elutant
Date Placed: 9/19/15 0833

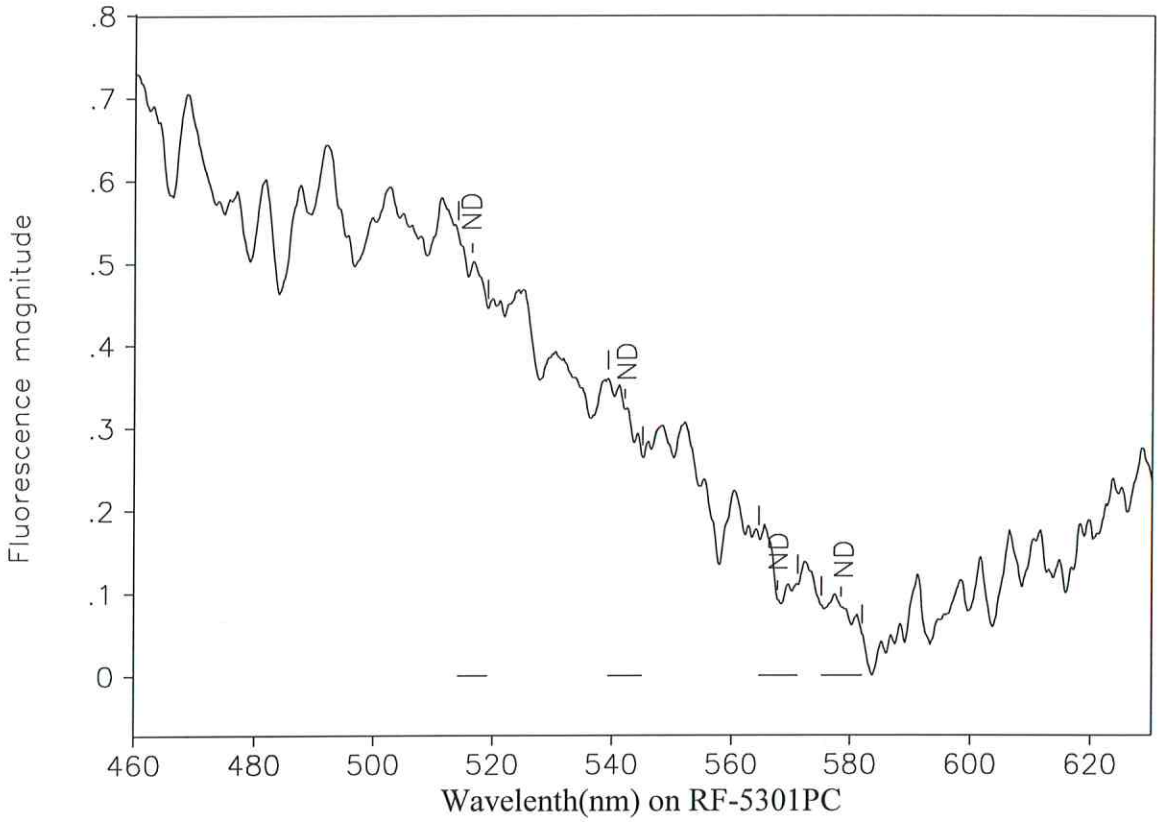
Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1505

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 4: TS-04
OUL Number: B1221
Matrix: Elutant
Date Placed: 9/19/15 0840

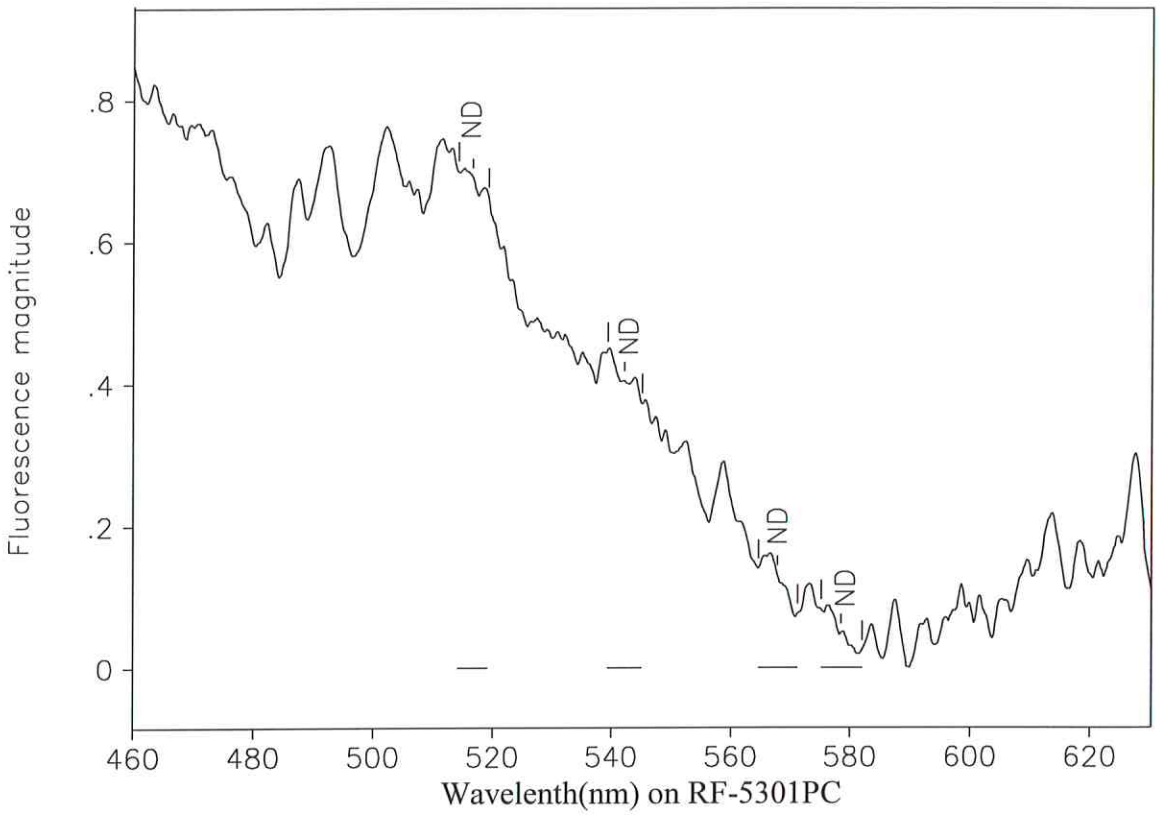
Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1510

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



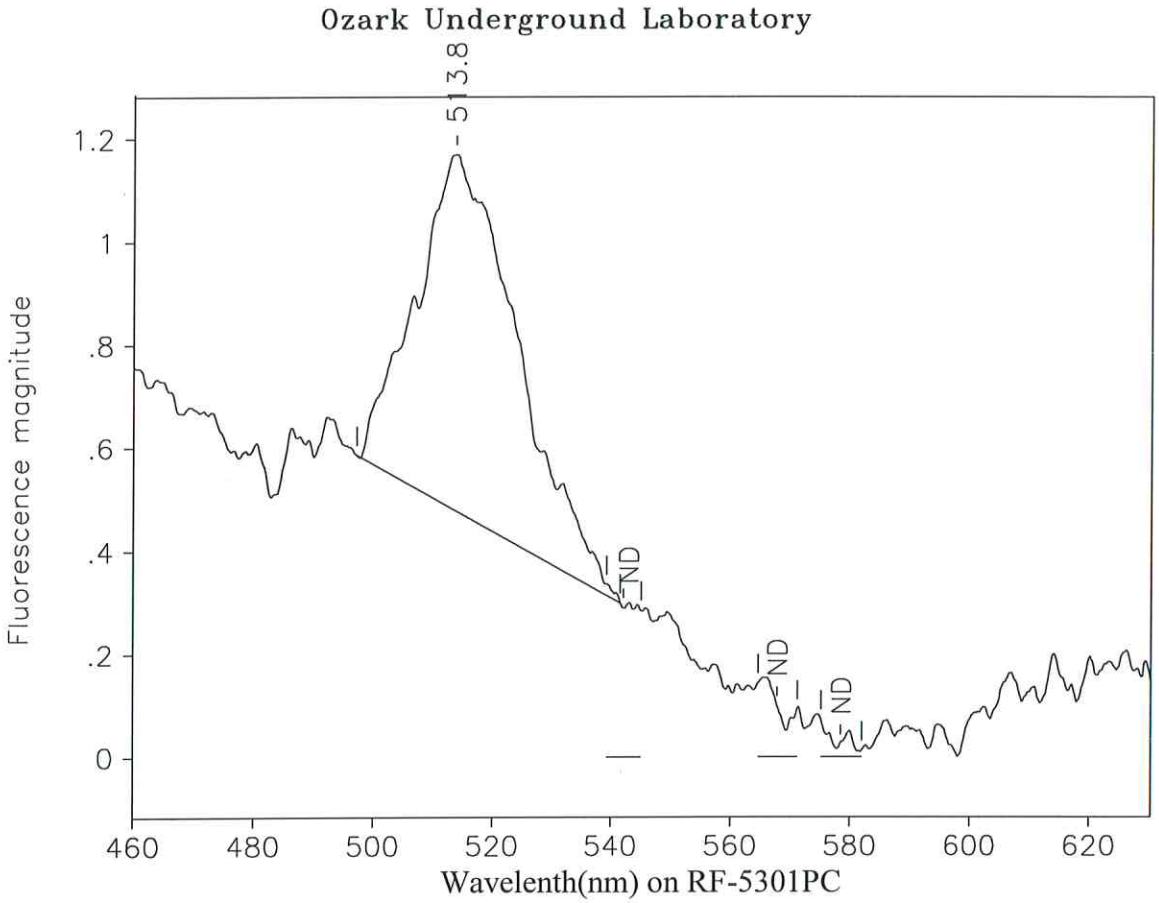
Station 5: TS-05
OUL Number: B1222
Matrix: Elutant
Date Placed: 9/19/15 0847

Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1518

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:



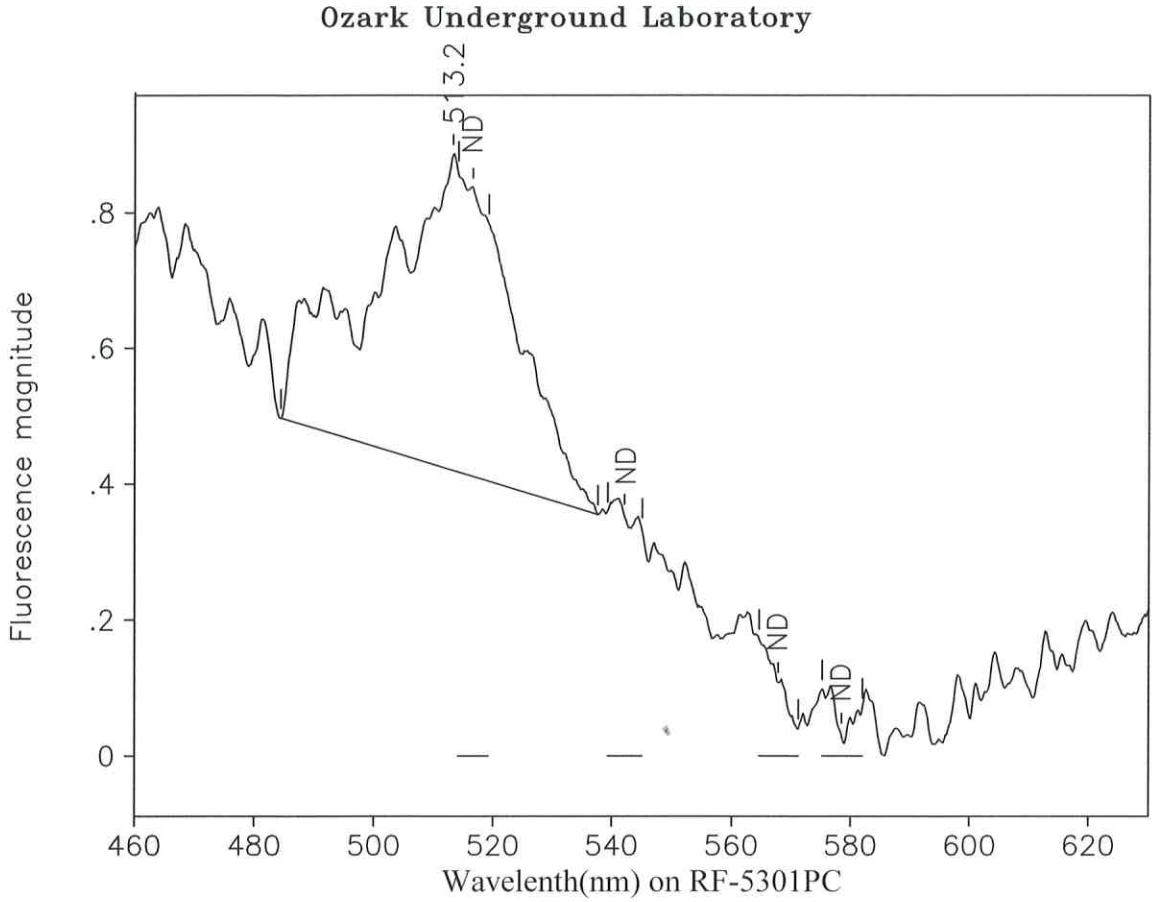
Station 6: TS-06
OUL Number: B1223
Matrix: Elutant
Date Placed: 9/19/15 0854

Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1533

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
513.8	497.2	541.6	0.69	13.74	0.026	0.525 Fl
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

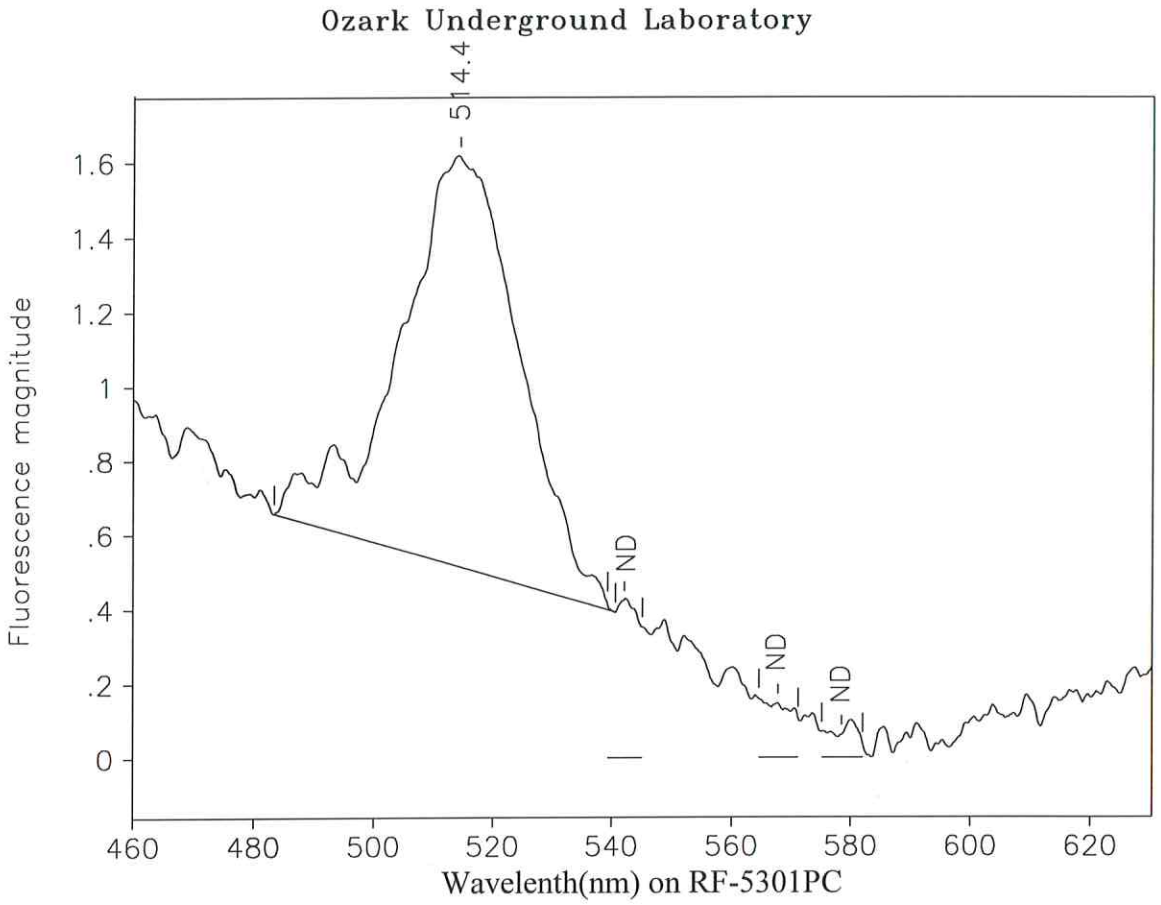


Station 7: TS-07
OUL Number: B1224
Matrix: Elutant
Date Placed: 9/19/15 0904

Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1547

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
516.5	514.1	519.2	0.00	0.00		ND
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND
Peaks close to the normal range of tracer dyes:						
513.2	484.4	537.6	0.47	12.24	0.023	0.468 Fl *



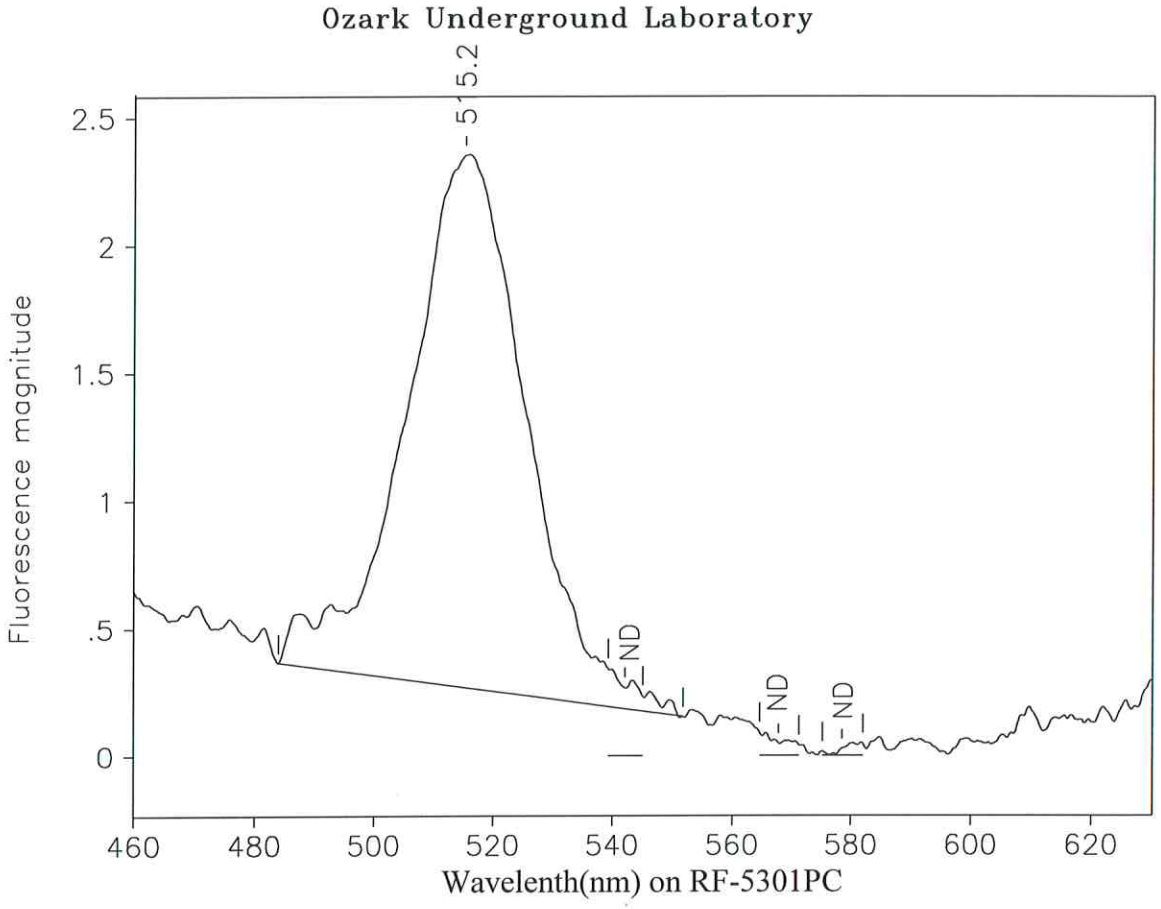
Station 8: TS-08
OUL Number: B1225
Matrix: Elutant
Date Placed: 9/19/15 0909

Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1555

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
514.4	483.4	540.6	1.10	25.99	0.049	0.994 Fl
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:



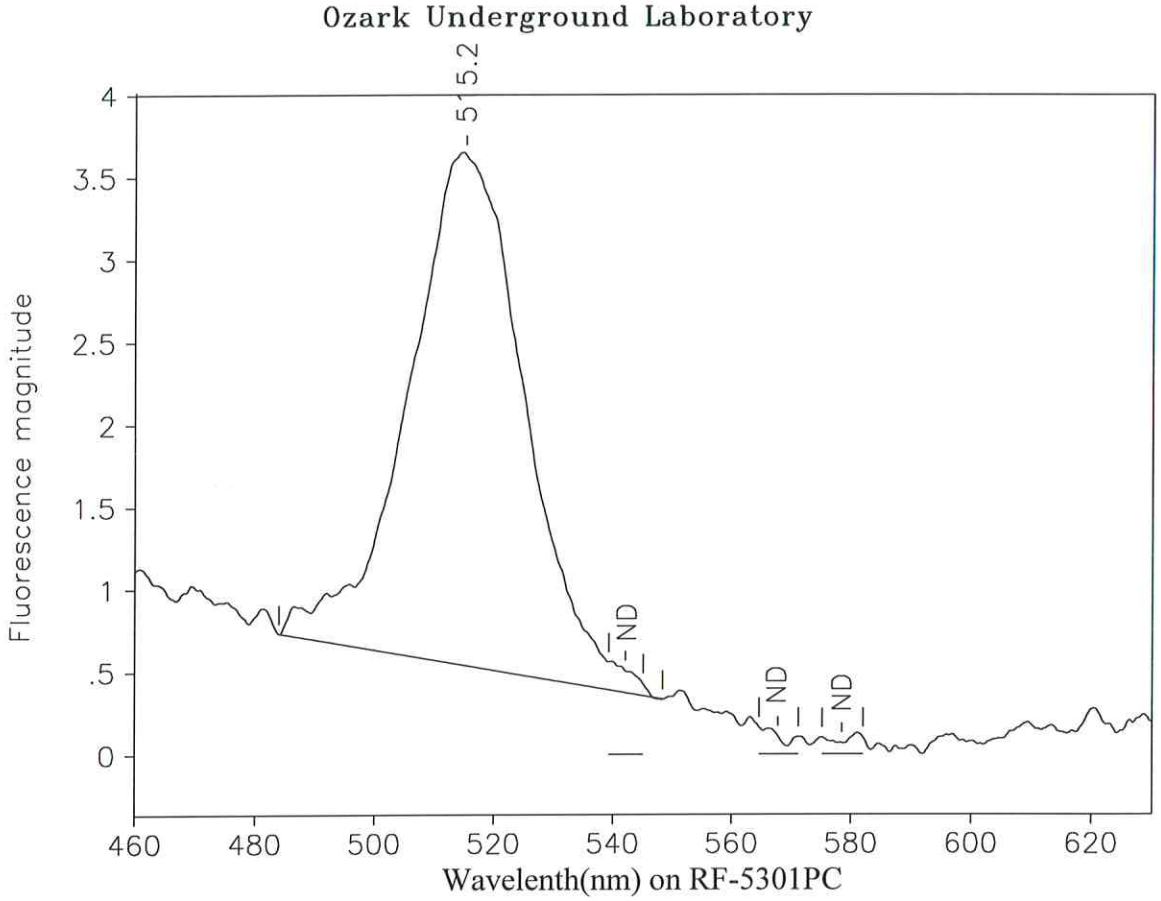
Station 9: TS-09
OUL Number: B1226
Matrix: Elutant
Date Placed: 9/19/15 0914

Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1600

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
515.2	484.0	551.8	2.09	48.90	0.092	1.87 FI
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:



Station 10: TS-10
OUL Number: B1227
Matrix: Elutant
Date Placed: 9/19/15 0920

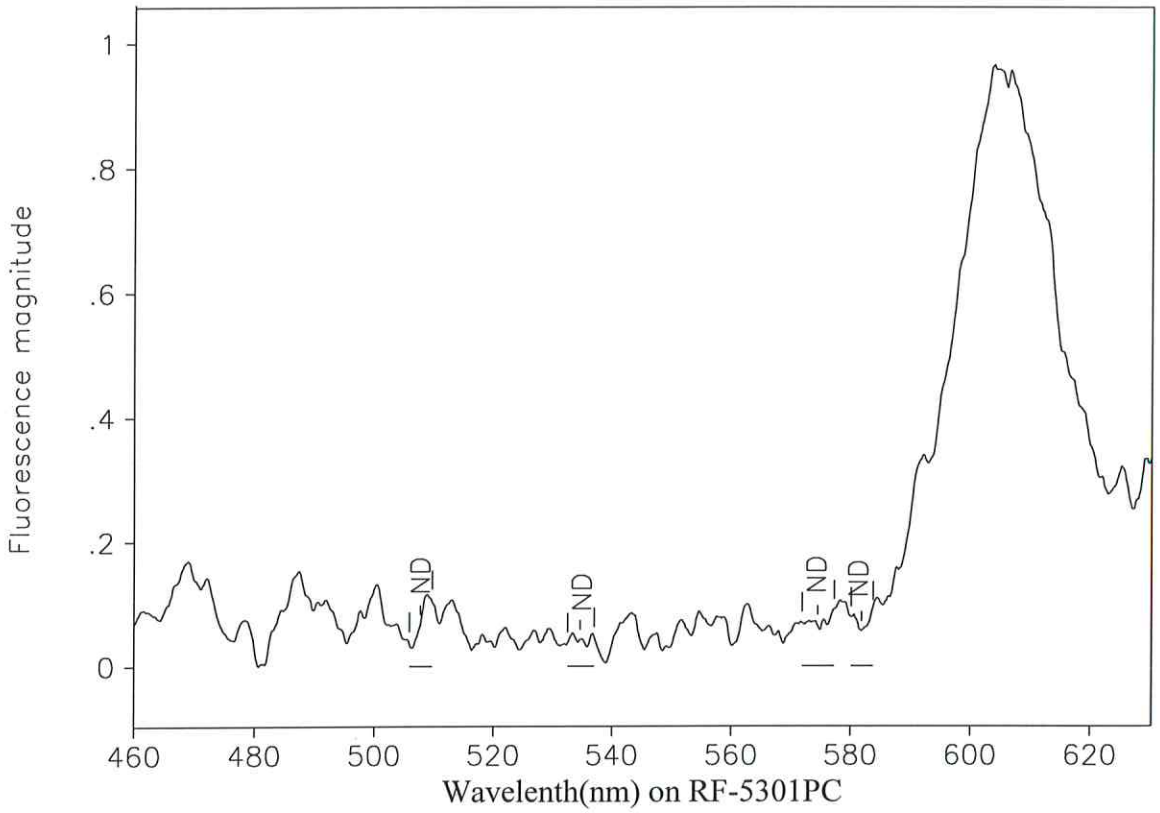
Analyzed: 10/30/15
Duration: 20.3 days
Date collected: 10/9/15 1605

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc/Day	Conc.
515.2	484.0	548.4	3.10	70.91	0.134	2.71 Fl
542.1	539.3	545.1	0.00	0.00		ND
567.8	564.6	571.2	0.00	0.00		ND
578.5	575.2	582.0	0.00	0.00		ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



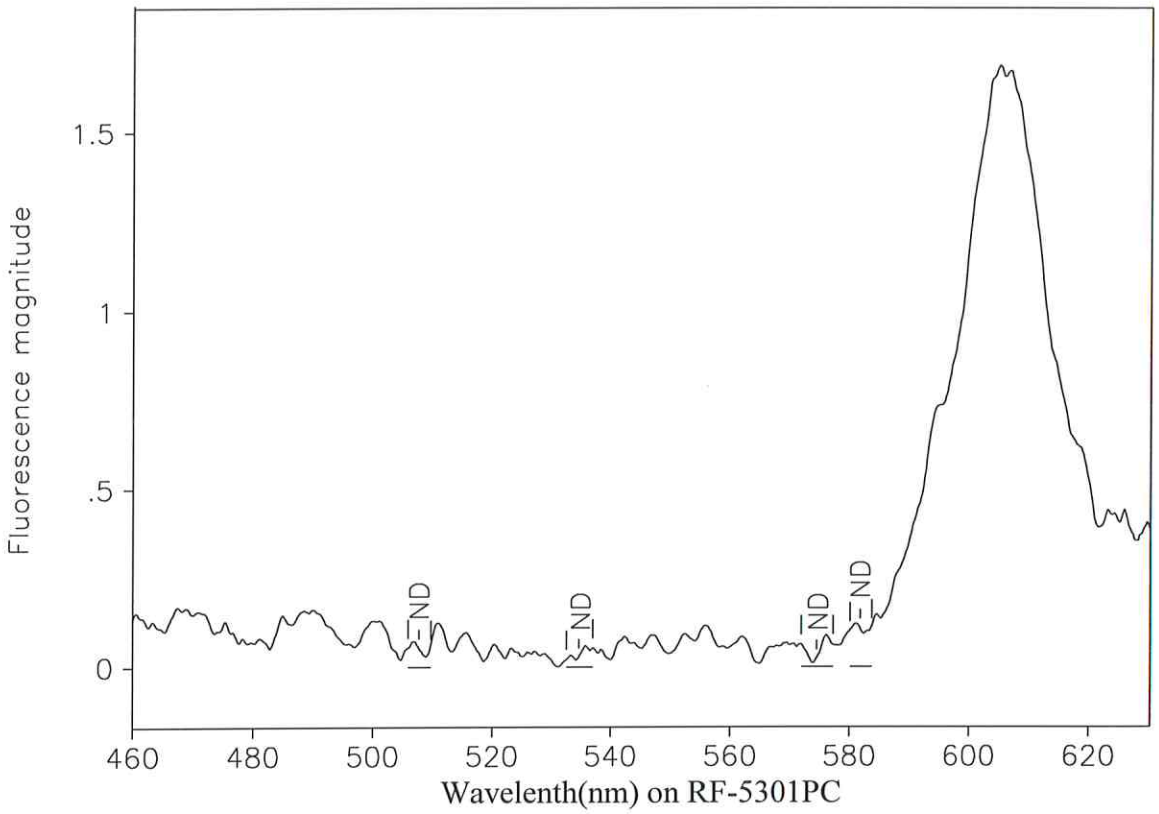
Station 6: TS-06
OUL Number: B1338 Analyzed: 11/2/15
Matrix: Water
Date collected: 10/9/15 1533

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc.
507.7	505.9	509.7	0.00	0.00	ND
534.6	532.5	537.0	0.00	0.00	ND
574.5	571.9	577.2	0.00	0.00	ND
581.8	580.1	583.7	0.00	0.00	ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



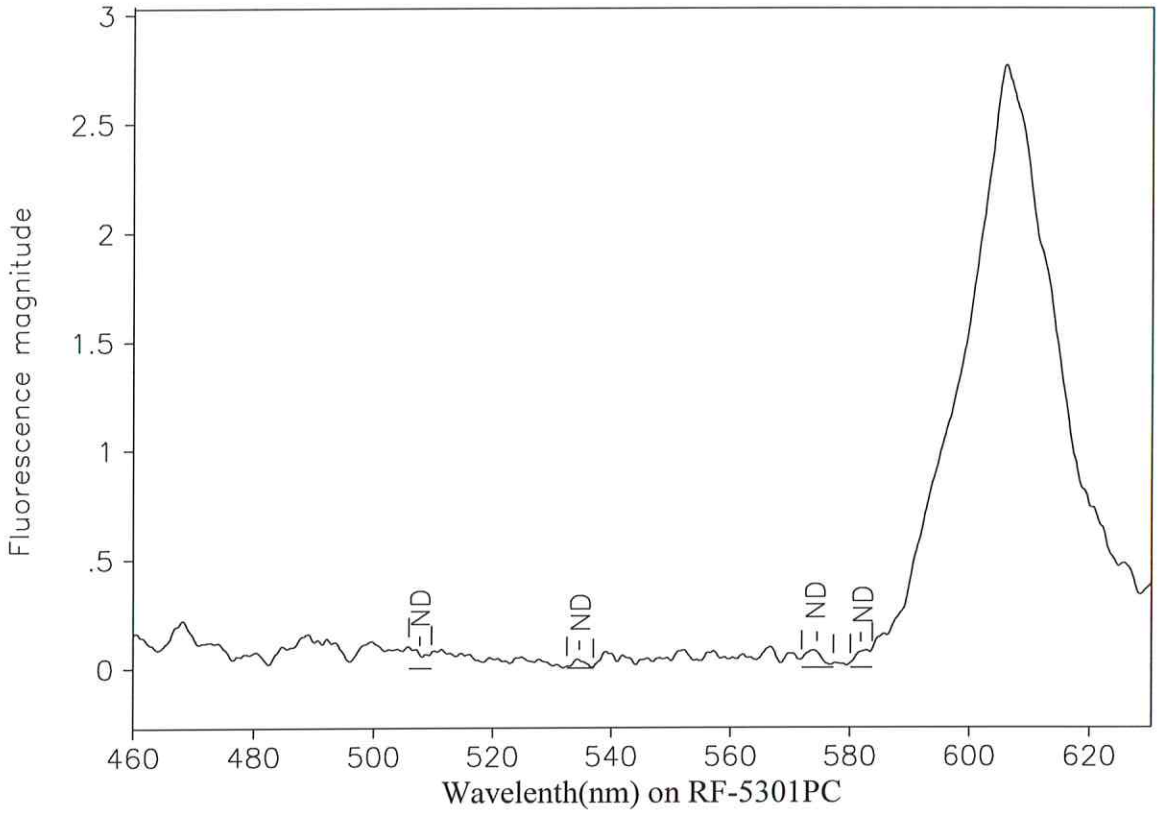
Station 8: TS-08
OUL Number: B1339 Analyzed: 11/2/15
Matrix: Water
Date collected: 10/9/15 1555

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc.
507.7	505.9	509.7	0.00	0.00	ND
534.6	532.5	537.0	0.00	0.00	ND
574.5	571.9	577.2	0.00	0.00	ND
581.8	580.1	583.7	0.00	0.00	ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



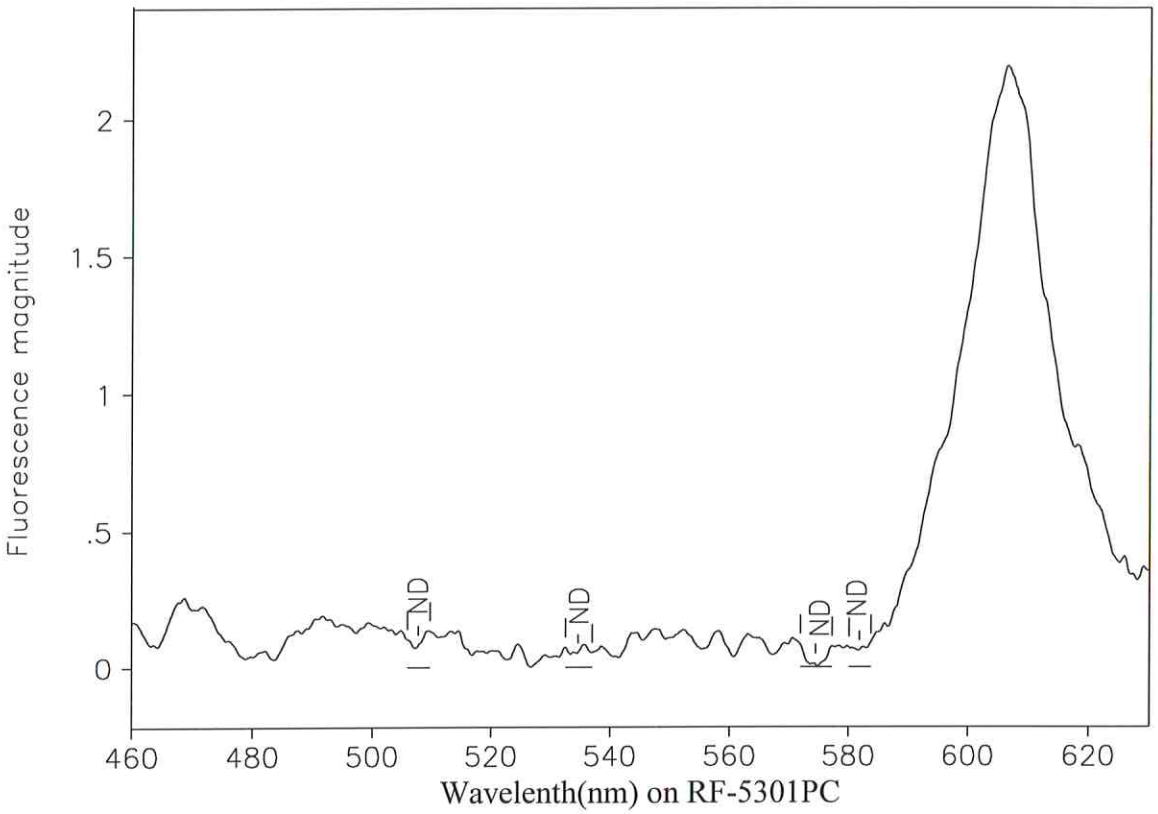
Station 9: TS-09
OUL Number: B1341 Analyzed: 11/2/15
Matrix: Water
Date collected: 10/9/15 1600

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc.
507.7	505.9	509.7	0.00	0.00	ND
534.6	532.5	537.0	0.00	0.00	ND
574.5	571.9	577.2	0.00	0.00	ND
581.8	580.1	583.7	0.00	0.00	ND

Peaks close to the normal range of tracer dyes:

Ozark Underground Laboratory



Station 10: TS-10
OUL Number: B1342 Analyzed: 11/2/15
Matrix: Water
Date collected: 10/9/15 1605

Peaks within the normal range of tracer dyes:

Peak nm	Left X	Right X	Height	Area	Conc.
507.7	505.9	509.7	0.00	0.00	ND
534.6	532.5	537.0	0.00	0.00	ND
574.5	571.9	577.2	0.00	0.00	ND
581.8	580.1	583.7	0.00	0.00	ND

Peaks close to the normal range of tracer dyes:

APPENDIX D

EFFLUENT CHARACTERIZATION DATA

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Discharge (Flow)	Total Suspended Solids	pH (field)	pH (lab)	Specific Conductance (field)	Specific Conductance (lab)	Temperature (field)	Hardness (from total)	Hardness (from dissolved)	Alkalinity, total	Chloride	Fluoride	Sulphate, dissolved	Ammonia (N)	Nitrite (N)	Nitrate (N)	Dissolved Organic Carbon	Aluminum (Al), total	Antimony (Sb), total	Arsenic (As), total	Barium (Ba), total	Beryllium (Be), total	Bismuth (Bi), total	Boron (B), total	Cadmium (Cd), total
			L/s	mg/L	pH units	pH units	µS/cm	µS/cm	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	mg/L	mg/L	mg/L	mg/L	mg/L
MMER Grab				30	6.0-9.5	6.0-9.5																1					
MMER Max Monthly Mean				15																		0.5					
KV-43	Bellekeno 625 Treatment Pond Decant	09/09/2013	4.1	<1.0	7.75	7.69	1027	855	10.4	517	518	50.3	10.1	<0.20	467	0.48	0.814	3.89	0.83	0.0137	0.0118	0.00339	0.0148	<0.00010	<0.00050	0.011	0.000796
KV-43	Bellekeno 625 Treatment Pond Decant	10/09/2013	2.95	<1.0	7.74	7.84	922	928	7.9	560	550	52.7	10.3	<0.20	507	0.64	0.793	3.73	0.91	<0.030	0.0129	0.0030	0.0158	<0.0010	<0.0050	<0.10	0.00071
KV-43	Bellekeno 625 Treatment Pond Decant	01/10/2013	9.3	<1.0	8.89	8.23	1398	1150	4.9	716	718	114	13.9	0.37	672	3.56	1.66	7.21	1.31	0.0083	0.0189	0.00274	0.0200	<0.00010	<0.00050	0.024	0.000128
KV-43	Bellekeno 625 Treatment Pond Decant	08/10/2013	0	<1.0	8.5	8.22	1484	1080	2.7	667	674	91.9	8.0	0.24	594	3.32	1.09	3.38	1.19	<0.030	0.0147	0.0020	0.0142	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	15/10/2013	3.40	4.4	8.34	8.14	1775	1120	4.2	736	737	97.2	7.5	0.26	674	3.20	1.16	2.64	0.93	<0.030	0.0196	0.0027	0.0161	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	18/10/2013		22.6		8.10		1210				88.3	7.5	0.28	682		1.12	2.53									
KV-43	Bellekeno 625 Treatment Pond Decant	22/10/2013	0.08	6.2	8.69	7.94	1648	576	1.6	731	729	77.9	7.4	0.30	668	3.10	1.04	2.20	1.08	0.0082	0.0180	0.00229	0.0123	<0.00010	<0.00050	<0.010	0.000092
KV-43	Bellekeno 625 Treatment Pond Decant	05/11/2013		5.8	8.84	8.10	1232	1180	2.5	774	790	70.1	8.2	0.21	723	2.44	0.848	2.28	0.80	0.0225	0.0178	0.00319	0.0109	<0.00010	<0.00050	0.012	0.000489
KV-43	Bellekeno 625 Treatment Pond Decant	12/11/2013	3.90	2.8	8.35	8.00	1717	1140	1.7	772	799	85.9	9.4	0.24	747	2.55	0.818	2.60	0.68	<0.030	0.0165	0.0021	0.0111	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	19/11/2013	3.28	<1.0	8.39	8.32	1479	1120	0.5	752	770	66.3	7.0	0.21	748	2.36	0.515	1.67	0.73	<0.030	0.0156	0.0017	0.00883	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	27/11/2013	3.46	7.6	8.45	8.36	1444	1290	1.2	748	755	112	6.3	0.31	716	2.01	0.342	1.46	0.59	<0.030	0.0134	0.0019	0.0119	<0.0010	<0.0050	<0.10	0.00045
KV-43	Bellekeno 625 Treatment Pond Decant	03/12/2013	3.32	7.0	8.2	8.22	1362	1090	1.8	737	724	61.9	5.9	0.21	686	1.85	0.267	1.35	0.64	0.0159	0.0127	0.00176	0.00887	<0.00010	<0.00050	<0.010	0.000147
KV-43	Bellekeno 625 Treatment Pond Decant	10/12/2013	0.66	1.8	8.72	8.40	1347	1180	1.1	743	731	49.0	5.7	<0.20	671	1.64	0.200	1.33	0.75	<0.030	0.0125	0.0012	0.00734	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	16/12/2013	4.54	11.0	8.59	8.13	1397	1350	1.2	787	769	70.2	6.4	0.33	765	1.97	0.192	1.25	0.63	0.034	0.0148	0.0036	0.00925	<0.0010	<0.0050	<0.10	0.00061
KV-43	Bellekeno 625 Treatment Pond Decant	23/12/2013	2.95	10.4	8.91	8.09	1492	1320	1.7	737	749	47.5	5.9	0.22	707	1.87	0.142	1.25	0.52	<0.030	0.0135	0.0018	0.00827	<0.0010	<0.0050	<0.10	0.00031
KV-43	Bellekeno 625 Treatment Pond Decant	31/12/2013	4.37	4.2	8.49	8.12	1318	1250	1.1	699	677	32.6	5.4	0.30	680	1.79	0.126	1.15	<0.50	<0.030	0.0116	0.0016	0.00674	<0.0010	<0.0050	<0.10	0.00013
KV-43	Bellekeno 625 Treatment Pond Decant	07/01/2014	0.80	7.0	8.72	8.19	1236	1270	1.2	727	716	48.8	5.4	<0.20	700	1.51	0.098	1.17	0.82	0.0063	0.0101	0.00173	0.00634	<0.00010	<0.00050	<0.010	0.000501
KV-43	Bellekeno 625 Treatment Pond Decant	13/01/2014	5.73	5.1	8.74	8.17	1361	1250	-0.1	745	723	40.9	6.7	<0.20	704	1.57	0.073	1.17	0.71	<0.030	0.0094	0.0010	0.00423	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	21/01/2014	6.03	10.2	8.16	8.02	1434	1320	0	737	754	78.4	7.3	<0.20	710	1.69	0.067	1.15	<0.50	<0.030	0.0093	0.0013	0.00705	<0.0010	<0.0050	<0.10	0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	28/01/2014	6.08	7.7	8.32	8.13	1570	1290	0.9	831	811	121	6.4	<0.20	722	1.62	0.052	1.07	<0.50	<0.030	0.0093	0.0012	0.0107	<0.0010	<0.0050	<0.10	0.00061
KV-43	Bellekeno 625 Treatment Pond Decant	04/02/2014	6.12	8.4	8.41	8.04	1460	1280	1	728	754	78.9	5.3	<0.20	720	1.54	0.060	1.08	<0.50	<0.030	0.0083	0.0012	0.00565	<0.0010	<0.0050	<0.10	0.00012
KV-43	Bellekeno 625 Treatment Pond Decant	11/02/2014		7.8	8.75	8.10	1400	1190	0.1	769	747	65.9	5.3	<0.20	726	1.38	0.049	1.08	0.57	0.0130	0.00755	0.00126	0.00440	<0.00010	<0.00050	<0.010	0.000111
KV-43	Bellekeno 625 Treatment Pond Decant	18/02/2014	0	4.2	8.28	7.87	1380	1210	0.2	764	768	77.1	<5.0	<0.20	677	1.43	0.042	1.00	<0.50	<0.030	0.0070	0.0010	0.00408	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	24/02/2014	5.53	5.8	8.42	8.20	1436	1240	1.4	743	765	85.7	<5.0	<0.20	704	1.42	0.035	1.02	0.59	<0.030	0.0071	0.0010	0.00456	<0.0010	<0.0050	<0.10	0.00012
KV-43	Bellekeno 625 Treatment Pond Decant	04/03/2014	5.53	6.4	8.58	8.20	1350	1230	1.2	764	759	49.1	<5.0	<0.20	728	1.38	0.031	1.03	<0.50	<0.030	0.0068	0.0010	0.00374	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	11/03/2014	5.55	10.8	8.47	8.28	1256	1210	1.6	769	781	66.0	<5.0	0.20	705	1.23	0.032	0.981	<0.50	0.0142	0.00716	0.00121	0.00424	<0.00010	<0.00050	<0.010	0.000106
KV-43	Bellekeno 625 Treatment Pond Decant	21/03/2014	0.55	6.2	9.05	8.08	1579	1170	1.8	722	734	35.3	4.61	0.108	666	1.35	0.0332	0.969	<0.50	<0.030	0.0077	<0.0010	0.00473	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	27/03/2014	0.30	3.8	8.91	8.33	1341	1210	1.1	726	727	27.7	<5.0	<0.20	693	1.27	0.032	0.918	<0.50	<0.030	0.0068	<0.0010	0.00411	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	02/04/2014	0.32	6.8	8.7	8.34	1354	1190	2.2	768	739	48.0	<5.0	<0.20	710	1.32	0.030	0.919	<0.50	<0.030	0.0064	0.0011	0.00420	<0.0010	<0.0050	<0.10	0.00012
KV-43	Bellekeno 625 Treatment Pond Decant	16/04/2014	6.7	16.0	8.44	8.20	1392	1300	1.1	802	799	99.0	<5.0	0.21	720	1.45	0.031	0.861	<0.50	0.0239	0.00789	0.00174	0.00947	<0.00010	<0.00050	<0.010	0.00199
KV-43	Bellekeno 625 Treatment Pond Decant	22/04/2014	0.34	6.6	8.3	8.22	1327	1340	2.6	804	769	102	5.1	0.20	709	1.23	0.036	0.868	<0.50	<0.030	0.0104	0.0015	0.00972	<0.0010	<0.0050	<0.10	0.00056
KV-43	Bellekeno 625 Treatment Pond Decant	29/04/2014	1.78	5.5	8.42	8.11	1363	1290	4.2	743	747	72.7	6.5	<0.20	686	1.33	0.040	0.814	<0.50	<0.030	0.0089	0.0016	0.00534	<0.0010	<0.0050	<0.10	0.00016
KV-43	Bellekeno 625 Treatment Pond Decant	06/05/2014	8.53	6.4	8.14	8.13	1371	1330	11	773	767	87.0	13.0	<0.20	722	1.57	0.595	4.23	0.77	0.0190	0.0112	0.00248	0.00751	<0.00010	<0.00050	0.017	0.000775
KV-43	Bellekeno 625 Treatment Pond Decant	14/05/2014	0.3	9.8	9.11	8.14	1269	1340	9	695	713	36.4	10.3	<0.20	709	1.76	0.640	4.52	1.18	<0.030	0.0091	0.0014	0.00735	<0.0010	<0.0050	<0.10	0.00027
KV-43	Bellekeno 625 Treatment Pond Decant	20/05/2014	0.54	15.6	8.39	8.30	1475	1280	6.6	763	779	107	<5.0	0.21	675	1.13	0.126	1.68	0.53	<0.030	0.0070	0.0013	0.00805	<0.0010	<0.0050	<0.10	0.00084
KV-43	Bellekeno 625 Treatment Pond Decant	27/05/2014	0.94	13.0	8.51	8.01	1235	1110	10.1	730	724	90.3	<5.0	<0.20	633	0.828	0.022	1.05	0.64	<0.030	0.0061	0.0012	0.00810	<0.0010	<0.0050	<0.10	0.00123
KV-43	Bellekeno 625 Treatment Pond Decant	03/06/2014	4.15	21.4	8.51	8.36	1280	1200	7.9	733	757	91.3	<5.0	<0.20	655	0.916	0.020	0.878	1.16	<0.030	0.0069	0.0012	0.00858	<0.0010	<0.0050	<0.10	0.00108
KV-43	Bellekeno 625 Treatment Pond Decant	11/06/2014	2.56	14.6	8.52	8.34	1143	1200	10.2	739	750	89.2	5.3	<0.20	654	0.795	0.018	0.862	<0.50	<0.030	0.0061	0.0011	0.00594	<0.0010	<0.0050	<0.10	0.00063
KV-43	Bellekeno 625 Treatment Pond Decant	17/06/2014	3.59	6.0	8.55	8.05		1110	9.9	674	699	83.0	<5.0	<0.20	610	0.644	0.024	0.987	<0.50	0.0076	0.00500	0.00138	0.00610	<0.00010	<0.00050	<0.010	0.000281
KV-43	Bellekeno 625 Treatment Pond Decant	24/06/2014	2.04	2.2	8.56	8.07		1090	13.2	617	647	31.2	5.0	<0.20	617	0.614	0.022	0.987	0.59	<0.030	0.0053	<0.0010	0.00497	<0.0010	<0.0050	<0.10	0.00015
KV-43	Bellekeno 625 Treatment Pond Decant	08/07/2014	9.8	16.8	8.48	7.94	1210	1170	11.1	744	729	42.6	6.4	<0.20	686	0.896	0.082	1.29	0.82	<0.030	0.0065	0.0019	0.00618	<0.0010	<0.0050	<0.10	0.00035

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Discharge (Flow)	Total Suspended Solids	pH (field)	pH (lab)	Specific Conductance (field)	Specific Conductance (lab)	Temperature (field)	Hardness (from total)	Hardness (from dissolved)	Alkalinity, total	Chloride	Fluoride	Sulphate, dissolved	Ammonia (N)	Nitrite (N)	Nitrate (N)	Dissolved Organic Carbon	Aluminum (Al), total	Antimony (Sb), total	Arsenic (As), total	Barium (Ba), total	Beryllium (Be), total	Bismuth (Bi), total	Boron (B), total	Cadmium (Cd), total
			L/s	mg/L	pH units	pH units	µS/cm	µS/cm	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	mg/L	mg/L	mg/L	mg/L	mg/L
MMER Grab				30	6.0-9.5	6.0-9.5																1					
MMER Max Monthly Mean				15																		0.5					
KV-43	Bellekeno 625 Treatment Pond Decant	15/07/2014	3.22	9.6	8.54	8.15	1223	1190	12.6	697	706	45.6	<5.0	<0.20	664	0.730	0.040	1.00	0.54	<0.030	0.0059	0.0016	0.00601	<0.0010	<0.0050	<0.10	0.00027
KV-43	Bellekeno 625 Treatment Pond Decant	22/07/2014	3.60	3.0	8.47	8.17	1053	1190	14.3	667	707	45.3	<5.0	<0.20	650	0.676	0.023	0.783	0.59	0.0063	0.00569	0.00128	0.00547	<0.00010	<0.00050	<0.010	0.000122
KV-43	Bellekeno 625 Treatment Pond Decant	30/07/2014	0.30	2.8	8.30	7.91	1215	1170	12.0	657	689	45.5	<5.0	<0.20	634	0.576	0.022	0.788	<0.50	<0.030	0.0053	0.0011	0.00496	<0.0010	<0.0050	<0.10	0.00011
KV-43	Bellekeno 625 Treatment Pond Decant	05/08/2014	0.30	1.0	8.52	7.88	1033	1110	14.5	687	692	42.0	5.9	<0.20	624	0.538	0.029	0.818	0.69	0.0088	0.00548	0.00097	0.00469	<0.00010	<0.00050	<0.010	0.000269
KV-43	Bellekeno 625 Treatment Pond Decant	13/08/2014	1.00	8.8	8.33	8.19	1194	1380	12.9	740	752	48.7	7.9	<0.20	694	0.808	0.143	1.97	0.61	<0.030	0.0063	0.0014	0.00651	<0.0010	<0.0050	<0.10	0.00019
KV-43	Bellekeno 625 Treatment Pond Decant	19/08/2014	1.00	14.2	8.61	8.03	1313	1360	11.1	743	750	66.5	9.4	<0.20	685	0.937	0.258	3.25	0.77	<0.030	0.0059	0.0017	0.00770	<0.0010	<0.0050	<0.10	0.00084
KV-43	Bellekeno 625 Treatment Pond Decant	26/08/2014	9.00	3.6	8.38	8.31	1536	1400	9.9	749	748	106	5.4	0.23	691	0.811	0.079	1.59	0.79	0.0078	0.00585	0.00250	0.00752	<0.00010	<0.00050	<0.010	0.00132
KV-43	Bellekeno 625 Treatment Pond Decant	03/09/2014	0.3	10.8	8.86	8.10	1277	1430	7.2	865	862	109	5.1	<0.20	751	0.684	0.022	0.845	0.56	<0.030	0.0047	<0.0010	0.00637	<0.0010	<0.0050	<0.10	0.00011
KV-43	Bellekeno 625 Treatment Pond Decant	10/09/2014	3.70	13.8	8.74	8.39	1333	1490	5.5	790	786	37.3	6.0	<0.20	768	0.783	0.097	1.84	0.65	<0.030	0.0049	<0.0010	0.00481	<0.0010	<0.0050	<0.10	0.00022
KV-43	Bellekeno 625 Treatment Pond Decant	16/09/2014	3.40	12.4	8.50	8.26	1391	1620	8.4	800	814	50.3	10.2	<0.20	777	0.911	0.222	3.60	0.57	0.0073	0.00527	0.00091	0.00623	<0.00010	<0.00050	0.016	0.000333
KV-43	Bellekeno 625 Treatment Pond Decant	26/09/2014	9.41	10.2	8.90	8.08	1484	1400	3.4	838	824	73.1	10.3	<0.20	799	1.01	0.256	4.51	0.81	<0.030	0.0059	0.0011	0.00700	<0.0010	<0.0050	<0.10	0.00034
KV-43	Bellekeno 625 Treatment Pond Decant	30/09/2014	0.76	14.8	8.88	8.12	1319	1260	2.3	876	869	80.4	7.7	<0.20	769	0.721	0.059	1.75	0.66	<0.030	0.0054	0.0011	0.00690	<0.0010	<0.0050	<0.10	0.00050
KV-43	Bellekeno 625 Treatment Pond Decant	08/10/2014	3.92	11.6	8.78	8.18	1497	1400	2.8	910	888	83.3	9.0	<0.20	818	0.983	0.184	3.85	3.13	<0.030	0.0058	0.0011	0.00717	<0.0010	<0.0050	<0.10	0.00041
KV-43	Bellekeno 625 Treatment Pond Decant	14/10/2014	3.78	7.0	8.75	8.20	1574	1410	1.1	908	916	101	8.6	<0.20	816	0.866	0.170	3.45	3.09	<0.030	0.0058	<0.0010	0.00611	<0.0010	<0.0050	<0.10	0.00033
KV-43	Bellekeno 625 Treatment Pond Decant	23/10/2014	10.90	8.4	9.06	8.24	1518	1580	3.4	876	886	68.9	7.2	<0.20	820	0.764	0.117	2.83	2.28	<0.030	0.0057	<0.0010	0.00615	<0.0010	<0.0050	<0.10	0.00043
KV-43	Bellekeno 625 Treatment Pond Decant	28/10/2014	0.3	1.6	9.06	7.80	1537	1630	2.3	888	871	68.0	7.2	<0.20	842	0.811	0.118	2.73	1.77	0.0034	0.00571	0.00074	0.00555	<0.00010	<0.00050	0.011	0.000160
KV-43	Bellekeno 625 Treatment Pond Decant	04/11/2014	3.34	3.6	8.84	8.22	1570	1580	2	902	905	90.7	<5.0	<0.20	816	0.621	0.050	1.40	0.53	<0.030	0.0049	<0.0010	0.00586	<0.0010	<0.0050	<0.10	0.00019
KV-43	Bellekeno 625 Treatment Pond Decant	11/11/2014	3.19	3.0	8.80	8.18	1555	1680	2.1	919	919	103	<10	<0.40	865	0.702	0.061	1.32	0.86	<0.030	0.0048	<0.0010	0.00604	<0.0010	<0.0050	<0.10	0.00043
KV-43	Bellekeno 625 Treatment Pond Decant	18/11/2014	0.30	8.6	8.68	8.01	1397	1630	2.4	943	955	102	7.2	<0.20	853	0.647	0.036	1.16	<0.50	0.0044	0.00487	0.00084	0.00626	<0.00010	<0.00050	<0.010	0.000482
KV-43	Bellekeno 625 Treatment Pond Decant	27/11/2014	13.30	9.2	9.37	8.06	1433	1570	1.1	891	890	65.3	<5.0	<0.20	823	0.666	0.031	1.05	<0.50	<0.030	0.0046	<0.0010	0.00540	<0.0010	<0.0050	<0.10	0.00027
KV-43	Bellekeno 625 Treatment Pond Decant	04/12/2014	3.00	15.4	8.8	8.03	1509	1540	1.8	916	922	82.1	6.9	<0.20	867	0.668	0.023	1.02	<0.50	<0.030	0.0045	<0.0010	0.00584	<0.0010	<0.0050	<0.10	0.00029
KV-43	Bellekeno 625 Treatment Pond Decant	09/12/2014	0.30	3.6	8.91	8.48	1387	1390	2.6	894	892	45.7	<5.0	<0.20	817	0.639	0.017	0.956	<0.50	0.0032	0.00424	0.00059	0.00483	<0.00010	<0.00050	<0.010	0.000239
KV-43	Bellekeno 625 Treatment Pond Decant	15/12/2014	11.20	23.8	9.43	8.24	1562	1530	2.7	896	880	49.0	6.5	<0.20	822	0.633	0.024	0.923	<0.50	<0.030	0.0043	0.0010	0.00548	<0.0010	<0.0050	<0.10	0.00113
KV-43	Bellekeno 625 Treatment Pond Decant	22/12/2014	9.34	10.0	8.96	8.10	1634	1500	2.5	950	949	80.0	6.5	<0.20	863	0.645	0.018	0.911	<0.50	<0.030	0.0044	<0.0010	0.00605	<0.0010	<0.0050	<0.10	0.00038
KV-43	Bellekeno 625 Treatment Pond Decant	02/01/2015	2.97	4.0	8.86	8.25	1536	1420	0.4	890	885	44.4	<5.0	0.36	840	0.640	0.010	0.798	<0.50	<0.030	0.0039	<0.0010	0.00481	<0.0010	<0.0050	<0.10	0.00018
KV-43	Bellekeno 625 Treatment Pond Decant	06/01/2015	2.87	12.2	8.86	8.24	1567	1520	1.5	921	903	41.7	4.7	0.171	815	0.658	0.0105	0.778	<0.50	<0.030	0.0040	<0.0010	0.00494	<0.0010	<0.0050	<0.10	0.00029
KV-43	Bellekeno 625 Treatment Pond Decant	18/01/2015	2.78	19.4	8.93	7.99	1538	1540	2.3	929	955	101	4.2	0.27	827	0.564	0.0073	0.729	0.66	<0.030	0.0041	<0.0010	0.00807	<0.0010	<0.0050	<0.10	0.00109
KV-43	Bellekeno 625 Treatment Pond Decant	21/01/2015	3.47	29.4	9.40	8.09	1450	1490	2.7	945	946	47.2	4.2	0.31	821	0.550	0.0107	0.734	<0.50	0.0037	0.00388	0.00074	0.00574	<0.00010	<0.00050	<0.010	0.000552
KV-43	Bellekeno 625 Treatment Pond Decant	29/01/2015	2.72	15.2	9.15	8.39	1526	1520	1	838	825	31.0	4.0	0.20	809	0.546	0.0082	0.679	<0.50	<0.030	0.0036	<0.0010	0.00427	<0.0010	<0.0050	<0.10	0.00019
KV-43	Bellekeno 625 Treatment Pond Decant	03/02/2015	2.96	14.2	9.05	8.15	1469	1560	1.5	881	875	38.3	3.9	0.24	807	0.617	0.0072	0.658	<0.50	<0.030	0.0037	<0.0010	0.00513	<0.0010	<0.0050	<0.10	0.00039
KV-43	Bellekeno 625 Treatment Pond Decant	15/02/2015	0.30	16.4	9.39	8.73	1391	1560	3.0	866	916	32.3	4.2	0.26	839	0.640	0.0088	0.633	0.60	0.0038	0.00362	0.00075	0.00485	<0.00010	<0.00050	<0.010	0.000408
KV-43	Bellekeno 625 Treatment Pond Decant	18/02/2015	2.77	24.2	8.8	8.41	1418	1550	3.5	867	865	35.7	<5.0	0.32	836	0.591	0.011	0.620	<0.50	<0.030	0.0035	<0.0010	0.00513	<0.0010	<0.0050	<0.10	0.00055
KV-43	Bellekeno 625 Treatment Pond Decant	24/02/2015	2.55	2.8	9.04	8.32	1532	1490	1.7	802	822	30.4	4.0	0.162	770	0.606	0.0065	0.584	<0.50	<0.030	0.0033	<0.0010	0.00427	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	03/03/2015	2.47	8.8	8.99	8.58	1516	1440	2.5	886	905	36.8	4.1	0.25	841	0.651	0.0084	0.609	<0.50	<0.030	0.0032	<0.0010	0.00506	<0.0010	<0.0050	<0.10	0.00022
KV-43	Bellekeno 625 Treatment Pond Decant	12/03/2015	2.60	9.0	9.21	8.14	1608	1530	2.5	914	924	66.9	4.3	0.23	859	0.623	0.0075	0.592	<0.50	0.0043	0.00365	0.00106	0.00617	<0.00010	<0.00050	<0.010	0.000390
KV-43	Bellekeno 625 Treatment Pond Decant	16/03/2015	2.34	12.6	8.94	8.13	1754	1550	2.0	917	899	105	4.3	0.32	840	0.596	0.0059	0.584	0.54	0.0042	0.00360	0.00131	0.00729	<0.00010	<0.00050	<0.010	0.000517
KV-43	Bellekeno 625 Treatment Pond Decant	24/03/2015	2.40	3.6	8.64	8.29	1652	1500	2.7	932	958	83.1	5.0	0.19	853	0.701	0.0075	0.576	<0.50	<0.030	0.0033	<0.0010	0.00573	<0.0010	<0.0050	<0.10	0.00011
KV-43	Bellekeno 625 Treatment Pond Decant	31/03/2015	2.35	13.8	8.74	8.37	1579	1470	3.1	904	925	72.2	5.1	0.21	853	0.616	0.0087	0.570	<0.50	<0.030	0.0030	0.0011	0.00603	<0.0010	<0.0050	<0.10	0.00027
KV-43	Bellekeno 625 Treatment Pond Decant	12/04/2015	2.12	2.4	9.09	8.06	1472	1410	4.6	825	858	41.7	5.1	0.11	843	0.554	0.0107	0.555	<0.50	0.0035	0.00284	0.00087	0.00528	<0.00010	<0.000050	<0.010	0.000100
KV-43	Bellekeno 625 Treatment Pond Decant	14/04/2015	2.19	1.4	9.01	8.25	1481	1430	4.0	884	903	44.2	4.1	0.12	840	0.560	0.0089	0.551	<0.50	0.0033	0.00279	0.00087	0.00532	<0.00010	<0.000050	<0.010	0.0000906
KV-43	Bellekeno 625 Treatment Pond Decant	21/04/2015	2.26	8.6	8.84	8.56	1507	1400	6	843	859	35.7	4.8	0.20	837	0.555	0.0133	0.542	<0.50	<0.030	0.0028	<0.0010	0.00505	<0.0010	<0.0050	<0.10	0.00017

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Discharge (Flow)	Total Suspended Solids	pH (field)	pH (lab)	Specific Conductance (field)	Specific Conductance (lab)	Temperature (field)	Hardness (from total)	Hardness (from dissolved)	Alkalinity, total	Chloride	Fluoride	Sulphate, dissolved	Ammonia (N)	Nitrite (N)	Nitrate (N)	Dissolved Organic Carbon	Aluminum (Al), total	Antimony (Sb), total	Arsenic (As), total	Barium (Ba), total	Beryllium (Be), total	Bismuth (Bi), total	Boron (B), total	Cadmium (Cd), total
			L/s	mg/L	pH units	pH units	µS/cm	µS/cm	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	mg/L	mg/L	mg/L	mg/L	mg/L
MMER Grab				30	6.0-9.5	6.0-9.5																1					
MMER Max Monthly Mean				15																		0.5					
KV-43	Bellekeno 625 Treatment Pond Decant	28/04/2015	2.28	2.6	8.73	8.29	1529	1440	5.8	893	879	39.0	4.9	0.19	846	0.490	0.0125	0.556	<0.50	<0.030	0.0030	0.0010	0.00573	<0.0010	<0.0050	<0.10	0.00016
KV-43	Bellekeno 625 Treatment Pond Decant	06/05/2015	2.12	8.0	9.21	8.60	1399	1450	6.8	866	851	29.7	4.8	0.20	853	0.502	0.0107	0.559	<0.50	0.0044	0.00266	0.00096	0.00490	<0.00010	<0.000050	<0.010	0.0000979
KV-43	Bellekeno 625 Treatment Pond Decant	12/05/2015	1.93	7.2	9.44	8.54	1337	1420	12	845	855	18.8	5.5	0.147	829	0.492	0.0726	0.963	0.64	0.0033	0.00272	0.00069	0.00478	<0.00010	<0.000050	<0.010	0.0000460
KV-43	Bellekeno 625 Treatment Pond Decant	20/05/2015	3.84	21.4	8.70	8.27	1506	1450	11.6	928	913	41.2	4.8	0.18	874	0.500	0.0141	0.584	<0.50	<0.030	0.0021	<0.0010	0.00449	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	26/05/2015	3.51	4.4	8.42	8.12	1274	1260	14.2	761	764	41.6	3.7	0.18	713	0.369	0.0504	0.985	0.76	<0.030	0.0022	0.0014	0.00512	<0.0010	<0.0050	<0.10	0.00019
KV-43	Bellekeno 625 Treatment Pond Decant	28/05/2015																									
KV-43	Bellekeno 625 Treatment Pond Decant	07/06/2015	4.48	14.6	9.18	7.86	1260	1220	10.8	742	729	45.9	3.3	0.31	777	0.362	0.0099	0.751	1.15	0.0118	0.00247	0.00104	0.00517	<0.00010	<0.000050	<0.010	0.000114
KV-43	Bellekeno 625 Treatment Pond Decant	12/06/2015	2.82	7.0	8.61	8.18	1284	1260	10.4	771	799	72.6	3.6	0.232	676	0.379	0.0097	0.598	<0.50	<0.030	0.0023	0.0011	0.00518	<0.0010	<0.0050	<0.10	0.00015
KV-43	Bellekeno 625 Treatment Pond Decant	17/06/2015	3.03	7.8	8.59	8.18	1226	1330	12.9	753	766	44.5	3.5	0.175	669	0.401	0.0107	0.630	<0.50	<0.030	0.0022	0.0012	0.00496	<0.0010	<0.0050	<0.10	0.00021
KV-43	Bellekeno 625 Treatment Pond Decant	23/06/2015	2.91	6.0	8.55	8.06	1280	1270	14.1	741	772	43.1	3.8	0.28	682	0.341	0.0106	0.635	<0.50	<0.030	0.0024	0.0011	0.00504	<0.0010	<0.0050	<0.10	0.00017
KV-43	Bellekeno 625 Treatment Pond Decant	02/07/2015	2.63	2.8	8.98	7.94	1310	1290	11.2	730	760	39.4	4.0	0.169	679	0.356	0.0539	0.713	<0.50	0.0067	0.00236	0.00129	0.00491	<0.00010	<0.000050	0.010	0.000239
KV-43	Bellekeno 625 Treatment Pond Decant	12/07/2015	2.81	7.8	8.58	7.91	1255	1260	12.3	709	726	38.9	4.2	0.203	686	0.341	0.0537	0.726	<0.50	<0.030	0.0023	0.0010	0.00511	<0.0010	<0.0050	<0.10	0.00017
KV-43	Bellekeno 625 Treatment Pond Decant	16/07/2015	2.67	15.4	8.53	8.09	1278	1280	13.8	767	764	46.3	4.2	0.258	701	0.360	0.0268	0.655	<0.50	<0.030	0.0031	0.0027	0.00561	<0.0010	<0.0050	<0.10	0.00071
KV-43	Bellekeno 625 Treatment Pond Decant	21/07/2015	2.86	4.0	8.46	8.15	1320	1310	11.5	761	763	49.4	4.2	0.146	694	0.385	0.0477	0.746	<0.50	<0.030	0.0029	0.0011	0.00537	<0.0010	<0.0050	<0.10	0.00013
KV-43	Bellekeno 625 Treatment Pond Decant	29/07/2015	2.57	1.6	8.69	8.43	1328	1280	11.9	801	804	80.6	4.0	0.174	700	0.415	0.0128	0.567	0.60	0.0052	0.00279	0.00124	0.00577	<0.00010	<0.000050	<0.010	0.000169
KV-43	Bellekeno 625 Treatment Pond Decant	04/08/2015	2.88	2.2	8.85	7.90	1291	1270	13.8	810	836	73.2	3.6	0.145	681	0.375	0.0111	0.565	<0.50	0.0054	0.00274	0.00149	0.00592	<0.00010	<0.000050	<0.010	0.000276
KV-43	Bellekeno 625 Treatment Pond Decant	12/08/2015	3.07	9.6	8.37	8.11	1308	1340	10.7	784	811	90.4	3.6	0.140	697	0.352	0.0105	0.593	<0.50	<0.030	0.0026	0.0015	0.00554	<0.0010	<0.0050	<0.10	0.00028
KV-43	Bellekeno 625 Treatment Pond Decant	18/08/2015	2.82	6.8	8.46	7.97	1293	1260	10.8	768	811	71.7	3.7	0.183	696	0.349	0.0120	0.574	<0.50	<0.030	0.0025	0.0013	0.00494	<0.0010	<0.0050	<0.10	0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	26/08/2015	2.83	3.4	8.79	8.11	1344	1310	10.3	838	805	77.6	3.8	0.28	759	0.411	0.0106	0.594	0.54	0.0048	0.00266	0.00121	0.00548	<0.00010	<0.000050	0.010	0.000213
KV-43	Bellekeno 625 Treatment Pond Decant	02/09/2015	3.62	15.0	8.75	8.07	1499	1380	6.5	951	963	107	3.6	0.14	796	0.409	0.0079	0.606	0.96	0.0048	0.00276	0.00136	0.00665	<0.00010	<0.000050	<0.010	0.000482
KV-43	Bellekeno 625 Treatment Pond Decant	08/09/2015	3.65	14.6	8.70	8.35	1458	1440	5.9	928	934	111	3.5	0.16	814	0.428	0.0088	0.598	<0.50	<0.030	0.0024	<0.0010	0.00598	<0.0010	<0.0050	<0.10	0.00044
KV-43	Bellekeno 625 Treatment Pond Decant	14/09/2015	3.38	17.6	8.93	8.27	1494	1420	6	976	996	104	3.8	0.13	858	0.401	0.0075	0.579	<0.50	<0.030	0.0025	0.0012	0.00615	<0.0010	<0.0050	<0.10	0.00060
KV-43	Bellekeno 625 Treatment Pond Decant	21/09/2015	3.45	12.2	8.77	8.08	1592	1550	5.2	967	974	113	3.6	0.14	849	0.438	0.0067	0.566	0.53	<0.030	0.0031	0.0016	0.00645	<0.0010	<0.0050	<0.10	0.00069
KV-43	Bellekeno 625 Treatment Pond Decant	27/09/2015	3.63	10.0	8.53	8.26	1670	1600	3.6	1030	1040	111	3.6	0.14	875	0.450	0.0067	0.560	0.52	<0.030	0.0038	0.0011	0.00611	<0.0010	<0.0050	<0.10	0.00046
KV-43	Bellekeno 625 Treatment Pond Decant	29/09/2015	3.86	10.8	8.81	8.24	1787	1610	5.9	961	998	113	3.6	0.14	868	0.453	0.0092	0.572	<0.50	0.0058	0.00392	0.00098	0.00618	<0.00010	<0.000050	<0.010	0.000457
KV-43	Bellekeno 625 Treatment Pond Decant	06/10/2015	3.25	4.4	8.68	8.38	1595	1530	4.2	972	979	68.7	3.9	0.123	852	0.453	0.0077	0.569	<0.50	<0.030	0.0039	<0.0010	0.00474	<0.0010	<0.0050	<0.10	0.00017
KV-43	Bellekeno 625 Treatment Pond Decant	13/10/2015	3.50	20.6	8.72	8.32	1642	1620	4.0	1040	1040	94.9	3.8	0.16	875	0.425	<0.0050	0.612	<0.50	<0.030	0.0042	0.0012	0.00643	<0.0010	<0.0050	<0.10	0.00099
KV-43	Bellekeno 625 Treatment Pond Decant	20/10/2015	3.66	9.1	8.80	8.16	1494	1470	4.7	1030	1040	81.7	4.1	0.14	969	0.435	0.0073	0.743	0.58	0.0043	0.00440	0.00088	0.00524	<0.00010	<0.000050	0.011	0.000506
KV-43	Bellekeno 625 Treatment Pond Decant	28/10/2015	3.09	24.0	9.07	8.42	1501	1650	2.8	981	1010	46.2	4.0	0.108	910	0.404	0.0084	0.762	<0.50	<0.030	0.0039	<0.0010	0.00476	<0.0010	<0.0050	<0.10	0.00116
KV-43	Bellekeno 625 Treatment Pond Decant	03/11/2015	3.48	8.8	8.78	8.29	1736	1700	1.8	1070	1100	88.5	<5.0	<0.20	994	0.438	<0.010	0.777	<0.50	<0.030	0.0040	<0.0010	0.00605	<0.0010	<0.0050	<0.10	0.00032
KV-43	Bellekeno 625 Treatment Pond Decant	09/11/2015	0.53	2.4	8.14	8.22	1742	1710	1.9	1080	1100	89.5	3.9	0.14	981	0.452	0.0103	0.726	<0.50	<0.030	0.0046	<0.0010	0.00573	<0.0010	<0.0050	<0.10	<0.00010
KV-43	Bellekeno 625 Treatment Pond Decant	24/11/2015	0.20	8.8	8.65	8.70	1028	915	0.8	613	619	32.6	1.6	0.083	540	0.0890	0.0082	1.12	0.92	0.0044	0.00170	0.00035	0.00252	<0.00010	<0.000050	<0.010	0.00267
KV-43	Bellekeno 625 Treatment Pond Decant	25/11/2015	0.25	4.4	9.35	8.64	982	899	1.2	610	605	43.2	1.6	0.077	524	0.0863	0.0117	1.09	0.89	0.0040	0.00178	0.00036	0.00257	<0.00010	<0.000050	<0.010	0.00110

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Calcium (Ca), total mg/L	Chromium (Cr), total mg/L	Cobalt (Co), total mg/L	Copper (Cu), total mg/L	Iron (Fe), total mg/L	Lead (Pb), total mg/L	Lithium (Li), total mg/L	Magnesium (Mg), total mg/L	Manganese (Mn), total mg/L	Mercury (Hg), total mg/L	Molybdenum (Mo), total mg/L	Nickel (Ni), total mg/L	Phosphorus (P), total mg/L	Potassium (K), total mg/L	Selenium (Se), total mg/L	Silicon (Si), total mg/L	Silver (Ag), total mg/L	Sodium (Na), total mg/L	Strontium (Sr), total mg/L	Sulphur (S), total mg/L	Thallium (Tl), total mg/L	Tin (Sn), total mg/L	Titanium (Ti), total mg/L
MMER Grab						0.6		0.4						1												
MMER Max Monthly Mean						0.3		0.2						0.5												
KV-43	Bellekeno 625 Treatment Pond Decant	09/09/2013	146	0.00022	0.00082	0.00079	0.017	0.0161	0.0231	36.7	0.303	<0.000010	0.00533	0.00621	<0.050	6.02	0.00286	3.41	0.000076	21.6	0.533	153	0.000103	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	10/09/2013	154	<0.0010	<0.0010	<0.0050	0.013	0.0158	0.0228	42.7	0.316	<0.000050	0.00537	0.0064	<0.050	6.47	0.0027	3.48	<0.00010	21.3	0.553	170	<0.00010	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	01/10/2013	206	0.00012	0.00161	0.00235	0.020	0.00757	0.0353	48.8	0.278	<0.000010	0.00600	0.0111	<0.050	10.4	0.00266	3.49	0.000057	41.4	0.865	217	0.000186	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	08/10/2013	191	<0.0010	0.0015	<0.0050	0.027	0.00336	0.0265	46.1	0.216	<0.000050	0.00526	0.0123	<0.050	7.04	0.0027	3.63	<0.00010	28.0	0.767	198	0.00018	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	15/10/2013	204	<0.0010	0.0018	<0.0050	0.027	0.00484	0.0297	55.3	0.225	<0.000050	0.00614	0.0172	<0.050	7.12	0.0022	3.70	<0.00010	30.5	0.850	217	0.00024	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	18/10/2013																								
KV-43	Bellekeno 625 Treatment Pond Decant	22/10/2013	201	0.00017	0.00168	0.00083	0.025	0.00476	0.0322	55.8	0.186	<0.000010	0.00590	0.0156	<0.050	8.09	0.00198	3.79	0.000021	27.8	0.825	230	0.000212	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	05/11/2013	211	0.00014	0.00158	0.00168	0.126	0.0656	0.0325	60.0	0.228	<0.000010	0.00512	0.0164	<0.050	8.16	0.00181	3.74	0.000310	26.2	0.798	241	0.000211	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	12/11/2013	211	<0.0010	0.0019	<0.0050	0.032	0.00270	0.0357	59.5	0.255	<0.000050	0.00518	0.0185	<0.050	8.68	0.0017	3.79	<0.00010	29.7	0.850	240	0.00023	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	19/11/2013	202	<0.0010	0.0015	<0.0050	0.016	0.00220	0.0346	60.0	0.172	<0.000050	0.00491	0.0175	<0.050	6.96	0.0018	3.83	<0.00010	25.7	0.796	242	0.00022	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	27/11/2013	208	<0.0010	0.0024	<0.0050	0.038	0.00266	0.0308	55.6	0.383	<0.000050	0.00456	0.0194	<0.050	5.88	0.0015	3.61	<0.00010	23.6	0.821	221	0.00020	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	03/12/2013	209	0.00015	0.00138	0.00056	0.040	0.0150	0.0303	52.6	0.145	<0.000010	0.00437	0.0136	<0.050	6.17	0.00161	3.53	0.000056	22.1	0.769	236	0.000187	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	10/12/2013	201	<0.0010	0.0014	<0.0050	<0.010	0.00056	0.0318	58.7	0.145	<0.000050	0.00452	0.0160	<0.050	5.79	0.0015	3.72	<0.00010	23.2	0.739	226	0.00020	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	16/12/2013	217	<0.0010	0.0018	<0.0050	0.168	0.0674	0.0312	59.7	0.298	<0.000050	0.00437	0.0164	<0.050	5.74	0.0014	3.62	0.00028	23.2	0.743	234	0.00021	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	23/12/2013	199	<0.0010	0.0016	<0.0050	0.062	0.0211	0.0301	58.2	0.252	<0.000050	0.00419	0.0137	<0.050	5.49	0.0014	3.57	<0.00010	21.6	0.712	238	0.00020	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	31/12/2013	188	<0.0010	0.0012	<0.0050	0.041	0.0111	0.0336	55.9	0.122	<0.000050	0.00438	0.0142	<0.050	5.43	0.0015	3.62	<0.00010	19.2	0.699	235	0.00018	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	07/01/2014	198	0.00011	0.00169	0.00074	0.097	0.00833	0.0264	56.2	0.296	<0.000010	0.00382	0.0149	<0.050	5.41	0.00120	3.53	0.000028	21.9	0.611	228	0.000180	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	13/01/2014	198	<0.0010	0.0018	<0.0050	0.018	0.00286	0.0308	61.0	0.275	<0.000050	0.00388	0.0155	<0.050	5.45	0.0011	3.75	<0.00010	20.3	0.526	244	0.00018	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	21/01/2014	202	<0.0010	0.0026	<0.0050	0.037	0.00241	0.0292	56.5	0.412	<0.000050	0.00379	0.0188	<0.050	5.19	0.0011	3.55	<0.00010	21.4	0.645	229	0.00019	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	28/01/2014	235	<0.0010	0.0038	<0.0050	0.043	0.00197	0.0283	59.2	0.725	<0.000050	0.00357	0.0226	<0.050	5.06	<0.0010	3.78	<0.00010	20.7	0.714	235	0.00020	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	04/02/2014	196	<0.0010	0.0030	<0.0050	0.027	0.00108	0.0290	58.2	0.430	<0.000050	0.00354	0.0226	<0.050	4.84	0.0011	3.77	<0.00010	20.7	0.573	233	0.00018	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	11/02/2014	213	<0.00010	0.00269	<0.00050	0.040	0.00184	0.0315	57.9	0.322	<0.000010	0.00359	0.0219	<0.050	5.08	0.00112	4.10	<0.000010	20.3	0.590	239	0.000187	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	18/02/2014	209	<0.0010	0.0027	<0.0050	0.025	0.00092	0.0285	58.7	0.351	<0.000050	0.00318	0.0220	<0.050	4.85	<0.0010	3.84	<0.00010	19.8	0.525	223	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	24/02/2014	203	<0.0010	0.0030	<0.0050	0.027	0.00114	0.0313	57.4	0.396	<0.000050	0.00345	0.0234	<0.050	5.13	<0.0010	3.73	<0.00010	19.3	0.562	218	0.00018	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	04/03/2014	205	<0.0010	0.0026	<0.0050	0.029	0.00121	0.0311	61.1	0.309	<0.000050	0.00319	0.0224	<0.050	5.54	<0.0010	3.89	<0.00010	19.9	0.533	240	0.00018	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	11/03/2014	211	0.00024	0.00274	<0.00050	0.042	0.00162	0.0337	58.7	0.333	<0.000010	0.00304	0.0225	<0.050	4.83	0.00064	3.81	<0.000010	20.9	0.526	235	0.000178	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	21/03/2014	201	<0.0010	0.0018	<0.0050	<0.010	0.00112	0.0286	53.5	0.206	<0.000050	0.00330	0.0171	<0.050	4.91	<0.0010	3.65	<0.00010	19.8	0.601	235	0.00019	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	27/03/2014	210	<0.0010	0.0010	<0.0050	0.019	0.00089	0.0309	49.0	0.134	<0.000050	0.00299	0.0100	<0.050	4.66	<0.0010	3.28	<0.00010	19.2	0.611	241	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	02/04/2014	217	<0.0010	0.0019	<0.0050	0.048	0.00211	0.0294	54.8	0.260	<0.000050	0.00296	0.0153	<0.050	4.79	<0.0010	3.58	<0.00010	18.5	0.590	242	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	16/04/2014	226	0.00021	0.00387	0.00122	0.081	0.0280	0.0270	57.8	0.693	<0.000010	0.00313	0.0236	<0.050	4.79	0.00036	3.77	0.000039	18.6	0.691	234	0.000201	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	22/04/2014	225	<0.0010	0.0039	<0.0050	0.068	0.0113	0.0294	58.8	0.773	<0.000050	0.00299	0.0228	<0.050	4.90	<0.0010	3.83	<0.00010	19.2	0.687	243	0.00021	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	29/04/2014	208	<0.0010	0.0028	<0.0050	0.023	0.00518	0.0300	54.5	0.402	<0.000050	0.00275	0.0206	<0.050	4.58	<0.0010	3.60	<0.00010	17.9	0.575	230	0.00019	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	06/05/2014	222	<0.00010	0.00285	0.00157	0.088	0.0319	0.0343	53.1	0.490	<0.000010	0.00274	0.0195	<0.050	8.52	0.00087	3.67	0.000091	32.4	0.674	247	0.000216	0.00020	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	14/05/2014	213	<0.0010	0.0017	<0.0050	0.038	0.00845	0.0365	39.8	0.218	<0.000050	0.00252	0.0139	<0.050	8.27	0.0011	3.23	<0.00010	30.7	0.703	231	0.00019	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	20/05/2014	220	<0.0010	0.0034	<0.0050	0.121	0.00485	0.0276	51.8	0.715	<0.000050	0.00226	0.0209	<0.050	4.72	0.0050	3.88	<0.00010	17.4	0.654	222	0.00018	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	27/05/2014	207	<0.0010	0.0035	<0.0050	0.031	0.00233	0.0233	51.5	0.791	<0.000050	0.00209	0.0234	<0.050	3.50	0.0095	3.98	<0.00010	15.1	0.602	201	0.00014	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	03/06/2014	206	<0.0010	0.0032	<0.0050	0.030	0.00259	0.0244	52.7	0.678	<0.000050	0.00207	0.0219	<0.050	3.75	0.0049	3.81	<0.00010	14.4	0.607	213	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	11/06/2014	213	<0.0010	0.0028	<0.0050	0.050	0.00272	0.0228	50.4	0.537	<0.000050	0.00211	0.0188	<0.050	3.85	0.0041	3.71	<0.00010	14.3	0.563	214	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	17/06/2014	190	<0.00010	0.00204	<0.00050	0.085	0.00255	0.0217	48.4	0.272	<0.000010	0.00169	0.0177	<0.050	3.34	0.00544	3.60	<0.000010	13.9	0.541	207	0.000133	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	24/06/2014	179	<0.0010	<0.0010	<0.0050	0.029	0.00429	0.0237	41.1	0.0967	<0.000050	0.00173	0.0108	<0.050	3.16	0.0081	3.17	<0.00010	13.0	0.652	196	0.00012	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	08/07/2014	209	<0.0010	0.0018	<0.0050	0.078	0.00822	0.0289	53.8	0.198	<0.000050	0.00214	0.0197	<0.050	4.37	0.0033	3.74	<0.00010	17.8	0.724	225	0.00017	<0.0010	<0.10

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Calcium (Ca), total mg/L	Chromium (Cr), total mg/L	Cobalt (Co), total mg/L	Copper (Cu), total mg/L	Iron (Fe), total mg/L	Lead (Pb), total mg/L	Lithium (Li), total mg/L	Magnesium (Mg), total mg/L	Manganese (Mn), total mg/L	Mercury (Hg), total mg/L	Molybdenum (Mo), total mg/L	Nickel (Ni), total mg/L	Phosphorus (P), total mg/L	Potassium (K), total mg/L	Selenium (Se), total mg/L	Silicon (Si), total mg/L	Silver (Ag), total mg/L	Sodium (Na), total mg/L	Strontium (Sr), total mg/L	Sulphur (S), total mg/L	Thallium (Tl), total mg/L	Tin (Sn), total mg/L	Titanium (Ti), total mg/L
MMER Grab						0.6		0.4						1												
MMER Max Monthly Mean						0.3		0.2						0.5												
KV-43	Bellekeno 625 Treatment Pond Decant	15/07/2014	196	<0.0010	0.0016	<0.0050	0.085	0.00330	0.0266	50.4	0.213	<0.000050	0.00190	0.0154	<0.050	3.90	0.0037	3.56	<0.00010	14.3	0.693	214	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	22/07/2014	187	<0.00010	0.00137	<0.00050	0.053	0.00245	0.0211	48.7	0.161	<0.000010	0.00175	0.0132	<0.050	3.57	0.00323	3.32	<0.000010	12.7	0.662	210	0.000136	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	30/07/2014	184	<0.0010	0.0012	<0.0050	0.023	0.00266	0.0228	47.8	0.102	<0.000050	0.00172	0.0139	<0.050	3.36	0.0039	3.39	<0.00010	13.1	0.635	201	0.00013	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	05/08/2014	193	<0.00010	0.00103	<0.00050	0.043	0.00175	0.0211	49.9	0.103	<0.000010	0.00174	0.0136	<0.050	3.13	0.00364	3.39	<0.000010	12.9	0.672	204	0.000123	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	13/08/2014	206	<0.0010	0.0018	<0.0050	0.069	0.00586	0.0275	54.9	0.207	<0.000050	0.00191	0.0157	<0.050	5.06	0.0021	3.54	<0.00010	19.6	0.738	228	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	19/08/2014	206	<0.0010	0.0018	<0.0050	0.121	0.00623	0.0279	55.6	0.288	<0.000050	0.00172	0.0152	<0.050	6.12	0.0033	3.45	<0.00010	23.0	0.694	227	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	26/08/2014	204	<0.00010	0.00266	0.00067	0.249	0.0113	0.0239	58.1	0.461	<0.000010	0.00181	0.0209	<0.050	3.83	0.00363	3.50	0.000021	17.8	0.712	233	0.000156	0.00012	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	03/09/2014	230	<0.0010	0.0026	<0.0050	<0.010	<0.00050	0.0275	70.5	0.513	<0.000050	0.00171	0.0207	<0.050	3.29	0.0041	3.35	<0.00010	14.2	0.702	253	0.00014	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	10/09/2014	220	<0.0010	0.0015	<0.0050	0.091	0.00263	0.0277	58.4	0.214	<0.000050	0.00170	0.0121	<0.050	4.31	0.0040	3.05	0.00015	17.2	0.723	246	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	16/09/2014	224	0.00014	0.00180	<0.00050	0.099	0.00381	0.0330	58.5	0.274	<0.000010	0.00172	0.0140	<0.050	6.17	0.00340	3.10	0.000020	25.7	0.776	245	0.000161	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	26/09/2014	236	<0.0010	0.0023	<0.0050	0.079	0.00458	0.0319	60.7	0.332	<0.000050	0.00181	0.0172	<0.050	7.30	0.0029	3.19	<0.00010	28.6	0.751	259	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	30/09/2014	238	<0.0010	0.0024	<0.0050	0.103	0.00685	0.0292	68.2	0.397	<0.000050	0.00181	0.0186	<0.050	4.50	0.0029	3.29	<0.00010	17.6	0.757	258	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	08/10/2014	257	<0.0010	0.0025	<0.0050	0.108	0.00262	0.0382	65.0	0.417	<0.000050	0.00260	0.0186	<0.050	7.39	0.0034	3.52	<0.00010	27.2	0.787	276	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	14/10/2014	254	<0.0010	0.0023	<0.0050	0.069	0.00173	0.0343	66.6	0.397	<0.000050	0.00175	0.0170	<0.050	6.64	0.0034	3.20	<0.00010	21.7	0.782	267	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	23/10/2014	244	<0.0010	0.0021	<0.0050	0.054	0.00167	0.0337	65.1	0.350	<0.000050	0.00180	0.0179	<0.050	6.22	0.0030	3.17	<0.00010	21.9	0.802	271	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	28/10/2014	250	0.00013	0.00188	0.00057	0.036	0.000840	0.0326	63.8	0.290	<0.000010	0.00196	0.0167	<0.050	5.93	0.00313	3.14	<0.000010	21.1	0.877	275	0.000167	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	04/11/2014	257	<0.0010	0.0024	<0.0050	0.045	0.00066	0.0314	63.4	0.435	<0.000050	0.00191	0.0190	<0.050	4.47	0.0028	3.02	<0.00010	16.5	0.795	274	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	11/11/2014	258	<0.0010	0.0028	<0.0050	0.057	0.00104	0.0320	66.5	0.477	<0.000050	0.00195	0.0225	<0.050	4.59	0.0023	3.38	<0.00010	17.5	0.808	268	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	18/11/2014	261	0.00010	0.00299	<0.00050	0.069	0.00140	0.0291	70.9	0.523	<0.000010	0.00207	0.0237	<0.050	4.62	0.00228	3.40	0.000011	16.2	0.844	275	0.000172	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	27/11/2014	252	<0.0010	0.0023	<0.0050	0.050	0.00091	0.0335	63.3	0.361	<0.000050	0.00207	0.0200	<0.050	4.32	0.0020	3.09	<0.00010	16.6	0.866	274	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	04/12/2014	261	<0.0010	0.0026	<0.0050	0.035	0.00100	0.0317	64.0	0.453	<0.000050	0.00193	0.0212	<0.050	4.40	0.0018	3.01	<0.00010	16.2	0.864	275	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	09/12/2014	257	0.00011	0.00191	<0.00050	0.045	0.000737	0.0329	61.4	0.273	<0.000010	0.00191	0.0173	<0.050	4.20	0.00164	3.04	0.000011	15.3	0.857	268	0.000158	0.00011	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	15/12/2014	255	<0.0010	0.0024	<0.0050	0.063	0.00137	0.0334	62.6	0.395	<0.000050	0.00192	0.0205	<0.050	4.33	0.0017	3.08	<0.00010	16.6	0.869	275	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	22/12/2014	273	0.0032	0.0028	<0.0050	0.048	0.00098	0.0348	65.0	0.427	<0.000050	0.00193	0.0226	<0.050	4.42	0.0015	3.35	<0.00010	16.4	0.891	292	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	02/01/2015	260	<0.0010	0.0020	<0.0050	0.032	<0.00050	0.0315	58.7	0.251	<0.000050	0.00183	0.0188	<0.050	4.23	0.0013	3.27	<0.00010	15.7	0.867	274	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	06/01/2015	262	<0.0010	0.0019	<0.0050	0.047	0.00111	0.0312	64.9	0.253	<0.000050	0.00189	0.0176	<0.050	4.36	0.0013	3.19	<0.00010	15.7	0.889	286	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	18/01/2015	269	<0.0010	0.0038	<0.0050	0.052	0.00263	0.0306	62.2	0.788	<0.000050	0.00177	0.0232	<0.050	3.97	<0.0010	3.23	<0.00010	14.6	0.862	264	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	21/01/2015	275	<0.00010	0.00257	<0.00050	0.040	0.000972	0.0314	62.6	0.369	<0.000010	0.00181	0.0196	<0.050	4.15	0.00110	3.25	<0.000010	15.1	0.837	277	0.000152	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	29/01/2015	244	<0.0010	0.0014	<0.0050	0.027	<0.00050	0.0237	55.4	0.175	<0.000050	0.00178	0.0145	<0.050	4.12	<0.0010	3.03	<0.00010	14.4	0.840	269	0.00014	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	03/02/2015	258	<0.0010	0.0018	<0.0050	0.051	0.00093	0.0330	57.2	0.268	<0.000050	0.00180	0.0151	<0.050	4.22	<0.0010	3.21	<0.00010	16.0	0.877	275	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	15/02/2015	247	<0.00010	0.00139	<0.00050	0.050	0.00102	0.0342	60.4	0.210	<0.000010	0.00185	0.0132	<0.050	4.21	0.00045	3.01	<0.000010	16.3	0.856	276	0.000144	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	18/02/2015	250	<0.0010	0.0016	<0.0050	0.067	0.00169	0.0323	58.8	0.252	<0.000050	0.00188	0.0149	<0.050	4.20	<0.0010	3.05	<0.00010	15.0	0.875	275	0.00014	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	24/02/2015	230	<0.0010	0.0012	<0.0050	0.017	<0.00050	0.0332	55.4	0.153	<0.000050	0.00183	0.0140	<0.050	4.00	<0.0010	3.02	<0.00010	15.3	0.862	258	0.00014	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	03/03/2015	258	<0.0010	0.0015	<0.0050	0.036	0.00064	0.0319	58.4	0.212	<0.000050	0.00177	0.0143	<0.050	4.48	<0.0010	3.14	<0.00010	16.6	0.872	285	0.00014	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	12/03/2015	267	0.00018	0.00235	<0.00050	0.065	0.00322	0.0349	60.4	0.322	<0.000010	0.00190	0.0181	<0.050	4.54	0.00018	3.25	0.000014	16.3	0.910	285	0.000158	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	16/03/2015	262	<0.00010	0.00333	<0.00050	0.089	0.00171	0.0317	64.0	0.539	<0.000010	0.00191	0.0228	<0.050	4.27	0.00011	3.39	<0.000010	16.0	0.934	284	0.000167	<0.00010	<0.010
KV-43	Bellekeno 625 Treatment Pond Decant	24/03/2015	279	<0.0010	0.0026	<0.0050	0.032	<0.00050	0.0331	57.0	0.301	<0.000050	0.00192	0.0214	<0.050	4.17	<0.0010	3.26	<0.00010	16.7	0.922	266	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	31/03/2015	278	<0.0010	0.0022	<0.0050	0.058	0.00076	0.0345	51.1	0.313	<0.000050	0.00179	0.0165	<0.050	4.25	<0.0010	3.13	<0.00010	15.5	0.929	284	0.00014	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	12/04/2015	255	0.00011	0.00176	<0.00050	0.026	0.000399	0.0339	45.8	0.227	<0.0000050	0.00172	0.0146	<0.050	3.72	0.000083	2.84	<0.000010	15.7	0.901	245	0.000131	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	14/04/2015	271	0.00016	0.00179	<0.00050	0.026	0.000327	0.0339	50.1	0.231	<0.0000050	0.00176	0.0152	<0.050	4.06	0.000097	3.08	<0.000010	15.5	0.907	265	0.000139	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	21/04/2015	254	<0.0010	0.0016	<0.0050	0.033	0.00064	0.0322	51.0	0.191	<0.000050	0.00181	0.0139	<0.050	4.22	<0.0010	3.05	<0.00010	16.2	0.942	287	0.00013	<0.0010	<0.10

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Calcium (Ca), total mg/L	Chromium (Cr), total mg/L	Cobalt (Co), total mg/L	Copper (Cu), total mg/L	Iron (Fe), total mg/L	Lead (Pb), total mg/L	Lithium (Li), total mg/L	Magnesium (Mg), total mg/L	Manganese (Mn), total mg/L	Mercury (Hg), total mg/L	Molybdenum (Mo), total mg/L	Nickel (Ni), total mg/L	Phosphorus (P), total mg/L	Potassium (K), total mg/L	Selenium (Se), total mg/L	Silicon (Si), total mg/L	Silver (Ag), total mg/L	Sodium (Na), total mg/L	Strontium (Sr), total mg/L	Sulphur (S), total mg/L	Thallium (Tl), total mg/L	Tin (Sn), total mg/L	Titanium (Ti), total mg/L
MMER Grab						0.6		0.4						1												
MMER Max Monthly Mean						0.3		0.2						0.5												
KV-43	Bellekeno 625 Treatment Pond Decant	28/04/2015	279	<0.0010	0.0017	<0.0050	0.029	0.00088	0.0331	47.8	0.210	<0.000050	0.00189	0.0148	<0.050	4.12	<0.0010	3.13	<0.00010	16.1	1.01	284	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	06/05/2015	271	0.00015	0.00122	<0.00050	0.024	0.000675	0.0341	45.7	0.146	<0.0000050	0.00176	0.0123	<0.050	4.14	0.000079	3.02	<0.000010	15.7	0.964	284	0.000132	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	12/05/2015	268	0.00014	0.00059	0.00199	0.011	0.000187	0.0359	42.6	0.0641	<0.0000050	0.00192	0.00845	<0.050	4.59	0.000163	2.87	<0.000010	17.3	1.04	274	0.000137	0.00011	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	20/05/2015	279	<0.0010	0.0016	<0.0050	0.043	0.00073	0.0337	56.1	0.277	<0.000050	0.00157	0.0124	<0.050	3.97	<0.0010	3.05	<0.00010	13.4	0.911	304	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	26/05/2015	228	<0.0010	0.0013	<0.0050	0.052	0.00317	0.0249	46.5	0.188	<0.000050	0.00131	0.0110	<0.050	3.62	0.0075	3.07	<0.00010	12.8	0.768	231	0.00011	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	28/05/2015																								
KV-43	Bellekeno 625 Treatment Pond Decant	07/06/2015	218	0.00016	0.00204	0.00076	0.031	0.000993	0.0255	47.8	0.187	<0.0000050	0.00139	0.0189	<0.050	3.04	0.00495	3.43	<0.000010	12.0	0.723	227	0.000124	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	12/06/2015	226	<0.0010	0.0019	<0.0050	0.038	0.00062	0.0292	50.1	0.222	<0.000050	0.00138	0.0163	<0.050	3.19	0.0037	3.41	<0.00010	12.3	0.720	236	0.00012	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	17/06/2015	222	<0.0010	0.0016	<0.0050	0.042	0.00069	0.0263	48.1	0.201	<0.000050	0.00130	0.0141	<0.050	3.15	0.0038	3.36	<0.00010	11.8	0.702	230	0.00012	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	23/06/2015	215	<0.0010	0.0015	<0.0050	0.041	0.00076	0.0268	49.7	0.195	<0.000050	0.00138	0.0135	<0.050	3.25	0.0032	3.37	<0.00010	11.9	0.748	238	0.00013	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	02/07/2015	217	0.00010	0.00141	<0.00050	0.044	0.000862	0.0295	45.7	0.168	<0.0000050	0.00134	0.0134	<0.050	3.32	0.00261	3.11	<0.000010	12.6	0.740	216	0.000114	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	12/07/2015	211	<0.0010	0.0012	<0.0050	0.042	0.00083	0.0263	44.3	0.181	<0.000050	0.00141	0.0093	<0.050	3.28	0.0020	2.90	<0.00010	13.1	0.764	221	0.00011	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	16/07/2015	228	<0.0010	0.0016	<0.0050	0.127	0.0308	0.0286	47.9	0.222	<0.000050	0.00140	0.0139	<0.050	3.47	0.0019	3.28	0.00017	12.4	0.768	230	0.00013	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	21/07/2015	224	<0.0010	0.0016	<0.0050	0.042	0.00204	0.0252	48.8	0.183	<0.000050	0.00143	0.0147	<0.050	3.57	0.0021	3.27	<0.00010	12.6	0.751	228	0.00012	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	29/07/2015	228	0.00011	0.00187	<0.00050	0.049	0.000904	0.0278	56.1	0.237	<0.0000050	0.00136	0.0167	<0.050	3.52	0.00210	3.49	<0.000010	12.0	0.721	252	0.000135	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	04/08/2015	231	<0.00010	0.00195	<0.00050	0.066	0.00166	0.0259	56.4	0.255	<0.0000050	0.00137	0.0187	<0.050	3.37	0.00191	3.53	<0.000010	11.8	0.738	244	0.000126	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	12/08/2015	222	<0.0010	0.0020	<0.0050	0.063	0.00116	0.0264	55.5	0.257	<0.000050	0.00127	0.0184	<0.050	3.17	0.0025	3.43	<0.00010	12.0	0.702	230	0.00012	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	18/08/2015	220	<0.0010	0.0018	<0.0050	0.058	0.00095	0.0263	53.2	0.220	<0.000050	0.00126	0.0175	<0.050	3.09	0.0024	3.40	<0.00010	11.9	0.695	233	0.00011	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	26/08/2015	240	0.00011	0.00205	<0.00050	0.050	0.000709	0.0314	57.8	0.260	<0.0000050	0.00149	0.0188	<0.050	3.19	0.00222	3.50	<0.000010	12.0	0.730	247	0.000124	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	02/09/2015	265	<0.00010	0.00301	<0.00050	0.155	0.00226	0.0321	70.0	0.503	<0.0000050	0.00139	0.0228	<0.050	3.32	0.00267	3.64	0.000012	12.9	0.817	283	0.000157	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	08/09/2015	260	<0.0010	0.0030	<0.0050	0.129	0.00120	0.0314	68.0	0.517	<0.000050	0.00131	0.0235	<0.050	3.20	0.0031	3.53	<0.00010	13.2	0.791	283	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	14/09/2015	272	<0.0010	0.0027	<0.0050	0.126	0.00117	0.0304	72.2	0.446	<0.000050	0.00140	0.0218	<0.050	3.33	0.0023	3.40	<0.00010	12.4	0.803	300	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	21/09/2015	269	<0.0010	0.0030	<0.0050	0.150	0.0164	0.0336	71.7	0.520	<0.000050	0.00142	0.0240	<0.050	3.41	0.0021	3.40	<0.00010	13.2	0.810	279	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	27/09/2015	280	<0.0010	0.0030	<0.0050	0.102	0.00894	0.0332	79.4	0.506	<0.000050	0.00149	0.0242	<0.050	3.49	0.0021	3.57	<0.00010	13.6	0.802	295	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	29/09/2015	258	0.00012	0.00288	0.00091	0.084	0.00604	0.0357	77.1	0.453	<0.0000050	0.00155	0.0238	<0.050	3.31	0.00211	3.37	0.000022	13.1	0.815	285	0.000169	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	06/10/2015	259	<0.0010	0.0020	<0.0050	0.042	0.00117	0.0324	78.9	0.286	<0.000050	0.00157	0.0201	<0.050	3.75	0.0017	3.36	<0.00010	12.9	0.779	309	0.00015	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	13/10/2015	281	<0.0010	0.0030	<0.0050	0.077	0.00446	0.0325	81.0	0.500	<0.000050	0.00151	0.0257	<0.050	3.68	0.0012	3.43	<0.00010	12.9	0.821	299	0.00016	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	20/10/2015	277	0.00014	0.00234	0.00224	0.041	0.00132	0.0342	82.3	0.340	<0.0000050	0.00152	0.0244	<0.050	3.80	0.00113	3.30	0.000010	14.0	0.819	303	0.000158	0.00011	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	28/10/2015	263	<0.0010	0.0020	<0.0050	0.088	0.00307	0.0316	78.9	0.325	<0.000050	0.00169	0.0204	<0.050	3.86	0.0011	3.19	<0.00010	12.6	0.883	293	0.00014	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	03/11/2015	290	<0.0010	0.0026	<0.0050	0.040	0.00106	0.0347	83.7	0.398	<0.000050	0.00165	0.0244	<0.050	4.12	<0.0010	3.49	<0.00010	14.4	0.901	318	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	09/11/2015	293	<0.0010	0.0027	<0.0050	0.021	0.00188	0.0369	85.5	0.362	<0.000050	0.00176	0.0264	<0.050	4.33	<0.0010	3.57	<0.00010	14.4	0.866	348	0.00017	<0.0010	<0.10
KV-43	Bellekeno 625 Treatment Pond Decant	24/11/2015	198	0.00022	0.00026	<0.00050	0.013	0.00288	0.0137	29.0	0.214	<0.0000050	0.000473	0.00945	<0.050	1.44	0.0109	2.14	<0.000010	5.40	0.596	178	0.000053	<0.00010	<0.00030
KV-43	Bellekeno 625 Treatment Pond Decant	25/11/2015	185	0.00022	0.00030	<0.00050	<0.010	0.000708	0.0147	36.3	0.247	<0.0000050	0.000473	0.0124	<0.050	1.42	0.0110	2.26	<0.000010	5.41	0.585	172	0.000057	0.00020	<0.00030

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Uranium (U), total mg/L	Vanadium (V), total mg/L	Zinc (Zn), total mg/L	Zirconium (Zr), total mg/L	Aluminum (Al), dissolved mg/L	Antimony (Sb), dissolved mg/L	Arsenic (As), dissolved mg/L	Barium (Ba), dissolved mg/L	Beryllium (Be), dissolved mg/L	Bismuth (Bi), dissolved mg/L	Boron (B), dissolved mg/L	Cadmium (Cd), dissolved mg/L	Calcium (Ca), dissolved mg/L	Chromium (Cr), dissolved mg/L	Cobalt (Co), dissolved mg/L	Copper (Cu), dissolved mg/L	Iron (Fe), dissolved mg/L	Lead (Pb), dissolved mg/L	Lithium (Li), dissolved mg/L	Magnesium (Mg), dissolved mg/L	Manganese (Mn), dissolved mg/L
MMER Grab					1																		
MMER Max Monthly Mean					0.5																		
KV-43	Bellekeno 625 Treatment Pond Decant	09/09/2013	0.00757	<0.0010	0.123	<0.00080	0.0081	0.0120	0.00329	0.0152	<0.00010	<0.00050	0.011	0.000769	146	0.00015	0.00082	0.00070	<0.010	0.00860	0.0221	37.1	0.297
KV-43	Bellekeno 625 Treatment Pond Decant	10/09/2013	0.00747	<0.010	0.131	<0.0080	<0.010	0.0123	0.0027	0.0145	<0.0010	<0.0050	<0.10	0.00069	151	<0.0010	<0.0010	<0.0020	<0.010	0.00951	0.0229	41.9	0.295
KV-43	Bellekeno 625 Treatment Pond Decant	01/10/2013	0.0162	0.0011	0.0304	<0.00080	0.0074	0.0181	0.00252	0.0194	<0.00010	<0.00050	0.019	0.000126	207	<0.00010	0.00158	0.00192	<0.010	0.00494	0.0335	48.8	0.270
KV-43	Bellekeno 625 Treatment Pond Decant	08/10/2013	0.0136	<0.010	<0.030	<0.0080	<0.010	0.0149	0.0017	0.0144	<0.0010	<0.0050	<0.10	<0.00010	193	<0.0010	0.0014	<0.0020	<0.010	0.00074	0.0256	46.5	0.178
KV-43	Bellekeno 625 Treatment Pond Decant	15/10/2013	0.0202	<0.010	0.036	<0.0080	<0.010	0.0164	0.0021	0.0138	<0.0010	<0.0050	<0.10	<0.00010	203	<0.0010	0.0016	<0.0020	<0.010	<0.00050	0.0275	55.7	0.169
KV-43	Bellekeno 625 Treatment Pond Decant	18/10/2013																					
KV-43	Bellekeno 625 Treatment Pond Decant	22/10/2013	0.0164	<0.0010	0.0365	<0.00080	0.0058	0.0178	0.00191	0.0118	<0.00010	<0.00050	<0.010	0.000059	200	<0.00010	0.00153	0.00077	<0.010	0.00106	0.0297	55.5	0.170
KV-43	Bellekeno 625 Treatment Pond Decant	05/11/2013	0.0160	<0.0010	0.0626	<0.00080	0.0048	0.0174	0.00152	0.0105	<0.00010	<0.00050	<0.010	0.000029	215	<0.00010	0.00148	0.00077	<0.010	0.000759	0.0309	61.4	0.168
KV-43	Bellekeno 625 Treatment Pond Decant	12/11/2013	0.0194	<0.010	0.037	<0.0080	<0.010	0.0159	0.0016	0.0107	<0.0010	<0.0050	<0.10	<0.00010	221	<0.0010	0.0018	<0.0020	<0.010	<0.00050	0.0357	60.2	0.227
KV-43	Bellekeno 625 Treatment Pond Decant	19/11/2013	0.0186	<0.010	<0.030	<0.0080	<0.010	0.0146	0.0014	0.00881	<0.0010	<0.0050	<0.10	<0.00010	209	<0.0010	0.0014	<0.0020	<0.010	<0.00050	0.0324	60.4	0.154
KV-43	Bellekeno 625 Treatment Pond Decant	27/11/2013	0.0192	<0.010	0.211	<0.0080	<0.010	0.0138	0.0013	0.0122	<0.0010	<0.0050	<0.10	0.00021	210	<0.0010	0.0023	<0.0020	<0.010	<0.00050	0.0307	56.3	0.348
KV-43	Bellekeno 625 Treatment Pond Decant	03/12/2013	0.0144	<0.0010	0.0319	<0.00080	0.0071	0.0124	0.00122	0.00843	<0.00010	<0.00050	<0.010	0.000023	202	<0.00010	0.00123	0.00047	<0.010	0.000709	0.0308	53.4	0.114
KV-43	Bellekeno 625 Treatment Pond Decant	10/12/2013	0.0123	<0.010	<0.030	<0.0080	<0.010	0.0122	0.0011	0.00728	<0.0010	<0.0050	<0.10	<0.00010	197	<0.0010	0.0013	<0.0020	<0.010	<0.00050	0.0314	58.0	0.129
KV-43	Bellekeno 625 Treatment Pond Decant	16/12/2013	0.0139	<0.010	0.071	<0.0080	<0.010	0.0143	0.0013	0.00864	<0.0010	<0.0050	<0.10	<0.00010	211	<0.0010	0.0017	<0.0020	<0.010	0.00092	0.0300	59.0	0.228
KV-43	Bellekeno 625 Treatment Pond Decant	23/12/2013	0.0101	<0.010	0.121	<0.0080	<0.010	0.0130	0.0012	0.00759	<0.0010	<0.0050	<0.10	<0.00010	199	<0.0010	0.0014	<0.0020	<0.010	<0.00050	0.0279	61.1	0.220
KV-43	Bellekeno 625 Treatment Pond Decant	31/12/2013	0.0100	<0.010	<0.030	<0.0080	<0.010	0.0121	0.0013	0.00600	<0.0010	<0.0050	<0.10	<0.00010	181	<0.0010	0.0011	<0.0020	<0.010	<0.00050	0.0292	54.5	0.109
KV-43	Bellekeno 625 Treatment Pond Decant	07/01/2014	0.00674	<0.0010	0.187	<0.00080	0.0022	0.0102	0.00089	0.00564	<0.00010	<0.00050	<0.010	0.000277	198	<0.00010	0.00160	0.00091	<0.010	0.000199	0.0292	53.8	0.259
KV-43	Bellekeno 625 Treatment Pond Decant	13/01/2014	0.00508	<0.010	0.032	<0.0080	<0.010	0.0093	<0.0010	0.00413	<0.0010	<0.0050	<0.10	<0.00010	192	<0.0010	0.0017	<0.0020	<0.010	0.00074	0.0315	59.2	0.257
KV-43	Bellekeno 625 Treatment Pond Decant	21/01/2014	0.00963	<0.010	0.095	<0.0080	<0.010	0.0090	0.0010	0.00656	<0.0010	<0.0050	<0.10	0.00025	208	<0.0010	0.0025	<0.0020	<0.010	<0.00050	0.0335	56.8	0.385
KV-43	Bellekeno 625 Treatment Pond Decant	28/01/2014	0.0152	<0.010	0.362	<0.0080	<0.010	0.0093	<0.0010	0.0101	<0.0010	<0.0050	<0.10	0.00049	230	<0.0010	0.0037	<0.0020	<0.010	<0.00050	0.0280	57.4	0.710
KV-43	Bellekeno 625 Treatment Pond Decant	04/02/2014	0.00967	<0.010	0.077	<0.0080	0.010	0.0081	<0.0010	0.00514	<0.0010	<0.0050	<0.10	<0.00010	205	<0.0010	0.0029	<0.0020	<0.010	<0.00050	0.0300	58.5	0.421
KV-43	Bellekeno 625 Treatment Pond Decant	11/02/2014	0.00888	<0.0010	0.0466	<0.00080	0.0107	0.00735	0.00093	0.00416	<0.00010	<0.00050	<0.010	0.000046	206	<0.00010	0.00261	<0.00020	<0.010	0.000138	0.0304	56.5	0.303
KV-43	Bellekeno 625 Treatment Pond Decant	18/02/2014	0.00792	<0.010	0.047	<0.0080	0.011	0.0068	<0.0010	0.00402	<0.0010	<0.0050	<0.10	<0.00010	210	<0.0010	0.0026	<0.0020	<0.010	<0.00050	0.0314	59.2	0.326
KV-43	Bellekeno 625 Treatment Pond Decant	24/02/2014	0.00858	<0.010	0.063	<0.0080	0.013	0.0068	<0.0010	0.00437	<0.0010	<0.0050	<0.10	<0.00010	210	<0.0010	0.0029	<0.0020	<0.010	<0.00050	0.0323	58.5	0.373
KV-43	Bellekeno 625 Treatment Pond Decant	04/03/2014	0.00719	<0.010	0.037	<0.0080	0.011	0.0068	<0.0010	0.00349	<0.0010	<0.0050	<0.10	<0.00010	205	<0.0010	0.0025	<0.0020	<0.010	<0.00050	0.0314	59.9	0.290
KV-43	Bellekeno 625 Treatment Pond Decant	11/03/2014	0.00734	<0.0010	0.0496	<0.00080	0.0107	0.00662	0.00073	0.00353	<0.00010	<0.00050	<0.010	0.000034	215	<0.00010	0.00265	<0.00020	<0.010	0.000122	0.0311	59.2	0.336
KV-43	Bellekeno 625 Treatment Pond Decant	21/03/2014	0.00794	<0.010	<0.030	<0.0080	<0.010	0.0077	<0.0010	0.00452	<0.0010	<0.0050	<0.10	<0.00010	202	<0.0010	0.0017	<0.0020	<0.010	<0.00050	0.0273	55.6	0.185
KV-43	Bellekeno 625 Treatment Pond Decant	27/03/2014	0.00368	<0.010	<0.030	<0.0080	<0.010	0.0066	<0.0010	0.00374	<0.0010	<0.0050	<0.10	<0.00010	209	<0.0010	<0.0010	<0.0020	<0.010	<0.00050	0.0306	50.0	0.126
KV-43	Bellekeno 625 Treatment Pond Decant	02/04/2014	0.00626	<0.010	0.039	<0.0080	<0.010	0.0065	<0.0010	0.00395	<0.0010	<0.0050	<0.10	<0.00010	208	<0.0010	0.0018	<0.0020	<0.010	<0.00050	0.0294	53.2	0.241
KV-43	Bellekeno 625 Treatment Pond Decant	16/04/2014	0.0144	<0.0010	0.307	<0.00080	0.0098	0.00767	0.00098	0.00932	<0.00010	<0.00050	<0.010	0.00154	222	<0.00010	0.00374	0.00039	<0.010	0.000587	0.0277	59.5	0.654
KV-43	Bellekeno 625 Treatment Pond Decant	22/04/2014	0.0146	<0.010	0.200	<0.0080	0.010	0.0105	0.0010	0.00900	<0.0010	<0.0050	<0.10	0.00038	219	<0.0010	0.0038	<0.0020	<0.010	<0.00050	0.0277	54.3	0.756
KV-43	Bellekeno 625 Treatment Pond Decant	29/04/2014	0.00925	<0.010	0.049	<0.0080	<0.010	0.0088	0.0014	0.00529	<0.0010	<0.0050	<0.10	<0.00010	208	<0.0010	0.0027	<0.0020	<0.010	<0.00050	0.0290	55.0	0.377
KV-43	Bellekeno 625 Treatment Pond Decant	06/05/2014	0.00958	<0.0010	0.155	<0.00080	0.0073	0.0109	0.00144	0.00686	<0.00010	<0.00050	0.017	0.000392	217	0.00014	0.00270	0.00075	<0.010	0.000855	0.0348	54.5	0.423
KV-43	Bellekeno 625 Treatment Pond Decant	14/05/2014	0.00739	<0.010	0.061	<0.0080	<0.010	0.0092	<0.0010	0.00701	<0.0010	<0.0050	<0.10	0.00012	216	<0.0010	0.0015	<0.0020	<0.010	<0.00050	0.0379	42.1	0.179
KV-43	Bellekeno 625 Treatment Pond Decant	20/05/2014	0.0129	<0.010	0.344	<0.0080	<0.010	0.0072	<0.0010	0.00777	<0.0010	<0.0050	<0.10	0.00058	223	<0.0010	0.0032	<0.0020	<0.010	0.00058	0.0273	53.7	0.677
KV-43	Bellekeno 625 Treatment Pond Decant	27/05/2014	0.0121	<0.010	0.321	<0.0080	<0.010	0.0061	<0.0010	0.00778	<0.0010	<0.0050	<0.10	0.00096	206	<0.0010	0.0033	<0.0020	<0.010	<0.00050	0.0234	51.1	0.752
KV-43	Bellekeno 625 Treatment Pond Decant	03/06/2014	0.0137	<0.010	0.284	<0.0080	<0.010	0.0071	<0.0010	0.00829	<0.0010	<0.0050	<0.10	0.00090	210	<0.0010	0.0032	<0.0020	<0.010	0.00066	0.0262	56.3	0.685
KV-43	Bellekeno 625 Treatment Pond Decant	11/06/2014	0.00785	<0.010	0.274	<0.0080	<0.010	0.0059	<0.0010	0.00543	<0.0010	<0.0050	<0.10	0.00043	216	<0.0010	0.0027	<0.0020	<0.010	0.00101	0.0249	51.3	0.506
KV-43	Bellekeno 625 Treatment Pond Decant	17/06/2014	0.0100	<0.0010	0.122	<0.00080	0.0054	0.00512	0.00082	0.00598	<0.00010	<0.00050	<0.010	0.000055	198	<0.00010	0.00190	<0.00020	<0.010	0.000113	0.0224	49.9	0.236
KV-43	Bellekeno 625 Treatment Pond Decant	24/06/2014	0.00745	<0.010	0.039	<0.0080	<0.010	0.0055	<0.0010	0.00495	<0.0010	<0.0050	<0.10	<0.00010	187	<0.0010	<0.0010	<0.0020	<0.010	<0.00050	0.0246	43.5	0.0821
KV-43	Bellekeno 625 Treatment Pond Decant	08/07/2014	0.0161	<0.010	0.124	<0.0080	0.013	0.0064	0.0012	0.00580	<0.0010	<0.0050	<0.10	<0.00010	204	<0.0010	0.0015	<0.0020	<0.010	0.00401	0.0287	53.7	0.136

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Uranium (U), total mg/L	Vanadium (V), total mg/L	Zinc (Zn), total mg/L	Zirconium (Zr), total mg/L	Aluminum (Al), dissolved mg/L	Antimony (Sb), dissolved mg/L	Arsenic (As), dissolved mg/L	Barium (Ba), dissolved mg/L	Beryllium (Be), dissolved mg/L	Bismuth (Bi), dissolved mg/L	Boron (B), dissolved mg/L	Cadmium (Cd), dissolved mg/L	Calcium (Ca), dissolved mg/L	Chromium (Cr), dissolved mg/L	Cobalt (Co), dissolved mg/L	Copper (Cu), dissolved mg/L	Iron (Fe), dissolved mg/L	Lead (Pb), dissolved mg/L	Lithium (Li), dissolved mg/L	Magnesium (Mg), dissolved mg/L	Manganese (Mn), dissolved mg/L
MMER Grab					1																		
MMER Max Monthly Mean					0.5																		
KV-43	Bellekeno 625 Treatment Pond Decant	15/07/2014	0.0120	<0.010	0.110	<0.0080	<0.010	0.0058	<0.0010	0.00583	<0.0010	<0.0050	<0.10	<0.00010	199	<0.0010	0.0014	<0.0020	<0.010	<0.00050	0.0268	50.8	0.168
KV-43	Bellekeno 625 Treatment Pond Decant	22/07/2014	0.0112	<0.0010	0.0468	<0.00080	0.0056	0.00585	0.00089	0.00561	<0.00010	<0.00050	<0.010	0.000041	199	<0.00010	0.00133	<0.00020	<0.010	0.00220	0.0226	51.2	0.147
KV-43	Bellekeno 625 Treatment Pond Decant	30/07/2014	0.0118	<0.010	0.041	<0.0080	<0.010	0.0056	<0.0010	0.00507	<0.0010	<0.0050	<0.10	<0.00010	194	<0.0010	0.0011	<0.0020	<0.010	<0.00050	0.0225	49.9	0.0895
KV-43	Bellekeno 625 Treatment Pond Decant	05/08/2014	0.0111	<0.0010	0.105	<0.00080	0.0076	0.00546	0.00082	0.00475	<0.00010	<0.00050	<0.010	0.000280	195	<0.00010	0.00093	0.00036	<0.010	0.00118	0.0213	49.6	0.0881
KV-43	Bellekeno 625 Treatment Pond Decant	13/08/2014	0.0128	<0.010	0.066	<0.0080	<0.010	0.0063	0.0010	0.00647	<0.0010	<0.0050	<0.10	<0.00010	208	<0.0010	0.0016	<0.0020	<0.010	<0.00050	0.0278	56.7	0.162
KV-43	Bellekeno 625 Treatment Pond Decant	19/08/2014	0.0113	<0.010	0.157	<0.0080	<0.010	0.0058	<0.0010	0.00738	<0.0010	<0.0050	<0.10	0.00020	209	<0.0010	0.0016	<0.0020	<0.010	0.00074	0.0281	55.2	0.218
KV-43	Bellekeno 625 Treatment Pond Decant	26/08/2014	0.0150	<0.0010	0.454	<0.00080	0.0041	0.00554	0.00078	0.00704	<0.00010	<0.00050	<0.010	0.000898	206	<0.00010	0.00250	0.00024	<0.010	0.00164	0.0242	56.7	0.418
KV-43	Bellekeno 625 Treatment Pond Decant	03/09/2014	0.0131	<0.010	0.069	<0.0080	<0.010	0.0045	<0.0010	0.00612	<0.0010	<0.0050	<0.10	<0.00010	231	<0.0010	0.0025	<0.0020	0.020	<0.00050	0.0270	69.1	0.498
KV-43	Bellekeno 625 Treatment Pond Decant	10/09/2014	0.00802	<0.010	0.101	<0.0080	<0.010	0.0047	<0.0010	0.00465	<0.0010	<0.0050	<0.10	<0.00010	220	<0.0010	0.0012	<0.0020	<0.010	<0.00050	0.0250	57.8	0.162
KV-43	Bellekeno 625 Treatment Pond Decant	16/09/2014	0.00935	0.0012	0.122	<0.00080	0.0036	0.00533	0.00045	0.00596	<0.00010	<0.00050	0.012	0.000029	227	<0.00010	0.00157	<0.00020	<0.010	0.000243	0.0327	59.9	0.209
KV-43	Bellekeno 625 Treatment Pond Decant	26/09/2014	0.0110	<0.010	0.131	<0.0080	<0.010	0.0059	<0.0010	0.00663	<0.0010	<0.0050	<0.10	<0.00010	232	<0.0010	0.0020	<0.0020	<0.010	<0.00050	0.0306	59.4	0.280
KV-43	Bellekeno 625 Treatment Pond Decant	30/09/2014	0.0111	<0.010	0.193	<0.0080	<0.010	0.0055	<0.0010	0.00643	<0.0010	<0.0050	<0.10	<0.00010	235	<0.0010	0.0022	<0.0020	<0.010	0.00074	0.0296	68.9	0.307
KV-43	Bellekeno 625 Treatment Pond Decant	08/10/2014	0.0108	<0.010	0.174	<0.0080	<0.010	0.0058	<0.0010	0.00669	<0.0010	<0.0050	<0.10	0.00010	251	<0.0010	0.0022	<0.0020	<0.010	0.00077	0.0309	63.2	0.338
KV-43	Bellekeno 625 Treatment Pond Decant	14/10/2014	0.0115	<0.010	0.135	<0.0080	<0.010	0.0058	<0.0010	0.00669	<0.0010	<0.0050	<0.10	0.00012	258	<0.0010	0.0023	<0.0020	<0.010	<0.00050	0.0343	66.2	0.377
KV-43	Bellekeno 625 Treatment Pond Decant	23/10/2014	0.0117	<0.010	0.141	<0.0080	<0.010	0.0056	<0.0010	0.00586	<0.0010	<0.0050	<0.10	<0.00010	245	<0.0010	0.0019	<0.0020	<0.010	<0.00050	0.0340	66.4	0.296
KV-43	Bellekeno 625 Treatment Pond Decant	28/10/2014	0.0107	0.0016	0.0685	<0.00080	0.0019	0.00580	0.00048	0.00535	<0.00010	<0.00050	<0.010	0.000237	247	0.00010	0.00167	0.00059	0.019	0.000312	0.0329	62.0	0.265
KV-43	Bellekeno 625 Treatment Pond Decant	04/11/2014	0.0112	<0.010	0.077	<0.0080	<0.010	0.0050	<0.0010	0.00608	<0.0010	<0.0050	<0.10	0.00012	257	<0.0010	0.0023	<0.0020	<0.010	<0.00050	0.0322	64.3	0.412
KV-43	Bellekeno 625 Treatment Pond Decant	11/11/2014	0.0121	<0.010	0.129	<0.0080	<0.010	0.0049	<0.0010	0.00594	<0.0010	<0.0050	<0.10	0.00016	259	<0.0010	0.0027	<0.0020	<0.010	<0.00050	0.0321	65.9	0.432
KV-43	Bellekeno 625 Treatment Pond Decant	18/11/2014	0.0134	0.0014	0.134	<0.00080	0.0036	0.00498	0.00049	0.00617	<0.00010	<0.00050	<0.010	0.000201	265	<0.00010	0.00287	0.00027	<0.010	0.000808	0.0297	71.0	0.487
KV-43	Bellekeno 625 Treatment Pond Decant	27/11/2014	0.0121	<0.010	0.075	<0.0080	<0.010	0.0044	<0.0010	0.00502	<0.0010	<0.0050	<0.10	0.00019	252	<0.0010	0.0021	<0.0020	<0.010	<0.00050	0.0318	63.4	0.320
KV-43	Bellekeno 625 Treatment Pond Decant	04/12/2014	0.0125	<0.010	0.087	<0.0080	<0.010	0.0044	<0.0010	0.00558	<0.0010	<0.0050	<0.10	<0.00010	262	<0.0010	0.0024	<0.0020	<0.010	<0.00050	0.0309	65.0	0.377
KV-43	Bellekeno 625 Treatment Pond Decant	09/12/2014	0.0110	0.0014	0.0717	<0.00080	0.0027	0.00418	0.00036	0.00474	<0.00010	<0.00050	<0.010	0.000109	257	<0.00010	0.00178	<0.00020	<0.010	0.000063	0.0312	61.0	0.250
KV-43	Bellekeno 625 Treatment Pond Decant	15/12/2014	0.0119	<0.010	0.232	<0.0080	<0.010	0.0040	<0.0010	0.00552	<0.0010	<0.0050	<0.10	0.00050	252	<0.0010	0.0019	<0.0020	0.014	0.00094	0.0251	60.9	0.309
KV-43	Bellekeno 625 Treatment Pond Decant	22/12/2014	0.0135	<0.010	0.096	<0.0080	<0.010	0.0042	<0.0010	0.00581	<0.0010	<0.0050	<0.10	0.00019	274	<0.0010	0.0026	<0.0020	<0.010	<0.00050	0.0341	64.4	0.386
KV-43	Bellekeno 625 Treatment Pond Decant	02/01/2015	0.0120	<0.010	0.047	<0.0080	<0.010	0.0040	<0.0010	0.00463	<0.0010	<0.0050	<0.10	<0.00010	260	<0.0010	0.0018	<0.0020	<0.010	<0.00050	0.0315	57.2	0.223
KV-43	Bellekeno 625 Treatment Pond Decant	06/01/2015	0.0112	<0.010	0.080	<0.0080	<0.010	0.0040	<0.0010	0.00464	<0.0010	<0.0050	<0.10	<0.00010	258	<0.0010	0.0016	<0.0020	<0.010	<0.00050	0.0306	63.2	0.202
KV-43	Bellekeno 625 Treatment Pond Decant	18/01/2015	0.0139	<0.010	0.293	<0.0080	<0.010	0.0043	<0.0010	0.00828	<0.0010	<0.0050	<0.10	0.00036	277	<0.0010	0.0034	<0.0020	<0.010	<0.00050	0.0304	63.9	0.704
KV-43	Bellekeno 625 Treatment Pond Decant	21/01/2015	0.0121	0.0013	0.116	<0.00080	0.0018	0.00397	0.00031	0.00538	<0.00010	<0.00050	<0.010	0.000240	278	<0.00010	0.00203	0.00037	<0.010	0.000072	0.0324	61.5	0.269
KV-43	Bellekeno 625 Treatment Pond Decant	29/01/2015	0.00976	<0.010	0.055	<0.0080	<0.010	0.0036	<0.0010	0.00426	<0.0010	<0.0050	<0.10	<0.00010	237	<0.0010	0.0012	<0.0020	<0.010	<0.00050	0.0255	56.5	0.142
KV-43	Bellekeno 625 Treatment Pond Decant	03/02/2015	0.0102	<0.010	0.107	<0.0080	<0.010	0.0036	<0.0010	0.00491	<0.0010	<0.0050	<0.10	<0.00010	257	<0.0010	0.0015	<0.0020	<0.010	<0.00050	0.0319	56.8	0.213
KV-43	Bellekeno 625 Treatment Pond Decant	15/02/2015	0.00910	0.0020	0.111	<0.00080	0.0021	0.00361	0.00031	0.00487	<0.00010	<0.00050	<0.010	0.000150	258	<0.00010	0.00118	0.00035	<0.010	0.000094	0.0350	65.8	0.170
KV-43	Bellekeno 625 Treatment Pond Decant	18/02/2015	0.00987	<0.010	0.134	<0.0080	<0.010	0.0035	<0.0010	0.00470	<0.0010	<0.0050	<0.10	0.00011	249	<0.0010	0.0014	<0.0020	<0.010	<0.00050	0.0334	59.2	0.197
KV-43	Bellekeno 625 Treatment Pond Decant	24/02/2015	0.00989	<0.010	<0.030	<0.0080	<0.010	0.0033	<0.0010	0.00422	<0.0010	<0.0050	<0.10	<0.00010	238	<0.0010	0.0011	<0.0020	<0.010	<0.00050	0.0335	55.5	0.133
KV-43	Bellekeno 625 Treatment Pond Decant	03/03/2015	0.00944	<0.010	0.057	<0.0080	<0.010	0.0033	<0.0010	0.00499	<0.0010	<0.0050	<0.10	<0.00010	265	<0.0010	0.0014	<0.0020	<0.010	<0.00050	0.0324	59.0	0.185
KV-43	Bellekeno 625 Treatment Pond Decant	12/03/2015	0.0116	0.0020	0.0958	<0.00080	0.0034	0.00362	0.00053	0.00592	<0.00010	<0.00050	<0.010	0.000118	270	<0.00010	0.00224	<0.00020	<0.010	0.000168	0.0359	60.9	0.284
KV-43	Bellekeno 625 Treatment Pond Decant	16/03/2015	0.0160	0.0014	0.146	<0.00080	0.0029	0.00359	0.00061	0.00707	<0.00010	<0.00050	<0.010	0.000140	256	0.00016	0.00333	0.00039	<0.010	0.000108	0.0297	62.8	0.508
KV-43	Bellekeno 625 Treatment Pond Decant	24/03/2015	0.0138	<0.010	0.031	<0.0080	<0.010	0.0032	<0.0010	0.00567	<0.0010	<0.0050	<0.10	<0.00010	289	<0.0010	0.0025	<0.0020	<0.010	<0.00050	0.0324	57.8	0.278
KV-43	Bellekeno 625 Treatment Pond Decant	31/03/2015	0.0115	<0.010	0.083	<0.0080	<0.010	0.0029	<0.0010	0.00591	<0.0010	<0.0050	<0.10	<0.00010	285	<0.0010	0.0020	<0.0020	<0.010	<0.00050	0.0350	52.1	0.276
KV-43	Bellekeno 625 Treatment Pond Decant	12/04/2015	0.00961	0.00091	0.0371	<0.00030	0.0028	0.00286	0.00065	0.00532	<0.00010	<0.000050	<0.010	0.0000534	258	0.00011	0.00166	0.00084	<0.010	0.000078	0.0341	51.9	0.209
KV-43	Bellekeno 625 Treatment Pond Decant	14/04/2015	0.0102	0.00089	0.0272	<0.00030	0.0029	0.00274	0.00066	0.00539	<0.00010	<0.000050	<0.010	0.000102	277	<0.00010	0.00181	0.00025	<0.010	0.000108	0.0336	51.4	0.227
KV-43	Bellekeno 625 Treatment Pond Decant	21/04/2015	0.00923	<0.010	0.054	<0.00030	<0.010	0.0028	<0.0010	0.00480	<0.0010	<0.0050	<0.10	<0.00010	258	<0.0010	0.0015	<0.0020	<0.010	<0.00050	0.0313	51.9	0.163

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Uranium (U), total mg/L	Vanadium (V), total mg/L	Zinc (Zn), total mg/L	Zirconium (Zr), total mg/L	Aluminum (Al), dissolved mg/L	Antimony (Sb), dissolved mg/L	Arsenic (As), dissolved mg/L	Barium (Ba), dissolved mg/L	Beryllium (Be), dissolved mg/L	Bismuth (Bi), dissolved mg/L	Boron (B), dissolved mg/L	Cadmium (Cd), dissolved mg/L	Calcium (Ca), dissolved mg/L	Chromium (Cr), dissolved mg/L	Cobalt (Co), dissolved mg/L	Copper (Cu), dissolved mg/L	Iron (Fe), dissolved mg/L	Lead (Pb), dissolved mg/L	Lithium (Li), dissolved mg/L	Magnesium (Mg), dissolved mg/L	Manganese (Mn), dissolved mg/L
MMER Grab					1																		
MMER Max Monthly Mean					0.5																		
KV-43	Bellekeno 625 Treatment Pond Decant	28/04/2015	0.0105	<0.010	0.044	<0.00030	<0.010	0.0031	<0.0010	0.00574	<0.0010	<0.0050	<0.10	<0.00010	272	<0.0010	0.0016	<0.0020	<0.010	<0.00050	0.0359	48.4	0.177
KV-43	Bellekeno 625 Treatment Pond Decant	06/05/2015	0.00918	0.00058	0.0350	<0.00030	0.0028	0.00265	0.00067	0.00485	<0.00010	<0.000050	<0.010	0.0000211	264	<0.00010	0.00109	<0.00020	<0.010	0.000271	0.0331	46.4	0.115
KV-43	Bellekeno 625 Treatment Pond Decant	12/05/2015	0.00724	<0.00050	0.0216	<0.00030	0.0019	0.00266	0.00051	0.00487	<0.00010	<0.000050	<0.010	0.0000300	268	<0.00010	0.00038	0.00024	<0.010	0.000340	0.0340	45.0	0.0396
KV-43	Bellekeno 625 Treatment Pond Decant	20/05/2015	0.00968	<0.010	0.041	<0.00030	<0.010	0.0021	<0.0010	0.00458	<0.0010	<0.0050	<0.10	<0.00010	274	<0.0010	0.0015	<0.0020	<0.010	<0.00050	0.0325	55.6	0.223
KV-43	Bellekeno 625 Treatment Pond Decant	26/05/2015	0.00675	<0.010	0.067	<0.00030	<0.010	0.0021	0.0010	0.00514	<0.0010	<0.0050	<0.10	<0.00010	228	<0.0010	0.0012	<0.0020	<0.010	<0.00050	0.0244	46.9	0.164
KV-43	Bellekeno 625 Treatment Pond Decant	28/05/2015																					
KV-43	Bellekeno 625 Treatment Pond Decant	07/06/2015	0.0131	<0.00050	0.0440	<0.00030	0.0045	0.00243	0.00071	0.00463	<0.00010	<0.000050	<0.010	0.0000203	215	<0.00010	0.00162	0.00046	<0.010	0.000146	0.0256	46.9	0.108
KV-43	Bellekeno 625 Treatment Pond Decant	12/06/2015	0.0116	<0.010	0.071	<0.00030	<0.010	0.0024	<0.0010	0.00506	<0.0010	<0.0050	<0.10	<0.00010	235	<0.0010	0.0018	<0.0020	<0.010	<0.00050	0.0292	51.5	0.180
KV-43	Bellekeno 625 Treatment Pond Decant	17/06/2015	0.00929	<0.010	0.083	<0.00030	<0.010	0.0022	<0.0010	0.00490	<0.0010	<0.0050	<0.10	<0.00010	226	<0.0010	0.0014	<0.0020	<0.010	<0.00050	0.0266	49.0	0.160
KV-43	Bellekeno 625 Treatment Pond Decant	23/06/2015	0.0101	<0.010	0.068	<0.00030	<0.010	0.0023	<0.0010	0.00495	<0.0010	<0.0050	<0.10	<0.00010	226	<0.0010	0.0014	<0.0020	<0.010	<0.00050	0.0289	50.2	0.161
KV-43	Bellekeno 625 Treatment Pond Decant	02/07/2015	0.00975	0.00053	0.0879	<0.00030	0.0038	0.00245	0.00089	0.00491	<0.00010	<0.000050	<0.010	0.000134	225	<0.00010	0.00129	0.00032	<0.010	0.000321	0.0304	47.9	0.142
KV-43	Bellekeno 625 Treatment Pond Decant	12/07/2015	0.00686	<0.010	0.061	<0.00030	<0.010	0.0023	<0.0010	0.00505	<0.0010	<0.0050	<0.10	<0.00010	215	<0.0010	0.0011	<0.0020	<0.010	<0.00050	0.0259	45.7	0.154
KV-43	Bellekeno 625 Treatment Pond Decant	16/07/2015	0.00996	<0.010	0.139	<0.00030	<0.010	0.0028	<0.0010	0.00486	<0.0010	<0.0050	<0.10	<0.00010	227	<0.0010	0.0014	<0.0020	<0.010	<0.00050	0.0282	48.0	0.157
KV-43	Bellekeno 625 Treatment Pond Decant	21/07/2015	0.0105	<0.010	0.063	<0.00030	<0.010	0.0029	<0.0010	0.00522	<0.0010	<0.0050	<0.10	<0.00010	224	<0.0010	0.0014	<0.0020	<0.010	<0.00050	0.0253	49.3	0.150
KV-43	Bellekeno 625 Treatment Pond Decant	29/07/2015	0.0113	0.00079	0.0676	<0.00030	0.0049	0.00277	0.00090	0.00594	<0.00010	<0.000050	<0.010	0.0000642	230	0.00010	0.00174	0.00050	<0.010	0.000712	0.0292	55.7	0.216
KV-43	Bellekeno 625 Treatment Pond Decant	04/08/2015	0.0127	0.00093	0.105	<0.00030	0.0044	0.00273	0.00096	0.00613	<0.00010	<0.000050	<0.010	0.000120	239	<0.00010	0.00184	0.00055	<0.010	0.00148	0.0265	57.9	0.225
KV-43	Bellekeno 625 Treatment Pond Decant	12/08/2015	0.0133	<0.010	0.127	<0.00030	<0.010	0.0026	<0.0010	0.00530	<0.0010	<0.0050	<0.10	<0.00010	231	<0.0010	0.0019	<0.0020	<0.010	<0.00050	0.0269	56.5	0.216
KV-43	Bellekeno 625 Treatment Pond Decant	18/08/2015	0.0120	<0.010	0.107	<0.00030	<0.010	0.0026	<0.0010	0.00501	<0.0010	<0.0050	<0.10	<0.00010	233	<0.0010	0.0017	<0.0020	<0.010	<0.00050	0.0260	55.6	0.195
KV-43	Bellekeno 625 Treatment Pond Decant	26/08/2015	0.0135	0.00053	0.0798	<0.00030	0.0049	0.00259	0.00085	0.00538	<0.00010	<0.000050	<0.010	0.000111	234	<0.00010	0.00190	0.00031	<0.010	0.000403	0.0295	53.6	0.230
KV-43	Bellekeno 625 Treatment Pond Decant	02/09/2015	0.0152	0.00070	0.233	<0.00030	0.0026	0.00267	0.00059	0.00656	<0.00010	<0.000050	<0.010	0.000185	271	<0.00010	0.00263	0.00051	<0.010	0.000513	0.0283	69.1	0.442
KV-43	Bellekeno 625 Treatment Pond Decant	08/09/2015	0.0133	<0.010	0.202	<0.00030	<0.010	0.0023	<0.0010	0.00586	<0.0010	<0.0050	<0.10	0.00012	262	<0.0010	0.0028	<0.0020	<0.010	<0.00050	0.0302	67.9	0.456
KV-43	Bellekeno 625 Treatment Pond Decant	14/09/2015	0.0137	<0.010	0.249	<0.00030	<0.010	0.0024	<0.0010	0.00557	<0.0010	<0.0050	<0.10	0.00022	279	<0.0010	0.0025	<0.0020	<0.010	<0.00050	0.0292	72.8	0.389
KV-43	Bellekeno 625 Treatment Pond Decant	21/09/2015	0.0142	<0.010	0.220	<0.00030	<0.010	0.0029	<0.0010	0.00627	<0.0010	<0.0050	<0.10	0.00015	271	<0.0010	0.0028	<0.0020	<0.010	<0.00050	0.0341	72.1	0.459
KV-43	Bellekeno 625 Treatment Pond Decant	27/09/2015	0.0140	<0.010	0.174	<0.00030	<0.010	0.0037	<0.0010	0.00578	<0.0010	<0.0050	<0.10	0.00012	285	<0.0010	0.0028	<0.0020	<0.010	<0.00050	0.0325	79.2	0.445
KV-43	Bellekeno 625 Treatment Pond Decant	29/09/2015	0.0143	<0.00050	0.175	<0.00030	0.0058	0.00386	0.00053	0.00601	<0.00010	<0.000050	<0.010	0.000149	268	<0.00010	0.00270	0.00032	<0.010	0.000173	0.0360	79.5	0.436
KV-43	Bellekeno 625 Treatment Pond Decant	06/10/2015	0.0127	<0.010	0.065	<0.00030	<0.010	0.0039	<0.0010	0.00461	<0.0010	<0.0050	<0.10	<0.00010	264	<0.0010	0.0018	<0.0020	<0.010	<0.00050	0.0321	77.7	0.251
KV-43	Bellekeno 625 Treatment Pond Decant	13/10/2015	0.0137	<0.010	0.226	<0.00030	<0.010	0.0043	<0.0010	0.00632	<0.0010	<0.0050	<0.10	0.00016	281	<0.0010	0.0027	<0.0020	<0.010	<0.00050	0.0311	81.2	0.422
KV-43	Bellekeno 625 Treatment Pond Decant	20/10/2015	0.0131	0.00132	0.115	<0.00030	0.0045	0.00435	0.00060	0.00494	<0.00010	<0.000050	<0.010	0.000138	280	0.00015	0.00224	0.00034	<0.010	0.000809	0.0360	83.2	0.308
KV-43	Bellekeno 625 Treatment Pond Decant	28/10/2015	0.0105	<0.010	0.245	<0.00030	<0.010	0.0040	<0.0010	0.00469	<0.0010	<0.0050	<0.10	0.00041	272	<0.0010	0.0018	<0.0020	<0.010	0.00059	0.0326	81.6	0.282
KV-43	Bellekeno 625 Treatment Pond Decant	03/11/2015	0.0140	<0.010	0.098	<0.00030	<0.010	0.0040	<0.0010	0.00493	<0.0010	<0.0050	<0.10	<0.00010	299	<0.0010	0.0024	<0.0020	<0.010	<0.00050	0.0353	85.6	0.350
KV-43	Bellekeno 625 Treatment Pond Decant	09/11/2015	0.0136	<0.010	0.036	<0.00030	<0.010	0.0047	<0.0010	0.00563	<0.0010	<0.0050	<0.10	<0.00010	298	<0.0010	0.0026	<0.0020	<0.010	<0.00050	0.0364	85.7	0.353
KV-43	Bellekeno 625 Treatment Pond Decant	24/11/2015	0.00208	0.00121	0.652	<0.00030	0.0024	0.00169	0.00018	0.00250	<0.00010	<0.000050	<0.010	0.00113	202	<0.00010	0.00025	0.00043	<0.010	0.000288	0.0142	28.1	0.152
KV-43	Bellekeno 625 Treatment Pond Decant	25/11/2015	0.00246	0.00095	0.207	<0.00030	0.0034	0.00170	0.00029	0.00251	<0.00010	<0.000050	<0.010	0.00114	184	<0.00010	0.00028	0.00035	<0.010	0.000345	0.0153	35.3	0.239

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Mercury (Hg), dissolved mg/L	Molybdenum (Mo), dissolved mg/L	Nickel (Ni), dissolved mg/L	Phosphorus (P), dissolved mg/L	Potassium (K), dissolved mg/L	Selenium (Se), dissolved mg/L	Silicon (Si), dissolved mg/L	Silver (Ag), dissolved mg/L	Sodium (Na), dissolved mg/L	Strontium (Sr), dissolved mg/L	Sulphur (S), dissolved mg/L	Thallium (Tl), dissolved mg/L	Tin (Sn), dissolved mg/L	Titanium (Ti), dissolved mg/L	Uranium (U), dissolved mg/L	Vanadium (V), dissolved mg/L	Zinc (Zn), dissolved mg/L	Zirconium (Zr), dissolved mg/L	LC50 % RT Mortality at 96 Hrs %	LC50 [%] 50% RT Mortality %	LC50 % DM Mortality at 48 Hrs %	LC50 [%] 50% DM Mortality %	Radium-226 Bq/L
MMER Grab																							50		1.11
MMER Max Monthly Mean																									0.37
KV-43	Bellekeno 625 Treatment Pond Decant	09/09/2013	<0.000010	0.00515	0.00610	<0.050	5.66	0.00313	3.39	<0.000010	21.1	0.526	151	0.000092	<0.00010	<0.010	0.00759	<0.0010	0.124	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	10/09/2013	<0.000050	0.00531	0.0061	<0.050	6.04	0.0026	3.39	<0.00010	20.0	0.552	163	<0.00010	<0.0010	<0.10	0.00699	<0.010	0.121	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	01/10/2013	<0.000010	0.00550	0.0109	<0.050	10.7	0.00262	3.45	0.000013	40.3	0.827	212	0.000179	<0.00010	<0.010	0.0151	<0.0010	0.0254	<0.00080	0	>100	0	>100	<0.0100
KV-43	Bellekeno 625 Treatment Pond Decant	08/10/2013	<0.000050	0.00479	0.0117	<0.050	7.21	0.0027	3.61	<0.00010	27.4	0.716	196	0.00016	<0.0010	<0.10	0.0130	<0.010	0.013	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	15/10/2013	<0.000050	0.00546	0.0149	<0.050	7.15	0.0019	3.66	<0.00010	26.9	0.791	213	0.00021	<0.0010	<0.10	0.0165	<0.010	0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	18/10/2013																							
KV-43	Bellekeno 625 Treatment Pond Decant	22/10/2013	<0.000010	0.00556	0.0147	<0.050	7.49	0.00197	3.77	<0.000010	26.6	0.769	226	0.000214	<0.00010	<0.010	0.0163	<0.0010	0.0181	<0.00080					
KV-43	Bellekeno 625 Treatment Pond Decant	05/11/2013	<0.000010	0.00501	0.0157	<0.050	8.43	0.00181	3.78	<0.000010	26.3	0.772	241	0.000201	<0.00010	<0.010	0.0157	<0.0010	0.0080	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	12/11/2013	<0.000050	0.00489	0.0176	<0.050	8.58	0.0017	3.87	<0.00010	28.3	0.811	241	0.00022	<0.0010	<0.10	0.0191	<0.010	0.011	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	19/11/2013	<0.000050	0.00492	0.0167	<0.050	6.47	0.0017	3.87	<0.00010	24.2	0.808	241	0.00021	<0.0010	<0.10	0.0179	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	27/11/2013	<0.000050	0.00441	0.0185	<0.050	5.85	0.0015	3.61	<0.00010	21.9	0.814	222	0.00021	<0.0010	<0.10	0.0188	<0.010	0.134	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	03/12/2013	<0.000010	0.00414	0.0128	<0.050	5.95	0.00155	3.45	<0.000010	21.8	0.763	230	0.000178	<0.00010	<0.010	0.0141	<0.0010	0.0068	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	10/12/2013	<0.000050	0.00424	0.0144	<0.050	5.64	0.0015	3.62	<0.00010	21.5	0.710	217	0.00019	<0.0010	<0.10	0.0115	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	16/12/2013	<0.000050	0.00429	0.0153	<0.050	5.56	0.0014	3.40	<0.00010	22.0	0.747	230	0.00020	<0.0010	<0.10	0.0128	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	23/12/2013	<0.000050	0.00390	0.0128	<0.050	5.52	0.0014	3.61	<0.00010	21.0	0.674	240	0.00019	<0.0010	<0.10	0.00936	<0.010	0.060	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	31/12/2013	<0.000050	0.00394	0.0131	<0.050	4.88	0.0013	3.49	<0.00010	21.9	0.711	224	0.00018	<0.0010	<0.10	0.0107	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	07/01/2014	<0.000010	0.00374	0.0143	<0.050	5.12	0.00122	3.48	<0.000010	21.2	0.609	225	0.000181	0.00018	<0.010	0.00663	<0.0010	0.154	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	13/01/2014	<0.000050	0.00361	0.0146	<0.050	5.27	0.0011	3.67	<0.00010	20.1	0.499	235	0.00019	<0.0010	<0.10	0.00479	<0.010	0.017	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	21/01/2014	<0.000050	0.00369	0.0184	<0.050	4.97	0.0011	3.56	<0.00010	20.9	0.638	228	0.00019	<0.0010	<0.10	0.00893	<0.010	0.064	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	28/01/2014	<0.000050	0.00334	0.0218	<0.050	4.98	<0.0010	3.67	<0.00010	20.4	0.669	224	0.00020	<0.0010	<0.10	0.0144	<0.010	0.324	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	04/02/2014	<0.000050	0.00344	0.0216	<0.050	4.92	0.0011	3.96	<0.00010	19.6	0.566	236	0.00018	<0.0010	<0.10	0.00919	<0.010	0.056	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	11/02/2014	<0.000010	0.00335	0.0215	<0.050	4.94	0.00118	3.95	<0.000010	20.4	0.540	232	0.000184	<0.00010	<0.010	0.00824	<0.0010	0.0246	<0.00080	0	>100	0	>100	<0.0100
KV-43	Bellekeno 625 Treatment Pond Decant	18/02/2014	<0.000050	0.00304	0.0212	<0.050	4.94	<0.0010	3.86	<0.00010	19.5	0.508	221	0.00018	<0.0010	<0.10	0.00747	<0.010	0.036	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	24/02/2014	<0.000050	0.00343	0.0228	<0.050	4.98	<0.0010	3.86	<0.00010	19.4	0.563	218	0.00018	<0.0010	<0.10	0.00806	<0.010	0.047	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	04/03/2014	<0.000050	0.00318	0.0217	<0.050	5.13	<0.0010	3.87	<0.00010	19.1	0.530	234	0.00018	<0.0010	<0.10	0.00695	<0.010	0.019	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	11/03/2014	<0.000010	0.00304	0.0217	<0.050	4.80	0.00064	3.83	<0.000010	18.5	0.513	232	0.000185	<0.00010	<0.010	0.00676	<0.0010	0.0238	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	21/03/2014	<0.000050	0.00315	0.0165	<0.050	5.06	<0.0010	3.71	<0.00010	19.1	0.588	234	0.00018	<0.0010	<0.10	0.00759	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	27/03/2014	<0.000050	0.00279	0.0099	<0.050	4.60	<0.0010	3.27	<0.00010	18.8	0.593	238	0.00017	<0.0010	<0.10	0.00347	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	02/04/2014	<0.000050	0.00285	0.0150	<0.050	4.53	<0.0010	3.43	<0.00010	18.2	0.572	229	0.00017	<0.0010	<0.10	0.00566	<0.010	0.017	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	16/04/2014	<0.000010	0.00303	0.0231	<0.050	4.77	0.00040	3.78	<0.000010	18.5	0.679	234	0.000198	<0.00010	<0.010	0.0142	<0.0010	0.255	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	22/04/2014	<0.000050	0.00285	0.0227	<0.050	4.65	<0.0010	3.67	<0.00010	19.2	0.644	226	0.00021	<0.0010	<0.10	0.0140	<0.010	0.163	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	29/04/2014	<0.000050	0.00277	0.0201	<0.050	4.55	<0.0010	3.63	<0.00010	17.1	0.564	230	0.00018	<0.0010	<0.10	0.00893	<0.010	0.023	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	06/05/2014	<0.000010	0.00264	0.0187	<0.050	8.43	0.00084	3.69	<0.000010	31.6	0.650	242	0.000209	<0.00010	<0.010	0.00923	<0.0010	0.106	<0.00080	0	>100	0	>100	<0.0100
KV-43	Bellekeno 625 Treatment Pond Decant	14/05/2014	<0.000050	0.00248	0.0132	<0.050	8.29	0.0011	3.34	<0.00010	30.4	0.696	232	0.00018	<0.0010	<0.10	0.00700	<0.010	0.022	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	20/05/2014	<0.000050	0.00216	0.0202	<0.050	4.78	0.0052	3.84	<0.00010	17.2	0.637	220	0.00017	<0.0010	<0.10	0.0122	<0.010	0.249	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	27/05/2014	<0.000050	0.00200	0.0226	<0.050	3.47	0.0100	3.94	<0.00010	14.5	0.589	200	0.00015	<0.0010	<0.10	0.0115	<0.010	0.231	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	03/06/2014	<0.000050	0.00206	0.0215	<0.050	4.13	0.0053	3.99	<0.00010	14.5	0.583	213	0.00017	<0.0010	<0.10	0.0122	<0.010	0.161	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	11/06/2014	<0.000050	0.00208	0.0181	<0.050	3.95	0.0040	3.70	<0.00010	14.3	0.532	209	0.00016	<0.0010	<0.10	0.00714	<0.010	0.193	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	17/06/2014	<0.000010	0.00169	0.0168	<0.050	3.54	0.00557	3.66	<0.000010	13.8	0.563	205	0.000132	<0.00010	<0.010	0.0102	<0.0010	0.0387	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	24/06/2014	<0.000050	0.00171	0.0106	<0.050	3.30	0.0085	3.26	<0.00010	13.2	0.645	200	0.00013	<0.0010	<0.10	0.00737	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	08/07/2014	<0.000050	0.00207	0.0182	<0.050	4.32	0.0033	3.69	<0.00010	17.3	0.692	223	0.00016	<0.0010	<0.10	0.0154	<0.010	0.020	<0.0080					

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Mercury (Hg), dissolved	Molybdenum (Mo), dissolved	Nickel (Ni), dissolved	Phosphorus (P), dissolved	Potassium (K), dissolved	Selenium (Se), dissolved	Silicon (Si), dissolved	Silver (Ag), dissolved	Sodium (Na), dissolved	Strontium (Sr), dissolved	Sulphur (S), dissolved	Thallium (Tl), dissolved	Tin (Sn), dissolved	Titanium (Ti), dissolved	Uranium (U), dissolved	Vanadium (V), dissolved	Zinc (Zn), dissolved	Zirconium (Zr), dissolved	LC50 % RT Mortality at 96 Hrs	LC50 [%] 50% RT Mortality	LC50 % DM Mortality at 48 Hrs	LC50 [%] 50% DM Mortality	Radium-226
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	%	%	%	Bq/L
MMER Grab																							50		1.11
MMER Max Monthly Mean																									0.37
KV-43	Bellekeno 625 Treatment Pond Decant	15/07/2014	<0.000050	0.00181	0.0144	<0.050	3.78	0.0036	3.53	<0.00010	14.4	0.689	216	0.00015	<0.0010	<0.10	0.0118	<0.010	0.027	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	22/07/2014	<0.000010	0.00178	0.0129	<0.050	3.77	0.00332	3.52	<0.000010	13.0	0.673	218	0.000142	<0.00010	<0.010	0.0113	<0.0010	0.0144	<0.00080	0	>100	0	>100	<0.0100
KV-43	Bellekeno 625 Treatment Pond Decant	30/07/2014	<0.000050	0.00171	0.0136	<0.050	3.48	0.0033	3.52	<0.00010	13.3	0.652	211	0.00014	<0.0010	<0.10	0.0119	<0.010	0.029	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	05/08/2014	<0.000010	0.00165	0.0128	<0.050	3.11	0.00357	3.39	<0.000010	12.4	0.657	201	0.000119	<0.00010	<0.010	0.0106	<0.0010	0.0912	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	13/08/2014	<0.000050	0.00187	0.0149	<0.050	5.09	0.0022	3.56	<0.00010	19.8	0.730	234	0.00016	<0.0010	<0.10	0.0126	<0.010	0.014	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	19/08/2014	<0.000050	0.00173	0.0140	<0.050	6.10	0.0033	3.46	<0.00010	23.1	0.681	227	0.00016	<0.0010	<0.10	0.0112	<0.010	0.034	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	26/08/2014	<0.000010	0.00173	0.0193	<0.050	3.88	0.00338	3.49	<0.000010	16.9	0.677	224	0.000150	<0.00010	<0.010	0.0144	<0.0010	0.359	<0.00080					
KV-43	Bellekeno 625 Treatment Pond Decant	03/09/2014	<0.000050	0.00155	0.0197	<0.050	3.29	0.0040	3.33	<0.00010	13.6	0.697	248	0.00015	<0.0010	<0.10	0.0130	<0.010	0.068	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	10/09/2014	<0.000050	0.00160	0.0111	<0.050	4.33	0.0029	3.06	<0.00010	16.6	0.703	245	0.00016	<0.0010	<0.10	0.00761	<0.010	0.014	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	16/09/2014	<0.000010	0.00165	0.0130	<0.050	6.32	0.00348	3.15	<0.000010	25.1	0.755	248	0.000157	<0.00010	<0.010	0.00904	<0.0010	0.0154	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	26/09/2014	<0.000050	0.00178	0.0163	<0.050	7.30	0.0030	3.13	<0.00010	27.7	0.745	255	0.00016	<0.0010	<0.10	0.0105	<0.010	0.035	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	30/09/2014	<0.000050	0.00173	0.0175	<0.050	4.47	0.0030	3.31	<0.00010	17.1	0.718	259	0.00014	<0.0010	<0.10	0.0109	<0.010	0.016	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	08/10/2014	<0.000050	0.00176	0.0177	<0.050	7.34	0.0032	3.44	<0.00010	25.2	0.764	266	0.00016	<0.0010	<0.10	0.0103	<0.010	0.045	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	14/10/2014	<0.000050	0.00168	0.0174	<0.050	6.75	0.0025	3.23	<0.00010	22.3	0.774	265	0.00017	<0.0010	<0.10	0.0114	<0.010	0.055	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	23/10/2014	<0.000050	0.00174	0.0168	<0.050	6.17	0.0030	3.14	<0.00010	21.5	0.772	272	0.00016	<0.0010	<0.10	0.0113	<0.010	0.030	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	28/10/2014	<0.000010	0.00199	0.0157	<0.050	5.84	0.00317	3.05	<0.000010	20.5	0.898	267	0.000167	0.00019	<0.010	0.0108	0.0013	0.0492	<0.00080	0	>100	0	>100	0.014
KV-43	Bellekeno 625 Treatment Pond Decant	04/11/2014	<0.000050	0.00192	0.0183	<0.050	4.37	0.0031	2.99	<0.00010	16.0	0.809	273	0.00017	<0.0010	<0.10	0.0116	<0.010	0.032	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	11/11/2014	<0.000050	0.00191	0.0220	<0.050	4.62	0.0024	3.36	<0.00010	17.3	0.790	265	0.00016	<0.0010	<0.10	0.0121	<0.010	0.047	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	18/11/2014	<0.000010	0.00203	0.0233	<0.050	4.69	0.00247	3.46	<0.000010	16.3	0.849	276	0.000177	<0.00010	<0.010	0.0132	0.0014	0.0513	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	27/11/2014	<0.000050	0.00192	0.0193	<0.050	4.34	0.0021	3.09	<0.00010	16.1	0.837	273	0.00016	<0.0010	<0.10	0.0116	<0.010	0.038	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	04/12/2014	<0.000050	0.00184	0.0203	<0.050	4.39	0.0018	3.06	<0.00010	15.8	0.849	271	0.00017	<0.0010	<0.10	0.0125	<0.010	0.023	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	09/12/2014	<0.000010	0.00171	0.0168	<0.050	4.17	0.00175	3.03	<0.000010	15.1	0.819	265	0.000154	<0.00010	<0.010	0.0106	0.0013	0.0234	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	15/12/2014	<0.000050	0.00178	0.0172	<0.050	4.20	0.0016	3.02	<0.00010	14.9	0.844	262	0.00015	<0.0010	<0.10	0.0110	<0.010	0.065	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	22/12/2014	<0.000050	0.00169	0.0217	<0.050	4.46	0.0014	3.32	<0.00010	15.9	0.854	279	0.00016	<0.0010	<0.10	0.0129	<0.010	0.038	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	02/01/2015	<0.000050	0.00176	0.0178	<0.050	4.14	0.0013	3.22	<0.00010	15.4	0.854	266	0.00015	<0.0010	<0.10	0.0117	<0.010	0.012	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	06/01/2015	<0.000050	0.00177	0.0161	<0.050	4.26	0.0013	3.15	<0.00010	15.6	0.876	268	0.00015	<0.0010	<0.10	0.0106	<0.010	0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	18/01/2015	<0.000050	0.00173	0.0218	<0.050	4.21	<0.0010	3.27	<0.00010	14.9	0.856	265	0.00017	<0.0010	<0.10	0.0140	<0.010	0.077	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	21/01/2015	<0.000010	0.00173	0.0165	<0.050	4.35	0.00107	3.23	<0.000010	14.6	0.823	263	0.000151	<0.00010	<0.010	0.0115	0.0011	0.0341	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	29/01/2015	<0.000050	0.00167	0.0133	<0.050	3.91	<0.0010	2.99	<0.00010	14.6	0.844	265	0.00013	<0.0010	<0.10	0.00920	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	03/02/2015	<0.000050	0.00168	0.0136	<0.050	4.35	<0.0010	3.12	<0.00010	15.4	0.846	259	0.00015	<0.0010	<0.10	0.00962	<0.010	0.020	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	15/02/2015	<0.000010	0.00174	0.0123	<0.050	4.50	0.00043	3.22	<0.000010	16.3	0.850	282	0.000143	<0.00010	<0.010	0.00849	0.0019	0.0267	<0.00080	0	>100	0	>100	0.011
KV-43	Bellekeno 625 Treatment Pond Decant	18/02/2015	<0.000050	0.00180	0.0139	<0.050	4.17	<0.0010	3.08	<0.00010	15.2	0.878	272	0.00015	<0.0010	<0.10	0.00947	<0.010	0.023	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	24/02/2015	<0.000050	0.00165	0.0129	<0.050	4.10	<0.0010	3.09	<0.00010	15.2	0.836	257	0.00013	<0.0010	<0.10	0.00929	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	03/03/2015	<0.000050	0.00174	0.0136	<0.050	4.47	<0.0010	3.19	<0.00010	16.4	0.871	282	0.00014	<0.0010	<0.10	0.00979	<0.010	<0.010	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	12/03/2015	<0.000010	0.00179	0.0175	<0.050	4.61	0.00017	3.26	<0.000010	16.4	0.920	282	0.000154	<0.00010	<0.010	0.0115	0.0018	0.0372	<0.00080	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	16/03/2015	<0.000010	0.00186	0.0224	<0.050	4.18	0.00011	3.25	<0.000010	16.1	0.915	277	0.000164	<0.00010	<0.010	0.0155	0.0012	0.0634	<0.00080					
KV-43	Bellekeno 625 Treatment Pond Decant	24/03/2015	<0.000050	0.00180	0.0206	<0.050	4.22	<0.0010	3.30	<0.00010	16.3	0.918	265	0.00016	<0.0010	<0.10	0.0137	<0.010	0.013	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	31/03/2015	<0.000050	0.00171	0.0162	<0.050	4.38	<0.0010	3.20	<0.00010	15.8	0.921	286	0.00014	<0.0010	<0.10	0.0112	<0.010	0.014	<0.0080					
KV-43	Bellekeno 625 Treatment Pond Decant	12/04/2015	<0.0000050	0.00159	0.0138	<0.050	3.80	0.000095	2.83	<0.000010	15.2	0.877	268	0.000137	<0.00010	<0.00030	0.00937	0.00083	0.0142	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	14/04/2015	<0.0000050	0.00162	0.0148	<0.050	4.18	0.000113	3.08	<0.000010	15.2	0.891	264	0.000141	<0.00010	<0.00030	0.00999	0.00080	0.0307	<0.00030	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	21/04/2015	<0.000050	0.00174	0.0137	<0.050	4.29	<0.0010	3.10	<0.00010	15.8	0.945	285	0.00013	<0.0010	<0.10	0.00891	<0.010	0.013	<0.00030					

APPENDIX D-1

Effluent Quality Data - Temporary Suspension of Operations Period

Station Name	Description	Sample Date	Mercury (Hg), dissolved mg/L	Molybdenum (Mo), dissolved mg/L	Nickel (Ni), dissolved mg/L	Phosphorus (P), dissolved mg/L	Potassium (K), dissolved mg/L	Selenium (Se), dissolved mg/L	Silicon (Si), dissolved mg/L	Silver (Ag), dissolved mg/L	Sodium (Na), dissolved mg/L	Strontium (Sr), dissolved mg/L	Sulphur (S), dissolved mg/L	Thallium (Tl), dissolved mg/L	Tin (Sn), dissolved mg/L	Titanium (Ti), dissolved mg/L	Uranium (U), dissolved mg/L	Vanadium (V), dissolved mg/L	Zinc (Zn), dissolved mg/L	Zirconium (Zr), dissolved mg/L	LC50 % RT Mortality at 96 Hrs %	LC50 [%] 50% RT Mortality %	LC50 % DM Mortality at 48 Hrs %	LC50 [%] 50% DM Mortality %	Radium-226 Bq/L
MMER Grab																							50		1.11
MMER Max Monthly Mean																									0.37
KV-43	Bellekeno 625 Treatment Pond Decant	28/04/2015	<0.000050	0.00185	0.0146	<0.050	4.07	<0.0010	3.10	<0.00010	16.5	1.01	271	0.00015	<0.0010	<0.10	0.0109	<0.010	<0.010	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	06/05/2015	<0.0000050	0.00169	0.0115	<0.050	4.06	0.000091	2.99	<0.000010	15.0	0.955	273	0.000131	<0.00010	<0.00030	0.00891	<0.00050	0.0043	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	12/05/2015	<0.0000050	0.00172	0.00738	<0.050	4.60	0.000166	2.95	<0.000010	17.0	1.01	274	0.000137	<0.00010	<0.00030	0.00663	<0.00050	0.0070	<0.00030					<0.0100
KV-43	Bellekeno 625 Treatment Pond Decant	20/05/2015	<0.000050	0.00144	0.0128	<0.050	3.86	<0.0010	3.03	<0.00010	14.9	0.877	296	0.00015	<0.0010	<0.10	0.00904	<0.010	<0.010	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	26/05/2015	<0.000050	0.00122	0.0105	<0.050	3.54	0.0075	3.08	<0.00010	13.1	0.759	231	0.00012	<0.0010	<0.10	0.00650	<0.010	0.016	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	28/05/2015																			0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	07/06/2015	<0.0000050	0.00134	0.0171	<0.050	3.00	0.00488	3.48	<0.000010	11.8	0.704	226	0.000123	<0.00010	<0.00030	0.0127	<0.00050	0.0039	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	12/06/2015	<0.000050	0.00133	0.0157	<0.050	3.23	0.0040	3.50	<0.00010	12.1	0.715	240	0.00012	<0.0010	<0.10	0.0114	<0.010	0.013	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	17/06/2015	<0.000050	0.00125	0.0133	<0.050	3.19	0.0038	3.44	<0.00010	11.5	0.695	234	0.00012	<0.0010	<0.10	0.00919	<0.010	0.015	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	23/06/2015	<0.000050	0.00136	0.0131	<0.050	3.23	0.0033	3.49	<0.00010	11.9	0.739	241	0.00012	<0.0010	<0.10	0.00971	<0.010	0.012	<0.00030	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	02/07/2015	<0.0000050	0.00136	0.0128	<0.050	3.52	0.00268	3.27	<0.000010	12.9	0.753	225	0.000115	<0.00010	<0.00030	0.00979	0.00052	0.0300	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	12/07/2015	<0.000050	0.00132	0.0089	<0.050	3.42	0.0023	3.00	<0.00010	13.0	0.742	225	0.00012	<0.0010	<0.10	0.00658	<0.010	0.011	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	16/07/2015	<0.000050	0.00136	0.0130	<0.050	3.44	0.0019	3.25	<0.00010	12.4	0.738	230	0.00013	<0.0010	<0.10	0.00980	<0.010	0.028	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	21/07/2015	<0.000050	0.00138	0.0144	<0.050	3.55	0.0024	3.29	<0.00010	12.2	0.751	229	0.00012	<0.0010	<0.10	0.0103	<0.010	0.013	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	29/07/2015	<0.0000050	0.00135	0.0159	<0.050	3.43	0.00212	3.42	<0.000010	12.1	0.722	248	0.000132	<0.00010	<0.00030	0.0111	0.00066	0.0263	<0.00030	0	>100	0	>100	0.011
KV-43	Bellekeno 625 Treatment Pond Decant	04/08/2015	<0.0000050	0.00133	0.0171	<0.050	3.50	0.00192	3.64	<0.000010	11.9	0.729	244	0.000126	<0.00010	<0.00030	0.0123	0.00080	0.0412	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	12/08/2015	<0.000050	0.00125	0.0185	<0.050	3.17	0.0026	3.49	<0.00010	12.3	0.705	230	0.00012	<0.0010	<0.10	0.0130	<0.010	0.017	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	18/08/2015	<0.000050	0.00125	0.0171	<0.050	3.26	0.0026	3.53	<0.00010	12.1	0.709	240	0.00012	<0.0010	<0.10	0.0123	<0.010	0.033	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	26/08/2015	<0.0000050	0.00138	0.0182	<0.050	2.88	0.00228	3.33	<0.000010	11.7	0.707	233	0.000127	<0.00010	<0.00030	0.0132	<0.00050	0.0399	<0.00030	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	02/09/2015	<0.0000050	0.00135	0.0204	<0.050	3.37	0.00242	3.62	<0.000010	11.6	0.777	275	0.000150	<0.00010	<0.00030	0.0144	<0.00050	0.0868	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	08/09/2015	<0.000050	0.00125	0.0221	<0.050	3.19	0.0029	3.48	<0.00010	13.3	0.792	274	0.00014	<0.0010	<0.10	0.0124	<0.010	0.066	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	14/09/2015	<0.000050	0.00127	0.0214	<0.050	3.43	0.0025	3.45	<0.00010	12.4	0.783	295	0.00014	<0.0010	<0.10	0.0129	<0.010	0.094	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	21/09/2015	<0.000050	0.00137	0.0227	<0.050	3.44	0.0020	3.33	<0.00010	13.6	0.778	272	0.00015	<0.0010	<0.10	0.0137	<0.010	0.064	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	27/09/2015	<0.000050	0.00137	0.0233	<0.050	3.53	0.0022	3.52	<0.00010	13.2	0.783	289	0.00016	<0.0010	<0.10	0.0135	<0.010	0.062	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	29/09/2015	<0.0000050	0.00150	0.0227	<0.050	3.41	0.00211	3.45	<0.000010	13.1	0.780	283	0.000163	<0.00010	<0.00030	0.0135	<0.00050	0.0652	<0.00030	0	>100	0	>100	
KV-43	Bellekeno 625 Treatment Pond Decant	06/10/2015	<0.000050	0.00147	0.0188	<0.050	3.67	0.0016	3.35	<0.00010	12.1	0.772	301	0.00015	<0.0010	<0.10	0.0121	<0.010	0.016	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	13/10/2015	<0.000050	0.00141	0.0242	<0.050	3.69	0.0013	3.45	<0.00010	12.3	0.833	299	0.00016	<0.0010	<0.10	0.0135	<0.010	0.048	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	20/10/2015	<0.0000050	0.00152	0.0237	<0.050	3.84	0.00118	3.32	<0.000010	13.7	0.837	302	0.000171	0.00039	<0.00030	0.0131	0.00109	0.0328	<0.00030	0	>100	0	>100	<0.0100
KV-43	Bellekeno 625 Treatment Pond Decant	28/10/2015	<0.000050	0.00156	0.0199	<0.050	4.10	0.0010	3.26	<0.00010	12.9	0.888	300	0.00014	<0.0010	<0.10	0.0100	<0.010	0.068	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	03/11/2015	<0.000050	0.00154	0.0234	<0.050	4.36	<0.0010	3.52	<0.00010	13.9	0.877	321	0.00017	<0.0010	<0.10	0.0138	<0.010	0.024	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	09/11/2015	<0.000050	0.00169	0.0255	<0.050	4.30	<0.0010	3.53	<0.00010	13.8	0.870	345	0.00017	<0.0010	<0.10	0.0139	<0.010	0.028	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	24/11/2015	<0.0000050	0.000460	0.00780	<0.050	1.35	0.0111	2.00	<0.000010	5.34	0.596	176	0.000052	0.00014	<0.00030	0.00202	0.00115	0.0638	<0.00030					
KV-43	Bellekeno 625 Treatment Pond Decant	25/11/2015	<0.0000050	0.000430	0.0121	<0.050	1.34	0.0109	2.23	<0.000010	5.24	0.565	167	0.000055	<0.00010	<0.00030	0.00231	0.00092	0.141	<0.00030					

HydroQual
Laboratories Ltd.

ATTN: Peter Johnson/Kai Woloshyn
Alexco Resource Corp.
Suite 1150-200 Granville Street
Vancouver, British Columbia
Canada V6C 1S4

Received:	2014/12/18, 1010
Report Date:	2015/01/22
Version:	FINAL

HydroQual Test Report

Client:	ALE132
Reference:	14-1901
Billing:	see paperwork

Technical Lead

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

HydroQual Laboratories Ltd.

#4, 6125 12th Street SE Calgary, Alberta Canada T2H 2K1
Tel (403) 253-7121 Fax (403) 252-9363 www.hydroqual.ca

Transmittal

Date: 2014/01/22

From: Jacklyn Pool, BSc.
Laboratory Supervisor

To: Peter Johnson
Alexco Resource Corp.

Sublet of Algae and Early Life Stage Testing for 14-1901

A toxicity sample was collected December 15, 2014 and given the name KV-43. This sample was then submitted to HydroQual Laboratories for analysis and was assigned the laboratory reference 14-1901. The required tests were early life stage rainbow trout, algae, *Ceriodaphnia dubia* and *Lemna minor*.

Due to the validation of an update to HydroQual's algae method, the algae component was also subcontracted to Pollutech. The Early Life Stage test was subcontracted to Nautilus environmental due to the fact that HydroQual does not conduct these tests in-house.

Detailed results from Pollutech and Nautilus have been provided here for your consideration. The algae component was set outside of hold time and a protocol deviation was noted on the Pollutech report. I have verified that these results meet all other necessary method requirements.

Please let me know if you have any questions or if you require any additional information.

Thank you,

Laboratory Supervisor

The document(s) included in this transmission are intended only for the recipient(s) named above and contain privileged and confidential information. Any unauthorized disclosure, dissemination or copying of this transmission is strictly prohibited. If you have received this transmission in error, please immediately notify us by telephone and destroy the transmission. Thank you.

pollutech
enviroquatics limited

January 2, 2015

Holly Stewart
HydroQual Laboratories Ltd.
#4, 6125 12th Street SE
Calgary, AB
T2H 2K1

Dear Holly:

On December 19, 2014, Pollutech EnviroQuatics Limited personnel received one water sample (14-1901) from HydroQual Laboratories Ltd., Calgary Site. The following chronic toxicity test was performed on this sample observing Environment Canada methods:

- Freshwater alga 72-hour toxicity test, according to the protocol "Biological Test Method: Growth Inhibition Test Using a Freshwater Alga", Second Edition, Environmental Protection Series, Ottawa, ON., Report EPS 1/RM/25, March 2007.

Summary of Chronic Toxicity Test Results

Sample Name Sample #	Toxicity Test	Endpoint	Effect	Result[1,2]
14-1901	*Pseudokirchneriella subcapitata*[3]	72-hour IC25 (95% Confidence)	Growth	47.03% Volume (24.25, 68.14% v/v)
#51618014104		72-hour IC50 (95% Confidence)	Growth	78.04 % Volume (90.91, NA % v/v)

1 – Results relate only to the sample tested
2 - Sample started 24 hours past hold time. Tested at clients request. Method Deviation.
3 – Previously called *Selenastrum capricornutum*

Toxicity Test Endpoint Descriptions

From the data obtained in toxicity tests the following endpoints can be determined:

IC25 — The estimated test sample concentration which causes a 25% impairment in a quantitative biological function (*i.e.,* the concentration estimated to cause a 25% reduction in fathead minnow larvae biomass, 25% reduction in the number of *Ceriodaphnia dubia* young produced or 25% algae growth).

IC50 — The estimated test sample concentration which causes a 50% impairment in a quantitative biological function (*i.e.,* the concentration estimated to cause a 50% reduction in the number of *Ceriodaphnia dubia* young produced).

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Chronic Toxicity Test Descriptions

Pseudokirchneriella subcapitata (previously *Selenastrum capricornutum*) Toxicity Test

The *Pseudokirchneriella subcapitata* 72-hour growth inhibition test is performed to determine the capacity of a sample to inhibit the growth of algal cells. *P. subcapitata* cells are introduced into the test in the form of an inoculum, in which the algae is 3 to 7 days old and at a concentration of 10,000 cells/mL. The test is comprised of at least 10 concentrations, of 3 to 4 replicates each, diluted by a factor of 0.33 (*i.e.*, 100%, 33%, 11%, 3.7% etc.). The set of controls includes 10 replicates. Into each replicate of the test, 2200 algal cells are placed. The actual concentrations are diluted by a factor of 0.9091 because of the addition of a nutrient spike (enrichment medium) and the preparation of the inoculum. After 72 hours in an incubation area, the cells in each replicate are counted, and the growth of the algae exposed to the sample is compared with growth of the controls. An IC25 is calculated to reveal if the sample caused any inhibition in the growth of the algal cells.

The following pages contain detailed descriptions of the chronic toxicity test. Also attached is a graph of the impairment in growth/reproduction. Additional information with regard to quality assurance/quality control procedures and results can be made available if so desired. If there are any further details which you require, please do not hesitate to contact us.

Yours very truly,
Pollutech EnviroQuatics Limited

R. Clay Ferguson, B.Sc. (Hon.)
Laboratory Manager

File ID:\bioassay\2014\5000\516180\516180dc2 Pseu.

*Pseudokirchneriella subcapitata** 72-Hour Growth Inhibition Test

*(previously called *Selenastrum capricornutum*)

METHOD: Environment Canada "Biological Test Method: Growth Inhibition Test Using a Freshwater Alga", Second Edition, Environmental Protection Series, Ottawa, ON., Report EPS 1/RM/25, March 2007. Pollutech Test Method PS-GI-R1.12.

Test Material

Client Name/Location:	HydroQual Laboratories Ltd., Calgary, AB		
Sample #:	51618014104	**Sample Name:**	14-1901
Sample Method:	Grab	**Collected by:**	n/a
Date/Time Collected:	December 15, 2014; n/a	**Arrival Temp.:**	10.8°C
Date/Time Received:	December 19, 2014; 11:00	**Sample Description:**	Clear, colourless
Sample Point Description:	Other	**Sample Type:**	n/a
Transportation:	Air/Road		
Storage:	N/A		
Container:	500 mL Plastic Bottle		

n/a – not available

Test Organisms

Species (Strain #):	*Pseudokirchneriella subcapitata* (CPCC # 37)
Source:	Pollutech Plant Culture Unit (from CPCC)
Culture Temp.:	24 ± 2 °C
Test Culture Number:	G2(I)b
Culture Age at Test Start:	3 days old
Cell Density in the Microplate Wells at the Start of the Test:	10,340.91 cells/ml

Test Conditions

Date/Time Test Start:	Dec. 19, 2014; 12:05	**T=0 Control pH:**	7.4
Date/Time Test End:	Dec. 22, 2014; 11:40 to 12:30, 13:15-15:00	**T=72 Control pH:**	7.4
Sample pH Before Dilution:	7.5	**pH Adjustment:**	None
Test Duration:	72 hours		

Test Conditions – continued

Mean Test Temperature (±Standard Deviation): 24.4 (± 0.9)°C

Pre-Aeration of Sample: None **Analyst:** E. Pasiak/J. Woodward/ R.Giacomin/

Procedure for Sample Filtration: 50-ml subsample filtered through preconditioned 0.45-µm pore diameter membrane

Type and Source of Control/Dilution Water: Millipore water

Type and Quantity of Chemicals Added to Control/Dilution Water: None

Metal Mining Effluent Nutrient Spike Used: Yes

Type and Quantity of Chemicals Added to Each Well as Nutrient Spike:

Macronutrient	mg/l	Micronutrient	µg/l
$NaNO_3$	15.94	H_3BO_3	115.95
$MgCl_2\ 6H_2O$	6.25	$MnCl_2\ 4H_2O$	259.76
$CaCl_2\ 2H_2O$	2.76	$ZnCl_2$	2.05
$MgSO_4\ 7H_2O$	9.19	$CoCl_2\ 6H_2O$	0.89
K_2HPO_4	0.65	$CuCl_2\ 2H_2O$	0.008
$NaHCO_3$	9.38	$Na_2MoO_4\ 2H_2O$	4.54
		$FeCl_3\ 6H_2O$	100
		$Na_2EDTA\ 2H_2O$	46.9

Enumeration Technique: Neubauer Haemacytometer

Test Vessel: 96-Well U-bottomed Polystyrene Microplate

Concentration of Test Solutions: 90.91%; 30.30%; 10.10%; 3.37%; 1.12%; 0.374%; 0.125%; 0.042%; 0.014%; 0.005%; control

 # Replicates/Concentration: 4 reps started, 3 reps counted of test solutions
10 control reps started, 2 used for pH measurement

Design if Specialized Procedure: Not Applicable

Method Deviations or Unusual Occurrences: Yes. Sample past holding time. Test proceeded on client request.

Conditions for Test Validity

Algal cells in the controls increase by a factor of >16 times:	Acceptable (19.7 times)
pH in controls did not vary by more than 1.5 units:	Acceptable (0 units)
C V for cell yields is < 20% within the control wells:	Acceptable (17.9%)
No inhibitory trend detected across the control wells:	Acceptable (no significant trend)

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*Pseudokirchneriella subcapitata** 72-Hour Growth Inhibition Test

*(previously called *Selenastrum capricornutum*)

Sample #: 51618014104 **Sample Name:** 14-1901

Test Results

Control 72-Hour Growth Data - Cell Yield[1] (cells/ml)									
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Mean	CV[2]
264,659	204,659	167,159	199,659	194,659	174,659	172,159	252,159	203,722	17.9

1 Cell yield = measured algal cell concentration - initial algal cell concentration
2 CV = Coefficient of Variation = (100 x standard deviation / mean)

Test Concentrations 72-Hour Growth Data - Cell Yield[1] (cells/ml)					
REP	Concentration				
	90.91%	**30.30%**	**10.10%**	**3.37%**	**1.12%**
1	117,159	174,659	222,159	237,159	259,659
2	107,159	202,159	254,659	239,659	237,159
3	129,659	204,659	384,659	249,659	282,159
Mean Cell Yield	117,992	193,826	287,159	242,159	259,659
Coefficient Variation[2]	10	9	30	3	9
REP	Concentration				
	0.374%	**0.125%**	**0.042%**	**0.014%**	**0.005%**
1	292,159	227,159			
2	294,659	244,659			
3	264,659	199,659			
Mean Cell Yield	283,826	223,826			
Coefficient Variation[2]	6	10			

1 Cell yield = measured algal cell concentration - initial algal cell concentration
2 Coefficient of Variation = (100 x standard deviation / mean)
Mean cell yield for concentrations with significant growth stimulation are shaded. Growth stimulation is determined by statistical comparison with control cell yield by pairwise comparison using William's Test.

Statistical Analysis

Statistic	Result[1]	Method of Calculation
IC25 (95% CI)[2] for Cell Yield	47.03% Volume (24.25; 68.14% v/v)	Linear Interpolation ICPIN No nonlinear regression models would fit
IC50 (95% CI)[2] for Cell Yield	78.04% Volume[3] (90.91; NA % v/v)	Linear Interpolation ICPIN No nonlinear regression models would fit
Test for Trend in Controls	no trend	Mann-Kendall

1 Results relate only to the sample tested. N/A - Not Available
2 Empirical 95% Confidence Interval for the Bootstrap Estimate
3 Highest concentration tested, based on test method.

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***Pseudokirchneriella subcapitata** 72-Hour Growth Inhibition Test**
*(previously called *Selenastrum capricornutum*)

Sample #: 51618014104 **Sample Name:** 14-1901

Method of Analysis

IC25 and Pairwise Comparison: Tidepool Scientific Software, 2001-2007 Comprehensive Environmental Toxicity, Information System - CETIS v1.8.1.2.

Mann-Kendall: "Selenastrum Trend Test 2" Excel Program by B. Zadlijk

Weighting Techniques Applied to the Data: None

Outliers and Justification for Their Removal: Yes, rep 3 conc. 10.101%

Statistic Transformation of Data that Was Required: None

Reference Toxicant Results

Reference test performed under same experimental conditions as test: Yes

Test Method Deviation: None

Reference Chemical: Phenol **Date Test Initiated:** 12/08/14

Method of Analysis: ICPIN- linear interpolation

Algae Lot #: G5(l)a

72-hour IC25 (95% Confidence Limits): 77.09 mg/L (66.15 mg/L; 86.63 mg/L)

Historic Geometric Mean IC25: 42.21 mg/L (22.25 mg/L; 80.06 mg/L)
(Historic Warning Limits) (± 2 Standard Deviations)

Test Facilities

Testing Laboratory: Pollutech EnviroQuatics Limited, 704 Mara St., Suite 122, Point Edward, Ontario, N7V 1X4

CALA
Testing
Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA). The test included in this report is within the scope of this laboratory.

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Sample Name 14-1901 Sample # 51618014104 Date test start 12.19.14

Calculate initial algal cell concentration

Concentration of innocculum (cells/ml)	113750	Use last count algae/nutrient mixture or algae only	
Volume of algae addition (uL)	20	Algae/nutrient mixture = 20uL, algae only 10uL	
Cells added to each test well	2275	**Cell yield (must be >16 times in controls)**	
Cells/ml in well at T=0	10340.90909	=	19.700549

enter control data

	D2	D3	D4	D5	D8	D9	D10	D11
	23	19	16	13	24	18	15	24
	24	20	22	26	19	21	15	29
	34	26	15	21	21	21	18	27
	29	21	18	24	18	14	25	25
total cells	110	86	71	84	82	74	73	105
cells/ul	275	215	177.5	210	205	185	182.5	262 5
cells/ml	275000	215000	177500	210000	205000	185000	182500	262500
Cell yield = measured concentration - initial algal cell concentration								
	264659	204659	167159	199659	194659	174659	172159	252159

Mean cell yield for the control = Rc Standard deviation coefficient of variation

Rc 203722 SD 36521.45896 CV 17.927142 **Must be ≤20**

% inhibition summary

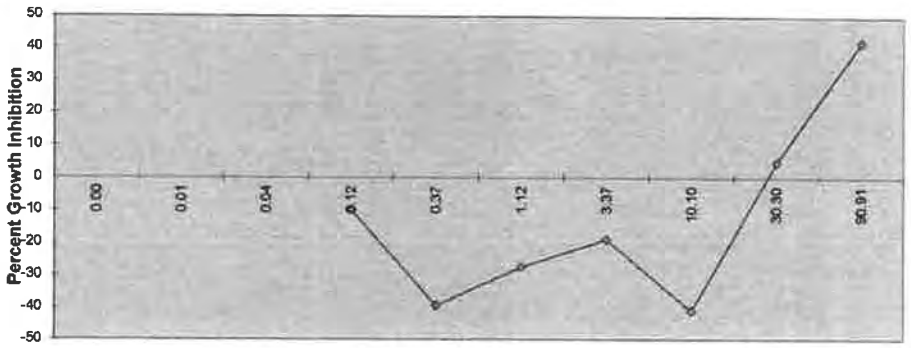
Concentrati	Average % inhibition
0 005	
0.014	
0.042	
0.125	-9.868
0 374	-39 320
1.122	-27 458
3 367	-18.868
10.101	-40.957
30.303	4 858
90.910	42.082

enter test data

nominal conc	100.000			33.333			11.111			3.704			1.235		
Conc.(%)	90.910			30.303			10.101			3.367			1.122		
	B2	C2	F2	B3	C3	F3	B4	C4	F4	B5	C5	F5	B6	C6	F6
	10	11	15	18	31	31	16	33	35	26	24	26	32	32	31
	16	6	16	20	19	13	23	22	37	18	26	26	20	25	30
	15	9	9	18	18	17	26	25	45	31	25	25	31	18	25
	10	21	16	18	17	25	28	26	41	24	25	27	25	24	31
total cells	51	47	56	74	85	86	93	106	158	99	100	104	108	99	117
cells/ul	127.5	117.5	140	185	212.5	215	232 5	265	395	247.5	250	260	270	247 5	292.5
cells/ml	127500	117500	140000	185000	212500	215000	232500	265000	395000	247500	250000	260000	270000	247500	292500
Cell yield = measured concentration - initial algal cell concentration															
	117159	107159	129659	174659	202159	204659	222159	254659	384659	237159	239659	249659	259659	237159	282159
Mean Yield	117992			193826			287159			242159			259659		
STD Yield	11273			16646			85987			6614			22500		
CV Yield	10			9			30			3			9		

Average % inhibition														
	for 90.910%	42.082		for 30.303%	4.858		for 10.101%	-40.957		for 3.367%	-18.868		for 1.122%	-27 458	

Average % stimulation														
	for 90.910%	-42.082		for 30.303%	-4.858		for 10 101%	40.957		for 3 367%	18.868		for 1 122%	27.458	



0.412			0.137			0.046			0.015			0.005		
0.374			0.125			0.042			0.014			0.005		
B7	C7	F7	B8	C8	F8	B9	C9	F9	B10	C10	F10	B11	C11	F11
31	35	26	23	26	22									
22	27	22	25	23	18									
40	30	31	26	23	28									
28	30	31	21	30	16									
121	122	110	95	102	84	0	0	0	0	0	0	0	0	0
302.5	305	275	237.5	255	210	0	0	0	0	0	0	0	0	0
302500	305000	275000	237500	255000	210000	0	0	0	0	0	0	0	0	0
292159	294659	264659	227159	244659	199659	-10341	-10341	-10341	-10341	-10341	-10341	-10341	-10341	-10341
283626			223826			-10341			-10341			-10341		
16646			22684			0			0			0		
6			10			0			0			0		
for 0.374%	-39.320		for 0.125%	-9.868		for 0.042%	105.076		for 0.014%	105.076		for 0.005%	105.076	
for 0.374%	39.320		for 0.125%	9.868		for 0.042%	-105.076		for 0.014%	-105.076		for 0.005%	-105.076	

Pollutech EnviroQuatics Limited
***Pseudokirchneriella subcapitata* 72-Hour Growth Inhibition Test**
Summary Sheet

Client Hydromantel Sample Name 14 - 1901 Sample # 516180141104

Conditions for Test Validity

Cell increase for control is >16	Acceptable/Not acceptable	19.7 (times)
CV among controls ≤ 20	Acceptable/Not acceptable	17.9
Result of Mann-Kendall test for trend	Acceptable/Not acceptable	no significant trend

Test Organisms

Concentration of Innocculum

Algae and Nutrient spike 113 750 (cells/mL)

Used: Yes/No (Circle one)

Algae only _____ (cells/mL)

Used: Yes/No (Circle one)

Cell density in the microplate wells at the start of the test 10340.91 (cells/mL)

Analysis Completed: Initials: EP Date: 12/23/14

Results Verified: Initials: RG Date: 12/29/14

Psuedokirchneriella subcapitata Growth Inhibition Test
72-Hour Quantitative Observations of Test Concentrations

Sample Name: 14 – 1901 Sample Number: 516180141104 Date Test Start: 12 19 14

Theoretical Test Concentration : 3.704 % v/v					Actual Test Concentration: 3.367 % v/v
Cell count per 0.1 µl or 0.004 µl	Well # B5	Well # C5	Well # F5	Well #	Average Cell Yield (±Standard Deviation)
1	26	24	26		242 159 (± 6614)
2	18	26	26		Coefficient of Variation of Cell Yield
3	31	25	25		3
4	24	25	27		Average % Inhibition (-ve number = enhancement)
5	—	—	—		-18.868
Initials	JW	[illegible]	[illegible]		[illegible]

Theoretical Test Concentration : 1.235 % v/v					Actual Test Concentration: 1.122 % v/v
Cell count per 0.1 µl or 0.004 µl	Well # B6	Well # C6	Well # F6	Well #	Average Cell Yield (±Standard Deviation)
1	32	32	31		259659 (± 22500)
2	20	25	30		Coefficient of Variation of Cell Yield
3	31	18	25		9
4	25	24	31		Average % Inhibition (-ve number = enhancement)
5	—	—	—		-27.458
Initials	[illegible]	[illegible]	JW		[illegible]

Theoretical Test Concentration : 0.412 % v/v					Actual Test Concentration: 0.374 % v/v
Cell count per 0.1 µl or 0.004 µl	Well # B7	Well # C7	Well # F7	Well #	Average Cell Yield (±Standard Deviation)
1	31	35	26		283 826 (± 16646)
2	22	27	22		Coefficient of Variation of Cell Yield
3	40	30	31		6
4	28	30	31		Average % Inhibition (-ve number = enhancement)
5	—	—	—		-39.320
Initials	JW	[illegible]	[illegible]		[illegible]

Psuedokirchneriella subcapitata Growth Inhibition Test
72-Hour Quantitative Observations of Test Concentrations

Sample Name: 14 – 190 Sample Number: 516180141 04 Date Test Start: 12. 19 14

Theoretical Test Concentration : 0.137 % v/v		Actual Test Concentration: 0.125 % v/v			
Cell count per 0.1 µl or 0.004 µl	Well # B8	Well # C8	Well # F8	Well #	Average Cell Yield (±Standard Deviation)
1	23	26	22		223 826 (± 22684)
2	25	23	18		Coefficient of Variation of Cell Yield
3	26	23	28		10
4	21	30	16		Average % Inhibition (-ve number = enhancement)
5	—	—	—		-9.868
Initials	JW	JW	[illegible]		[illegible]

Theoretical Test Concentration :		Actual Test Concentration:			
Cell count per 0.1 µl or 0.004 µl	Well #	Well #	Well #	Well #	Average Cell Yield (±Standard Deviation)
1					
2					Coefficient of Variation of Cell Yield
3					
4					Average % Inhibition (-ve number = enhancement)
5					
Initials					

Theoretical Test Concentration :		Actual Test Concentration:			
Cell count per 0.1 µl or 0.004 µl	Well #	Well #	Well #	Well #	Average Cell Yield (±Standard Deviation)
1					
2					Coefficient of Variation of Cell Yield
3					
4					Average % Inhibition (-ve number = enhancement)
5					
Initials					

Nautilus Environmental

HydroQual Laboratories Ltd.

Embryo Development Testing - Sample 14-1901

Collected December 15, 2014

Report date:
January 19, 2015

Submitted to:

HydroQual Laboratories Ltd.
Calgary, AB

8664 Commerce Court
Burnaby, BC
V5A 4N7

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APPENDIX B - Chain of Custody Form

SIGNATURE PAGE

Yvonne Lam, B.Sc.
Laboratory Biologist

Armando Tang, R.P.Bio.
Senior Reviewer

This report by Nautilus Environmental Company Inc. is based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

1.0 INTRODUCTION

Nautilus Environmental conducted a 7-d rainbow trout (*Oncorhynchus mykiss*) embryo toxicity test for HydroQual Laboratories Ltd. on a sample identified as 14-1901. The sample was collected on December 15, 2014 and transported in seven 20-L plastic containers. They were delivered to the Nautilus Environmental laboratory in Burnaby, BC on December 17, 2014 and stored in the dark at 4 ± 2°C prior to testing.

This report describes the results of the toxicity test. Copies of raw laboratory data sheets and statistical analyses for the sample are provided in Appendix A. The chain-of-custody form is provided in Appendix B.

2.0 METHODS

The methodology for the 7-day rainbow trout embryo test is summarized in Table 1. Testing was conducted according to procedures described by Environment Canada (1998) and Canaria et al. (1999). Statistical analyses were performed using CETIS (Tidepool Scientific Software, 2013).

Table 1. Summary of test conditions: 7-d rainbow trout embryo LC50 test.

Test organism	*Oncorhynchus mykiss*
Test organism source	Vancouver Island Trout Hatchery, Duncan, BC
Test organism age	<30 min post fertilization embryos, <24-h old gametes
Test type	Static-renewal
Test duration	7 days
Test vessel	2-L plastic containers
Test solution volume	2 L
Test treatments	Laboratory control, 6.25%, 12.5%, 25%, 50%, and 100% sample
Test replicates	4 test replicates per treatment
Number of organisms	30 eggs per container
Control / Diluent water	Dechlorinated municipal tap water (hardness 9 mg/L $CaCO_3$)
Test solution renewal	Daily
Test temperature	14 ± 1°C
Feeding	None
Light intensity	Dark (low light during solution renewals)
Photoperiod	24 h dark
Aeration	6.5 ± 1 mL/min/L
Test protocol	Environment Canada (1998), EPS 1/RM/28; Canaria et al. (1999)
Statistical software	CETIS (2013)
Test endpoint	Percent embryo viability
Test acceptability criterion for control	Embryo viability ≥70%
Reference toxicant	Sodium dodecyl sulphate (SDS)

3.0 RESULTS

Results of the 7-day rainbow trout embryo test are provided in Table 2. Embryo viability in all the test treatments and lab control were >74%. Consequently, the EC25 and EC50 values for this sample were both >100% (v/v).

Table 2. Results: 7-d rainbow trout embryo LC50 test.

Concentration (% v/v)	**Embryo Viability (%) (Mean ± SD)**
Control	81.7 ± 8.8
6.25	90.0 ± 4.7
12.5	92.5 ± 5.0
25	81.7 ± 6.4
50	79.2 ± 5.7
100	74.5 ± 7.6
Test endpoint	
EC25 (% v/v)	>100
EC50 (% v/v)	>100

SD = Standard Deviation, v/v = volume per volume, EC = Effective Concentration.

4.0 QA/QC

The test met control passing criterion of ≥70% embryo viability specified in the Environment Canada protocol. Water quality parameters were within ranges specified in the protocol and there were no deviations from the test methodologies. Uncertainty associated with these tests is best described by the standard deviation around the mean and/or where applicable, the confidence intervals around the point estimates.

Results of the reference toxicant test conducted during the testing program are summarized in Table 3. Results for this test fell within the range for organism performance of mean and range, based on historical results obtained by the laboratory with this test species. Thus, the sensitivity of the embryos used in the toxicity test and evaluated with the concurrent SDS reference toxicant test was appropriate.

Table 3. Reference toxicant test result.

Test Species	Endpoint	Historical Mean (2 SD Range)	CV (%)	Test Date
O. mykiss (embryo)	Viability (EC50): 4.4 mg/L SDS	3.9 (2.1 - 7.1)	35	December 17, 2014

SD = Standard Deviation, CV = Coefficient of Variation, EC = Effective Concentration.

5.0 REFERENCES

Canaria, E.C., J.R. Elphick and H.C. Bailey. 1999. A simplified procedure for conducting small-scale short-term embryo toxicity tests with salmonids. *Environ. Toxicol.* 14:301-307.

Environment Canada. 1998. Biological test method: toxicity tests using early life stages of salmonid fish (rainbow trout). Environmental Protection Series EPS 1/RM/28. Second Edition, July 1998. Environment Canada, Method Development and Application Section, Environmental Technology Centre, Ottawa, ON. 102 pp.

Tidepool Scientific Software. 2013. CETIS comprehensive environmental toxicity information system, version 1.8.7.16 Tidepool Scientific Software, McKinleyville, CA. 222 pp.

APPENDIX A - 7-d Rainbow Trout Embryo Toxicity Test Data

Rainbow Trout Embryo Summary Sheet

Client: HydroQual

Start Date/Time: December 17, 2014 @1600

Work Order No.: 14994

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 14-1901
Sample Date: December 15, 2014
Date Received: December 17, 2014
Sample Volume: 7 x 20L

Dilution Water:

Type: Dechlorinated Tap Water
Hardness (mg/L $CaCO_3$): 9
Alkalinity (mg/L $CaCO_3$): 7

Test Organism Information:

Batch No.: 121714
Source: Vancouver Island Trout Hatchery, Duncan, B.C.
Loading Density: 0.94 g/L

SDS Reference Toxicant Results:

Reference Toxicant ID: RTE68
Stock Solution ID: 14S04
Date Initiated: December 17, 2014
7-d EC50 (95% CL): 4.4 (4.1-4.7) mg/L SDS

Reference Toxicant Mean and Range: 3.9 (2.1-7.1) mg/L SDS
Reference Toxicant CV (%): 35

Test Results:

	Sample ID		
	14-1901		
EC25 % (v/v) (95% CL)	>100		
EC50 % (v/v) (95% CL)	>100		

Reviewed by: JCh

Date reviewed: Jan. 15/15

CETIS Analytical Report

Salmonid Embryo Survival and Development Test — **Nautilus Environmental**

Analysis ID:	04-9905-7214	**Endpoint:**	Proportion Normal	**CETIS Version:**	CETISv1.8.7
Analyzed:	30 Dec-14 17:04	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	01-3038-5181	**Test Type:**	Development	**Analyst:**	Yvonne Lam
Start Date:	17 Dec-14 16:00	**Protocol:**	EC/EPS 1/RM/28	**Diluent:**	Dechlorinated Tap Water
Ending Date:	24 Dec-14 11:00	**Species:**	Oncorhynchus mykiss	**Brine:**	
Duration:	6d 19h	**Source:**	Vancouver Island Trout Hatchery	**Age:**	
Sample ID:	09-6766-4067	**Code:**	39AD61C3	**Client:**	hydroqual
Sample Date:	15 Dec-14	**Material:**	Effluent	**Project:**	
Receive Date:	17 Dec-14 14:45	**Source:**	Hydroqual (HYDROQUAL)		
Sample Age:	64h (7 °C)	**Station:**	14-1901		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	366666	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	20.21	14.09	75.13	4.949	1.331	7.098
EC10	48.87	4.892	N/A	2.046	NA	20.44
EC15	96.2	16.93	N/A	1.04	NA	5.905
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

Proportion Normal Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	0.8167	0.7	0.9	0.0441	0.08819	10.8%	0.0%	98	120
6.25		4	0.9002	0.8333	0.9333	0.02333	0.04665	5.18%	-10.23%	108	120
12.5		4	0.925	0.8667	0.9667	0.025	0.05	5.41%	-13.27%	111	120
25		4	0.8167	0.7333	0.8667	0.03191	0.06383	7.82%	0.0%	98	120
50		4	0.7917	0.7333	0.8667	0.02846	0.05693	7.19%	3.06%	95	120
100		4	0.7454	0.6333	0.8	0.03786	0.07571	10.16%	8.72%	91	122

Proportion Normal Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	0.8	0.7	0.9	0.8667
6.25		0.8333	0.931	0.9032	0.9333
12.5		0.9667	0.8667	0.9	0.9667
25		0.8667	0.8667	0.8	0.7333
50		0.8667	0.7333	0.7667	0.8
100		0.7742	0.8	0.7742	0.6333

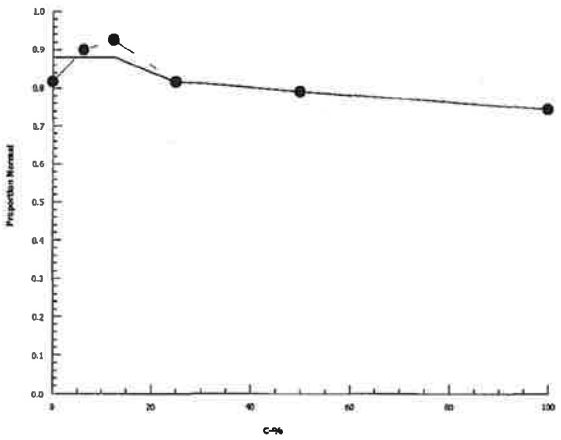
Proportion Normal Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	24/30	21/30	27/30	26/30
6.25		25/30	27/29	28/31	28/30
12.5		29/30	26/30	27/30	29/30
25		26/30	26/30	24/30	22/30
50		26/30	22/30	23/30	24/30
100		24/31	24/30	24/31	19/30

Salmonid Embryo Survival and Development Test **Nautilus Environmental**

Analysis ID:	04-9905-7214	**Endpoint:**	Proportion Normal	**CETIS Version:**	CETISv1.8.7
Analyzed:	30 Dec-14 17:04	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



Chronic Freshwater Toxicity Test
Initial and Final Water Quality Measurements

Client: Hydroqual
Sample ID: 14-1901
Work Order #: 14994
Start Date & Time: December 17, 2014 @ 16:00
Stop Date & Time: December 24, 2014 @ 11:00
Test Species: *Oncorhynchus mykiss*

(%v/v) Concentration	Days													
	0	1		2		3		4		5		6		7
Control	init.	new	old	new	old	new	old	new	old	new	old	new	old	final
Temperature (°C)	13.5	14.0	14.0	13.5	14.5	14.0	14.0	14.0	14.0	14.5	14.5	14.0	14.5	14.5
DO (mg/L)	10.1	9.9	9.8	9.9	9.8	10.1	9.9	10.1	9.8	9.9	9.8	9.9	9.8	9.9
pH	6.8	6.8	6.7	6.8	6.7	6.8	6.9	6.8	7.0	6.8	6.9	6.8	6.7	6.9
Cond. (µS/cm)	27	26		25		26		26		25		25		27
Initials	YML	SSD		SSD		AD		AD		SSD		SSD		YML

Concentration 6.25	Days													
	0	1		2		3		4		5		6		7
	init.	new	old	new	old	new	old	new	old	new	old	new	old	final
Temperature (°C)	13.5	13.0	14.0	13.5	14.5	14.0	14.0	14.0	14.0	14.5	14.5	14.0	14.5	14.5
DO (mg/L)	10.2	9.9	9.8	10.0	9.9	10.1	9.8	10.2	9.7	10.0	9.9	9.9	9.8	9.9
pH	6.9	6.8	6.9	6.8	6.9	6.8	7.0	7.0	7.1	6.9	6.9	6.9	7.0	7.0
Cond. (µS/cm)	149	148		141		143		141		141		149		147
Initials	YML	SSD		SSD		AD		AD		SSD		SSD		YML

Concentration 25	Days													
	0	1		2		3		4		5		6		7
	init.	new	old	new	old	new	old	new	old	new	old	new	old	final
Temperature (°C)	13.0	13.0	14.0	13.5	14.5	14.0	14.0	14.0	14.0	14.5	14.5	14.0	14.5	14.5
DO (mg/L)	10.2	9.9	9.8	10.0	9.9	10.0	9.9	10.2	9.7	10.0	9.8	9.9	9.8	9.8
pH	7.4	7.3	7.2	7.1	7.2	7.1	7.1	7.1	7.2	7.1	7.0	7.0	7.1	7.1
Cond. (µS/cm)	485	471		493		494		492		445		482		473
Initials	YML	SSD		SSD		AD		AD		SSD		SSD		YML

Concentration 100	Days													
	0	1		2		3		4		5		6		7
	init.	new	old	new	old	new	old	new	old	new	old	new	old	final
Temperature (°C)	13.0	13.0	14.0	14.0	14.5	14.0	14.0	14.0	14.0	14.5	14.5	14.0	14.5	14.5
DO (mg/L)	10.2	10.0	9.8	10.0	9.9	10.1	9.8	10.1	9.8	10.0	9.8	9.9	9.9	9.9
pH	8.3	8.5	8.2	8.2	8.1	8.2	8.0	8.1	8.0	8.2	8.1	8.1	8.0	7.6
Cond. (µS/cm)	1492	1464		1475		1479		1477		1475		1478		1486
Initials	YML	SSD		SSD		AD		AD		SSD		SSD		YML

DO meter: DO-1 13 **pH meter:** pH-1 13 **Conductivity meter:** C-1 13

	Control	100%		
Hardness*	9	850		
Alkalinity*	7	50		

* mg/L as CaCO3

Analysts: AWD, SSD, YML
Reviewed by: JOL
Date reviewed: Jan. 15/15

Sample Description: clear, no colour, some particulates

Comments:

Embryo Toxicity Test
Daily Mortality

Client: Hydroqual
Sample ID: 14-1901
Work Order #: 14994

Start Date & Time: December 17 @ 2014 16:00
Stop Date & Time: December 24, 2014 @ 11:00
Test Species: *Oncorhynchus mykiss*

Concentration (% v/v)	Rep	Day of Test - No. of Mortalities							Total Dead Eggs	Total Undeveloped	Total No. Embryo	Total Exposed
		1	2	3	4	5	6	7				
Control	1	5	1	0	0	0	0	0	6	0	24	30
	2	7	1			0	0	0	8	1	21	30
	3	0	0			1	0	1	2	1	27	30
	4	1	0			0	1	0	2	2	26	30
6.25	1	0				0	0		0	5	25	30
	2					1			1	1	27	29
	3					0			0	3	28	31
	4					2			2	0	28	30
12.5	1					0			0	1	29	30
	2								0	4	26	30
	3								0	3	27	30
	4						1		1	0	29	30
25	1						0		1	3	26	30
	2					2		0	2	2	26	30
	3					1			2	4	24	30
	4					0		0	0	8	22	30
50	1				1	1			2	2	26	30
	2				0	1			1	7	22	30
	3				1	1	1		3	4	23	30
	4				0	1	1		2	4	24	30
100	1					0	0		0	7	24	31
	2							2	2	4	24	30
	3							0	0	7	24	31
	4							0	0	11	19	30
	1											
	2											
	3											
	4											
	1											
	2											
	3											
	4											
Tech Initials		SSD	SSD			SSD	SSD		JAB	JAB	JAB	JAB

Comments:

Reviewed by: JAB **Date reviewed:** Jan. 15/15

Nautilus Environmental

Client: Hydroqual

W.O.#: 14994

Hardness and Alkalinity Datasheet

	Alkalinity						Hardness			
Sample ID	Sample Date	Sample Volume (mL)	(mL) 0.02N HCL/H_2SO_4 used to pH 4.5	(mL) of 0.02N HCL/H_2SO_4 used to pH 4.2	Total Alkalinity ($mg/LCaCO_3$)		Sample Volume (mL)	Volume of 0.01M EDTA Used (mL)	Total Hardness ($mg/L\ CaCO_3$)	Technician
14-1901	Dec-17/14	50	2.6	2.7	50		10①	8.5	850	SSD
Dechlor	↓	100	0.8	0.9	7		100	0.9	9	MM

Notes: ① Diluted to 100mL w/ DI water.

Reviewed by: JCh

Date Reviewed: Jan. 15/15

APPENDIX B - Chain of Custody Form

Nautilus Environmental
4340 Vandever Ave.
San Diego, CA 92120
Phone 858.587.7333
Fax 858.587.3961

Chain of Custody

Date_____ Page__ of __

Sample Collection By:

Report to:		Invoice To:	
Company	HydroQual Laboratories	Company	HydroQual Laboratories
Address		Address	
City/State/Zip		City/State/Zip	
Contact	Jacklyn Poole/Holly Stewart	Contact	Jacklyn Poole/Holly Stewart
Phone	403 253 7121	Phone	403 253 7121
Email	jpoole@golder.com; holly_stewart@golder.c	Email	jpoole@golder.com; holly_stewart@golder.com

	SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NO. OF CONTAINERS	COMMENTS	ANALYSES REQUIRED: ELS LC50	7d-Embryo LC50	WO # 14994	Receipt Temperature (°C)
1	14-1901	15/12/2014		water		7 x 20 L		X			7.0
2											
3											
4											
5											
6											
7											
8											
9											
10											

PROJECT INFORMATION

Client:	
PO No.:	
Shipped Via:	

SAMPLE RECEIPT

Total No. of Containers	7
Received Good Condition?	Y
Matches Test Schedule?	Y

SPECIAL INSTRUCTIONS/COMMENTS: This is in addition to what was sent yesterday. Please add it to that sample.

RELINQUISHED BY (CLIENT)

(Signature) (Time)

(Printed Name) (Date)

(Company)

RECEIVED BY (COURIER)

(Signature) (Time)

(Printed Name) (Date)

RELINQUISHED BY (COURIER)

(Signature) (Time)

(Printed Name) (Date)

(Company)

RECEIVED BY (LABORATORY) Nautilus

(Signature) NY- (Time) Dec 15/14 @ 14:45

(Printed Name) Nan Yamamoto (Date)

HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Client: ALE132
Reference: 14-1901-01-CDD

Result Summary

Client: Alexco Resource Corp.; operation Vancouver

Sample: KV-43

Collection: collected on 2014/12/15 at not given by not given
Receipt: received on 2014/12/18 at 1010 by AH
Containers: received 1 x 20 L pail at 8 °C, in good condition with no seals and no initials
Description: type: water, collection method: not given

Test: started on 2014/12/18 ; ended on 2014/12/25

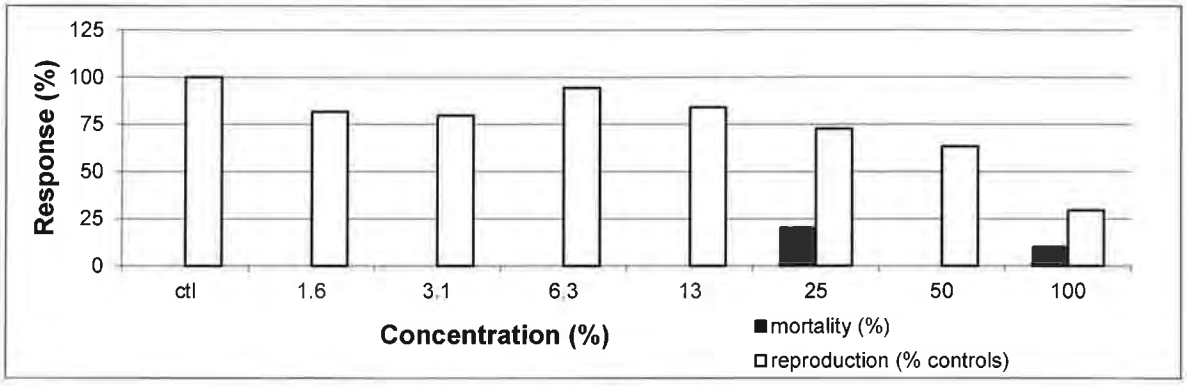
Contents

Result Summary.....1
Test Conditions.....2
Test Data.....4
Comments/Statistics..8
QA/QC.....9

Result:

	Endpoint (7-day)	Value	Confidence Limits (95%) lower	upper	Units	Method Calculated
Acute:	LC25	>100			%	could not be calculated
(survival)	LC50	>100			%	could not be calculated
Chronic:	IC25	39	16	63	%	3P Log-Gompertz EV
(fecundity)	IC50	41	49	>100	%	3P Log-Gompertz EV

Notes: LCx & ICx, concentrations lethal or inhibitory to 'x' percent of the test population; fecundity, reproduction as the number of young produced



The test data and results are authorized and verified correct.

Technical Lead

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Conditions

Client: ALE132
Reference: 14-1901-01-CDD

Method: Biological Test method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*. Environment Canada, EPS 1/RM/21, 2nd Edition, February 2007.

Test type: *Ceriodaphnia* Survival and Reproduction Static Renewal Test (WTR-ME-018)
Species: *Ceriodaphnia dubia*
Age: <24 hours old; all from same brood source within 12 hours of the same age.
Organism source: in-house cultures; cultures from a single brood organism to provide test organisms.
Culture health: Culture mortality was 2% (must be ≤ 20%).
7-d prior to test initiation: No ephippia were noted in the cultures at any time.
Average young produced per adult in the first three broods was 26 (must be ≥ 15)
Number of young produced by each brood organism in the last complete brood before use was 14 (must be ≥ 8).
Organism observations: No unusual behavior, appearance or treatment of test organisms was noted prior to or during the test. All first-generation mortality was recorded on the day it was observed.
Sample initial chemistry: pH: 8.0; EC: 1448 (µS/cm); DO: 9.7 (mg/L); temperature: 13 °C
hardness (mg CaC03/L): 784; colour: colorless; odour: odourless
Sample holding time: 3 days (must be ≤ 3 days); The test was conducted with three subsamples samples a, b, and c were for days 0 to 2, 3 to 5, and 6 to 8 respectively
Sample storage: 4 ± 2°C in darkness

Test vessel: The tests were conducted in 30 mL plastic vessels (2 cm depth).
Test volume: 15 mL of solution (1 cm depth); replenished daily.
Control/dilution water: The control and dilution water was moderately hard reconstituted water. Chemicals added to dilution water:
1.92 g $NaHCO_3$, 1.20 g $CaSO_4$, 1.20 g $MgSO_4$, 0.08 g KCl per 20L.
Test concentrations: 7 effluent concentrations (1.6, 3.1, 6.3, 13, 25, 50, 100% (v/v) plus a negative control)
Test replicates: One neonate <24 hours old was loaded per test vessel;
10 replicates/concentration
Feeding: The test organisms were fed daily a mixture of fermented trout chow, yeast, alfalfa powder, and the green alga *Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum* and *Raphidocelis subcapitata*).
Food expiration date: 2014/12/27; 2015/01/04
Measurements: pH, conductivity, dissolved oxygen and temperature were measured daily.
Sample pre-treatment: The sample was not aerated, filtered or pH adjusted prior or during testing.
The dissolved oxygen concentration (mg/L) was: 8.9
The sample pH was: 7.9
Lighting: Overhead full spectrum fluorescent lights; 100-600 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 25 ± 1°C

Note: Outlined sections are protocol deviations explained on the comment page

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Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Conditions

Client: ALE132
Reference: 14-1901-01-CDD

Endpoints: Survival, 7-d LC50 (with 95% confidence limits)
Reproduction, 7-d IC25 (with 95% confidence limits)
Test endpoints were bracketed by at least 1 test concentration (except for <1.6% or >100 %)
No outliers were observed within the data set.

Test completion: 80% of the control organisms had ≥ 3 broods on day 7 (must be ≥ 60% within 8 days) Any neonates produced after third brood were not included in the mean young per adult calculation.

Test validity: The control had 100% survival (must ≥ 80%)
Number of young produced by each surviving control adult within the first three broods was 21 (must be ≥ 15).

Reference toxicant: 7-d test with NaCl initiated on December 15, 2014;
(must be within 14 days of test initiation)
current results: (7-d LC50 and 95% confidence limits) =
3.39 (3.25 - 3.45) log (mg/L NaCl)
current results: (7-d IC50 and 95% confidence limits) =
2.85 (2.63 - 3.02) log (mg/L NaCl)
The reference toxicant test was performed under the same conditions as those used during this test.

Note: Outlined sections are protocol deviations explained on the comment page

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HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Data

Client: ALE132
Reference: 14-1901-01-CDD

Test Log:

Date	Day	Time	Technicians	Temperature (°C)	
				Control	Sample
2014/12/18	0	1515	CB/JR	25	25
2014/12/19	1	0800	CQ/DS	25	25
2014/12/20	2	1110	JP/HKS	25	25
2014/12/21	3	1000	CB/ML	25	25
2014/12/22	4	1000	CQ/DS	25	25
2014/12/23	5	0845	CQ/PL	25	25
2014/12/24	6	0845	JR/ML	25	25
2014/12/25	7	0900	CQ/HKS	na	na

Chemistry Summary Tables:

	New Solutions								Old Solutions							
Conc. %	ctl	1.6	3.1	6.3	13	25	50	100	ctl	1.6	3.1	6.3	13	25	50	100
Average Values																
pH	7.7	7.8	7.8	7.8	7.9	7.8	7.8	7.7	7.9	8.0	8.0	8.0	7.9	7.9	7.9	7.8
cond.	405	430	453	491	565	684	946	1392	446	482	530	530	603	749	1036	1611
DO	7.5	7.4	7.4	7.4	7.4	7.4	7.5	7.6	7.3	7.2	7.2	7.2	7.2	7.1	7.1	7.1
temp.	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Coefficients of Variation (%)																
pH	3	2	2	1	1	1	1	2	1	1	1	2	1	1	1	1
cond.	1	2	5	2	2	6	1	1	2	3	5	2	3	3	5	4
DO	3	3	4	2	3	3	3	8	2	4	2	2	3	3	3	3
temp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Test Data

Client: ALE132
Reference: 14-1901-01-CDD

Biology (number of young produced):

Replicate	Day 1	2	3	4	5	6	7	8
Control								
1	0	0	0	0	3	10	5	
2	0	0	0	3	0	7	4	
3	0	0	0	4	0	9	9	
4	0	0	0	0	5	0	11	
5	0	0	0	2	7	0	10	
6	0	0	0	6	0	12	14	
7	0	0	0	5	10	0	13	
8	0	0	0	4	0	12	0	
9	0	0	0	3	6	12	-	
10	0	0	0	3	10	14	-	
13%								
1	0	0	0	0	3	10	0	
2	0	0	0	0	0	4	0	
3	0	0	0	0	0	9	13	
4	0	0	0	0	3	10	0	
5	0	0	0	5	0	12	12	
6	0	0	0	6	0	2	11	
7	0	0	0	6	5	0	nd	
8	0	0	0	4	7	11	-	
9	0	0	0	6	0	10	7	
10	0	0	0	0	0	16	0	
1.6%								
1	0	0	0	0	3	8	0	
2	0	0	0	0	0	4	8	
3	0	0	0	0	2	8	0	
4	0	0	0	4	0	11	7	
5	0	0	0	0	0	8	0	
6	0	0	0	5	0	10	11	
7	0	0	0	7	11	0	10	
8	0	0	0	0	0	8	0	
9	0	0	0	6	0	13	4	
10	0	0	0	0	5	9	12	
25%								
1	0	0	0	0	0	7	0	
2	0	0	0	3	0	9	0	
3	0	0	0	0	0	6	9	
4	0	0	0	0	5	4	10	
5	0	0	0	2	3	3	-	
6	0	0	0	0	0	12	**8**	
7	0	0	0	**0**	X	X	X	
8	0	0	0	5	0	12	13	
9	0	0	0	6	0	10	14	
10	0	0	0	4	0	10	0	
3.1%								
1	0	0	0	0	0	0	12	
2	0	0	0	0	4	0	10	
3	0	0	0	0	0	7	0	
4	0	0	0	0	0	0	14	
5	0	0	0	4	5	11	-	
6	0	0	0	6	0	14	15	
7	0	0	0	5	0	5	10	
8	0	0	0	0	4	10	0	
9	0	0	0	5	0	9	0	
10	0	0	0	7	3	10	-	
50%								
1	0	0	0	0	2	6	0	
2	0	0	0	3	0	5	0	
3	0	0	0	4	3	0	11	
4	0	0	0	0	0	0	8	
5	0	0	0	6	0	6	12	
6	0	0	0	6	7	0	11	
7	0	0	0	3	0	11	0	
8	0	0	0	6	3	0	9	
9	0	0	0	0	0	7	0	
10	0	0	0	0	0	6	0	

Notes: #, young produced; 0, no young; X, dead; bold #, number of young the test organism had the day it died; —, young produced after third brood

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HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Ceriodaphnia (6-8d LC50/IC25) Test Report

Test Data

Client: ALE132
Reference: 14-1901-01-CDD

Biology (number of young produced):

Day	1	2	3	4	5	6	7	8

Day	1	2	3	4	5	6	7	8

Replicate	6.3%							
1	0	0	0	2	2	4	-	
2	0	0	0	3	0	5	10	
3	0	0	0	0	0	6	9	
4	0	0	0	0	3	0	12	
5	0	0	0	4	10	0	13	
6	0	0	0	6	12	0	15	
7	0	0	0	5	9	0	11	
8	0	0	0	4	0	11	5	
9	0	0	0	6	0	15	7	
10	0	0	0	0	4	8	0	

100%							
0	0	**0**	X	X	X	X	
0	0	0	0	2	5	0	
0	0	0	0	0	3	0	
0	0	0	0	0	6	0	
0	0	0	3	0	6	0	
0	0	0	3	0	6	0	
0	0	0	0	0	8	0	
0	0	0	4	0	6	0	
0	0	0	0	3	6	0	
0	0	0	0	0	2	0	

Notes: #, young produced; 0, no young; X, dead; bold #, number of young the test organism had the day it died; —, young produced after third brood

Biology Summary Tables:

Conc. %	ctl	1.6	3.1	6.3	13	25	50	100

	ctl	1.6	3.1	6.3	13	25	50	100

Day	Number of Organism Alive							
0	10	10	10	10	10	10	10	10
1	10	10	10	10	10	10	10	10
2	10	10	10	10	10	10	10	9
3	10	10	10	10	10	10	10	9
4	10	10	10	10	10	9	10	9
5	10	10	10	10	10	9	10	9
6	10	10	10	10	10	9	10	9
7	10	10	10	10	10	8	10	9
8								

Day	Daily Young Production							
0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	30	22	27	30	21	20	28	10
5	41	21	16	40	13	8	15	5
6	76	79	66	49	84	73	41	48
7	66	52	61	82	43	54	51	0
8								

Percent Mortality (%)								
mean	0	0	0	0	0	20	0	10

Total	213	174	170	201	161	155	135	63

Young Per Adult (within first three broods)

mean	21	17	17	20	18	16	14	6
sd	5.95	8.26	7.54	7.95	7.24	9.64	7.07	3.47
cv(%)	27.9	47.5	44.4	39.6	40.5	62.2	52.4	55

Replicate	Total Young Produced by Each Adult							
1	18	11	12	8	13	7	8	0
2	14	12	14	18	4	12	8	7
3	22	10	7	15	22	15	18	3
4	16	22	14	15	13	19	8	6
5	19	8	20	27	29	8	24	9
6	32	26	35	33	19	20	24	9
7	28	28	20	25	11	0	14	8
8	16	8	14	20	22	30	18	10
9	21	23	14	28	23	30	7	9
10	27	26	20	12	16	14	6	2

Young Production as a Percent of Controls

100	82	80	94	84	73	63	30

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HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Test Data

Client: ALE132
Reference: 14-1901-01-CDD

Chemistry:

Day	New Solutions								Old Solutions							
Conc. %	ctl	1.6	3.1	6.3	13	25	50	100	ctl	1.6	3.1	6.3	13	25	50	100
	pH (units)								pH (units)							
0	7.6	7.7	7.7	7.7	7.7	7.8	7.8	7.9								
1	7.4	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.9	7.9	8.0	8.0	8.0	7.9	7.9	7.8
2	8.0	8.0	8.0	8.0	8.0	7.9	7.9	7.8	8.0	8.0	8.1	8.1	8.0	8.0	7.9	7.9
3	7.9	7.9	7.9	7.9	7.9	7.8	7.7	7.6	8.0	8.1	8.1	8.0	8.0	8.0	8.0	7.9
4	7.5	7.6	7.6	7.7	7.9	7.7	7.6	7.5	7.7	7.8	7.8	7.7	7.7	7.7	7.7	7.6
5	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.7	7.8	7.9	7.9	7.9	7.9	7.9	7.8	7.8
6	7.7	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.9	8.0	8.0	8.0	7.9	7.9	7.9	7.8
7									8.0	8.0	8.1	8.0	8.0	8.0	8.0	7.9
8																
	Conductivity (µS/cm)								Conductivity (µS/cm)							
0	398	422	446	487	557	688	942	1374								
1	405	432	433	493	566	600	953	1405	453	469	508	519	591	732	982	1521
2	409	426	449	490	564	688	935	1412	454	506	576	543	610	761	1054	1738
3	396	427	446	489	565	701	950	1375	434	468	535	524	598	729	973	1634
4	411	439	458	497	574	713	962	1415	460	479	499	544	635	793	1061	1579
5	410	444	497	507	579	711	952	1398	438	478	528	531	606	758	1043	1599
6	403	420	441	476	552	687	927	1363	434	480	537	526	592	735	1012	1594
7									450	496	524	526	592	737	1129	1613
8																
	Dissolved Oxygen (mg/L)								Dissolved Oxygen (mg/L)							
0	7.5	7.5	7.6	7.6	7.6	7.6	7.7	8.9								
1	7.6	7.5	7.5	7.6	7.6	7.7	7.7	7.8	7.5	7.4	7.3	7.3	7.3	7.2	7.2	7.3
2	7.7	7.4	7.3	7.3	7.3	7.4	7.4	7.4	7.3	7.3	7.2	7.2	7.2	7.1	7.1	7.1
3	7.7	7.6	7.3	7.3	7.2	7.2	7.2	7.2	7.3	7.3	7.2	7.2	7.2	7.2	7.1	7.1
4	7.1	7.0	6.8	7.3	7.2	7.2	7.2	7.0	7.1	6.7	7.0	7.0	6.7	6.6	6.6	6.8
5	7.5	7.5	7.5	7.6	7.6	7.6	7.7	7.7	7.4	7.3	7.3	7.3	7.2	7.2	7.2	7.2
6	7.6	7.5	7.5	7.3	7.2	7.2	7.3	7.2	7.3	7.2	7.1	7.1	7.2	7.1	7.1	7.1
7									7.5	7.5	7.5	7.4	7.3	7.3	7.3	7.4
8																
	Temperature (°C)								Temperature (°C)							
0	25	25	25	25	25	25	25	25								
1	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
2	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
4	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
7									25	25	25	25	25	25	25	25
8																

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Comments/Statistics

Client: ALE132
Reference: 14-1901-01-CDD

Test Result Comments:
None

Data Analysis:
Endpoints for mortality could not be calculated. No effect occurred.

Endpoints for reproduction were calculated using a Non-Linear Regression model (3P Log-Gompertz) with CETIS v. 1.8.7.15.

Protocol Deviations:
Only nine replicates were run in the 12.5% for reproduction, as replicate 7 was not scored on day 7 of testing

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Quality Assurance Information

Culture history for adults used in the test for reference 14-1901:

Number of young produced per brood adult:
(Note: The third brood per adult may be on the day the test is set)

	row/replicate	D2	C3	A3	C4	E5	E1	B1	D7			
	number of young											
	number of adults											
		D2	C3	A3	C4	E5	E1	B1	D7			
	number of young											
	number of adults											
		D2	C3	A3	C4	E5	E1	B1	D7			
	number of young											
	number of adults											
		D2	C3	A3	C4	E5	E1	B1	D7			
	number of young											
	number of adults											
		D2	C3	A3	C4	E5	E1	B1	D7			
	number of young	6	4	4	4	4	3	2	4			
	number of adults	1	1	1	1	1	1	1	1			
		D2	C3	A3	C4	E5	E1	B1	D7			
	number of young	9	8	9	7	10	8	8	8			
	number of adults	1	1	1	1	1	1	1	1			
		D2	C3	A3	C4	E5	E1	B1	D7			
DAY USED 2014/12/18	number of young	14	8	11	16	14	14	18	16			
	number of adults	1	1	1	1	1	1	1	1			
		D2	C3	A3	C4	E5	E1	B1	D7			
totals (# of young in first 3 broods)	number of young	29	20	24	27	28	25	28	28			

Number of young produced per organism in the last brood before use	14
Mean number of surviving young per adult over the first three broods	26
Culture mortality over the last seven days	2

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HydroQual Laboratories Ltd.

Warning Chart
Ceriodaphnia

Test Method: *Ceriodaphnia* Survival and Reproduction Test (7 treatments plus a control)
HydroQual Test Method: WTR-ME-019
Reference: Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*, 2007. Environment Canada, EPS 1/RM/21

Test Organism:

test species:	*Ceriodaphnia dubia*
culture source:	in-house
original culture source:	Aquatic Biosystems
ephippia in stock culture:	none
food type:	YAT:Algae
frequency of feeding:	daily
age of test organisms:	<24 hours
culture mortality 7 days prior:	4
culture fecundity 7 days prior within the first three broods:	19
young produced in previous brood:	14
culture condition prior to test initiation:	normal
culture water:	Moderately hard reconstituted water (1.92 g $NaHCO_3$, 1.20 g $CaSO_4 \cdot 2H_2O$, 1.20 g $MgSO_4$, 0.08 g KCl per 20L) supplemented with vitamin B_{12} (2 µg/L), Na_2SeO_3 (5 µg/L) and 10% (v/v) Perrier water.

Test Design:

test type:	static renewal
toxicant:	sodium chloride (NaCl)
test vessel:	30 mL plastic cup
test volume (mL):	15
replicates per treatment:	10
organisms per replicate:	1
feeding:	daily
temperature (°C):	24-26
photoperiod:	16 hours light: 8 hours dark
light level (surface):	100-600 lux (full spectrum)
hardness adjustment:	no

*Note: there are 2 subcultures within this culture source, separated by one week in age. The test is set with organisms from one subculture. The number of young a culture has is monitored daily. If young are not used that day, they are discarded, therefore organisms in tests are <24h.

Control/Dilution Water:

source: Moderately Hard Reconstituted Water

pH (units):	8.0
conductance (uS/cm):	397
dissolved oxygen (mg/L):	7.4
NH_4^+ (mg/L):	<0.1
hardness (mg $CaCO_3$/L):	135
alkalinity (mg $CaCO_3$/L):	106
total residual chlorine (mg/L):	<0.01

* Note: moderately hard reconstituted water prepared as per EPS 1/RM/21

Comments: None

The test data and results are authorized and verified correct.

Technical Lead

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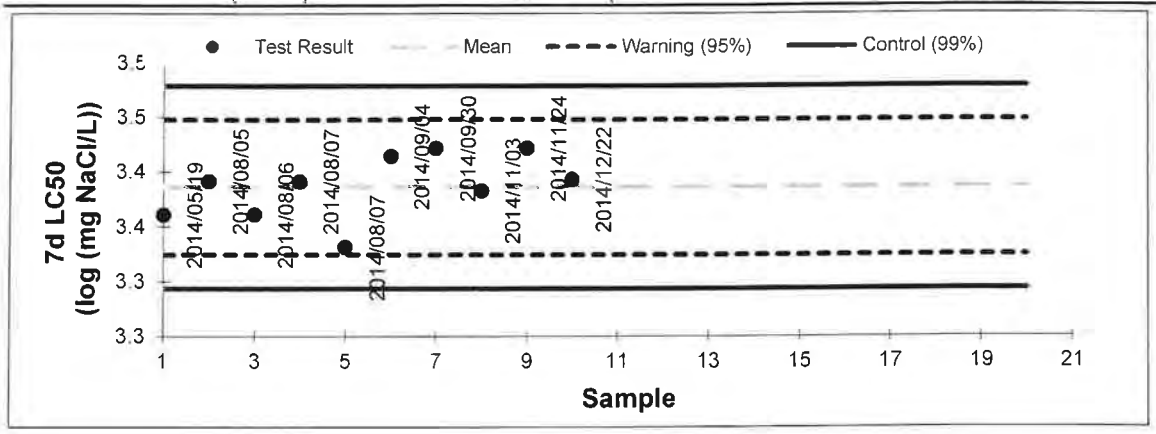
Mortality

Current Test

toxicant	Sodium chloride (NaCl)				
started on	2014/12/15	ended on	2014/12/22		
Result (7d LC50):	3.39	log (mg NaCl/L); geometric mean			
Confidence Limits (95%)	lower	3.25	upper	3.45	

Historical Values

mean	3.39	sd	0.03	cv(%):	1
	lower	upper			
warning limits (±2 sd)	3.32	3.45	(95% confidence limits)		
control limits (±3 sd)	3.29	3.48	(99% confidence limits)		

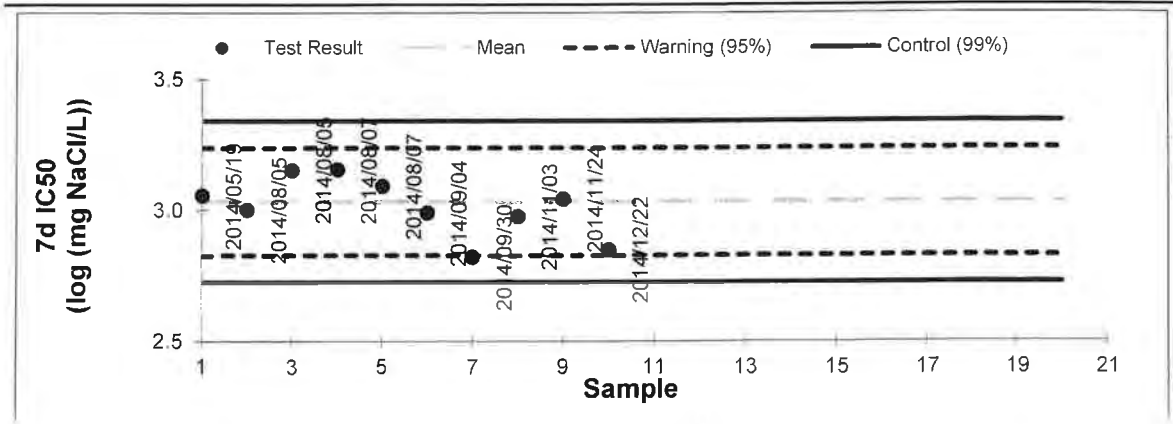


Current Test

toxicant	Sodium chloride (NaCl)				
started on	2014/12/15	ended on	2014/12/22		
Result (7d IC50)	2.85	log (mg NaCl/L); geometric mean			
Confidence Limits (95%)	lower	2.63	upper	3.02	

Historical Values

mean	3.03	sd	0.10	cv(%):	3
	lower	upper			
warning limits (±2 sd)	2.83	3.24	(95% confidence limits)		
control limits (±3 sd)	2.72	3.34	(99% confidence limits)		



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HydroQual Laboratories Ltd.

Ceriodaphnia Test Report

Quality Assurance Information

Culture history for adults used in the test for reference QA311:

Number of young produced per brood adult:
(Note: The third brood per adult may be on the day the test is set)

row/replicate	E6	D9	A7	A8	A9	C10	D6				
number of young											
number of adults											

	E6	D9	A7	A8	A9	C10	D6				
number of young											
number of adults											

	E6	D9	A7	A8	A9	C10	D6				
number of young											
number of adults											

	E6	D9	A7	A8	A9	C10	D6				
number of young	6	6	6	6	2	2	8				
number of adults	1	1	1	1	1	1	1				

	E6	D9	A7	A8	A9	C10	D6				
number of young	4	4	6	8	8	10	2				
number of adults	1	1	1	1	1	1	1				

	E6	D9	A7	A8	A9	C10	D6				
number of young	7	2	5	8	12	8	12				
number of adults	1	1	1	1	1	1	1				

DAY USED 2014/12/15	E6	D9	A7	A8	A9	C10	D6				
number of young	11	12	13	12	14	17	18				
number of adults	1	1	1	1	1	1	1				

	E6	D9	A7	A8	A9	C10	D6				
totals (# of young in first 3 broods) number of young	17	12	17	22	22	20	22				

Number of young produced per organism in the last brood before use	14
Mean number of surviving young per adult over the first three broods	19
Culture mortality over the last seven days	4

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HydroQual Laboratories Ltd.

Lemna minor Test Report

Result Summary

Client: ALE132
Reference: 14-1901-01-LMD

Client: Alexco Resource Corp.; operation Vancouver

Sample: KV-43

Collection: collected on 2014/12/15 at not given by not given
Receipt: received on 2014/12/18 at 1010 by AH
Containers: received 1 x 20 L pail at 8 °C, in good condition with no seals and no initials
Description: type: water, collection method: not given
Test: started on 2014/12/18 ; ended on 2014/12/25

Contents

Result Summary.....1
Test Conditions.....2
Test Data.....4
Comments/Statistics..6
QA/QC.....7

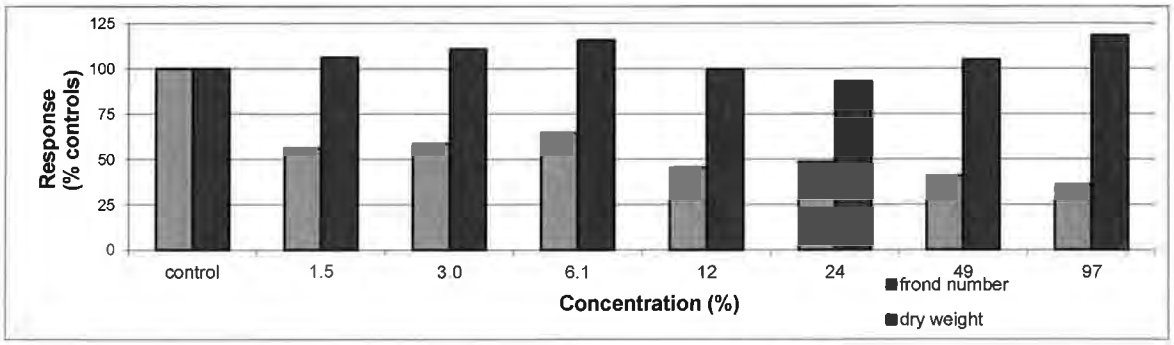
Result:

	Endpoint (7-day)	Value	Confidence Limits (95%) lower	upper	Units	Method Calculated
Chronic:						
Frond Number	IC25	<1.5	<1.5	<1.5	%	3P Log-Gompertz
Inhibition	IC50	13	7.1	24	%	3P Log-Gompertz
Dry Weight	IC25	>97			%	could not be calculated
Inhibiton	IC50	>97			%	could not be calculated

Notes: ICx, concentrations lethal or inhibitory to 'x' percent of the test population;

	Stimulation Observed	Test Concentrations		Method Calculated
Chronic:				
Frond Number Stimulation	**no**	none	%	William's Multiple Comparison
Dry Weight Stimulation	**no**	none	%	William's Multiple Comparison

Notes: Stimulation refers to increased response at all concentrations or at high concentrations



The test data and results are authorized and verified correct.

Technical Lead

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Test Conditions

Client: ALE132
Reference: 14-1901-01-LMD

Method: Biological Test Method: Test for Measuring the Inhibition of Growth Using the Freshwater Macrophyte, *Lemna minor*. Environment Canada, EPS 1/RM/37 2nd Edition, January 2007

Test type: *Lemna* 7-d Inhibition of Growth Static Test (WTR-ME-030)
Species: *Lemna minor*
Organism source: in-house culture, ≥ 3 weeks in age (original source: UTCC 492, clone 7730)
Culture health: The fronds were acclimated in test media (≥2cm) for 24 hours prior to test initiation.
The test culture was axenic prior to testing.
There was an 9 fold increase in frond number of culture over last 7 days.
Test loaded with 3 frond daughter plants, all with light green fronds and short roots.
Culture age: The test was started with 10 day old fronds.
Culture media: modified Hoagland's E+ medium
Organism observation: No unusual behaviour, appearance or treatment of test organisms was noted prior to or during the test.

Sample initial chemistry: pH: 8.0; EC: 1448 (µS/cm); DO: 9.7 (mg/L); temperature: 13 °C
hardness (mg CaC03/L): 784; colour: colorless; odour: odourless
Sample holding time: 3 days (must be ≤ 3 days)

Sample storage: 4 ± 2°C in darkness
Test vessel: The test was a static test conducted in 200 mL polyethylene plastic containers with clear lids. Test vessel size is adequate to ensure no overlapping of fronds occurs.
Test volume: The test volume was 150 mL, depth of ≥ 4 cm
Test concentrations: 7 effluent concentrations (1.5, 3.0, 6.1, 12.1, 24, 49, 97% (v/v) plus a negative control)
Test replicates: There were four replicates per treatment with two 3 frond daughter plants per replicate; replicates are randomly rotated daily.
Control/dilution water: Test media (modified APHA medium) made up with deionized City of Calgary water
water spiked with nutrients as per Environment Canada EPS 1/RM/37, 2007.
made by adding 60 mL of each of the three stock solutions to 5.82 L of DRO
The media aerated for 2 hours and was pH adjusted to 8.3 ± 0.1 with 6N HCl or NaOH
The test media was not filtered.
Elutriate preparation: 2014/12/18
Sample pre-treatment: 1455 mL of sample spiked with 15 mL of each of the three APHA stock solutions, no other chemicals added. The sample was not pH adjusted or filtered prior to testing.
Aeration: The sample was pre-aerated for 20 minutes at a rate of 100 bubbles/minute with oil free filtered compressed air from a 1 mL glass pipette attached to an air pump.

Note: Outlined sections are protocol deviations explained on the comment page

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Test Conditions

Client: ALE132
Reference: 14-1901-01-LMD

Lighting: The cups were incubated under continuous full-spectrum light. The light levels were measured at the sample surface, at three locations on the testing bench, during testing:

left:	4600	lux	≈	74	µmol/m^2•S
centre:	4700	lux	≈	75	µmol/m^2•S
right:	4400	lux	≈	70	µmol/m^2•S

Measurements:
pH, conductivity, dissolved oxygen and temperature at test initiation and termination; temperature in the control, low, middle and high concentrations are recorded daily.

Test temperature: 25 ± 2°C

Endpoint: Growth (based on increase in frond number), 7-d IC25 (with 95% confidence limits)
Growth (based on dry weight), 7-d IC25 (with 95% confidence limits)
Test endpoints were bracketed by at least 1 test concentration.
(except for <1.5% or >97 %)
No outliers were observed within the data set

Test validity: The mean number of fronds in the controls have increased 8 times (must be ≥ 8 time increase). The average number attained at test termination was 48 (must be ≥48 fronds per test vessel).

Reference toxicant: 7-d test with Potassium Chloride (KCl) initiated December 30, 2014;
current results:
(Frond Number; 7-d IC25 and 95% confidence limits) = 3.27 (3.17 - 3.35) log(mg KCl/L)
current results:
(Dry Weight; 7-d IC25 and 95% confidence limits) = 3.71 (3.57 - 3.81) log (mg KCl/L)
The reference toxicant test was performed under the same conditions as those used during this test .

Note: Outlined sections are protocol deviations explained on the comment page

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Test Data

Client: ALE132
Reference: 14-1901-01-LMD

Test Log:

Date	Day	Time	Technicians	Rotate	Temperature (°C)			
					Control	3.0%	24%	97%
2014/12/18	0	1345	CB	na	25	25	25	25
2014/12/19	1	0800	DS	yes	25	25	25	25
2014/12/20	2	0830	HKS	yes	25	25	25	25
2014/12/21	3	0745	ML	yes	26	26	26	26
2014/12/22	4	0745	DS	yes	26	26	26	26
2014/12/23	5	0745	PL	yes	26	26	26	26
2014/12/24	6	0745	ML	yes	26	26	26	26
2014/12/25	7	1150	HKS/CQ	na	26	26	26	26

Chemistry:

Conc.(%)	control	1.5	3.0	6.1	12	24	49	97	
				Day 0					
pH	8.2	8.2	8.2	8.2	8.2	8.2	8.1	8	
cond.	869	879	897	946	1040	1203	1540	2120	
DO	7.7	7.7	7.7	7.6	7.6	7.6	7.6	7.6	
temp.	25	25	25	25	25	25	25	25	
				Day 7					
pH	8.5	8.5	8.4	8.4	8.5	8.5	8.3	8.4	
cond.	1877	1540	1753	1534	1690	2300	4370	5410	
DO	7.7	7.7	7.7	7.8	8	8	8	8	
temp.	25	25	25	25	25	25	25	25	

Notes: pH, units; cond., conductivity (µS/cm); DO, dissolved oxygen (mg/L); temp., temperature (°C)

Frond Appearance:

Concentration (%)	Day 0	Day 7
control	green, short roots, healthy	light green, long roots, healthy
1.5	green, short roots, healthy	light green, long roots, healthy
3.0	green, short roots, healthy	light green, long roots, healthy
6.1	green, short roots, healthy	light green, long roots, healthy
12.1	green, short roots, healthy	light green, long roots, healthy
24	green, short roots, healthy	light green, long roots, healthy
49	green, short roots, healthy	light green, long roots, healthy
97	green, short roots, healthy	light green, long roots, healthy

Notes: chl, chlorotic; nec, necrotic; asf, abnormally sized fronds; gib, gibbosity; cd, colony destroyed; rd, roots destroyed; lb, loss of bouyancy; ag, algae

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results

HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

HydroQual Laboratories Ltd.

Lemna minor Test Report

Test Data

Client: ALE132
Reference: 14-1901-01-LMD

Frond number:

Conc.(%)	control	1.5	3.0	6.1	12.1	24	49	97
Replicate				Day 0				
a	6	6	6	6	6	6	6	6
b	6	6	6	6	6	6	6	6
c	6	6	6	6	6	6	6	6
d	6	6	6	6	6	6	6	6
				Day 7				
a	49	28	31	29	24	28	22	20
b	56	31	31	36	23	26	24	18
c	41	33	27	29	30	24	19	22
d	47	27	34	39	24	28	28	25
average	**48**	30	31	33	25	27	23	21
fold increase	**8**	5	5	6	4	4	4	4

Increase in Frond Number compared to the Control:

a	43	22	25	23	18	22	16	14
b	50	25	25	30	17	20	18	12
c	35	27	21	23	24	18	13	16
d	41	21	28	33	18	22	22	19
average	42	24	25	27	19	21	17	15
sd	6	3	3	5	3	2	4	3
cv	15	12	12	19	17	9	22	20
% ctls	100	56	59	64	46	49	41	36
% stim	0	-44	-41	-36	-54	-51	-59	-64

Total Dry Weights (mg):

Conc.(%)	control	1.5	3.0	6.1	12.1	24	49	97
Replicate				Day 7				
a	3.4	3.7	4.0	3.5	3.6	2.7	3.7	4.4
b	4.2	4.1	4.1	4.4	3.8	3.2	4.3	3.5
c	3.6	3.9	3.8	4.1	4.0	3.3	3.2	4.3
d	3.0	3.4	3.9	4.4	2.8	4.1	3.6	4.7
				Day 7				
average	3.6	3.8	3.9	4.1	3.5	3.3	3.7	4.2
sd	0.5	0.3	0.1	0.5	0.6	0.6	0.5	0.5
cv	14	7	2	11	16	18	12	12
%ctls	100	106	111	116	100	93	105	118
% stim	0	6	11	16	0	-7	5	18

Notes: cv, coefficient of variation; %ctls, percent of controls; sd, standard deviation, % stim, percent stimulation

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Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Comments/Statistics

Client: ALE132
Reference: 14-1901-01-LMD

Test Result Comments:
None

Data Analysis:
Endpoints for frond number were calculated using a non-linear regression model (3P Log-Logistic EV) with CETIS v. 1.8.7.15.

Enpoints for dry weight could not be calculated. No inhibitory effect occurred.

Significant stimulatory effects in frond number were not observed in any test concentration as calculated by ANOVA analysis with CETIS v. 1.8.7.15. (William's Multiple Comparison).

Significant stimulatory effects in dry weight were not observed in any test concentration as calculated by ANOVA analysis with CETIS v. 1.8.7.15. (William's Multiple Comparison).

Protocol Deviations:
None

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HydroQual Laboratories Ltd.

Warning Chart
Lemna

Test Method: 7 days *Lemna minor* Survival and Growth Test (seven treatments plus a control)
HydroQual Test Method Manual, section: WTR-ME-031
Reference: Biological Test Method: Test for Measuring the Inhibition of Growth Using the Freshwater Macrophyte, *Lemna minor*, 2007. Environment Canada, EPS 1/RM/37.

Test Organism:

test species:	*Lemna minor*
culture source:	in-house
original culture source:	UTCC - 492 (clone 7730)
culture vessels:	250 mL Erlenmeyer flask
water source:	deionized water
growth medium:	Hoagland's E+ medium
cultivation method:	as per test conditons
temp of breeding aquaria:	25 ± 2°C
organism age:	8 days old acclimated to test media for 18 to 24 hours
Fold increase of culture over last 7 days:	9
Fold increase of test fronds:	8

Test Design:

test type:	static
toxicant:	potassium chloride
water source:	deionized reverse osmosis water with nutrients as per EPS 1/RM/37
test vessel:	200mL polyethylene cups
test volume (ml):	150
test cover:	clear plastic lids
replicates per treatment:	4
organisms per replicate:	two 3 frond plants
temperature (°C):	25 ± 2°C
photoperiod:	24 hours light
light level (surface):	4000-5600 lux
light source:	full spectrum fluorescent
hardness adjustment:	no

Control/Dilution Water:
water source: Deionized reverse osmosis water and nutrients as per EPS 1/RM/37

Comments: None

The test data and results are authorized and verified correct.

Technical Lead

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1 *Lemna* Ref. Tox.v 3.0
tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

HydroQual Laboratories Ltd.

Warning Chart
Lemna

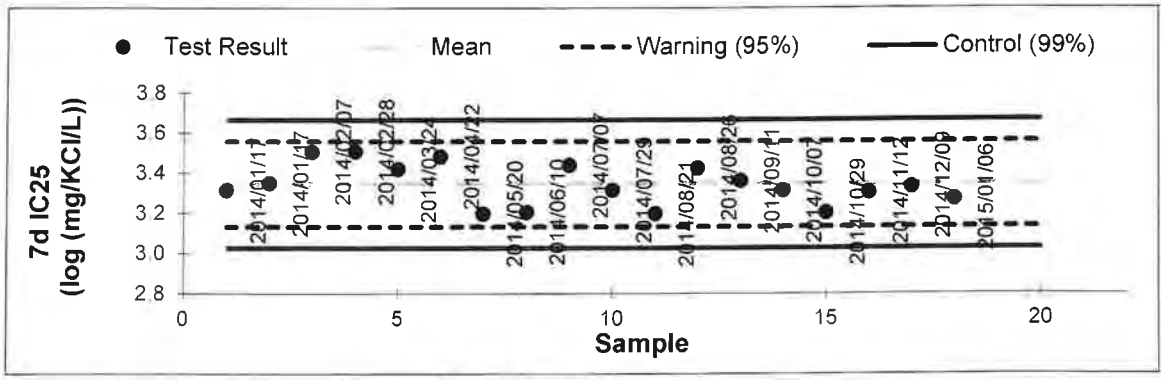
Frond Number

Current Test

toxicant Potassium Chloride (KCl)
started on 2014/12/30 ended on 2015/01/06
Result (7 d IC25): 3.27 log (mg KCl/L); geometric mean
Confidence Limits (95%) lower 3.17 upper 3.35

Historical Values

mean	3.35	sd	0.11	cv(%):	16.2
	lower	upper			
warning limits (±2 sd)	3.13	3.56	(95% confidence limits)		
control limits (±3 sd)	3.03	3.66	(99% confidence limits)		



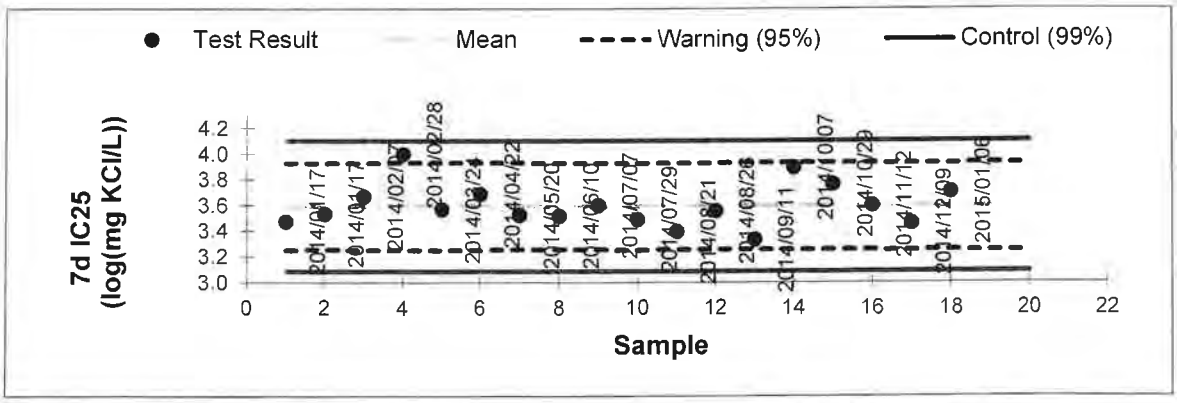
Dry Weight

Current Test

toxicant Potassium Chloride (KCl)
started on 2014/12/30 ended on 2015/01/06
Result (7 d IC25): 3.71 log (mg KCl/L); geometric mean
Confidence Limits (95%) lower 3.57 upper 3.81

Historical Values

mean	3.59	sd	0.17	cv(%):	26.1
	lower	upper			
warning limits (±2 sd)	3.25	3.93	(95% confidence limits)		
control limits (±3 sd)	3.08	4.10	(99% confidence limits)		



notes: sd, standard deviation; cv, coefficient of variance; NA, could not be calculated

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HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1 *Lemna* Ref. Tox.v 3.0
tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

GENERAL TERMS AND CONDITIONS:

These terms and conditions are incorporated into and form part of the Chain of Custody between HydroQual Laboratories Ltd. ("HydroQual") and the party named in the Chain of Custody (the "Client").

1. **Definitions:** Capitalized terms shall have the definition ascribed as such in these General Terms and Conditions and the Chain of Custody.
2. **The Services:** HydroQual will provide the Services to the Client as listed and described in the Chain of Custody.
3. **Prices:** HydroQual may review and change all prices, fees, surcharges or other charges as set out in proposals and/or price quotations if there are changes to HydroQual's cost beyond HydroQual's control, including changes in legislative requirements, Client variations of sample numbers and Client requests for changes to standard reporting requirements. Notwithstanding condition 3, all quotations are reviewed and updated on a yearly basis.
4. **Payment Terms:** The Client shall pay HydroQual within 30 days of the invoice date as provided by HydroQual. HydroQual may, for reasonable business reasons, require the Client to arrange for payment in advance.
5. **Quotation Numbers:** The Client shall provide the proposal and/or price quotation number to HydroQual (where applicable) to ensure correct pricing.
6. **Taxes:** Applicable taxes are not included in prices, surcharges and additional fees and will be added at the time of invoicing.
7. **No Guarantee of Results:** The Client is responsible for informing itself on the limitation of the results and acknowledges that the results are not guaranteed.
8. **Standard of Care:** HydroQual will use reasonable care and diligence as required by the laws of the province or territory where the sample is tested, subject to that level of care and skill ordinarily exercised by other laboratories currently practicing under similar conditions in the same locality, subject to the time limits and financial, physical or other constraints applicable to the Services. No warranty, express or implied, is made.
9. **Storage:** Where possible, HydroQual will store samples until a final report is issued to the Client, after which time HydroQual may discard the sample.
10. **Holds:** If the Client requests a sample be placed on hold, HydroQual will store the sample for the mutually agreed upon written time and price, after which HydroQual will invoice the Client and discard the sample.
11. **Archives:** If the Client requests a sample be archived, HydroQual will store the sample for a mutually agreed upon written time frame and price, after which HydroQual will invoice the Client and discard the sample.
12. **Handling Protocol:** Legal sample handling protocol must be arranged, and provided in writing, before samples are collected. HydroQual will provide a price quotation for legal sample protocol. Samples processed under legal protocol are stored indefinitely, subject to a storage charge as advised by HydroQual.
13. **Samples:** The quality, condition, content and source of samples stored and tested are not known to HydroQual except as declared and described on the Chain of Custody completed and submitted by the Client and accompanying the sample.
14. **Risk of Loss:** HydroQual will use reasonable care to protect samples during storage, however, all samples are stored at the Client's risk and the Client is responsible for obtaining appropriate insurance, if desired. The Client acknowledges that during the performance of the Services samples may be altered, lost, damaged or destroyed and the client forever releases HydroQual from any and all claims the Client may have for any loss or damage to the sample.
15. **Environmental:** the Client must comply with all applicable environmental legislation, including labeling all hazardous samples to comply with Canada's *Workplace Hazardous Materials Information System* and the Alberta *Transfer of Dangerous Goods* regulations, and must provide appropriate material safety data sheets that include the nature of the hazard and a contact name and phone number to call for information. The Client shall defend, indemnify and hold harmless HydroQual for all loss or damages, including any fine or cost of complying with an order of any government authority, resulting from the Client's breach of this paragraph.
16. **Hazardous Materials Disposal:** HydroQual may return, at the Client's cost, hazardous material to the Client for disposal.
17. **Hazardous Materials Surcharge:** HydroQual may apply an additional surcharge for handling of hazardous samples or samples with Naturally Occurring Radioactive Materials ("NORM"), such as and including without limitation, H_2S and CN.
18. **Sample Containers:** HydroQual may ship sample containers to the Client's location by the most cost effective means using HydroQual's preferred courier suppliers, within the specified project timeline. Shipping will be charged back to the Client.
19. **Additional Charges:** HydroQual may charge the Client:
    (a) for pick-up and delivery services when provided subject in each instance to a minimum charge of $50.00; and,
    (b) for rush service (processing samples and/or reporting).
20. **Large Bottle Orders:** The Client shall provide HydroQual with not less than 24 hours' notice for large bottle orders.
21. **Re-Tests:** HydroQual reserves the right to re-test any samples that remain in HydroQual's possession. Re-tests requested by the Client may be charged to Client and Client agrees to pay for such charges.
22. **Waiver:** The Client is responsible for making any assessment regarding the suitability of the Services and the intended results for the Client's purposes and waives any and all claims against HydroQual that the Client may have against HydroQual as a result of the interpretation of the results provided to the Client. The Client shall defend, indemnify and save harmless HydroQual for any and all claims made by any third party against HydroQual in respect of all losses however arising from the performance of the Services or the use of any report provided in the performance of the Services.
23. **LIMITATION OF LIABILITY: IN NO EVENT SHALL HYDROQUAL BE RESPONSIBLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY OR PUNITIVE DAMAGES, WHETHER FORESEEABLE OR UNFORESEEABLE (INCLUDING CLAIMS FOR LOSS OF PROFITS OR REVENUE OR LOSSES CAUSED BY STOPPAGE OF OTHER WORK OR IMPAIRMENT OF OTHER ASSETS) INCURRED BY THE CLIENT ARISING OUT OF BREACH OR FAILURE OF EXPRESS OF IMPLIED WARRANTY, BREACH OF CONTRACT, BREACH OF WARRANTY, MISREPRESENTATION, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE. IN ANY EVENT, THE LIABILITY OF HYDROQUAL TO THE CLIENT SHALL BE LIMITED TO THE COST OF TESTING THE SAMPLE AS REQUESTED IN THE CHAIN OF CUSTODY UNDER WHICH THE SAMPLE WAS ORIGINALLY DEPOSITED. FOR THE PURPOSES OF THIS PARAGRAPH AND PARAGRAPHS 7, 14, 15, 22, AND 24, AS APPLICABLE, "HYDROQUAL" INCLUDES WITHOUT LIMITATIONS ITS DIRECTORS, OFFICERS, EMPLOYEES AND AFFILIATES AND THE "CLIENT" INCLUDES WITHOUT LIMITATION ANY THIRD PARTY THAT MAY HAVE A CLAIM AGAINST HYDROQUAL THROUGH THE CLIENT.**
24. **Notice of Liability:** Notwithstanding paragraph 23, HydroQual shall not be liable to the Client unless the Client provides notice in writing to HydroQual of such loss or damage, together with full particulars thereof, within 30 days of the Client's receipt of the report of the analysis of the sample giving rise to such liability. The provisions of this paragraph allocate the risk between the Client and HydroQual, and the fees to be paid by the Client to HydroQual reflect this allocation of any such risks and the limitations of liability in these General Terms and Conditions.
25. **Entire Agreement:** These General Terms and Conditions, the Chain of Custody and price quotations constitute the entire agreement between the parties and supersede and take precedence over any terms and conditions contained in any documentation provided by the Client. HydroQual's execution of any subsequent documentation from the Client only acknowledges receipt and not acceptance of any terms or conditions therein unless expressly stipulated otherwise by HydroQual. If there is a conflict between these General Terms and Conditions and any other document, these General Terms and Conditions prevail.

HydroQual Laboratories Ltd.

ATTN: Peter Johnson/Kai Woloshyn
Alexco Resource Corp.
Suite 1150-200 Granville Street
Vancouver, British Columbia
Canada V6C 1S4

Received: 2015/09/24
Report Date: 2015/11/03
Version: FINAL

HydroQual Test Report

Client: ALE132
Reference: 15-1276
Billing: R71281

Senior Verifier

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

HydroQual Laboratories Ltd.

Algae
Test Report

Client: ALE132
Reference: 15-1276-01-AGD

Results Summary

Client: Alexco Resource Corp.; operation Vancouver

Sample: KV 43

Collection: collected on 2015/09/21 at 1700 by not given
Receipt: received on 2015/09/24 at 1355 by AH
Containers: received 1 x 20 L pail at 12 °C, in good condition with no seals and no initials
Description: type: water, collection method: not given

Test: started on 2015/09/24 ; ended on 2015/09/27

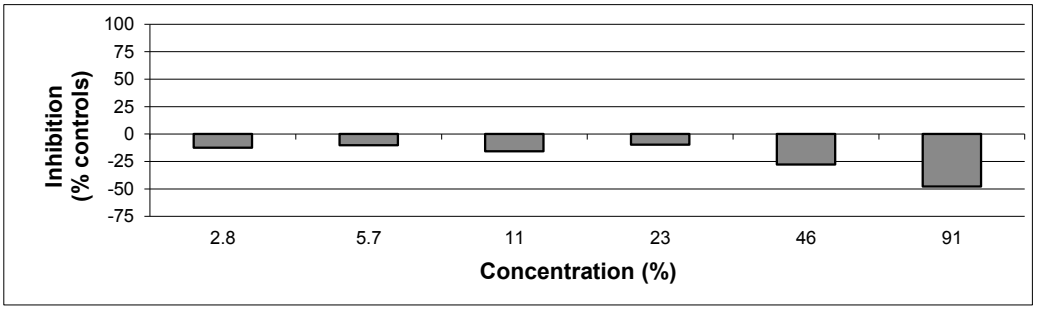
Results:

	Endpoint (72-hour)	Value	Confidence Limits (95%) lower	upper		Method Calculated
Chronic: Growth Inhibition	IC25	>91			%	could not be calculated
	IC50	>91			%	could not be calculated

Notes: ICx, concentrations inhibiting growth by 'x' percent relative to controls; CV, coefficient of variation (%); SD, standard deviation

	Stimulation Observed	Test Concentrations		Method Calculated
Chronic: Growth Stimulation	yes	46, 91	%	Fligner-Wolfe Omnibus

Notes: Stimulation refers to increased response at all concentrations or at high concentrations



The test data and results are authorized and verified correct.

Senior Verifier

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

Test Conditions

Client: ALE132
Reference: 15-1276-01-AGD

Method: Biological Test Method: Growth Inhibition Test Using a Freshwater Alga *Pseudokirchneriella subcapitata (formerly Selenastrum capricornutum)* . Environment Canada, EPS 1/RM/25, 2nd Edition, March 2007

Test type: Algal Growth Inhibition Test (WTR-ME-034)
Species: *Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum* and *Raphidocelis subcapitata*)
Organism source: In-house culture (original source: UTCC 37; strain: LB37)
Culture age: The test was started with 6-day old, exponentially growing cells determined with an algal growth curve. The algal growth curve was started with an inoculum from the algal stock culture determined over an 8-10 day period. This culture name was FRI-JULY-20150512AG. Algal cultures are regrown every 2 months from slants made from a new culture purchased twice annually.
Culture observations: No unusual appearance or treatment of the algae was noted prior to or during the conduct of the test.
Sample initial chemistry: pH: 7.5; EC: 1633 (µS/cm); DO: 9.5 (mg/L); temperature: 11 °C
hardness (mg CaC03/L): 587; colour: colourless; odour: odourless
Sample holding time: 3 days (must be ≤ 3 days)
Sample storage: 4 ± 2°C in darkness
Test concentrations: 10 effluent concentrations (0.2, 0.4, 0.7, 1.4, 2.8, 5.7, 11, 23, 46, and 91% (v/v), plus a negative control) (≥6 enumerated; see Test Result Comments)
Test vessel: The test was conducted in 96-well microplates. Two microplates (the test plate and a backup plate for use only in the case of an invalid test plate) were run. Test concentrations were isolated from each other with microplate sealing film.
Test replicates: 5 replicate wells per test concentration (≥3 enumerated)
10 replicate wells per control (8 enumerated).
Test volume: 220 µL final volume in each well with 200 µL of sample;
10µL of enrichment medium and 10µL of algal inoculum.
Inoculum: The initial cell density of the inoculum was 9580 (cells/mL), it was prepared less than 3 hours before test initiation.
Control/dilution water: Made up with 85% deionized and 15% dechlorinated City of Calgary water spiked with nutrients as per EPS 1/RM/25
The metal stock with 25% reduced EDTA was used.
Sample Filtration: 100 mL filtered through a 0.45 µm pore diameter membrane.
Sample treatment: Sample spiked with nutrients as per EPS 1/RM/25; no other chemicals added.
Measurements: Final cell densities were determined using an electronic particle counter.

Aeration: Not required
pH Adjustment: Not required
Lighting: The plates were incubated under continuous light: 3665 lux
(cool white fluorescent bulbs) 51.31 µmol/(m^2·S)
Test temperature: 24 ± 2°C

Note: Outlined sections are protocol deviations explained on the comment page

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Test Conditions

Client: ALE132
Reference: 15-1276-01-AGD

Endpoint: Growth, 72-h IC25 (with 95% confidence limits)
Test endpoint was bracketed by at least 1 test concentration (except for <1.4% or >91%)
No outliers were observed within the data set.

Test validity: Control growth was a 41-fold increase over the inoculum. (Must be >16-fold)
The CV of the standard control wells was 8.9%. (Must be ≤20%)

Statistics: See Data Analysis section.
Mann-Kendall trend analysis was not performed as the control CV was <10%

Reference toxicant: 72-h test with Zinc ($ZnSO_4*7H_2O$) initiated September 29, 2015; current results (72-h IC25 and 95% confidence limits) = 1.25 (1.19-1.33) log (µg Zn2+/L)
historical results:
(72-h IC25 and 95% confidence limits) = 1.35 (1.13-1.56) log (µg Zn2+/L)

The reference toxicant test was performed under the same conditions as those used during this test.

Note: Outlined sections are protocol deviations explained on the comment page

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

HydroQual Laboratories Ltd.

Algae Test Report

Test Data

Client: ALE132
Reference: 15-1276-01-AGD

Test Log:

Date	Day	Technician	Time	Rotated	Temperature (°C)
2015/09/24	0	ML	1530	N/A	26
2015/09/25	1	HKS	0800	Yes	25
2015/09/26	2	DS	0800	Yes	25
2015/09/27	3	JP	1330	Yes	25

pH Measurements:

Concentration	Initial Value	Final Value
100%	7.8	-
control (well D6)	7.2	-
control (well D7)	-	7.8

Initial cell density (cells/mL): 9580

Backup microplate used? no

Standard Control Well Final Cell Densities (D Row):

Column	Final Cell Density ($x10^3$ cells/mL)	Cell Yield ($x10^3$ cells/mL)
2	485	475
3	377	367
4	395	385
5	407	397
8	383	373
9	383	373
10	389	379
11	419	409
Average	-	395
SD	-	35
CV (%)	-	8.9
	Fold Growth (x)	41

Test Well Final Cell Densities:

Concentration (%)	Calculated Final Cell Density ($x10^3$ cells/ mL)				
	Row				
	B	C	E	F	G
0.2	-	-	-	-	-
0.4	-	-	-	-	-
0.7	-	-	-	-	-
1.4	-	-	-	-	-
2.8	395	401	622	437	413
5.7	467	437	431	*	*
11	449	473	479	*	*
23	437	389	491	449	449
46	520	526	497	*	*
91	592	604	664	622	485

Cell Yield Results:

Concentration (%)	Cell Yield ($x10^3$ cells/ mL)								Percent Controls	Inhibition (%)	Stimulation (%)
	Row					**Mean**	SD	CV (%)			
	B	C	E	F	G						
0.2	-	-	-	-	-	**-**	-	-	-	-	-
0.4	-	-	-	-	-	**-**	-	-	-	-	-
0.7	-	-	-	-	-	**-**	-	-	-	-	-
1.4	-	-	-	-	-	**-**	-	-	-	-	-
2.8	385	391	613	427	403	**444**	96	22	112	-12	12
5.7	457	427	421	*	*	**435**	19	4	110	-10	10
11	439	463	469	*	*	**457**	16	3	116	-16	16
23	427	379	481	439	439	**433**	36	8	110	-10	10
46	511	517	487	*	*	**505**	16	3	128	-28	28
91	583	595	654	613	475	**584**	67	11	148	-48	48

*see test result comments

Test Validity Criteria:

Control growth was a 41-fold increase over the inoculum. (Must be >16-fold)
The CV of the standard control wells was 8.9%. (Must be ≤20%)
Mann-Kendall trend analysis was not performed as the control CV was <10%

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

Comments/Statistics

Client: ALE132
Reference: 15-1276-01-AGD

Test Result Comments:
Electronic enumeration using a Beckman-Coulter particle counter was performed on the same day as test termination. A minimum of 3 replicates were enumerated for each concentration. Additional replicates were enumerated for concentrations with high variability between replicates.

Only six concentrations were enumerated as inhibitory effects did not occur.

Data Analysis:
Significant stimulatory effects in growth were observed in 46 and 91% concentrations as calculated by ANOVA analysis with CETIS v. 1.9.0.8. (Fligner-Wolfe Omnibus).

Endpoints for growth inhibition could not be calculated. Inhibitory effects did not occur.

Protocol Deviations:
None

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

Client: ALE132
Reference: 15-1276-01-LMD

Result Summary

Client: Alexco Resource Corp.; operation Vancouver

Sample: KV 43

Collection: collected on 2015/09/21 at 1700 by not given
Receipt: received on 2015/09/24 at 1355 by AH
Containers: received 1 x 20 L pail at 12 °C, in good condition with no seals and no initials
Description: type: water, collection method: not given
Test: started on 2015/09/24 ; ended on 2015/10/01

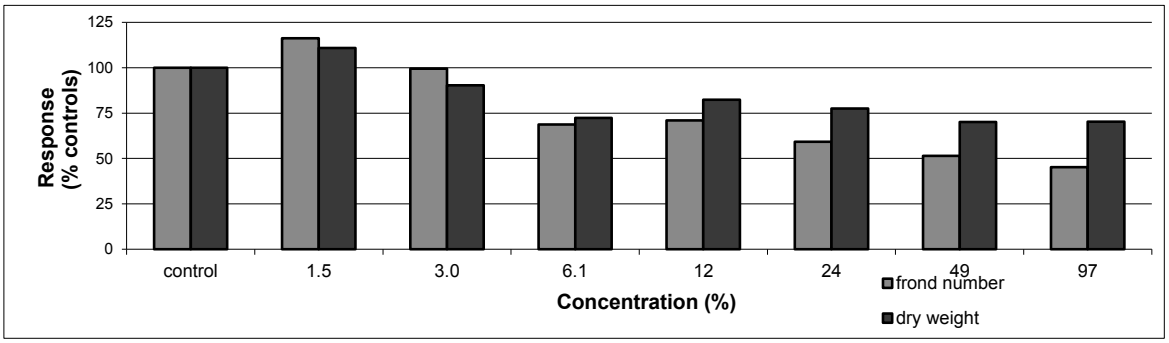
Result:

	Endpoint (7-day)	Value	Confidence Limits (95%) lower	upper	Units	Method Calculated
Chronic:						
Frond Number	IC25	5.4	3.7	17	%	Linear Interpolation
Inhibition	IC50	57	24	>100	%	Linear Interpolation
Dry Weight	IC25	5.6	<1.5	51	%	Linear Interpolation
Inhibiton	IC50	>97			%	could not be calculated

Notes: ICx, concentrations lethal or inhibitory to 'x' percent of the test population;

	Stimulation Observed	Test Concentrations		Method Calculated
Chronic:				
Frond Number Stimulation	yes	1.5	%	Dunnett's Multiple Comparison
Dry Weight Stimulation	no	-	%	Dunnett's Multiple Comparison

Notes: Stimulation refers to increased response at all concentrations or at high concentrations



The test data and results are authorized and verified correct.

Senior Verifier

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HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Conditions

Client: ALE132
Reference: 15-1276-01-LMD

Method: Biological Test Method: Test for Measuring the Inhibition of Growth Using the Freshwater Macrophyte, *Lemna minor*. Environment Canada, EPS 1/RM/37 2nd Edition, January 2007

Test type: *Lemna* 7-d Inhibition of Growth Static Test (WTR-ME-030)
Species: *Lemna minor*
Organism source: in-house culture, ≥ 3 weeks in age (original source: UTCC 492, clone 7730)
Culture health: The fronds were acclimated in test media (≥2cm) for 24 hours prior to test initiation.
The test culture was axenic prior to testing.
There was an 11 fold increase in frond number of culture over last 7 days.
Test loaded with 3 frond daughter plants, all with light green fronds and short roots.
Culture age: The test was started with 7 day old fronds.
Culture media: modified Hoagland's E+ medium
Organism observation: No unusual behaviour, appearance or treatment of test organisms was noted prior to or during the test.

Sample initial chemistry: pH: 7.5; EC: 1633 (µS/cm); DO: 9.5 (mg/L); temperature: 11 °C
hardness (mg CaC03/L): 587; colour: colourless; odour: odourless
Sample holding time: 3 days (must be ≤ 3 days)

Sample storage: 4 ± 2°C in darkness
Test vessel: The test was a static test conducted in 200 mL polyethylene plastic containers with clear lids. Test vessel size is adequate to ensure no overlapping of fronds occurs.
Test volume: The test volume was 150 mL, depth of ≥ 4 cm
Test concentrations: 7 effluent concentrations (1.5, 3.0, 6.1, 12.1, 24, 49, 97% (v/v) plus a negative control)
Test replicates: There were four replicates per treatment with two 3 frond daughter plants per replicate; replicates are randomly rotated daily.
Control/dilution water: Test media (modified APHA medium) made up with deionized City of Calgary water
water spiked with nutrients as per Environment Canada EPS 1/RM/37, 2007.
made by adding 60 mL of each of the three stock solutions to 5.82 L of DRO
The media aerated for 2 hours and was pH adjusted to 8.3 ± 0.1 with 6N HCl or NaOH
The test media was not filtered.
Elutriate preparation: 2015/09/24
Sample pre-treatment: 1455 mL of sample spiked with 15 mL of each of the three APHA stock solutions, no other chemicals added. The sample was not pH adjusted or filtered prior to testing.
Aeration: The sample was pre-aerated for 20 minutes at a rate of 100 bubbles/minute with oil free filtered compressed air from a 1 mL glass pipette attached to an air pump.

Note: Outlined sections are protocol deviations explained on the comment page

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Test Conditions

Client: ALE132
Reference: 15-1276-01-LMD

Lighting: The cups were incubated under continuous full-spectrum light. The light levels were measured at the sample surface, at three locations on the testing bench, during testing:

left:	4430	lux	≈	71	µmol/m^2•S
centre:	4060	lux	≈	65	µmol/m^2•S
right:	4050	lux	≈	65	µmol/m^2•S

Measurements:
pH, conductivity, dissolved oxygen and temperature at test initiation and termination; temperature in the control, low, middle and high concentrations are recorded daily.

Test temperature: 25 ± 2°C

Endpoint: Growth (based on increase in frond number), 7-d IC25 (with 95% confidence limits)
Growth (based on dry weight), 7-d IC25 (with 95% confidence limits)
Test endpoints were bracketed by at least 1 test concentration.
(except for <1.5% or >97 %)
No outliers were observed within the data set

Test validity: The mean number of fronds in the controls have increased 8 times (must be ≥ 8 time increase). The average number attained at test termination was 51 (must be ≥48 fronds per test vessel).

Reference toxicant: 7-d test with Potassium Chloride (KCl) initiated September 29, 2015;
current results:
(Frond Number; 7-d IC25 and 95% confidence limits) = 3.11 (3.01-3.17) log(mg KCl/L)
Historical results: (Frond Number, 7-d IC25 and 95% confidence limits) = 3.29 (3.13-3.45)
(Dry Weight; 7-d IC25 and 95% confidence limits) = 3.34 (3.24-3.40) log (mg KCl/L)
Historical results: (Dry Weight; 7-d IC25 and 95% confidence limits) = 3.56 (3.23-3.89) log (mg KCl/L)

The reference toxicant test was performed under the same conditions as those used during this test .

Note: Outlined sections are protocol deviations explained on the comment page

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Test Data

Client: ALE132
Reference: 15-1276-01-LMD

Test Log:

Date	Day	Time	Technicians	Rotate	Temperature (°C)			
					Control	3.0%	24%	97%
2015/09/24	0	1600	ML	na	24	24	24	24
2015/09/25	1	0800	HKS	yes	25	25	25	25
2015/09/26	2	0810	DS	yes	24	24	24	24
2015/09/27	3	0830	JK	yes	24	24	24	24
2015/09/28	4	0830	JK	yes	24	24	24	24
2015/09/29	5	0820	JK	yes	24	24	24	24
2015/09/30	6	0830	JK	yes	24	24	24	24
2015/10/01	7	1045	NM	na	25	25	25	25

Chemistry:

Conc.(%)	control	1.5	3.0	6.1	12	24	49	97	
Day 0									
pH	8.3	8.3	8.3	8.3	8.2	8.1	7.9	7.7	
cond.	934	994	1032	1096	1195	1374	1690	2380	
DO	7.6	7.7	7.6	7.6	7.6	7.6	7.5	7.5	
temp.	24	24	24	24	24	24	24	24	
Day 7									
pH	8.2	8.2	8.2	8.2	8.2	8.2	8.3	8.2	
cond.	1704	1449	1561	1636	1941	2270	3130	4480	
DO	9.0	9.1	9.1	9.1	9.1	9.1	9.0	9.0	
temp.	25	25	25	25	25	25	25	25	

Notes: pH, units; cond., conductivity (µS/cm); DO, dissolved oxygen (mg/L); temp., temperature (°C)

Frond Appearance:

Concentration (%)	Day 0	Day 7
control	green, short roots, healthy	medium green, long roots, healthy
1.5	green, short roots, healthy	medium green, long roots, healthy
3.0	green, short roots, healthy	green, long roots, healthy
6.1	green, short roots, healthy	green, long roots, some fronds turning brown
12.1	green, short roots, healthy	green, long roots, some fronds turning brown
24	green, short roots, healthy	green, long roots, some fronds turning brown
49	green, short roots, healthy	green, medium-short roots, some fronds turning brown
97	green, short roots, healthy	green, medium-short roots, some fronds turning brown

Notes: chl, chlorotic; nec, necrotic; asf, abnormally sized fronds; gib, gibbosity; cd, colony destroyed; rd, roots destroyed; lb, loss of bouyancy; ag, algae

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Test Data

Client: ALE132
Reference: 15-1276-01-LMD

Frond number:

Conc.(%)	control	1.5	3.0	6.1	12.1	24	49	97
Replicate				Day 0				
a	6	6	6	6	6	6	6	6
b	6	6	6	6	6	6	6	6
c	6	6	6	6	6	6	6	6
d	6	6	6	6	6	6	6	6
				Day 7				
a	51	61	49	31	42	32	30	26
b	57	63	48	38	42	34	27	29
c	45	54	53	42	32	32	30	26
d	50	54	52	36	35	32	29	24
average	**51**	58	51	37	38	33	29	26
fold increase	**8**	10	8	6	6	5	5	4

Increase in Frond Number compared to the Control:

a	45	55	43	25	36	26	24	20
b	51	57	42	32	36	28	21	23
c	39	48	47	36	26	26	24	20
d	44	48	46	30	29	26	23	18
average	45	52	45	31	32	27	23	20
sd	5	5	2	5	5	1	1	2
cv	11	9	5	15	16	4	6	10
% ctls	100	116	99	69	71	59	51	45
% stim	0	16	-1	-31	-29	-41	-49	-55

Total Dry Weights (mg):

Conc.(%)	control	1.5	3.0	6.1	12.1	24	49	97
Replicate				Day 7				
a	4.7	5.3	4.0	3.3	4.1	3.6	3.4	3.3
b	6.3	6.4	4.5	3.6	4.3	4.4	3.4	3.8
c	4.5	5.3	5.0	4.0	3.7	3.9	3.7	3.6
d	4.8	5.5	4.9	3.8	4.6	3.8	3.8	3.6
.								
				Day 7				
average	5.1	5.6	4.6	3.7	4.2	3.9	3.6	3.6
sd	0.8	0.5	0.5	0.3	0.4	0.3	0.2	0.2
cv	16	9	10	8	9	8	5	5
%ctls	100	111	90	72	82	78	70	70
% stim	0	11	-10	-28	-18	-22	-30	-30

Notes: cv, coefficient of variation; %ctls, percent of controls; sd, standard deviation, % stim, percent stimulation

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Comments/Statistics

Client: ALE132
Reference: 15-1276-01-LMD

Test Result Comments:
The IC25 result for frond number of the reference toxicant test initiated on 2015/09/29 was outside the warning limit. This is expected to happen 5% of the time. An investigation occurred and all testing and culturing procedures were followed appropriately.

Data Analysis:

The data was determined to be hormetic. Regression analysis was attempted on the data, but the assumptions of normality and homoscedasticity of residuals were not met. Therefore, endpoints for frond number were calculated using a Linear Interpolation model using CETIS v. 1.9.0.8 where all stimulatory concentrations were assigned control values.

Regression analysis was attempted on the data, but the assumptions of normality and homoscedasticity of residuals were not met. Therefore, endpoints for dry weight were calculated using a Linear Interpolation model using CETIS v. 1.9.0.8.

Significant stimulatory effects in frond number were observed in the1.5% concentrations as calculated by ANOVA analysis with CETIS v. 1.9.0.8. (Dunnet's Multiple Comparison).

Significant stimulatory effects in dry weight were not observed in any test concentration as calculated by ANOVA analysis with CETIS v. 1.9.0.8. (Dunnett's Multiple Comparison).

Protocol Deviations:
None

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Transmittal

Date: 2015/11/03

From: Holly Lopez, BSc.
Laboratory Biologist

To: Peter Johnson
Alexco Resource Corp.

Sublet of *Ceriodaphnia* and Early Life Stage Testing for 15-1276

A toxicity sample was collected September 21, 2015 and given the name KV 43. This sample was then submitted to HydroQual Laboratories for analysis and was assigned the laboratory reference 15-1276. The required tests were early life stage rainbow trout, algae, *Ceriodaphnia dubia* and *Lemna minor*.

The Early Life Stage test was subcontracted to Nautilus Environmental in Burnaby B.C due to the fact that HydroQual does not conduct these tests in-house. The *Ceriodaphnia* component was subcontracted to Aquatox Testing and Consulting Inc, due to HydroQual's *Ceriodaphnia* culture not producing sufficient neonates for testing.

Detailed results from Aquatox and Nautilus have been provided here for your consideration. The final results have been verified that these results meet all other necessary method requirements.

Please let me know if you have any questions or if you require any additional information.

Thank you,

Laboratory Biologist

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AquaTox Testing & Consulting Inc.
11B Nicholas Beaver Rd.
RR 3
Guelph ON N1H 6H9
Tel: (519) 763-4412 Fax: (519) 763-4419

Work Order : 229354
Sample Number : 45393

SAMPLE IDENTIFICATION

Company :	Hydroqual Laboratories Ltd.		
Location :	Calgary AB	Date Collected :	2015-09-21
Substance :	15-1276	Time Collected :	Not given
Sampling Method :	Grab	Date Received :	2015-09-24
Sampled By :	N.Y.	Time Received :	08:50
Temp. on arrival :	10.0°C	Date Tested :	2015-09-24
Sample Description :	Clear, colourless, odourless		

Test Method : Test of Reproduction and Survival using the Cladoceran *Ceriodaphnia dubia*. Environment Canada, Conservation and Protection. Ottawa, Ontario. Report EPS 1/RM/21, 2nd ed. (February 2007).

TEST RESULTS

Effect	Value	95% Confidence Limits	Statistical Method
LC50	>100%	-	-
IC25 (Reproduction)	93.6%	59.6-98.4	Linear Interpolation (TOXSTAT) d

The results reported relate only to the sample tested.

SODIUM CHLORIDE REFERENCE TOXICANT DATA

Date Tested :	2015-09-09	Analyst(s) :	MA, AS, HR, MS, RD
Organism Batch :	Cd15-09	Test Duration :	7 days
IC25 Reproduction :	1.25 g/L	LC50 :	2.21 g/L
95% Confidence Limits :	1.08 - 1.38 g/L	95% Confidence Limits :	1.81 - 2.70 g/L
Statistical Method :	Linear Interpolation (CETIS)[a]	Statistical Method :	Linear Regression (MLE) (CETIS)[a]
Historical Mean IC25 :	1.22 g/L	Historical Mean LC50 :	2.36 g/L
Warning Limits (± 2SD) :	0.89 - 1.68 g/L	Warning Limits (± 2SD) :	1.87 - 2.98 g/L

The reference toxicity test was performed under the same experimental conditions as those used with the test sample.

TEST CONDITIONS

Sample Filtration :	None	Test Volume per Replicate :	15 mL
Test Aeration :	None	Test Vessel :	22 mL polystyrene vial
pH Adjustment :	None	Depth of Test Solution :	4.0 cm
Hardness Adjustment :	None	Organisms per Replicate :	1
Daily Renewal Method :	Transferred to fresh solutions	Number of Replicates :	10
Control/Dilution Water :	Well water (no chemicals added)	Test Method Deviation(s) :	None

COMMENTS

•All test validity criteria as specified in the test method cited above were satisfied.
•Statistical analysis could not be performed using non linear regression, since a suitable model could not be found. Therefore, test results were calculated using Linear Interpolation (Toxstat)[d].

Work Order : 229354
Sample Number : 45393

TEST ORGANISMS

Test Organism :	*Ceriodaphnia dubia*	Range of Age (at start of test) :	09:15 h - 20:30 h
Organism Batch :	Cd15-09	Mean Brood Organism Mortality :	0%
Organism Origin :	Single in-house mass culture	Ephippia in Culture :	No
Test Organism Origin :	Individual in-house cultures		

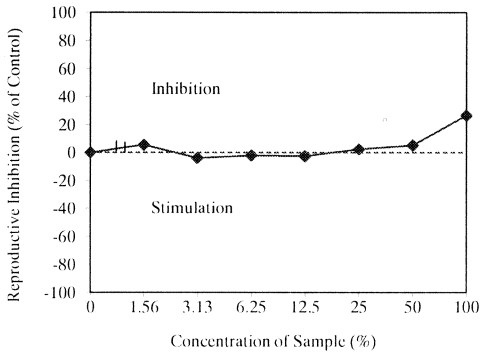
Brood Organism Neonate Production

Replicate :	1	2	3	4	5	6	7	8	9	10	Mean
Total (third or subsequent brood):	14	17	15	13	13	16	16	15	17	14	15.0
Total (first three broods):	21	23	21	21	23	23	22	19	23	22	21.8

No organisms exhibiting unusual appearance, behaviour, or undergoing unusual treatment were used in the test.

TEST DATA

***Ceriodaphnia dubia* Reproductive Inhibition**



Cumulative Daily Test Organism Mortality (%)

		Concentration of Sample (%)							
Date	**Test Day**	Control	1.56	3.13	6.25	12.5	25	50	100
2015-09-25	1	0	0	0	0	0	0	0	0
2015-09-26	2	0	0	0	0	0	0	0	0
2015-09-27	3	0	0	0	0	0	0	0	0
2015-09-28	4	0	0	0	0	0	0	0	0
2015-09-29	5	0	0	0	0	0	0	0	0
2015-09-30	6	0	0	0	0	0	0	0	0
Total Mortality (%)		0	0	0	0	0	0	0	0

REFERENCES

[a] CETIS™, © 2000-2013. V.1.8.7.17. Comprehensive Environmental Toxicity Information System. Tidepool Scientific Software, LLC, McKinleyville, CA 95519 [Program on disk and printed User's Guide].

[d] West, Inc. and D. Gulley. 1996. Toxstat Release 3.5. Western Ecosystems Technology. Cheyenne, WY, U.S.A.

Date : 2015-10-08
yyyy-mm-dd

Approved By : Shawn Wilson
Project Manager

Work Order : 229354
Sample Number : 45393

Ceriodaphnia dubia Survival and Reproduction

Test Initiation Date : 2015-09-24
Initiation Time : 13:30
Test Completion Date : 2015-09-30

Concentration (%)		Replicate										Mean Young	Analyst(s)
Control	**Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**(±SD)**	
2015-09-25	**1**	0	0	0	0	0	0	0	0	0	0	0	XD
2015-09-26	**2**	0	0	0	0	0	0	0	0	0	0	0	AW
2015-09-27	**3**	5	0	4	4	3	0	0	0	0	0	1.6	EJS
2015-09-28	**4**	0	5	0	0	3	6	4	4	5	4	3.1	MA
2015-09-29	**5**	6	7	8	8	5	6	8	9	7	8	7.2	FS
2015-09-30	**6**	11	14	12	9	–	15	16	14	12	11	11.4	XD
Total		**22**	**26**	**24**	**21**	**11**[1]	**27**	**28**	**27**	**24**	**23**	**23.3 (±4.9)**	

Concentration (%)		Replicate										Mean Young
12.5	**Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**(±SD)**
2015-09-25	**1**	0	0	0	0	0	0	0	0	0	0	0
2015-09-26	**2**	0	0	0	0	0	0	0	0	0	0	0
2015-09-27	**3**	0	3	3	0	0	0	0	0	0	0	0.6
2015-09-28	**4**	0	0	0	3	4	4	5	4	4	5	2.9
2015-09-29	**5**	8	7	8	9	9	9	10	11	10	11	9.2
2015-09-30	**6**	9	11	10	12	9	16	14	11	11	9	11.2
Total		**17**	**21**	**21**	**24**	**22**	**29**	**29**	**26**	**25**	**25**	**23.9 (±3.8)**

Concentration (%)		Replicate										Mean Young
1.56	**Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**(±SD)**
2015-09-25	**1**	0	0	0	0	0	0	0	0	0	0	0
2015-09-26	**2**	0	0	0	0	0	0	0	0	0	0	0
2015-09-27	**3**	4	0	3	5	0	0	0	0	0	0	1.2
2015-09-28	**4**	0	1	0	0	4	5	4	5	4	5	2.8
2015-09-29	**5**	4	6	6	7	8	6	7	8	9	11	7.2
2015-09-30	**6**	12	10	12	11	10	9	11	12	10	11	10.8
Total		**20**	**17**	**21**	**23**	**22**	**20**	**22**	**25**	**23**	**27**	**22.0 (±2.8)**

Concentration (%)		Replicate										Mean Young
25	**Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**(±SD)**
2015-09-25	**1**	0	0	0	0	0	0	0	0	0	0	0
2015-09-26	**2**	0	0	0	0	0	0	0	0	0	0	0
2015-09-27	**3**	0	0	6	0	0	0	0	0	0	0	0.6
2015-09-28	**4**	0	4	0	3	4	6	7	4	4	4	3.6
2015-09-29	**5**	7	8	9	11	9	9	8	10	8	8	8.7
2015-09-30	**6**	7	13	8	8	11	0	12	13	12	14	9.8
Total		**14**	**25**	**23**	**22**	**24**	**15**	**27**	**27**	**24**	**26**	**22.7 (±4.6)**

Concentration (%)		Replicate										Mean Young
3.13	**Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**(±SD)**
2015-09-25	**1**	0	0	0	0	0	0	0	0	0	0	0
2015-09-26	**2**	0	0	0	0	0	0	0	0	0	0	0
2015-09-27	**3**	5	6	5	4	0	0	0	0	0	0	2.0
2015-09-28	**4**	0	0	0	0	4	6	6	5	3	6	3.0
2015-09-29	**5**	5	7	8	6	8	7	9	8	7	8	7.3
2015-09-30	**6**	13	14	11	10	10	16	15	9	12	9	11.9
Total		**23**	**27**	**24**	**20**	**22**	**29**	**30**	**22**	**22**	**23**	**24.2 (±3.3)**

Concentration (%)		Replicate										Mean Young
50	**Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**(±SD)**
2015-09-25	**1**	0	0	0	0	0	0	0	0	0	0	0
2015-09-26	**2**	0	0	0	0	0	0	0	0	0	0	0
2015-09-27	**3**	4	4	0	0	0	0	0	0	0	0	0.8
2015-09-28	**4**	0	0	4	3	5	6	5	3	5	4	3.5
2015-09-29	**5**	8	8	8	4	6	8	7	8	8	9	7.4
2015-09-30	**6**	9	10	8	7	12	13	14	11	10	10	10.4
Total		**21**	**22**	**20**	**14**	**23**	**27**	**26**	**22**	**23**	**23**	**22.1 (±3.5)**

Concentration (%)		Replicate										Mean Young	
6.25	**Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**(±SD)**	
2015-09-25	**1**	0	0	0	0	0	0	0	0	0	0	0	
2015-09-26	**2**	0	0	0	0	0	0	0	0	0	0	0	
2015-09-27	**3**	5	7	4	3	0	0	0	0	0	0	1.9	
2015-09-28	**4**	0	0	0	0	5	6	5	5	4	4	2.9	
2015-09-29	**5**	6	8	9	7	9	7	7	9	8	9	7.9	
2015-09-30	**6**	11	14	10	11	10	12	11	10	12	10	11.1	
Total		**22**	**29**	**23**	**21**	**24**	**25**	**23**	**24**	**24**	**23**	**23.8 (±2.1)**	

Concentration (%)		Replicate										Mean Young
100	**Day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**(±SD)**
2015-09-25	**1**	0	0	0	0	0	0	0	0	0	0	0
2015-09-26	**2**	0	0	0	0	0	0	0	0	0	0	0
2015-09-27	**3**	0	0	2	0	0	0	0	0	0	0	0.2
2015-09-28	**4**	2	4	0	5	4	4	4	4	5	4	3.6
2015-09-29	**5**	7	9	0	3	5	6	5	4	6	3	4.8
2015-09-30	**6**	8	9	7	13	0	10	9	10	9	10	8.5
Total		**17**	**22**	**9**	**21**	**9**	**20**	**18**	**18**	**20**	**17**	**17.1 (±4.6)**

NOTES : •All young produced by a test organism during its fourth and subsequent broods were discarded and not included in the above counts. The presence of two or more neonates in any test chamber, during any given day of the test, constitutes a brood.
•[1] Outlier according to Grubbs Test (CETIS)[a]. Outlying data points were not excluded from statistical analysis, since they could not be attributed to error.

"x"= test organism mortality
"*"= accidental test organism mortality
"–"=4th brood (see 'NOTES')

Data Reviewed By : SF
Date : 2015-10-07

Work Order : 229354
Sample Number: 45393

Ceriodaphnia dubia Water Chemistry Data

Initial Chemistry:	Temp. (°C)	DO (mg/L)	pH	Conductivity (µmhos/cm)	Hardness (mg/L as $CaCO_3$)
	25.0	10.3	8.1	1622	960

		Day 0 - 1	Day 1 - 2	Day 2 - 3	Day 3 - 4	Day 4 - 5	Day 5 - 6
Date :		**2015-09-24**	**2015-09-25**	**2015-09-26**	**2015-09-27**	**2015-09-28**	**2015-09-29**
Sub-sample Used		1	1	1	2	2	3
Temperature (°C)		25.0	24.0	24.0	24.0	24.0	24.0
Dissolved Oxygen (mg/L)		10.3	9.0	9.4	9.1	8.8	9.3
Dissolved Oxygen % Sat.[3]		128	111	115	112	109	116
pH		8.1	8.1	8.1	8.1	8.0	7.9
Pre-aeration Time (min)[4]		20	20	20	20	20	20
Analyst(s)	Initial	MS	TCB(RD)	NL(RD)	NL(RD)	TCB(RD)	SS(RD)
	Final	TCB(RD)	CZN(RD)	NL(RD)	TCB(RD)	SS(RD)	SS(RD)
Control (0%)							
Temp. (°C)	Initial	25.0	25.0	25.0	25.0	25.0	26.0
	Final	24.0	24.0	24.0	24.0	24.0	24.0
DO % Sat.[3]	Initial	99	98	99	99	97	100
DO (mg/L)	Initial	8.0	7.8	7.9	8.0	7.7	7.9
	Final	7.2	7.5	7.5	7.0	7.1	7.3
pH	Initial	8.5	8.3	8.3	8.3	8.3	8.3
	Final	8.1	8.2	8.1	8.0	8.0	8.1
Cond. (µmhos)	Initial	452	480	464	467	456	467
1.56 %							
Temp. (°C)	Initial	25.0	25.0	25.0	25.0	25.0	26.0
	Final	24.0	24.0	24.0	24.0	24.0	24.0
DO (mg/L)	Initial	8.2	8.2	8.2	8.1	7.9	8.0
	Final	7.1	7.4	7.5	7.1	7.0	7.4
pH	Initial	8.2	8.3	8.3	8.3	8.2	8.2
	Final	8.1	8.2	8.1	8.0	8.0	8.1
Cond. (µmhos)	Initial	477	505	489	491	478	499
25 %							
Temp. (°C)	Initial	25.0	25.0	25.0	25.0	25.0	26.0
	Final	24.0	24.0	24.0	24.0	24.0	24.0
DO (mg/L)	Initial	8.3	8.3	8.1	8.1	8.0	8.1
	Final	7.2	7.4	7.3	7.1	7.1	7.3
pH	Initial	8.1	8.2	8.2	8.2	8.2	8.1
	Final	8.0	8.1	8.1	8.0	8.0	8.0
Cond. (µmhos)	Initial	796	828	802	809	797	822
100 %							
Temp. (°C)	Initial	25.0	25.0	25.0	25.0	25.0	26.0
	Final	24.0	24.0	24.0	24.0	24.0	24.0
DO (mg/L)	Initial	8.7	8.7	8.8	8.6	8.5	8.3
	Final	6.8	7.4	7.5	7.3	7.2	7.4
pH	Initial	8.1	8.1	8.1	8.1	8.0	8.0
	Final	7.9	8.0	8.0	8.0	7.9	7.9
Cond. (µmhos)	Initial	1627	1642	1626	1623	1627	1645

"–" = not measured

[3] % saturation (adjusted for actual temperature and barometric pressure)

[4] ≤100 bubbles/minute

Nautilus Environmental

BRITISH COLUMBIA
8664 Commerce Court
Burnaby British Columbia Canada V5A 4N7
Phone 604.420.8773
Fax 604.357.1361

Chain of Custody

1502

Date Sept 23/15 Page 1 of 1

Sample Collection by: _____

Report to:
Company HydroQual Laboratories
Address 4-6125-12th street SE
City Calgary Prov. AB PC T2H 2K1
Contact Jacklyn Poole
Phone No. 403-253-7121

Invoice to:
Company SAME
Address _____
City _____ Prov. _____ PC _____
Contact _____
Phone No. _____

ANALYSIS REQUIRED

SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NUMBER OF CONTAINERS	COMMENTS	7d cervodaphnia dubia											RECEIPT TEMPERATURE (°C)
15-1276	Sept 21/15		H2O	1L	7		X											

PROJECT INFORMATION	SAMPLE RECEIPT	
CLIENT	TOTAL NO. OF CONTAINERS	
P.O. NO.	REC'D GOOD CONDITION	
SHIPPED VIA:		

SPECIAL INSTRUCTIONS/COMMENTS:
Sample# 45393
W.O.# 229354

RELINQUISHED BY (CLIENT)	RELINQUISHED BY (COURIER)
(Signature) NY (Time)	(Signature) (Time)
(Printed Name) Nan Yamamoto - Sept 23/15 (Date)	(Printed Name) (Date)
(Company) Nautilus	(Company)
RECEIVED BY (COURIER)	**RECEIVED BY (LABORATORY)**
(Signature) AW 0850 (Time)	(Signature) (Time)
(Printed Name) 2015-09-24 (Date)	(Printed Name) (Date)
(Company)	

Additional costs may be required for sample disposal or storage. Net 30 unless otherwise contracted.

DISTRIBUTION: WHITE - Nautilus Environmental, COLOR - Originator

Nautilus Environmental

Rainbow Trout Embryo Development Testing on Sample 15-1276

Sample collected September 21, 2015

Final Report

Report date: November 2, 2015

Submitted to:

HydroQual Laboratories Ltd.

Calgary, AB

8664 Commerce Court
Burnaby, BC
V5A 4N7

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SIGNATURE PAGE

Yvonne Lam, B.Sc.
Laboratory Biologist

Armando Tang, R.P.Bio.
Senior Reviewer

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the sample tested.

1.0 INTRODUCTION

Nautilus Environmental conducted a 7-d rainbow trout (*Oncorhynchus mykiss*) embryo viability toxicity test for HydroQual Laboratories on a sample identified as 15-1276. The sample was collected on September 21, 2015 and transported in seven 20-L plastic containers. They were delivered to the Nautilus Environmental laboratory in Burnaby, BC on September 23, 2015 and stored in the dark at 4 ± 2°C prior to testing.

This report describes the results of the toxicity test. Copies of raw laboratory data sheets and statistical analyses for the samples are provided in Appendix A. The chain-of-custody form is provided in Appendix B.

2.0 METHODS

The methodology for the 7-day rainbow trout embryo toxicity test is summarized in Table 1. Testing was conducted according to procedures described by Environment Canada (1998) and Canaria et al. (1999). Statistical analyses were performed using CETIS (Tidepool Scientific Software, 2013).

Table 1. Summary of test conditions: 7-d rainbow trout embryo viability test.

Test organism	*Oncorhynchus mykiss*
Test organism source	Miracle Springs, Mission, BC
Test organism age	<30 min post fertilization embryos, <24-h old gametes
Test type	Static-renewal
Test duration	7 days
Test vessel	2-L plastic containers
Test solution volume	2 L
Test treatments	Laboratory control, 6.25, 12.5, 25, 50 and 100% sample
Test replicates	4 test replicates per treatment
Number of organisms	30 eggs per container
Control water	Dechlorinated municipal tap water (hardness 12 mg/L $CaCO_3$)
Test solution renewal	Daily
Test temperature	14 ± 1°C
Feeding	None
Light intensity	Dark (low light during solution renewals)
Photoperiod	24 h dark
Aeration	6.5 ± 1 mL/min/L
Test protocol	Environment Canada (1998), EPS 1/RM/28; Canaria et al. (1999)
Statistical software	CETIS (2013)
Test endpoint	Percent embryo viability
Test acceptability criterion for control	Embryo viability ≥70%
Reference toxicant	Sodum dodecyl sulphate (SDS)

3.0 RESULTS

The test exhibited no significant effects on embryo viability for the sample 15-1276. Embryo viability in all treatments and control were >76%. A summary of the test results are provided in Table 2.

Table 2. Results: 7-d rainbow trout embryo viability test.

Concentration (% v/v)	**Embryo Viability (%) (Mean ± SD)**
Control	85.0 ± 5.8
6.25	76.1 ± 9.0
12.5	86.7 ± 6.7
25	85.8 ± 1.7
50	91.7 ± 6.4
100	81.7 ± 4.3
Test endpoint (% v/v)	
EC25	>100
EC50	>100

v/v = volume per volume, SD = Standard Deviation, EC = Effective Concentration.

4.0 QA/QC

The test met the control passing criterion of ≥70% embryo viability specified in the Environment Canada protocol. Water quality parameters were within ranges specified in the protocol and there were no deviations from the test methodologies. Uncertainty associated with the test is best described by the standard deviation around the mean and/or where applicable, the confidence intervals around the point estimates.

Results of the reference toxicant test conducted during the testing program are summarized in Table 3. Results for this test fell within the range for organism performance of mean and range, based on historical results obtained by the laboratory with this test species. Thus, the sensitivity of the embryos used in the toxicity test and evaluated with the concurrent SDS reference toxicant test was appropriate. The reference toxicant test was performed under the same conditions as those used for the sample.

Table 3. Reference toxicant test summary.

Test Species	Endpoint	Historical Mean (2 SD Range)	CV (%)	Test Date
O. mykiss (embryo)	Viability (EC50): 2.8 mg/L SDS	4.2 (2.2 – 8.1)	39	September 23, 2015

SD = Standard Deviation, CV = Coefficient of Variation, EC = Effective Concentration.

5.0 REFERENCES

Canaria, E.C., J.R. Elphick and H.C. Bailey. 1999. A simplified procedure for conducting small-scale short-term embryo toxicity tests with salmonids. *Environ. Toxicol.* 14:301-307.

Environment Canada. 1998. Biological test method: toxicity tests using early life stages of salmonid fish (rainbow trout). Environmental Protection Series EPS 1/RM/28. Second Edition, July 1998. Environment Canada, Method Development and Application Section, Environmental Technology Centre, Ottawa, ON. 102 pp.

Tidepool Scientific Software. 2013. CETIS comprehensive environmental toxicity information system, version 1.8.7.16 Tidepool Scientific Software, McKinleyville, CA. 222 pp.

APPENDIX A - 7-d Rainbow Trout Embryo Toxicity Test Data

Rainbow Trout Embryo Summary Sheet

Client: HydroQual

Start Date/Time: September 23, 2015 @1600h

Work Order No.: 15759

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: 15-1276
Sample Date: September 21, 2015
Date Received: September 23, 2015
Sample Volume: 7 x 20L

Dilution Water:

Type: Dechlorinated Tap Water
Hardness (mg/L $CaCO_3$): 12
Alkalinity (mg/L $CaCO_3$): 8

Test Organism Information:

Batch No.: 092315
Source: Miracle Springs, Mission, BC.
Loading Density: 0.59 g/L
Number of male broodstock used: 8
Number of female broodstock used: 8

SDS Reference Toxicant Results:

Reference Toxicant ID: RTE76
Stock Solution ID: 15501
Date Initiated: September 23 2015
7-d EC50 (95% CL): 2.8 (2.7-3.0) mg/L SDS

Reference Toxicant Mean and Range: 4.2 (2.2-8.1) mg/L SDS
Reference Toxicant CV (%): 39

Test Results:

	Sample ID		
	15-1276		
EC25 % (v/v) (95% CL)	>100		
EC50 % (v/v) (95% CL)	>100		

Reviewed by: JOL

Date reviewed: Oct. 27/15

Salmonid Embryo Survival and Development Test — **Nautilus Environmental**

Analysis ID:	11-3814-7602	**Endpoint:**	Proportion Normal	**CETIS Version:**	CETISv1.8.7
Analyzed:	14 Oct-15 16:46	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	19-2060-0898	**Test Type:**	Development	**Analyst:**	Yvonne Lam
Start Date:	23 Sep-15 16:00	**Protocol:**	EC/EPS 1/RM/28	**Diluent:**	Dechlorinated Tap Water
Ending Date:	30 Sep-15 12:00	**Species:**	Oncorhynchus mykiss	**Brine:**	
Duration:	6d 20h	**Source:**	Miracle Spring	**Age:**	
Sample ID:	09-1363-9559	**Code:**	36750887	**Client:**	hydroqual
Sample Date:	21 Sep-15	**Material:**	Water Sample	**Project:**	
Receive Date:	23 Sep-15 15:11	**Source:**	Hydroqual (HYDROQUAL)		
Sample Age:	64h (10.8 °C)	**Station:**	15-1276		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	198196	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

Proportion Normal Summary

			Calculated Variate(A/B)								
C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	0.85	0.7667	0.9	0.02887	0.05774	6.79%	0.0%	102	120
6.25		4	0.7608	0.6667	0.8667	0.04492	0.08985	11.81%	10.5%	92	121
12.5		4	0.8667	0.8333	0.9667	0.03333	0.06667	7.69%	-1.96%	104	120
25		4	0.8583	0.8333	0.8667	0.008334	0.01667	1.94%	-0.98%	103	120
50		4	0.9167	0.8333	0.9667	0.03191	0.06383	6.96%	-7.84%	110	120
100		4	0.8167	0.7667	0.8667	0.02152	0.04303	5.27%	3.92%	98	120

Proportion Normal Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	0.7667	0.8667	0.8667	0.9
6.25		0.8667	0.8	0.6667	0.7097
12.5		0.8333	0.9667	0.8333	0.8333
25		0.8667	0.8667	0.8667	0.8333
50		0.9667	0.9	0.8333	0.9667
100		0.8333	0.8	0.8667	0.7667

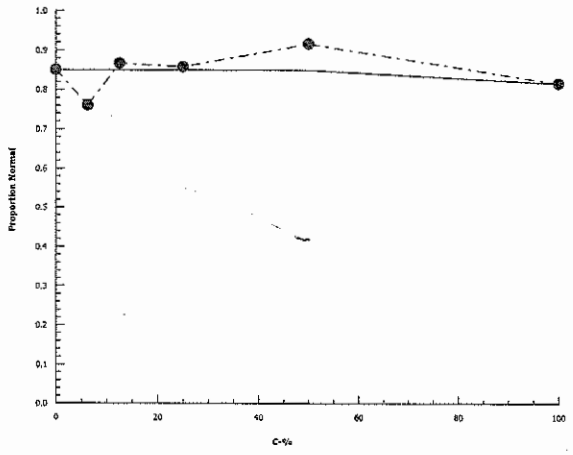
Proportion Normal Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	23/30	26/30	26/30	27/30
6.25		26/30	24/30	20/30	22/31
12.5		25/30	29/30	25/30	25/30
25		26/30	26/30	26/30	25/30
50		29/30	27/30	25/30	29/30
100		25/30	24/30	26/30	23/30

Salmonid Embryo Survival and Development Test — **Nautilus Environmental**

Analysis ID:	11-3814-7602	**Endpoint:**	Proportion Normal	**CETIS Version:**	CETISv1.8.7
Analyzed:	14 Oct-15 16:46	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



 Analyst:_____ QA: JCL Oct-23/15

Embryo Toxicity Test
Daily Mortality

Client: HydroQual
Sample ID: 15-1276
Work Order #: 15759

Start Date & Time: Sept 23/15 @ 1600h
Stop Date & Time: Sept 30/15 @ 1200h
Test Species: *Oncorhynchus mykiss*

Concentration % (v/v)	Rep	Day of Test - No. of Mortalities							Total Dead Eggs	Total Undeveloped	Total No. Embryo	Total Exposed
		1	2	3	4	5	6	7				
Control	1	0	0	0	0	0	2	1	3	4	23	30
	2	↓	↓	↓	↓	1	0	0	~~0~~ 1	3	26	30
	3					1	1	0	2	2	26	30
	4					0	0	1	1	2	27	30
6.25	1					1	1	0	1	3	26	30
	2					1	1	0	1	5	24	30
	3					↓	1	0	1	9	20	30
	4		↓			1	0	2	3	6	~~25~~ 22	31
12.5	1		1			1	↓	0	2	3	25	30
	2		0			0		1	1	0	29	30
	3		↓			2		0	2	3	25	30
	4					1		0	2	3	25	30
25	1					0	0	0	0	4	26	30
	2					0	0	1	1	3	26	30
	3					1	0	0	1	3	26	30
	4					0	1	1	2	3	25	30
50	1					0	0	0	0	1	29	30
	2					0	1	0	1	2	27	30
	3					1	0	1	2	3	25	30
	4					0	↓	0	0	1	29	30
100	1					0		0	0	5	25	30
	2					1		0	1	5	24	30
	3				↓	0		0	0	4	26	30
	4	↓	↓	↓		0	↓	0	0	7	23	30
	1											
	2											
	3											
	4											
	1											
	2											
	3											
	4											
Tech Initials		KL	SSD	↑	↑	EM/KL	MML	SSD	YML	YML	YML	YML

Comments:

Reviewed by: JGL **Date reviewed:** Oct. 23/15

7-d Chronic Freshwater Toxicity Test
Initial and Final Water Quality Measurements

Client: Hydro Qual
Sample ID: 15-1276
Work Order #: 15759

Start Date & Time: Sept 23/15 @ 1600h
Stop Date & Time: Sept 30/15 @ 1200h
Test Species: *Oncorhynchus mykiss*

% (v/v) Concentration	Days														
	0	1		2		3		4		5		6		7
control	init.	new	old	new	old	new	old	new	old	new	old	new	old	final
Temperature (°C)	15.0	14.5	13.5	14.0	13.5	14.0	14.0	14.0	14.0	14.0	13.5	14.5	13.5	13.5
DO (mg/L)	9.2	9.9	10.0	9.7	10.0	9.9	9.9	9.9	9.8	9.9	9.7	9.7	9.8	10.1
pH	7.0	6.9	6.9	7.0	6.9	7.1	7.2	6.9	7.0	6.9	6.9	7.1	7.0	7.0
Cond. (µS/cm)	36	35		35		35		35		35		35		37
Initials	YYL	YYL/KL		SSD		[illegible]		[illegible]		KL		YYL		YYL

Concentration 6.25	Days														
	0	1		2		3		4		5		6		7
	init.	new	old	new	old	new	old	new	old	new	old	new	old	final
Temperature (°C)	14.5	14.5	13.5	14.5	13.5	14.0	14.0	14.0	14.0	14.0	13.5	14.5	13.5	13.5
DO (mg/L)	9.6	9.8	10.0	9.8	10.1	9.8	9.8	9.9	9.9	9.9	9.7	9.6	9.9	10.2
pH	7.0	7.2	7.1	7.3	7.0	7.4	7.3	7.4	7.3	7.2	7.0	7.3	7.2	7.3
Cond. (µS/cm)	177	173		156		174		180		166		163		166
Initials	YYL	YYL/KL		SSD		[illegible]		[illegible]		KL		YYL		YYL

Concentration 25	Days														
	0	1		2		3		4		5		6		7
	init.	new	old	new	old	new	old	new	old	new	old	new	old	final
Temperature (°C)	14.0	14.5	13.5	14.5	13.5	14.0	14.0	14.0	14.0	14.0	13.5	14.0	13.5	13.5
DO (mg/L)	9.8	9.9	10.1	9.8	10.1	9.9	9.9	9.9	9.9	9.9	9.8	9.7	9.8	10.1
pH	7.5	7.6	7.3	7.7	7.2	7.8	7.4	7.7	7.6	7.6	7.2	7.4	7.3	7.5
Cond. (µS/cm)	505	523		517		502		511		492		529		~~509~~ 509
Initials	YYL	YYL/KL		SSD		[illegible]		[illegible]		KL		YYL		YYL

Concentration 100	Days														
	0	1		2		3		4		5		6		7
	init.	new	old	new	old	new	old	new	old	new	old	new	old	final
Temperature (°C)	13.5	15.0	13.5	14.0	13.5	14.0	14.0	14.0	14.0	13.5	13.5	14.0	13.5	13.5
DO (mg/L)	10.1	10.2	10.1	10.2	10.1	9.9	9.8	10.0	9.9	9.6	9.9	9.4	9.9	10.2
pH	8.2	8.0	7.9	8.1	7.9	8.1	7.8	8.1	7.9	7.9	7.8	7.9	7.8	7.9
Cond. (µS/cm)	1579	1578		1581		1581		1580		1579		1583		1590
Initials	YYL	YYL/KL		SSD		[illegible]		[illegible]		KL		YYL		YYL

Thermometer: 7 **DO meter:** DO-2/3 **pH meter:** pH 1/3 **Conductivity meter:** C-2/3

	Control	100%		
Hardness*	12	1050		
Alkalinity*	8	92		

* mg/L as CaCO3

Analysts: YYL, [illegible], KL, SSD

Reviewed by: JGL

Date reviewed: Oct. 23/15

Sample Description: clear

Comments:

Client: HydroQual

W.O.#: 15159

Hardness and Alkalinity Datasheet

	Alkalinity						Hardness			
Sample ID	Sample Date	Sample Volume (mL)	(mL) 0.02N HCL/H_2SO_4 used to pH 4.5	(mL) of 0.02N HCL/H_2SO_4 used to pH 4.2	Total Alkalinity ($mg/LCaCO_3$)		Sample Volume (mL)	Volume of 0.01M EDTA Used (mL)	Total Hardness ($mg/L\ CaCO_3$)	Technician
15-1276	Sept 23/15	50	4.8	5.0	92		10①	10.5	1050	YHL
Dechlor	↓	50	0.5	0.6	8		50	06	12	EC

Notes: ① Diluted to 100 mL DI water

Reviewed by: JGL

Date Reviewed: Oct. 23/15

APPENDIX B – Chain-of-Custody Form

Nautilus Environmental

BRITISH COLUMBIA
8664 Commerce Court
Burnaby British Columbia Canada V5A 4N7
Phone 604.420.8773
Fax 604.357.1361

Chain of Custody

1486

Date Sept 23/15 Page 1 of 1

Sample Collection by: _____

Report to:
Company HydroQual
Address 4-6125-12th Street SE
City Calgary Prov. AB PC T2H 2K1
Contact Jacklyn Poole
Phone No. 403-253-7121

Invoice to:
Company SAME
Address _____
City _____ Prov. _____ PC _____
Contact _____
Phone No. _____

SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NUMBER OF CONTAINERS	COMMENTS	ANALYSIS REQUIRED: 7d Rbt Embryo	RECEIPT TEMPERATURE (°C)
15-1276	Sept 21/15		H2O	20L	7		X	10.8
						WO # 15759		

PROJECT INFORMATION	SAMPLE RECEIPT	
CLIENT	TOTAL NO. OF CONTAINERS	7
P.O. NO.	REC'D GOOD CONDITION	4
SHIPPED VIA:		

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY (CLIENT)	RELINQUISHED BY (COURIER)
(Signature) NY (Time)	(Signature) (Time)
(Printed Name) (Date)	(Printed Name) (Date)
(Company)	(Company)
RECEIVED BY (COURIER)	**RECEIVED BY (LABORATORY)** Nautilus
(Signature) (Time)	(Signature) NY 15:11 (Time)
(Printed Name) (Date)	(Printed Name) Nau Yamamoto Sept 23/15 (Date)
(Company)	

Additional costs may be required for sample disposal or storage. Net 30 unless otherwise contracted.

DISTRIBUTION: WHITE - Nautilus Environmental, COLOR - Originator

GENERAL TERMS AND CONDITIONS:

These terms and conditions are incorporated into and form part of the Chain of Custody between HydroQual Laboratories Ltd. ("HydroQual") and the party named in the Chain of Custody (the "Client").

1. **Definitions:** Capitalized terms shall have the definition ascribed as such in these General Terms and Conditions and the Chain of Custody.
2. **The Services:** HydroQual will provide the Services to the Client as listed and described in the Chain of Custody.
3. **Prices:** HydroQual may review and change all prices, fees, surcharges or other charges as set out in proposals and/or price quotations if there are changes to HydroQual's cost beyond HydroQual's control, including changes in legislative requirements, Client variations of sample numbers and Client requests for changes to standard reporting requirements. Notwithstanding condition 3, all quotations are reviewed and updated on a yearly basis.
4. **Payment Terms:** The Client shall pay HydroQual within 30 days of the invoice date as provided by HydroQual. HydroQual may, for reasonable business reasons, require the Client to arrange for payment in advance.
5. **Quotation Numbers:** The Client shall provide the proposal and/or price quotation number to HydroQual (where applicable) to ensure correct pricing.
6. **Taxes:** Applicable taxes are not included in prices, surcharges and additional fees and will be added at the time of invoicing.
7. **No Guarantee of Results:** The Client is responsible for informing itself on the limitation of the results and acknowledges that the results are not guaranteed.
8. **Standard of Care:** HydroQual will use reasonable care and diligence as required by the laws of the province or territory where the sample is tested, subject to that level of care and skill ordinarily exercised by other laboratories currently practicing under similar conditions in the same locality, subject to the time limits and financial, physical or other constraints applicable to the Services. No warranty, express or implied, is made.
9. **Storage:** Where possible, HydroQual will store samples until a final report is issued to the Client, after which time HydroQual may discard the sample.
10. **Holds:** If the Client requests a sample be placed on hold, HydroQual will store the sample for the mutually agreed upon written time and price, after which HydroQual will invoice the Client and discard the sample.
11. **Archives:** If the Client requests a sample be archived, HydroQual will store the sample for a mutually agreed upon written time frame and price, after which HydroQual will invoice the Client and discard the sample.
12. **Handling Protocol:** Legal sample handling protocol must be arranged, and provided in writing, before samples are collected. HydroQual will provide a price quotation for legal sample protocol. Samples processed under legal protocol are stored indefinitely, subject to a storage charge as advised by HydroQual.
13. **Samples:** The quality, condition, content and source of samples stored and tested are not known to HydroQual except as declared and described on the Chain of Custody completed and submitted by the Client and accompanying the sample.
14. **Risk of Loss:** HydroQual will use reasonable care to protect samples during storage, however, all samples are stored at the Client's risk and the Client is responsible for obtaining appropriate insurance, if desired. The Client acknowledges that during the performance of the Services samples may be altered, lost, damaged or destroyed and the client forever releases HydroQual from any and all claims the Client may have for any loss or damage to the sample.
15. **Environmental:** the Client must comply with all applicable environmental legislation, including labeling all hazardous samples to comply with Canada's *Workplace Hazardous Materials Information System* and the Alberta *Transfer of Dangerous Goods* regulations, and must provide appropriate material safety data sheets that include the nature of the hazard and a contact name and phone number to call for information. The Client shall defend, indemnify and hold harmless HydroQual for all loss or damages, including any fine or cost of complying with an order of any government authority, resulting from the Client's breach of this paragraph.
16. **Hazardous Materials Disposal:** HydroQual may return, at the Client's cost, hazardous material to the Client for disposal.
17. **Hazardous Materials Surcharge:** HydroQual may apply an additional surcharge for handling of hazardous samples or samples with Naturally Occurring Radioactive Materials ("NORM"), such as and including without limitation, H_2S and CN.
18. **Sample Containers:** HydroQual may ship sample containers to the Client's location by the most cost effective means using HydroQual's preferred courier suppliers, within the specified project timeline. Shipping will be charged back to the Client.
19. **Additional Charges:** HydroQual may charge the Client:
    (a) for pick-up and delivery services when provided subject in each instance to a minimum charge of $50.00; and,
    (b) for rush service (processing samples and/or reporting).
20. **Large Bottle Orders:** The Client shall provide HydroQual with not less than 24 hours' notice for large bottle orders.
21. **Re-Tests:** HydroQual reserves the right to re-test any samples that remain in HydroQual's possession. Re-tests requested by the Client may be charged to Client and Client agrees to pay for such charges.
22. **Waiver:** The Client is responsible for making any assessment regarding the suitability of the Services and the intended results for the Client's purposes and waives any and all claims against HydroQual that the Client may have against HydroQual as a result of the interpretation of the results provided to the Client. The Client shall defend, indemnify and save harmless HydroQual for any and all claims made by any third party against HydroQual in respect of all losses however arising from the performance of the Services or the use of any report provided in the performance of the Services.
23. **LIMITATION OF LIABILITY:** IN NO EVENT SHALL HYDROQUAL BE RESPONSIBLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY OR PUNITIVE DAMAGES, WHETHER FORESEEABLE OR UNFORESEEABLE (INCLUDING CLAIMS FOR LOSS OF PROFITS OR REVENUE OR LOSSES CAUSED BY STOPPAGE OF OTHER WORK OR IMPAIRMENT OF OTHER ASSETS) INCURRED BY THE CLIENT ARISING OUT OF BREACH OR FAILURE OF EXPRESS OF IMPLIED WARRANTY, BREACH OF CONTRACT, BREACH OF WARRANTY, MISREPRESENTATION, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE. IN ANY EVENT, THE LIABILITY OF HYDROQUAL TO THE CLIENT SHALL BE LIMITED TO THE COST OF TESTING THE SAMPLE AS REQUESTED IN THE CHAIN OF CUSTODY UNDER WHICH THE SAMPLE WAS ORIGINALLY DEPOSITED. FOR THE PURPOSES OF THIS PARAGRAPH AND PARAGRAPHS 7, 14, 15, 22, AND 24, AS APPLICABLE, "HYDROQUAL" INCLUDES WITHOUT LIMITATIONS ITS DIRECTORS, OFFICERS, EMPLOYEES AND AFFILIATES AND THE "CLIENT" INCLUDES WITHOUT LIMITATION ANY THIRD PARTY THAT MAY HAVE A CLAIM AGAINST HYDROQUAL THROUGH THE CLIENT.
24. **Notice of Liability:** Notwithstanding paragraph 23, HydroQual shall not be liable to the Client unless the Client provides notice in writing to HydroQual of such loss or damage, together with full particulars thereof, within 30 days of the Client's receipt of the report of the analysis of the sample giving rise to such liability. The provisions of this paragraph allocate the risk between the Client and HydroQual, and the fees to be paid by the Client to HydroQual reflect this allocation of any such risks and the limitations of liability in these General Terms and Conditions.
25. **Entire Agreement:** These General Terms and Conditions, the Chain of Custody and price quotations constitute the entire agreement between the parties and supersede and take precedence over any terms and conditions contained in any documentation provided by the Client. HydroQual's execution of any subsequent documentation from the Client only acknowledges receipt and not acceptance of any terms or conditions therein unless expressly stipulated otherwise by HydroQual. If there is a conflict between these General Terms and Conditions and any other document, these General Terms and Conditions prevail.

APPENDIX E

LIGHTNING CREEK WATER QUALITY DATA

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Discharge (Flow)	Total Suspended Solids	pH (field)	pH (lab)	Specific Conductance (field)	Specific Conductance (lab)	Temperature (field)	Dissolved Oxygen (field)	Dissolved Oxygen (field)	ORP (field)	Hardness (from total)	Hardness (from dissolved)	Alkalinity, total	Chloride	Fluoride	Sulphate, dissolved	Cyanide, Free	Ammonia (N)	Nitrite (N)	Nitrate (N)	Total Kjeldahl Nitrogen	Dissolved Organic Carbon	Aluminum (Al), total	Antimony (Sb), total	Arsenic (As), total	Barium (Ba), total	Beryllium (Be), total	Bismuth (Bi), total
			L/s	mg/L	pH units	pH units	µS/cm	µS/cm	C	mg/L	%	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
CCME Guidelines - Protection of Aquatic Life					6.5-9	6.5-9				6.5						120	0.12		0.005	0.197	0.06	3			*		0.005			
KV-37	Lightning Creek u/s Hope Gulch	01/08/2014		<1.0	7.44	7.44	162.2	148	6.5	12.13	101.1	331.1	70.3	70.7		<0.50	0.041	40.1	<0.0050	<0.0050	<0.0010	0.0277	0.065	1.17	0.0125	0.00016	0.00258	0.0556	<0.00010	<0.00050
KV-37	Lightning Creek u/s Hope Gulch	25/08/2014	685.51																											
KV-37	Lightning Creek u/s Hope Gulch	02/09/2014	702.21	1.0	7.56	7.67	148.1	178	3.5	13.2	102.5	263.6	76.7	77.6		<0.50	0.031	48.3	<0.0050	<0.0050	<0.0010	0.0447	0.056	1.06	0.0228	0.00019	0.00275	0.0523	<0.00010	<0.00050
KV-37	Lightning Creek u/s Hope Gulch	16/10/2014	348.5	<1.0	7.94	8.19	163	144	0.6	11.94	86.5	253	69.9	69.6	32.7	<0.50	0.044	37.7	<0.0050	<0.0050	<0.0010	0.103	<0.050	0.92	0.0102	<0.00010	0.00236	0.0537	<0.00010	<0.00050
KV-37	Lightning Creek u/s Hope Gulch	13/11/2014		<1.0	7.25	7.80	143.1	155	0	13.7	95.8	151.4	66.6	66.7		<0.50	0.055	32.0	<0.0050	<0.0050	<0.0010	0.146	0.077	<0.50	0.0492	0.00014	0.00289	0.0576	<0.00010	<0.00050
KV-37	Lightning Creek u/s Hope Gulch	14/12/2014	138.2	<1.0	**6.47**	7.44	138.3	148	0.1	13.85	97.6	190.6	61.1	63.2		<0.50	0.049	29.5	<0.0050	0.0071	<0.0010	0.149	<0.050	<0.50	**0.0272**	<0.00010	0.00267	0.0558	<0.00010	<0.00050
KV-37	Lightning Creek u/s Hope Gulch	11/01/2015	104.5																											
KV-37	Lightning Creek u/s Hope Gulch	05/02/2015	91.7	1.2	7.39	7.47	133.3	151	-0.1	14.9	104.6	184	66.0	66.5	39.1	<0.50	0.054	27.3	<0.0050	0.0069	<0.0010	0.163	0.058	0.55	0.0196	0.00015	0.00310	0.0637	<0.00010	<0.00050
KV-37	Lightning Creek u/s Hope Gulch	06/03/2015	89.7	<1.0	7.23	8.04	134.5	155	0.1	14.01	99	266.6	62.4	65.3		<0.50	0.046	26.6	<0.0050	0.0051	<0.0010	0.155	<0.10	0.65	0.0101	<0.00010	0.00322	0.0684	<0.00010	<0.00050
KV-37	Lightning Creek u/s Hope Gulch	06/04/2015	76	1.0	7.54	7.52	135.7	134	0.2	13.04	93.6	236.8	64.1	65.1		<0.50	0.053	27.0		0.0057	<0.0010	0.150	0.055	<0.50	0.0194	0.00012	0.00330	0.0629	<0.00010	<0.000050
KV-37	Lightning Creek u/s Hope Gulch	28/05/2015		1.0	7.43	7.64	102.5	106	2	12.2	101	480.2	46.0	46.5	17.0	<0.50	0.027	29.3		<0.0050	<0.0010	0.0210	0.077	1.62	0.0410	0.00013	0.00187	0.0376	<0.00010	<0.000050
KV-37	Lightning Creek u/s Hope Gulch	17/06/2015		1.0	7.9	7.66		170	5.7	11.8	97	253.5	67.6	67.0		<0.50	0.035	40.9		<0.0050	<0.0010	0.0105	0.091	1.04	0.0175	0.00012	0.00228	0.0469	<0.00010	<0.000050
KV-37	Lightning Creek u/s Hope Gulch	16/07/2015		<1.0	7.21	7.57		189	5.8	10.12	80.9	-24.6	74.0	72.6	30.4	<0.50	0.038	46.3		<0.0050	<0.0010	0.0247	<0.050	1.01	0.0099	0.00014	0.00239	0.0523	<0.00010	<0.000050
KV-37	Lightning Creek u/s Hope Gulch	15/08/2015		<1.0	7.57	7.54	135.9	175	5.9	11.22	92	126.1	79.3	82.6		<0.50	0.037	50.8		<0.0050	<0.0010	0.0341	<0.050	1.12	0.0088	0.00012	0.00223	0.0551	<0.00010	<0.000050
KV-37	Lightning Creek u/s Hope Gulch	02/09/2015		2.4	7.44	7.59	162.6	184	2.7	12.7	106	309.7	87.8	88.4	32.1	<0.50	0.039	57.7		<0.0050	<0.0010	0.0578		1.38	0.0160	0.00033	0.00315	0.0526	<0.00010	<0.000050
KV-37	Lightning Creek u/s Hope Gulch	07/09/2015		<1.0	7.26	7.73	188.8	174	4.3	12.66	100.4		84.5	86.3		<0.50	0.034	51.2		0.0083	<0.0010	0.0336	0.067	0.94	0.0101	0.00014	0.00230	0.0533	<0.00010	<0.000050
KV-37	Lightning Creek u/s Hope Gulch	16/10/2015		<1.0	7.88	7.73	150.4	165	0.7	13.37	93.2	93.4	76.0	74.4	31.7	<0.50	0.039	42.5		<0.0050	<0.0010	0.105	<0.050	0.79	0.0069	<0.00010	0.00225	0.0544	<0.00010	<0.000050
KV-37	Lightning Creek u/s Hope Gulch	14/11/2015		<1.0	7.98	7.56	155.2	149	0.1	10.51	75.1	49.6	67.0	70.4		<0.50	0.049	33.8		0.0081	<0.0010	0.149	0.078	0.54	0.0066	0.00019	0.00249	0.0582	<0.00010	<0.000050
KV-37	Lightning Creek u/s Hope Gulch	17/12/2015		1.6	8.52	7.87	141.2	138	0.2	10.7	85	63.9	67.1	67.3		<0.50	0.042	29.6		0.0055	<0.0010	0.156	<0.050	<0.50	0.0071	<0.00010	0.00275	0.0629	<0.00010	<0.000050
KV-38	Lightning Creek u/s Thunder Gulch	01/08/2014	392.3	1.8	7.68	7.45	192.1	177	5.4	12.4	99.7	323.8	94.1	87.7		<0.50	0.053	49.9	<0.0050	<0.0050	<0.0010	0.0371	0.073	1.05	0.0314	0.00032	0.00273	0.0610	<0.00010	<0.00050
KV-38	Lightning Creek u/s Thunder Gulch	02/09/2014	468.00	<1.0	7.66	7.59	196.9	204	3.5	12.9	99.6	254.2	92.6	91.5		<0.50	0.040	57.5	<0.0050	<0.0050	<0.0010	0.0579	0.065	1.19	0.0395	0.00033	0.00295	0.0550	<0.00010	<0.00050
KV-38	Lightning Creek u/s Thunder Gulch	16/10/2014	457.2	<1.0	7.18	8.14	207.7	186	0.9	12.26	88.9	262.9	96.3	96.7	37.8	<0.50	0.048	53.4	<0.0050	0.0062	<0.0010	0.103	<0.050	1.01	0.0110	0.00025	0.00243	0.0555	<0.00010	<0.00050
KV-38	Lightning Creek u/s Thunder Gulch	13/11/2014	259.2	<1.0	7.19	7.80	196.4	211	0	13.78	95.5	242.2	94.4	95.3		<0.50	0.059	51.3	<0.0050	<0.0050	<0.0010	0.145	<0.050	<0.50	0.0088	0.00024	0.00233	0.0595	<0.00010	<0.00050
KV-38	Lightning Creek u/s Thunder Gulch	13/12/2014	180.3	<1.0	7.48	7.46	192	204	0.1	13.92	97.8	215.5	89.4	90.5		<0.50	0.070	50.4	<0.0050	<0.0050	0.0018	0.174	<0.050	<0.50	0.0079	0.00024	0.00237	0.0577	<0.00010	<0.00050
KV-38	Lightning Creek u/s Thunder Gulch	11/01/2015	164.4	<1.0	7.36	7.44	194.8	202	0	13.9	97.2	217.2	94.8	86.0		<0.50	0.067	49.6	<0.0050	<0.0050	<0.0010	0.178	<0.050	<0.50	0.0104	0.00026	0.00266	0.0599	<0.00010	<0.00050
KV-38	Lightning Creek u/s Thunder Gulch	05/02/2015	112.8	<1.0	7.36	7.49	189.8	214	-0.1	15.43	107.8	238.5	98.8	102	46.2	<0.50	0.065	47.7	<0.0050	<0.0050	<0.0010	0.178	<0.050	0.87	0.0118	0.00026	0.00282	0.0613	<0.00010	<0.00050
KV-38	Lightning Creek u/s Thunder Gulch	06/03/2015	122.6	1.0	7.34	7.98	190.9	199	0.2	14.39	101.1	303.2	93.3	95.3		<0.50	0.064	46.1	<0.0050	<0.0050	<0.0010	0.173	<0.050	<0.50	0.0128	0.00026	0.00306	0.0669	<0.00010	<0.00050
KV-38	Lightning Creek u/s Thunder Gulch	06/04/2015	118.7		7.57		193.7		0.2	13.57	96.6	257.2																		
KV-38	Lightning Creek u/s Thunder Gulch	27/05/2015		3.8	7.64	7.48	111.4	108	5.5	11.3	101	426	51.1	50.7	18.8	<0.50	0.034	31.7		<0.0050	<0.0010	0.0358	0.098	1.85	0.0499	0.00034	0.00317	0.0387	<0.00010	<0.000050
KV-38	Lightning Creek u/s Thunder Gulch	16/07/2015	718.4	<1.0	7.61	7.62		197	6	13.5	109	103.8	82.6	83.2	35.0	<0.50	0.049	52.6		<0.0050	<0.0010	0.0247	0.051	1.07	0.0111	0.00030	0.00277	0.0550	<0.00010	<0.000050
KV-38	Lightning Creek u/s Thunder Gulch	01/09/2015		43.2	7.25	7.53	171.7	194	3.3	12.8			98.1	98.8	32.8	<0.50	0.043	62.3		<0.0050	<0.0010	0.0521		1.50	**0.864**	0.00040	0.00336	0.0723	<0.00010	<0.000050
KV-38	Lightning Creek u/s Thunder Gulch	16/10/2015	523.6	<1.0	7.86	7.75	190.3	210	0.5	13.12	91.6	99.8	102	101	37.2	<0.50	0.049	57.9		<0.0050	<0.0010	0.117	<0.050	0.68	0.0064	0.00027	0.00252	0.0572	<0.00010	<0.000050
KV-39	Hope Gulch u/s Lightning Creek	16/10/2014	17.8	<1.0	7.72	7.89	359.1	356	0.3	12.46	89.5	290.2	169	172	63.4	<0.50	0.066	108			<0.0010	0.235		0.71	0.0071	0.00153	**0.00909**	0.0492	<0.00010	<0.00050
KV-39	Hope Gulch u/s Lightning Creek	05/02/2015	0																											
KV-39	Hope Gulch u/s Lightning Creek	28/05/2015	234.2	1.4	7.69	7.55	152	150	3.3	11.8	100	465	71.2	71.2	27.3	<0.50	0.045	43.7			<0.0010	0.178		1.21	0.0368	0.00125	**0.00964**	0.0333	<0.00010	<0.000050
KV-39	Hope Gulch u/s Lightning Creek	16/07/2015	25	<1.0	7.66	7.66		271	5.7	13.45	107.5	69.3	130	131											0.0071	0.00160	**0.00988**	0.0418	<0.00010	<0.000050
KV-39	Hope Gulch u/s Lightning Creek	16/10/2015	38.7	1.1	7.78	7.93	281.1	338	0.4	13.53	93.6	118.2	170	170	59.5	<0.50	0.057	106			<0.0010	0.257		0.58	0.0044	0.00136	**0.00936**	0.0492	<0.00010	<0.000050
KV-40	Charity Gulch u/s Lightning Creek	16/10/2014	5.4	<1.0	7.45	7.67	426	470	1.4	12.07	89.1	277.6	233	233	36.6	<0.50	0.058	178			<0.0010	0.146		0.72	0.0097	0.00010	0.00079	0.0687	<0.00010	<0.00050
KV-40	Charity Gulch u/s Lightning Creek	05/02/2015	0																											
KV-40	Charity Gulch u/s Lightning Creek	28/05/2015	40.7	1.0	7.8	7.62	305.5	310	1.9	12.6	102	426.5	154	159	25.2	<0.50	0.095	125			<0.0010	0.103		1.35	0.0361	0.00010	0.00035	0.0300	<0.00010	<0.000050
KV-40	Charity Gulch u/s Lightning Creek	16/07/2015		<1.0	7.61	7.60		405	2.3	14.95	108.6	114.7	202	204	38.4	<0.50	0.062	157			<0.0010	0.131		0.52	0.0082	<0.00010	0.00085	0.0627	<0.00010	<0.000050
KV-40	Charity Gulch u/s Lightning Creek	16/10/2015	6.9	<1.0	7.78	7.54	435.8	452	1.6	12.53	89.6	100.5	248	242	34.0	<0.50	0.057	195			<0.0010	0.152		0.57	0.0254	0.00038	0.00125	0.0694	<0.00010	<0.000050
KV-41	Lightning Creek u/s Keno City bridge	01/08/2014	429.079	10.0	7.91	7.49	206.3	188	6.3	12.48	101.5	299.6	103	101	42.8	<0.50	0.065	50.6	<0.0050	<0.0050	<0.0010	0.0759	0.104	1.27	**0.368**	0.00040	0.00251	0.0587	<0.00010	<0.00050
KV-41	Lightning Creek u/s Keno City bridge	02/09/2014	705.20	13.4	8.01	7.69	192.3	202	4	13.22	102.5	257.1	92.7	90.0	39.3	<0.50	0.051	49.8	<0.0050	<0.0050	<0.0010	0.0891	0.058	1.33	**0.223**	0.00029	0.00236	0.0521	<0.00010	<0.00050
KV-41	Lightning Creek u/s Keno City bridge	16/10/2014	650.4	3.4	7.39	8.17	228.4	210	0.8	13.34	95.6	251.2	111	109	47.6	<0.50	0.062	54.3	<0.0050	<0.0050	<0.0010	0.160	<0.050	1.06	0.0839	0.00026	0.00153	0.0536	<0.00010	<0.00050

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Discharge (Flow)	Total Suspended Solids	pH (field)	pH (lab)	Specific Conductance (field)	Specific Conductance (lab)	Temperature (field)	Dissolved Oxygen (field)	Dissolved Oxygen (field)	ORP (field)	Hardness (from total)	Hardness (from dissolved)	Alkalinity, total	Chloride	Fluoride	Sulphate, dissolved	Cyanide, Free	Ammonia (N)	Nitrite (N)	Nitrate (N)	Total Kjeldahl Nitrogen	Dissolved Organic Carbon	Aluminum (Al), total	Antimony (Sb), total	Arsenic (As), total	Barium (Ba), total	Beryllium (Be), total	Bismuth (Bi), total
			L/s	mg/L	pH units	pH units	µS/cm	µS/cm	C	mg/L	%	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
CCME Guidelines - Protection of Aquatic Life					6.5-9	6.5-9				6.5						120	0.12		0.005	0.197	0.06	3			*		0.005			
KV-41	Lightning Creek u/s Keno City bridge	13/11/2014		3.2	7.28	7.69	229.9	246	-0.1	14.31	98	250.7	110	117	57.0	<0.50	0.068	59.8	<0.0050	<0.0050	<0.0010	0.198	0.057	0.60	0.0710	0.00026	0.00131	0.0504	<0.00010	<0.00050
KV-41	Lightning Creek u/s Keno City bridge	13/12/2014	186.8	<1.0	7.47	7.70	242.2	257	0.1	14.74	102.3	232.7	117	117	55.7	<0.50	0.077	63.2	<0.0050	<0.0050	0.0013	0.222	<0.050	0.92	0.0930	0.00025	0.00143	0.0519	<0.00010	<0.00050
KV-41	Lightning Creek u/s Keno City bridge	11/01/2015	203.4	28.0	7.34	7.63	253.4	255	0	14.75	101.9	215	126	130	59.9	<0.50	0.077	67.5	<0.0050	<0.0050	<0.0010	0.234	<0.050	<0.50	**0.280**	0.00029	0.00311	0.0566	<0.00010	<0.00050
KV-41	Lightning Creek u/s Keno City bridge	05/02/2015		30.0	7.13	7.68	256	273	-0.1	16.42	113.1	212.8	130	134	61.3	<0.50	0.075	67.2	<0.0050	<0.0050	<0.0010	0.231	<0.050	<0.50	**0.374**	0.00035	0.00415	0.0584	<0.00010	<0.00050
KV-41	Lightning Creek u/s Keno City bridge	06/03/2015	199.6	21.2	7.24	8.02	276.1	287	0.1	15.39	106.8	302.7	141	143	64.7	1.14	0.072	78.2	<0.0050	0.0078	<0.0010	0.223	<0.050	<0.50	**0.470**	0.00035	0.00264	0.0714	<0.00010	<0.00050
KV-41	Lightning Creek u/s Keno City bridge	06/04/2015	122.1	5.6	7.66	7.66	251.7	239	0.1	14.64	103	217.9	129	131	63.4	<0.50	0.076	66.0		<0.0050	<0.0010	0.197	<0.050	<0.50	0.0944	0.00025	0.00132	0.0483	<0.00010	<0.000050
KV-41	Lightning Creek u/s Keno City bridge	13/05/2015	1225.3	33.4	6.98	7.22	117.5	102	1.6	14.15	102.3	334.8	50.9	53.0	25.8	<0.50	0.049	22.5		<0.0050	<0.0010	0.0736	0.463	12.1	**0.931**	0.00046	0.00426	0.0496	<0.00010	<0.000050
KV-41	Lightning Creek u/s Keno City bridge	02/06/2015	1349.8	12.8	7.37	7.69		182	2.3	11.9	98	260.6	69.8	71.5	61.5	<0.50	0.050	39.8		<0.0050	<0.0010	0.0628	0.108	1.85	**0.191**	0.00028	0.00239	0.0441	<0.00010	<0.000050
KV-41	Lightning Creek u/s Keno City bridge	29/07/2015		22.0	8.02	7.69	154.6	196	6.1	10.2	92	310.4	91.6	94.9	42.1	<0.50	0.058	49.8		<0.0050	<0.0010	0.0472	0.054	1.15	**0.651**	0.00045	0.00371	0.0619	<0.00010	<0.000050
KV-41	Lightning Creek u/s Keno City bridge	23/08/2015	1319.6	22.6	7.75	7.80	166.1	206	5.4	12.56	101.1	102.4	94.8	98.0		<0.50	0.048	54.7		<0.0050	<0.0010	0.0758	0.104	1.39	**0.920**	0.00042	0.00327	0.0711	<0.00010	<0.000050
KV-41	Lightning Creek u/s Keno City bridge	01/09/2015	2057.8	196	7.44	7.60	160.1	178	3.4	12.7	107	331	103	87.3	37.9	<0.50	0.048	52.5		0.0097	<0.0010	0.0884		1.91	**7.42**	0.00127	**0.0178**	0.216	0.00023	0.000100
KV-41	Lightning Creek u/s Keno City bridge	18/09/2015	1790.4																											
KV-41	Lightning Creek u/s Keno City bridge	16/10/2015	735.9	10.6	7.83	7.88	198.1	219	0.7	13.66	95.2	97.4	106	107	44.5	<0.50	0.054	55.6		<0.0050	<0.0010	0.143	0.051	0.97	**0.182**	0.00025	0.00189	0.0542	<0.00010	<0.000050
KV-41	Lightning Creek u/s Keno City bridge	15/11/2015	408.7	<1.0	7.73	7.75	219.2	217	0	13.88	97.9	49.8	112	113	48.2	<0.50	0.077	56.7		<0.0050	<0.0010	0.173	0.069	0.70	0.0320	0.00031	0.00125	0.0513	<0.00010	<0.000050
KV-41	Lightning Creek u/s Keno City bridge	17/12/2015		3.4		7.95		219					111	112	52.1	<0.50	0.064	56.5		<0.0050	<0.0010	0.190	<0.050	0.66	0.0954	0.00023	0.00140	0.0533	<0.00010	<0.000050
KV-41	Lightning Creek u/s Keno City bridge	18/12/2015	162.1		7.64		209.7		0	13.14	92.5	41.5																		
KV-65	Thunder Gulch upstream of Bellekeno	01/08/2014		60.0	8.08	7.70	183.4	162	6	12.57	102.8	323.5	91.4	90.9	54.5	<0.50	0.064	29.2	<0.0050	<0.0050	<0.0010	0.107	0.156	1.43	**0.920**	0.00035	0.00304	0.0536	<0.00010	<0.00050
KV-65	Thunder Gulch upstream of Bellekeno	25/08/2014	662.4		7.85		145.9		4.9	13.13	105.6	146.1																		
KV-65	Thunder Gulch upstream of Bellekeno	20/09/2014	119.9	743	7.18	7.91	184.6	196	2.9	13.83	105.8	249.2	116	91.8	60.8	<0.50	0.060	29.8	<0.0050	0.0087	<0.0010	0.108	0.620	1.35	**12.3**	0.00334	**0.0331**	0.242	0.00037	<0.00050
KV-65	Thunder Gulch upstream of Bellekeno	26/10/2014	197.3	21.8	7.13	7.95	206.8	220	0.2	14.45	102.4	280.5	108	108	70.7	<0.50	0.062	37.1	<0.0050	<0.0050	<0.0010	0.161	<0.050	0.89	**0.134**	0.00015	0.00074	0.0426	<0.00010	<0.00050
KV-65	Thunder Gulch upstream of Bellekeno	18/11/2014	107.9	20.0	7.57	7.72	241.5	245	0.1	14.41	100.5	247.9	120	125	80.5	<0.50	0.082	44.6	<0.0050	<0.0050	<0.0010	0.166	0.062	0.77	**0.109**	0.00014	0.00068	0.0434	<0.00010	<0.00050
KV-65	Thunder Gulch upstream of Bellekeno	14/12/2014	30.7	11.4	7.55	7.80	256	272	0.1	14.55	102.5	236.9	117	134	80.6	<0.50	0.076	50.4	<0.0050	<0.0050	<0.0010	0.163	<0.050	0.53	**0.108**	0.00014	0.00066	0.0399	<0.00010	<0.00050
KV-65	Thunder Gulch upstream of Bellekeno	11/01/2015	50.3	25.4	7.64	8.00	288	291	0.1	14.42	101	208.9	148	153	91.9	<0.50	0.083	59.0	<0.0050	<0.0050	<0.0010	0.182	<0.050	<0.50	**0.131**	0.00019	0.00085	0.0510	<0.00010	<0.00050
KV-65	Thunder Gulch upstream of Bellekeno	15/02/2015	46.1	9.8	7.78	7.87	300.6	337	0	15.4	106.8	258.9	155	153	91.2	<0.50	0.082	61.8	<0.0050	<0.0050	<0.0010	0.173	<0.050	0.81	0.0810	0.00017	0.00073	0.0505	<0.00010	<0.00050
KV-65	Thunder Gulch upstream of Bellekeno	06/03/2015	47	3.4	7.43	8.17	297	302	0.1	15.08	105.6	247.8	158	164	99.3	1.30	0.079	60.5	<0.0050	<0.0050	<0.0010	0.169	<0.050	0.53	0.0441	0.00014	0.00052	0.0495	<0.00010	<0.00050
KV-65	Thunder Gulch upstream of Bellekeno	12/04/2015	29.4	1.8	7.68	7.81	320.7	279	0	14.98	106.9	254.5	162	166	96.2	<0.50	0.078	61.8		<0.0050	<0.0010	0.155	<0.050	0.58	0.0345	0.00015	0.00050	0.0462	<0.00010	<0.000050
KV-65	Thunder Gulch upstream of Bellekeno	27/05/2015	846.3	22.4	7.39	7.82	55.9	56.1	3.6	12	102	487.6	26.2	25.3	17.8	<0.50	0.030	7.56		<0.0050	<0.0010	0.0587	0.129	3.84	**0.192**	0.00014	0.00073	0.0230	<0.00010	<0.000050
KV-65	Thunder Gulch upstream of Bellekeno	17/06/2015	145.7	490	7.8	6.79		142	4.6	12.48	98.8	266.6	89.9	64.3	41.5	<0.50	0.054	22.3		0.0059	<0.0010	0.0398	0.344	1.68	**11.4**	0.00264	**0.0260**	0.191	0.00022	0.000093
KV-65	Thunder Gulch upstream of Bellekeno	30/07/2015		129	7.72	7.85	132.2	145	5.1	11.2	99	297.3	97.3	74.0	55.7	<0.50	0.061	23.6			<0.0010	0.0935		1.87	**9.58**	0.00255	**0.0250**	0.175	0.00024	0.000105
KV-65	Thunder Gulch upstream of Bellekeno	23/08/2015	176.9	68.0	7.7	7.79	117.7	138	4.8	13.09	105	105	77.5	69.1		<0.50	0.050	21.4		<0.0050	<0.0010	0.0988	0.306	1.82	**6.27**	0.00156	**0.0180**	0.144	0.00019	0.000091
KV-65	Thunder Gulch upstream of Bellekeno	12/09/2015	324.3	152	7.29	7.91	109.9	126	3.7	13.33	103.5		67.5	67.5	44.2	<0.50	0.045	20.9		<0.0050	<0.0010	0.109	0.065	1.96	**1.69**	0.00038	0.00435	0.0801	<0.00010	<0.000050
KV-65	Thunder Gulch upstream of Bellekeno	16/10/2015	193.7	63.3	8.02	7.98	164.4	183	0.5	13.65	94.4	112.5	91.3	91.5	56.8	<0.50	0.056	30.2		<0.0050	<0.0010	0.124	<0.050	0.98	**0.708**	0.00023	0.00224	0.0540	<0.00010	<0.000050
KV-65	Thunder Gulch upstream of Bellekeno	19/11/2015	12.6	63.2	7.48	7.99	225.2	248	0	12.77	89.2	63.4	117	120	76.5	<0.50	0.064	41.9		0.0062	<0.0010	0.147	0.096	1.05	**0.612**	0.00024	0.00205	0.0580	<0.00010	<0.000050
KV-65	Thunder Gulch upstream of Bellekeno	17/12/2015	73.9	26.0	8.27	7.96	187.5	225	0	11.5	91	121.4	128	132	75.9	<0.50	0.071	46.2		<0.0050	<0.0010	0.152	<0.050	0.69	**0.169**	0.00015	0.00081	0.0486	<0.00010	<0.000050
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	06/08/2014	20.667		7.99		205.7		5.6	12.66	102.7	302.2																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	21/09/2014	99.9		7.36		194		2.8	14.05	106.9	299.9																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	28/10/2014	98.1	18.0	7.2	8.02	223	238	0	14.3	103.2	186	113	115	70.9	<0.50	0.063	41.9		<0.0050	<0.0010	0.171		0.79	**0.302**	0.00022	0.00117	0.0474	<0.00010	<0.00050
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	18/11/2014	50.5		7.13		250.5		0	14.73	102.3	238.4																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	14/12/2014	43.9		7.54		275.4		0.1	14.86	104.2	209.6																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	11/01/2015	26.7		7.03		304.5		0	15.7	110	240.1																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	15/02/2015	24.7	11.6	7.33	7.85	324.3	352	-0.1	15.79	109	177.3	165	168	95.5	<0.50	0.083	73.3		<0.0050	<0.0010	0.182		1.03	**0.161**	0.00019	0.00080	0.0527	<0.00010	<0.00050
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	12/03/2015	29.8		6.87		428.5		0	14.4	101.9	238																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	14/04/2015	18.7		7.26		592.4		0.2	15.43	109.8	207.7																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	13/05/2015	335.5	52.0	6.85	7.45	96.6	81.0	0.4	14.36	101.1	312.5	42.5	42.4	25.0	<0.50	0.045	13.6		<0.0050	<0.0010	0.0621		15.1	**1.06**	0.00040	0.00254	0.0426	<0.00010	<0.000050
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	18/06/2015	74.6		8		76.2		3.9	12.78	98.6	239.8																		

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Discharge (Flow)	Total Suspended Solids	pH (field)	pH (lab)	Specific Conductance (field)	Specific Conductance (lab)	Temperature (field)	Dissolved Oxygen (field)	Dissolved Oxygen (field)	ORP (field)	Hardness (from total)	Hardness (from dissolved)	Alkalinity, total	Chloride	Fluoride	Sulphate, dissolved	Cyanide, Free	Ammonia (N)	Nitrite (N)	Nitrate (N)	Total Kjeldahl Nitrogen	Dissolved Organic Carbon	Aluminum (Al), total	Antimony (Sb), total	Arsenic (As), total	Barium (Ba), total	Beryllium (Be), total	Bismuth (Bi), total
			L/s	mg/L	pH units	pH units	µS/cm	µS/cm	C	mg/L	%	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
CCME Guidelines - Protection of Aquatic Life					6.5-9	6.5-9				6.5						120	0.12		0.005	0.197	0.06	3			*		0.005			
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	29/07/2015		366	7.88	7.89	142.6	169	5.3	11.5	102	256.9	107	88.7	57.5	<0.50	0.063	31.3		0.0059	<0.0010	0.0963		1.48	**9.94**	0.00257	**0.0316**	0.188	0.00027	0.000126
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	23/08/2015	151.8		7.67		131.3		5	12.57	100.9	87.8																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	12/09/2015	311		7.7		118		3.5	13.42	103.1																			
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	16/10/2015		63.6	7.99	7.80	175.4	180	0.5	13.96	97	117.1	94.0	95.7	57.5	<0.50	0.055	33.5		<0.0050	<0.0010	0.130		0.95	**0.788**	0.00029	0.00255	0.0533	<0.00010	<0.000050
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	19/10/2015	157.2		7.93		183.1		0.9	16.03	113.3	55.9																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	15/11/2015	75.9		7.95		230.9		0.1	11.7	82.8	45.6																		
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	20/12/2015	29.9		7.83		262.5		0.1	12.7	101	202.3																		
KV-77	Thunder Gulch u/s Bellekeno East	26/10/2014	58.6	1.4	7.58	7.86	137.8	145	0	14.49	103	308	67.3	66.6	40.7	<0.50	0.039	28.1			<0.0010	0.105		0.78	0.0254	0.00011	0.00032	0.0485	<0.00010	<0.00050
KV-77	Thunder Gulch u/s Bellekeno East	15/02/2015	13.9	6.6	7.68	7.68	241.4	264	0	15.2	105.3	284.6	120	122	68.9	<0.50	0.056	54.7			<0.0010	0.166		1.20	0.0248	0.00012	0.00027	0.0736	<0.00010	<0.00050
KV-77	Thunder Gulch u/s Bellekeno East	27/05/2015	846.1	5.0	7.61	7.55	53.8	46.0	3.8	12	104	430.3	20.8	21.1	15.7	<0.50	0.027	5.36			<0.0010	0.0369		3.92	**0.184**	<0.00010	0.00044	0.0220	<0.00010	<0.000050
KV-77	Thunder Gulch u/s Bellekeno East	29/07/2015		99.6	7.85	7.71	89.7	109	5.1	10.5	94	333.8	57.8	52.6	35.9	<0.50	0.044	16.9			<0.0010	0.0381		1.36	**2.09**	0.00052	**0.00631**	0.0788	<0.00010	<0.000050
KV-77	Thunder Gulch u/s Bellekeno East	16/10/2015	153.7	64.4	7.84	7.63	120.3	118	0.1	14.07	96.2	117.6	57.6	57.5	35.8	<0.50	0.040	21.3			<0.0010	0.0960		0.94	**0.701**	0.00024	0.00209	0.0536	<0.00010	<0.000050
KV-81	Lightning Creek southwest of Mill Site	01/08/2014		10.4	7.93	7.58	213.8	199	6.3	12.56	101.5	268	100	102	46.3	<0.50	0.064	51.8		<0.0050	<0.0010	0.0666		1.40	**0.338**	0.00033	0.00226	0.0549	<0.00010	<0.00050
KV-81	Lightning Creek southwest of Mill Site	02/09/2014	754.50	13.6	8.06	7.75	200	203	4.2	13.28	102.9	279.8	92.2	94.7	43.7	<0.50	0.054	50.5		<0.0050	<0.0010	0.0827		1.48	**0.303**	0.00031	0.00232	0.0522	<0.00010	<0.00050
KV-81	Lightning Creek southwest of Mill Site	16/10/2014	640.6	8.8	6.55	7.84	241.2	224	0.6	14.28	101.2	268.2	113	117	55.4	0.58	0.063	56.3		<0.0050	<0.0010	0.217		1.37	**0.101**	0.00025	0.00142	0.0518	<0.00010	<0.00050
KV-81	Lightning Creek southwest of Mill Site	13/11/2014		1.2	6.63	8.18	249	251	-0.1	14.67	100	200.5	124	124	62.1	<0.50	0.069	63.2		0.0105	<0.0010	0.175		1.21	0.0487	0.00035	0.00141	0.0509	<0.00010	<0.00050
KV-81	Lightning Creek southwest of Mill Site	13/12/2014	351.7	5.0	7.34	7.73	246.2	254	0.2	14.93	103.2	186.7	106	119	56.4	<0.50	0.073	64.4		0.0117	<0.0010	0.215		0.53	**0.113**	0.00024	0.00141	0.0482	<0.00010	<0.00050
KV-81	Lightning Creek southwest of Mill Site	11/01/2015	137.2	10.4	**6.44**	7.71	255	261	0	14.92	102.4	236.1	122	130	57.9	<0.50	0.075	68.8		<0.0050	<0.0010	0.236		1.19	**0.209**	0.00027	0.00250	0.0518	<0.00010	<0.00050
KV-81	Lightning Creek southwest of Mill Site	05/02/2015	139.9	13.6	6.94	7.70	260.2	284	-0.1	15.4	105.9	258.2	130	131	62.1	0.90	0.078	68.9		<0.0050	<0.0010	0.233		0.56	**0.211**	0.00027	0.00240	0.0551	<0.00010	<0.00050
KV-81	Lightning Creek southwest of Mill Site	06/03/2015	273	5.8	6.54	8.02	261.2	258	0.2	15.46	106.9	236.6	134	141	63.5	<0.50	0.075	68.5		<0.0050	<0.0010	0.221		<0.50	**0.141**	0.00025	0.00152	0.0504	<0.00010	<0.00050
KV-81	Lightning Creek southwest of Mill Site	06/04/2015	138.2	5.0	7.69	7.70	268.6	258	0.2	14.45	100.7	186.1	137	141	67.0	<0.50	0.088	74.6		0.0063	<0.0010	0.212		<0.50	**0.106**	0.00031	0.00134	0.0499	<0.00010	<0.000050
KV-81	Lightning Creek southwest of Mill Site	25/05/2015		16.8	7.67	7.39	100.6	100	5.3	11.6	102	294.2	45.7	45.8	19.8	<0.50	0.035	25.6		<0.0050	<0.0010	0.0500		2.49	**0.416**	0.00031	0.00308	0.0405	<0.00010	<0.000050
KV-81	Lightning Creek southwest of Mill Site	18/06/2015	949.5	5.8	8.28	7.95		188	5.6	12.5	99.5	268.9	83.2	84.3	39.7	<0.50	0.052	47.0		<0.0050	<0.0010	<0.0050		1.16	**0.261**	0.00030	0.00219	0.0496	<0.00010	<0.000050
KV-81	Lightning Creek southwest of Mill Site	27/07/2015	747.8	6.0	8.05	7.84	177.8	200	7.6	12.28	103.9	55.7	104	102	45.4	<0.50	0.062	52.4		<0.0050	<0.0010	0.0242		1.07	**0.212**	0.00029	0.00199	0.0539	<0.00010	<0.000050
KV-81	Lightning Creek southwest of Mill Site	23/08/2015	1383.6	18.8		7.64		193					103	105	41.6	<0.50	0.053	55.6		<0.0050	<0.0010	0.0720		1.41	**0.938**	0.00056	0.00315	0.0678	<0.00010	<0.000050
KV-81	Lightning Creek southwest of Mill Site	12/09/2015		64.6	7.51	7.71	158.8	191	3.3	13.3	100.3		92.6	96.6	40.5	<0.50	0.046	51.0		<0.0050	<0.0010	0.0911		2.56	**1.41**	0.00042	0.00423	0.0794	<0.00010	<0.000050
KV-81	Lightning Creek southwest of Mill Site	18/09/2015	1919.1																											
KV-81	Lightning Creek southwest of Mill Site	16/10/2015	742.9	12.2	8.09	7.76	207.5	213	0.6	14.11	98.6	80.7	111	111	47.5	<0.50	0.056	56.8		<0.0050	<0.0010	0.132		0.90	**0.182**	0.00026	0.00193	0.0548	<0.00010	<0.000050
KV-81	Lightning Creek southwest of Mill Site	15/11/2015	194.3	<1.0	7.8	7.76	232.7	227	0	14.21	99.7	26.1	122	120	59.0	<0.50	0.073	59.8		<0.0050	<0.0010	0.144		1.11	0.0487	0.00039	0.00121	0.0510	<0.00010	<0.000050
KV-81	Lightning Creek southwest of Mill Site	16/12/2015	189.8	3.8	8.33	8.32	229	225	0	11.9	91	162.3	110	116	54.2	<0.50	0.064	58.1		<0.0050	<0.0010	0.189		<0.50	0.0803	0.00022	0.00138	0.0501	<0.00010	<0.000050

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Boron (B), total mg/L	Cadmium (Cd), total mg/L	Calcium (Ca), total mg/L	Chromium (Cr), total mg/L	Cobalt (Co), total mg/L	Copper (Cu), total mg/L	Iron (Fe), total mg/L	Lead (Pb), total mg/L	Lithium (Li), total mg/L	Magnesium (Mg), total mg/L	Manganese (Mn), total mg/L	Mercury (Hg), total mg/L	Molybdenum (Mo), total mg/L	Nickel (Ni), total mg/L	Phosphorus (P), total mg/L	Potassium (K), total mg/L	Selenium (Se), total mg/L	Silicon (Si), total mg/L	Silver (Ag), total mg/L	Sodium (Na), total mg/L	Strontium (Sr), total mg/L	Sulphur (S), total mg/L	Thallium (Tl), total mg/L	Tin (Sn), total mg/L
CCME Guidelines - Protection of Aquatic Life			1.5	*		0.001		*	0.3	*				0.000026	0.073	*			0.001		0.00025				0.0008	
KV-37	Lightning Creek u/s Hope Gulch	01/08/2014	<0.010	0.000022	21.4	0.00011	<0.00010	<0.00050	0.055	0.000210	<0.00050	4.10	0.0109	<0.000010	0.000111	<0.00050	<0.050	<0.10	0.00046	2.31	<0.000010	0.612	0.0658	13.6	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	25/08/2014																								
KV-37	Lightning Creek u/s Hope Gulch	02/09/2014	<0.010	**0.000254**	23.5	0.00013	<0.00010	0.00055	0.073	**0.00251**	<0.00050	4.39	0.0118	<0.000010	0.000103	<0.00050	<0.050	0.11	0.00050	2.15	0.000018	0.554	0.0698	15.7	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	16/10/2014	<0.010	0.000014	21.3	0.00023	<0.00010	<0.00050	0.041	0.000077	<0.00050	4.07	0.00732	<0.000010	0.000111	<0.00050	<0.050	0.15	0.00055	2.87	<0.000010	0.732	0.0718	13.0	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	13/11/2014	<0.010	0.000026	20.3	0.00029	<0.00010	0.00052	0.130	0.00139	0.00087	3.85	0.0125	<0.000010	0.000141	<0.00050	<0.050	0.15	0.00056	3.47	0.000014	0.853	0.0709	11.0	<0.000010	0.00022
KV-37	Lightning Creek u/s Hope Gulch	14/12/2014	<0.010	0.000023	18.7	0.00039	<0.00010	0.00051	0.081	0.000348	0.00059	3.51	0.00945	<0.000010	0.000139	<0.00050	<0.050	0.17	0.00054	3.53	<0.000010	0.900	0.0689	9.17	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	11/01/2015																								
KV-37	Lightning Creek u/s Hope Gulch	05/02/2015	<0.010	0.000030	20.1	0.00048	<0.00010	<0.00050	0.087	0.00144	0.00087	3.81	0.0127	<0.000010	0.000141	<0.00050	<0.050	0.20	0.00051	3.90	<0.000010	0.993	0.0729	9.42	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	06/03/2015	<0.010	0.000036	19.1	0.00036	<0.00010	<0.00050	0.061	0.000292	0.00077	3.60	0.0116	<0.000010	0.000164	<0.00050	<0.050	0.20	0.00057	3.82	<0.000010	1.08	0.0716	9.34	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	06/04/2015	<0.010	0.0000271	19.8	0.00019	<0.00010	0.00060	0.085	0.000468	<0.0010	3.58	0.0140	<0.0000050	0.000153	<0.00050	<0.050	0.23	0.000498	3.95	<0.000010	1.27	0.0717	9.17	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	28/05/2015	<0.010	0.0000130	14.1	0.00012	<0.00010	0.00070	0.084	0.000117	<0.0010	2.62	0.00554	<0.0000050	0.000083	<0.00050	<0.050	<0.10	0.000348	1.44	<0.000010	0.323	0.0394	9.79	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	17/06/2015	<0.010	0.0000076	20.9	0.00012	<0.00010	<0.00050	0.045	<0.000050	<0.0010	3.78	0.00532	<0.0000050	0.000104	<0.00050	<0.050	<0.10	0.000507	1.78	<0.000010	0.428	0.0541	13.3	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	16/07/2015	<0.010	0.0000098	22.9	<0.00010	<0.00010	<0.00050	0.037	0.000081	<0.0010	4.11	0.00690	<0.0000050	0.000115	<0.00050	<0.050	<0.10	0.000482	2.10	0.000012	0.580	0.0642	15.0	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	15/08/2015	<0.010	0.0000116	24.5	0.00021	<0.00010	<0.00050	0.041	0.000133	<0.0010	4.39	0.00740	<0.0000050	0.000149	<0.00050	<0.050	<0.10	0.000520	2.28	<0.000010	0.571	0.0682	16.2	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	02/09/2015	<0.010	**0.000256**	26.7	0.00012	<0.00010	<0.00050	0.041	0.000336	<0.0010	5.11	0.00724	<0.0000050	0.000150	<0.00050	<0.050	0.10	0.000618	2.27	<0.000010	0.623	0.0728	20.2	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	07/09/2015	<0.010	0.0000176	25.7	0.00011	<0.00010	<0.00050	0.037	<0.000050	<0.0010	4.92	0.00676	<0.0000050	0.000101	<0.00050	<0.050	0.10	0.000550	2.53	<0.000010	0.609	0.0725	18.7	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	16/10/2015	<0.010	0.0000081	23.1	0.00015	<0.00010	<0.00050	0.033	<0.000050	<0.0010	4.43	0.00623	<0.0000050	0.000115	<0.00050	<0.050	0.11	0.000688	3.05	<0.000010	0.773	0.0719	14.7	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	14/11/2015	<0.010	0.0000105	20.5	0.00017	<0.00010	<0.00050	0.048	0.000302	<0.0010	3.86	0.00806	<0.0000050	0.000142	<0.00050	<0.050	0.19	0.000633	3.52	<0.000010	0.844	0.0684	11.7	<0.000010	<0.00010
KV-37	Lightning Creek u/s Hope Gulch	17/12/2015	<0.010	0.0000084	20.5	0.00022	<0.00010	<0.00050	0.058	0.000073	<0.0010	3.86	0.00925	<0.0000050	0.000137	<0.00050	<0.050	0.18	0.000650	3.86	<0.000010	0.919	0.0718	10.8	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	01/08/2014	<0.010	0.000103	29.1	0.00015	<0.00010	0.00057	0.090	0.00173	0.00080	5.20	0.0103	<0.000010	0.000188	<0.00050	<0.050	0.17	0.00055	2.69	0.000015	0.777	0.0834	17.4	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	02/09/2014	<0.010	**0.000242**	28.1	0.00015	<0.00010	0.00084	0.078	0.000683	0.00071	5.42	0.00951	<0.000010	0.000160	0.00053	<0.050	0.14	0.00059	2.44	0.000011	0.656	0.0881	18.7	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	16/10/2014	<0.010	0.000119	29.4	0.00019	<0.00010	<0.00050	0.035	0.000316	0.00082	5.56	0.00725	<0.000010	0.000185	<0.00050	<0.050	0.15	0.00065	2.88	<0.000010	0.829	0.0904	18.4	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	13/11/2014	<0.010	0.000080	29.0	0.00014	<0.00010	<0.00050	0.029	0.000152	0.00117	5.36	0.00617	<0.000010	0.000213	<0.00050	<0.050	0.14	0.00068	3.24	<0.000010	0.934	0.0908	17.3	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	13/12/2014	<0.010	0.000067	27.3	0.00015	<0.00010	<0.00050	0.028	0.000544	0.00090	5.14	0.00574	<0.000010	0.000224	<0.00050	<0.050	0.20	0.00078	3.36	<0.000010	1.25	0.0937	15.9	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	11/01/2015	<0.010	0.000078	29.1	0.00017	<0.00010	<0.00050	0.036	0.000319	0.00088	5.41	0.00658	<0.000010	0.000235	<0.00050	<0.050	0.14	0.00077	3.64	<0.000010	1.02	0.0947	16.6	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	05/02/2015	<0.010	0.000079	30.5	0.00022	<0.00010	<0.00050	0.041	0.000423	0.00116	5.47	0.00591	<0.000010	0.000232	<0.00050	<0.050	0.19	0.00076	3.56	<0.000010	1.09	0.0953	16.4	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	06/03/2015	<0.010	0.000086	28.7	0.00026	<0.00010	0.00058	0.032	0.000438	0.00120	5.25	0.00488	<0.000010	0.000332	<0.00050	<0.050	0.19	0.00082	3.56	<0.000010	1.46	0.0942	16.2	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	06/04/2015																								
KV-38	Lightning Creek u/s Thunder Gulch	27/05/2015	<0.010	**0.000349**	15.6	0.00014	<0.00010	0.00092	0.106	**0.00154**	<0.0010	2.96	0.00938	<0.0000050	0.000111	0.00057	<0.050	0.12	0.000426	1.60	0.000022	0.389	0.0462	11.2	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	16/07/2015	<0.010	0.000135	25.4	<0.00010	<0.00010	0.00052	0.031	0.000194	<0.0010	4.63	0.00614	<0.0000050	0.000194	<0.00050	<0.050	<0.10	0.000538	2.29	<0.000010	0.674	0.0801	17.1	<0.000010	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	01/09/2015	<0.010	**0.000263**	29.9	**0.00151**	0.00066	**0.00313**	**1.45**	0.00166	0.0023	5.71	0.0420	<0.0000050	0.000251	0.00225	<0.050	0.29	0.000667	3.61	0.000032	0.659	0.0804	21.4	0.000012	<0.00010
KV-38	Lightning Creek u/s Thunder Gulch	16/10/2015	<0.010	0.000151	31.4	0.00012	<0.00010	<0.00050	0.022	0.000084	<0.0010	5.81	0.00559	<0.0000050	0.000190	<0.00050	<0.050	0.13	0.000803	3.03	<0.000010	0.907	0.0917	20.3	<0.000010	<0.00010
KV-39	Hope Gulch u/s Lightning Creek	16/10/2014	<0.010	**0.00242**	51.2	0.00015	<0.00010	<0.00050	<0.010	0.000673	0.00160	10.0	0.000841	<0.000010	0.000453	0.00083	<0.050	0.20	**0.00134**	2.81	<0.000010	1.27	0.150	36.4	<0.000010	<0.00010
KV-39	Hope Gulch u/s Lightning Creek	05/02/2015																								
KV-39	Hope Gulch u/s Lightning Creek	28/05/2015	<0.010	**0.00240**	21.9	<0.00010	<0.00010	0.00097	0.069	**0.00647**	0.0013	4.04	0.00919	<0.0000050	0.000204	0.00093	<0.050	0.18	0.000522	1.97	0.000064	0.518	0.0665	14.2	<0.000010	<0.00010
KV-39	Hope Gulch u/s Lightning Creek	16/07/2015	<0.010	**0.00208**	40.1	<0.00010	<0.00010	<0.00050	<0.010	0.000611	0.0015	7.15	0.00127	<0.0000050	0.000385	0.00073	<0.050	0.19	0.000893	2.63	<0.000010	0.990	0.116	25.6	<0.000010	<0.00010
KV-39	Hope Gulch u/s Lightning Creek	16/10/2015	<0.010	**0.00235**	51.6	<0.00010	<0.00010	<0.00050	<0.010	0.000445	0.0023	9.90	0.00160	<0.0000050	0.000417	0.00098	<0.050	0.18	**0.00144**	3.02	<0.000010	1.26	0.149	35.7	<0.000010	<0.00010
KV-40	Charity Gulch u/s Lightning Creek	16/10/2014	<0.010	0.000032	64.2	<0.00030	<0.00010	<0.00050	<0.010	0.000054	0.00209	17.7	0.000597	<0.000010	0.000077	0.00075	<0.050	0.17	**0.00156**	3.01	<0.000010	1.01	0.200	61.9	<0.000010	<0.00010
KV-40	Charity Gulch u/s Lightning Creek	05/02/2015																								
KV-40	Charity Gulch u/s Lightning Creek	28/05/2015	<0.010	0.0000707	40.8	0.00011	<0.00010	0.00189	0.017	0.000132	0.0022	12.7	0.00479	<0.0000050	0.000097	0.00349	<0.050	0.15	0.000703	2.57	0.000017	0.775	0.138	42.5	0.000011	<0.00010
KV-40	Charity Gulch u/s Lightning Creek	16/07/2015	<0.010	0.0000302	56.2	<0.00010	<0.00010	<0.00050	<0.010	<0.000050	0.0025	15.0	0.00089	<0.0000050	0.000063	0.00077	<0.050	0.16	**0.00174**	2.90	<0.000010	1.02	0.174	51.8	<0.000010	<0.00010
KV-40	Charity Gulch u/s Lightning Creek	16/10/2015	<0.010	0.0000348	67.4	0.00011	<0.00010	<0.00050	<0.010	<0.000050	0.0027	19.3	0.00115	<0.0000050	0.000063	0.00125	<0.050	0.18	**0.00194**	3.10	<0.000010	1.19	0.214	67.8	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	01/08/2014	<0.010	0.000113	32.0	0.00089	0.00037	0.00232	**0.680**	**0.00530**	0.00167	5.56	0.0234	<0.000010	0.000231	0.00130	<0.050	0.28	0.00071	3.47	0.000055	0.848	0.0835	17.7	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	02/09/2014	<0.010	**0.000163**	28.6	0.00049	0.00024	0.00149	**0.390**	0.00267	0.00126	5.19	0.0160	<0.000010	0.000206	0.00095	<0.050	0.18	0.00070	2.88	0.000032	0.721	0.0838	16.2	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	16/10/2014	<0.010	0.000096	34.4	0.00028	<0.00010	0.00075	0.147	0.00104	0.00132	6.05	0.00836	<0.000010	0.000206	<0.00050	<0.050	0.18	0.00080	2.99	0.000011	0.884	0.0923	19.1	<0.000010	<0.00010

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Boron (B), total mg/L	Cadmium (Cd), total mg/L	Calcium (Ca), total mg/L	Chromium (Cr), total mg/L	Cobalt (Co), total mg/L	Copper (Cu), total mg/L	Iron (Fe), total mg/L	Lead (Pb), total mg/L	Lithium (Li), total mg/L	Magnesium (Mg), total mg/L	Manganese (Mn), total mg/L	Mercury (Hg), total mg/L	Molybdenum (Mo), total mg/L	Nickel (Ni), total mg/L	Phosphorus (P), total mg/L	Potassium (K), total mg/L	Selenium (Se), total mg/L	Silicon (Si), total mg/L	Silver (Ag), total mg/L	Sodium (Na), total mg/L	Strontium (Sr), total mg/L	Sulphur (S), total mg/L	Thallium (Tl), total mg/L	Tin (Sn), total mg/L
CCME Guidelines - Protection of Aquatic Life			1.5	*		0.001		*	0.3	*				0.000026	0.073	*			0.001		0.00025				0.0008	
KV-41	Lightning Creek u/s Keno City bridge	13/11/2014	<0.010	0.000098	34.2	0.00031	<0.00010	0.00090	0.127	**0.00417**	0.00176	6.00	0.00924	<0.000010	0.000215	<0.00050	<0.050	0.16	0.00088	3.00	0.000057	0.973	0.0911	19.5	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	13/12/2014	<0.010	0.000078	36.5	0.00037	0.00013	0.00092	0.192	0.00205	0.00150	6.35	0.0102	<0.000010	0.000228	0.00055	<0.050	0.20	**0.00101**	3.29	0.000022	1.14	0.0997	21.3	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	11/01/2015	<0.010	0.000102	39.1	0.00061	0.00047	0.00180	**0.662**	**0.00530**	0.00168	6.95	0.0275	<0.000010	0.000248	0.00120	<0.050	0.23	**0.00106**	3.61	0.000060	4.20	0.101	22.1	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	05/02/2015	<0.010	0.000104	40.7	0.00085	0.00057	0.00220	**0.838**	**0.00710**	0.00209	6.97	0.0338	<0.000010	0.000260	0.00153	<0.050	0.25	**0.00109**	3.53	0.000098	1.23	0.101	22.5	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	06/03/2015	<0.010	0.000113	43.7	0.00100	0.00047	0.00202	**0.735**	0.00341	0.00258	7.86	0.0303	<0.000010	0.000304	0.00165	<0.050	0.40	**0.00123**	4.06	0.000078	4.17	0.120	27.4	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	06/04/2015	<0.010	0.0000513	40.6	0.00027	0.00012	0.00067	0.188	0.00171	0.0018	6.65	0.00967	<0.0000050	0.000235	0.00051	<0.050	0.28	**0.00115**	3.48	0.000017	1.20	0.100	22.1	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	13/05/2015	<0.010	**0.000373**	15.6	**0.00165**	0.00081	**0.00574**	**1.46**	**0.0131**	0.0018	2.92	0.0466	0.0000247	0.000210	0.00304	0.066	0.51	0.000395	3.20	0.000147	0.506	0.0489	8.10	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	02/06/2015	<0.010	**0.000170**	21.4	0.00042	0.00023	0.00147	**0.362**	**0.00238**	0.0011	4.00	0.0170	<0.0000050	0.000178	0.00094	<0.050	0.14	0.000554	2.45	0.000027	0.587	0.0603	12.7	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	29/07/2015	<0.010	0.000146	28.2	**0.00140**	0.00067	**0.00361**	**1.26**	**0.00613**	0.0021	5.13	0.0341	<0.0000050	0.000267	0.00239	<0.050	0.27	0.000685	3.67	0.000095	0.759	0.0867	17.2	0.000027	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	23/08/2015	<0.010	**0.000159**	29.4	**0.00162**	0.00074	**0.00370**	**1.50**	**0.00349**	0.0017	5.22	0.0452	<0.0000050	0.000268	0.00245	<0.050	0.31	0.000673	3.79	0.000052	0.699	0.0808	17.0	0.000013	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	01/09/2015	<0.010	**0.000582**	29.4	**0.0137**	0.00603	**0.0260**	**12.5**	**0.0351**	0.0080	7.14	0.286	**0.000037**	0.000694	0.0164	0.281	1.16	0.000767	13.7	**0.000611**	0.828	0.0831	18.2	0.000084	0.00016
KV-41	Lightning Creek u/s Keno City bridge	18/09/2015																								
KV-41	Lightning Creek u/s Keno City bridge	16/10/2015	<0.010	0.000113	33.0	0.00041	0.00023	0.00093	**0.306**	0.00113	0.0016	5.73	0.0152	<0.0000050	0.000215	0.00083	<0.050	0.18	0.000929	3.12	0.000017	0.900	0.0887	18.4	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	15/11/2015	<0.010	0.0000622	35.1	0.00015	<0.00010	<0.00050	0.053	0.000380	0.0016	5.92	0.00497	<0.0000050	0.000244	<0.00050	<0.050	0.19	0.000962	3.27	<0.000010	0.914	0.0895	19.6	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	17/12/2015	<0.010	0.0000569	34.6	0.00041	0.00010	0.00060	0.184	0.000946	0.0015	5.99	0.00788	<0.0000050	0.000244	0.00054	<0.050	0.20	0.00100	3.35	0.000018	0.920	0.0916	19.8	<0.000010	<0.00010
KV-41	Lightning Creek u/s Keno City bridge	18/12/2015																								
KV-65	Thunder Gulch upstream of Bellekeno	01/08/2014	<0.010	**0.000150**	29.0	**0.00195**	0.00090	**0.00450**	**1.80**	**0.00833**	0.00297	4.60	0.0598	<0.000010	0.000272	0.00300	0.068	0.29	0.00063	4.28	0.000103	0.624	0.0718	9.85	0.000011	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	25/08/2014																								
KV-65	Thunder Gulch upstream of Bellekeno	20/09/2014	<0.010	**0.00101**	31.3	**0.0298**	0.0136	**0.0575**	**26.4**	**0.133**	0.0217	9.11	0.707	**0.000030**	0.00126	0.0383	0.582	1.36	**0.00121**	18.9	**0.00176**	1.05	0.103	9.88	0.000133	0.00026
KV-65	Thunder Gulch upstream of Bellekeno	26/10/2014	<0.010	0.000046	34.7	0.00037	0.00015	0.00106	0.257	0.00263	0.00232	5.28	0.00994	<0.000010	0.000228	0.00056	<0.050	0.12	0.00096	3.20	0.000040	0.682	0.0854	13.1	<0.000010	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	18/11/2014	<0.010	0.000057	38.8	0.00031	0.00011	0.00078	0.182	0.00225	0.00277	5.64	0.00779	<0.000010	0.000236	<0.00050	<0.050	0.12	0.00093	3.07	0.000016	0.702	0.0949	14.6	<0.000010	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	14/12/2014	<0.010	0.000056	37.9	0.00029	0.00013	0.00071	0.212	0.00258	0.00235	5.54	0.00743	<0.000010	0.000229	<0.00050	<0.050	0.12	0.00086	2.93	0.000016	0.685	0.0949	14.8	<0.000010	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	11/01/2015	<0.010	0.000080	47.7	0.00041	0.00014	0.00189	0.275	0.00306	0.00308	6.92	0.0106	<0.000010	0.000268	0.00065	<0.050	0.18	0.00100	3.31	0.000029	0.776	0.121	19.0	<0.000010	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	15/02/2015	<0.010	0.000066	50.4	0.00037	0.00012	0.00088	0.170	0.00450	0.00330	7.15	0.0124	<0.000010	0.000285	0.00062	<0.050	0.18	0.00098	3.17	0.000016	2.61	0.122	20.6	<0.000010	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	06/03/2015	<0.010	0.000066	51.6	0.00020	<0.00010	0.00174	0.067	0.00114	0.00289	7.17	0.00283	<0.000010	0.000299	<0.00050	<0.050	0.17	**0.00107**	3.25	0.000015	1.80	0.123	21.3	<0.000010	0.00020
KV-65	Thunder Gulch upstream of Bellekeno	12/04/2015	<0.010	0.0000385	53.4	0.00017	<0.00010	<0.00050	0.054	0.00102	0.0029	7.06	0.00239	<0.0000050	0.000302	<0.00050	<0.050	0.20	0.000971	3.37	<0.000010	0.794	0.121	22.1	<0.000010	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	27/05/2015	<0.010	0.0000241	8.30	0.00049	0.00015	0.00150	0.259	**0.00175**	0.0012	1.33	0.00636	<0.0000050	0.000093	0.00085	<0.050	0.13	0.000275	1.81	0.000030	0.328	0.0259	2.76	<0.000010	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	17/06/2015	<0.010	**0.000682**	22.7	**0.0257**	0.0134	**0.124**	**23.1**	**0.0896**	0.0161	8.09	0.700	**0.0000412**	0.000755	0.0348	0.426	1.09	0.000767	19.8	**0.00146**	0.771	0.0645	6.96	0.000085	0.00015
KV-65	Thunder Gulch upstream of Bellekeno	30/07/2015	<0.010	**0.00103**	26.3	**0.0173**	0.0139	**0.104**	**22.1**	**0.0758**	0.0130	7.69	0.678	**0.000035**	0.000807	0.0325	0.492	0.87	0.000697	18.0	**0.00128**	0.822	0.0812	7.44	0.000123	0.00016
KV-65	Thunder Gulch upstream of Bellekeno	23/08/2015	<0.010	**0.000682**	22.3	**0.0140**	0.00653	**0.0236**	**11.5**	**0.0749**	0.0088	5.28	0.427	0.0000213	0.000604	0.0179	0.299	0.93	0.000732	11.3	**0.000915**	0.817	0.0706	6.76	0.000069	0.00020
KV-65	Thunder Gulch upstream of Bellekeno	12/09/2015	<0.010	**0.000139**	20.8	**0.00333**	0.00194	**0.00708**	**3.33**	**0.00817**	0.0053	3.79	0.0989	0.0000051	0.000294	0.00570	0.160	0.51	0.000726	5.50	0.000108	0.662	0.0620	7.53	0.000021	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	16/10/2015	<0.010	0.0000827	29.1	**0.00155**	0.00101	**0.00299**	**1.31**	**0.00393**	0.0031	4.53	0.0489	<0.0000050	0.000251	0.00264	0.055	0.22	0.000936	3.92	0.000053	0.698	0.0758	9.95	<0.000010	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	19/11/2015	<0.010	0.0000875	37.8	**0.00122**	0.00078	**0.00275**	**1.16**	**0.00423**	0.0028	5.44	0.0470	<0.0000050	0.000267	0.00229	0.061	0.22	0.000903	3.91	0.000039	0.747	0.0860	13.3	<0.000010	<0.00010
KV-65	Thunder Gulch upstream of Bellekeno	17/12/2015	<0.010	0.0000409	41.4	0.00040	0.00017	0.00078	**0.304**	0.00144	0.0031	5.97	0.0117	<0.0000050	0.000263	0.00068	<0.050	0.17	0.000933	3.50	0.000022	0.733	0.100	16.5	<0.000010	<0.00010
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	06/08/2014																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	21/09/2014																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	28/10/2014	<0.010	0.000098	36.2	0.00080	0.00030	0.00170	**0.533**	**0.00467**	0.00277	5.52	0.0194	<0.000010	0.000235	0.00114	<0.050	0.13	**0.00105**	3.30	0.000059	0.700	0.0909	14.0	<0.000010	<0.00010
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	18/11/2014																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	14/12/2014																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	11/01/2015																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	15/02/2015	<0.010	0.000131	53.5	0.00042	0.00018	<0.0010	0.295	0.00312	0.00303	7.63	0.0131	<0.000010	0.000256	0.00071	<0.050	0.20	0.00098	3.21	0.000033	0.752	0.125	24.1	<0.000010	<0.00010
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	12/03/2015																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	14/04/2015																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	13/05/2015	<0.010	**0.000260**	13.3	**0.00185**	0.00113	**0.00552**	**1.61**	**0.0207**	0.0023	2.23	0.0657	**0.0000298**	0.000172	0.00336	0.080	0.56	0.000298	2.87	0.000179	0.362	0.0398	4.98	0.000012	<0.00010
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	18/06/2015																								

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Boron (B), total mg/L	Cadmium (Cd), total mg/L	Calcium (Ca), total mg/L	Chromium (Cr), total mg/L	Cobalt (Co), total mg/L	Copper (Cu), total mg/L	Iron (Fe), total mg/L	Lead (Pb), total mg/L	Lithium (Li), total mg/L	Magnesium (Mg), total mg/L	Manganese (Mn), total mg/L	Mercury (Hg), total mg/L	Molybdenum (Mo), total mg/L	Nickel (Ni), total mg/L	Phosphorus (P), total mg/L	Potassium (K), total mg/L	Selenium (Se), total mg/L	Silicon (Si), total mg/L	Silver (Ag), total mg/L	Sodium (Na), total mg/L	Strontium (Sr), total mg/L	Sulphur (S), total mg/L	Thallium (Tl), total mg/L	Tin (Sn), total mg/L
CCME Guidelines - Protection of Aquatic Life			1.5	*		0.001		*	0.3	*				0.000026	0.073	*			0.001		0.00025				0.0008	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	29/07/2015	<0.010	**0.00107**	30.1	**0.0195**	0.0113	**0.0614**	**22.8**	**0.0863**	0.0138	7.61	0.613	**0.0000340**	0.000938	0.0334	0.554	1.17	0.000819	17.6	**0.00133**	0.860	0.0823	9.52	0.000116	0.00016
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	23/08/2015																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	12/09/2015																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	16/10/2015	<0.010	0.0000943	30.0	**0.00159**	0.00101	**0.00341**	**1.38**	**0.00428**	0.0032	4.61	0.0463	<0.0000050	0.000271	0.00272	0.053	0.24	**0.00117**	3.98	0.000054	0.749	0.0770	10.9	<0.000010	<0.00010
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	19/10/2015																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	15/11/2015																								
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	20/12/2015																								
KV-77	Thunder Gulch u/s Bellekeno East	26/10/2014	<0.010	0.000013	21.2	0.00021	<0.00010	<0.00050	0.032	0.000414	0.00098	3.51	0.00100	<0.000010	0.000147	<0.00050	<0.050	<0.10	0.00073	2.69	<0.000010	0.585	0.0585	9.73	<0.000010	<0.00010
KV-77	Thunder Gulch u/s Bellekeno East	15/02/2015	<0.010	0.000022	38.6	0.00013	<0.00010	<0.00050	0.033	0.000376	0.00131	5.82	0.00134	<0.000010	0.000217	<0.00050	<0.050	0.13	0.00079	2.61	<0.000010	0.576	0.0925	18.0	<0.000010	<0.00010
KV-77	Thunder Gulch u/s Bellekeno East	27/05/2015	<0.010	0.0000193	6.42	0.00034	0.00010	0.00121	0.186	0.000533	<0.0010	1.14	0.00413	<0.0000050	0.000075	0.00079	<0.050	0.12	0.000307	1.70	0.000014	0.349	0.0238	1.88	<0.000010	<0.00010
KV-77	Thunder Gulch u/s Bellekeno East	29/07/2015	<0.010	**0.000139**	17.5	**0.00373**	0.00214	**0.00756**	**3.65**	**0.0136**	0.0033	3.42	0.0792	<0.0000050	0.000256	0.00658	0.130	0.45	0.000465	6.11	0.000206	0.661	0.0521	5.44	0.000025	0.00013
KV-77	Thunder Gulch u/s Bellekeno East	16/10/2015	<0.010	0.0000843	17.9	**0.00142**	0.00109	**0.00282**	**1.18**	**0.00294**	0.0021	3.15	0.0513	0.0000063	0.000211	0.00258	0.053	0.20	0.000823	3.66	0.000042	0.669	0.0524	7.03	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	01/08/2014	<0.010	0.000115	31.2	0.00073	0.00038	0.00219	**0.594**	**0.00371**	0.00179	5.44	0.0212	<0.000010	0.000222	0.00144	<0.050	0.23	0.00062	3.18	0.000131	0.765	0.0913	17.0	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	02/09/2014	<0.010	**0.000183**	28.2	0.00066	0.00029	0.00171	**0.519**	**0.00288**	0.00158	5.29	0.0179	<0.000010	0.000197	0.00122	<0.050	0.18	0.00067	2.83	0.000030	0.681	0.0890	16.1	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	16/10/2014	<0.010	0.000097	35.0	<0.00030	0.00015	0.00092	0.176	0.00123	0.00144	6.27	0.00990	<0.000010	0.000207	0.00083	<0.050	0.17	0.00080	2.84	0.000012	0.879	0.101	18.8	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	13/11/2014	<0.010	**0.000204**	38.0	0.00033	0.00022	0.00166	0.083	**0.00680**	0.00203	7.08	0.0147	<0.000010	0.000228	0.00211	<0.050	0.36	0.00092	3.07	0.000071	1.17	0.106	21.4	<0.000010	0.00010
KV-81	Lightning Creek southwest of Mill Site	13/12/2014	<0.010	0.000090	32.7	0.00028	0.00022	0.00085	0.183	0.00170	0.00139	5.93	0.00980	<0.000010	0.000211	0.00135	<0.050	0.18	0.00097	2.97	0.000023	0.921	0.0950	19.3	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	11/01/2015	<0.010	0.000110	37.8	0.00048	0.00041	0.00152	**0.453**	0.00380	0.00173	6.61	0.0216	<0.000010	0.000219	0.00173	<0.050	0.25	**0.00105**	3.44	0.000038	1.19	0.102	22.0	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	05/02/2015	<0.010	0.000106	40.5	0.00050	0.00042	0.00154	**0.412**	0.00357	0.00177	7.12	0.0217	<0.000010	0.000229	0.00178	<0.050	0.25	**0.00113**	3.33	0.000036	1.32	0.102	23.0	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	06/03/2015	<0.010	0.000092	41.5	0.00049	0.00026	0.00097	0.239	0.00145	0.00181	7.44	0.0125	<0.000010	0.000252	0.00145	<0.050	0.28	**0.00112**	3.42	0.000018	1.20	0.110	24.9	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	06/04/2015	<0.010	0.0000879	43.1	0.00045	0.00025	0.00110	0.181	0.00266	0.0024	7.14	0.0115	<0.0000050	0.000243	0.00150	<0.050	0.29	**0.00113**	3.37	0.000021	2.17	0.110	24.1	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	25/05/2015	<0.010	**0.000255**	13.8	0.00081	0.00032	**0.00230**	**0.650**	**0.00301**	0.0016	2.74	0.0182	<0.0000050	0.000150	0.00138	<0.050	0.24	0.000419	2.18	0.000057	0.343	0.0434	8.02	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	18/06/2015	<0.010	0.000110	25.4	0.00053	0.00027	**0.00251**	**0.376**	**0.00252**	<0.0010	4.78	0.0168	<0.0000050	0.000173	0.00106	<0.050	0.16	0.000655	2.50	0.000029	0.645	0.0713	14.9	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	27/07/2015	<0.010	0.0000947	32.3	0.00046	0.00022	0.00180	**0.366**	0.00149	0.0016	5.73	0.0126	<0.0000050	0.000219	0.00163	<0.050	0.21	0.000641	3.08	0.000023	0.760	0.0866	16.3	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	23/08/2015	<0.010	**0.000164**	31.7	**0.00164**	0.00075	**0.00366**	**1.64**	**0.00368**	0.0021	5.88	0.0436	<0.0000050	0.000256	0.00244	<0.050	0.33	0.000659	4.01	0.000054	0.670	0.0848	17.4	0.000014	<0.00010
KV-81	Lightning Creek southwest of Mill Site	12/09/2015	<0.010	**0.000214**	27.9	**0.00240**	0.00118	**0.00510**	**2.31**	**0.00418**	0.0029	5.55	0.0604	0.0000054	0.000309	0.00368	0.070	0.35	0.000655	4.53	0.000073	0.692	0.0799	17.0	0.000016	<0.00010
KV-81	Lightning Creek southwest of Mill Site	18/09/2015																								
KV-81	Lightning Creek southwest of Mill Site	16/10/2015	<0.010	0.000113	34.3	0.00043	0.00026	0.00101	**0.306**	0.000960	0.0019	6.13	0.0145	<0.0000050	0.000217	0.00104	<0.050	0.19	**0.00106**	3.17	0.000014	0.883	0.0962	19.2	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	15/11/2015	<0.010	0.000101	37.9	0.00016	0.00015	0.00069	0.061	0.000357	0.0018	6.63	0.00511	<0.0000050	0.000205	0.00133	<0.050	0.21	0.000968	3.16	<0.000010	0.868	0.0971	19.3	<0.000010	<0.00010
KV-81	Lightning Creek southwest of Mill Site	16/12/2015	<0.010	0.0000759	33.9	0.00024	0.00016	0.00070	0.141	0.000730	<0.0010	6.08	0.00761	<0.0000050	0.000211	0.00093	<0.050	0.18	0.000988	3.14	<0.000010	0.914	0.0945	19.4	<0.000010	<0.00010

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Titanium (Ti), total mg/L	Uranium (U), total mg/L	Vanadium (V), total mg/L	Zinc (Zn), total mg/L	Zirconium (Zr), total mg/L	Aluminum (Al), dissolved mg/L	Antimony (Sb), dissolved mg/L	Arsenic (As), dissolved mg/L	Barium (Ba), dissolved mg/L	Beryllium (Be), dissolved mg/L	Bismuth (Bi), dissolved mg/L	Boron (B), dissolved mg/L	Cadmium (Cd), dissolved mg/L	Calcium (Ca), dissolved mg/L	Chromium (Cr), dissolved mg/L	Cobalt (Co), dissolved mg/L	Copper (Cu), dissolved mg/L	Iron (Fe), dissolved mg/L	Lead (Pb), dissolved mg/L	Lithium (Li), dissolved mg/L	Magnesium (Mg), dissolved mg/L	Manganese (Mn), dissolved mg/L	Mercury (Hg), dissolved mg/L
CCME Guidelines - Protection of Aquatic Life				0.015		0.03																				
KV-37	Lightning Creek u/s Hope Gulch	01/08/2014	<0.010	0.000059	<0.0010	<0.0030	<0.00080	0.0086	0.00011	0.00246	0.0564	<0.00010	<0.00050	<0.010	0.000027	21.5	<0.00010	<0.00010	0.00033	0.032	0.000209	<0.00050	4.12	0.0103	<0.000010
KV-37	Lightning Creek u/s Hope Gulch	25/08/2014																							
KV-37	Lightning Creek u/s Hope Gulch	02/09/2014	<0.010	0.000061	<0.0010	0.0215	<0.00080	0.0062	<0.00010	0.00200	0.0524	<0.00010	<0.00050	<0.010	0.000030	23.7	<0.00010	<0.00010	0.00040	0.025	0.000347	<0.00050	4.46	0.00818	<0.000010
KV-37	Lightning Creek u/s Hope Gulch	16/10/2014	<0.010	0.000068	<0.0010	<0.0030	<0.00080	0.0046	<0.00010	0.00231	0.0527	<0.00010	<0.00050	<0.010	0.000019	21.1	<0.00010	<0.00010	0.00022	0.022	<0.000050	<0.00050	4.10	0.00696	<0.000010
KV-37	Lightning Creek u/s Hope Gulch	13/11/2014	<0.010	0.000082	<0.0010	0.0070	<0.00080	0.0036	<0.00010	0.00246	0.0559	<0.00010	<0.00050	<0.010	0.000016	20.4	0.00012	<0.00010	0.00027	0.030	0.000222	0.00095	3.85	0.00929	<0.000010
KV-37	Lightning Creek u/s Hope Gulch	14/12/2014	<0.010	0.000083	<0.0010	0.0041	<0.00080	0.0028	<0.00010	0.00238	0.0562	<0.00010	<0.00050	<0.010	0.000016	19.4	0.00014	<0.00010	0.00033	0.024	0.000348	0.00065	3.60	0.00827	<0.000010
KV-37	Lightning Creek u/s Hope Gulch	11/01/2015																							
KV-37	Lightning Creek u/s Hope Gulch	05/02/2015	<0.010	0.000086	<0.0010	0.0033	<0.00080	0.0024	0.00012	0.00273	0.0669	<0.00010	<0.00050	<0.010	0.000020	20.3	0.00051	<0.00010	0.00041	0.029		0.00074	3.82	0.0111	<0.000010
KV-37	Lightning Creek u/s Hope Gulch	06/03/2015	<0.010	0.000104	<0.0010	0.0040	<0.00080	0.0036	<0.00010	0.00276	0.0620	<0.00010	<0.00050	<0.010	0.000037	20.0	0.00020	<0.00010	0.00038	0.033	0.000121	0.00087	3.73	0.00967	<0.000010
KV-37	Lightning Creek u/s Hope Gulch	06/04/2015	0.00035	0.000110	<0.00050	<0.0030	<0.00080	0.0037	<0.00010	0.00277	0.0610	<0.00010	<0.000050	<0.010	0.0000161	20.1	0.00012	<0.00010	0.00067	0.034	0.000060	<0.0010	3.60	0.0125	<0.0000050
KV-37	Lightning Creek u/s Hope Gulch	28/05/2015	0.00092	0.000021	<0.00050	<0.0030	<0.00030	0.0096	0.00011	0.00139	0.0379	<0.00010	<0.000050	<0.010	0.0000096	14.2	<0.00010	<0.00010	0.00051	0.015	<0.000050	<0.0010	2.65	0.00288	<0.0000050
KV-37	Lightning Creek u/s Hope Gulch	17/06/2015	<0.00030	0.000059	<0.00050	<0.0030	<0.00030	0.0053	0.00011	0.00209	0.0476	<0.00010	<0.000050	<0.010	0.0000083	20.7	<0.00010	<0.00010	0.00035	0.013	0.000091	<0.0010	3.73	0.00418	<0.0000050
KV-37	Lightning Creek u/s Hope Gulch	16/07/2015	<0.00030	0.000071	<0.00050	<0.0030	<0.00030	0.0053	0.00011	0.00232	0.0515	<0.00010	<0.000050	<0.010	0.0000151	22.5	<0.00010	<0.00010	0.00034	0.021	<0.000050	<0.0010	3.99	0.00615	<0.0000050
KV-37	Lightning Creek u/s Hope Gulch	15/08/2015	<0.00030	0.000066	<0.00050	<0.0030	<0.00030	0.0044	0.00010	0.00212	0.0568	<0.00010	<0.000050	<0.010	0.0000060	25.6	<0.00010	<0.00010	0.00030	0.023	<0.000050	<0.0010	4.55	0.00707	<0.0000050
KV-37	Lightning Creek u/s Hope Gulch	02/09/2015	<0.00090	0.000110	0.00065	0.0219	<0.00030	0.0056	0.00029	0.00272	0.0530	<0.00010	<0.000050	<0.010	**0.000248**	27.0	<0.00010	<0.00010	0.00038	0.016	<0.000050	<0.0010	5.12	0.00593	<0.0000050
KV-37	Lightning Creek u/s Hope Gulch	07/09/2015	<0.00030	0.000067	<0.00050	<0.0030	<0.00030	0.0057	0.00010	0.00204	0.0531	<0.00010	<0.000050	<0.010	0.0000135	26.3	<0.00010	<0.00010	0.00046	0.022	0.000061	<0.0010	5.01	0.00609	<0.0000050
KV-37	Lightning Creek u/s Hope Gulch	16/10/2015	<0.00030	0.000080	<0.00050	<0.0030	<0.00030	0.0026	<0.00010	0.00213	0.0546	<0.00010	<0.000050	<0.010	0.0000060	22.7	<0.00010	<0.00010	<0.00020	0.017	<0.000050	<0.0010	4.32	0.00538	<0.0000050
KV-37	Lightning Creek u/s Hope Gulch	14/11/2015	<0.00030	0.000075	<0.00050	<0.0030	<0.00030	0.0020	<0.00010	0.00218	0.0580	<0.00010	<0.000050	<0.010	0.0000069	21.6	0.00011	<0.00010	<0.00020	0.021	0.000068	<0.0010	3.99	0.00706	<0.0000050
KV-37	Lightning Creek u/s Hope Gulch	17/12/2015	<0.00030	0.000078	<0.00050	<0.0030	<0.00030	0.0019	<0.00010	0.00239	0.0625	<0.00010	<0.000050	<0.010	0.0000052	20.7	0.00016	<0.00010	<0.00020	0.032	<0.000050	<0.0010	3.81	0.00815	<0.0000050
KV-38	Lightning Creek u/s Thunder Gulch	01/08/2014	<0.010	0.000125	<0.0010	0.0113	<0.00080	0.0066	0.00026	0.00235	0.0593	<0.00010	<0.00050	<0.010	0.000094	26.7	0.00023	<0.00010	0.00051	0.032	0.00226	0.00071	5.10	0.00751	<0.000010
KV-38	Lightning Creek u/s Thunder Gulch	02/09/2014	<0.010	0.000130	<0.0010	0.0213	<0.00080	0.0079	0.00028	0.00261	0.0535	<0.00010	<0.00050	<0.010	**0.000232**	27.9	<0.00010	<0.00010	0.00042	0.017	0.000321	0.00065	5.34	0.00616	<0.000010
KV-38	Lightning Creek u/s Thunder Gulch	16/10/2014	<0.010	0.000164	<0.0010	0.0113	<0.00080	0.0058	0.00024	0.00229	0.0545	<0.00010	<0.00050	<0.010	0.000113	29.7	0.00014	<0.00010	0.00031	0.013	0.000132	0.00078	5.48	0.00540	<0.000010
KV-38	Lightning Creek u/s Thunder Gulch	13/11/2014	<0.010	0.000188	<0.0010	0.0093	<0.00080	0.0037	0.00025	0.00216	0.0604	<0.00010	<0.00050	<0.010	0.000079	29.2	<0.00010	<0.00010	0.00061	<0.010	0.000189	0.00122	5.43	0.00563	<0.000010
KV-38	Lightning Creek u/s Thunder Gulch	13/12/2014	<0.010	0.000207	<0.0010	0.0079	<0.00080	0.0028	0.00022	0.00230	0.0576	<0.00010	<0.00050	<0.010	0.000062	27.7	<0.00010	<0.00010	0.00021	<0.010	0.000067	0.00092	5.17	0.00465	<0.000010
KV-38	Lightning Creek u/s Thunder Gulch	11/01/2015	<0.010	0.000261	<0.0010	0.0080	<0.00080	0.0031	0.00024	0.00234	0.0586	<0.00010	<0.00050	<0.010	0.000068	26.1	0.00011	<0.00010	0.00020	<0.010	0.000431	0.00127	5.05	0.00526	<0.000010
KV-38	Lightning Creek u/s Thunder Gulch	05/02/2015	<0.010	0.000264	<0.0010	0.0075	<0.00080	0.0023	0.00026	0.00252	0.0623	<0.00010	<0.00050	<0.010	0.000071	31.4	0.00011	<0.00010	0.00024	<0.010		0.00109	5.60	0.00423	<0.000010
KV-38	Lightning Creek u/s Thunder Gulch	06/03/2015	<0.010	0.000268	<0.0010	0.0095	<0.00080	0.0039	0.00024	0.00278	0.0636	<0.00010	<0.00050	<0.010	0.000093	29.4	0.00013	<0.00010	0.00027	<0.010	0.000118	0.00117	5.31	0.00336	<0.000010
KV-38	Lightning Creek u/s Thunder Gulch	06/04/2015																							
KV-38	Lightning Creek u/s Thunder Gulch	27/05/2015	0.00119	0.000047	<0.00050	**0.0328**	<0.00030	0.0112	0.00029	0.00245	0.0376	<0.00010	<0.000050	<0.010	**0.000312**	15.5	<0.00010	<0.00010	0.00065	0.013	0.000138	<0.0010	2.92	0.00334	<0.0000050
KV-38	Lightning Creek u/s Thunder Gulch	16/07/2015	<0.00030	0.000131	<0.00050	0.0110	<0.00030	0.0097	0.00032	0.00263	0.0545	<0.00010	<0.000050	<0.010	**0.000149**	25.6	<0.00010	<0.00010	0.00051	0.024	0.000977	<0.0010	4.69	0.00725	<0.0000050
KV-38	Lightning Creek u/s Thunder Gulch	01/09/2015	<0.042	0.000159	0.00281	0.0251	<0.00030	0.0087	0.00031	0.00223	0.0540	<0.00010	<0.000050	<0.010	**0.000177**	30.6	<0.00010	<0.00010	0.00046	0.018	<0.000050	<0.0010	5.47	0.00654	<0.0000050
KV-38	Lightning Creek u/s Thunder Gulch	16/10/2015	<0.00030	0.000172	<0.00050	0.0161	<0.00030	0.0024	0.00024	0.00242	0.0565	<0.00010	<0.000050	<0.010	0.000152	31.1	<0.00010	<0.00010	<0.00020	<0.010	<0.000050	<0.0010	5.62	0.00469	<0.0000050
KV-39	Hope Gulch u/s Lightning Creek	16/10/2014	<0.010	0.00112	<0.0010	**0.179**	<0.00080	0.0039	0.00150	**0.00916**	0.0498	<0.00010	<0.00050	<0.010	**0.00248**	52.3	<0.00010	<0.00010	0.00041	<0.010	0.000660	0.00163	10.1	0.000699	<0.000010
KV-39	Hope Gulch u/s Lightning Creek	05/02/2015																							
KV-39	Hope Gulch u/s Lightning Creek	28/05/2015	<0.0030	0.000186	<0.00050	**0.201**	<0.00030	0.0067	0.00114	**0.00843**	0.0331	<0.00010	<0.000050	<0.010	**0.00231**	21.9	<0.00010	<0.00010	0.00072	<0.010	0.000499	0.0012	4.04	0.00102	<0.0000050
KV-39	Hope Gulch u/s Lightning Creek	16/07/2015	<0.00030	0.000543	<0.00050	**0.138**	<0.00030	0.0051	0.00166	**0.00941**	0.0416	<0.00010	<0.000050	<0.010	**0.00214**	40.6	<0.00010	<0.00010	0.00043	<0.010	0.000382	0.0021	7.27	0.00057	<0.0000050
KV-39	Hope Gulch u/s Lightning Creek	16/10/2015	<0.00030	0.000899	<0.00050	**0.174**	<0.00030	0.0020	0.00131	**0.00913**	0.0488	<0.00010	<0.000050	<0.010	**0.00225**	51.8	<0.00010	<0.00010	0.00022	<0.010	0.000211	0.0022	9.84	0.00127	<0.0000050
KV-40	Charity Gulch u/s Lightning Creek	16/10/2014	<0.010	0.000032	<0.0010	0.0038	<0.00080	0.0079	<0.00010	0.00080	0.0686	<0.00010	<0.00050	<0.010	0.000045	64.8	0.00012	<0.00010	0.00030	<0.010	0.000199	0.00210	17.4	0.000441	<0.000010
KV-40	Charity Gulch u/s Lightning Creek	05/02/2015																							
KV-40	Charity Gulch u/s Lightning Creek	28/05/2015	<0.00030	0.000051	<0.00050	0.0060	<0.00030	0.0167	<0.00010	0.00030	0.0298	<0.00010	<0.000050	<0.010	0.0000551	42.1	<0.00010	<0.00010	0.00050	<0.010	<0.000050	0.0021	13.1	0.00101	<0.0000050
KV-40	Charity Gulch u/s Lightning Creek	16/07/2015	<0.00030	0.000033	<0.00050	0.0031	<0.00030	0.0072	<0.00010	0.00081	0.0618	<0.00010	<0.000050	<0.010	0.0000310	57.0	0.00023	<0.00010	0.00021	<0.010	<0.000050	0.0021	15.0	0.00013	<0.0000050
KV-40	Charity Gulch u/s Lightning Creek	16/10/2015	<0.00030	0.000040	<0.00050	0.0036	<0.00030	0.0113	<0.00010	0.00092	0.0680	<0.00010	<0.000050	<0.010	0.0000260	65.6	<0.00010	<0.00010	0.00025	<0.010	<0.000050	0.0022	18.9	0.00081	<0.0000050
KV-41	Lightning Creek u/s Keno City bridge	01/08/2014	0.012	0.000273	0.0011	0.0200	<0.00080	0.0072	0.00028	0.00132	0.0520	<0.00010	<0.00050	<0.010	0.000067	31.5	<0.00010	<0.00010	0.00049	<0.010	0.000270	0.00116	5.31	0.00523	<0.000010
KV-41	Lightning Creek u/s Keno City bridge	02/09/2014	<0.010	0.000221	<0.0010	0.0163	<0.00080	0.0081	0.00027	0.00152	0.0473	<0.00010	<0.00050	<0.010	0.000142	27.7	<0.00010	<0.00010	0.00059	0.012	0.000796	0.00099	5.07	0.00517	<0.000010
KV-41	Lightning Creek u/s Keno City bridge	16/10/2014	<0.010	0.000333	<0.0010	0.0098	<0.00080	0.0041	0.00022	0.00121	0.0504	<0.00010	<0.00050	<0.010	0.000085	33.8	<0.00010	<0.00010	0.00101	<0.010	0.000094	0.00126	5.87	0.00406	<0.000010

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Titanium (Ti), total mg/L	Uranium (U), total mg/L	Vanadium (V), total mg/L	Zinc (Zn), total mg/L	Zirconium (Zr), total mg/L	Aluminum (Al), dissolved mg/L	Antimony (Sb), dissolved mg/L	Arsenic (As), dissolved mg/L	Barium (Ba), dissolved mg/L	Beryllium (Be), dissolved mg/L	Bismuth (Bi), dissolved mg/L	Boron (B), dissolved mg/L	Cadmium (Cd), dissolved mg/L	Calcium (Ca), dissolved mg/L	Chromium (Cr), dissolved mg/L	Cobalt (Co), dissolved mg/L	Copper (Cu), dissolved mg/L	Iron (Fe), dissolved mg/L	Lead (Pb), dissolved mg/L	Lithium (Li), dissolved mg/L	Magnesium (Mg), dissolved mg/L	Manganese (Mn), dissolved mg/L	Mercury (Hg), dissolved mg/L
CCME Guidelines - Protection of Aquatic Life				0.015		0.03																				
KV-41	Lightning Creek u/s Keno City bridge	13/11/2014	<0.010	0.000402	<0.0010	0.0196	<0.00080	0.0032	0.00022	0.00103	0.0521	<0.00010	<0.00050	<0.010	0.000069	36.3	<0.00010	<0.00010	0.00031	<0.010	0.000257	0.00181	6.38	0.00388	<0.000010
KV-41	Lightning Creek u/s Keno City bridge	13/12/2014	<0.010	0.000486	<0.0010	0.0103	<0.00080	0.0026	0.00022	0.00094	0.0503	<0.00010	<0.00050	<0.010	0.000058	36.3	<0.00010	<0.00010	0.00037	<0.010	0.000161	0.00145	6.31	0.00421	<0.000010
KV-41	Lightning Creek u/s Keno City bridge	11/01/2015	0.011	0.000618	0.0010	0.0141	<0.00080	0.0036	0.00023	0.00078	0.0519	<0.00010	<0.00050	<0.010	0.000058	40.7	<0.00010	<0.00010	0.00035	<0.010	0.000109	0.00182	6.79	0.00938	<0.000010
KV-41	Lightning Creek u/s Keno City bridge	05/02/2015	0.013	0.000648	0.0012	0.0135	<0.00080	0.0024	0.00029	0.00092	0.0561	<0.00010	<0.00050	<0.010	0.000058	42.0	<0.00010	<0.00010	0.00028	<0.010		0.00165	7.07	0.0122	<0.000010
KV-41	Lightning Creek u/s Keno City bridge	06/03/2015	0.014	0.000805	0.0013	0.0218	<0.00080	0.0024	0.00027	0.00081	0.0540	<0.00010	<0.00050	<0.010	0.000075	44.6	0.00013	<0.00010	0.00037	<0.010	0.000060	0.00205	7.77	0.00762	<0.000010
KV-41	Lightning Creek u/s Keno City bridge	06/04/2015	<0.0078	0.000652	<0.00050	0.0064	<0.00080	0.0016	0.00023	0.00076	0.0461	<0.00010	<0.000050	<0.010	0.0000433	41.3	<0.00010	<0.00010	<0.00020	<0.010	0.000071	0.0017	6.73	0.00402	<0.0000050
KV-41	Lightning Creek u/s Keno City bridge	13/05/2015	0.0272	0.000234	0.00222	**0.0420**	0.00058	0.0988	0.00028	0.00163	0.0354	<0.00010	<0.000050	<0.010	**0.000267**	16.5	0.00017	0.00011	**0.00244**	0.096	**0.00312**	0.0011	2.87	0.0130	0.0000119
KV-41	Lightning Creek u/s Keno City bridge	02/06/2015	0.00660	0.000149	0.00064	0.0171	<0.00030	0.0064	0.00024	0.00163	0.0404	<0.00010	<0.000050	<0.010	**0.000136**	22.0	<0.00010	<0.00010	0.00052	0.010	0.000065	<0.0010	4.04	0.00404	<0.0000050
KV-41	Lightning Creek u/s Keno City bridge	29/07/2015	0.0199	0.000309	0.00185	0.0211	<0.00030	0.0057	0.00027	0.00154	0.0513	<0.00010	<0.000050	<0.010	0.0000715	29.5	<0.00010	<0.00010	0.00043	<0.010	0.000086	0.0013	5.13	0.00503	<0.0000050
KV-41	Lightning Creek u/s Keno City bridge	23/08/2015	0.0298	0.000246	0.00253	0.0182	<0.00030	0.0066	0.00025	0.00156	0.0531	<0.00010	<0.000050	<0.010	0.0000655	30.7	<0.00010	<0.00010	0.00044	0.012	0.000077	<0.0010	5.17	0.00715	<0.0000050
KV-41	Lightning Creek u/s Keno City bridge	01/09/2015	0.237	0.000641	0.0199	**0.0759**	0.00184	0.0081	0.00025	0.00131	0.0589	<0.00010	<0.000050	<0.010	0.0000751	26.8	<0.00010	<0.00010	0.00050	0.012	0.000072	<0.0010	4.95	0.00659	<0.0000050
KV-41	Lightning Creek u/s Keno City bridge	18/09/2015																							
KV-41	Lightning Creek u/s Keno City bridge	16/10/2015	0.00720	0.000308	0.00055	0.0114	<0.00030	0.0057	0.00022	0.00141	0.0519	<0.00010	<0.000050	<0.010	0.000103	33.5	<0.00010	<0.00010	0.00053	<0.010	0.000464	0.0013	5.72	0.00531	<0.0000050
KV-41	Lightning Creek u/s Keno City bridge	15/11/2015	0.00085	0.000381	<0.00050	0.0071	<0.00030	0.0029	0.00023	0.00111	0.0513	<0.00010	<0.000050	<0.010	0.0000644	35.5	<0.00010	<0.00010	0.00023	<0.010	<0.000050	0.0015	5.91	0.00348	<0.0000050
KV-41	Lightning Creek u/s Keno City bridge	17/12/2015	0.00341	0.000440	0.00057	0.0067	<0.00030	0.0016	0.00020	0.00098	0.0510	<0.00010	<0.000050	<0.010	0.0000460	34.9	<0.00010	<0.00010	<0.00020	<0.010	<0.000050	0.0016	5.95	0.00345	<0.0000050
KV-41	Lightning Creek u/s Keno City bridge	18/12/2015																							
KV-65	Thunder Gulch upstream of Bellekeno	01/08/2014	0.039	0.000483	0.0027	0.0190	<0.00080	0.0071	0.00015	0.00049	0.0419	<0.00010	<0.00050	<0.010	0.000060	29.2	<0.00010	<0.00010	0.00057	<0.010	0.000532	0.00182	4.33	0.000677	<0.000010
KV-65	Thunder Gulch upstream of Bellekeno	25/08/2014																							
KV-65	Thunder Gulch upstream of Bellekeno	20/09/2014	0.379	0.00177	0.0336	**0.192**	0.00180	0.0103	0.00017	0.00044	0.0357	<0.00010	<0.00050	<0.010	0.000025	29.3	<0.00010	<0.00010	0.00070	0.037	0.000594	0.00228	4.51	0.00312	<0.000010
KV-65	Thunder Gulch upstream of Bellekeno	26/10/2014	<0.010	0.000645	<0.0010	0.0054	<0.00080	0.0037	<0.00010	0.00032	0.0388	<0.00010	<0.00050	<0.010	0.000039	34.6	<0.00010	<0.00010	0.00032	<0.010	0.000361	0.00229	5.15	0.000766	<0.000010
KV-65	Thunder Gulch upstream of Bellekeno	18/11/2014	<0.010	0.000779	<0.0010	0.0055	<0.00080	0.0036	0.00011	0.00035	0.0431	<0.00010	<0.00050	<0.010	0.000050	40.3	<0.00010	<0.00010	0.00055	<0.010	0.000426	0.00787	5.84	0.00122	<0.000010
KV-65	Thunder Gulch upstream of Bellekeno	14/12/2014	<0.010	0.000810	<0.0010	0.0050	<0.00080	0.0032	0.00011	0.00038	0.0433	<0.00010	<0.00050	<0.010	0.000049	43.4	<0.00010	<0.00010	0.00026	<0.010	0.000381	0.00260	6.27	0.000362	<0.000010
KV-65	Thunder Gulch upstream of Bellekeno	11/01/2015	<0.010	0.00113	<0.0010	0.0075	<0.00080	0.0039	0.00014	0.00041	0.0469	<0.00010	<0.00050	<0.010	0.000066	49.6	0.00042	<0.00010	0.00068	<0.010	0.000636	0.00261	6.98	0.000993	<0.000010
KV-65	Thunder Gulch upstream of Bellekeno	15/02/2015	<0.010	0.00132	<0.0010	0.0076	<0.00080	0.0030	0.00014	0.00041	0.0490	<0.00010	<0.00050	<0.010	0.000053	49.6	0.00014	<0.00010	0.00045	<0.010	0.000858	0.00341	7.01	0.000788	<0.000010
KV-65	Thunder Gulch upstream of Bellekeno	06/03/2015	<0.010	0.00124	<0.0010	0.0062	<0.00080	0.0038	0.00012	0.00040	0.0484	<0.00010	<0.00050	<0.010	0.000056	53.6	0.00014	<0.00010	0.00028	<0.010	0.000415	0.00294	7.37	0.000512	<0.000010
KV-65	Thunder Gulch upstream of Bellekeno	12/04/2015	0.00136	0.00130	<0.00050	0.0043	<0.00030	0.0031	0.00013	0.00042	0.0484	<0.00010	<0.000050	<0.010	0.0000390	54.7	<0.00010	<0.00010	0.00040	<0.010	0.000372	0.0029	7.22	0.00061	<0.0000050
KV-65	Thunder Gulch upstream of Bellekeno	27/05/2015	0.00530	0.000109	0.00056	0.0036	<0.00030	0.0322	<0.00010	0.00035	0.0190	<0.00010	<0.000050	<0.010	0.0000132	8.05	0.00011	<0.00010	0.00084	0.015	0.000302	0.0011	1.26	0.00048	<0.0000050
KV-65	Thunder Gulch upstream of Bellekeno	17/06/2015	0.349	0.00119	0.0320	**0.144**	0.00119	0.0104	0.00012	0.00043	0.0258	<0.00010	<0.000050	<0.010	0.0000114	20.7	<0.00010	<0.00010	0.00098	0.022	0.000399	0.0012	3.04	0.00299	<0.0000050
KV-65	Thunder Gulch upstream of Bellekeno	30/07/2015	0.289	0.00138	0.0283	**0.185**	0.00132	0.0103	0.00014	0.00039	0.0258	<0.00010	<0.000050	<0.010	0.0000222	23.7	<0.00010	<0.00010	0.00101	0.025	0.00114	0.0018	3.59	0.00266	<0.0000050
KV-65	Thunder Gulch upstream of Bellekeno	23/08/2015	0.238	0.000840	0.0177	**0.0837**	0.00097	0.0143	0.00011	0.00047	0.0350	<0.00010	<0.000050	<0.010	0.0000227	22.0	<0.00010	<0.00010	0.00054	0.035	0.00149	0.0013	3.41	0.00433	<0.0000050
KV-65	Thunder Gulch upstream of Bellekeno	12/09/2015	0.0806	0.000470	0.00501	0.0184	0.00043	0.0117	<0.00010	0.00030	0.0398	<0.00010	<0.000050	<0.010	0.0000116	21.4	<0.00010	<0.00010	0.00047	0.013	0.000320	0.0018	3.39	0.00144	<0.0000050
KV-65	Thunder Gulch upstream of Bellekeno	16/10/2015	0.0310	0.000527	0.00206	0.0094	<0.00030	0.0061	<0.00010	0.00030	0.0392	<0.00010	<0.000050	<0.010	0.0000095	29.5	<0.00010	<0.00010	0.00028	<0.010	0.000328	0.0020	4.31	0.00199	<0.0000050
KV-65	Thunder Gulch upstream of Bellekeno	19/11/2015	0.0282	0.000751	0.00181	0.0097	<0.00030	0.0027	<0.00010	0.00036	0.0462	<0.00010	<0.000050	<0.010	0.0000109	39.1	<0.00010	<0.00010	0.00022	<0.010	0.000172	0.0025	5.35	0.00117	<0.0000050
KV-65	Thunder Gulch upstream of Bellekeno	17/12/2015	0.00635	0.000800	0.00056	0.0041	<0.00030	0.0031	0.00010	0.00036	0.0453	<0.00010	<0.000050	<0.010	0.0000240	43.2	<0.00010	<0.00010	<0.00020	<0.010	0.000066	0.0030	5.95	0.00145	<0.0000050
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	06/08/2014																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	21/09/2014																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	28/10/2014	0.011	0.000730	<0.0010	0.0114	<0.00080	0.0077	0.00013	0.00039	0.0422	<0.00010	<0.00050	<0.010	0.000059	36.8	0.00010	<0.00010	0.00059	<0.010	0.000441	0.00237	5.64	0.00128	<0.000010
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	18/11/2014																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	14/12/2014																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	11/01/2015																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	15/02/2015	<0.010	0.00144	<0.0010	0.0105	<0.00080	0.0030	0.00016	0.00040	0.0490	<0.00010	<0.00050	<0.010	0.000107	54.8	<0.00010	<0.00010	0.00044	<0.010	0.000341	0.00291	7.62	0.00108	<0.000010
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	12/03/2015																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	14/04/2015																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	13/05/2015	0.0308	0.000273	0.00250	0.0249	0.00039	**0.143**	0.00018	0.00043	0.0266	<0.00010	<0.000050	<0.010	**0.000136**	13.6	0.00016	0.00011	0.00198	0.101	**0.00629**	0.0012	2.04	0.00826	0.0000158
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	18/06/2015																							

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Titanium (Ti), total mg/L	Uranium (U), total mg/L	Vanadium (V), total mg/L	Zinc (Zn), total mg/L	Zirconium (Zr), total mg/L	Aluminum (Al), dissolved mg/L	Antimony (Sb), dissolved mg/L	Arsenic (As), dissolved mg/L	Barium (Ba), dissolved mg/L	Beryllium (Be), dissolved mg/L	Bismuth (Bi), dissolved mg/L	Boron (B), dissolved mg/L	Cadmium (Cd), dissolved mg/L	Calcium (Ca), dissolved mg/L	Chromium (Cr), dissolved mg/L	Cobalt (Co), dissolved mg/L	Copper (Cu), dissolved mg/L	Iron (Fe), dissolved mg/L	Lead (Pb), dissolved mg/L	Lithium (Li), dissolved mg/L	Magnesium (Mg), dissolved mg/L	Manganese (Mn), dissolved mg/L	Mercury (Hg), dissolved mg/L
CCME Guidelines - Protection of Aquatic Life				0.015		0.03																				
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	29/07/2015	0.303	0.00153	0.0261	**0.206**	0.00107	0.0094	0.00016	0.00041	0.0304	<0.00010	<0.000050	<0.010	0.0000296	28.8	<0.00010	<0.00010	0.00060	0.034	0.000371	0.0021	4.06	0.00244	<0.0000050
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	23/08/2015																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	12/09/2015																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	16/10/2015	0.0357	0.000562	0.00226	0.0117	<0.00030	0.0054	0.00011	0.00042	0.0391	<0.00010	<0.000050	<0.010	0.0000284	31.0	<0.00010	<0.00010	0.00026	<0.010	<0.000050	0.0022	4.45	0.00074	<0.0000050
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	19/10/2015																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	15/11/2015																							
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	20/12/2015																							
KV-77	Thunder Gulch u/s Bellekeno East	26/10/2014	<0.010	0.000298	<0.0010	<0.0030	<0.00080	0.0053	<0.00010	0.00026	0.0467	<0.00010	<0.00050	<0.010	0.000011	21.0	<0.00010	<0.00010	<0.00020	<0.010	0.000056	0.00108	3.46	0.000332	<0.000010
KV-77	Thunder Gulch u/s Bellekeno East	15/02/2015	<0.010	0.000661	<0.0010	<0.0030	<0.00080	0.0034	0.00011	0.00024	0.0738	<0.00010	<0.00050	<0.010	0.000026	39.1	<0.00010	<0.00010	0.00035	<0.010	0.000117	0.00131	5.84	0.000412	<0.000010
KV-77	Thunder Gulch u/s Bellekeno East	27/05/2015	0.00445	0.000092	<0.00050	<0.0030	<0.00030	0.0430	<0.00010	0.00025	0.0191	<0.00010	<0.000050	<0.010	0.0000109	6.58	0.00011	<0.00010	0.00074	0.017	0.000156	<0.0010	1.14	0.00053	<0.0000050
KV-77	Thunder Gulch u/s Bellekeno East	29/07/2015	0.0892	0.000357	0.00562	0.0235	0.00050	0.0116	<0.00010	0.00028	0.0360	<0.00010	<0.000050	<0.010	0.0000085	16.6	<0.00010	<0.00010	0.00045	0.012	0.000148	0.0011	2.71	0.00045	<0.0000050
KV-77	Thunder Gulch u/s Bellekeno East	16/10/2015	0.0312	0.000268	0.00200	0.0081	<0.00030	0.0055	<0.00010	0.00033	0.0386	<0.00010	<0.000050	<0.010	0.0000106	18.2	<0.00010	<0.00010	0.00021	<0.010	<0.000050	0.0012	2.95	0.00057	<0.0000050
KV-81	Lightning Creek southwest of Mill Site	01/08/2014	0.011	0.000326	<0.0010	0.0129	0.00086	0.0084	0.00026	0.00128	0.0497	<0.00010	<0.00050	<0.010	0.000080	31.9	<0.00010	<0.00010	0.00059	<0.010	0.000270	0.00158	5.51	0.00540	<0.000010
KV-81	Lightning Creek southwest of Mill Site	02/09/2014	<0.010	0.000293	<0.0010	0.0153	<0.00080	0.0088	0.00026	0.00142	0.0472	<0.00010	<0.00050	<0.010	0.000116	29.2	<0.00010	<0.00010	0.00061	0.012	0.000194	0.00116	5.33	0.00550	<0.000010
KV-81	Lightning Creek southwest of Mill Site	16/10/2014	<0.010	0.000454	<0.0010	0.0105	<0.00080	0.0087	0.00021	0.00110	0.0489	<0.00010	<0.00050	<0.010	0.000092	36.6	<0.00010	<0.00010	0.00045	<0.010	0.000158	0.00154	6.33	0.00475	<0.000010
KV-81	Lightning Creek southwest of Mill Site	13/11/2014	<0.010	0.000490	<0.0010	0.0267	<0.00080	0.0156	0.00022	0.00117	0.0514	<0.00010	<0.00050	<0.010	0.000114	38.0	0.00011	0.00017	**0.00738**	0.012	0.000476	0.00191	7.00	0.00588	<0.000010
KV-81	Lightning Creek southwest of Mill Site	13/12/2014	<0.010	0.000510	<0.0010	0.0118	0.00183	0.0133	0.00022	0.00095	0.0497	<0.00010	<0.00050	<0.010	0.000090	37.1	<0.00010	0.00011	0.00038	<0.010	0.000162	0.00149	6.53	0.00522	<0.000010
KV-81	Lightning Creek southwest of Mill Site	11/01/2015	<0.010	0.000578	<0.0010	0.0140	<0.00080	**0.0132**	0.00022	0.00093	0.0500	<0.00010	<0.00050	<0.010	0.000086	40.5	0.00011	0.00013	0.00046	<0.010	0.000123	0.00161	7.04	0.00925	<0.000010
KV-81	Lightning Creek southwest of Mill Site	05/02/2015	<0.010	0.000621	<0.0010	0.0133	<0.00080	0.0138	0.00033	0.00097	0.0521	<0.00010	<0.00050	<0.010	0.000077	41.1	<0.00010	0.00014	0.00044	<0.010	0.00352	0.00152	7.01	0.00885	<0.000010
KV-81	Lightning Creek southwest of Mill Site	06/03/2015	<0.010	0.000715	<0.0010	**0.0463**	<0.00080	0.0159	0.00022	0.00091	0.0467	<0.00010	<0.00050	<0.010	0.000186	44.0	<0.00010	0.00013	0.00044	<0.010	0.000061	0.00176	7.63	0.00620	<0.000010
KV-81	Lightning Creek southwest of Mill Site	06/04/2015	0.00260	0.000778	<0.00050	0.0119	<0.00080	0.0210	0.00024	0.00089	0.0482	<0.00010	<0.000050	<0.010	0.0000729	44.3	0.00011	0.00015	0.00101	<0.010	0.000056	0.0022	7.29	0.00457	<0.0000050
KV-81	Lightning Creek southwest of Mill Site	25/05/2015	0.0132	0.000106	0.00119	0.0265	<0.00030	0.0166	0.00023	0.00169	0.0318	<0.00010	<0.000050	<0.010	**0.000192**	14.0	<0.00010	<0.00010	0.00084	0.019	0.000189	<0.0010	2.64	0.00337	<0.0000050
KV-81	Lightning Creek southwest of Mill Site	18/06/2015	0.00626	0.000239	0.00070	0.0103	<0.00030	0.0115	0.00024	0.00148	0.0448	<0.00010	<0.000050	<0.010	0.0000603	25.9	<0.00010	<0.00010	0.00056	<0.010	0.000065	<0.0010	4.78	0.00313	<0.0000050
KV-81	Lightning Creek southwest of Mill Site	27/07/2015	0.00634	0.000297	0.00077	0.0101	<0.00030	0.0107	0.00026	0.00140	0.0500	<0.00010	<0.000050	<0.010	0.0000673	31.9	<0.00010	<0.00010	0.00042	<0.010	0.000065	0.0013	5.57	0.00430	<0.0000050
KV-81	Lightning Creek southwest of Mill Site	23/08/2015	0.0307	0.000320	0.00267	0.0179	<0.00030	0.0102	0.00030	0.00147	0.0513	<0.00010	<0.000050	<0.010	0.0000711	32.8	<0.00010	<0.00010	0.00061	0.017	0.000354	0.0011	5.64	0.00790	<0.0000050
KV-81	Lightning Creek southwest of Mill Site	12/09/2015	0.0424	0.000366	0.00376	0.0246	0.00038	0.0141	0.00024	0.00159	0.0523	<0.00010	<0.000050	<0.010	0.0000755	29.8	0.00010	<0.00010	0.00068	0.029	0.000157	0.0013	5.41	0.00880	<0.0000050
KV-81	Lightning Creek southwest of Mill Site	18/09/2015																							
KV-81	Lightning Creek southwest of Mill Site	16/10/2015	0.00629	0.000402	0.00051	0.0120	<0.00030	0.0074	0.00019	0.00139	0.0502	<0.00010	<0.000050	<0.010	0.0000864	34.6	<0.00010	<0.00010	0.00032	<0.010	<0.000050	0.0014	6.03	0.00390	<0.0000050
KV-81	Lightning Creek southwest of Mill Site	15/11/2015	<0.0015	0.000417	<0.00050	0.0130	<0.00030	0.0153	0.00025	0.00108	0.0503	<0.00010	<0.000050	<0.010	0.0000987	37.4	<0.00010	0.00012	0.00046	<0.010	<0.000050	0.0016	6.42	0.00380	<0.0000050
KV-81	Lightning Creek southwest of Mill Site	16/12/2015	0.00229	0.000486	<0.00050	0.0090	<0.00030	0.0130	0.00021	0.00112	0.0522	<0.00010	<0.000050	<0.010	0.0000670	36.0	<0.00010	<0.00010	0.00034	<0.010	0.000053	<0.0010	6.33	0.00371	<0.0000050

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Molybdenum (Mo), dissolved mg/L	Nickel (Ni), dissolved mg/L	Phosphorus (P), dissolved mg/L	Potassium (K), dissolved mg/L	Selenium (Se), dissolved mg/L	Silicon (Si), dissolved mg/L	Silver (Ag), dissolved mg/L	Sodium (Na), dissolved mg/L	Strontium (Sr), dissolved mg/L	Sulphur (S), dissolved mg/L	Thallium (Tl), dissolved mg/L	Tin (Sn), dissolved mg/L	Titanium (Ti), dissolved mg/L	Uranium (U), dissolved mg/L	Vanadium (V), dissolved mg/L	Zinc (Zn), dissolved mg/L	Zirconium (Zr), dissolved mg/L
CCME Guidelines - Protection of Aquatic Life																			
KV-37	Lightning Creek u/s Hope Gulch	01/08/2014	0.000105	<0.00050	<0.050	<0.10	0.00046	2.32	<0.000010	0.617	0.0648	13.5	<0.000010	<0.00010	<0.010	0.000054	<0.0010	0.0024	<0.00080
KV-37	Lightning Creek u/s Hope Gulch	25/08/2014																	
KV-37	Lightning Creek u/s Hope Gulch	02/09/2014	0.000089	<0.00050	<0.050	<0.10	0.00054	2.18	<0.000010	0.531	0.0675	15.5	<0.000010	<0.00010	<0.010	0.000054	<0.0010	0.0030	<0.00080
KV-37	Lightning Creek u/s Hope Gulch	16/10/2014	0.000092	<0.00050	<0.050	0.13	0.00059	2.86	<0.000010	0.696	0.0682	12.7	<0.000010	<0.00010	<0.010	0.000059	<0.0010	0.0014	<0.00080
KV-37	Lightning Creek u/s Hope Gulch	13/11/2014	0.000122	<0.00050	<0.050	0.13	0.00062	3.40	<0.000010	0.829	0.0708	10.9	<0.000010	<0.00010	<0.010	0.000070	<0.0010	0.0031	<0.00080
KV-37	Lightning Creek u/s Hope Gulch	14/12/2014	0.000121	<0.00050	<0.050	0.20	0.00058	3.60	<0.000010	0.931	0.0694	9.48	<0.000010	<0.00010	<0.010	0.000068	<0.0010	0.0029	<0.00080
KV-37	Lightning Creek u/s Hope Gulch	11/01/2015																	
KV-37	Lightning Creek u/s Hope Gulch	05/02/2015	0.000141	<0.00050	<0.050	0.20	0.00071	3.99	<0.000010	1.06	0.0736	9.75	<0.000010	<0.00010	<0.010	0.000082	<0.0010	0.0029	<0.00080
KV-37	Lightning Creek u/s Hope Gulch	06/03/2015	0.000151	<0.00050	<0.050	0.23	0.00057	3.89	<0.000010	1.02	0.0721	9.30	<0.000010	<0.00010	<0.010	0.000086	<0.0010	0.0041	<0.00080
KV-37	Lightning Creek u/s Hope Gulch	06/04/2015	0.000130	<0.00050	<0.050	0.22	0.000600	3.93	<0.000010	1.15	0.0707	8.99	<0.000010	0.00014	<0.00030	0.000086	<0.00050	0.0021	<0.00080
KV-37	Lightning Creek u/s Hope Gulch	28/05/2015	0.000061	<0.00050	<0.050	<0.10	0.000365	1.39	<0.000010	0.321	0.0387	10.0	<0.000010	<0.00010	<0.00030	0.000012	<0.00050	0.0012	<0.00030
KV-37	Lightning Creek u/s Hope Gulch	17/06/2015	0.000087	<0.00050	<0.050	<0.10	0.000513	1.76	<0.000010	0.416	0.0530	13.4	<0.000010	<0.00010	<0.00030	0.000044	<0.00050	0.0011	<0.00030
KV-37	Lightning Creek u/s Hope Gulch	16/07/2015	0.000083	<0.00050	<0.050	<0.10	0.000494	2.05	<0.000010	0.549	0.0649	14.9	<0.000010	<0.00010	<0.00030	0.000054	<0.00050	0.0012	<0.00030
KV-37	Lightning Creek u/s Hope Gulch	15/08/2015	0.000112	<0.00050	<0.050	<0.10	0.000565	2.35	<0.000010	0.566	0.0690	16.6	<0.000010	<0.00010	<0.00030	0.000067	<0.00050	<0.0010	<0.00030
KV-37	Lightning Creek u/s Hope Gulch	02/09/2015	0.000206	<0.00050	<0.050	<0.10	0.000589	2.27	<0.000010	0.651	0.0720	20.1	<0.000010	<0.00010	<0.00030	0.000104	<0.00050	0.0217	<0.00030
KV-37	Lightning Creek u/s Hope Gulch	07/09/2015	0.000093	<0.00050	<0.050	0.11	0.000568	2.52	<0.000010	0.596	0.0701	17.9	<0.000010	<0.00010	<0.00030	0.000064	<0.00050	<0.0010	<0.00030
KV-37	Lightning Creek u/s Hope Gulch	16/10/2015	0.000101	<0.00050	<0.050	0.12	0.000733	2.97	<0.000010	0.739	0.0711	14.2	<0.000010	<0.00010	<0.00030	0.000063	<0.00050	<0.0010	<0.00030
KV-37	Lightning Creek u/s Hope Gulch	14/11/2015	0.000124	<0.00050	<0.050	0.20	0.000644	3.58	<0.000010	0.804	0.0660	11.5	<0.000010	<0.00010	<0.00030	0.000068	<0.00050	0.0012	<0.00030
KV-37	Lightning Creek u/s Hope Gulch	17/12/2015	0.000125	<0.00050	<0.050	0.17	0.000609	3.84	<0.000010	0.915	0.0701	10.7	<0.000010	<0.00010	<0.00030	0.000074	<0.00050	<0.0010	<0.00030
KV-38	Lightning Creek u/s Thunder Gulch	01/08/2014	0.000174	<0.00050	<0.050	0.15	0.00058	2.62	<0.000010	0.885	0.0805	17.1	<0.000010	<0.00010	<0.010	0.000126	<0.0010	0.0121	<0.00080
KV-38	Lightning Creek u/s Thunder Gulch	02/09/2014	0.000155	<0.00050	<0.050	0.11	0.00060	2.36	<0.000010	0.659	0.0818	18.3	<0.000010	<0.00010	<0.010	0.000118	<0.0010	0.0201	<0.00080
KV-38	Lightning Creek u/s Thunder Gulch	16/10/2014	0.000176	<0.00050	<0.050	0.13	0.00075	2.87	<0.000010	0.774	0.0865	18.4	<0.000010	0.00012	<0.010	0.000160	<0.0010	0.0112	<0.00080
KV-38	Lightning Creek u/s Thunder Gulch	13/11/2014	0.000197	<0.00050	<0.050	0.15	0.00081	3.27	<0.000010	0.914	0.0896	17.5	<0.000010	<0.00010	<0.010	0.000181	<0.0010	0.0087	<0.00080
KV-38	Lightning Creek u/s Thunder Gulch	13/12/2014	0.000208	<0.00050	<0.050	0.19	0.00074	3.36	<0.000010	1.00	0.0920	15.9	<0.000010	<0.00010	<0.010	0.000198	<0.0010	0.0073	<0.00080
KV-38	Lightning Creek u/s Thunder Gulch	11/01/2015	0.000231	<0.00050	<0.050	0.15	0.00080	3.42	<0.000010	1.03	0.0922	15.8	<0.000010	<0.00010	<0.010	0.000244	<0.0010	0.0077	<0.00080
KV-38	Lightning Creek u/s Thunder Gulch	05/02/2015	0.000233	<0.00050	<0.050	0.22	0.00081	3.70	<0.000010	1.10	0.0972	16.7	<0.000010	<0.00010	<0.010	0.000260	<0.0010	0.0076	<0.00080
KV-38	Lightning Creek u/s Thunder Gulch	06/03/2015	0.000232	<0.00050	<0.050	0.22	0.00095	3.56	<0.000010	1.31	0.0899	15.7	<0.000010	<0.00010	<0.010	0.000248	<0.0010	0.0104	<0.00080
KV-38	Lightning Creek u/s Thunder Gulch	06/04/2015																	
KV-38	Lightning Creek u/s Thunder Gulch	27/05/2015	0.000098	<0.00050	<0.050	0.14	0.000427	1.51	<0.000010	0.386	0.0443	10.6	<0.000010	<0.00010	<0.00030	0.000038	<0.00050	**0.0310**	<0.00030
KV-38	Lightning Creek u/s Thunder Gulch	16/07/2015	0.000131	<0.00050	<0.050	0.11	0.000597	2.32	<0.000010	0.673	0.0767	17.0	<0.000010	<0.00010	<0.00030	0.000117	<0.00050	0.0133	<0.00030
KV-38	Lightning Creek u/s Thunder Gulch	01/09/2015	0.000163	<0.00050	<0.050	0.11	0.000631	2.30	<0.000010	0.626	0.0781	21.9	<0.000010	<0.00010	<0.00030	0.000109	<0.00050	0.0171	<0.00030
KV-38	Lightning Creek u/s Thunder Gulch	16/10/2015	0.000160	<0.00050	<0.050	0.13	0.000814	2.92	<0.000010	0.850	0.0893	19.4	<0.000010	<0.00010	<0.00030	0.000154	<0.00050	0.0153	<0.00030
KV-39	Hope Gulch u/s Lightning Creek	16/10/2014	0.000416	0.00085	<0.050	0.23	**0.00149**	2.84	<0.000010	1.27	0.150	36.0	<0.000010	<0.00010	<0.010	0.00107	<0.0010	**0.183**	<0.00080
KV-39	Hope Gulch u/s Lightning Creek	05/02/2015																	
KV-39	Hope Gulch u/s Lightning Creek	28/05/2015	0.000200	0.00083	<0.050	0.17	0.000525	1.98	0.000012	0.510	0.0668	14.3	<0.000010	<0.00010	<0.00030	0.000181	<0.00050	**0.196**	<0.00030
KV-39	Hope Gulch u/s Lightning Creek	16/07/2015	0.000373	0.00063	<0.050	0.17	0.000947	2.67	<0.000010	0.913	0.118	25.8	<0.000010	<0.00010	<0.00030	0.000499	<0.00050	**0.140**	<0.00030
KV-39	Hope Gulch u/s Lightning Creek	16/10/2015	0.000367	0.00092	<0.050	0.19	**0.00143**	2.99	<0.000010	1.22	0.144	35.5	<0.000010	<0.00010	<0.00030	0.000853	<0.00050	**0.174**	<0.00030
KV-40	Charity Gulch u/s Lightning Creek	16/10/2014	0.000080	0.00067	<0.050	0.16	**0.00150**	2.98	<0.000010	1.01	0.199	61.6	<0.000010	<0.00010	<0.010	0.000031	<0.0010	0.0038	<0.00080
KV-40	Charity Gulch u/s Lightning Creek	05/02/2015																	
KV-40	Charity Gulch u/s Lightning Creek	28/05/2015	0.000076	0.00321	<0.050	0.15	0.000710	2.57	<0.000010	0.763	0.134	42.3	<0.000010	<0.00010	<0.00030	0.000048	<0.00050	0.0047	<0.00030
KV-40	Charity Gulch u/s Lightning Creek	16/07/2015	0.000064	0.00071	<0.050	0.14	**0.00168**	2.91	<0.000010	0.968	0.173	52.2	<0.000010	<0.00010	<0.00030	0.000034	<0.00050	0.0026	<0.00030
KV-40	Charity Gulch u/s Lightning Creek	16/10/2015	<0.000050	0.00116	<0.050	0.19	**0.00176**	3.01	<0.000010	1.12	0.206	66.0	<0.000010	<0.00010	<0.00030	0.000037	<0.00050	0.0030	<0.00030
KV-41	Lightning Creek u/s Keno City bridge	01/08/2014	0.000207	<0.00050	<0.050	0.18	0.00070	2.74	<0.000010	0.818	0.0812	17.3	<0.000010	<0.00010	<0.010	0.000215	<0.0010	0.0049	<0.00080
KV-41	Lightning Creek u/s Keno City bridge	02/09/2014	0.000169	<0.00050	<0.050	0.14	0.00072	2.50	<0.000010	0.715	0.0800	16.0	<0.000010	<0.00010	<0.010	0.000194	<0.0010	0.0122	<0.00080
KV-41	Lightning Creek u/s Keno City bridge	16/10/2014	0.000185	<0.00050	<0.050	0.15	0.00089	2.83	<0.000010	0.861	0.0876	18.7	<0.000010	<0.00010	<0.010	0.000308	<0.0010	0.0082	<0.00080

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Molybdenum (Mo), dissolved mg/L	Nickel (Ni), dissolved mg/L	Phosphorus (P), dissolved mg/L	Potassium (K), dissolved mg/L	Selenium (Se), dissolved mg/L	Silicon (Si), dissolved mg/L	Silver (Ag), dissolved mg/L	Sodium (Na), dissolved mg/L	Strontium (Sr), dissolved mg/L	Sulphur (S), dissolved mg/L	Thallium (Tl), dissolved mg/L	Tin (Sn), dissolved mg/L	Titanium (Ti), dissolved mg/L	Uranium (U), dissolved mg/L	Vanadium (V), dissolved mg/L	Zinc (Zn), dissolved mg/L	Zirconium (Zr), dissolved mg/L
CCME Guidelines - Protection of Aquatic Life																			
KV-41	Lightning Creek u/s Keno City bridge	13/11/2014	0.000205	<0.00050	<0.050	0.21	**0.00104**	3.10	<0.000010	1.02	0.0936	20.4	<0.000010	<0.00010	<0.010	0.000404	<0.0010	0.0083	<0.00080
KV-41	Lightning Creek u/s Keno City bridge	13/12/2014	0.000209	<0.00050	<0.050	0.21	**0.00105**	3.07	<0.000010	1.10	0.0976	20.2	<0.000010	<0.00010	<0.010	0.000458	<0.0010	0.0073	<0.00080
KV-41	Lightning Creek u/s Keno City bridge	11/01/2015	0.000222	<0.00050	<0.050	0.22	**0.00106**	3.17	<0.000010	2.53	0.105	22.4	<0.000010	<0.00010	<0.010	0.000565	<0.0010	0.0055	<0.00080
KV-41	Lightning Creek u/s Keno City bridge	05/02/2015	0.000218	<0.00050	<0.050	0.21	**0.00115**	3.26	<0.000010	1.23	0.105	23.5	<0.000010	0.00016	<0.010	0.000601	<0.0010	0.0055	<0.00080
KV-41	Lightning Creek u/s Keno City bridge	06/03/2015	0.000240	<0.00050	<0.050	0.31	**0.00134**	3.21	<0.000010	2.62	0.115	27.1	<0.000010	<0.00010	<0.010	0.000736	<0.0010	0.0099	<0.00080
KV-41	Lightning Creek u/s Keno City bridge	06/04/2015	0.000210	<0.00050	<0.050	0.22	**0.00109**	3.27	<0.000010	1.19	0.100	21.6	<0.000010	<0.00010	<0.00030	0.000588	<0.00050	0.0039	<0.00080
KV-41	Lightning Creek u/s Keno City bridge	13/05/2015	0.000137	0.00094	<0.050	0.42	0.000415	1.96	0.000013	0.479	0.0474	8.13	<0.000010	<0.00010	0.00058	0.000155	<0.00050	**0.0330**	<0.00030
KV-41	Lightning Creek u/s Keno City bridge	02/06/2015	0.000141	<0.00050	<0.050	0.11	0.000585	2.23	<0.000010	0.595	0.0610	13.1	<0.000010	<0.00010	<0.00030	0.000121	<0.00050	0.0129	<0.00030
KV-41	Lightning Creek u/s Keno City bridge	29/07/2015	0.000219	<0.00050	<0.050	0.13	0.000617	2.72	<0.000010	0.747	0.0851	17.6	<0.000010	<0.00010	<0.00030	0.000214	<0.00050	0.0064	<0.00030
KV-41	Lightning Creek u/s Keno City bridge	23/08/2015	0.000197	<0.00050	<0.050	0.14	0.000673	2.51	<0.000010	0.654	0.0789	17.6	<0.000010	<0.00010	<0.00030	0.000184	<0.00050	0.0065	<0.00030
KV-41	Lightning Creek u/s Keno City bridge	01/09/2015	0.000191	<0.00050	<0.050	0.15	0.000688	2.44	<0.000010	0.649	0.0731	18.4	<0.000010	<0.00010	<0.00030	0.000162	<0.00050	0.0046	<0.00030
KV-41	Lightning Creek u/s Keno City bridge	18/09/2015																	
KV-41	Lightning Creek u/s Keno City bridge	16/10/2015	0.000190	<0.00050	<0.050	0.18	0.000925	2.89	<0.000010	0.915	0.0875	18.6	<0.000010	<0.00010	<0.00030	0.000271	<0.00050	0.0120	<0.00030
KV-41	Lightning Creek u/s Keno City bridge	15/11/2015	0.000199	<0.00050	<0.050	0.17	0.000950	3.18	<0.000010	0.846	0.0871	19.2	<0.000010	<0.00010	<0.00030	0.000358	<0.00050	0.0058	<0.00030
KV-41	Lightning Creek u/s Keno City bridge	17/12/2015	0.000196	<0.00050	<0.050	0.19	**0.00106**	3.22	<0.000010	0.917	0.0911	19.9	<0.000010	<0.00010	<0.00030	0.000399	<0.00050	0.0046	<0.00030
KV-41	Lightning Creek u/s Keno City bridge	18/12/2015																	
KV-65	Thunder Gulch upstream of Bellekeno	01/08/2014	0.000200	<0.00050	<0.050	0.12	0.00067	2.75	<0.000010	0.692	0.0712	9.97	<0.000010	<0.00010	<0.010	0.000394	<0.0010	0.0117	<0.00080
KV-65	Thunder Gulch upstream of Bellekeno	25/08/2014																	
KV-65	Thunder Gulch upstream of Bellekeno	20/09/2014	0.000232	<0.00050	<0.050	0.13	0.00087	2.83	<0.000010	0.641	0.0818	9.98	<0.000010	<0.00010	<0.010	0.000518	<0.0010	0.0010	<0.00080
KV-65	Thunder Gulch upstream of Bellekeno	26/10/2014	0.000191	<0.00050	<0.050	<0.10	0.00090	2.94	<0.000010	0.656	0.0833	12.8	<0.000010	<0.00010	<0.010	0.000597	<0.0010	0.0024	<0.00080
KV-65	Thunder Gulch upstream of Bellekeno	18/11/2014	0.000219	<0.00050	<0.050	0.15	0.00096	3.02	<0.000010	0.781	0.0932	15.2	<0.000010	<0.00010	<0.010	0.000768	<0.0010	0.0043	<0.00080
KV-65	Thunder Gulch upstream of Bellekeno	14/12/2014	0.000230	<0.00050	<0.050	0.11	**0.00101**	3.12	<0.000010	0.733	0.104	16.3	<0.000010	<0.00010	<0.010	0.000856	<0.0010	0.0032	<0.00080
KV-65	Thunder Gulch upstream of Bellekeno	11/01/2015	0.000261	<0.00050	<0.050	0.21	**0.00105**	3.22	<0.000010	0.871	0.114	19.4	<0.000010	<0.00010	<0.010	0.00109	<0.0010	0.0051	<0.00080
KV-65	Thunder Gulch upstream of Bellekeno	15/02/2015	0.000304	<0.00050	<0.050	0.21	**0.00102**	3.04	<0.000010	1.25	0.136	20.7	<0.000010	<0.00010	<0.010	0.00148	<0.0010	0.0048	<0.00080
KV-65	Thunder Gulch upstream of Bellekeno	06/03/2015	0.000263	<0.00050	<0.050	0.17	**0.00116**	3.22	<0.000010	0.861	0.120	21.0	<0.000010	0.00020	<0.010	0.00120	<0.0010	0.0042	<0.00080
KV-65	Thunder Gulch upstream of Bellekeno	12/04/2015	0.000245	<0.00050	<0.050	0.24	0.000977	3.30	<0.000010	0.862	0.121	22.0	<0.000010	<0.00010	<0.00030	0.00123	<0.00050	0.0047	<0.00030
KV-65	Thunder Gulch upstream of Bellekeno	27/05/2015	0.000080	<0.00050	<0.050	0.11	0.000278	1.51	<0.000010	0.313	0.0252	2.74	<0.000010	<0.00010	<0.00030	0.000086	<0.00050	0.0014	<0.00030
KV-65	Thunder Gulch upstream of Bellekeno	17/06/2015	0.000178	<0.00050	<0.050	0.14	0.000570	2.49	<0.000010	0.523	0.0485	7.31	<0.000010	<0.00010	<0.00030	0.000223	<0.00050	<0.0010	<0.00030
KV-65	Thunder Gulch upstream of Bellekeno	30/07/2015	0.000224	<0.00050	<0.050	0.11	0.000564	2.84	<0.000010	0.621	0.0663	7.54	<0.000010	<0.00010	<0.00030	0.000340	<0.00050	0.0014	<0.00030
KV-65	Thunder Gulch upstream of Bellekeno	23/08/2015	0.000219	<0.00050	<0.050	0.12	0.000639	2.73	<0.000010	0.628	0.0618	7.07	<0.000010	<0.00010	0.00050	0.000312	<0.00050	<0.0010	<0.00030
KV-65	Thunder Gulch upstream of Bellekeno	12/09/2015	0.000151	<0.00050	<0.050	0.22	0.000735	2.86	<0.000010	0.591	0.0588	7.79	<0.000010	<0.00010	<0.00030	0.000266	<0.00050	<0.0010	<0.00030
KV-65	Thunder Gulch upstream of Bellekeno	16/10/2015	0.000180	<0.00050	<0.050	<0.10	0.000958	2.85	<0.000010	0.660	0.0756	9.96	<0.000010	<0.00010	<0.00030	0.000437	<0.00050	0.0013	<0.00030
KV-65	Thunder Gulch upstream of Bellekeno	19/11/2015	0.000239	<0.00050	<0.050	0.12	**0.00101**	3.15	<0.000010	0.710	0.0885	13.8	<0.000010	<0.00010	<0.00030	0.000681	<0.00050	0.0016	<0.00030
KV-65	Thunder Gulch upstream of Bellekeno	17/12/2015	0.000255	<0.00050	<0.050	0.12	0.000911	3.27	<0.000010	0.735	0.102	16.6	<0.000010	<0.00010	<0.00030	0.000755	<0.00050	0.0016	<0.00030
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	06/08/2014																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	21/09/2014																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	28/10/2014	0.000228	<0.00050	<0.050	0.12	**0.00103**	3.07	<0.000010	0.719	0.0976	14.6	<0.000010	<0.00010	<0.010	0.000754	<0.0010	0.0042	<0.00080
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	18/11/2014																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	14/12/2014																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	11/01/2015																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	15/02/2015	0.000272	<0.00050	<0.050	0.20	**0.00102**	3.03	<0.000010	0.799	0.122	24.0	<0.000010	<0.00010	<0.010	0.00143	<0.0010	0.0079	<0.00080
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	12/03/2015																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	14/04/2015																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	13/05/2015	0.000100	0.00096	<0.050	0.46	0.000283	1.57	0.000012	0.331	0.0384	5.11	<0.000010	<0.00010	0.00096	0.000183	<0.00050	0.0100	<0.00030
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	18/06/2015																	

APPENDIX E

Lightning Creek Water Quality Data - August 2014 to December 2015

Station Name	Description	Sample Date	Molybdenum (Mo), dissolved mg/L	Nickel (Ni), dissolved mg/L	Phosphorus (P), dissolved mg/L	Potassium (K), dissolved mg/L	Selenium (Se), dissolved mg/L	Silicon (Si), dissolved mg/L	Silver (Ag), dissolved mg/L	Sodium (Na), dissolved mg/L	Strontium (Sr), dissolved mg/L	Sulphur (S), dissolved mg/L	Thallium (Tl), dissolved mg/L	Tin (Sn), dissolved mg/L	Titanium (Ti), dissolved mg/L	Uranium (U), dissolved mg/L	Vanadium (V), dissolved mg/L	Zinc (Zn), dissolved mg/L	Zirconium (Zr), dissolved mg/L
CCME Guidelines - Protection of Aquatic Life																			
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	29/07/2015	0.000228	<0.00050	<0.050	0.12	0.000554	2.85	<0.000010	0.645	0.0674	9.90	<0.000010	<0.00010	<0.00030	0.000418	<0.00050	0.0016	<0.00030
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	23/08/2015																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	12/09/2015																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	16/10/2015	0.000184	<0.00050	<0.050	0.14	0.000923	2.94	<0.000010	0.697	0.0766	11.2	<0.000010	<0.00010	<0.00030	0.000491	<0.00050	0.0021	<0.00030
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	19/10/2015																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	15/11/2015																	
KV-76	Thunder Gulch d/s Bellekeno 625 Adit	20/12/2015																	
KV-77	Thunder Gulch u/s Bellekeno East	26/10/2014	0.000138	<0.00050	<0.050	<0.10	0.00071	2.61	<0.000010	0.568	0.0568	9.54	<0.000010	<0.00010	<0.010	0.000295	<0.0010	<0.0010	<0.00080
KV-77	Thunder Gulch u/s Bellekeno East	15/02/2015	0.000208	<0.00050	<0.050	0.15	0.00088	2.60	<0.000010	0.682	0.0884	18.0	<0.000010	<0.00010	<0.010	0.000658	<0.0010	0.0022	<0.00080
KV-77	Thunder Gulch u/s Bellekeno East	27/05/2015	0.000062	<0.00050	<0.050	0.12	0.000299	1.49	<0.000010	0.334	0.0231	1.90	<0.000010	<0.00010	<0.00030	0.000068	<0.00050	0.0018	<0.00030
KV-77	Thunder Gulch u/s Bellekeno East	29/07/2015	0.000117	<0.00050	<0.050	<0.10	0.000418	2.63	<0.000010	0.568	0.0482	5.39	<0.000010	<0.00010	<0.00030	0.000140	<0.00050	<0.0010	<0.00030
KV-77	Thunder Gulch u/s Bellekeno East	16/10/2015	0.000144	<0.00050	<0.050	<0.10	0.000832	2.70	<0.000010	0.617	0.0519	7.11	<0.000010	<0.00010	<0.00030	0.000186	<0.00050	<0.0010	<0.00030
KV-81	Lightning Creek southwest of Mill Site	01/08/2014	0.000206	0.00057	<0.050	0.17	0.00063	2.65	<0.000010	0.787	0.0935	17.5	<0.000010	<0.00010	<0.010	0.000284	<0.0010	0.0056	<0.00080
KV-81	Lightning Creek southwest of Mill Site	02/09/2014	0.000164	<0.00050	<0.050	0.15	0.00072	2.46	<0.000010	0.682	0.0867	16.3	<0.000010	<0.00010	<0.010	0.000268	<0.0010	0.0103	<0.00080
KV-81	Lightning Creek southwest of Mill Site	16/10/2014	0.000196	0.00058	<0.050	0.15	0.00085	2.78	<0.000010	0.873	0.0995	19.0	<0.000010	<0.00010	<0.010	0.000424	<0.0010	0.0090	<0.00080
KV-81	Lightning Creek southwest of Mill Site	13/11/2014	0.000212	0.00173	<0.050	0.20	**0.00108**	3.02	<0.000010	0.989	0.103	21.5	<0.000010	0.00133	<0.010	0.000453	<0.0010	0.0188	<0.00080
KV-81	Lightning Creek southwest of Mill Site	13/12/2014	0.000219	0.00104	<0.050	0.17	**0.00104**	3.09	<0.000010	0.973	0.103	20.8	<0.000010	<0.00010	<0.010	0.000534	<0.0010	0.0108	<0.00080
KV-81	Lightning Creek southwest of Mill Site	11/01/2015	0.000214	0.00103	<0.050	0.22	**0.00109**	3.30	<0.000010	12.1	0.105	22.8	<0.000010	<0.00010	<0.010	0.000552	<0.0010	0.0090	<0.00080
KV-81	Lightning Creek southwest of Mill Site	05/02/2015	0.000208	0.00112	<0.050	0.21	**0.00115**	3.13	0.000011	1.24	0.103	22.9	<0.000010	<0.00010	<0.010	0.000600	<0.0010	0.0142	<0.00080
KV-81	Lightning Creek southwest of Mill Site	06/03/2015	0.000210	0.00109	<0.050	0.26	**0.00121**	3.33	<0.000010	1.21	0.106	24.9	<0.000010	<0.00010	<0.010	0.000672	<0.0010	0.0268	<0.00080
KV-81	Lightning Creek southwest of Mill Site	06/04/2015	0.000216	0.00115	<0.050	0.26	**0.00128**	3.23	<0.000010	1.36	0.111	24.0	<0.000010	<0.00010	<0.00030	0.000727	<0.00050	0.0089	<0.00080
KV-81	Lightning Creek southwest of Mill Site	25/05/2015	0.000102	0.00054	<0.050	0.15	0.000392	1.56	<0.000010	0.346	0.0431	8.51	<0.000010	<0.00010	<0.00030	0.000068	<0.00050	0.0203	<0.00030
KV-81	Lightning Creek southwest of Mill Site	18/06/2015	0.000163	<0.00050	<0.050	0.12	0.000670	2.15	<0.000010	0.636	0.0693	15.3	<0.000010	<0.00010	<0.00030	0.000199	<0.00050	0.0060	<0.00030
KV-81	Lightning Creek southwest of Mill Site	27/07/2015	0.000190	<0.00050	<0.050	0.14	0.000646	2.71	<0.000010	0.748	0.0860	16.4	<0.000010	<0.00010	<0.00030	0.000266	<0.00050	0.0060	<0.00030
KV-81	Lightning Creek southwest of Mill Site	23/08/2015	0.000194	<0.00050	<0.050	0.11	0.000702	2.60	<0.000010	0.653	0.0843	17.8	<0.000010	<0.00010	<0.00030	0.000251	<0.00050	0.0069	<0.00030
KV-81	Lightning Creek southwest of Mill Site	12/09/2015	0.000200	0.00056	<0.050	0.12	0.000658	2.52	<0.000010	0.654	0.0791	17.7	<0.000010	<0.00010	<0.00030	0.000255	<0.00050	0.0088	<0.00030
KV-81	Lightning Creek southwest of Mill Site	18/09/2015																	
KV-81	Lightning Creek southwest of Mill Site	16/10/2015	0.000175	0.00054	<0.050	0.17	**0.00109**	2.87	<0.000010	0.853	0.0935	18.7	<0.000010	<0.00010	<0.00030	0.000363	<0.00050	0.0090	<0.00030
KV-81	Lightning Creek southwest of Mill Site	15/11/2015	0.000190	0.00119	<0.050	0.18	0.000979	3.13	<0.000010	0.834	0.0965	19.6	<0.000010	<0.00010	<0.00030	0.000404	<0.00050	0.0121	<0.00030
KV-81	Lightning Creek southwest of Mill Site	16/12/2015	0.000209	0.00076	<0.050	0.18	**0.00107**	3.22	<0.000010	0.923	0.0971	20.4	<0.000010	<0.00010	<0.00030	0.000454	<0.00050	0.0080	<0.00030