NEW GOLD RAINY RIVER MINE
APPENDIX G
2018 FISH TISSUE MONITORING REPORT

Rainy River Project 2018 Fish Tissue Quality Monitoring Program

Prepared for:
New Gold Inc.
Emo, Ontario

Prepared by:
Minnow Environmental Inc.
Georgetown, Ontario

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Rainy River Mine 2018 Fish Tissue Quality Monitoring Program

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ACRONYMS AND ABBREVIATIONS

ANCOVA – Analysis of Covariance

BCMOE – British Columbia Ministry of Environment

COPC – Contaminants of Potential Concern

CPUE – Catch-per-unit-effort

DQR – Data Quality Review

EA – Environmental Assessment

ECA – Environmental Compliance Approval

GPS – Global Position System

MECP – Ministry of the Environment, Conservation, and Parks

QA/QC – Quality Assurance/Quality Control

RRM – Rainy River Mine

TDI – Tolerable Daily Intake

TMA – Tailings Management Area

1 INTRODUCTION

1.1 Site Description

New Gold Inc. owns the Rainy River Mine (RRM), located in northwestern Ontario in the Township of Chapple and District of Rainy River, approximately 65 km northwest of Fort Frances, and approximately 420 km west of Thunder Bay (Figure 1.1). The RRM is located within the Pinewood River watershed. The Pinewood River flows past the RRM and drains into the Rainy River approximately 37 km downstream.

Earliest exploration of the RRM began in 1967. Rainy River Resources Ltd. acquired the project in 2005 and began conducting baseline studies in 2008. The RRM was acquired by New Gold Inc. in 2013 and an Environmental Assessment (EA) report was submitted in 2014 (AMEC 2014). Site construction began following provincial and federal EA approvals in 2015. In 2017, the RRM site construction was completed and the project transitioned to an operational mine which includes an open pit mine, ore storage facilities, a process plant, a Tailings Management Area (TMA), watercourse diversions, site drainage works, a fuel tank farm, explosives manufacturing facilities, explosives storage facilities, and plans for future underground operation. The Rainy River Mine was officially commissioned in September 2017.

Mine construction/operations have had only a moderate influence on surface water quality of the Pinewood River downstream of the RRM (Minnow 2018a). The influence of the RRM was evident in higher conductivity, hardness, calcium, potassium, and sodium in the Pinewood River downstream of the mine property relative to upstream (Minnow 2018a). No other analytes were significantly elevated in Pinewood River water downstream of effluent discharge compared to upstream while the effluent was discharging (September 2015 to December 2017; Minnow 2018a). However, RRM ceased effluent discharge in May 2018, and has no plans for effluent discharge until 2020 at earliest.

1.2 Project Background and Objective

The RRM fish tissue quality monitoring program is one part of RRM's comprehensive environmental monitoring activities and is a requirement of both the Federal EA Approval and provincial Environmental Compliance Approval (ECA). The ECA (Number 5178-9TUPD9) was issued by the Ministry of the Environment, Conservation, and Parks (MECP) on September 1, 2015. This requirement is comprised of two components, a large-bodied and a small-bodied fish tissue quality survey. The large-bodied fish survey is implemented on a three year cycle and the small-bodied fish survey is implemented annually. Due to logistical error, the large-bodied survey was implemented in 2018 and the small-bodied fish survey was not completed in 2018. The monitoring frequencies have been formalized and all stakeholders are

415,000 420,000 425,000 430,000 435,000 440,000

5,415,000 5,410,000 5,405,000

McCallum Creek
617
Tailings Management Area
Emulsion Plant
Transmission Line Route
Explosive Magazine Storage
Marr Road
East Access Road
Water Management Pond
Water Discharge Pond
Aggregate Pit
Process Plant
Korpi Rd.
Constructed Wetland
Marr Creek
Overburden Stockpile
West Creek
Crusher Area
East Mine Rock Stockpile
600
Clark Creek
Gallinger Road
Water Management Discharge Waterline and Service Road
Lostio Creek
West Mine Rock Stockpile
Open Pit
Low Grade Stockpile
Pinewood Lake
Sediment Pond #2
HWY 600 Realignment
Mine Rock Pond
615
Pinewood River
Teeple Road
71
Tait Quarry
HWY 600 Realignment
Tait Road
Blackhawk Road
Heatwole Rd.
Pinewood River
Pinewood River Pumphouse
Water Management Discharge Waterline and Service Road
Tait Road
Barwick Road

MANITOBA
QUEBEC
ONTARIO
Kenora
Rainy River
Rainy River Mine
Thunder Bay
Sault Ste. Marie
Sudbury
Ottawa
Kingston
Toronto
UNITED STATES OF AMERICA

415,000 420,000 425,000 430,000 435,000 440,000

LEGEND

Mine Infrastructure

Contour (10 m)

0 1 2 4 km

N W E S

Projection: North American Datum 1983 UTM Zone 15

Location and Layout, Rainy River Mine

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Figure 1.1

Document Path: S:\Projects\187202\187202.0045 - RRP 2018 Fish Tissue\4 - GIS\Report\18-45 Figure 1 Location and Layout.mxd

aware of the requirements for future surveys with the next large-bodied survey scheduled for 2021 and the small-bodied survey scheduled for 2019.

The objective of the large-bodied fish tissue quality monitoring is to characterize concentrations of contaminants of potential concern (COPCs; arsenic, boron, cadmium, cobalt, copper, chromium, iron, lead, manganese, mercury, molybdenum, nickel, selenium and zinc) in muscle, liver, and ovary tissues of two sentinel sport fish species, northern pike (*Esox lucius*) and walleye (*Sander vitreus*), collected in the Pinewood River downstream of historical effluent discharge. COPC concentration data are used to determine whether the RRM has affected these concentrations, and, if it has, to communicate any potential risk to human health from the consumption of the sentinel sport fish.

1.3 Study Design

The 2018 study included fish tissue quality assessment in the Pinewood River downstream of the RRM extending to approximately 500 m upstream of the confluence with the Rainy River. As required under ECA 5178-9TUPD9, tissue samples from fifteen individuals of two sentinel sport fish species, northern pike and walleye were collected. Three types of tissue were sampled: muscle, liver, and ovary. Data were compared to provincial, federal, and international criteria for the protection of human health (BCMOE 2012, Health Canada 2007, Health Canada 2010, MECP 2015, IRIS 2018) as well as to baseline concentrations (AMEC 2013).

2 METHODS

2.1 Overview

The RRM Fish Tissue Quality Monitoring Program was conducted from September 10th to 14th, 2018. The program focused on fish tissue quality assessment, targeting northern pike and walleye in the Pinewood River downstream of the RRM. All fish collection locations were recorded using a handheld Global Positioning System (GPS) and maps. The locations were chosen based on the results of previous fishing efforts, habitat characteristics preferred by the target species, and access.

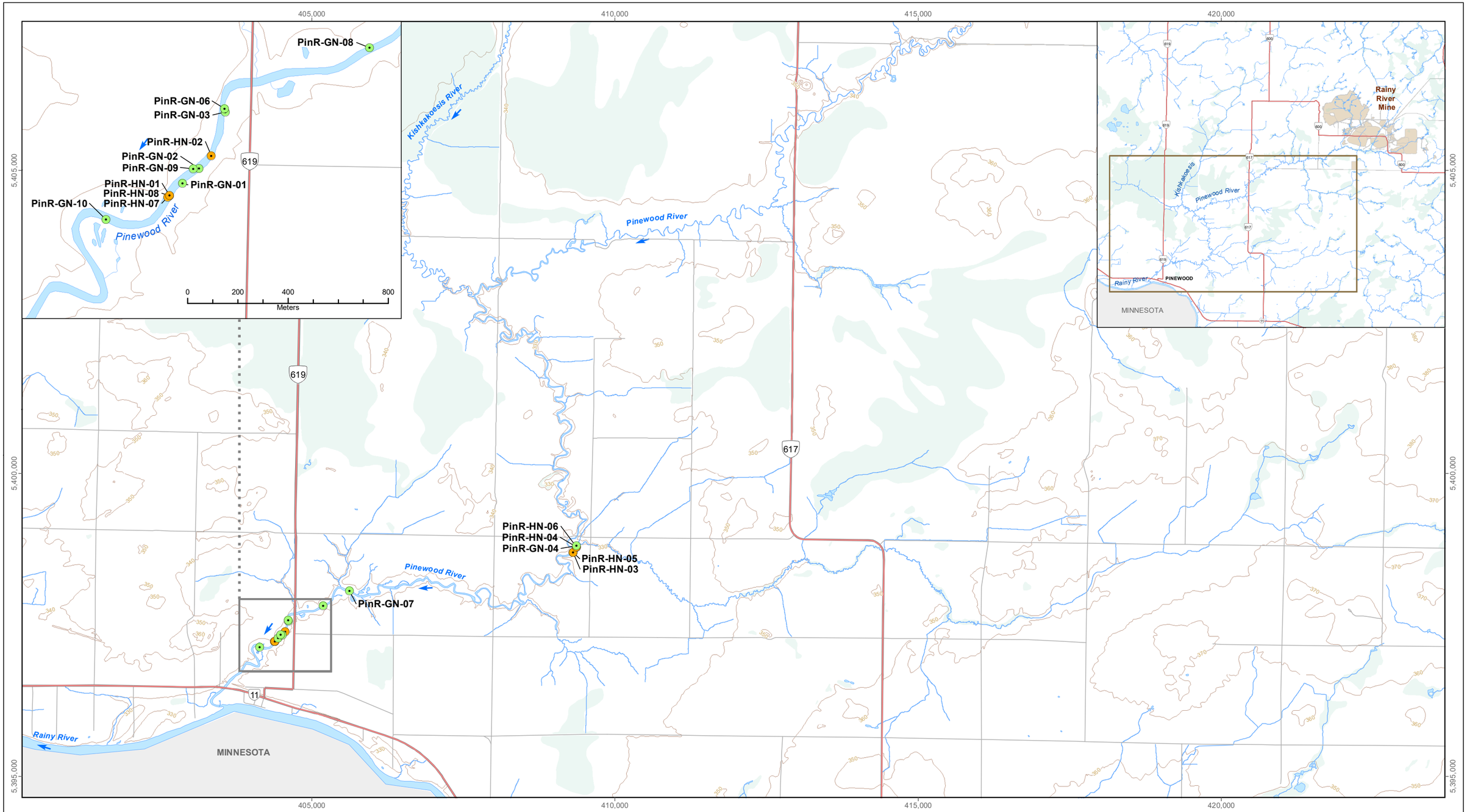
2.2 Field Data Collection

Fish sampling was performed under an Ontario Ministry of Natural Resources and Forestry License to Collect Fish for Scientific Purposes (Licence No. 1090759; Appendix B). Fishing was conducted in the Pinewood River downstream of the RRM using gill nets and hoop nets (Figure 2.1). Gill nets were standard 100-ft lengths with mesh sizes of 3", 4", and 5". Medium hoop nets (0.75 m diameter hoops, 2.5 cm stretched mesh) were used. Time of deployment and retrieval were recorded for every net set. Upon retrieval of each net, captured fish were identified and counted, and results were recorded on catch data sheets. Only northern pike and walleye of edible size were retained for sampling (>30 cm total length, based on MECP recommendations for the Rainy River; MECP 2015). A total of fifteen northern pike and fifteen walleye were retained for detailed assessment. Any live bycatch[1] or additional target species captured were released.

All retained northern pike and walleye were measured to determine length (fork and total) and weight. Lengths were measured to the nearest millimetre on a fish board. Weights were measured to the nearest 1 to 5% of total weight using Pesola™ spring scales. Two aging structures (scales and either cleithra [northern pike] or dorsal spines [walleye]) were collected from each sacrificed fish. Livers and gonads (if developed) were removed using clean implements (cutting boards, fillet knives, and tweezers) and weighed to the nearest 0.001 g (with ± 1% precision) using a Scout Pro balance. Tissue samples of boneless, skinless muscle tissue, whole livers, and whole ovaries (where present and developed) were collected from each fish, placed in clean, labeled Whirl-Pak™ bags, and frozen until analysis.

Upon completion of the sampling program, tissue samples were submitted to ALS Environmental in Thunder Bay, Ontario, along with a chain-of-custody record, a list of expected Lowest Detection Limits (LDLs), and laboratory QA/QC requirements (Appendix A). Aging structures were shipped

[1] Unwanted fish species caught while conducting targeted sampling for a different species (i.e., in this study, any fish species other than northern pike and walleye).



LEGEND

Fishing Method

- Gill Net
- Hoop Net

- Mine Infrastructure
- Contour (10 m)

0 1 2 4 km

N W E S

Fishing Locations, Rainy River Mine, Fish Tissue Quality Monitoring, Fall 2018

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Figure 2.1

to AAE Tech Services Inc. in Winnipeg, Manitoba, along with a chain-of-custody record for determination of fish ages.

2.3 Analysis of Catch and Meristic Data

Fish catch data were compiled and summarized. The catch compilations, along with data on the gill net and hoop net set durations were used to calculate total and species-specific catch-per-unit effort (CPUE) for each capture method in the Pinewood River.

2.4 Analysis of Chemical Data

Upon receipt of the chemical data from ALS, a data quality review (DQR) was performed. This included the assessment of laboratory precision and laboratory accuracy against data quality objectives (DQOs) established at the outset of the project (Appendix A). A minimum of 10% of the analyses represented quality control samples (e.g., laboratory duplicates and certified reference materials). After DQR, summary statistics were calculated for each analyte (i.e., mean, standard deviation, minimum, and maximum).

Mercury is the only metal[2] for which a commercial guideline and various consumption level advisories have been established for fish muscle tissue (Health Canada 2007, BCMOE 2012, MECP 2015). Health Canada has established a standard of 0.5 mg/kg wet weight (ww) as the maximum acceptable concentration of mercury in commercially sold fish, enforceable by the Canadian Food Inspection Agency (Health Canada 2007). Although this guideline is only applicable to commercially sold fish, 0.5 mg/kg ww is also the level at which the MOECP recommends a complete consumption restriction for vulnerable populations (i.e., women of child-bearing age and children under 15; Table 2.1; MECP 2015). In addition to evaluating mercury concentrations relative to health guidelines, relationships between mercury concentrations in fish muscle tissue and age were explored graphically. Mercury concentrations were also compared to previous studies including baseline data collected in 2012 (AMEC 2013).

Summary statistics were calculated for each parameter by year. Summary statistics included sample size, mean, standard deviation, minimum, and maximum values. Means and standard deviations were estimated used the Kaplan-Meier (K-M) method to most appropriately deal with less than laboratory reporting limit data (Helsel 2012). This method involves transforming left-censored data (i.e., data prefaced with a "<" symbol) to right-censored data (i.e., values prefaced with a ">" symbol), and then using the K-M estimator (used to estimate the mean survival time in survival analysis) to estimate the mean. The calculation was completed using the survfit() function in the survival package (Therneau 2017) in R software (R Core Team 2019) and involves

[2] Here and elsewhere in this document, "metal" includes metalloids, such as arsenic and selenium.

Table 2.1: Fish Consumption Advisories for Vulnerable Populations and for the General Population Based on Fish Tissue Mercury Concentrations (MECP 2015)

Advisory recommended maximum number of meals per month	Fish tissue mercury concentration (mg/kg w.w.)	
	As consumed by vulnerable populations [a]	As consumed by the general population
32	0	0
16	0.06	0.15
12	0.12	0.3
8	0.16	0.4
4	0.25	0.6
2	-	1.2
0	0.5	1.8

[a] i.e., women of child-bearing age and children under 15.
Note: w.w. - wet weight.

calculating the area under the K-M survival curve. The K-M method is non-parametric and can accommodate multiple laboratory reporting limits (LRLs). This method of estimating the mean is equivalent to using the distribution of detected values below the maximum LRL to represent values that are <LRL. For example, the mean of the data set {1, 2, <4, 5} is estimated as the mean of 1, 2, [½×1 + ½×2], and 5 which is 2.375. The value <4 is replaced by the distribution of values below 4 (i.e. 1 and 2 with equal weight of ½). Similarly, the mean of the data set {1, 1.6, 2, 2.1, <4, 5} is estimated as the mean of 1, 1.6, 2, 2.1, [¼×1 + ¼×1.6 + ¼×2 + ¼×2.1], and 5 which is 2.229. Again, the value <4 is replaced by the distribution of values below 4 (i.e., 1, 1.6, 2, and 2.1 with equal weight of ¼). If the minimum value in the data set is <LRL then it is replaced with the LRL. Therefore, if there is only one LRL and no detected values <LRL, then the K-M estimate of the mean is equivalent to replacing the value <LRL with the LRL (i.e., the best guess for the values <LRL is the LRL). If a standard deviation could not be estimated (e.g., all data <LRL), then one was not reported.

Concentrations of mercury in muscle, liver, and ovary tissue of northern pike and walleye were plotted versus fork length by species and year using scatterplots because mercury is known to bio-accumulate in fish tissue over time (e.g. Evers et al. 2011, Kidd and Batchelar 2012). Concentrations of mercury in muscle were plotted relative to the Health Canada guideline (Health Canada 2007) of 0.5 mg/kg ww. Statistical comparisons of concentrations of mercury among years (2012, 2015, 2016, 2017, and 2018) were conducted by species using analysis of

covariance (ANCOVA) with fork length as the covariate. An assumption of ANCOVA is that the range of covariate values (i.e., fork length) is similar among groups. The range of fork lengths was therefore truncated for statistical comparisons to provide a similar range of fish sizes among years and to remove the influence of small fish observed in 2012 (northern pike) and 2016 (walleye) on the regression coefficients. For northern pike, comparisons to 2012 were made on fish between 40 and 55 cm fork length, and comparisons among the other years (excluding 2012) were made on fish between 40 and 70 cm. For walleye, comparisons to 2016 were made on fish between 30 and 40 cm fork length, and comparisons among the other years (excluding 2016) were made on fish greater than 30 cm fork length. Fork length and concentrations of mercury were $\log_{10}$-transformed to meet the assumptions of normality of the model residuals.

The ANCOVA analyses were conducted using all data and then supported by comparisons of similar sized fish among years. The first step was to test the significance of the interaction between year and fork length in the ANCOVA interaction model (i.e., a test for equal regression slopes among years). If the regression slopes were significantly different, pairwise comparisons of slopes were conducted among years. In most cases, significant differences among slopes were driven by the range of fish sizes among years and the ANCOVA analyses proceeded on a subset of size or on two subsets of sizes as described above. For the subset analyses, when significantly different regression slopes were observed among years, the conclusion was that there is a difference among years in mean mercury concentration but the magnitude depends on the size of the fish. The magnitude of difference in mercury concentration among years was estimated based on the predicted means from the regression equations at the minimum and maximum values of the range of fork lengths that overlap among years.

For ANCOVA models with similar slopes, the ANCOVA parallel slope model was fit (i.e., the non-significant interaction term was dropped from the model). If fork length was not a significant predictor of mercury concentration in the ANCOVA parallel slope model, mercury concentration was compared among years using an ANOVA with post-hoc comparisons of least-squares means and Tukey's honestly significant differences method for multiple comparisons. If fork length was a significant predictor of mercury concentration in the ANCOVA parallel slope model, the differences in concentrations of mercury among years were assessed with post-hoc comparisons of least-squares means at the average fork length and Tukey's honestly significant differences method for multiple comparisons.

A meaningful ANCOVA analysis of ovary mercury concentrations versus size could not be conducted because too few of the walleye captured in 2018 were mature females and the range of fork lengths of those that were captured were not similar to previous years. Concentrations of mercury in ovary were therefore compared using a Kruskal-Wallis test on concentration between

years, with Dunn's test for pairwise differences. No adjustment was made for multiple comparisons because of the low power of non-parametric tests.

Significant differences were evaluated among years using a compact letter system. Capital letters were assigned to years (e.g., A,B,C) and lower case letters to slopes (e.g. a,b,c) such that years that share a letter are not significantly different. The letters were assigned such that the year with the highest mean (or slope) was assigned the letter "A" (or "a").

A magnitude of difference was calculated relative to the baseline year (defined as the minimum year used in the statistical comparison) as:

$$\text{Magnitude of Difference } \frac{\bar{x}_{\text{i}} - \bar{x}_{\text{baseline}}}{\bar{x}_{\text{baseline}}} \times 100\% ,$$

where $\bar{x}_i$ is the mean for year *i* , $\bar{x}_{baseline}$ is the mean for the baseline year. The magnitude of difference was calculated using length-adjusted means for ANCOVA with parallel slopes, predicted means from regressions by year for the ANCOVA with significantly different slopes, geometric means for the ANOVA, and medians for the Kruskal-Wallis test. All statistical comparisons were conducted using a significance level (α) of 0.05, in R 3.5.0 (R Core Team 2019) using custom functions and the R package emmeans 1.2.1 (Lenth 2018).

Concentrations of selenium in muscle of northern pike and walleye were plotted versus fork length by species and year using scatterplots and relative to the British Columbia Ministry of Environment (BCMOE) consumption guidelines. These guidelines were 1.8 mg/kg ww for a high intake diet and 3.6 mg/kg ww for a moderate intake diet (BCMOE 2012).

Concentrations of other metals in muscle, liver, and ovary tissue were evaluated relative to consumption benchmarks (Table 2.2). These benchmarks were derived based on the lowest reported tolerable daily intake (TDI; Health Canada 2010, IRIS 2018) and established consumption rates for fish eating populations (OHM 1990, Richardson 1997, USEPA 1997, Health Canada 2010), assuming a typical adult body weight of 70 kg, where:

Fish Consumption Limit Benchmark = TDI mg/kg x 70 kg / consumption rate (kg).

Investigations during the initial environmental assessment (EA) determined that the RRM area does not support a significant commercial or recreational fishery and that no traditional activities are currently undertaken within the RRM area by local First Nation and/or Métis people (AMEC 2014). Further discussion with local First Nations community members in August 2016 confirmed that the Pinewood River does not support a significant traditional fishery, and that it is only occasionally used for recreational fishing, with most fishing located near the mouth (Minnow 2017). In light of this, the consumption rate category of 21.8 g/d was used in deriving

Table 2.2: Consumption Benchmarks for Metals (including all COPCs) in Fish Tissue (mg/kg)

Analyte	Tolerable Daily Intake (mg/kg day)[a]	Fish Concentration Benchmarks (mg/kg) Based on		
		6.5 g/day[b]	21.8 g/day[c]	111 g/day[d]
Antimony	0.0004 [e]	4.3	1.3	0.3
Arsenic	0.0003 [e]	3.2	1.0	0.2
Barium	0.2 [e,f]	2,150	642	126
Beryllium	0.002 [e]	21.5	6.4	1.3
Boron	0.0175 [f]	188	56.2	11.0
Cadmium	0.001 [e,f]	10.8	3.2	0.6
Chromium	0.001 [f]	10.8	3.2	0.6
Cobalt	none available	-	-	-
Copper	0.091 [f,h]	980	292	57
Iron	none available	-	-	-
Lead	0.0036 [f]	38.8	11.6	2.3
Manganese	0.122 [f,h]	1,310	392	76.9
Molybdenum	0.005 [e]	53.8	16.1	3.2
Nickel	0.0011 [f,g]	11.8	3.5	0.7
Silver	0.005 [e]	53.8	16.1	3.2
Strontium	0.6 [e]	6,460	1,930	378
Uranium	0.0006 [f]	6.5	1.9	0.4
Zinc	0.3 [e]	3,230	963	189

Selected benchmark.

Note: COPC - Contaminants of Potential Concern.

[a] Where values were reported by both IRIS (2018) and Health Canada (2010), the lowest value was used to derive a conservative benchmark.

[b] USEPA (1997) mean consumption rate for general population; mean value for anglers is 8.0 g/day, 95th percentile for anglers is 25 g/day.

[c] Upper limit consumption rate for Canadian population based on high caloric intake (OHM 1990). Also the highest consumption level considered in development of fish advisories in Ontario.

[d] Health Canada (2010) consumption rate for screening level risk assessments, from Richardson (1997). Exceeds the average value for fishing subsistence populations (70 g/day; USEPA 1997).

[e] IRIS (2018).

[f] Health Canada (2010).

[g] Based on nickel chloride.

[h] Most conservative concentration (tolerable daily intakes are defined on an age-group specific basis).

the benchmarks, representing the upper limit consumption rate for Canadian population based on high caloric intake (Table 2.2; OHM 1990, Richardson 1997).

The consumption rate of 21.8 g/d still results in the derivation of conservative benchmarks, as it is more than double the mean consumption rate for anglers within a general population (8.0 g/d; USEPA 1997). Additionally, 21.8 g/d is the highest consumption level considered in development of fish advisories in Ontario. Benchmarks were derived for COPC for which health criteria or TDI values were available (Table 2.2): antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, molybdenum, nickel, silver, strontium, uranium, and zinc. Of the COPCs, only cobalt and iron do not have applicable health criteria or TDI values (i.e., benchmarks could not be calculated), so concentrations in fish tissues recorded in 2018 were only compared to baseline data.

3 RESULTS

3.1 Fish Communities and Catch-per-unit-effort

A total of seven fish species were captured in the Pinewood River using gill nets and hoop nets (Table 3.1). Walleye were the most abundant large bodied fish, followed by northern pike and black crappie (Table 3.1). Catch-per-unit-effort in 2018 was similar to previous years.

3.2 Northern Pike Tissue Quality

3.2.1 Muscle Tissue Chemistry

Up until May 2018 (when RRM ceased effluent discharge), there had been no detectable mercury concentrations in effluent and receiving water quality samples (Minnow 2018a), suggesting that effluent may not meaningfully contribute to mercury accumulation in Pinewood River fish. Naturally elevated mercury concentrations are often observed in predatory fish species in northern lakes and depositional rivers due to naturally elevated environmental mercury levels, atmospheric deposition of mercury, and biogeochemical conditions that favour mercury methylation (Evers et al. 2011, Kidd and Batchelar 2012). Methylated mercury is biomagnified through the food chain resulting in elevated concentrations in predatory fish species such as northern pike and walleye (Evers et al. 2011, Kidd and Batchelar 2012). In addition to this, methylated mercury has a long residence time in tissues and, with continued exposure, will bioaccumulate over the organism's lifetime (Evers et al. 2011, Kidd and Batchelar 2012). Bioaccumulation in northern pike in the Pinewood River is characterized by the relationship between mercury concentration in muscle tissue and fish size (i.e., fork length) and age (Figures 3.1 and 3.2; Appendix Table B.3).

Northern pike muscle tissue collected in 2018 contained an average mercury concentration below all consumption guidelines (Table 3.2). However, six large fish (ranging in size from 56.1 and 63.9 fork length) had mercury concentrations above consumption guidelines for vulnerable populations (0.5 mg/kg; Figures 3.1 and 3.2; Appendix Table C.5). Despite these exceptions, all mercury concentrations in muscle tissue were well below the complete consumption restriction level for the general population (1.8 mg/kg; Table 2.1, Figures 3.1 and 3.2; MECP 2015). All other metal concentrations in muscle tissue were below established guidelines (established in Section 2.4), including selenium concentrations that were much lower than British Columbia's consumption guidelines (Figure 3.3; BCMOE 2012).

The 2018 mercury concentrations in muscle were compared to 2017, 2016, 2015, and baseline data (2012). The assessment was made by comparing concentrations at length, due to the established relationship between mercury concentrations and fish size (Figures 3.1 and 3.2).

Table 3.1: Summary of Fishing Effort in the Pinewood River, Rainy River Mine Fish Monitoring, 2018

a) Fish catch numbers by sampling method.

Size Class	Species	Gill Nets	Hoop Nets	Total Catch
Large Body	Northern Pike	35	0	35
	Walleye	38	3	41
	Black Crappie	14	13	27
	Brown Bullhead	0	1	1
	Shorthead Redhorse	1	0	1
	White Sucker	0	2	2
	Yellow Perch	0	3	3

b) Catch-per-unit-effort (CPUE) by sampling method.

Size Class	Species	Gill Nets (fish per 100 m*hr)[a]	Hoop Nets (fish per trap*day)[b]
Large Body	Northern Pike	0.54	0.00
	Walleye	0.59	0.40
	Black Crappie	0.22	1.75
	Brown Bullhead	0.00	0.13
	Shorthead Redhorse	0.02	0.00
	White Sucker	0.00	0.27
	Yellow Perch	0.00	0.40
Total CPUE		1.36	2.95

[a] total effort = 64.7 (length*hours/100 m)
[b] total effort = 7.4 (trap * days)

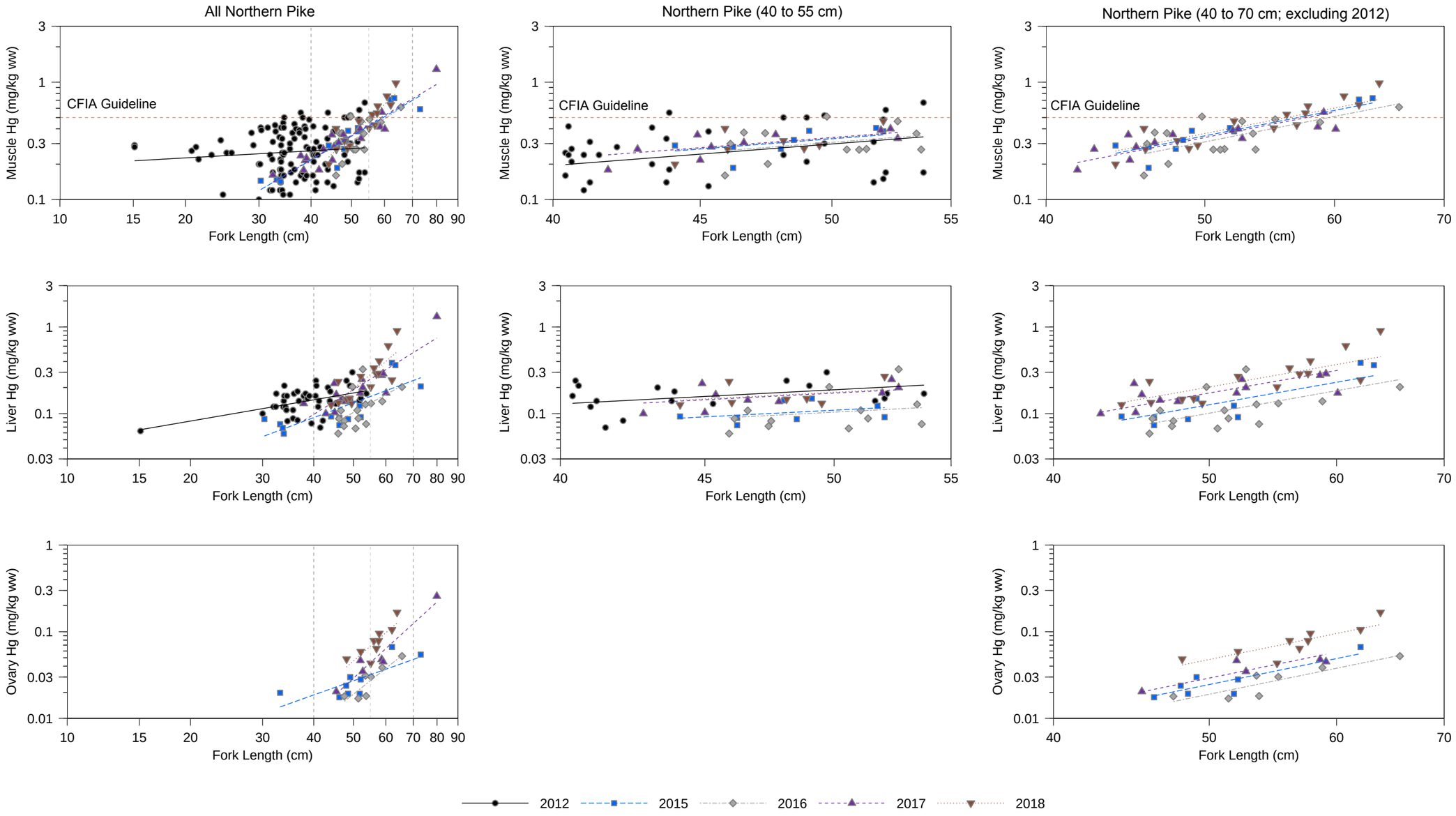

Figure 3.1: Scatterplots of Concentrations of Mercury (Hg) in Muscle, Liver, and Ovary of Northern Pike from Pinewood River, 2012 to 2018

Notes:
Left: all data; Middle: Fish between 40 and 55 cm fit to parallel slope ANCOVA model; Right: Fish > 40 cm (excluding 2012) fit to ANCOVA parallel slope model. Y and X axes are $\log_{10}$-scaled.
Dashed horizonal line = CFIA Guideline of 0.5 mg/kg ww
Dashed vertical lines = cut offs used for examining similar sized fish among years

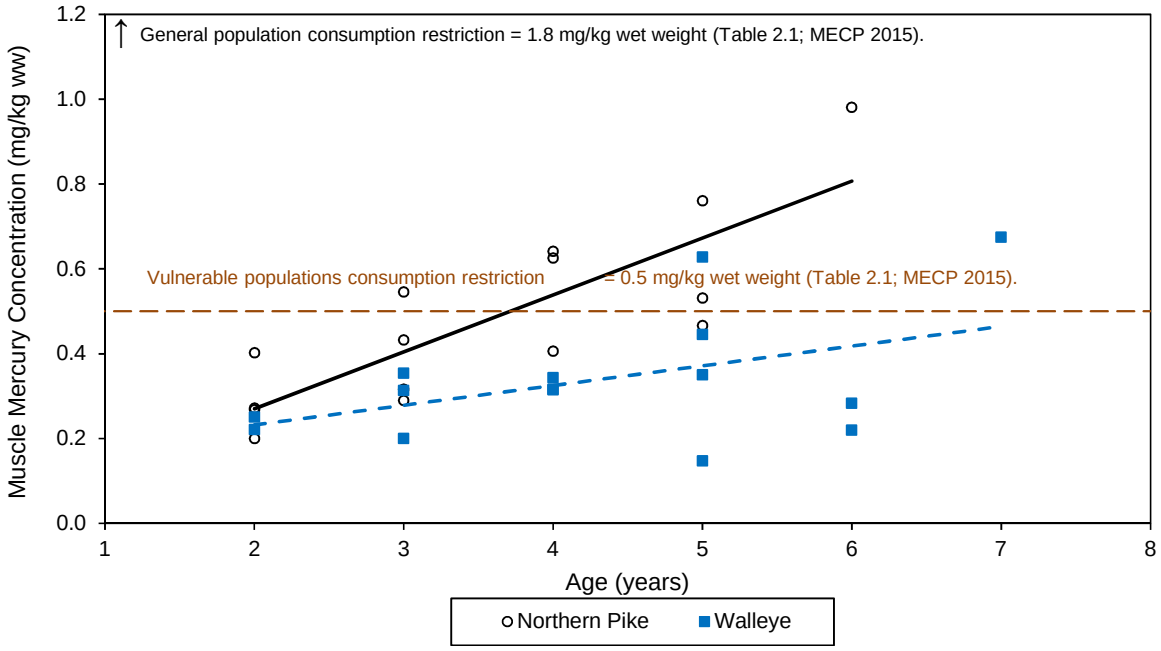

Figure 3.2: Scatterplot and Linear Regression of Muscle Mercury Concentration versus Age for Sentinel Fish from the Pinewood River, Rainy River Mine Fish Quality Tissue Monitoring, 2018

Table 3.2: Metal Concentrations in Northern Pike Muscle Tissue, Rainy River Mine Fish Tissue Quality Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Average (n=15)	SD	Minimum	Maximum
% Moisture	0.25	%	-	79.0	1.0	77.5	80.8
Aluminum (Al)	2.0	mg/kg ww	-	0.676	0.292	<0.400	1.32
Antimony (Sb)	0.010	mg/kg ww	1.3	<0.00200	-	<0.00200	<0.00200
Arsenic (As)	0.020	mg/kg ww	1.0	0.0485	0.0174	0.0276	0.0896
Barium (Ba)	0.050	mg/kg ww	642	0.0671	0.0459	<0.0100	0.182
Beryllium (Be)	0.010	mg/kg ww	6.4	<0.00200	-	<0.00200	<0.00200
Bismuth (Bi)	0.010	mg/kg ww	-	0.00285	0.000516	<0.00200	0.00400
Boron (B)	1.0	mg/kg ww	56.2	<0.200	-	<0.200	<0.200
Cadmium (Cd)	0.0050	mg/kg ww	3.2	0.00124	0.000526	0.000972	0.00257
Calcium (Ca)	20	mg/kg ww	-	313	224	99.7	708
Cesium (Cs)	0.0050	mg/kg ww	-	0.0108	0.00284	0.00577	0.0156
Chromium (Cr)	0.050	mg/kg ww	3.2	0.0104	0.00136	<0.0100	0.0152
Cobalt (Co)	0.020	mg/kg ww	-	0.00488	0.00128	<0.00400	0.00778
Copper (Cu)	0.10	mg/kg ww	292	0.171	0.0351	0.109	0.236
Iron (Fe)	3.0	mg/kg ww	-	3.11	1.06	1.37	4.68
Lead (Pb)	0.020	mg/kg ww	11.6	0.00690	0.00707	0.00396	0.0257
Lithium (Li)	0.50	mg/kg ww	-	<0.100	-	<0.100	<0.100
Magnesium (Mg)	2.0	mg/kg ww	-	305	23.6	263	346
Manganese (Mn)	0.050	mg/kg ww	392	0.366	0.212	0.144	0.733
Mercury (Hg)	0.0050	mg/kg ww	0.5	0.476	0.212	0.200	0.981
Molybdenum (Mo)	0.020	mg/kg ww	16.1	<0.00400	-	<0.00400	<0.00400
Nickel (Ni)	0.20	mg/kg ww	3.5	<0.0400	-	<0.0400	<0.0400
Phosphorus (P)	10	mg/kg ww	-	2,360	222	1,920	2,680
Potassium (K)	20	mg/kg ww	-	4,110	340	3,530	4,700
Rubidium (Rb)	0.050	mg/kg ww	-	6.20	1.14	4.61	8.41
Selenium (Se)	0.050	mg/kg ww	3.6	0.163	0.0167	0.140	0.196
Sodium (Na)	20	mg/kg ww	-	462	137	160	665
Strontium (Sr)	0.050	mg/kg ww	1,930	0.145	0.128	0.0214	0.391
Tellurium (Te)	0.020	mg/kg ww	-	<0.00400	-	<0.00400	<0.00400
Thallium (Tl)	0.0020	mg/kg ww	-	0.00216	0.000729	0.00121	0.00344
Tin (Sn)	0.10	mg/kg ww	-	0.0202	0.000116	<0.0200	0.0219
Uranium (U)	0.0020	mg/kg ww	1.9	<0.000400	-	<0.000400	<0.000400
Vanadium (V)	0.10	mg/kg ww	-	<0.0200	-	<0.0200	<0.0200
Zinc (Zn)	0.50	mg/kg ww	963	4.87	0.968	3.51	6.93
Zirconium (Zr)	0.20	mg/kg ww	-	<0.0400	-	<0.0400	<0.0400

Note: SD = Standard Deviation.
Value > Benchmark
[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).
[b] See Table 2.2 for Consumption Benchmark References.

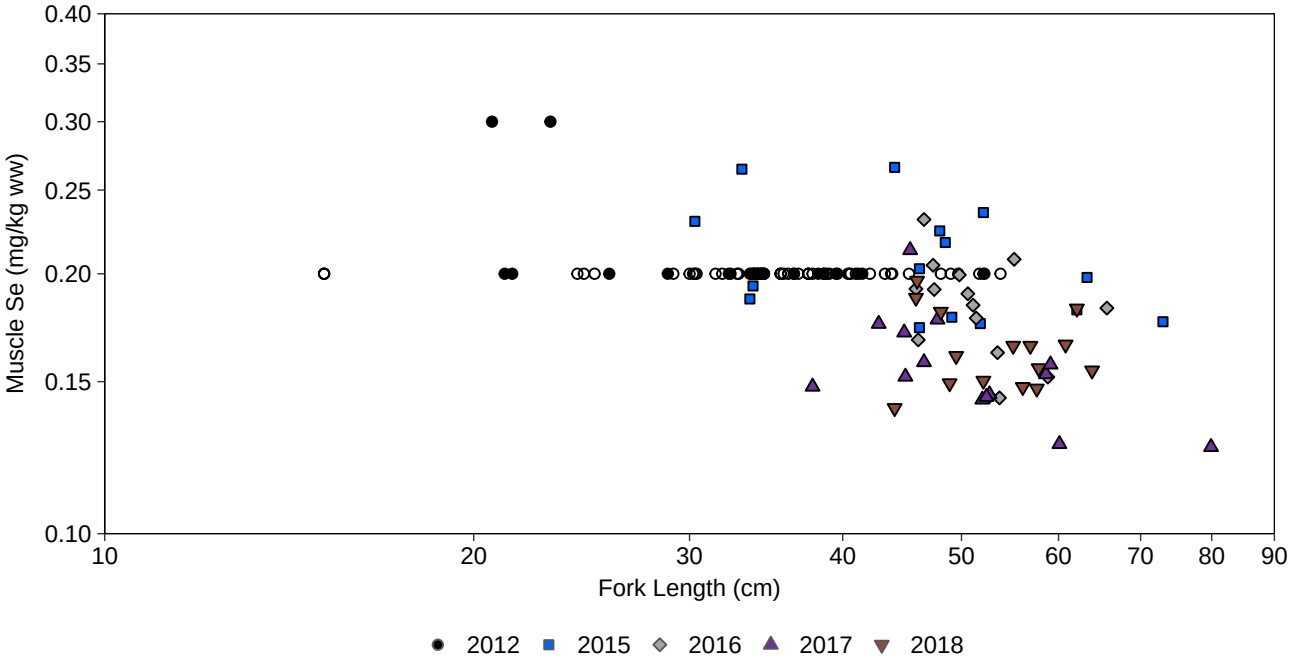

Figure 3.3: Scatterplot of Concentrations of Selenium (Se) in Muscle of Northern Pike from Pinewood River, 2012 to 2018

Notes:
Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. BCMOE Guideline = 1.8 mg/kg ww (high intake) and 3.6 mg/kg ww (moderate intake).

Comparison with previous data showed that mercury concentrations in muscle have generally remained within the same range or lower, despite notably different maximum sizes/ages (Figure 3.1 and Table 3.3; AMEC 2013). Metal concentrations in northern pike muscle tissue in 2018 were within the range of baseline (2012), 2015, 2016, and 2017 concentrations (Table 3.3; AMEC 2013).

The relationship between mercury concentrations in muscle and length were compared statistically among baseline (2012) and the four Fish Tissue Monitoring Programs (2015, 2016, 2017, and 2018; Table 3.4). Mercury concentrations in muscle did not differ significantly among 2012, 2015, 2016, 2017, and 2018 fish (Table 3.4; Figure 3.1).

3.2.2 Liver and Ovary Tissue Chemistry

Fish liver tissue is not recommended for human consumption (MECP 2015). Discussion with local First Nations community members in August 2016 indicated that organs of fish caught in the Pinewood River are not regularly eaten by community members (Minnow 2017). It is unclear whether livers are included with canned northern pike, a process which includes 80% of the fish (Minnow 2017). However, since RRM has regulatory requirements to monitor for key contaminants in northern pike and walleye livers, concentrations of metals in livers were screened against benchmarks to provide perspective on whether this tissue is edible based on chemical quality. Many metals are known to accumulate to higher concentrations in liver tissue than in muscle tissue (e.g., chromium, lead), and liver is more likely to contain quantifiable chemical concentrations (AMEC 2013).

Northern pike liver tissue collected in 2018 contained an average mercury concentration that was well below human consumption benchmarks, however, two individual fish had liver mercury concentrations above consumption guidelines for vulnerable populations (0.5 mg/kg; Table 3.5; Appendix Table C.6). All other metal concentrations in liver tissue were below associated guidelines (Appendix Table C.6). Compared temporally, 2018 metal concentrations in liver were within the range of data from previous studies (2012, 2015, 2016, and 2017) for all metals (Table 3.6; AMEC 2013).

Similar to muscle, mercury concentrations in liver were compared statistically among the 2012, 2015, 2016, and 2018 data. As with muscle, liver mercury concentrations in 2018 were not statistically different than baseline (2012; Table 3.4; Figure 3.1). Additionally, 2018 mercury concentrations in liver were similar to those in 2015 and 2017, but greater than those in 2016 (Table 3.4).

Discussion with local First Nations community members in August 2016 indicated that roe of fish caught in the Pinewood River is not regularly eaten by community members (Minnow 2017).

Table 3.3: Concentrations (mean ± standard deviation) of Contaminants of Potential Concern (COPCs) in Northern Pike Muscle Tissue, Comparing Baseline (2012) and Construction/Operations (2015, 2016, 2017, 2018) Data, Rainy River Mine Fish Tissue Quality Monitoring

COPC	Units	Benchmark[a,b]	Baseline 2012 Data (n = 70; AMEC 2013)	2015 Data (n = 15; Minnow 2016)	2016 Data (n = 15; Minnow 2017)	2017 Data (n = 15; Minnow 2018)	2018 Data (n = 15; This Study)
Arsenic (As)	mg/kg w.w.	1.0	0.10 ± 0	0.0935 ± 0.0198	0.0829 ± 0.0378	0.0688 ± 0.0241	0.0485 ± 0.0174
Boron (B)	mg/kg w.w.	56.2	<0.50 ± 0	<0.200 ± -	<0.200 ± -	<0.200 ± -	<0.200 ± -
Cadmium (Cd)	mg/kg w.w.	3.2	<0.01 ± 0	0.00138 ± 0.00205	0.00118 ± -	0.00103 ± 0.000103	0.00124 ± 0.000526
Chromium (Cr)	mg/kg w.w.	3.2	<0.30 ± 0	0.0176 ± 0.0253	0.0204 ± 0.0227	0.0131 ± 0.00481	0.0104 ± 0.00136
Cobalt (Co)	mg/kg w.w.	-	0.01 ± 0.00051	0.00409 ± 0.000190	0.00411 ± 0.0000819	0.00416 ± -	0.00488 ± 0.00128
Copper (Cu)	mg/kg w.w.	292	0.51 ± 0.048	0.180 ± 0.0404	0.156 ± 0.0305	0.143 ± 0.0737	0.171 ± 0.0351
Iron (Fe)	mg/kg w.w.	-	3.23 ± 0.52	4.00 ± 5.76	1.71 ± 0.359	1.68 ± 0.552	3.11 ± 1.06
Lead (Pb)	mg/kg w.w.	11.6	0.03 ± 0	0.0105 ± 0.0174	0.00415 ± -	0.00432 ± -	0.00690 ± 0.00707
Manganese (Mn)	mg/kg w.w.	392	0.78 ± 0.73	0.417 ± 0.254	0.414 ± 0.303	0.518 ± 0.378	0.366 ± 0.212
Mercury (Hg)	mg/kg w.w.	0.5	0.34 ± 0.11	0.369 ± 0.208	0.364 ± 0.121	0.410 ± 0.248	0.476 ± 0.212
Molybdenum (Mo)	mg/kg w.w.	16.1	0.05 ± 0.012	0.00428 ± 0.000647	<0.00400 ± -	<0.00400 ± -	<0.00400 ± -
Nickel (Ni)	mg/kg w.w.	3.5	0.10 ± 0.44	<0.0400 ± -	<0.0400 ± -	<0.0400 ± -	<0.0400 ± -
Selenium (Se)	mg/kg w.w.	16.1	0.20 ± 0.017	0.205 ± 0.0303	0.181 ± 0.0256	0.157 ± 0.0210	0.163 ± 0.0167
Zinc (Zn)	mg/kg w.w.	963	5.0 ± 1.8	4.99 ± 3.30	4.14 ± 0.957	3.62 ± 0.566	4.87 ± 0.968

Note: w.w. - wet weight.

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1; MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

Table 3.4: Results of Statistical Comparisons of Concentrations of Mercury in Muscle, Liver, and Ovary of Northern Pike from Pinewood River, 2012 to 2018

Species	Tissue	Dataset	Test	Sample Size					ANCOVA Interaction Model	ANCOVA Parallel Slope Model	Covariate Value[a] Fork Length (cm)	Summary Statistic	Value of Statistic (Mean or Median) [b] Hg (mg/kg ww)					Test P-value	Pairwise Comparisons [c]					Magnitude of Difference Relative to Baseline/Earliest Year (%)				
				2012	2015	2016	2017	2018	Interaction P-value	Covariate P-value			2012	2015	2016	2017	2018		2012	2015	2016	2017	2018	Baseline Year[f]	2015	2016	2017	2018
Northern Pike	Muscle	All Data	ANCOVA	112	15	15	19	15	<0.001	-	-	-	-	-	-	-	-	-	slope (b)	slope (a)	slope (ab)	slope (a)	slope (a)	-	-	-	-	-
		40-55 cm [d]	ANCOVA	36	8	12	10	7	0.967	0.002	46.8	Adjusted Mean	0.264	0.292	0.272	0.300	0.296	0.895	A	A	A	A	A	2012	11	3.0	14	12
		40-70 cm (exlcuding 2012) [e]	ANCOVA	-	10	15	13	15	0.189	<0.001	51.4	Adjusted Mean	-	0.383	0.340	0.371	0.401	0.251	-	A	A	A	A	2015	-	-11	-3.2	4.7
	Liver	All Data	ANCOVA	42	15	15	14	15	<0.001	-	-	-	-	-	-	-	-	-	slope (c)	slope (b)	slope (abc)	slope (ab)	slope (a)	-	-	-	-	-
		40-55 cm [d]	ANCOVA	18	8	12	9	7	0.721	0.010	47.4	Adjusted Mean	0.173	0.101	0.0955	0.158	0.162	<0.001	A	BC	C	AB	AB	2012	-42	-45	-8.5	-6.5
		40-70 cm (exlcuding 2012) [e]	ANCOVA	-	10	15	12	15	0.216	<0.001	51.6	Adjusted Mean	-	0.143	0.114	0.196	0.229	<0.001	-	BC	C	AB	A	2015	-	-20	37	60
	Ovary	All Data	ANCOVA	-	9	7	6	9	0.010	-	-	-	-	-	-	-	-	-	-	slope (b)	slope (ab)	slope (a)	slope (ab)	-	-	-	-	-
		40-70 cm [e]	ANCOVA	-	8	7	6	9	0.298	<0.001	55.3	Adjusted Mean	-	0.0342	0.0287	0.0474	0.0726	<0.001	-	BC	C	B	A	2015	-	-16	39	112

P-value < 0.05
Covariate P-value > 0.05 (i.e., fork length is not a significant predictor of Hg concentration)
Year is significantly > baseline year
Year is significantly < baseline year

Notes:
[a] Covariate value that corresponds to the adjusted means or predicted means in the ANCOVA.
[b] Mean reported for t-test; length-adjusted mean or predicted mean reported for ANCOVA, median reported for Mann-Whitney test.
[c] Years that share a letter (A,B,C) are not significantly different (Tukey's honestly significant differences method; α = 0.05); Slopes that share a letter (a,b) are not significantly different (all pairwise comparisons of slopes; α = 0.05).
[d] Range of fork lengths that provides good overlap of fish sizes to compare 2018 to 2012.
[e] Range of fork lengths that provides good overlap of fish sizes to compare 2018 to 2015, 2016, and 2017.
[f] Baseline year denotes measurements prior to mine operatration, (i.e. 2012), for endpoints not collected during this time period (i.e. ovary tissue), baseline denotes the earliest year in the temporal comparisons.

Table 3.5: Metal Concentrations in Northern Pike Liver Tissue, Rainy River Mine Fish Tissue Quality Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Average (n=15)	SD	Minimum	Maximum
% Moisture	0.25	%	-	76.8	3.26	69.1	80.7
Aluminum (Al)	2.0	mg/kg ww	-	1.68	1.50	<0.400	5.15
Antimony (Sb)	0.010	mg/kg ww	1.3	0.00219	0.000739	<0.00200	0.00447
Arsenic (As)	0.020	mg/kg ww	1.0	0.0367	0.0119	0.0206	0.0589
Barium (Ba)	0.050	mg/kg ww	642	0.115	0.0882	0.0260	0.391
Beryllium (Be)	0.010	mg/kg ww	6.4	<0.00200	-	<0.00200	<0.00200
Bismuth (Bi)	0.010	mg/kg ww	-	0.00829	0.00366	0.00328	0.0173
Boron (B)	1.0	mg/kg ww	56.2	<0.200	-	<0.200	<0.200
Cadmium (Cd)	0.0050	mg/kg ww	3.2	0.129	0.117	0.0471	0.444
Calcium (Ca)	20	mg/kg ww	-	83.0	108	27.0	441
Cesium (Cs)	0.0050	mg/kg ww	-	0.00511	0.00134	0.00210	0.00786
Chromium (Cr)	0.050	mg/kg ww	3.2	0.0112	0.00114	<0.0100	0.0179
Cobalt (Co)	0.020	mg/kg ww	-	0.0628	0.0301	0.0333	0.133
Copper (Cu)	0.10	mg/kg ww	292	35.3	18.4	11.1	78.1
Iron (Fe)	3.0	mg/kg ww	-	192	145	18.7	484
Lead (Pb)	0.020	mg/kg ww	11.6	0.00431	0.000883	<0.00400	0.00736
Lithium (Li)	0.50	mg/kg ww	-	<0.100	-	<0.100	<0.100
Magnesium (Mg)	2.0	mg/kg ww	-	153	22.8	124	190
Manganese (Mn)	0.050	mg/kg ww	392	1.37	0.449	0.632	2.48
Mercury (Hg)	0.0050	mg/kg ww	0.5	0.297	0.210	0.126	0.903
Molybdenum (Mo)	0.020	mg/kg ww	16.1	0.220	0.0578	0.0842	0.311
Nickel (Ni)	0.20	mg/kg ww	3.5	0.0411	0.00332	<0.0400	0.0526
Phosphorus (P)	10	mg/kg ww	-	2,580	514	1,810	3,280
Potassium (K)	20	mg/kg ww	-	2,500	414	1,640	3,020
Rubidium (Rb)	0.050	mg/kg ww	-	6.17	1.71	3.27	10.1
Selenium (Se)	0.050	mg/kg ww	3.6	1.99	0.261	1.55	2.37
Sodium (Na)	20	mg/kg ww	-	962	220	607	1,480
Strontium (Sr)	0.050	mg/kg ww	1,930	0.0657	0.0813	<0.0100	0.333
Tellurium (Te)	0.020	mg/kg ww	-	0.00471	0.00169	<0.00400	0.00894
Thallium (Tl)	0.0020	mg/kg ww	-	0.00272	0.000794	0.00185	0.00471
Tin (Sn)	0.10	mg/kg ww	-	0.0420	0.0457	<0.0200	0.210
Uranium (U)	0.0020	mg/kg ww	1.9	0.000895	0.000800	<0.000400	0.00369
Vanadium (V)	0.10	mg/kg ww	-	0.394	0.299	0.0720	1.05
Zinc (Zn)	0.50	mg/kg ww	963	48.0	11.2	27.5	67.8
Zirconium (Zr)	0.20	mg/kg ww	-	<0.0400	-	<0.0400	<0.0400

Note: SD = Standard Deviation.
Value > Benchmark
[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).
[b] See Table 2.2 for Consumption Benchmark References.

Table 3.6: Concentrations (mean ± standard deviation) of Contaminants of Potential Concern (COPCs) in Northern Pike Liver Tissue, Comparing Baseline (2012) and Construction/Operations (2015, 2016, 2017, 2018) Data, Rainy River Mine Fish Tissue Quality Monitoring

COPC	Units	Benchmark[a,b]	Baseline 2012 Data (n = 70; AMEC 2013)	2015 Data (n = 15; Minnow 2016)	2016 Data (n = 15; Minnow 2017)	2017 Data (n = 15; Minnow 2018)	2018 Data (n = 15; This Study)
Arsenic (As)	mg/kg w.w.	1.0	0.10 ± 0.013	0.0424 ± 0.0202	0.0383 ± 0.0135	0.0358 ± 0.0174	0.0367 ± 0.0119
Boron (B)	mg/kg w.w.	56.2	<0.50 ± 0	<0.200 ± -	<0.200 ± -	<0.200 ± -	<0.200 ± -
Cadmium (Cd)	mg/kg w.w.	3.2	0.051 ± 0.050	0.0528 ± 0.0371	0.0697 ± 0.0485	0.0980 ± 0.0509	0.129 ± 0.117
Chromium (Cr)	mg/kg w.w.	3.2	<0.30 ± 0	0.0193 ± 0.0437	0.0109 ± -	0.0332 ± 0.0797	0.0112 ± 0.00114
Cobalt (Co)	mg/kg w.w.	-	0.056 ± 0.057	0.0425 ± 0.0166	0.0489 ± 0.0175	0.0579 ± 0.0208	0.0628 ± 0.0301
Copper (Cu)	mg/kg w.w.	292	13 ± 9.3	24.2 ± 12.4	23.7 ± 10.6	31.1 ± 9.13	35.3 ± 18.4
Iron (Fe)	mg/kg w.w.	-	112 ± 73	116 ± 111	197 ± 165	143 ± 110	192 ± 145
Lead (Pb)	mg/kg w.w.	11.6	0.031 ± 0.0075	0.0375 ± 0.129	0.00417 ± -	0.00474 ± 0.00145	0.00431 ± 0.000883
Manganese (Mn)	mg/kg w.w.	392	1.5 ± 0.49	1.49 ± 0.595	1.11 ± 0.360	1.23 ± 0.384	1.37 ± 0.449
Mercury (Hg)	mg/kg w.w.	0.5	0.18 ± 0.16	0.140 ± 0.101	0.126 ± 0.0688	0.253 ± 0.290	0.297 ± 0.210
Molybdenum (Mo)	mg/kg w.w.	16.1	0.17 ± 0.046	0.145 ± 0.0432	0.174 ± 0.0528	0.206 ± 0.0590	0.220 ± 0.0578
Nickel (Ni)	mg/kg w.w.	3.5	0.05 ± 0	<0.0400 ± -	0.0424 ± 0.0108	0.0472 ± -	0.0411 ± 0.00332
Selenium (Se)	mg/kg w.w.	16.1	1.3 ± 0.39	1.49 ± 0.381	1.70 ± 0.443	2.20 ± 0.675	1.99 ± 0.261
Zinc (Zn)	mg/kg w.w.	963	34 ± 13	45.6 ± 15.9	36.9 ± 9.63	44.3 ± 5.78	48.0 ± 11.2

Note: w.w. - wet weight.

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1; MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

Despite this, concentrations of metals in ovaries were screened against benchmarks to provide perspective on whether this tissue would be safe to eat based on chemical quality. Some metals are known to accumulate to higher concentrations in ovary tissue than in muscle tissue (e.g., selenium; Janz 2012).

Screening of 2018 ovary tissue results showed that ovaries contained metal concentrations that were below human consumption benchmarks for metals with established TDI values or a provincial/commercial guideline (Table 3.7; Appendix Table C.7). Average ovary concentrations of northern pike collected in 2018 were within the range of fish collected in 2015 and 2016 for all metals (Table 3.8).

As with muscle and liver, mercury concentrations in ovary tissue were compared statistically among the four Fish Tissue Monitoring Programs[3] (2015, 2016, 2017, and 2018). Mercury concentrations in ovary tissue in 2018 were significantly higher than in 2015, 2016, and 2017, (Table 3.4, Figure 3.1). This relationship cannot be explained by fish size or age, and should be monitored moving forward. It should be noted that this relationship was not observed in muscle or liver tissue where it would normally be expected (Evers et al. 2011, Kidd and Batchelar 2012), thereby making these findings equivocal.

3.3 Walleye Tissue Quality

3.3.1 Muscle Tissue Chemistry

Average mercury concentrations in walleye muscle for 2018 were below human consumption benchmarks, however two large individuals were above consumption guidelines for vulnerable populations (0.5 mg/kg; Table 3.9; Appendix Table C.5). Despite these higher mercury concentrations, all walleye muscle tissue were well below the complete consumption restriction level for the general population (1.8 mg/kg; Table 2.1, Figure 3.4; MECP 2015). Walleye muscle metal concentrations for all other metals were below associated guidelines (Appendix Table C.5). Metal concentrations in 2018 walleye muscle tissue were within the range of data for all previous studies (Table 3.10; AMEC 2013). Additionally, selenium concentrations in walleye muscle tissue were much lower than British Columbia's consumption guidelines (Figure 3.5; BCMOE 2012).

The 2018 mercury concentrations in muscle were compared to previous data (2017 and 2016; Figure 3.4). Similar to northern pike, the assessment was made by comparing concentrations at length. Comparison with previous data showed that concentrations have generally remained within the same range, despite notably different maximum sizes/ages (Figures 3.2 and 3.4; AMEC 2013). As with northern pike, the longest/oldest walleye captured in the 2018 study was

[3] Ovary tissue was not collected in 2012.

Table 3.7: Metal Concentrations in Northern Pike Ovary Tissue, Rainy River Mine Fish Tissue Quality Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Average (n=7)	SD	Minimum	Maximum
% Moisture	0.25	%	-	83.2	0.542	82.3	84.1
Aluminum (Al)	2.0	mg/kg ww	-	0.814	0.658	<0.400	2.43
Antimony (Sb)	0.010	mg/kg ww	1.3	0.00218	-	<0.00200	0.00365
Arsenic (As)	0.020	mg/kg ww	1.0	0.0252	0.00590	0.0152	0.0329
Barium (Ba)	0.050	mg/kg ww	642	0.0834	0.0683	0.0187	0.242
Beryllium (Be)	0.010	mg/kg ww	6.4	<0.00200	-	<0.00200	<0.00200
Bismuth (Bi)	0.010	mg/kg ww	-	0.00209	-	<0.00200	0.00284
Boron (B)	1.0	mg/kg ww	56.2	<0.200	-	<0.200	<0.200
Cadmium (Cd)	0.0050	mg/kg ww	3.2	0.0105	0.00465	0.00518	0.0202
Calcium (Ca)	20	mg/kg ww	-	137	58.5	77.9	277
Cesium (Cs)	0.0050	mg/kg ww	-	0.00848	0.00163	0.00642	0.0120
Chromium (Cr)	0.050	mg/kg ww	3.2	0.0104	0.00345	0.00811	0.0182
Cobalt (Co)	0.020	mg/kg ww	-	0.0699	0.0226	0.0444	0.107
Copper (Cu)	0.10	mg/kg ww	292	1.05	0.167	0.762	1.20
Iron (Fe)	3.0	mg/kg ww	-	43.2	14.8	21.0	67.6
Lead (Pb)	0.020	mg/kg ww	11.6	0.00503	-	<0.00400	0.0133
Lithium (Li)	0.50	mg/kg ww	-	<0.100	-	<0.100	<0.100
Magnesium (Mg)	2.0	mg/kg ww	-	202	32.0	127	234
Manganese (Mn)	0.050	mg/kg ww	392	26.9	9.47	12.0	40.4
Mercury (Hg)	0.0050	mg/kg ww	0.5	0.0822	0.0379	0.0432	0.167
Molybdenum (Mo)	0.020	mg/kg ww	16.1	0.0535	0.0141	0.0254	0.0772
Nickel (Ni)	0.20	mg/kg ww	3.5	<0.0400	-	<0.0400	<0.0400
Phosphorus (P)	10	mg/kg ww	-	2,780	362	2,020	3,130
Potassium (K)	20	mg/kg ww	-	3,540	465	2,760	4,000
Rubidium (Rb)	0.050	mg/kg ww	-	6.02	0.804	5.05	7.32
Selenium (Se)	0.050	mg/kg ww	3.6	0.649	0.177	0.514	1.08
Sodium (Na)	20	mg/kg ww	-	868	111	655	1,000
Strontium (Sr)	0.050	mg/kg ww	1,930	0.0756	0.0337	0.0451	0.144
Tellurium (Te)	0.020	mg/kg ww	-	<0.00400	-	<0.00400	<0.00400
Thallium (Tl)	0.0020	mg/kg ww	-	0.00288	0.000759	0.00187	0.00398
Tin (Sn)	0.10	mg/kg ww	-	0.0189	0.00139	0.0186	0.0217
Uranium (U)	0.0020	mg/kg ww	1.9	0.000408	-	<0.000400	0.000468
Vanadium (V)	0.10	mg/kg ww	-	0.0624	0.0345	<0.0200	0.113
Zinc (Zn)	0.50	mg/kg ww	963	59.6	8.93	39.7	67.2
Zirconium (Zr)	0.20	mg/kg ww	-	<0.0400	-	<0.0400	<0.0400

Note: SD = Standard Deviation.
Value > Benchmark
[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).
[b] See Table 2.2 for Consumption Benchmark References.

Table 3.8: Concentrations (mean ± standard deviation) of Contaminants of Potential Concern (COPCs) in Northern Pike Ovary Tissue, Comparing Construction/Operations (2015, 2016, 2017, 2018) Data, Rainy River Mine Fish Tissue Quality Monitoring

COPC	Units	Benchmark[a,b]	2015 Data (n = 9; Minnow 2016)	2016 Data (n = 7; Minnow 2017)	2017 Data (n = 7; Minnow 2018)	2018 Data (n = 9; This Study)
Arsenic (As)	mg/kg w.w.	1.0	0.0250 ± 0.00531	0.0201 ± 0.0121	0.0188 ± 0.00427	0.0252 ± 0.00590
Boron (B)	mg/kg w.w.	56.2	<0.200 ± -	<0.200 ± -	<0.200 ± -	<0.200 ± -
Cadmium (Cd)	mg/kg w.w.	3.2	0.00751 ± 0.00244	0.00552 ± 0.00271	0.00981 ± 0.00308	0.0105 ± 0.00465
Chromium (Cr)	mg/kg w.w.	3.2	0.0122 ± -	0.0206 ± 0.0178	<0.0100 ± -	0.0104 ± 0.00345
Cobalt (Co)	mg/kg w.w.	-	0.0653 ± 0.0159	0.0533 ± 0.0200	0.0545 ± 0.0161	0.0699 ± 0.0226
Copper (Cu)	mg/kg w.w.	292	1.17 ± 0.158	1.26 ± 0.128	0.936 ± 0.145	1.05 ± 0.167
Iron (Fe)	mg/kg w.w.	-	54.6 ± 10.5	50.2 ± 8.45	39.8 ± 11.0	43.2 ± 14.8
Lead (Pb)	mg/kg w.w.	11.6	0.00621 ± 0.00791	<0.00400 ± -	<0.00400 ± -	0.00503 ± -
Manganese (Mn)	mg/kg w.w.	392	34.1 ± 11.9	32.3 ± 7.41	22.0 ± 5.14	26.9 ± 9.47
Mercury (Hg)	mg/kg w.w.	0.5	0.0333 ± 0.0182	0.0304 ± 0.0126	0.0698 ± 0.0831	0.0822 ± 0.0379
Molybdenum (Mo)	mg/kg w.w.	16.1	0.0403 ± 0.00806	0.0532 ± 0.00955	0.0407 ± 0.0138	0.0535 ± 0.0141
Nickel (Ni)	mg/kg w.w.	3.5	<0.0400 ± -	0.0410 ± 0.00692	<0.0400 ± -	<0.0400 ± -
Selenium (Se)	mg/kg w.w.	16.1	1.17 ± 0.271	0.948 ± 0.330	1.17 ± 0.981	0.649 ± 0.177
Zinc (Zn)	mg/kg w.w.	963	78.4 ± 19.3	70.3 ± 11.6	69.3 ± 7.78	59.6 ± 8.93

Note: w.w. - wet weight.

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1; MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

Table 3.9: Metal Concentrations in Walleye Muscle Tissue, Rainy River Mine Fish Tissue Quality Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Average (n=15)	SD	Minimum	Maximum
% Moisture	0.25	%	-	78.8	0.621	77.8	80.2
Aluminum (Al)	2.0	mg/kg ww	-	0.690	0.657	<0.400	2.88
Antimony (Sb)	0.010	mg/kg ww	1.3	<0.00200	-	<0.00200	<0.00200
Arsenic (As)	0.020	mg/kg ww	1.0	0.0420	0.0110	0.0192	0.0670
Barium (Ba)	0.050	mg/kg ww	642	0.0579	0.0198	0.0402	0.104
Beryllium (Be)	0.010	mg/kg ww	6.4	<0.00200	-	<0.00200	<0.00200
Bismuth (Bi)	0.010	mg/kg ww	-	0.00251	0.000683	<0.00200	0.00469
Boron (B)	1.0	mg/kg ww	56.2	<0.200	-	<0.200	<0.200
Cadmium (Cd)	0.0050	mg/kg ww	3.2	<0.00100	-	<0.00100	<0.00100
Calcium (Ca)	20	mg/kg ww	-	167	107	79.1	519
Cesium (Cs)	0.0050	mg/kg ww	-	0.0119	0.00285	0.00721	0.0191
Chromium (Cr)	0.050	mg/kg ww	3.2	0.0112	0.00566	<0.0100	0.0270
Cobalt (Co)	0.020	mg/kg ww	-	<0.00400	-	<0.00400	<0.00400
Copper (Cu)	0.10	mg/kg ww	292	0.139	0.0288	0.114	0.228
Iron (Fe)	3.0	mg/kg ww	-	1.84	0.775	1.11	4.24
Lead (Pb)	0.020	mg/kg ww	11.6	0.00687	0.0107	<0.00400	0.0415
Lithium (Li)	0.50	mg/kg ww	-	<0.100	-	<0.100	<0.100
Magnesium (Mg)	2.0	mg/kg ww	-	335	23.1	301	377
Manganese (Mn)	0.050	mg/kg ww	392	0.139	0.0322	0.0867	0.204
Mercury (Hg)	0.0050	mg/kg ww	0.5	0.337	0.147	0.147	0.674
Molybdenum (Mo)	0.020	mg/kg ww	16.1	<0.00400	-	<0.00400	<0.00400
Nickel (Ni)	0.20	mg/kg ww	3.5	<0.0400	-	<0.0400	<0.0400
Phosphorus (P)	10	mg/kg ww	-	2,470	177	2,250	2,800
Potassium (K)	20	mg/kg ww	-	4,840	272	4,550	5,460
Rubidium (Rb)	0.050	mg/kg ww	-	11.0	2.43	8.06	18.0
Selenium (Se)	0.050	mg/kg ww	3.6	0.219	0.0381	0.167	0.304
Sodium (Na)	20	mg/kg ww	-	310	93.9	202	485
Strontium (Sr)	0.050	mg/kg ww	1,930	0.0386	0.0356	0.0148	0.152
Tellurium (Te)	0.020	mg/kg ww	-	<0.00400	-	<0.00400	<0.00400
Thallium (Tl)	0.0020	mg/kg ww	-	0.00337	0.000768	0.00240	0.00502
Tin (Sn)	0.10	mg/kg ww	-	<0.0200	-	<0.0200	<0.0200
Uranium (U)	0.0020	mg/kg ww	1.9	0.000424	-	<0.000400	0.000767
Vanadium (V)	0.10	mg/kg ww	-	<0.0200	-	<0.0200	<0.0200
Zinc (Zn)	0.50	mg/kg ww	963	3.20	0.353	2.63	3.65
Zirconium (Zr)	0.20	mg/kg ww	-	<0.0400	-	<0.0400	<0.0400

Note: SD = Standard Deviation.
Value > Benchmark
[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).
[b] See Table 2.2 for Consumption Benchmark References.

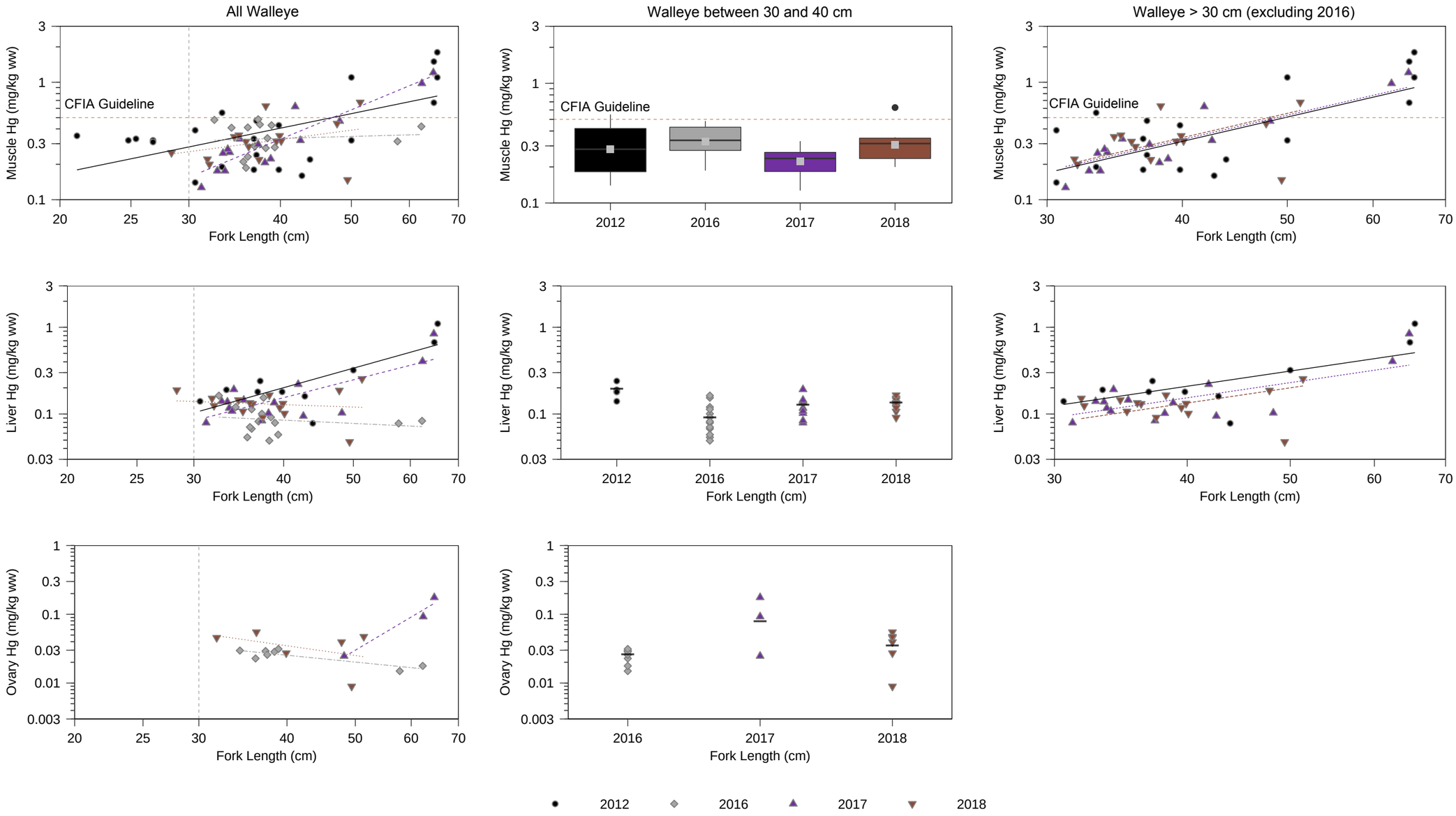

Figure 3.4: Scatterplots, Boxplots, or Individual Value Plots of Concentrations of Mercury (Hg) in Muscle, Liver, and Ovary of Walleye from Pinewood River, 2012 to 2018

Notes:
Left: All data; Middle: Fish between 30 and 40 cm used in ANOVA or Kruskal-Wallis comparisons; Right: Fish > 30 cm and excluding 2016, fit to ANCOVA parallel slope model
Boxplots: box represents the first quartile (Q1), the median, and Q3. Whiskers extend to the minimum and maximum values; however, values above Q3 + 1.5IQR or below Q1 − 1.5IQR are plotted as individual points (IQR = Q3 − Q1) and the whiskers are truncated to the next value in the dataset. The mean is plotted as a square.
Dashed horizonal line = CFIA Guidleine of 0.5 mg/kg ww
Dashed vertical line = cut off used for examining similar sized fish among years

Table 3.10: Concentrations (mean ± standard deviation) of Contaminants of Potential Concern (COPCs) in Walleye Muscle Tissue, Comparing Baseline (2012) and Construction/Operations (2015, 2016, 2017, 2018) Data, Rainy River Mine Fish Tissue Quality Monitoring

COPC	Units	Benchmark[a,b]	Baseline 2012 Data (n = 15; AMEC 2013)	2015 Data (n = 1; Minnow 2016)	2016 Data (n = 15; Minnow 2017)	2017 Data (n = 15; Minnow 2018)	2018 Data (n = 15; This Study)
Arsenic (As)	mg/kg w.w.	1.0	0.1 ± 0	0.102	0.0374 ± 0.0111	0.0476 ± 0.0217	0.0420 ± 0.0110
Boron (B)	mg/kg w.w.	56.2	<0.5 ± 0	<0.200	<0.200 ± -	<0.200 ± -	<0.200 ± -
Cadmium (Cd)	mg/kg w.w.	3.2	<0.01 ± 0	<0.00100	<0.00100 ± -	0.00104 ± -	<0.00100 ± -
Chromium (Cr)	mg/kg w.w.	3.2	<0.3 ± 0	<0.0100	0.0116 ± -	0.0101 ± 0.000576	0.0112 ± 0.00566
Cobalt (Co)	mg/kg w.w.	-	<0.005 ± 0	<0.00400	<0.00400 ± -	<0.00400 ± -	<0.00400 ± -
Copper (Cu)	mg/kg w.w.	292	0.54 ± 0.15	0.146	0.135 ± 0.0240	0.120 ± 0.0157	0.139 ± 0.0288
Iron (Fe)	mg/kg w.w.	-	3.2 ± 0.56	2.15	1.03 ± 0.344	1.60 ± 0.347	1.84 ± 0.775
Lead (Pb)	mg/kg w.w.	11.6	<0.03 ± 0	0.00669	<0.00400 ± -	0.00508 ± 0.00127	0.00687 ± 0.0107
Manganese (Mn)	mg/kg w.w.	392	0.31 ± 0.03	0.163	0.0906 ± 0.0162	0.118 ± 0.0454	0.139 ± 0.0322
Mercury (Hg)	mg/kg w.w.	0.5	0.57 ± 0.50	0.299	0.358 ± 0.0997	0.479 ± 0.384	0.337 ± 0.147
Molybdenum (Mo)	mg/kg w.w.	16.1	<0.05 ± 0	<0.00400	<0.00400 ± -	<0.00400 ± -	<0.00400 ± -
Nickel (Ni)	mg/kg w.w.	3.5	<0.05 ± 0	<0.0400	0.0500 ± 0.00640	0.0678 ± 0.146	<0.0400 ± -
Selenium (Se)	mg/kg w.w.	16.1	0.21 ± 0.04	0.295	0.207 ± 0.0226	0.219 ± 0.0399	0.219 ± 0.0381
Zinc (Zn)	mg/kg w.w.	963	3.5 ± 0.6	3.16	2.78 ± 0.280	2.59 ± 0.300	3.20 ± 0.353

Note: w.w. - wet weight.

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1; MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

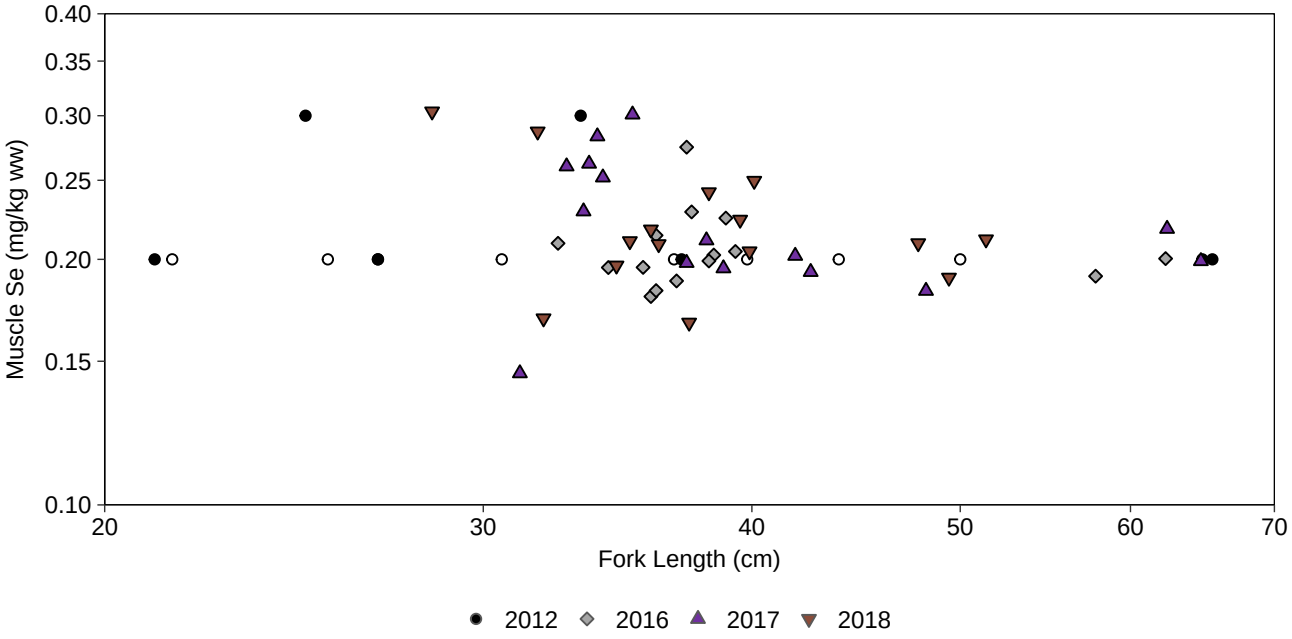

Figure 3.5: Scatterplot of Concentrations of Selenium (Se) in Muscle of Walleye from Pinewood River, 2012 to 2018

Notes:
Concentrations below the laboratory reporting limit (LRL) are plotted as open symbols at the LRL. BCMOE Guideline = 1.8 mg/kg ww (high intake) and 3.6 mg/kg ww (moderate intake).

within the range of fish captured during previous studies (2012, 2016, and 2017). As with northern pike, walleye muscle tissue mercury concentrations generally increased with increasing fish size (Figures 3.2 and 3.4; Appendix Table B.4).

The relationship between mercury concentrations in muscle and length were compared statistically among baseline data (2012) and the three subsequent years of monitoring[4] (2016, 2017, and 2018; Table 3.11). Mercury concentrations in walleye muscle tissue were similar between 2018 and baseline (Table 3.11, Figure 3.4). The relationship between muscle tissue mercury concentration and walleye size was notably different in 2016 than in 2018, 2017, and baseline, with no apparent increase in concentrations with size evident in 2016 (Figure 3.4). Examination of the data plots suggests similar mercury concentrations among years in smaller fish, but lower concentrations in larger fish in 2016 (leveraged by two large fish Figure 3.4).

3.3.2 Liver and Ovary Tissue Chemistry

Average 2018 liver tissue metal concentrations were below human consumption benchmarks for metals with established TDI values or commercial/provincial guidelines (Table 3.12, Appendix Tables B.4 and C.6). As with muscle, metal concentrations in liver for 2018 were within the range of 2017, 2016, and baseline (2012) data for all metals (Table 3.13; AMEC 2013).

Similar to northern pike, mercury concentrations in liver tissue were compared statistically among the three years of monitoring (2016, 2017, and 2018) and baseline (2012). Mercury concentrations in 2018 were statistically similar to those in baseline and 2017 but were significantly higher than 2016 (Table 3.11; Figure 3.4). As with walleye muscle, there was no apparent relationship between liver mercury concentration and fish size in 2016 (Figure 3.4).

Screening of 2018 ovary tissue results showed that ovaries contained average metal concentrations that were below human consumption benchmarks for metals with established TDI values or a provincial/commercial guideline (Table 3.14; Appendix Table C.7). Metal concentrations in walleye ovary tissue collected in 2018 were within the range of concentrations reported in previous studies for all metals (Table 3.15).

As with muscle and liver, mercury concentrations in ovaries were compared statistically among the three Fish Tissue Monitoring Programs (2016, 2017, and 2018). Mercury concentrations in ovary tissue did not differ significantly among 2018, 2017, and 2016 fish (Table 3.11, Figure 3.4).

[4] Only one walleye (male) was captured during the 2015 field survey, and therefore could not be compared statistically.

Table 3.11: Results of Statistical Comparisons of Concentrations of Mercury in Muscle, Liver, and Ovary of Walleye from Pinewood River, 2012 to 2018

Species	Tissue	Dataset	Test	Sample Size				ANCOVA Interaction Model	ANCOVA Parallel Slope Model	Covariate Value[a] Fork Length (cm)	Summary Statistic	Value of Statistic (Mean or Median) [b] Hg (mg/kg ww)				Test P-value	Pairwise Comparisons [c]				Magnitude of Difference Relative to Baseline/Earliest Year (%)			
				2012	2016	2017	2018	Interaction P-value	Covariate P-value			2012	2016	2017	2018		2012	2016	2017	2018	Baseline Year[g]	2016	2017	2018
Walleye	Muscle	All Data	ANCOVA	25	15	15	15	0.067	<0.001	38.4	Adjusted Mean	0.364	0.338	0.319	0.330	0.864	A	A	A	A	2012	-7.2	-12	-9.2
		30-40 cm [d]	ANCOVA	10	13	10	10	0.584	0.168	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			ANOVA	10	13	10	10	-	-	-	Geometric Mean	0.280	0.327	0.223	0.306	0.089	A	A	A	A	2012	17	-20	9.3
		>30 cm (excluding 2016) [e]	ANCOVA	19	-	15	14	0.298	<0.001	40.7	Adjusted Mean	0.344	-	0.357	0.370	0.923	A	-	A	A	2012	-	3.7	7.6
	Liver	All Data	ANCOVA	10	15	15	15	0.001	-	-	-	-	-	-	-	-	Slope (a)	Slope (b)	Slope (a)	Slope (b)	-	-	-	-
		30-40 cm [d]	ANCOVA	5	13	10	10	0.164	0.454	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			ANOVA	5	13	10	10	-	-	-	Geometric Mean	0.183	0.0864	0.120	0.128	<0.001	A	B	A	A	2012	-53	-35	-30
		>30 cm (excluding 2016) [e]	ANCOVA	10	-	15	14	0.064	<0.001	40.1	Adjusted Mean	0.219	-	0.161	0.140	0.090	A	-	A	A	2012	-	-26	-36
	Ovary	All Data	ANCOVA	-	8	3	6	0.013	-	-	-	-	-	-	-	-	-	Slope (b)	Slope (a)	Slope (b)	-	-	-	-
		>30 cm [f]	K-W	-	8	3	6	-	-	-	Median	-	0.0271	0.0924	0.0426	0.152	-	A	A	A	2016	-	241	57

P-value < 0.05
Covariate P-value > 0.05 (i.e., fork length is not a significant predictor of Hg concentration)
Year is significantly > baseline year
Year is significantly < baseline year

Notes:

[a] Covariate value that corresponds to the adjusted means or predicted means in the ANCOVA.

[b] Mean reported for t-test; length-adjusted mean or predicted mean reported for ANCOVA, median reported for Mann-Whitney test.

[c] Years that share a letter (A,B,C) are not significantly different (Tukey's honestly significant differences method; α = 0.05); Slopes that share a letter (a,b) are not significantly different (all pairwise comparisons of slopes; α = 0.05).

[d] Range of fork lengths that provides good overlap of fish sizes to compare 2018 to 2016.

[e] Range of fork lengths that provides good overlap of fish sizes to compare 2018 to 2012 and 2017.

[f] Range of fork lengths that provides good overlap of fish sizes to compare 2018 to all other years.

[g] Baseline year denotes measurements prior to mine operatration, (i.e. 2012), for endpoints not collected during this time period (i.e. ovary tissue), baseline denotes the earliest year in the temporal comparisons.

Table 3.12: Metal Concentrations in Walleye Liver Tissue, Rainy River Mine Fish Tissue Quality Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Average (n=15)	SD	Minimum	Maximum
% Moisture	0.25	%	-	77.4	3.16	72.4	81.6
Aluminum (Al)	2.0	mg/kg ww	-	0.505	0.132	<0.400	1.06
Antimony (Sb)	0.010	mg/kg ww	1.3	<0.00200	-	<0.00200	<0.00200
Arsenic (As)	0.020	mg/kg ww	1.0	0.0758	0.0432	0.0275	0.156
Barium (Ba)	0.050	mg/kg ww	642	0.0382	0.0210	0.0141	0.0772
Beryllium (Be)	0.010	mg/kg ww	6.4	<0.00200	-	<0.00200	<0.00200
Bismuth (Bi)	0.010	mg/kg ww	-	0.00244	0.000655	<0.00200	0.00489
Boron (B)	1.0	mg/kg ww	56.2	<0.200	-	<0.200	<0.200
Cadmium (Cd)	0.0050	mg/kg ww	3.2	0.140	0.0761	0.0453	0.329
Calcium (Ca)	20	mg/kg ww	-	155	154	52.5	618
Cesium (Cs)	0.0050	mg/kg ww	-	0.00592	0.00216	0.00302	0.0104
Chromium (Cr)	0.050	mg/kg ww	3.2	0.0132	-	<0.0100	0.0580
Cobalt (Co)	0.020	mg/kg ww	-	0.159	0.0807	0.0545	0.333
Copper (Cu)	0.10	mg/kg ww	292	1.77	0.507	0.962	2.82
Iron (Fe)	3.0	mg/kg ww	-	118	47.9	33.8	190
Lead (Pb)	0.020	mg/kg ww	11.6	<0.00400	-	<0.00400	<0.00400
Lithium (Li)	0.50	mg/kg ww	-	<0.100	-	<0.100	<0.100
Magnesium (Mg)	2.0	mg/kg ww	-	175	31.8	122	217
Manganese (Mn)	0.050	mg/kg ww	392	1.59	0.449	1.00	2.44
Mercury (Hg)	0.0050	mg/kg ww	0.5	0.138	0.0483	0.0477	0.254
Molybdenum (Mo)	0.020	mg/kg ww	16.1	0.161	0.0419	0.0915	0.235
Nickel (Ni)	0.20	mg/kg ww	3.5	<0.0400	-	<0.0400	<0.0400
Phosphorus (P)	10	mg/kg ww	-	2,790	569	1,810	3,580
Potassium (K)	20	mg/kg ww	-	2,600	354	2,020	3,230
Rubidium (Rb)	0.050	mg/kg ww	-	6.84	2.06	3.76	11.6
Selenium (Se)	0.050	mg/kg ww	3.6	0.824	0.193	0.597	1.24
Sodium (Na)	20	mg/kg ww	-	1,130	182	792	1,430
Strontium (Sr)	0.050	mg/kg ww	1,930	0.0937	0.0867	0.0362	0.332
Tellurium (Te)	0.020	mg/kg ww	-	<0.00400	-	<0.00400	<0.00400
Thallium (Tl)	0.0020	mg/kg ww	-	0.00795	0.00240	0.00476	0.0134
Tin (Sn)	0.10	mg/kg ww	-	0.149	0.118	0.0352	0.391
Uranium (U)	0.0020	mg/kg ww	1.9	0.000415	-	<0.000400	0.000624
Vanadium (V)	0.10	mg/kg ww	-	0.0259	0.00890	<0.0200	0.0466
Zinc (Zn)	0.50	mg/kg ww	963	19.1	3.57	12.0	25.4
Zirconium (Zr)	0.20	mg/kg ww	-	0.0411	0.00370	<0.0400	0.0538

Note: SD = Standard Deviation.
Value > Benchmark
[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).
[b] See Table 2.2 for Consumption Benchmark References.

Table 3.13: Concentrations (mean ± standard deviation) of Contaminants of Potential Concern (COPCs) in Walleye Liver Tissue, Comparing Baseline (2012) and Construction/Operations (2015, 2016, 2017, 2018) Data, Rainy River Mine Fish Tissue Quality Monitoring

COPC	Units	Benchmark[a,b]	Baseline 2012 Data (n = 13; AMEC 2013)	2015 Data (n = 1; Minnow 2016)	2016 Data (n = 15; Minnow 2017)	2017 Data (n = 15; Minnow 2018)	2018 Data (n = 15; This Study)
Arsenic (As)	mg/kg w.w.	1.0	<0.10 ± 0	0.0603	0.0690 ± 0.0191	0.0452 ± 0.0190	0.0758 ± 0.0432
Boron (B)	mg/kg w.w.	56.2	<0.05 ± 0	<0.200	<0.200 ± -	<0.200 ± -	<0.200 ± -
Cadmium (Cd)	mg/kg w.w.	3.2	0.112 ± 0.055	0.581	0.0998 ± 0.102	0.389 ± 0.519	0.140 ± 0.0761
Chromium (Cr)	mg/kg w.w.	3.2	<0.30 ± 0	<0.0400	<0.0100 ± -	0.0194 ± 0.0162	0.0132 ± -
Cobalt (Co)	mg/kg w.w.	-	0.13 ± 0.088	0.234	0.124 ± 0.0915	0.196 ± 0.102	0.159 ± 0.0807
Copper (Cu)	mg/kg w.w.	292	2.0 ± 0.5	3.12	1.93 ± 1.65	1.62 ± 0.376	1.77 ± 0.507
Iron (Fe)	mg/kg w.w.	-	84 ± 24	120	68.2 ± 30.3	91.2 ± 48.5	118 ± 47.9
Lead (Pb)	mg/kg w.w.	11.6	0.030 ± 0	<0.0100	<0.00400 ± -	0.00608 ± 0.00224	<0.00400 ± -
Manganese (Mn)	mg/kg w.w.	392	1.9 ± 0.45	4.22	1.51 ± 0.571	1.67 ± 0.407	1.59 ± 0.449
Mercury (Hg)	mg/kg w.w.	0.5	0.33 ± 0.32	0.128	0.0898 ± 0.0332	0.247 ± 0.254	0.138 ± 0.0483
Molybdenum (Mo)	mg/kg w.w.	16.1	0.14 ± 0.046	0.132	0.120 ± 0.0380	0.138 ± 0.0385	0.161 ± 0.0419
Nickel (Ni)	mg/kg w.w.	3.5	<0.05 ± 0	<0.0400	0.0410 ± -	0.0423 ± 0.00898	<0.0400 ± -
Selenium (Se)	mg/kg w.w.	16.1	0.79 ± 0.16	1.13	0.673 ± 0.112	0.842 ± 0.145	0.824 ± 0.193
Zinc (Zn)	mg/kg w.w.	963	19 ± 2	45.6	15.7 ± 2.26	18.0 ± 2.02	19.1 ± 3.57

Note: w.w. - wet weight.

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1; MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

Table 3.14: Metal Concentrations in Walleye Ovary Tissue, Rainy River Mine Fish Tissue Quality Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Average (n=3)	SD	Minimum	Maximum
% Moisture	0.25	%	-	73.4	1.75	71.3	75.2
Aluminum (Al)	2.0	mg/kg ww	-	0.821	-	<0.400	2.93
Antimony (Sb)	0.010	mg/kg ww	1.3	0.00213	-	<0.00200	0.00278
Arsenic (As)	0.020	mg/kg ww	1.0	0.0332	0.0138	0.0195	0.0521
Barium (Ba)	0.050	mg/kg ww	642	0.221	0.332	0.0441	0.893
Beryllium (Be)	0.010	mg/kg ww	6.4	<0.00200	-	<0.00200	<0.00200
Bismuth (Bi)	0.010	mg/kg ww	-	<0.00200	-	<0.00200	<0.00200
Boron (B)	1.0	mg/kg ww	56.2	0.266	-	<0.200	0.595
Cadmium (Cd)	0.0050	mg/kg ww	3.2	0.00218	0.000485	<0.00100	0.00396
Calcium (Ca)	20	mg/kg ww	-	238	81.7	93.7	327
Cesium (Cs)	0.0050	mg/kg ww	-	0.0113	0.00256	0.00798	0.0143
Chromium (Cr)	0.050	mg/kg ww	3.2	0.0178	-	<0.0100	0.0570
Cobalt (Co)	0.020	mg/kg ww	-	0.0564	0.0110	0.0436	0.0696
Copper (Cu)	0.10	mg/kg ww	292	0.871	0.107	0.794	1.07
Iron (Fe)	3.0	mg/kg ww	-	27.5	8.95	19.6	39.7
Lead (Pb)	0.020	mg/kg ww	11.6	0.00544	-	<0.00400	0.0126
Lithium (Li)	0.50	mg/kg ww	-	<0.100	-	<0.100	<0.100
Magnesium (Mg)	2.0	mg/kg ww	-	314	42.1	253	367
Manganese (Mn)	0.050	mg/kg ww	392	3.73	2.81	0.402	8.14
Mercury (Hg)	0.0050	mg/kg ww	0.5	0.0373	0.0167	0.00894	0.0550
Molybdenum (Mo)	0.020	mg/kg ww	16.1	0.0182	0.00733	0.00934	0.0289
Nickel (Ni)	0.20	mg/kg ww	3.5	0.0445	-	<0.0400	0.0670
Phosphorus (P)	10	mg/kg ww	-	3,030	1,030	2,320	5,080
Potassium (K)	20	mg/kg ww	-	3,680	1,160	2,800	5,980
Rubidium (Rb)	0.050	mg/kg ww	-	9.43	2.26	6.88	13.3
Selenium (Se)	0.050	mg/kg ww	3.6	0.954	0.477	0.655	1.90
Sodium (Na)	20	mg/kg ww	-	833	133	703	1,010
Strontium (Sr)	0.050	mg/kg ww	1,930	0.0675	0.0210	0.0459	0.0990
Tellurium (Te)	0.020	mg/kg ww	-	<0.00400	-	<0.00400	<0.00400
Thallium (Tl)	0.0020	mg/kg ww	-	0.00690	0.00277	0.00416	0.0118
Tin (Sn)	0.10	mg/kg ww	-	0.0258	-	<0.0200	0.0546
Uranium (U)	0.0020	mg/kg ww	1.9	<0.000400	-	<0.000400	<0.000400
Vanadium (V)	0.10	mg/kg ww	-	<0.0200	-	<0.0200	<0.0200
Zinc (Zn)	0.50	mg/kg ww	963	57.6	51.7	31.0	163
Zirconium (Zr)	0.20	mg/kg ww	-	0.0424	-	<0.0400	0.0546

Note: SD = Standard Deviation.
Value > Benchmark
[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).
[b] See Table 2.2 for Consumption Benchmark References.

Table 3.15: Concentrations (mean ± standard deviation) of Contaminants of Potential Concern (COPCs) in Walleye Ovary Tissue, Construction/Operations (2016, 2017, 2018) Data, Rainy River Mine Fish Tissue Quality Monitoring

COPC	Units	Benchmark[a,b]	2016 Data (n = 8; Minnow 2017)	2017 Data (n = 3; Minnow 2018)	2018 Data (n = 6; This Study)
Arsenic (As)	mg/kg w.w.	1.0	0.0432 ± 0.00778	0.0124 ± 0.00552	0.0332 ± 0.0138
Boron (B)	mg/kg w.w.	56.2	<0.200 ± -	<0.200 ± -	0.266 ± -
Cadmium (Cd)	mg/kg w.w.	3.2	0.00163 ± 0.000948	0.00362 ± 0.00240	0.00218 ± 0.000485
Chromium (Cr)	mg/kg w.w.	3.2	<0.0100 ± -	<0.0100 ± -	0.0178 ± -
Cobalt (Co)	mg/kg w.w.	-	0.0596 ± 0.0127	0.0363 ± 0.00400	0.0564 ± 0.0110
Copper (Cu)	mg/kg w.w.	292	0.717 ± 0.0541	0.714 ± 0.0769	0.871 ± 0.107
Iron (Fe)	mg/kg w.w.	-	24.5 ± 4.22	24.9 ± 6.02	27.5 ± 8.95
Lead (Pb)	mg/kg w.w.	11.6	<0.00400 ± -	<0.00400 ± -	0.00544 ± -
Manganese (Mn)	mg/kg w.w.	392	4.20 ± 2.10	1.90 ± 0.222	3.73 ± 2.81
Mercury (Hg)	mg/kg w.w.	0.5	0.0250 ± 0.00598	0.0990 ± 0.0619	0.0373 ± 0.0167
Molybdenum (Mo)	mg/kg w.w.	16.1	0.0125 ± 0.00347	0.00875 ± 0.00140	0.0182 ± 0.00733
Nickel (Ni)	mg/kg w.w.	3.5	<0.0400 ± -	<0.0400 ± -	0.0445 ± -
Selenium (Se)	mg/kg w.w.	16.1	0.830 ± 0.154	0.500 ± 0.0611	0.954 ± 0.477
Zinc (Zn)	mg/kg w.w.	963	30.5 ± 4.35	26.0 ± 3.62	57.6 ± 51.7

Note: w.w. - wet weight.

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1; MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Conclusions of the fish assessment undertaken in the Pinewood River downstream of the Rainy River Mine in the fall of 2018 are listed below.

1. Fish communities and catchability (CPUE) were generally consistent with the results of previous sampling efforts, with higher CPUE for northern pike relative to walleye. CPUE for northern pike and walleye were similar to previous years.

2. Northern pike and walleye mean muscle, liver, and ovary tissue samples contained metal concentrations that were below available human consumption benchmarks and within the range of baseline for tissue concentrations. However, although mean mercury concentrations were below benchmarks, mercury concentrations in six northern pike and two walleye muscle samples, and in one northern pike liver tissue sample exceeded some consumption guidelines. This was associated with the large size of these fish. Mercury concentrations in tissue of larger predatory fish are often naturally high in northern environments (Evers et al. 2011) and these results do not indicate that the RRM has influenced fish tissue quality. Based on comparisons to human consumption benchmarks and baseline data, it appears that the RRM has not influenced metal concentrations in muscle tissues of exposed northern pike or walleye.

3. Statistical analysis of northern pike and walleye muscle, liver, and ovary tissue mercury concentrations as related to length compared among the 2012, 2015, 2016, and 2017 Fish Tissue Monitoring Studies show no major temporal trends. Notably, there is a slight increase of northern pike liver and ovary concentrations over time, however these concentrations are below the consumption guideline, and this trend is not seen in muscle mercury concentrations.

Overall, the data indicate that the Rainy River Mine has not influenced the concentrations of metals in muscle, liver, and ovary tissues of sentinel fish species (northern pike and walleye).

4.2 Recommendations

Based on information acquired during the 2018 fish tissue monitoring study, recommendations for future monitoring include:

1. Continued monitoring of metal concentrations in muscle, liver, and ovary tissues for both sentinel species. This will allow for consistent year to year comparisons.

2. Provide notification to solicit possible public participation in the collection of northern pike and walleye by angling (fall 2021), to foster community engagement.

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APPENDIX A
DATA QUALITY REVIEW

APPENDIX A DATA QUALITY REVIEW

A1 INTRODUCTION

A1.1 Overview

The Data Quality Review (DQR) assessed data collected as part of the Rainy River Project 2018 Fish Tissue Quality Report. The DQR covers data collected in 2018. The objective of the DQR is to define the overall quality of the data presented in the report, and, by extension, the confidence with which the data can be used to derive conclusions.

A1.2 Background

A variety of factors can influence the chemical and biological measurements made in an environmental study and thus affect the accuracy and/or precision of the data. Inconsistencies in sampling or laboratory methods, use of instruments that are inadequately calibrated or which cannot measure to the desired level of accuracy or precision, and contamination of samples in the field or laboratory are just some of the potential factors that can lead to the reporting of data that do not accurately reflect actual environmental conditions. Depending on the magnitude of the problem, inaccuracy or imprecision have the potential to affect the reliability of any conclusions made from the data. Therefore, it is important to ensure that monitoring programs incorporate appropriate steps to control the non-natural sources of data variability (i.e., minimize the variability that does not reflect natural spatial and temporal variability in the environment) and thus assure the quality of the data.

Data quality as a concept is meaningful only when it relates to the intended use of the data. That is, one must know the context in which the data will be interpreted in order to establish a relevant basis for judging whether or not the data set is adequate. The DQR involves comparison of actual field and laboratory measurement performance to data quality objectives (DQOs) established for a particular study, such as evaluation of method detection limits, blank sample data, data precision (based on laboratory duplicate samples), and data accuracy (based on matrix spike recoveries and/or analysis of standards or certified reference materials).

DQOs were established either at the outset of the field program or by the laboratory and reflect reasonable and achievable performance expectations. The lowest detection limit (LDL) was set at the outset of the field program for tissue quality. Only samples that were below the laboratory detection limits were evaluated against target detection limits. Target detection limits should be at least as low as applicable guidelines, ideally ≤ 1/10th guideline values. Programs involving a large amount of samples and analytes usually result in some analytes that exceed the DQOs. This is particularly so for multi-element scans (e.g., ICP scans for

metals) since the analytical conditions are not necessarily optimal for every element included in the scan. Generally, scan results may be considered acceptable if no more than 20% of the parameters fail to meet the DQOs. Overall, the intent of comparing data to DQOs was not to reject any measurement that did not meet the DQO, but to ensure that any questionable data received more scrutiny to determine what effect, if any, this had on interpretation of results within the context of this project.

A1.3 Types of Quality Control Samples

Several types of quality control (QC) samples were assessed based on samples collected (or prepared) in the field and laboratory. These samples, and a description of each, include the following:

- **Blanks** are samples of de-ionized water and/or appropriate reagent(s) that are handled and analyzed the same way as regular samples. These samples will reflect any contamination that occurred in the field (in the case of field or travel blanks) or the laboratory (in the case of laboratory or method blanks). Analyte concentrations should be non-detectable although a DQO of twice the method detection limit allows for slight "noise" around the detection limit.
- **Laboratory Duplicates** are sub-sample pairs created in the laboratory from randomly selected field samples which are sub-sampled and then analyzed independently using identical analytical methods. The laboratory duplicate sample results reflect any variability introduced during laboratory sample handling and analysis and thus provide a measure of laboratory precision.
- **Certified Reference Materials** are samples containing known chemical concentrations that are processed and analyzed along with batches of environmental samples. The sample results are then compared to target results to provide a measure of analytical accuracy. The results are reported as the percent of the known amount that was recovered in the analysis.

A2 FISH TISSUE SAMPLES

A2.1 Holding Time and General Laboratory Flags

All tissue analyses were conducted within ALS Environmental's recommended hold times. There were no general laboratory flags associated with the analytical report (i.e., ALS Environmental Report L2173881; Appendix C).

A2.2 Lowest Detection Limits

All analytes were higher than target detection limits (benchmarks) indicating that the data for this project can be reliably interpreted (Appendix Table A.1).

A2.3 Laboratory Blank Sample Analysis

All blank samples contained non-detectable concentrations indicating no inadvertent contamination of samples within the laboratory during analysis (Appendix C).

A2.4 Data Precision

Data precision was evaluated based on results of laboratory duplicate samples (DUP; Appendix C). All DUP results (177 in total) met ALS Environmental's data quality objectives for precision (Appendix C). Laboratory precision achieved in this study is considered adequate.

A2.5 Data Accuracy

Data accuracy was evaluated based on results of certified reference materials (CRM), and laboratory control samples (LCS; Appendix C). All CRM and LCS results (327 in total) met ALS Environmental's data quality objectives for accuracy (Appendix C). Laboratory accuracy achieved in this study is considered adequate.

A3 DATA QUALITY STATEMENT

Data collected for the 2018 fish tissue monitoring at the Rainy River Project was of good quality as characterized by good detectability, negligible analyte concentrations in method blanks, good laboratory precision, and good laboratory accuracy. Therefore, associated data can be used with a high level of confidence in the derivation of conclusions.

Table A.1: Laboratory Lowest Detection limit (LDL) Evaluation for Tissue Chemistry Analyses Relative to Criteria

Analyte		Benchmark[a,b]	LDL Achieved	
			mg/kg dry weight	mg/kg wet weight
Total Metals	Aluminum (Al)	-	2.0	0.4
	Antimony (Sb)	1.3	0.010	0.002
	Barium (Ba)	642	0.050	0.010
	Beryllium (Be)	6.4	0.010	0.002
	Bismuth (Bi)	-	0.010	0.002
	Boron (B)	56	1.0	0.2
	Cadmium (Cd)	3.2	0.0050	0.0010
	Cesium (Cs)	-	0.0050	0.001
	Chromium (Cr)	3.2	0.050	0.010
	Cobalt (Co)	-	0.020	0.004
	Lead (Pb)	11.6	0.020	0.004
	Lithium (Li)	-	0.50	0.10
	Molybdenum (Mo)	16.1	0.020	0.004
	Nickel (Ni)	3.5	0.20	0.04
	Strontium (Sr)	1,930	0.050	0.010
	Tellurium (Te)	-	0.020	0.004
	Tin (Sn)	-	0.10	0.02
	Uranium (U)	1.9	0.0020	0.0004
	Vanadium (V)	-	0.10	0.02
	Zirconium (Zr)	-	0.20	0.04

Notes: Only Analytes With <LDL Values are Reported. Highlighted Values Indicate LDL Greater Than Benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

APPENDIX B
FISH CATCH AND MERISTIC DATA

Fish Catch Data
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FISH CATCH AND MERISTIC DATA

Fish Catch Data

Table B.1: Gill Net Records for Fish Caught in the Pinewood River, Rainy River Mine, September 2018

Area	Station ID	UTM (NAD83, 15 U)		Set Date	Lift Date	Set Time	Lift Time	Effort (Fishing Hours)	Depth Range (m)		Set			Black Crappie		Northern Pike		Shorthead Redhorse		Walleye	
		Easting	Northing								Length (ft)	Mesh (inches)	Description	Catch	CPUE[a]	Catch	CPUE[a]	Catch	CPUE[a]	Catch	CPUE[a]
Pinewood River	PinR-GN-01	404443	5397280	11-Sep-18	12-Sep-18	13:50	13:36	23.8	2	2.5	100	3	-	0	0.000	2	0.084	0	0.000	1	0.0421
	PinR-GN-02	404509	5397339	11-Sep-18	12-Sep-18	13:55	13:25	23.5	0.5	2.5	100	3	-	0	0.000	2	0.085	0	0.000	0	0.0000
	PinR-GN-03	404613	5397564	11-Sep-18	12-Sep-18	14:00	13:10	23.2	0.5	2	100	3	-	1	0.043	2	0.086	0	0.000	2	0.0863
	PinR-GN-04	409363	5398803	11-Sep-18	12-Sep-18	16:10	9:25	17.3	0.5	2.5	150	3-5	Exp.	1	0.058	0	0.000	0	0.000	0	0.0000
	PinR-GN-05	404852	5397701	12-Sep-18	13-Sep-18	13:00	10:35	21.6	1.5	1.5	150	3-5	Exp.	0	0.000	7	0.324	1	0.046	10	0.4633
	PinR-GN-06	404611	5397577	12-Sep-18	13-Sep-18	13:15	10:20	21.1	0.5	2	100	3	-	0	0.000	3	0.142	0	0.000	2	0.0949
	PinR-GN-07	405620	5398060	12-Sep-18	13-Sep-18	14:05	11:55	21.8	2	2.5	100	3	-	6	0.275	11	0.504	0	0.000	15	0.6870
	PinR-GN-08	405188	5397820	12-Sep-18	13-Sep-18	14:10	11:15	21.1	1.0	2	100	3	-	5	0.237	7	0.332	0	0.000	6	0.2846
	PinR-GN-09	404485	5397337	12-Sep-18	13-Sep-18	14:15	10:00	19.7	0.5	2	100	3		1	0.051	1	0.051	0	0.000	2	0.1013
	PinR-GN-10	404138	5397135	12-Sep-18	13-Sep-18	14:22	9:40	19.3	0.5	2	100	5	-	0	0.000	0	0.000	0	0.000	0	0.0000
							Total	**212.3167**						**14**	**0.0659**	**35**	**0.1648**	**1**	**0.0047**	**38**	**0.179**

[a] Total catch-per-unit-effort (CPUE) calculated as the total catch of a single species over the total effort for all the gill net sets in one area.

Table B.2: Hoop Net Records for Fish Caught in the Pinewood River, Rainy River Mine, September 2018

Area	Station ID	Net Size (ft)	UTM (NAD83, 15 U)		Set Date	Lift Date	Set Time	Removal Time	Fishing Hours (hrs)	Depth Range (m)		Effort (Fishing days)	Bullhead		Black Crappie		Walleye		Walleye (Juvenile)		White Sucker		Yellow Perch	
			Easting	Northing									Catch	CPUE[a]	Catch	CPUE[a]	Catch	CPUE[a]	Catch	CPUE[a]	Catch	CPUE[a]	Catch	CPUE[a]
Pinewood River	PinR-HN-01	2.5	404391	5397232	11-Sep-18	12-Sep-18	13:10	12:11	23.02	1.5	2	0.959	1	1.043	0	0.000	0	0.000	1	1.043	0	0.000	0	0.000
	PinR-HN-02	2.5	404557	5397391	11-Sep-18	12-Sep-18	13:30	13:18	23.80	2	2.5	0.992	0	0.000	6	6.050	0	0.000	0	0.000	0	0.000	0	0.000
	PinR-HN-03	2.5	409307	5398696	11-Sep-18	12-Sep-18	15:35	9:11	17.60	1.2	1.5	0.733	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
	PinR-HN-04	2.5	409362	5398789	11-Sep-18	12-Sep-18	16:15	9:05	16.83	1	1.5	0.701	0	0.000	0	0.000	2	2.851	0	0.000	1	1.000	0	0.000
	PinR-HN-05	2.5	409307	5398696	12-Sep-18	13-Sep-18	9:10	13:00	27.83	1.0	2.5	1.160	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
	PinR-HN-06	2.5	409362	5398789	12-Sep-18	13-Sep-18	9:15	13:05	27.83	2	2.5	1.160	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
	PinR-HN-07	2.5	404384	5397225	12-Sep-18	13-Sep-18	12:45	9:50	21.08	2	2.5	0.878	0	0.000	3	3.415	0	0.000	0	0.000	1	0.500	0	0.000
	PinR-HN-08	2.5	404391	5397232	12-Sep-18	13-Sep-18	13:25	10:10	20.75	1.5	2	0.865	0	0.000	4	4.627	0	0.000	0	0.000	0	0.000	3	3.470
											Total	**7.448**	**1**	**1.043**	**13**	**14.092**	**2**	**2.851**	**1**	**1.043**	**2**	**1.500**	**3**	**3.470**

[a] Total catch-per-unit-effort (CPUE) calculated as the total catch of a single species over the total effort for all the hoop net sets in one area.

FISH CATCH AND MERISTIC DATA

Fish Meristic Data

Table B.3: Fish Data Measurements for Northern Pike Caught in the Pinewood River, Rainy River Mine, September 2018

Area	Species	Processing Date	Fish ID	Total Length (cm)	Fork Length (cm)	Body Weight (g)	Age Structure Collected [a]	Age	Sex [b]	Liver Weight (g)	Gonad Weight (g)	Fulton's Condition Factor (K)	Tissue Collected [c]	Abnormalities
	Northern Pike	12-Sep-18	NP-01	47.5	44.1	650	Sc,Cl	2	M	4.892	17.170	0.76	M, L	-
		12-Sep-18	NP-02	55.6	52.1	870	Sc,Cl	5	F	9.640	13.949	0.62	M, L,O	slight black spot
		12-Sep-18	NP-03	52.8	48.9	750	Sc,Cl	2	M	7.041	17.861	0.64	M, L	-
		12-Sep-18	NP-04	48.5	46.0	700	Sc,Cl	2	M	5.409	13.973	0.72	M, L	cysts on liver
		13-Sep-18	NP-05	52.7	49.5	820	Sc,Cl	3	M	8.610	24.045	0.68	M, L	-
		13-Sep-18	NP-06	68.2	63.9	1180	Sc,Cl	6	F	6.546	6.525	0.45	M, L, O	-
		13-Sep-18	NP-07	61.3	57.6	1050	Sc,Cl	3	F	12.085	14.860	0.55	M, L, O	-
		13-Sep-18	NP-08	50.9	48.1	740	Sc,Cl	3	F	8.652	13.727	0.66	M, L, O	-
		13-Sep-18	NP-09	60.6	57.8	1100	Sc,Cl	4	F	11.372	14.335	0.57	M, L, O	-
		13-Sep-18	NP-10	65.6	62.1	1680	Sc,Cl	4	F	24.465	18.176	0.70	M, L, O	-
		13-Sep-18	NP-11	63.8	60.8	1200	Sc,Cl	5	M	9.829	16.787	0.53	M, L	-
		13-Sep-18	NP-12	59.6	56.9	1020	Sc,Cl	3	F	11.658	13.755	0.55	M, L, O	slight black spot
		13-Sep-18	NP-13	57.6	55.1	1,140	Sc,Cl	4	F	14.741	19.628	0.68	M, L, O	slight black spot
		13-Sep-18	NP-14	49.0	45.9	700	Sc,Cl	2	M	4.303	20.483	0.72	M, L	slight black spot
		13-Sep-18	NP-15	60.1	56.1	1,050	Sc,Cl	5	F	10.242	12.290	0.59	M, L, O	slight black spot
total sample size				**15**	**15**	**15**	**-**	**15**	**-**	**15**	**15**	**15**	**-**	**-**
average				**57**	**54**	**977**	**-**	**4**	**-**	**10**	**16**	**1**	**-**	**-**
median				**58**	**55**	**1020**	**-**	**3**	**-**	**10**	**15**	**1**	**-**	**-**
standard deviation				**6.5**	**6.3**	**273.0**	**-**	**1.3**	**-**	**5.0**	**4.1**	**0.1**	**-**	**-**
standard error				**1.68**	**1.64**	**70.49**	**-**	**0.34**	**-**	**1.28**	**1.06**	**0.02**	**-**	**-**
minimum				**48**	**44**	**650**	**-**	**2**	**-**	**4**	**7**	**0**	**-**	**-**
maximum				**68**	**64**	**1680**	**-**	**6**	**-**	**24**	**24**	**1**	**-**	**-**

[a] Age structures collected: sc - scales, oto - otoliths; ds - dorsal spine; pf - pectoral fin.
[b] Sex: F - Female, M - Male, U - Underdeveloped.
[c] Tissue collected: M - Muscle, L - Liver, O - Ovary.

Table B.4: Fish Data Measurements for Walleye Caught in the Pinewood River, Rainy River Mine, September 2018

Area	Species	Processing Date	Fish ID	Total Length (cm)	Fork Length (cm)	Body Weight (g)	Age Structure Collected [a]	Age	Sex [b]	Liver Weight (g)	Gonad Weight (g)	Fulton's Condition Factor (K)	Tissue Collected [c]	Abnormalities
Pinewood River	Walleye	12-Sep-18	WA-01	52.9	49.4	1410	Sc, oto, Ds	5	F	18.967	26.273	1.17	M, L, O	-
		12-Sep-18	WA-02	40.5	38.2	650	Sc, oto, Ds	5	M	9.035	13.202	1.17	M, L	-
		12-Sep-18	WA-03	39.7	37.4	520	Sc, oto, Ds	6	M	5.069	4.316	0.99	M, L	-
		12-Sep-18	WA-04	33.6	31.8	350	Sc, oto, Ds	2	F	2.738	0.799	1.09	M, L, O	immature
		12-Sep-18	WA-05	30.1	28.4	225	Sc, oto, Ds	2	U	1.659	-	0.98	M, L	immature
		13-Sep-18	WA-06	42.1	39.5	590	Sc, oto, Ds	4	M	4.005	2.384	0.96	M, L	cysts on liver
		13-Sep-18	WA-07	42.5	40.1	640	Sc, oto, Ds	4	M	6.723	2.334	0.99	M, L, O	immature
		13-Sep-18	WA-08	39.8	36.2	455	Sc, oto, Ds	6	F	5.392	8.603	0.96	M, L, O	-
		13-Sep-18	WA-09	34.9	51.4	1620	Sc, oto, Ds	7	F	21.159	35.375	1.19	M, L	-
		13-Sep-18	WA-10	34.6	32.0	425	Sc, oto, Ds	3	M	3.670	6.817	1.30	M, L, O	-
		13-Sep-18	WA-11	43.6	39.9	725	Sc, oto, Ds	5	F	8.326	14.643	1.14	M, L, O	-
		13-Sep-18	WA-12	50.5	47.8	1030	Sc, oto, Ds	5	F	9.817	17.907	0.94	M, L	cysts on liver
		13-Sep-18	WA-13	37.0	34.6	470	Sc, oto, Ds	4	M	4.180	9.226	1.13	M, L	-
		13-Sep-18	WA-14	37.1	35.9	540	Sc, oto, Ds	3	M	6.045	9.462	1.17	M, L	-
		13-Sep-18	WA-15	37.6	35.1	490	Sc, oto, Ds	3	M	6.608	9.029	1.13	M, L	-
total sample size				**15**	**15**	**15**	**-**	**15**	**-**	**15**	**14**	**15**	**-**	**-**
average				**40**	**39**	**676**	**-**	**4**	**-**	**8**	**11**	**1**	**-**	**-**
median				**40**	**37**	**540**	**-**	**4**	**-**	**6**	**9**	**1**	**-**	**-**
standard deviation				**6.1**	**6.6**	**388.1**	**-**	**1.5**	**-**	**5.6**	**9.7**	**0.1**	**-**	**-**
standard error				**1.57**	**1.70**	**100.20**	**-**	**0.38**	**-**	**1.44**	**2.59**	**0.03**	**-**	**-**
minimum				**30**	**28**	**225**	**-**	**2**	**-**	**2**	**1**	**1**	**-**	**-**
maximum				**53**	**51**	**1620**	**-**	**7**	**-**	**21**	**35**	**1**	**-**	**-**

[a] Age structures collected: sc - scales, oto - otoliths; ds - dorsal spine; pf - pectoral fin.

[b] Sex: F - Female, M - Male, U - Underdeveloped.

[c] Tissue collected: M - Muscle, L - Liver, O - Ovary.

FISH CATCH AND MERISTIC DATA

Fish Permit

Ontario

Ministry of Natural Resources

Ministère des Richesses naturelles

Licence to Collect Fish for Scientific Purposes

Permis pour faire la collecte de poissons à des fins scientifiques

Licence No. / N° de permis	1090759
Local Reference No. / N° de référence local	2018-0911
Issuer Account No. / N° de compte du délivreur de permis.	10002668

This licence is issued under Part I of the Fish Licensing Regulation made under the Fish and Wildlife Conservation Act, 1997 to:

Ce permis est délivré en vertu de la Partie I du règlement sur la délivrance de permis de pêche formulé conformément à la Loi sur la protection du poisson et de la faune de 1997 à:

	Last Name / Nom de famille	First Name / Prénom	Middle Name / Second Prénom
Name of Licencee / Nom du titulaire du permis	Mr. Worrall	Tyrell	

Name of Business/Organization/Affiliation (if applicable) / Nom de l'entreprise/de l'organisme/de l'affiliation (le cas échéant)

Minnow Enviroment

	Street Name & No./PO Box/RR#/Gen. Del / N° rue/C.P /R R /poste restante		
Mailing address of Licencee / *Adresse postale du titulaire du permis*	2 Lamb St		
	City/Town/Municipality / Ville/village/municipalité	Province/State / Province/État	Postal Code/Zip Code / Code Postal/Zip
	Georgetown	ON	L7G 3M9

to collect the species, size and quantites of fish from the waters as set out below.
Pour faire la collecte des espèces suivantes (stade et nombre indiqués ci-dessous):

Species / Espèces	Eggs / Oeuf	Juvenile / Fretin	Adults / Adulte	Numbers / Nombre	Name of Waterbody / Nom de l'étendue d'eau
	X	X	X		
Northern Pike			X	15	Pinewood River
Walleye			X	15	Pinewood River

Yes/Oui ☐ Additional species/Waterbody list attached / Liste d'espèces/d'étendue d'eau additionnelles ci-jointe

Purpose of collection / ***But de la collecte***: To conduct fish tissue monitoring studies of New Gold's Rainy River Project.

Licence Dates / *Dates du permis*	Effective Date / Date d'entrée en vigueur (YYYY-MM-DD)	Expiry Date / Date d'expiration (YYYY-MM-DD)
	2018-09-01	2018-12-31

Licence conditions / ***Conditions du permis***: This licence is subject to the conditions contained in Schedule A if included. / Ce permis doit respecter les conditions de l'annexe A si celle-ci est jointe.

Yes/Oui	No/Non	
☒	☐	Schedule A included. / Annexe A ci-jointe

Issued by (please print) / Délivré par (veuillez écrire en caractères d'imprimerie)	Signature of issuer / Signature du délivreur	Date of Issue/Date de délivrance (YYYY-MM-DD)
Matt Myers		2018-08-03

Signature of Licencee / Signature du titulaire du permis	Date (YYYY-MM-DD)
Tyrell Worrall	2018-09-04

Personal information contained on this form is collected under the authority of the Fish and Wildlife Conservation Act, 1997 and will be used for the purpose of licencing, identification, enforcement, resource management and customer service surveys. Please direct further inquiries to the District Manager of the MNR issuing district.

Les renseignements personnels dans ce formulaire sont recueillis conformément à la Loi sur la protection du poisson de la faune, 1997 , et ils seront utilisés aux fins de délivrance de permis, d'identification, d'application des règlements, de gestion des ressources et de sondage sur les services a la clientèle. Veuillez communiquer avec le chef du district du MRN qui délivré le permis si vous avez des questions.

FW0032 (04/00)

Ontario

Licence to Collect Fish for Scientific Purposes
Schedule A – Licence Conditions

Licence No. 1090759
Local Reference No. FF2018-0869
Issuer Account No. 10002668

This licence is subject to the conditions listed below.

1. Mandatory report forms documenting the sampling conducted under this licence must be submitted to the licence issuer within 30 days of the termination date, but in no case later than January 31 next following the year of issue. The digital Mandatory Report form (Part 1) must be completed for each Sampling Program and the digital Site Collection Reports (Part 2) must be completed for each collection site. A separate map clearly indicating the location of each collection site must be attached to the Site Collection Reports. Submit Mandatory Report forms to the Fort Frances District MNRF office. The submission of a satisfactory report is a prerequisite to any subsequent renewals.

2. Sampling locations must be reported using GPS location data using: Projection: Universal Transverse Mercator (UTM); Datum: North American 1983 (NAD83), Canadian Transformation (CNT); Zone: 15 N; Units: metres.

3. Before carrying out any operation under this licence, any person authorized under this licence is required to consult with the Fort Frances Ministry of Natural Resources District Manager at least one week prior to anticipated start of sampling and obtain approval from the respective Manager for the proposed sampling activity. Also, any person authorized under this licence must advise the respective Manager of the date, time and location of all sampling.

4. A copy of the signed original licence must be carried by the licenced person when working at the designated sites. An assistant of the licenced person who is carrying out activities under this licence during the absence of the licenced person shall carry the licence on his or her person.

5. All collection gear shall be clearly marked with the licenced person's and the organization's name.

6. This licence is not valid in Provincial Parks, park reserves, Conservation Authority property or National Parks without written permission from the authorized person in charge of the area concerned.
http://www.ontarioparks.com/email/research

7. Capture gear shall be inspected regularly and live holding traps must be inspected at least once daily.

8. This licence does not allow access to any property without permission of the landowner.

9. The licensee shall follow the best management practices for the collection, handling, transportation and holding of fish identified in **FPS Technical Bulletin (Dec. 15, 2011)** included with the licence in order to minimize the risk of spreading aquatic invasive species and diseases.

10. All field equipment must be de-contaminated prior to use on each water body in order to prevent the spread of exotic species and disease.

11. This licence does not authorize any activity that is prohibited under the federal ***Species at Risk Act*** or the provincial ***Endangered Species Act.***

12. All SAR fish and mussels must also be reported to the OMNR Natural Heritage Information Centre on the appropriate form at:
http://nhic.mnr.gov.on.ca/MNR/nhic/species/species_report.cfm

13. This licence does not authorize the possession of specially protected fish under the ***Ontario Fishery Regulations.***

14. This licence does not authorize the collection of any species of fish protected under the ***Species at Risk Act, Endangered Species Act, or Ontario Fishery Regulations***. If these species are accidentally captured they must be returned to the water immediately.

15. **This licence ONLY allows for the following capture gear to be used:**

    Hoop nets (2" and 3" stretched mesh), gill nets (3", 4", 5" mesh size), angling

16. **Persons authorized under this licence include the following:**

    Tyrell Worrall, Kevin Martens, Katharina Batchelar

17. ***The following MNRF Class Animal Care Protocols will be adhered to as appropriate for the project activity:***
    - ***Capture Methods- Electrofishing***
    - ***Capture Methods- Seining***
    - ***Capture Methods- Impounding Gear***
    - ***Handling and Marking- Biological Sampling***
    - ***Containment- Short term Containment***

Signature of Licensee

X _____

Date 4-Sep-18

APPENDIX C
FISH TISSUE QUALITY

Fish Tissue Chemistry
Laboratory Analysis Data Report

FISH TISSUE QUALITY

Fish Tissue Chemistry

Table C.1: Average Dry Weight (d.w.) Metal Concentrations in Fish Tissue, Rainy River Mine Fish Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Northern Pike											
			Muscle				Liver				Ovary			
			Average (n=15)	SD	Minimum	Maximum	Average (n=15)	SD	Minimum	Maximum	Average (n=9)	SD	Minimum	Maximum
Moisture	0.25	%	79.9	1.2	77.8	82.0	76.8	3.3	69.1	80.7	83.2	0.5	82.3	84.1
Aluminum (Al)	2.0	mg/kg d.w.	3.4	1.5	<2.0	6.9	8.4	5.8	2.8	23.3	5.5	3.8	2.4	14.9
Antimony (Sb)	0.010	mg/kg d.w.	<0.010	-	<0.010	<0.010	0.011	0.002	<0.010	0.017	0.011	0.004	<0.010	0.0220
Arsenic (As)	0.020	mg/kg d.w.	0.24	0.08	0.14	0.44	0.16	0.06	0.08	0.27	0.15	0.04	0.09	0.21
Barium (Ba)	0.050	mg/kg d.w.	0.34	0.24	<0.05	0.95	0.50	0.36	0.08	1.55	0.50	0.41	0.11	1.45
Beryllium (Be)	0.010	mg/kg d.w.	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010
Bismuth (Bi)	0.010	mg/kg d.w.	0.014	0.003	<0.010	0.018	0.037	0.018	0.013	0.080	0.011	0.002	<0.010	0.017
Boron (B)	1.0	mg/kg d.w.	<1.0	-	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	-	<1.0	<1.0
Cadmium (Cd)	0.0050	mg/kg d.w.	0.0064	0.0026	<0.0050	0.0133	0.565	0.489	0.173	1.690	0.063	0.028	0.031	0.121
Calcium (Ca)	20	mg/kg d.w.	1,569	1,135	499	3,670	348	420	107	1,750	810	328	478	1,600
Cesium (Cs)	0.0050	mg/kg d.w.	0.054	0.015	0.028	0.086	0.022	0.006	0.009	0.031	0.051	0.010	0.037	0.074
Chromium (Cr)	0.050	mg/kg d.w.	0.052	0.008	<0.050	0.079	0.135	0.073	<0.050	0.200	0.095	0.062	<0.050	0.200
Cobalt (Co)	0.020	mg/kg d.w.	0.024	0.006	<0.020	0.037	0.278	0.141	0.128	0.614	0.416	0.135	0.251	0.635
Copper (Cu)	0.10	mg/kg d.w.	0.85	0.16	0.60	1.11	158.7	90.3	44.5	355.0	6.23	1.00	4.56	7.49
Iron (Fe)	3.0	mg/kg d.w.	15.5	5.3	7.0	22.7	865	670	96	2,200	256	84	132	393
Lead (Pb)	0.020	mg/kg d.w.	0.035	0.035	<0.020	0.132	0.037	0.015	<0.020	0.028	0.033	0.022	<0.020	0.080
Lithium (Li)	0.50	mg/kg d.w.	<0.50	-	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	-	<0.50	<0.50
Magnesium (Mg)	2.0	mg/kg d.w.	1,520	74	1,420	1,680	680	170	415	949	1,202	180	759	1,330
Manganese (Mn)	0.050	mg/kg d.w.	1.84	1.09	0.67	3.80	6.11	2.46	2.53	12.70	160.04	55.84	71.60	235.00
Mercury (Hg)	0.0050	mg/kg d.w.	2.40	1.16	1.04	5.39	1.32	0.96	0.48	4.18	0.5	0.2	0.3	1.0
Molybdenum (Mo)	0.020	mg/kg d.w.	<0.020	-	<0.020	<0.020	0.96	0.27	0.34	1.44	0.319	0.086	0.147	0.462
Nickel (Ni)	0.20	mg/kg d.w.	<0.20	-	<0.20	<0.20	<0.2	-	<0.20	0.2	<0.20	-	<0.20	<0.20
Phosphorus (P)	10	mg/kg d.w.	11,773	1,039	10,000	13,500	11,490	3,455	6,880	16,800	16,511	2,056	12,100	18,000
Potassium (K)	20	mg/kg d.w.	20,500	1,517	18,400	24,000	11,100	3,018	6,230	15,600	21,067	2,718	16,500	24,000
Rubidium (Rb)	0.050	mg/kg d.w.	30.9	5.2	22.4	40.6	27.0	8.01	13.7	40.5	35.8	4.90	29.9	44.9
Selenium (Se)	0.050	mg/kg d.w.	0.81	0.08	0.73	0.96	8.71	1.56	5.90	11.40	3.84	0.93	3.09	6.10
Sodium (Na)	20	mg/kg d.w.	2,318	736	815	3,360	4,235	1,144	2,410	6,220	5,170	704	3,920	5,990
Strontium (Sr)	0.050	mg/kg d.w.	0.72	0.63	0.11	1.81	0.28	0.31	0.09	1.32	0.45	0.19	0.27	0.83
Tellurium (Te)	0.020	mg/kg d.w.	<0.020	-	<0.020	<0.020	0.022	0.005	<0.020	0.037	<0.020	-	<0.020	<0.020
Thallium (Tl)	0.0020	mg/kg d.w.	0.011	0.004	0.006	0.018	0.012	0.003	0.008	0.018	0.017	0.004	0.011	0.023
Tin (Sn)	0.10	mg/kg d.w.	0.101	0.004	<0.10	0.11	0.18	0.19	<0.10	0.80	0.10	0.010	<0.10	0.13
Uranium (U)	0.0020	mg/kg d.w.	<0.0020	-	<0.0020	<0.0020	0.0042	0.0038	<0.0020	0.0171	0.0021	0.0003	<0.0020	0.0028
Vanadium (V)	0.10	mg/kg d.w.	<0.10	-	<0.10	<0.10	1.78	1.40	0.28	4.85	0.37	0.21	<0.10	0.68
Zinc (Zn)	0.50	mg/kg d.w.	24.2	4.2	17.3	32.6	212.0	61.8	110.0	314.0	354.2	51.2	238.0	412.0
Zirconium (Zr)	0.20	mg/kg d.w.	<0.20	-	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	-	<0.20	<0.20

Note: SD - Standard Deviation.

Table C.1: Average Dry Weight (d.w.) Metal Concentrations in Fish Tissue, Rainy River Mine Fish Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Walleye											
			Muscle				Liver				Ovary			
			Average (n=15)	SD	Minimum	Maximum	Average (n=15)	SD	Minimum	Maximum	Average (n=6)	SD	Minimum	Maximum
Moisture	0.25	%	78.8	0.6	77.8	80.2	77.4	3.2	72.4	81.6	73.4	1.7	71.3	75.2
Aluminum (Al)	2.0	mg/kg d.w.	3.3	3.0	<2.0	13.5	4.7	0.9	<2.0	5.4	4.6	3.8	<2.0	11.8
Antimony (Sb)	0.010	mg/kg d.w.	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	0.010	0.0004	<0.010	0.011
Arsenic (As)	0.020	mg/kg d.w.	0.20	0.05	0.09	0.32	0.33	0.18	0.12	0.74	0.13	0.05	0.07	0.21
Barium (Ba)	0.050	mg/kg d.w.	0.27	0.09	0.18	0.48	0.16	0.08	0.06	0.29	0.86	1.35	0.16	3.60
Beryllium (Be)	0.010	mg/kg d.w.	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010
Bismuth (Bi)	0.010	mg/kg d.w.	0.012	0.0036	<0.010	0.022	0.012	0.003	<0.010	0.021	<0.010	-	<0.010	<0.010
Boron (B)	1.0	mg/kg d.w.	<1.0	-	<1.0	<1.0	<1.0	-	<1.0	<1.0	1.2	0.6	<1.0	2.4
Cadmium (Cd)	0.0050	mg/kg d.w.	<0.0050	-	<0.0050	<0.0050	0.64	0.37	0.24	1.53	0.0106	0.0032	<0.0050	0.0140
Calcium (Ca)	20	mg/kg d.w.	786	485	373	2,370	690	706	261	3,000	893	306	378	1,200
Cesium (Cs)	0.0050	mg/kg d.w.	0.056	0.014	0.033	0.090	0.027	0.009	0.013	0.045	0.0427	0.0103	0.0290	0.0568
Chromium (Cr)	0.050	mg/kg d.w.	0.055	0.020	<0.050	0.128	0.161	0.069	<0.050	0.210	0.130	0.088	<0.050	0.230
Cobalt (Co)	0.020	mg/kg d.w.	<0.020	-	<0.020	<0.020	0.71	0.36	0.24	1.55	0.21	0.05	0.15	0.28
Copper (Cu)	0.10	mg/kg d.w.	0.65	0.13	0.54	1.07	7.81	1.81	5.23	12	3.30	0.56	2.83	4.27
Iron (Fe)	3.0	mg/kg d.w.	8.7	3.6	5.0	19.9	534	227	145	886	104	35	70	157
Lead (Pb)	0.020	mg/kg d.w.	0.03	0.04	<0.020	0.20	0.042	0.014	<0.020	0.050	0.035	0.017	<0.020	0.051
Lithium (Li)	0.50	mg/kg d.w.	<0.50	-	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	-	<0.50	<0.50
Magnesium (Mg)	2.0	mg/kg d.w.	1,579	84	1,450	1,750	777	106	598	995	1,189	221	883	1,480
Manganese (Mn)	0.050	mg/kg d.w.	0.65	0.15	0.41	0.96	6.99	1.38	5.19	9.8	13.7	10.0	1.6	29.6
Mercury (Hg)	0.0050	mg/kg d.w.	1.59	0.69	0.70	3.18	0.62	0.21	0.18	1.10	0.14	0.06	0.04	0.20
Molybdenum (Mo)	0.020	mg/kg d.w.	<0.020	-	<0.020	<0.020	0.72	0.17	0.40	1.02	0.07	0.03	0.03	0.11
Nickel (Ni)	0.20	mg/kg d.w.	<0.20	-	<0.20	<0.20	<0.20	-	<0.20	<0.20	0.21	0.03	<0.20	0.27
Phosphorus (P)	10	mg/kg d.w.	11,640	637	10,600	12,800	12,323	1,662	9,850	15,500	11,525	4,514	8,100	20,500
Potassium (K)	20	mg/kg d.w.	22,773	950	21,400	24,600	11,606	1,414	9,390	14,900	14,017	5,164	10,200	24,100
Rubidium (Rb)	0.050	mg/kg d.w.	51.8	12.0	36.8	85.5	30.5	8.4	18.2	42.8	35.9	10.33	25.0	52.9
Selenium (Se)	0.050	mg/kg d.w.	1.03	0.16	0.82	1.38	3.64	0.54	2.95	4.67	3.63	2.002	2.51	7.68
Sodium (Na)	20	mg/kg d.w.	1,460	444	911	2,300	5,074	1,087	3,940	7,750	3,135	488	2,520	3,840
Strontium (Sr)	0.050	mg/kg d.w.	0.181	0.163	0.070	0.695	0.415	0.386	0.180	1.610	0.255	0.082	0.160	0.360
Tellurium (Te)	0.020	mg/kg d.w.	<0.020	-	<0.020	<0.020	<0.020	-	<0.020	<0.020	<0.020	-	<0.020	<0.020
Thallium (Tl)	0.0020	mg/kg d.w.	0.016	0.004	0.011	0.024	0.035	0.010	0.025	0.056	0.026	0.012	0.015	0.047
Tin (Sn)	0.10	mg/kg d.w.	<0.10	-	<0.10	<0.10	0.66	0.51	0.13	1.90	0.12	0.05	<0.10	0.22
Uranium (U)	0.0020	mg/kg d.w.	0.0021	0.0004	<0.0020	0.0036	0.0021	0.0002	<0.0020	0.0029	<0.0020	-	<0.0020	<0.0020
Vanadium (V)	0.10	mg/kg d.w.	<0.10	-	<0.10	<0.10	0.12	0.04	<0.10	0.21	<0.10	-	<0.10	<0.10
Zinc (Zn)	0.50	mg/kg d.w.	15.1	1.5	12.4	17.3	84.6	9.3	65.1	103.0	223	213	108	657
Zirconium (Zr)	0.20	mg/kg d.w.	<0.20	-	<0.20	<0.20	0.20	0.01	<0.20	0.25	0.20	0.01	<0.20	0.22

Note: SD - Standard Deviation.

Table C.2: Dry Weight (d.w.) Metal Concentrations in Fish Muscle Tissue, Rainy River Mine Fish Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Northern Pike															
			PinR-EXP-2018-NP01 MUSCLE	PinR-EXP-2018-NP02 MUSCLE	PinR-EXP-2018-NP03 MUSCLE	PinR-EXP-2018-NP04 MUSCLE	PinR-EXP-2018-NP05 MUSCLE	PinR-EXP-2018-NP06 MUSCLE	PinR-EXP-2018-NP07 MUSCLE	PinR-EXP-2018-NP08 MUSCLE	PinR-EXP-2018-NP09 MUSCLE	PinR-EXP-2018-NP10 MUSCLE	PinR-EXP-2018-NP11 MUSCLE	PinR-EXP-2018-NP12 MUSCLE	PinR-EXP-2018-NP13 MUSCLE	PinR-EXP-2018-NP14 MUSCLE	PinR-EXP-2018-NP15 MUSCLE
			12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.50	%	80.8	80.5	79.4	79.4	78.7	81.8	82.0	80.1	79.3	77.8	80.7	78.4	79.7	80.4	80.1
Aluminum (Al)	2.0	mg/kg d.w.	6.9	4	4.3	2.8	2.7	4.2	2.4	2.3	3	2.1	2.7	3	<2.0	<2.0	6.5
Antimony (Sb)	0.010	mg/kg d.w.	<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
Arsenic (As)	0.020	mg/kg d.w.	0.144	0.313	0.213	0.435	0.189	0.186	0.239	0.186	0.272	0.236	0.242	0.294	0.351	0.168	0.140
Barium (Ba)	0.050	mg/kg d.w.	0.949	0.476	0.464	0.420	0.261	0.386	0.296	0.256	0.588	<0.050	0.370	0.366	<0.050	<0.050	0.084
Beryllium (Be)	0.010	mg/kg d.w.	<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)	0.010	mg/kg d.w.	<0.010	0.016	<0.010	0.013	<0.010	0.018	0.017	<0.010	0.014	0.018	0.013	0.017	0.018	0.013	0.017
Boron (B)	1.0	mg/kg d.w.	<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
Cadmium (Cd)	0.0050	mg/kg d.w.	<0.0050	0.0056	<0.0050	<0.0050	<0.0050	0.0111	0.0054	<0.0050	0.0086	0.0067	0.0133	<0.0050	<0.0050	<0.0050	<0.0050
Calcium (Ca)	20	mg/kg d.w.	1,560	1,060	2,080	874	521	3,260	554	2,160	2,460	531	3,670	3,110	499	601	596
Cesium (Cs)	0.0050	mg/kg d.w.	0.0521	0.0463	0.0610	0.0280	0.0673	0.0857	0.0581	0.0415	0.0669	0.0563	0.0707	0.0410	0.0374	0.0448	0.0510
Chromium (Cr)	0.050	mg/kg d.w.	0.079	0.058	<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
Cobalt (Co)	0.020	mg/kg d.w.	0.026	0.037	<0.020	<0.020	<0.020	0.023	<0.020	<0.020	0.024	<0.020	0.022	0.036	0.025	<0.020	0.034
Copper (Cu)	0.10	mg/kg d.w.	0.83	1.09	0.78	0.94	1.11	0.60	0.80	0.60	0.65	0.92	0.93	0.77	0.82	0.93	0.98
Iron (Fe)	3.0	mg/kg d.w.	18.7	21.9	10.5	22.7	16.0	19.5	11.3	8.5	13.2	17.2	21.0	12.5	10.7	7.0	22.2
Lead (Pb)	0.020	mg/kg d.w.	0.109	0.132	0.026	<0.020	<0.020	0.026	0.022	<0.020	<0.020	<0.020	0.034	<0.020	<0.020	<0.020	0.023
Lithium (Li)	0.50	mg/kg d.w.	<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
Magnesium (Mg)	2.0	mg/kg d.w.	1,450	1,470	1,680	1,470	1,490	1,480	1,460	1,490	1,570	1,420	1,550	1,540	1,540	1,660	1,530
Manganese (Mn)	0.050	mg/kg d.w.	2.44	1.28	2.87	1.18	0.989	3.57	1.22	1.80	2.84	0.67	3.80	2.640	0.71	0.75	0.81
Mercury (Hg)	0.0050	mg/kg d.w.	1.04	2.39	1.32	1.30	1.36	5.39	3.03	1.590	3.020	2.89	3.94	2.00	2.00	2.05	2.67
Molybdenum (Mo)	0.020	mg/kg d.w.	<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
Nickel (Ni)	0.20	mg/kg d.w.	<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
Phosphorus (P)	10	mg/kg d.w.	10,000	11,100	13,000	10,600	11,700	13,400	11,400	12,500	12,100	11,100	13,500	11,800	11,300	12,400	10,700
Potassium (K)	20	mg/kg d.w.	18,400	20,100	22,700	19,900	21,400	21,200	20,400	21,800	19,700	18,700	20,600	19,000	20,000	24,000	19,600
Rubidium (Rb)	0.050	mg/kg d.w.	37.0	28.3	40.6	22.4	39.5	32.0	27.6	30.5	34.5	30.1	30.3	23.5	27.2	31.5	28.8
Selenium (Se)	0.050	mg/kg d.w.	0.728	0.771	0.725	0.953	0.754	0.85	0.818	0.908	0.751	0.821	0.858	0.764	0.813	0.957	0.743
Sodium (Na)	20	mg/kg d.w.	3,360	2,560	1,890	1,800	1,760	2,640	3,350	1,260	2,300	2,240	2,510	2,490	2,450	815	3,340
Strontium (Sr)	0.050	mg/kg d.w.	0.74	0.480	1.060	0.299	0.117	1.440	0.264	0.737	1.540	0.163	1.730	1.810	0.159	0.109	0.221
Tellurium (Te)	0.020	mg/kg d.w.	<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
Thallium (Tl)	0.0020	mg/kg d.w.	0.0179	0.0100	0.0140	0.0094	0.0155	0.0129	0.0078	0.0143	0.0082	0.0099	0.0076	0.0056	0.0075	0.0140	0.0074
Tin (Sn)	0.10	mg/kg d.w.	<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	0.11	0.11
Uranium (U)	0.0020	mg/kg d.w.	<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
Vanadium (V)	0.10	mg/kg d.w.	<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
Zinc (Zn)	0.50	mg/kg d.w.	22.0	26.2	21.8	21.1	28.2	22.8	24.3	19.4	24.3	31.2	22.7	22.6	17.3	27.1	32.6
Zirconium (Zr)	0.20	mg/kg d.w.	<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

Table C.2: Dry Weight (d.w.) Metal Concentrations in Fish Muscle Tissue, Rainy River Mine Fish Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Walleye															
			PinR-EXP-2018-WA01 MUSCLE	PinR-EXP-2018-WA02 MUSCLE	PinR-EXP-2018-WA03 MUSCLE	PinR-EXP-2018-WA04 MUSCLE	PinR-EXP-2018-WA05 MUSCLE	PinR-EXP-2018-WA06 MUSCLE	PinR-EXP-2018-WA07 MUSCLE	PinR-EXP-2018-WA08 MUSCLE	PinR-EXP-2018-WA09 MUSCLE	PinR-EXP-2018-WA10 MUSCLE	PinR-EXP-2018-WA11 MUSCLE	PinR-EXP-2018-WA12 MUSCLE	PinR-EXP-2018-WA13 MUSCLE	PinR-EXP-2018-WA14 MUSCLE	PinR-EXP-2018-WA15 MUSCLE
			12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.50	%	78.9	78.8	79.7	78.1	78.0	78.9	79.2	78.7	78.8	80.2	78.4	78.4	78.8	77.8	78.8
Aluminum (Al)	2.0	mg/kg d.w.	5.5	<2.0	2	2.1	2.1	2.1	<2.0	13.5	<2.0	2.3	<2.0	2.6	4.6	<2.0	2.6
Antimony (Sb)	0.010	mg/kg d.w.	<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
Arsenic (As)	0.020	mg/kg d.w.	0.181	0.259	0.209	0.227	0.227	0.164	0.322	0.090	0.190	0.160	0.192	0.208	0.199	0.184	0.157
Barium (Ba)	0.050	mg/kg d.w.	0.256	0.372	0.441	0.475	0.296	0.191	0.2	0.331	0.196	0.296	0.21	0.209	0.219	0.181	0.223
Beryllium (Be)	0.010	mg/kg d.w.	<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)	0.010	mg/kg d.w.	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	0.022	<0.010	<0.010	<0.010	0.016	0.016	0.011	0.015
Boron (B)	1.0	mg/kg d.w.	<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
Cadmium (Cd)	0.0050	mg/kg d.w.	<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
Calcium (Ca)	20	mg/kg d.w.	455	1,230	857	2,370	596	566	681	666	373	650	870	480	787	535	668
Cesium (Cs)	0.0050	mg/kg d.w.	0.0719	0.0576	0.0621	0.0329	0.0360	0.0522	0.0453	0.0521	0.0901	0.0590	0.0597	0.0617	0.0608	0.0523	0.0521
Chromium (Cr)	0.050	mg/kg d.w.	0.128	<0.050	<0.050	<0.050	<0.050	0.052	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cobalt (Co)	0.020	mg/kg d.w.	<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
Copper (Cu)	0.10	mg/kg d.w.	0.77	0.60	0.60	0.72	0.66	0.63	0.55	1.07	0.54	0.64	0.57	0.65	0.68	0.54	0.57
Iron (Fe)	3.0	mg/kg d.w.	11.6	7.1	7.9	8.0	6.9	7.6	6.4	19.9	6.5	7.4	6.6	9.7	12.1	5.0	7.6
Lead (Pb)	0.020	mg/kg d.w.	0.03	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.195	<0.020	<0.020	<0.020	0.033	<0.020	<0.020	<0.020
Lithium (Li)	0.50	mg/kg d.w.	<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
Magnesium (Mg)	2.0	mg/kg d.w.	1,550	1,560	1,600	1,650	1,660	1,590	1,600	1,750	1,470	1,520	1,490	1,450	1,540	1,700	1,560
Manganese (Mn)	0.050	mg/kg d.w.	0.547	0.861	0.555	0.871	0.649	0.606	0.620	0.957	0.409	0.698	0.534	0.525	0.718	0.626	0.605
Mercury (Hg)	0.0050	mg/kg d.w.	0.70	2.96	1.08	1.01	1.14	1.49	1.520	1.33	3.18	1.010	1.62	2.06	1.62	1.41	1.67
Molybdenum (Mo)	0.020	mg/kg d.w.	<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
Nickel (Ni)	0.20	mg/kg d.w.	<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
Phosphorus (P)	10	mg/kg d.w.	11,500	11,900	11,500	12,800	12,500	11,500	11,900	11,500	10,600	11,400	10,700	10,800	11,700	12,400	11,900
Potassium (K)	20	mg/kg d.w.	22,900	22,000	23,100	23,400	24,200	21,900	23,600	22,800	21,800	23,000	21,600	21,400	23,100	24,600	22,200
Rubidium (Rb)	0.050	mg/kg d.w.	85.5	51.9	65.8	36.8	41.1	50.8	41	47.7	61.4	56.8	48.8	51.3	48.0	45.4	44.9
Selenium (Se)	0.050	mg/kg d.w.	0.90	1.14	0.824	1.310	1.380	1.060	1.200	0.98	1.00	0.855	0.947	0.969	0.927	0.980	0.993
Sodium (Na)	20	mg/kg d.w.	997	1,600	1,760	1,100	1,210	2,300	1,070	2,100	1,150	1,020	1,460	1,880	1,420	911	1,920
Strontium (Sr)	0.050	mg/kg d.w.	0.098	0.380	0.204	0.695	0.076	0.101	0.138	0.138	0.070	0.138	0.206	0.072	0.184	0.073	0.143
Tellurium (Te)	0.020	mg/kg d.w.	<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
Thallium (Tl)	0.0020	mg/kg d.w.	0.0238	0.0194	0.0202	0.0181	0.0184	0.0134	0.0117	0.0142	0.0114	0.0121	0.0133	0.0156	0.0164	0.0158	0.0138
Tin (Sn)	0.10	mg/kg d.w.	<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
Uranium (U)	0.0020	mg/kg d.w.	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0036	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Vanadium (V)	0.10	mg/kg d.w.	<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
Zinc (Zn)	0.50	mg/kg d.w.	17.3	14.9	14.2	16.6	16.6	15.3	16.7	17.0	12.4	13.9	13.0	15.6	14.7	13.8	14.0
Zirconium (Zr)	0.20	mg/kg d.w.	<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

Table C.3: Dry Weight (d.w.) Metal Concentrations in Fish Liver Tissue, Rainy River Mine Fish Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Northern Pike														
			PinR-EXP-2018-NP01	PinR-EXP-2018-NP02	PinR-EXP-2018-NP03	PinR-EXP-2018-NP04	PinR-EXP-2018-NP05	PinR-EXP-2018-NP06	PinR-EXP-2018-NP07	PinR-EXP-2018-NP08	PinR-EXP-2018-NP09	PinR-EXP-2018-NP10	PinR-EXP-2018-NP11	PinR-EXP-2018-NP12	PinR-EXP-2018-NP13	PinR-EXP-2018-NP14	PinR-EXP-2018-NP15
			12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.50	%	73.7	79.5	69.1	76.1	74.8	78.4	80.5	80.0	78.7	75.0	73.7	78.0	80.7	74.8	79.0
Aluminum (Al)	2.0	mg/kg d.w.	<5.0	7.8	<5.0	<5.0	<5.0	23.3	8.5	2.8	11.5	4.6	19.6	8.4	5.5	6.1	7.6
Antimony (Sb)	0.010	mg/kg d.w.	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	<0.010	<0.010
Arsenic (As)	0.020	mg/kg d.w.	0.098	0.186	0.089	0.186	0.094	0.198	0.272	0.103	0.193	0.084	0.224	0.205	0.235	0.117	0.159
Barium (Ba)	0.050	mg/kg d.w.	0.161	0.146	0.084	0.632	0.567	0.76	0.477	0.666	0.512	0.178	0.379	0.409	0.406	1.55	0.596
Beryllium (Be)	0.010	mg/kg d.w.	<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)	0.010	mg/kg d.w.	0.017	0.043	0.017	0.026	0.013	0.080	0.048	0.019	0.044	0.025	0.045	0.051	0.041	0.035	0.050
Boron (B)	1.0	mg/kg d.w.	<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
Cadmium (Cd)	0.0050	mg/kg d.w.	0.179	0.392	0.173	0.436	0.252	1.580	0.742	0.341	1.040	0.312	1.690	0.301	0.411	0.239	0.383
Calcium (Ca)	20	mg/kg d.w.	793	182	147	175	107	300	286	280	207	151	201	171	236	1750	238
Cesium (Cs)	0.0050	mg/kg d.w.	0.0186	0.0220	0.0170	0.0088	0.0312	0.0279	0.0247	0.0246	0.0311	0.0210	0.0233	0.0177	0.0210	0.0173	0.0284
Chromium (Cr)	0.050	mg/kg d.w.	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.083	<0.050	0.084	<0.050	0.055	<0.050	<0.050	<0.20	<0.20
Cobalt (Co)	0.020	mg/kg d.w.	0.128	0.226	0.132	0.160	0.132	0.614	0.378	0.170	0.319	0.136	0.417	0.371	0.330	0.295	0.369
Copper (Cu)	0.10	mg/kg d.w.	66.9	229	66	86	107.0	228.0	124.0	105.0	278.0	44.5	151	355.0	203	109	229.0
Iron (Fe)	3.0	mg/kg d.w.	142	879	459	1,560	98	1,720	96	894	1,290	207	847	2,200	1,340	145	1,100
Lead (Pb)	0.020	mg/kg d.w.	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	<0.020	0.021	<0.020	0.028	<0.020	<0.020	<0.050	<0.050
Lithium (Li)	0.50	mg/kg d.w.	<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
Magnesium (Mg)	2.0	mg/kg d.w.	472	760	415	541	503	733	949	877	726	521	525	801	894	754	723
Manganese (Mn)	0.050	mg/kg d.w.	4.19	6.08	3.10	4.30	4.59	7.47	12.70	6.23	5.92	2.53	7.12	5.31	8.44	7.15	6.54
Mercury (Hg)	0.0050	mg/kg d.w.	0.480	1.310	0.482	0.561	0.521	4.180	1.49	0.732	1.900	0.976	2.300	1.300	1.05	0.931	1.600
Molybdenum (Mo)	0.020	mg/kg d.w.	0.804	1.010	0.826	0.83	0.836	1.440	1.310	0.792	0.862	0.337	0.911	0.971	0.999	1.210	1.320
Nickel (Ni)	0.20	mg/kg d.w.	<0.20	<0.20	<0.20	<0.20	<0.20	0.2	<0.20	<0.20	<0.20	<0.20	0.2	<0.20	<0.20	<0.20	<0.20
Phosphorus (P)	10	mg/kg d.w.	6,880	12,300	7,120	7,880	7,460	11,900	16,800	15,400	13,800	8,020	9,490	14,300	16,100	11,800	13,100
Potassium (K)	20	mg/kg d.w.	6,230	13,200	7,210	8,220	8,710	10,400	14,700	15,100	13,200	9,820	9,630	13,700	15,600	8,880	11,900
Rubidium (Rb)	0.050	mg/kg d.w.	19.4	40.5	24.0	13.7	40.0	27.9	25.8	26.7	38.4	21.2	22.8	25.2	32.8	18.1	29.0
Selenium (Se)	0.050	mg/kg d.w.	5.90	8.11	7.27	8.38	6.46	9.58	10.10	9.87	9.17	6.63	9.02	9.37	11.40	9.31	10.10
Sodium (Na)	20	mg/kg d.w.	2,790	4,430	3,110	2,920	2,410	5,220	6,220	4,920	4,460	3,100	4,350	4,390	4,840	5,870	4,490
Strontium (Sr)	0.050	mg/kg d.w.	0.630	0.200	0.140	0.120	<0.10	0.24	0.230	0.153	0.221	0.091	0.160	0.165	0.210	1.320	0.230
Tellurium (Te)	0.020	mg/kg d.w.	<0.020	<0.020	<0.020	0.023	<0.020	0.037	0.021	<0.020	<0.020	<0.020	0.034	<0.020	0.021	<0.020	<0.020
Thallium (Tl)	0.0020	mg/kg d.w.	0.0179	0.0133	0.0108	0.0119	0.0155	0.0141	0.0101	0.0151	0.0100	0.0089	0.0083	0.0084	0.0124	0.0098	0.0096
Tin (Sn)	0.10	mg/kg d.w.	0.80	0.32	0.37	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Uranium (U)	0.0020	mg/kg d.w.	<0.0020	0.004	<0.0020	<0.0020	<0.0020	0.0171	0.0060	<0.0020	0.0055	0.003	0.0044	0.0034	0.0032	<0.0020	0.0043
Vanadium (V)	0.10	mg/kg d.w.	0.28	3.15	0.47	1.42	0.36	4.85	1.71	0.36	1.76	1.28	2.29	4.21	1.97	0.60	1.96
Zinc (Zn)	0.50	mg/kg d.w.	152	224	175	173	140.0	314	279	195	280	110	150	276	267	233	212
Zirconium (Zr)	0.20	mg/kg d.w.	<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

Table C.3: Dry Weight (d.w.) Metal Concentrations in Fish Liver Tissue, Rainy River Mine Fish Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Walleye															
			PinR-EXP-2018-WA01	PinR-EXP-2018-WA02	PinR-EXP-2018-WA03	PinR-EXP-2018-WA04	PinR-EXP-2018-WA05	PinR-EXP-2018-WA06	PinR-EXP-2018-WA07	PinR-EXP-2018-WA08	PinR-EXP-2018-WA09	PinR-EXP-2018-WA10	PinR-EXP-2018-WA11	PinR-EXP-2018-WA12	PinR-EXP-2018-WA13	PinR-EXP-2018-WA14	PinR-EXP-2018-WA15
			12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.50	%	72.9	81.5	78.5	72.4	72.9	76.5	80.9	76.7	76.9	79.4	79.9	78.3	74.1	79.0	81.6
Aluminum (Al)	2.0	mg/kg d.w.	<2.0	5.4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	3.1	<5.0	<5.0	4.9	<5.0	<5.0	<5.0
Antimony (Sb)	0.010	mg/kg d.w.	<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
Arsenic (As)	0.020	mg/kg d.w.	0.139	0.205	0.344	0.395	0.576	0.320	0.165	0.118	0.129	0.572	0.328	0.375	0.340	0.744	0.268
Barium (Ba)	0.050	mg/kg d.w.	0.268	0.127	0.17	0.181	0.285	0.261	0.135	0.193	0.061	0.275	0.083	0.071	0.115	0.132	0.114
Beryllium (Be)	0.010	mg/kg d.w.	<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)	0.010	mg/kg d.w.	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	0.021	<0.010	0.016	<0.010	0.013	<0.010	0.014	<0.010
Boron (B)	1.0	mg/kg d.w.	<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
Cadmium (Cd)	0.0050	mg/kg d.w.	0.242	0.687	1.530	0.363	0.315	0.678	1.240	0.325	0.870	0.556	0.436	0.935	0.62	0.537	0.25
Calcium (Ca)	20	mg/kg d.w.	1510	467	612	530	345	686	640	327	304	3000	261	364	444	382	473
Cesium (Cs)	0.0050	mg/kg d.w.	0.0384	0.0289	0.0238	0.0155	0.0134	0.0265	0.0158	0.0211	0.0397	0.0448	0.0285	0.0329	0.0187	0.0223	0.0272
Chromium (Cr)	0.050	mg/kg d.w.	<0.050	<0.050	<0.20	0.21	<0.20	<0.20	<0.20	<0.20	<0.050	<0.20	<0.20	<0.050	<0.20	<0.20	<0.20
Cobalt (Co)	0.020	mg/kg d.w.	0.244	1.190	1.550	0.723	0.939	0.81	0.763	0.689	0.283	0.748	0.271	0.609	0.901	0.472	0.41
Copper (Cu)	0.10	mg/kg d.w.	7.22	8.03	12.00	8.33	10.40	8.77	8.28	6.39	6.35	9.40	5.84	6.9	6.57	7.51	5.23
Iron (Fe)	3.0	mg/kg d.w.	269	596	886	494	432	795	655	145	543	828	204	760	456	379	569
Lead (Pb)	0.020	mg/kg d.w.	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020	<0.050	<0.050	<0.020	<0.050	<0.050	<0.050
Lithium (Li)	0.50	mg/kg d.w.	<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
Magnesium (Mg)	2.0	mg/kg d.w.	782	828	754	725	749	745	688	933	888	849	759	995	598	703	662
Manganese (Mn)	0.050	mg/kg d.w.	7.60	5.58	6.60	8.84	7.0	5.19	5.90	9.79	8.51	7.14	7.19	8.04	5.37	6.66	5.46
Mercury (Hg)	0.0050	mg/kg d.w.	0.176	0.891	0.423	0.548	0.696	0.503	0.530	0.562	1.100	0.604	0.656	0.861	0.560	0.640	0.582
Molybdenum (Mo)	0.020	mg/kg d.w.	0.480	0.540	0.761	0.758	0.868	0.594	0.940	0.755	0.396	1.020	0.699	0.814	0.685	0.861	0.603
Nickel (Ni)	0.20	mg/kg d.w.	<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
Phosphorus (P)	10	mg/kg d.w.	13,200	12,800	10,900	11,900	12,700	12,600	10,600	13,600	14,300	14,200	11,700	15,500	10,500	10,500	9,850
Potassium (K)	20	mg/kg d.w.	10,300	13,700	10,300	10,600	10,900	11,900	10,600	12,100	12,800	11,700	11,900	14,900	9,390	11,600	11,400
Rubidium (Rb)	0.050	mg/kg d.w.	42.8	33.5	33.0	18.2	20.8	28.1	19.7	31.4	42.6	40.1	31.8	40.4	22.2	25.1	27.8
Selenium (Se)	0.050	mg/kg d.w.	3.36	3.86	3.83	4.44	4.56	3.56	3.53	2.95	3.29	4.67	2.97	3.57	3.18	3.48	3.32
Sodium (Na)	20	mg/kg d.w.	3,950	7,750	6,540	4,350	3,980	5,360	6,030	4,360	5,700	4,860	3,940	4,980	4,680	4,210	5,420
Strontium (Sr)	0.050	mg/kg d.w.	1.000	0.317	0.380	0.270	0.24	0.450	0.340	0.210	0.191	1.610	0.180	0.241	0.240	0.260	0.290
Tellurium (Te)	0.020	mg/kg d.w.	<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
Thallium (Tl)	0.0020	mg/kg d.w.	0.0340	0.0306	0.0403	0.0291	0.0494	0.0269	0.0249	0.0273	0.0250	0.0449	0.0385	0.0426	0.0289	0.0559	0.0304
Tin (Sn)	0.10	mg/kg d.w.	0.13	0.21	1.03	1.35	0.89	0.64	0.39	0.35	0.20	1.90	0.53	0.36	0.27	1.18	0.44
Uranium (U)	0.0020	mg/kg d.w.	<0.0020	<0.0020	0.0029	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Vanadium (V)	0.10	mg/kg d.w.	<0.10	0.12	0.21	<0.10	<0.10	0.14	<0.10	0.2	<0.10	<0.10	0.12	0.11	0.13	<0.10	<0.10
Zinc (Zn)	0.50	mg/kg d.w.	90.1	89.9	80.0	81.5	93.9	85.6	83.0	77.5	88.6	94.0	78.6	103.0	73.8	84.3	65.1
Zirconium (Zr)	0.20	mg/kg d.w.	<0.20	<0.20	0.25	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.21	<0.20	<0.20	<0.20	<0.20	<0.20

Table C.4: Dry Weight (d.w.) Metal Concentrations in Fish Ovaries, Rainy River Mine Fish Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Northern Pike									Walleye					
			PinR-EXP-2018-NP02 OVARY	PinR-EXP-2018-NP06 OVARY	PinR-EXP-2018-NP07	PinR-EXP-2018-NP08 OVARY	PinR-EXP-2018-NP09	PinR-EXP-2018-NP10 OVARY	PinR-EXP-2018-NP12 OVARY	PinR-EXP-2018-NP13 OVARY	PinR-EXP-2018-NP15 OVARY	PinR-EXP-2018-WA01 OVARY	PinR-EXP-2018-WA04 OVARY	PinR-EXP-2018-WA08 OVARY	PinR-EXP-2018-WA09 OVARY	PinR-EXP-2018-WA11 OVARY	PinR-EXP-2018-WA12 OVARY
			12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.25	%	83.4	83.3	84.1	82.3	83.7	82.7	83.1	82.8	83.3	74.9	75.2	72.5	71.7	71.3	74.7
Aluminum (Al)	2.0	mg/kg d.w.	6.2	<5.0	4.5	2.8	14.9	5.3	3.1	2.4	<5.0	<2.0	11.8	<5.0	<2.0	<5.0	<2.0
Antimony (Sb)	0.010	mg/kg d.w.	0.022	<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	0.011
Arsenic (As)	0.020	mg/kg d.w.	0.163	0.150	0.207	0.086	0.169	0.122	0.178	0.173	0.109	0.090	0.097	0.121	0.069	0.167	0.206
Barium (Ba)	0.050	mg/kg d.w.	0.617	1.450	0.520	0.480	0.473	0.559	0.147	0.109	0.125	0.200	3.600	0.579	0.156	0.379	0.269
Beryllium (Be)	0.010	mg/kg d.w.	<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)	0.010	mg/kg d.w.	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Boron (B)	1.0	mg/kg d.w.	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	<1.0	<1.0	<1.0	<1.0
Cadmium (Cd)	0.0050	mg/kg d.w.	0.0514	0.1210	0.0679	0.0566	0.0876	0.0715	0.0419	0.0370	0.0310	<0.0050	0.013	<0.010	0.014	<0.010	0.0114
Calcium (Ca)	20	mg/kg d.w.	906	583	661	924	478	1,600	751	715	676	973	378	1,190	787	832	1,200
Cesium (Cs)	0.0050	mg/kg d.w.	0.0503	0.0573	0.0493	0.0456	0.0735	0.0534	0.0421	0.0373	0.0463	0.0568	0.0376	0.0290	0.0497	0.0357	0.0472
Chromium (Cr)	0.050	mg/kg d.w.	0.057	<0.20	0.051	<0.050	0.052	0.105	0.06	0.076	<0.20	<0.050	0.23	<0.20	<0.050	<0.20	<0.050
Cobalt (Co)	0.020	mg/kg d.w.	0.372	0.476	0.305	0.251	0.518	0.277	0.635	0.553	0.359	0.235	0.177	0.243	0.197	0.152	0.275
Copper (Cu)	0.10	mg/kg d.w.	6.77	4.56	7.49	6.78	6.08	5.10	7.00	6.93	5.40	4.27	3.20	3.00	2.87	2.83	3.61
Iron (Fe)	3.0	mg/kg d.w.	307	148	132	304	258	231	311	393	217	78.1	89.4	136.0	69.7	91.4	157
Lead (Pb)	0.020	mg/kg d.w.	0.08	<0.050	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.050	<0.020	0.051	<0.050	<0.020	<0.050	<0.020
Lithium (Li)	0.50	mg/kg d.w.	<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
Magnesium (Mg)	2.0	mg/kg d.w.	1,310	759	1,260	1,320	1,240	1,220	1,330	1,280	1,100	1,190	1,480	1,060	1,120	883	1,400
Manganese (Mn)	0.050	mg/kg d.w.	179	72	204	176	118	89	206	235	162	6.1	1.6	29.6	10.2	19.3	15.4
Mercury (Hg)	0.0050	mg/kg d.w.	0.355	1.0000	0.494	0.2730	0.5860	0.610	0.379	0.251	0.471	0.0356	0.1840	0.2000	0.1670	0.0950	0.156
Molybdenum (Mo)	0.020	mg/kg d.w.	0.360	0.462	0.335	0.258	0.277	0.147	0.351	0.350	0.334	0.0440	0.0930	0.1050	0.0330	0.0620	0.0760
Nickel (Ni)	0.20	mg/kg d.w.	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.27	<0.20	<0.20	<0.20	<0.20
Phosphorus (P)	10	mg/kg d.w.	18,000	12,100	17,600	17,700	17,400	16,700	17,900	17,200	14,000	9,980	20,500	9,270	10,100	8,100	11,200
Potassium (K)	20	mg/kg d.w.	24,000	17,500	22,500	22,600	22,800	18,900	21,600	23,200	16,500	13,200	24,100	10,200	12,000	10,500	14,100
Rubidium (Rb)	0.050	mg/kg d.w.	41.3	33.8	34.5	37.7	44.9	32.8	29.9	36.9	30.8	52.9	42.0	25.0	33.2	26.9	35.1
Selenium (Se)	0.050	mg/kg d.w.	4.12	3.42	3.23	6.10	3.27	3.78	3.45	4.12	3.09	2.61	7.68	2.99	2.51	3.28	2.73
Sodium (Na)	20	mg/kg d.w.	5,350	5,990	5,710	4,100	5,340	5,630	5,330	5,160	3,920	2,800	2,980	3,110	3,560	2,520	3,840
Strontium (Sr)	0.050	mg/kg d.w.	0.714	0.270	0.332	0.361	0.311	0.834	0.468	0.376	0.370	0.214	0.270	0.360	0.188	0.160	0.340
Tellurium (Te)	0.020	mg/kg d.w.	<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
Thallium (Tl)	0.0020	mg/kg d.w.	0.0224	0.0179	0.0123	0.0225	0.0162	0.0180	0.0132	0.0198	0.0112	0.0469	0.0330	0.0183	0.0147	0.0190	0.0269
Tin (Sn)	0.10	mg/kg d.w.	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	<0.10	0.13	<0.10	0.22	<0.10	<0.10	<0.10	<0.10
Uranium (U)	0.0020	mg/kg d.w.	<0.0020	0.0028	<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
Vanadium (V)	0.10	mg/kg d.w.	0.68	0.56	0.19	<0.10	0.24	0.26	0.64	0.44	0.22	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Zinc (Zn)	0.50	mg/kg d.w.	356	238	363	370	412	388	378	371	312	150.0	657.0	140.0	122.0	108	162
Zirconium (Zr)	0.20	mg/kg d.w.	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.22	<0.20	<0.20	<0.20	<0.20

Table C.5: Wet Weight (w.w.) Metal Concentrations in Fish Muscle Tissue, Rainy River Mine Fish Tissue Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Northern Pike														
				PinR-EXP-2018-NP01	PinR-EXP-2018-NP02	PinR-EXP-2018-NP03	PinR-EXP-2018-NP04	PinR-EXP-2018-NP05	PinR-EXP-2018-NP06	PinR-EXP-2018-NP07	PinR-EXP-2018-NP08	PinR-EXP-2018-NP09	PinR-EXP-2018-NP10	PinR-EXP-2018-NP11	PinR-EXP-2018-NP12	PinR-EXP-2018-NP13	PinR-EXP-2018-NP14	PinR-EXP-2018-NP15
				12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.25	%	-	80.8	80.5	79.4	79.4	78.7	81.8	82.0	80.1	79.3	77.8	80.7	78.4	79.7	80.4	80.1
Aluminum (Al)	0.4	mg/kg w.w.	-	1.32	0.78	0.89	0.58	0.58	0.76	0.43	0.46	0.62	0.47	0.52	0.65	<0.4	<0.4	1.29
Antimony (Sb)	0.002	mg/kg w.w.	1.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Arsenic (As)	0.004	mg/kg w.w.	1.0	0.03	0.06	0.04	0.09	0.04	0.03	0.04	0.04	0.06	0.05	0.05	0.06	0.07	0.03	0.03
Barium (Ba)	0.010	mg/kg w.w.	642	0.18	0.09	0.10	0.09	0.06	0.07	0.05	0.05	0.12	<0.01	0.07	0.08	<0.01	<0.01	0.02
Beryllium (Be)	0.002	mg/kg w.w.	6.4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth (Bi)	0.002	mg/kg w.w.	-	<0.002	0.0031	<0.002	0.0027	<0.002	0.0033	0.0031	<0.002	0.0029	0.0040	0.0025	0.0037	0.0037	0.0025	0.0034
Boron (B)	0.2	mg/kg w.w.	56.2	<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
Cadmium (Cd)	0.0010	mg/kg w.w.	3.2	<0.001	0.0011	<0.001	<0.001	<0.001	0.0020	0.0010	<0.001	0.0018	0.0015	0.0026	<0.001	<0.001	<0.001	<0.001
Calcium (Ca)	4	mg/kg w.w.	-	300	207	428	180	111	593	100	430	509	118	708	672	101	118	119
Cesium (Cs)	0.0010	mg/kg w.w.	-	0.0100	0.0090	0.0126	0.0058	0.0143	0.0156	0.0105	0.0083	0.0138	0.0125	0.0136	0.0089	0.0076	0.0088	0.0101
Chromium (Cr)	0.010	mg/kg w.w.	3.2	0.015	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt (Co)	0.004	mg/kg w.w.	-	0.0050	0.0072	<0.004	<0.004	<0.004	0.0042	<0.004	<0.004	0.0050	<0.004	0.0042	0.0078	0.0051	<0.004	0.0068
Copper (Cu)	0.02	mg/kg w.w.	292	0.16	0.21	0.16	0.19	0.24	0.11	0.14	0.12	0.13	0.20	0.18	0.17	0.17	0.18	0.20
Iron (Fe)	0.6	mg/kg w.w.	-	3.6	4.3	2.2	4.7	3.4	3.5	2.0	1.7	2.7	3.8	4.1	2.7	2.2	1.4	4.4
Lead (Pb)	0.004	mg/kg w.w.	11.6	0.0209	0.0257	0.0054	<0.004	<0.004	0.0047	0.0040	<0.004	<0.004	<0.004	0.0066	<0.004	<0.004	<0.004	0.0046
Lithium (Li)	0.10	mg/kg w.w.	-	<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
Magnesium (Mg)	0.4	mg/kg w.w.	-	278	287	346	303	317	269	263	297	325	315	299	333	313	325	304
Manganese (Mn)	0.010	mg/kg w.w.	392	0.47	0.25	0.59	0.24	0.21	0.65	0.22	0.36	0.59	0.15	0.73	0.570	0.14	0.15	0.16
Mercury (Hg)	0.0010	mg/kg w.w.	0.5	0.20	0.47	0.27	0.27	0.29	0.98	0.55	0.32	0.63	0.64	0.76	0.43	0.41	0.40	0.53
Molybdenum (Mo)	0.004	mg/kg w.w.	16.1	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Nickel (Ni)	0.04	mg/kg w.w.	3.5	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Phosphorus (P)	2	mg/kg w.w.	-	1,920	2,165	2,678	2,184	2,492	2,439	2,052	2,488	2,505	2,464	2,606	2,549	2,294	2,430	2,129
Potassium (K)	4	mg/kg w.w.	-	3,533	3,920	4,676	4,099	4,558	3,858	3,672	4,338	4,078	4,151	3,976	4,104	4,060	4,704	3,900
Rubidium (Rb)	0.010	mg/kg w.w.	-	7.1	5.5	8.4	4.6	8.4	5.8	5.0	6.1	7.1	6.7	5.8	5.1	5.5	6.2	5.7
Selenium (Se)	0.010	mg/kg w.w.	3.6	0.14	0.15	0.15	0.20	0.16	0.15	0.15	0.18	0.16	0.18	0.17	0.17	0.17	0.19	0.15
Sodium (Na)	4	mg/kg w.w.	-	645	499	389	371	375	480	603	251	476	497	484	538	497	160	665
Strontium (Sr)	0.010	mg/kg w.w.	1,930	0.14	0.09	0.22	0.06	0.025	0.26	0.05	0.15	0.32	0.036	0.33	0.391	0.032	0.021	0.044
Tellurium (Te)	0.004	mg/kg w.w.	-	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Thallium (Tl)	0.0004	mg/kg w.w.	-	0.0034	0.0020	0.0029	0.0019	0.0033	0.0023	0.0014	0.0028	0.0017	0.0022	0.0015	0.0012	0.0015	0.0027	0.0015
Tin (Sn)	0.02	mg/kg w.w.	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.02
Uranium (U)	0.0004	mg/kg w.w.	1.9	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Vanadium (V)	0.02	mg/kg w.w.	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc (Zn)	0.10	mg/kg w.w.	963	4.2	5.1	4.5	4.3	6.0	4.1	4.4	3.9	5.0	6.9	4.4	4.9	3.5	5.3	6.5
Zirconium (Zr)	0.04	mg/kg w.w.	-	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

Table C.5: Wet Weight (w.w.) Metal Concentrations in Fish Muscle Tissue, Rainy River Mine Fish Tissue Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Walleye														
				PinR-EXP-2018-WA01	PinR-EXP-2018-WA02	PinR-EXP-2018-WA03	PinR-EXP-2018-WA04	PinR-EXP-2018-WA05	PinR-EXP-2018-WA06	PinR-EXP-2018-WA07	PinR-EXP-2018-WA08	PinR-EXP-2018-WA09	PinR-EXP-2018-WA10	PinR-EXP-2018-WA11	PinR-EXP-2018-WA12	PinR-EXP-2018-WA13	PinR-EXP-2018-WA14	PinR-EXP-2018-WA15
				12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.25	%	-	78.9	78.8	79.7	78.1	78.0	78.9	79.2	78.7	78.8	80.2	78.4	78.4	78.8	77.8	78.8
Aluminum (Al)	0.4	mg/kg w.w.	-	1.16	<0.4	0.41	0.46	0.46	0.44	<0.4	2.88	<0.4	0.46	<0.4	0.56	0.98	<0.4	0.55
Antimony (Sb)	0.002	mg/kg w.w.	1.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Arsenic (As)	0.004	mg/kg w.w.	1.0	0.038	0.055	0.042	0.050	0.050	0.035	0.067	0.019	0.040	0.032	0.041	0.045	0.042	0.041	0.033
Barium (Ba)	0.010	mg/kg w.w.	642	0.054	0.079	0.090	0.104	0.065	0.040	0.042	0.071	0.042	0.059	0.045	<0.045	0.046	0.040	0.047
Beryllium (Be)	0.002	mg/kg w.w.	6.4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth (Bi)	0.002	mg/kg w.w.	-	<0.002	<0.002	<0.002	<0.002	<0.002	0.0025	<0.002	0.0047	<0.002	<0.002	<0.002	0.0035	0.0034	0.0024	0.0032
Boron (B)	0.2	mg/kg w.w.	56.2	<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
Cadmium (Cd)	0.0010	mg/kg w.w.	3.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium (Ca)	4	mg/kg w.w.	-	96	261	174	519	131	119	142	142	79	129	188	104	167	119	142
Cesium (Cs)	0.0010	mg/kg w.w.	-	0.0152	0.0122	0.0126	0.0072	0.0079	0.0110	0.0094	0.0111	0.0191	0.0117	0.0129	0.0133	0.0129	0.0116	0.0110
Chromium (Cr)	0.010	mg/kg w.w.	3.2	0.027	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt (Co)	0.004	mg/kg w.w.	-	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Copper (Cu)	0.02	mg/kg w.w.	292	0.16	0.13	0.12	0.16	0.15	0.13	0.11	0.23	0.11	0.13	0.12	0.14	0.14	0.12	0.12
Iron (Fe)	0.6	mg/kg w.w.	-	2.4	1.5	1.6	1.8	1.5	1.6	1.3	4.2	1.4	1.5	1.4	2.1	2.6	1.1	1.6
Lead (Pb)	0.004	mg/kg w.w.	11.6	0.0063	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0415	<0.004	<0.004	<0.004	0.0071	<0.004	<0.004	<0.004
Lithium (Li)	0.10	mg/kg w.w.	-	<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
Magnesium (Mg)	0.4	mg/kg w.w.	-	327	331	325	361	365	335	333	373	312	301	322	313	326	377	331
Manganese (Mn)	0.010	mg/kg w.w.	392	0.12	0.18	0.11	0.19	0.14	0.13	0.13	0.20	0.09	0.14	0.12	0.113	0.15	0.14	0.13
Mercury (Hg)	0.0010	mg/kg w.w.	0.5	0.15	0.63	0.22	0.22	0.25	0.31	0.32	0.28	0.67	0.20	0.35	0.44	0.34	0.31	0.35
Molybdenum (Mo)	0.004	mg/kg w.w.	16.1	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Nickel (Ni)	0.04	mg/kg w.w.	3.5	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Phosphorus (P)	2	mg/kg w.w.	-	2,427	2,523	2,335	2,803	2,750	2,427	2,475	2,450	2,247	2,257	2,311	2,333	2,480	2,753	2,523
Potassium (K)	4	mg/kg w.w.	-	4,832	4,664	4,689	5,125	5,324	4,621	4,909	4,856	4,622	4,554	4,666	4,622	4,897	5,461	4,706
Rubidium (Rb)	0.010	mg/kg w.w.	-	18.0	11.0	13.4	8.1	9.0	10.7	8.6	10.2	13.0	11.2	10.5	11.1	10.2	10.1	9.5
Selenium (Se)	0.010	mg/kg w.w.	3.6	0.190	0.242	0.167	0.287	0.304	0.22	0.250	0.209	0.212	0.169	0.205	0.209	0.197	0.218	0.211
Sodium (Na)	4	mg/kg w.w.	-	210	339	357	241	266	485	223	447	244	202	315	406	301	202	407
Strontium (Sr)	0.010	mg/kg w.w.	1,920	0.02	0.08	0.04	0.15	0.017	0.02	0.03	0.03	0.01	0.027	0.04	0.016	0.039	0.016	0.030
Tellurium (Te)	0.004	mg/kg w.w.	-	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Thallium (Tl)	0.0004	mg/kg w.w.	-	0.0050	0.0041	0.0041	0.0040	0.0040	0.0028	0.0024	0.0030	0.0024	0.0024	0.0029	0.0034	0.0035	0.0035	0.0029
Tin (Sn)	0.02	mg/kg w.w.	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Uranium (U)	0.0004	mg/kg w.w.	1.9	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0008	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Vanadium (V)	0.02	mg/kg w.w.	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc (Zn)	0.10	mg/kg w.w.	963	3.7	3.2	2.9	3.6	3.7	3.2	3.5	3.6	2.6	2.8	2.8	3.4	3.1	3.1	3.0
Zirconium (Zr)	0.04	mg/kg w.w.	-	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

Table C.6: Wet Weight (w.w.) Metal Concentrations in Fish Liver Tissue, Rainy River Mine Fish Tissue Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Northern Pike														
				PinR-EXP-2018-NP01	PinR-EXP-2018-NP02	PinR-EXP-2018-NP03	PinR-EXP-2018-NP04	PinR-EXP-2018-NP05	PinR-EXP-2018-NP06	PinR-EXP-2018-NP07	PinR-EXP-2018-NP08	PinR-EXP-2018-NP09	PinR-EXP-2018-NP10	PinR-EXP-2018-NP11	PinR-EXP-2018-NP12	PinR-EXP-2018-NP13	PinR-EXP-2018-NP14	PinR-EXP-2018-NP15
				12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.25	%	-	73.7	79.5	69.1	76.1	74.8	78.4	80.5	80.0	78.7	75.0	73.7	78.0	80.7	74.8	79.0
Aluminum (Al)	2.0	mg/kg w.w.	-	<0.4	1.60	<0.4	<0.4	<0.4	5.03	1.66	0.56	2.45	1.15	5.15	1.85	1.06	1.54	1.60
Antimony (Sb)	0.010	mg/kg w.w.	1.3	<0.002	<0.002	<0.002	<0.002	<0.002	0.0024	<0.002	<0.002	<0.002	<0.002	0.0045	<0.002	<0.002	<0.002	<0.002
Arsenic (As)	0.020	mg/kg w.w.	1.0	0.026	0.038	0.028	0.044	0.024	0.043	0.053	0.021	0.041	0.021	0.059	0.045	0.045	0.029	0.033
Barium (Ba)	0.050	mg/kg w.w.	642	0.04	0.03	0.03	0.15	0.14	0.16	0.09	0.13	0.11	0.04	0.10	0.09	0.08	0.39	0.13
Beryllium (Be)	0.010	mg/kg w.w.	6.4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth (Bi)	0.010	mg/kg w.w.	-	0.004	0.009	0.005	0.006	0.003	0.017	0.009	0.004	0.009	0.006	0.012	0.011	0.008	0.009	0.011
Boron (B)	1.0	mg/kg w.w.	56.2	<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
Cadmium (Cd)	0.0050	mg/kg w.w.	3.2	0.047	0.080	0.053	0.104	0.064	0.341	0.145	0.068	0.222	0.078	0.444	0.066	0.079	0.060	0.080
Calcium (Ca)	20	mg/kg w.w.	-	209	37	45	42	27	65	56	56	44	38	53	38	46	441	50
Cesium (Cs)	0.0050	mg/kg w.w.	-	0.0049	0.0045	0.0053	0.0021	<0.0079	0.0060	0.0048	0.0049	0.0066	0.0053	0.0061	0.0039	0.0041	0.0044	0.0060
Chromium (Cr)	0.050	mg/kg w.w.	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.01	0.018	<0.01	0.014	<0.01	<0.01	<0.01	<0.01
Cobalt (Co)	0.020	mg/kg w.w.	-	0.034	0.046	0.041	0.038	0.033	0.133	0.074	0.034	0.068	0.034	0.110	0.082	0.064	0.074	0.077
Copper (Cu)	0.10	mg/kg w.w.	292	17.6	46.9	20.3	20.6	27.0	49.2	24.2	21.0	59.2	11.1	39.7	78.1	39.2	27.5	48.1
Iron (Fe)	3.0	mg/kg w.w.	-	37	180	142	373	25	372	19	179	275	52	223	484	259	37	231
Lead (Pb)	0.020	mg/kg w.w.	11.6	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0049	<0.004	0.0045	<0.004	0.0074	<0.004	<0.004	<0.004	<0.004
Lithium (Li)	0.50	mg/kg w.w.	-	<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
Magnesium (Mg)	2.0	mg/kg w.w.	-	124	156	128	129	127	158	185	175	155	130	138	176	173	190	152
Manganese (Mn)	0.050	mg/kg w.w.	392	1.10	1.25	0.96	1.03	1.16	1.61	2.48	1.25	1.26	0.63	1.87	1.17	1.63	1.80	1.37
Mercury (Hg)	0.0050	mg/kg w.w.	0.5	0.13	0.27	0.15	0.13	0.13	0.90	0.29	0.15	0.40	0.24	0.60	0.29	0.20	0.23	0.34
Molybdenum (Mo)	0.020	mg/kg w.w.	16.1	0.21	0.21	0.26	0.20	0.21	0.31	0.26	0.16	0.18	0.08	0.24	0.21	0.19	0.30	0.28
Nickel (Ni)	0.20	mg/kg w.w.	3.5	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	<0.04	<0.04	<0.04	<0.04	0.05	<0.04	<0.04	<0.04	<0.04
Phosphorus (P)	10	mg/kg w.w.	-	1,809	2,522	2,200	1,883	1,880	2,570	3,276	3,080	2,939	2,005	2,496	3,146	3,107	2,974	2,751
Potassium (K)	20	mg/kg w.w.	-	1,638	2,706	2,228	1,965	2,195	2,246	2,867	3,020	2,812	2,455	2,533	3,014	3,011	2,238	2,499
Rubidium (Rb)	0.050	mg/kg w.w.	-	5.1	8.3	7.4	3.3	10.1	6.0	5.0	5.3	8.2	5.3	6.0	5.5	6.3	4.6	6.1
Selenium (Se)	0.050	mg/kg w.w.	3.6	1.6	1.7	2.2	2.0	1.6	2.1	2.0	2.0	2.0	1.7	2.4	2.1	2.2	2.3	2.1
Sodium (Na)	20	mg/kg w.w.	-	734	908	961	698	607	1,128	1,213	984	950	775	1,144	966	934	1,479	943
Strontium (Sr)	0.050	mg/kg w.w.	1,930	0.166	0.041	0.043	0.029	<0.01	0.052	0.045	0.031	0.047	0.023	0.042	0.036	0.041	0.333	0.048
Tellurium (Te)	0.020	mg/kg w.w.	-	<0.004	<0.004	<0.004	0.0055	<0.004	0.0080	0.0041	<0.004	<0.004	<0.004	0.0089	<0.004	0.0041	<0.004	<0.004
Thallium (Tl)	0.0020	mg/kg w.w.	-	0.0047	0.0027	0.0033	0.0028	0.0039	0.0030	0.0020	0.0030	0.0021	0.0022	0.0022	0.0018	0.0024	0.0025	0.0020
Tin (Sn)	0.10	mg/kg w.w.	-	0.210	0.066	0.114	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Uranium (U)	0.0020	mg/kg w.w.	1.9	<0.0004	0.0008	<0.0004	<0.0004	<0.0004	0.0037	0.0012	<0.0004	0.0012	0.0008	0.0012	0.0007	0.0006	<0.0004	0.0009
Vanadium (V)	0.10	mg/kg w.w.	-	0.07	0.65	0.15	0.34	0.09	1.05	0.33	0.07	0.37	0.32	0.60	0.93	0.38	0.15	0.41
Zinc (Zn)	0.50	mg/kg w.w.	963	40	46	54	41	35.3	68	54	39	60	28	39	61	52	59	45
Zirconium (Zr)	0.20	mg/kg w.w.	-	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

Table C.6: Wet Weight (w.w.) Metal Concentrations in Fish Liver Tissue, Rainy River Mine Fish Tissue Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Walleye														
				PinR-EXP-2018-WA01	PinR-EXP-2018-WA02	PinR-EXP-2018-WA03	PinR-EXP-2018-WA04	PinR-EXP-2018-WA05	PinR-EXP-2018-WA06	PinR-EXP-2018-WA07	PinR-EXP-2018-WA08	PinR-EXP-2018-WA09	PinR-EXP-2018-WA10	PinR-EXP-2018-WA11	PinR-EXP-2018-WA12	PinR-EXP-2018-WA13	PinR-EXP-2018-WA14	PinR-EXP-2018-WA15
				12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.25	%	-	72.9	81.5	78.5	72.4	72.9	76.5	80.9	76.7	76.9	79.4	79.9	78.3	74.1	79.0	81.6
Aluminum (Al)	2.0	mg/kg w.w.	-	<0.4	1.00	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.72	<0.4	<0.4	1.06	<0.4	<0.4	<0.4
Antimony (Sb)	0.010	mg/kg w.w.	1.3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Arsenic (As)	0.020	mg/kg w.w.	1.0	0.038	0.038	0.074	0.109	0.156	0.075	0.032	0.027	0.030	0.118	0.066	0.081	0.088	0.156	0.049
Barium (Ba)	0.050	mg/kg w.w.	642	0.07	0.02	0.04	0.05	0.08	0.06	0.03	0.04	0.01	0.06	0.02	0.02	0.03	0.03	0.02
Beryllium (Be)	0.010	mg/kg w.w.	6.4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth (Bi)	0.010	mg/kg w.w.	-	<0.002	<0.002	<0.002	<0.002	<0.002	0.0026	<0.002	0.0049	<0.002	0.0033	<0.002	0.0028	<0.002	0.0029	<0.002
Boron (B)	1.0	mg/kg w.w.	56.2	<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
Cadmium (Cd)	0.0050	mg/kg w.w.	3.2	0.07	0.13	0.33	0.10	0.09	0.16	0.24	0.08	0.20	0.11	0.09	0.20	0.16	0.11	0.05
Calcium (Ca)	20	mg/kg w.w.	-	409	86	132	146	93	161	122	76	70	618	52	79	115	80	87
Cesium (Cs)	0.0050	mg/kg w.w.	-	0.0104	0.0053	0.0051	0.0043	0.0036	0.0062	0.0030	0.0049	0.0092	0.0092	0.0057	0.0071	0.0048	0.0047	0.0050
Chromium (Cr)	0.050	mg/kg w.w.	3.2	<0.01	<0.01	<0.01	0.058	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt (Co)	0.020	mg/kg w.w.	-	0.066	0.220	0.333	0.200	0.254	0.19	0.146	0.161	0.065	0.154	0.054	0.132	0.233	0.099	0.08
Copper (Cu)	0.10	mg/kg w.w.	292	1.96	1.49	2.58	2.30	2.82	2.06	1.58	1.49	1.47	1.94	1.17	1.49	1.70	1.58	0.96
Iron (Fe)	3.0	mg/kg w.w.	-	73	110	190	136	117	187	125	34	125	171	41	165	118	80	105
Lead (Pb)	0.020	mg/kg w.w.	11.6	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Lithium (Li)	0.50	mg/kg w.w.	-	<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
Magnesium (Mg)	2.0	mg/kg w.w.	-	212	153	162	200	203	175	131	217	205	175	153	216	155	148	122
Manganese (Mn)	0.050	mg/kg w.w.	392	2.06	1.03	1.42	2.44	1.90	1.22	1.13	2.28	1.97	1.47	1.45	1.74	1.39	1.40	1.00
Mercury (Hg)	0.0050	mg/kg w.w.	0.5	0.05	0.16	0.09	0.15	0.19	0.12	0.10	0.13	0.25	0.12	0.13	0.19	0.15	0.13	0.11
Molybdenum (Mo)	0.020	mg/kg w.w.	16.1	0.13	0.10	0.16	0.21	0.24	0.14	0.18	0.18	0.09	0.21	0.14	0.18	0.18	0.18	0.11
Nickel (Ni)	0.20	mg/kg w.w.	3.5	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Phosphorus (P)	10	mg/kg w.w.	-	3,577	2,368	2,344	3,284	3,442	2,961	2,025	3,169	3,303	2,925	2,352	3,364	2,720	2,205	1,812
Potassium (K)	20	mg/kg w.w.	-	2,791	2,535	2,215	2,926	2,954	2,797	2,025	2,819	2,957	2,410	2,392	3,233	2,432	2,436	2,098
Rubidium (Rb)	0.050	mg/kg w.w.	-	11.6	6.2	7.1	5.0	5.6	6.6	3.8	7.3	9.8	8.3	6.4	8.8	5.7	5.3	5.1
Selenium (Se)	0.050	mg/kg w.w.	3.6	0.91	0.71	0.82	1.23	1.24	0.84	0.67	0.69	0.76	0.96	0.60	0.77	0.82	0.73	0.61
Sodium (Na)	20	mg/kg w.w.	-	1,070	1,434	1,406	1,201	1,079	1,260	1,152	1,016	1,317	1,001	792	1,081	1,212	884	997
Strontium (Sr)	0.050	mg/kg w.w.	1,920	0.271	0.059	0.082	0.075	0.065	0.106	0.065	0.049	0.044	0.332	0.036	0.052	0.062	0.055	0.053
Tellurium (Te)	0.020	mg/kg w.w.	-	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Thallium (Tl)	0.0020	mg/kg w.w.	-	0.0092	0.0057	0.0087	0.0080	0.0134	0.0063	0.0048	0.0064	0.0058	0.0092	0.0077	0.0092	0.0075	0.0117	0.0056
Tin (Sn)	0.10	mg/kg w.w.	-	0.04	0.04	0.22	0.37	0.24	0.15	0.07	0.08	0.05	0.39	0.11	<0.08	0.07	0.25	0.08
Uranium (U)	0.0020	mg/kg w.w.	1.9	<0.0004	<0.0004	0.0006	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Vanadium (V)	0.10	mg/kg w.w.	-	<0.02	0.02	0.05	<0.02	<0.02	0.03	<0.02	0.05	<0.02	<0.02	0.02	0.02	0.03	<0.02	<0.02
Zinc (Zn)	0.50	mg/kg w.w.	963	24.4	16.6	17.2	22.5	25.4	20.1	15.9	18.1	20.5	19.4	15.8	22.4	19.1	17.7	12.0
Zirconium (Zr)	0.20	mg/kg w.w.	-	<0.04	<0.04	<0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

Table C.7: Wet Weight (w.w.) Metal Concentrations in Fish Ovaries, Rainy River Mine Fish Tissue Monitoring, 2018

Parameter	Lowest Detection Limit	Units	Benchmark[a,b]	Northern Pike									Walleye					
				PinR-EXP-2018-NP02	PinR-EXP-2018-NP06	PinR-EXP-2018-NP07	PinR-EXP-2018-NP08	PinR-EXP-2018-NP09	PinR-EXP-2018-NP10	PinR-EXP-2018-NP12	PinR-EXP-2018-NP13	PinR-EXP-2018-NP15	PinR-EXP-2018-WA01	PinR-EXP-2018-WA04	PinR-EXP-2018-WA08	PinR-EXP-2018-WA09	PinR-EXP-2018-WA11	PinR-EXP-2018-WA12
				12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	12-Sep-2018	12-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
% Moisture	0.25	%	-	83.4	83.3	84.1	82.3	83.7	82.7	83.1	82.8	83.3	74.9	75.2	72.5	71.7	71.3	74.7
Aluminum (Al)	2.0	mg/kg w.w.	-	1.0	<0.4	0.7	0.5	2.4	0.9	0.52	<0.4	<0.4	<0.4	<2.9	<0.4	<0.4	<0.4	<0.4
Antimony (Sb)	0.010	mg/kg w.w.	1.3	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003
Arsenic (As)	0.020	mg/kg w.w.	1.0	0.027	0.025	0.033	0.015	0.028	0.021	0.030	0.030	0.018	0.023	0.024	0.033	0.020	0.048	0.052
Barium (Ba)	0.050	mg/kg w.w.	642	0.10	0.24	0.08	0.08	0.08	0.10	0.02	0.02	0.02	0.05	0.89	0.16	0.04	0.11	0.07
Beryllium (Be)	0.010	mg/kg w.w.	6.4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth (Bi)	0.010	mg/kg w.w.	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Boron (B)	1.0	mg/kg w.w.	56.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.6	<0.2	<0.2	<0.2	<0.2
Cadmium (Cd)	0.0050	mg/kg w.w.	3.2	0.0085	0.0202	0.0108	0.0100	0.0143	0.0124	0.0071	0.0064	0.0052	<0.001	0.0032	<0.001	0.0040	<0.001	0.0029
Calcium (Ca)	20	mg/kg w.w.	-	150	97	105	164	78	277	127	123	113	244	94	327	223	239	304
Cesium (Cs)	0.0050	mg/kg w.w.	-	0.0083	0.0096	0.0078	0.0081	0.0120	0.0092	0.0071	0.0064	0.0077	0.0143	0.0093	0.0080	0.0141	0.0102	0.0119
Chromium (Cr)	0.050	mg/kg w.w.	3.2	0.009	<0.01	0.008	<0.01	0.008	0.018	<0.010	<0.013	<0.01	<0.01	<0.057	<0.01	<0.01	<0.01	<0.01
Cobalt (Co)	0.020	mg/kg w.w.	-	0.062	0.079	0.048	0.044	0.084	0.048	0.107	0.095	0.060	0.059	0.044	0.067	0.056	0.044	0.070
Copper (Cu)	0.10	mg/kg w.w.	292	1.12	0.76	1.19	1.20	0.99	0.88	1.18	1.19	0.90	1.07	0.79	0.83	0.81	0.81	0.91
Iron (Fe)	3.0	mg/kg w.w.	-	51	25	21	54	42	40	53	68	36	20	22	37	20	26	40
Lead (Pb)	0.020	mg/kg w.w.	11.6	0.013	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.013	<0.004	<0.004	<0.004	<0.004
Lithium (Li)	0.50	mg/kg w.w.	-	<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
Magnesium (Mg)	2.0	mg/kg w.w.	-	217	127	200	234	202	211	225	220	184	299	367	292	317	253	354
Manganese (Mn)	0.050	mg/kg w.w.	392	30	12	32	31	19	15	35	40	27	2	0	8	3	6	4
Mercury (Hg)	0.0050	mg/kg w.w.	0.5	0.059	0.167	0.079	0.048	0.096	0.106	0.064	0.043	0.079	0.009	0.046	0.055	0.047	0.027	0.039
Molybdenum (Mo)	0.020	mg/kg w.w.	16.1	0.060	0.077	0.053	0.046	0.045	0.025	0.059	0.060	0.056	0.011	0.023	0.029	0.009	0.018	0.019
Nickel (Ni)	0.20	mg/kg w.w.	3.5	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.21	<0.04	<0.04	<0.04	<0.04
Phosphorus (P)	10	mg/kg w.w.	-	2,988	2,021	2,798	3,133	2,836	2,889	3,025	2,958	2,338	2,505	5,084	2,549	2,858	2,325	2,834
Potassium (K)	20	mg/kg w.w.	-	3,984	2,923	3,578	4,000	3,716	3,270	3,650	3,990	2,756	3,313	5,977	2,805	3,396	3,014	3,567
Rubidium (Rb)	0.050	mg/kg w.w.	-	6.9	5.6	5.5	6.7	7.3	5.7	5.1	6.3	5.1	13.3	10.4	6.9	9.4	7.7	8.9
Selenium (Se)	0.050	mg/kg w.w.	3.6	0.7	0.6	0.5	1.1	0.5	0.7	0.6	0.7	0.5	0.7	1.9	0.8	0.7	0.9	0.7
Sodium (Na)	20	mg/kg w.w.	-	888	1,000	908	726	870	974	901	888	655	703	739	855	1,007	723	972
Strontium (Sr)	0.050	mg/kg w.w.	1,930	0.119	0.045	0.053	0.064	0.051	0.144	0.079	0.065	0.062	0.054	0.067	0.099	0.053	0.046	0.086
Tellurium (Te)	0.020	mg/kg w.w.	-	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Thallium (Tl)	0.0020	mg/kg w.w.	-	0.0037	0.0030	0.0020	0.0040	0.0026	0.0031	0.0022	0.0034	0.0019	0.0118	0.0082	0.0050	0.0042	0.0055	0.0068
Tin (Sn)	0.10	mg/kg w.w.	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	0.05	<0.02	<0.02	<0.02	<0.02
Uranium (U)	0.0020	mg/kg w.w.	1.9	<0.0004	0.0005	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Vanadium (V)	0.10	mg/kg w.w.	-	<0.11	0.09	0.03	<0.02	<0.04	<0.04	<0.11	0.08	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc (Zn)	0.50	mg/kg w.w.	963	59	40	58	65	67	67	64	64	52	38	163	39	35	31	41
Zirconium (Zr)	0.20	mg/kg w.w.	-	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.05	<0.04	<0.04	<0.04	<0.04

Indicates value greater than benchmark.

[a] Mercury guideline for women of child-bearing age and children under 15 (see Table 2.1, MECP 2015).

[b] See Table 2.2 for Consumption Benchmark References.

FISH TISSUE QUALITY

Laboratory Analysis Data Report

MINNOW ENVIRONMENTAL INC.
ATTN: Jess Tester
2 Lamb Street
Georgetown ON L7G 3M9

Date Received: 01-OCT-18
Report Date: 04-JAN-19 08:43 (MT)
Version: FINAL

Client Phone: 905-873-3371

Certificate of Analysis

Lab Work Order #: L2173881

Project P.O. #: NOT SUBMITTED
Job Reference: 18-45
C of C Numbers:
Legal Site Desc:

Christine Paradis
Project Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-1 WA-01 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.9		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	5.5		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.181		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.256		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	455		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0719		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.128		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.77		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	11.6		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.030		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1550		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.547		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.699		0.0050	mg/kg	12-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11500		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	22900		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	85.5		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.900		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	997		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.098		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0238		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	17.3		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-2 WA-02 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.8		0.50	%		13-NOV-18	R4333030
Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-2 WA-02 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.259		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.372		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	1230		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0576		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.60		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	7.1		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1560		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.861		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	2.96		0.030	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11900		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	22000		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	51.9		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	1.14		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1600		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.380		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0194		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	14.9		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-3 WA-03 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.7		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-3 WA-03 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Arsenic (As)-Total	0.209		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.441		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	857		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0621		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.60		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	7.9		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1600		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.555		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.08		0.0050	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11500		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	23100		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	65.8		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.824		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1760		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.204		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0202		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	14.2		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-4 WA-04 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.1		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.1		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.227		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.475		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-4 WA-04 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	2370		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0329		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.72		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	8.0		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1650		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.871		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.01		0.0050	mg/kg	12-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	12800		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	23400		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	36.8		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	1.31		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1100		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.695		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0181		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	16.6		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-5 WA-05 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.0		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.1		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.227		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.296		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-5 WA-05 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	596		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0360		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.66		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	6.9		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1660		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.649		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.14		0.0050	mg/kg	12-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	12500		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	24200		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	41.1		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	1.38		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1210		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.076		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0184		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	16.6		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-6 WA-06 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.9		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.1		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.164		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.191		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.012		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-6 WA-06 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Calcium (Ca)-Total	566		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0522		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.052		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.63		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	7.6		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1590		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.606		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.49		0.035	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11500		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	21900		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	50.8		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	1.06		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2300		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.101		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0134		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	15.3		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-7 WA-07 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.2		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.322		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.200		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	681		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0453		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-7 WA-07 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.55		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	6.4		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1600		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.620		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.52		0.035	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11900		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	23600		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	41.2		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	1.20		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1070		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.138		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0117		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	16.7		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-8 WA-08 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.7		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	13.5		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.090		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.331		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.022		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	666		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0521		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-8 WA-08 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Copper (Cu)-Total	1.07		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	19.9		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.195		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1750		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.957		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.33		0.035	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11500		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	22800		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	47.7		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.980		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2100		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.138		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0142		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	0.0036		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	17.0		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-9 WA-09 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.8		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.190		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.196		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	373		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0901		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.54		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	6.5		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-9 WA-09 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1470		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.409		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	3.18		0.025	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	10600		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	21800		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	61.4		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.998		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1150		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.070		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0114		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	12.4		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-10 WA-10 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.2		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.3		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.160		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.296		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	650		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0590		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.64		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	7.4		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-10 WA-10 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Magnesium (Mg)-Total	1520		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.698		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.01		0.0050	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11400		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	23000		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	56.8		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.855		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1020		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.138		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0121		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	13.9		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-11 WA-11 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.4		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.192		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.210		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	870		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0597		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.57		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	6.6		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1490		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.534		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-11 WA-11 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Mercury (Hg)-Total	1.62		0.025	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	10700		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	21600		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	48.8		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.947		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1460		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.206		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0133		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	13.0		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-12 WA-12 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.4		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.6		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.208		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.209		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.016		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	480		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0617		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.65		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	9.7		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.033		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1450		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.525		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	2.06		0.030	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-12 WA-12 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	10800		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	21400		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	51.3		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.969		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1880		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.072		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0156		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	15.6		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-13 WA-13 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.8		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	4.6		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.199		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.219		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.016		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	787		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0608		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.68		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	12.1		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1540		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.718		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.62		0.035	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11700		10	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-13 WA-13 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Potassium (K)-Total	23100		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	48.0		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.927		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1420		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.184		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0164		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	14.7		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-14 WA-14 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	77.8		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.184		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.181		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.011		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	535		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0523		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.54		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	5.0		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1700		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.626		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.41		0.035	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	12400		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	24600		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	45.4		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-14 WA-14 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Selenium (Se)-Total	0.980		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	911		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.073		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0158		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	13.8		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-15 WA-15 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.8		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.6		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.157		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.223		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.015		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	668		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0521		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.57		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	7.6		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1560		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.605		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.67		0.030	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11900		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	22200		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	44.9		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.993		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1920		20	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-15 WA-15 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Strontium (Sr)-Total	0.143		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0138		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	14.0		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-16 NP-01 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.8		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	6.9		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.144		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.949		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	1560		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0521		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.079		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.026		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.83		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	18.7		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.109		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1450		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	2.44		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.04		0.0050	mg/kg	12-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	10000		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	18400		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	37.0		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.728		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	3360		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.736		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-16 NP-01 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Thallium (Tl)-Total	0.0179		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	22.0		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-17 NP-02 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.5		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	4.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.313		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.476		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.016		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0056		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	1060		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0463		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.058		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.037		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	1.09		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	21.9		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.132		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1470		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	1.28		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	2.39		0.025	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11100		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	20100		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	28.3		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.771		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2560		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.480		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0100		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-17 NP-02 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	26.2		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-18 NP-03 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.4		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	4.3		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.213		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.464		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	2080		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0610		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.78		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	10.5		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.026		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1680		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	2.87		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.32		0.030	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	13000		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	22700		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	40.6		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.725		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1890		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	1.06		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0140		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-18 NP-03 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Zinc (Zn)-Total	21.8		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-19 NP-04 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.4		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.8		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.435		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.420		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.013		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	874		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0280		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.94		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	22.7		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1470		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	1.18		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.30		0.0050	mg/kg	12-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	10600		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	19900		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	22.4		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.953		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1800		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.299		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0094		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	21.1		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-19 NP-04 (MUSCLE) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
L2173881-20 NP-05 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.7		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.7		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.189		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.261		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	521		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0673		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	1.11		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	16.0		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1490		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.989		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.36		0.030	mg/kg	12-DEC-18	16-DEC-18	R4396742
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11700		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	21400		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	39.5		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.754		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1760		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.117		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0155		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	28.2		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-21 NP-06 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-21 NP-06 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	81.8		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	4.2		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.186		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.386		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.018		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0111		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	3260		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0857		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.023		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.60		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	19.5		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.026		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1480		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	3.57		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	5.39		0.040	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	13400		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	21200		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	32.0		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.849		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2640		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	1.44		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0129		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	22.8		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-22 NP-07 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	82.0		0.50	%		13-NOV-18	R4333030
Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-22 NP-07 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Aluminum (Al)-Total	2.4		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.239		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.296		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.017		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0054		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	554		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0581		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.80		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	11.3		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.022		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1460		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	1.22		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	3.03		0.035	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11400		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	20400		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	27.6		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.818		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	3350		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.264		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0078		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	24.3		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-23 NP-08 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.1		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.3		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-23 NP-08 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Arsenic (As)-Total	0.186		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.256		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	2160		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0415		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.60		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	8.5		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1490		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	1.80		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.59		0.040	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	12500		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	21800		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	30.5		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.908		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	1260		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.737		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0143		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	19.4		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-24 NP-09 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.3		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	3.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.272		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.588		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-24 NP-09 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.014		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0086		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	2460		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0669		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.024		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.65		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	13.2		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1570		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	2.84		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	3.02		0.030	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	12100		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	19700		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	34.5		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.751		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2300		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	1.54		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0082		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	24.3		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-25 NP-10 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	77.8		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.1		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.236		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.018		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-25 NP-10 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0067		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	531		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0563		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.92		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	17.2		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1420		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.672		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	2.89		0.030	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11100		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	18700		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	30.1		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.821		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2240		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.163		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0099		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	31.2		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-26 NP-11 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.7		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	2.7		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.242		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.370		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.013		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0133		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-26 NP-11 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Calcium (Ca)-Total	3670		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0707		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.022		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.93		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	21.0		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.034		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1550		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	3.80		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	3.94		0.045	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	13500		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	20600		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	30.3		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.858		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2510		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	1.73		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0076		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	22.7		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-27 NP-12 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.4		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	3.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.294		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.366		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.017		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	3110		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0410		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-27 NP-12 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.036		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.77		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	12.5		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1540		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	2.64		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	2.00		0.050	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11800		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	19000		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	23.5		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.764		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2490		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	1.81		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0056		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	22.6		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-28 NP-13 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.7		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.351		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.018		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	499		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0374		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.025		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-28 NP-13 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Copper (Cu)-Total	0.82		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	10.7		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1540		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.710		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	2.00		0.045	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11300		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	20000		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	27.2		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.813		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2450		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.159		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0075		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	17.3		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-29 NP-14 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.4		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.168		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.013		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	601		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0448		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.93		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	7.0		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-29 NP-14 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1660		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.748		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	2.05		0.050	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	12400		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	24000		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	31.5		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.957		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	815		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.109		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0140		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	0.11		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	27.1		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-30 NP-15 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.1		0.50	%		13-NOV-18	R4333030
Metals							
Aluminum (Al)-Total	6.5		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.140		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.084		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.017		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	596		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0510		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.034		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	0.98		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	22.2		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.023		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-30 NP-15 (MUSCLE) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Magnesium (Mg)-Total	1530		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	0.808		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	2.67		0.060	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	10700		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	19600		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	28.8		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	0.743		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	3340		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.221		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0074		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	0.11		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	32.6		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-31 WA-01 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	72.9		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.139		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.268		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.242		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	1510		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0384		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.244		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	7.22		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	269		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	782		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	7.60		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-31 WA-01 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Mercury (Hg)-Total	0.176		0.0050	mg/kg	12-DEC-18	17-DEC-18	R4397087
Molybdenum (Mo)-Total	0.480		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	13200		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	10300		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	42.8		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	3.36		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	3950		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	1.00		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0340		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	0.13		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	90.1		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-32 WA-02 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	81.5		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	5.4		2.0	mg/kg	12-DEC-18	03-JAN-19	R4426250
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	03-JAN-19	R4426250
Arsenic (As)-Total	0.205		0.020	mg/kg	12-DEC-18	03-JAN-19	R4426250
Barium (Ba)-Total	0.127		0.050	mg/kg	12-DEC-18	03-JAN-19	R4426250
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	03-JAN-19	R4426250
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	03-JAN-19	R4426250
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	03-JAN-19	R4426250
Cadmium (Cd)-Total	0.687		0.0050	mg/kg	12-DEC-18	03-JAN-19	R4426250
Calcium (Ca)-Total	467		20	mg/kg	12-DEC-18	03-JAN-19	R4426250
Cesium (Cs)-Total	0.0289		0.0050	mg/kg	12-DEC-18	03-JAN-19	R4426250
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	03-JAN-19	R4426250
Cobalt (Co)-Total	1.19		0.020	mg/kg	12-DEC-18	03-JAN-19	R4426250
Copper (Cu)-Total	8.03		0.10	mg/kg	12-DEC-18	03-JAN-19	R4426250
Iron (Fe)-Total	596		3.0	mg/kg	12-DEC-18	03-JAN-19	R4426250
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	03-JAN-19	R4426250
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	03-JAN-19	R4426250
Magnesium (Mg)-Total	828		2.0	mg/kg	12-DEC-18	03-JAN-19	R4426250
Manganese (Mn)-Total	5.58		0.050	mg/kg	12-DEC-18	03-JAN-19	R4426250
Mercury (Hg)-Total	0.891		0.0050	mg/kg	12-DEC-18	17-DEC-18	R4397087
Molybdenum (Mo)-Total	0.540		0.020	mg/kg	12-DEC-18	03-JAN-19	R4426250

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-32 WA-02 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	03-JAN-19	R4426250
Phosphorus (P)-Total	12800		10	mg/kg	12-DEC-18	03-JAN-19	R4426250
Potassium (K)-Total	13700		20	mg/kg	12-DEC-18	03-JAN-19	R4426250
Rubidium (Rb)-Total	33.5		0.050	mg/kg	12-DEC-18	03-JAN-19	R4426250
Selenium (Se)-Total	3.86		0.050	mg/kg	12-DEC-18	03-JAN-19	R4426250
Sodium (Na)-Total	7750		20	mg/kg	12-DEC-18	03-JAN-19	R4426250
Strontium (Sr)-Total	0.317		0.050	mg/kg	12-DEC-18	03-JAN-19	R4426250
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	03-JAN-19	R4426250
Thallium (Tl)-Total	0.0306		0.0020	mg/kg	12-DEC-18	03-JAN-19	R4426250
Tin (Sn)-Total	0.21		0.10	mg/kg	12-DEC-18	03-JAN-19	R4426250
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	03-JAN-19	R4426250
Vanadium (V)-Total	0.12		0.10	mg/kg	12-DEC-18	03-JAN-19	R4426250
Zinc (Zn)-Total	89.9		0.50	mg/kg	12-DEC-18	03-JAN-19	R4426250
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	03-JAN-19	R4426250
L2173881-33 WA-03 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.5		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.344		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.170		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	1.53		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	612		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0238		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	1.55		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	12.0		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	886		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	754		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	6.60		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.423		0.010	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.761		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	10900		10	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-33 WA-03 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Potassium (K)-Total	10300		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	33.0		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	3.83		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	6540		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.38		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0403		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	1.03		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	0.0029		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	0.21		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	80.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	0.25		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-34 WA-04 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	72.4		2.0	%		27-DEC-18	R4423636
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Antimony (Sb)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Arsenic (As)-Total	0.395		0.030	mg/kg	31-DEC-18	02-JAN-19	R4425197
Barium (Ba)-Total	0.181		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Beryllium (Be)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Boron (B)-Total	<1.0		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cadmium (Cd)-Total	0.363		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Calcium (Ca)-Total	530		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cesium (Cs)-Total	0.0155		0.0050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Chromium (Cr)-Total	0.21		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cobalt (Co)-Total	0.723		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Copper (Cu)-Total	8.33		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Iron (Fe)-Total	494		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lead (Pb)-Total	<0.050		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lithium (Li)-Total	<0.50		0.50	mg/kg	31-DEC-18	02-JAN-19	R4425197
Magnesium (Mg)-Total	725		2.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Manganese (Mn)-Total	8.84		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Mercury (Hg)-Total	0.548		0.0050	mg/kg	31-DEC-18	03-JAN-19	R4426348
Molybdenum (Mo)-Total	0.758		0.040	mg/kg	31-DEC-18	02-JAN-19	R4425197
Nickel (Ni)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Phosphorus (P)-Total	11900		10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Potassium (K)-Total	10600		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Rubidium (Rb)-Total	18.2		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-34 WA-04 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Selenium (Se)-Total	4.44		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Sodium (Na)-Total	4350		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Strontium (Sr)-Total	0.27		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tellurium (Te)-Total	<0.020		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Thallium (Tl)-Total	0.0291		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tin (Sn)-Total	1.35		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Uranium (U)-Total	<0.0020		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Vanadium (V)-Total	<0.10		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zinc (Zn)-Total	81.5		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
L2173881-35 WA-05 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	72.9		2.0	%		27-DEC-18	R4423636
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Antimony (Sb)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Arsenic (As)-Total	0.576		0.030	mg/kg	31-DEC-18	02-JAN-19	R4425197
Barium (Ba)-Total	0.285		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Beryllium (Be)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Boron (B)-Total	<1.0		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cadmium (Cd)-Total	0.315		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Calcium (Ca)-Total	345		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cesium (Cs)-Total	0.0134		0.0050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Chromium (Cr)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cobalt (Co)-Total	0.939		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Copper (Cu)-Total	10.4		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Iron (Fe)-Total	432		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lead (Pb)-Total	<0.050		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lithium (Li)-Total	<0.50		0.50	mg/kg	31-DEC-18	02-JAN-19	R4425197
Magnesium (Mg)-Total	749		2.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Manganese (Mn)-Total	7.01		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Mercury (Hg)-Total	0.696		0.0050	mg/kg	31-DEC-18	03-JAN-19	R4426348
Molybdenum (Mo)-Total	0.868		0.040	mg/kg	31-DEC-18	02-JAN-19	R4425197
Nickel (Ni)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Phosphorus (P)-Total	12700		10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Potassium (K)-Total	10900		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Rubidium (Rb)-Total	20.8		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Selenium (Se)-Total	4.56		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Sodium (Na)-Total	3980		20	mg/kg	31-DEC-18	02-JAN-19	R4425197

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-35 WA-05 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Strontium (Sr)-Total	0.24		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tellurium (Te)-Total	<0.020		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Thallium (Tl)-Total	0.0494		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tin (Sn)-Total	0.89		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Uranium (U)-Total	<0.0020		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Vanadium (V)-Total	<0.10		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zinc (Zn)-Total	93.9		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
L2173881-36 WA-06 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	76.5		2.0	%		27-DEC-18	R4423636
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Antimony (Sb)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Arsenic (As)-Total	0.320		0.030	mg/kg	31-DEC-18	02-JAN-19	R4425197
Barium (Ba)-Total	0.261		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Beryllium (Be)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Bismuth (Bi)-Total	0.011		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Boron (B)-Total	<1.0		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cadmium (Cd)-Total	0.678		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Calcium (Ca)-Total	686		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cesium (Cs)-Total	0.0265		0.0050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Chromium (Cr)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cobalt (Co)-Total	0.811		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Copper (Cu)-Total	8.77		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Iron (Fe)-Total	795		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lead (Pb)-Total	<0.050		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lithium (Li)-Total	<0.50		0.50	mg/kg	31-DEC-18	02-JAN-19	R4425197
Magnesium (Mg)-Total	745		2.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Manganese (Mn)-Total	5.19		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Mercury (Hg)-Total	0.503		0.010	mg/kg	31-DEC-18	03-JAN-19	R4426348
Molybdenum (Mo)-Total	0.594		0.040	mg/kg	31-DEC-18	02-JAN-19	R4425197
Nickel (Ni)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Phosphorus (P)-Total	12600		10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Potassium (K)-Total	11900		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Rubidium (Rb)-Total	28.1		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Selenium (Se)-Total	3.56		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Sodium (Na)-Total	5360		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Strontium (Sr)-Total	0.45		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tellurium (Te)-Total	<0.020		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-36 WA-06 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Thallium (Tl)-Total	0.0269		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tin (Sn)-Total	0.64		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Uranium (U)-Total	<0.0020		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Vanadium (V)-Total	0.14		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zinc (Zn)-Total	85.6		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
L2173881-37 WA-07 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.9		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.165		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.135		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	1.24		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	640		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0158		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.763		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	8.28		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	655		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	688		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	5.90		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.530		0.010	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.940		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	10600		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	10600		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	19.7		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	3.53		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	6030		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.34		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0249		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	0.39		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-37 WA-07 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	83.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-38 WA-08 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	76.7		2.0	%		27-DEC-18	R4423636
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Antimony (Sb)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Arsenic (As)-Total	0.118		0.030	mg/kg	31-DEC-18	02-JAN-19	R4425197
Barium (Ba)-Total	0.193		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Beryllium (Be)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Bismuth (Bi)-Total	0.021		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Boron (B)-Total	<1.0		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cadmium (Cd)-Total	0.325		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Calcium (Ca)-Total	327		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cesium (Cs)-Total	0.0211		0.0050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Chromium (Cr)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cobalt (Co)-Total	0.689		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Copper (Cu)-Total	6.39		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Iron (Fe)-Total	145		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lead (Pb)-Total	<0.050		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lithium (Li)-Total	<0.50		0.50	mg/kg	31-DEC-18	02-JAN-19	R4425197
Magnesium (Mg)-Total	933		2.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Manganese (Mn)-Total	9.79		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Mercury (Hg)-Total	0.562		0.010	mg/kg	31-DEC-18	03-JAN-19	R4426348
Molybdenum (Mo)-Total	0.755		0.040	mg/kg	31-DEC-18	02-JAN-19	R4425197
Nickel (Ni)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Phosphorus (P)-Total	13600		10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Potassium (K)-Total	12100		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Rubidium (Rb)-Total	31.4		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Selenium (Se)-Total	2.95		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Sodium (Na)-Total	4360		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Strontium (Sr)-Total	0.21		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tellurium (Te)-Total	<0.020		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Thallium (Tl)-Total	0.0273		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tin (Sn)-Total	0.35		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Uranium (U)-Total	<0.0020		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Vanadium (V)-Total	0.20		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-38 WA-08 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Zinc (Zn)-Total	77.5		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
L2173881-39 WA-09 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	76.9		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	3.1		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.129		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.061		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.870		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	304		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0397		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.283		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	6.35		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	543		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	888		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	8.51		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.10		0.035	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	0.396		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	14300		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	12800		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	42.6		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	3.29		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	5700		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.191		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0250		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	0.20		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	88.6		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-39 WA-09 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
L2173881-40 WA-10 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.4		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.572		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.275		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.016		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.556		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	3000		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0448		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.748		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	9.40		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	828		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	849		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	7.14		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.604		0.010	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	1.02		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	14200		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	11700		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	40.1		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	4.67		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	4860		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	1.61		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0449		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	1.90		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	94.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	0.21		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-41 WA-11 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-41 WA-11 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.9		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.328		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.083		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.436		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	261		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0285		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.271		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	5.84		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	204		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	759		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	7.19		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.656		0.0050	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.699		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	11700		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	11900		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	31.8		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	2.97		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	3940		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.18		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0385		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	0.53		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	0.12		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	78.6		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-42 WA-12 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.3		0.50	%		08-DEC-18	R4383673
Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-42 WA-12 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Aluminum (Al)-Total	4.9		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.375		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.071		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.013		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.935		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	364		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0329		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.609		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	6.87		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	760		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	995		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	8.04		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.861		0.0050	mg/kg	12-DEC-18	17-DEC-18	R4397087
Molybdenum (Mo)-Total	0.814		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	15500		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	14900		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	40.4		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	3.57		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	4980		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.241		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0426		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	0.36		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	0.11		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	103		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-43 WA-13 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	74.1		2.0	%		27-DEC-18	R4423636
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Antimony (Sb)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-43 WA-13 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Arsenic (As)-Total	0.340		0.030	mg/kg	31-DEC-18	02-JAN-19	R4425197
Barium (Ba)-Total	0.115		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Beryllium (Be)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Boron (B)-Total	<1.0		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cadmium (Cd)-Total	0.624		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Calcium (Ca)-Total	444		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cesium (Cs)-Total	0.0187		0.0050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Chromium (Cr)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cobalt (Co)-Total	0.901		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Copper (Cu)-Total	6.57		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Iron (Fe)-Total	456		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lead (Pb)-Total	<0.050		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lithium (Li)-Total	<0.50		0.50	mg/kg	31-DEC-18	02-JAN-19	R4425197
Magnesium (Mg)-Total	598		2.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Manganese (Mn)-Total	5.37		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Mercury (Hg)-Total	0.560		0.0050	mg/kg	31-DEC-18	03-JAN-19	R4426348
Molybdenum (Mo)-Total	0.685		0.040	mg/kg	31-DEC-18	02-JAN-19	R4425197
Nickel (Ni)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Phosphorus (P)-Total	10500		10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Potassium (K)-Total	9390		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Rubidium (Rb)-Total	22.2		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Selenium (Se)-Total	3.18		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Sodium (Na)-Total	4680		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Strontium (Sr)-Total	0.24		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tellurium (Te)-Total	<0.020		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Thallium (Tl)-Total	0.0289		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tin (Sn)-Total	0.27		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Uranium (U)-Total	<0.0020		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Vanadium (V)-Total	0.13		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zinc (Zn)-Total	73.8		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
L2173881-44 WA-14 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.0		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.744		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.132		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-44 WA-14 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.014		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.537		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	382		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0223		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.472		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	7.51		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	379		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	703		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	6.66		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.640		0.0050	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.861		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	10500		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	11600		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	25.1		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	3.48		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	4210		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.26		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0559		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	1.18		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	84.3		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-45 WA-15 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	81.6		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.268		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.114		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-45 WA-15 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.246		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	473		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0272		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.412		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	5.23		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	569		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	662		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	5.46		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.582		0.010	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.603		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	9850		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	11400		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	27.8		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	3.32		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	5420		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.29		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0304		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	0.44		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	65.1		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-46 NP-01 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	73.7		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.098		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.161		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.017		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.179		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-46 NP-01 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Calcium (Ca)-Total	793		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0186		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.128		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	66.9		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	142		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	472		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	4.19		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.480		0.0050	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.804		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	6880		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	6230		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	19.4		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	5.90		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	2790		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.63		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0179		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	0.80		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	0.28		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	152		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-47 NP-02 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.5		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	7.8		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.186		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.146		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.043		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.392		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	182		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0220		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-47 NP-02 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.226		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	229		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	879		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	760		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	6.08		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	1.31		0.010	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	1.01		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	12300		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	13200		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	40.5		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	8.11		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	4430		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.20		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0133		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	0.32		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	0.0040		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	3.15		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	224		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-48 NP-03 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	69.1		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.089		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.084		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.017		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.173		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	147		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0170		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.132		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-48 NP-03 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Copper (Cu)-Total	65.6		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	459		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	415		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	3.10		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.482		0.0050	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.826		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	7120		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	7210		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	24.0		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	7.27		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	3110		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.14		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0108		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	0.37		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	0.47		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	175		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-49 NP-04 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	76.1		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.186		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.632		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.026		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.436		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	175		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0088		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.160		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	86.0		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	1560		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-49 NP-04 (LIVER) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	541		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	4.30		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.561		0.010	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.827		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	7880		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	8220		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	13.7		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	8.38		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	2920		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.12		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	0.023		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0119		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	1.42		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	173		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-50 NP-05 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	74.8		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.094		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.567		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.013		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.252		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	107		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0312		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.132		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	107		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	97.7		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-50 NP-05 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Magnesium (Mg)-Total	503		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	4.59		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.521		0.0050	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.836		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	7460		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	8710		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	40.0		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	6.46		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	2410		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0155		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	0.36		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	140		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-51 NP-06 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.4		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	23.3		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	0.011		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.198		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.760		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.080		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	1.58		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	300		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0279		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.614		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	228		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	1720		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	733		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	7.47		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-51 NP-06 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Mercury (Hg)-Total	4.18		0.10	mg/kg	27-DEC-18	02-JAN-19	R4421468
Molybdenum (Mo)-Total	1.44		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	11900		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	10400		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	27.9		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	9.58		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	5220		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.24		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	0.037		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0141		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	0.0171		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	4.85		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	314		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-52 NP-07 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.5		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	8.5		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.272		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.477		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.048		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.742		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	286		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0247		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.083		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.378		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	124		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	95.7		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.025		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	949		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	12.7		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.49		0.0050	mg/kg	12-DEC-18	17-DEC-18	R4397087
Molybdenum (Mo)-Total	1.31		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-52 NP-07 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	16800		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	14700		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	25.8		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	10.1		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	6220		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.230		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	0.021		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0101		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	0.0060		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	1.71		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	279		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-53 NP-08 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.0		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	2.8		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.103		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.666		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.019		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.341		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	280		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0246		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.170		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	105		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	894		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	877		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	6.23		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.732		0.0050	mg/kg	12-DEC-18	17-DEC-18	R4397087
Molybdenum (Mo)-Total	0.792		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	15400		10	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-53 NP-08 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Potassium (K)-Total	15100		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	26.7		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	9.87		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	4920		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.153		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0151		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	0.36		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	195		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-54 NP-09 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.7		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	11.5		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.193		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.512		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.044		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	1.04		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	207		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0311		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.084		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.319		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	278		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	1290		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.021		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	726		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	5.92		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.90		0.035	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	0.862		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	13800		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	13200		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	38.4		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-54 NP-09 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Selenium (Se)-Total	9.17		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	4460		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.221		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0100		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	0.0055		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	1.76		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	280		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-55 NP-10 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	75.0		0.50	%		08-DEC-18	R4383673
Metals							
Aluminum (Al)-Total	4.6		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.084		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.178		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.025		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.312		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	151		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0210		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.136		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	44.5		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	207		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	521		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	2.53		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.976		0.0050	mg/kg	12-DEC-18	17-DEC-18	R4397087
Molybdenum (Mo)-Total	0.337		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	8020		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	9820		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	21.2		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	6.63		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	3100		20	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-55 NP-10 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Strontium (Sr)-Total	0.091		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0089		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	0.0030		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	1.28		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	110		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-56 NP-11 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	73.7		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	19.6		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	0.017		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.224		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.379		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.045		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	1.69		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	201		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0233		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.055		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.417		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	151		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	847		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.028		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	525		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	7.12		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	2.30		0.040	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	0.911		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	9490		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	9630		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	22.8		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	9.02		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	4350		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.160		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	0.034		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-56 NP-11 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Thallium (Tl)-Total	0.0083		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	0.0044		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	2.29		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	150		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-57 NP-12 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	78.0		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	8.4		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.205		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.409		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.051		0.010	mg/kg	12-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.301		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	171		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0177		0.0050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.371		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	355		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	2200		3.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	801		2.0	mg/kg	12-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	5.31		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.30		0.040	mg/kg	12-DEC-18	18-DEC-18	R4397087
Molybdenum (Mo)-Total	0.971		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	14300		10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	13700		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	25.2		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	9.37		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	4390		20	mg/kg	12-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.165		0.050	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0084		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-57 NP-12 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Uranium (U)-Total	0.0034		0.0020	mg/kg	12-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	4.21		0.10	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	276		0.50	mg/kg	12-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	12-DEC-18	14-DEC-18	R4396096
L2173881-58 NP-13 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	80.7		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	5.5		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.235		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.406		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	0.041		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.411		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	236		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0210		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.330		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	203		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	1340		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	894		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	8.44		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	1.05		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.999		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	16100		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	15600		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	32.8		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	11.4		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	4840		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.210		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	0.021		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0124		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	0.0032		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	1.97		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-58 NP-13 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Zinc (Zn)-Total	267		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-59 NP-14 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	74.8		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	6.1		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.117		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	1.55		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.035		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.239		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	1750		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0173		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.295		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	109		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	145		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	754		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	7.15		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.931		0.0050	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	1.21		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	11800		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	8880		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	18.1		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	9.31		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	5870		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	1.32		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0098		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	0.60		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	233		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-59 NP-14 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
L2173881-60 NP-15 (LIVER) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	79.0		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	7.6		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.159		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.596		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.050		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.383		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	238		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0284		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.369		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	229		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	1100		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	723		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	6.54		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	1.60		0.0050	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	1.32		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	13100		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	11900		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	29.0		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	10.1		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	4490		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.23		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0096		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	0.0043		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	1.96		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	212		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-61 WA-01 (OVARY) Sampled By: GC/TW on 12-SEP-18 @ 00:01							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-61 WA-01 (OVARY) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	74.9		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.090		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.200		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	<0.0050		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	973		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0568		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.235		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	4.27		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	78.1		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1190		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	6.12		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.0356		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.044		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	9980		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	13200		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	52.9		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	2.61		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	2800		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.214		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0469		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	150		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-62 WA-04 (OVARY) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	75.2		2.0	%		27-DEC-18	R4423636
Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-62 WA-04 (OVARY) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Aluminum (Al)-Total	11.8		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Antimony (Sb)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Arsenic (As)-Total	0.097		0.030	mg/kg	31-DEC-18	02-JAN-19	R4425197
Barium (Ba)-Total	3.60		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Beryllium (Be)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Boron (B)-Total	2.4		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cadmium (Cd)-Total	0.013		0.010	mg/kg	31-DEC-18	02-JAN-19	R4425197
Calcium (Ca)-Total	378		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cesium (Cs)-Total	0.0376		0.0050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Chromium (Cr)-Total	0.23		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Cobalt (Co)-Total	0.177		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Copper (Cu)-Total	3.20		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Iron (Fe)-Total	89.4		5.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lead (Pb)-Total	0.051		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Lithium (Li)-Total	<0.50		0.50	mg/kg	31-DEC-18	02-JAN-19	R4425197
Magnesium (Mg)-Total	1480		2.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Manganese (Mn)-Total	1.62		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Mercury (Hg)-Total	0.184		0.010	mg/kg	31-DEC-18	03-JAN-19	R4426348
Molybdenum (Mo)-Total	0.093		0.040	mg/kg	31-DEC-18	02-JAN-19	R4425197
Nickel (Ni)-Total	0.27		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Phosphorus (P)-Total	20500		10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Potassium (K)-Total	24100		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Rubidium (Rb)-Total	42.0		0.050	mg/kg	31-DEC-18	02-JAN-19	R4425197
Selenium (Se)-Total	7.68		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Sodium (Na)-Total	2980		20	mg/kg	31-DEC-18	02-JAN-19	R4425197
Strontium (Sr)-Total	0.27		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tellurium (Te)-Total	<0.020		0.020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Thallium (Tl)-Total	0.0330		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Tin (Sn)-Total	0.22		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Uranium (U)-Total	<0.0020		0.0020	mg/kg	31-DEC-18	02-JAN-19	R4425197
Vanadium (V)-Total	<0.10		0.10	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zinc (Zn)-Total	657		1.0	mg/kg	31-DEC-18	02-JAN-19	R4425197
Zirconium (Zr)-Total	0.22		0.20	mg/kg	31-DEC-18	02-JAN-19	R4425197
L2173881-63 WA-08 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	72.5		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-63 WA-08 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Arsenic (As)-Total	0.121		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.579		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	1190		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0290		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.243		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	3.00		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	136		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	1060		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	29.6		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.200		0.0050	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.105		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	9270		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	10200		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	25.0		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	2.99		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	3110		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.36		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0183		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	140		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-64 WA-09 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	71.7		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.069		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.156		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-64 WA-09 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0140		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	787		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0497		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.197		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	2.87		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	69.7		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1120		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	10.2		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.167		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.033		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	10100		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	12000		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	33.2		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	2.51		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	3560		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.188		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0147		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	122		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-65 WA-11 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	71.3		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.167		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.379		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-65 WA-11 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	832		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0357		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.152		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	2.83		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	91.4		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	883		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	19.3		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.0950		0.0050	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.062		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	8100		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	10500		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	26.9		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	3.28		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	2520		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.16		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0190		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	108		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-66 WA-12 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	74.7		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	<2.0		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	0.011		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.206		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.269		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0114		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-66 WA-12 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Calcium (Ca)-Total	1200		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0472		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.275		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	3.61		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	157		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1400		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	15.4		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.156		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.076		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	11200		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	14100		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	35.1		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	2.73		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	3840		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.340		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0269		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	162		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-67 NP-02 (OVARY) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	83.4		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	6.2		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	0.022		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.163		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.617		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0514		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	906		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0503		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-67 NP-02 (OVARY) Sampled By: GC/TW on 12-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Chromium (Cr)-Total	0.057		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.372		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	6.77		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	307		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	0.080		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1310		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	179		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.355		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.360		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	18000		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	24000		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	41.3		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	4.12		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	5350		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.714		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0224		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	0.68		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	356		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-68 NP-06 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	83.3		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.150		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	1.45		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.121		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	583		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0573		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.476		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-68 NP-06 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Copper (Cu)-Total	4.56		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	148		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	759		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	71.6		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	1.00		0.010	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.462		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	12100		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	17500		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	33.8		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	3.42		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	5990		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Strontium (Sr)-Total	0.27		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0179		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	<0.10		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	0.0028		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	0.56		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	238		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
L2173881-69 NP-07 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	84.1		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	4.5		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.207		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.520		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0679		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	661		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0493		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.051		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.305		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	7.49		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	132		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-69 NP-07 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1260		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	204		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.494		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.335		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	17600		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	22500		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	34.5		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	3.23		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	5710		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.332		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0123		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	0.19		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	363		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-70 NP-08 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	82.3		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	2.8		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.086		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.480		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0566		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	924		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0456		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	<0.050		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.251		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	6.78		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	304		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-70 NP-08 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Magnesium (Mg)-Total	1320		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	176		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.273		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.258		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	17700		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	22600		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	37.7		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	6.10		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	4100		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.361		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0225		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	370		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-71 NP-09 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	83.7		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	14.9		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.169		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.473		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0876		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	478		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0735		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.052		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.518		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	6.08		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	258		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1240		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	118		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-71 NP-09 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Mercury (Hg)-Total	0.586		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.277		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	17400		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	22800		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	44.9		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	3.27		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	5340		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.311		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0162		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	0.24		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	412		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-72 NP-10 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	82.7		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	5.3		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.122		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.559		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0715		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	1600		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0534		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.105		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.277		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	5.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	231		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1220		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	88.8		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.610		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.147		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-72 NP-10 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	16700		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	18900		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	32.8		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	3.78		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	5630		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.834		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0180		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	0.26		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	388		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-73 NP-12 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	83.1		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	3.1		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.178		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.147		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0419		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	751		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0421		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.060		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.635		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	7.00		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	311		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1330		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	206		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.379		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.351		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	17900		10	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-73 NP-12 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Potassium (K)-Total	21600		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	29.9		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Selenium (Se)-Total	3.45		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	5330		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.468		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0132		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	0.11		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	0.64		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	378		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-74 NP-13 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	82.8		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	2.4		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Antimony (Sb)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Arsenic (As)-Total	0.173		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Barium (Ba)-Total	0.109		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Beryllium (Be)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Bismuth (Bi)-Total	<0.010		0.010	mg/kg	13-DEC-18	14-DEC-18	R4396096
Boron (B)-Total	<1.0		1.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cadmium (Cd)-Total	0.0370		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Calcium (Ca)-Total	715		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cesium (Cs)-Total	0.0373		0.0050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Chromium (Cr)-Total	0.076		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Cobalt (Co)-Total	0.553		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Copper (Cu)-Total	6.93		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Iron (Fe)-Total	393		3.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lead (Pb)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Lithium (Li)-Total	<0.50		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Magnesium (Mg)-Total	1280		2.0	mg/kg	13-DEC-18	14-DEC-18	R4396096
Manganese (Mn)-Total	235		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Mercury (Hg)-Total	0.251		0.0050	mg/kg	13-DEC-18	15-DEC-18	R4396536
Molybdenum (Mo)-Total	0.350		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Nickel (Ni)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Phosphorus (P)-Total	17200		10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Potassium (K)-Total	23200		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Rubidium (Rb)-Total	36.9		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-74 NP-13 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Selenium (Se)-Total	4.12		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Sodium (Na)-Total	5160		20	mg/kg	13-DEC-18	14-DEC-18	R4396096
Strontium (Sr)-Total	0.376		0.050	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tellurium (Te)-Total	<0.020		0.020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Thallium (Tl)-Total	0.0198		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Tin (Sn)-Total	<0.10		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Uranium (U)-Total	<0.0020		0.0020	mg/kg	13-DEC-18	14-DEC-18	R4396096
Vanadium (V)-Total	0.44		0.10	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zinc (Zn)-Total	371		0.50	mg/kg	13-DEC-18	14-DEC-18	R4396096
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	13-DEC-18	14-DEC-18	R4396096
L2173881-75 NP-15 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Physical Tests							
% Moisture	83.3		0.50	%		08-DEC-18	R4383686
Metals							
Aluminum (Al)-Total	<5.0		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Antimony (Sb)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Arsenic (As)-Total	0.109		0.030	mg/kg	27-DEC-18	28-DEC-18	R4420889
Barium (Ba)-Total	0.125		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Beryllium (Be)-Total	<0.010		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Bismuth (Bi)-Total	0.017		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Boron (B)-Total	<1.0		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cadmium (Cd)-Total	0.031		0.010	mg/kg	27-DEC-18	28-DEC-18	R4420889
Calcium (Ca)-Total	676		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cesium (Cs)-Total	0.0463		0.0050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Chromium (Cr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Cobalt (Co)-Total	0.359		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Copper (Cu)-Total	5.40		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Iron (Fe)-Total	217		5.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lead (Pb)-Total	<0.050		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Lithium (Li)-Total	<0.50		0.50	mg/kg	27-DEC-18	28-DEC-18	R4420889
Magnesium (Mg)-Total	1100		2.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Manganese (Mn)-Total	162		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Mercury (Hg)-Total	0.471		0.010	mg/kg	27-DEC-18	31-DEC-18	R4421468
Molybdenum (Mo)-Total	0.334		0.040	mg/kg	27-DEC-18	28-DEC-18	R4420889
Nickel (Ni)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Phosphorus (P)-Total	14000		10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Potassium (K)-Total	16500		20	mg/kg	27-DEC-18	28-DEC-18	R4420889
Rubidium (Rb)-Total	30.8		0.050	mg/kg	27-DEC-18	28-DEC-18	R4420889
Selenium (Se)-Total	3.09		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Sodium (Na)-Total	3920		20	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2173881-75 NP-15 (OVARY) Sampled By: GC/TW on 13-SEP-18 @ 00:01 Matrix: Tissue							
Metals							
Strontium (Sr)-Total	0.37		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tellurium (Te)-Total	<0.020		0.020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Thallium (Tl)-Total	0.0112		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Tin (Sn)-Total	0.13		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Uranium (U)-Total	<0.0020		0.0020	mg/kg	27-DEC-18	28-DEC-18	R4420889
Vanadium (V)-Total	0.22		0.10	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zinc (Zn)-Total	312		1.0	mg/kg	27-DEC-18	28-DEC-18	R4420889
Zirconium (Zr)-Total	<0.20		0.20	mg/kg	27-DEC-18	28-DEC-18	R4420889

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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.

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.

MOISTURE-MICR-VA	Tissue	Moisture in Tissue	Puget Sound WQ Authority, Apr 1997

This analysis is carried out gravimetrically by drying the sample at <60 deg. C.

MOISTURE-TISS-VA	Tissue	% Moisture in Tissues	Puget Sound WQ Authority, Apr 1997

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
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

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

Quality Control Report

Client: MINNOW ENVIRONMENTAL INC.
2 Lamb Street
Georgetown ON L7G 3M9
Contact: Jess Tester

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-DRY-CVAFS-N-VA	**Tissue**							
Batch R4396536								
WG2952745-3 CRM		**VA-NRC-DORM4**						
Mercury (Hg)-Total			100.5		%		70-130	15-DEC-18
WG2952795-11 CRM		**VA-NRC-DORM4**						
Mercury (Hg)-Total			105.8		%		70-130	15-DEC-18
WG2952795-10 DUP		**L2173881-64**						
Mercury (Hg)-Total		0.167	0.155		mg/kg	7.2	40	15-DEC-18
WG2952745-4 LCS								
Mercury (Hg)-Total			97.3		%		70-130	15-DEC-18
WG2952795-12 LCS								
Mercury (Hg)-Total			100.8		%		70-130	15-DEC-18
WG2952745-1 MB								
Mercury (Hg)-Total			<0.0050		mg/kg		0.005	15-DEC-18
WG2952795-9 MB								
Mercury (Hg)-Total			<0.0050		mg/kg		0.005	15-DEC-18
Batch R4396742								
WG2952745-2 DUP		**L2173881-7**						
Mercury (Hg)-Total		1.52	1.47		mg/kg	3.7	40	16-DEC-18
Batch R4397087								
WG2952768-3 CRM		**VA-NRC-DORM4**						
Mercury (Hg)-Total			99.9		%		70-130	17-DEC-18
WG2952768-2 DUP		**L2173881-39**						
Mercury (Hg)-Total		1.10	1.04		mg/kg	5.6	40	18-DEC-18
WG2952768-4 LCS								
Mercury (Hg)-Total			104.3		%		70-130	17-DEC-18
WG2952768-1 MB								
Mercury (Hg)-Total			<0.0050		mg/kg		0.005	17-DEC-18
HG-DRY-MICR-CVAF-VA	**Tissue**							
Batch R4421468								
WG2960876-7 CRM		**VA-NRC-DORM4**						
Mercury (Hg)-Total			118.2		%		70-130	31-DEC-18
WG2960876-6 DUP		**L2173881-60**						
Mercury (Hg)-Total		1.60	1.48		mg/kg	7.6	40	31-DEC-18
WG2960876-8 LCS								
Mercury (Hg)-Total			123.3		%		70-130	31-DEC-18
WG2960876-5 MB								
Mercury (Hg)-Total			<0.0050		mg/kg		0.005	31-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-DRY-MICR-CVAF-VA	**Tissue**							
Batch R4426348								
WG2960889-3 CRM		**VA-NRC-DORM4**						
Mercury (Hg)-Total			102.2		%		70-130	03-JAN-19
WG2960889-2 DUP		**L2173881-43**						
Mercury (Hg)-Total		0.560	0.543		mg/kg	3.1	40	03-JAN-19
WG2960889-4 LCS								
Mercury (Hg)-Total			107.1		%		70-130	03-JAN-19
WG2960889-1 MB								
Mercury (Hg)-Total			<0.0050		mg/kg		0.005	03-JAN-19
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952745-3 CRM		**VA-NRC-DORM4**						
Aluminum (Al)-Total			108.9		%		70-130	14-DEC-18
Arsenic (As)-Total			102.9		%		70-130	14-DEC-18
Barium (Ba)-Total			108.1		%		70-130	14-DEC-18
Beryllium (Be)-Total			0.017		mg/kg		0.005-0.025	14-DEC-18
Bismuth (Bi)-Total			0.011		mg/kg		0.002-0.022	14-DEC-18
Boron (B)-Total			107.2		%		70-130	14-DEC-18
Cadmium (Cd)-Total			106.9		%		70-130	14-DEC-18
Calcium (Ca)-Total			101.9		%		70-130	14-DEC-18
Cesium (Cs)-Total			105.2		%		70-130	14-DEC-18
Chromium (Cr)-Total			106.1		%		70-130	14-DEC-18
Cobalt (Co)-Total			105.3		%		70-130	14-DEC-18
Copper (Cu)-Total			101.8		%		70-130	14-DEC-18
Iron (Fe)-Total			106.6		%		70-130	14-DEC-18
Lead (Pb)-Total			110.6		%		70-130	14-DEC-18
Lithium (Li)-Total			1.16		mg/kg		0.71-1.71	14-DEC-18
Magnesium (Mg)-Total			104.8		%		70-130	14-DEC-18
Manganese (Mn)-Total			97.4		%		70-130	14-DEC-18
Molybdenum (Mo)-Total			98.3		%		70-130	14-DEC-18
Nickel (Ni)-Total			99.7		%		70-130	14-DEC-18
Phosphorus (P)-Total			100.3		%		70-130	14-DEC-18
Potassium (K)-Total			107.0		%		70-130	14-DEC-18
Rubidium (Rb)-Total			104.1		%		70-130	14-DEC-18
Selenium (Se)-Total			105.8		%		70-130	14-DEC-18
Sodium (Na)-Total			101.5		%		70-130	14-DEC-18
Strontium (Sr)-Total			92.8		%		70-130	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952745-3 CRM		**VA-NRC-DORM4**						
Thallium (Tl)-Total			122.4		%		70-130	14-DEC-18
Uranium (U)-Total			101.8		%		70-130	14-DEC-18
Vanadium (V)-Total			102.5		%		70-130	14-DEC-18
Zinc (Zn)-Total			114.3		%		70-130	14-DEC-18
Zirconium (Zr)-Total			0.24		mg/kg		0.05-0.45	14-DEC-18
WG2952768-3 CRM		**VA-NRC-DORM4**						
Aluminum (Al)-Total			104.5		%		70-130	14-DEC-18
Arsenic (As)-Total			101.6		%		70-130	14-DEC-18
Barium (Ba)-Total			107.3		%		70-130	14-DEC-18
Beryllium (Be)-Total			0.015		mg/kg		0.005-0.025	14-DEC-18
Bismuth (Bi)-Total			0.010		mg/kg		0.002-0.022	14-DEC-18
Boron (B)-Total			104.2		%		70-130	14-DEC-18
Cadmium (Cd)-Total			103.0		%		70-130	14-DEC-18
Calcium (Ca)-Total			105.2		%		70-130	14-DEC-18
Cesium (Cs)-Total			102.1		%		70-130	14-DEC-18
Chromium (Cr)-Total			103.0		%		70-130	14-DEC-18
Cobalt (Co)-Total			95.1		%		70-130	14-DEC-18
Copper (Cu)-Total			98.5		%		70-130	14-DEC-18
Iron (Fe)-Total			104.5		%		70-130	14-DEC-18
Lead (Pb)-Total			105.6		%		70-130	14-DEC-18
Lithium (Li)-Total			1.18		mg/kg		0.71-1.71	14-DEC-18
Magnesium (Mg)-Total			106.5		%		70-130	14-DEC-18
Manganese (Mn)-Total			94.4		%		70-130	14-DEC-18
Molybdenum (Mo)-Total			92.0		%		70-130	14-DEC-18
Nickel (Ni)-Total			91.9		%		70-130	14-DEC-18
Phosphorus (P)-Total			100.2		%		70-130	14-DEC-18
Potassium (K)-Total			103.8		%		70-130	14-DEC-18
Rubidium (Rb)-Total			109.0		%		70-130	14-DEC-18
Selenium (Se)-Total			113.4		%		70-130	14-DEC-18
Sodium (Na)-Total			103.4		%		70-130	14-DEC-18
Strontium (Sr)-Total			99.6		%		70-130	14-DEC-18
Uranium (U)-Total			100.1		%		70-130	14-DEC-18
Vanadium (V)-Total			97.8		%		70-130	14-DEC-18
Zinc (Zn)-Total			108.4		%		70-130	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952768-3 CRM		**VA-NRC-DORM4**						
Zirconium (Zr)-Total			0.29		mg/kg		0.05-0.45	14-DEC-18
WG2952795-11 CRM		**VA-NRC-DORM4**						
Aluminum (Al)-Total			106.1		%		70-130	14-DEC-18
Arsenic (As)-Total			91.6		%		70-130	14-DEC-18
Barium (Ba)-Total			102.3		%		70-130	14-DEC-18
Beryllium (Be)-Total			0.015		mg/kg		0.005-0.025	14-DEC-18
Bismuth (Bi)-Total			0.010		mg/kg		0.002-0.022	14-DEC-18
Boron (B)-Total			94.3		%		70-130	14-DEC-18
Cadmium (Cd)-Total			92.4		%		70-130	14-DEC-18
Calcium (Ca)-Total			99.8		%		70-130	14-DEC-18
Cesium (Cs)-Total			104.2		%		70-130	14-DEC-18
Chromium (Cr)-Total			98.5		%		70-130	14-DEC-18
Cobalt (Co)-Total			95.6		%		70-130	14-DEC-18
Copper (Cu)-Total			94.0		%		70-130	14-DEC-18
Iron (Fe)-Total			98.1		%		70-130	14-DEC-18
Lead (Pb)-Total			105.3		%		70-130	14-DEC-18
Lithium (Li)-Total			1.04		mg/kg		0.71-1.71	14-DEC-18
Magnesium (Mg)-Total			95.9		%		70-130	14-DEC-18
Manganese (Mn)-Total			92.2		%		70-130	14-DEC-18
Molybdenum (Mo)-Total			95.1		%		70-130	14-DEC-18
Nickel (Ni)-Total			86.7		%		70-130	14-DEC-18
Phosphorus (P)-Total			89.7		%		70-130	14-DEC-18
Potassium (K)-Total			94.2		%		70-130	14-DEC-18
Rubidium (Rb)-Total			94.7		%		70-130	14-DEC-18
Selenium (Se)-Total			103.0		%		70-130	14-DEC-18
Sodium (Na)-Total			90.0		%		70-130	14-DEC-18
Strontium (Sr)-Total			91.6		%		70-130	14-DEC-18
Thallium (Tl)-Total			127.5		%		70-130	14-DEC-18
Uranium (U)-Total			97.5		%		70-130	14-DEC-18
Vanadium (V)-Total			100.7		%		70-130	14-DEC-18
Zinc (Zn)-Total			104.8		%		70-130	14-DEC-18
Zirconium (Zr)-Total			0.28		mg/kg		0.05-0.45	14-DEC-18
WG2952745-2 DUP		**L2173881-7**						
Aluminum (Al)-Total		<2.0	<2.0	RPD-NA	mg/kg	N/A	40	14-DEC-18
Antimony (Sb)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952745-2 DUP		**L2173881-7**						
Arsenic (As)-Total		0.322	0.299		mg/kg	7.3	40	14-DEC-18
Barium (Ba)-Total		0.200	0.237		mg/kg	17	40	14-DEC-18
Beryllium (Be)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-DEC-18
Bismuth (Bi)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-DEC-18
Boron (B)-Total		<1.0	<1.0	RPD-NA	mg/kg	N/A	40	14-DEC-18
Cadmium (Cd)-Total		<0.0050	<0.0050	RPD-NA	mg/kg	N/A	40	14-DEC-18
Calcium (Ca)-Total		681	520		mg/kg	27	60	14-DEC-18
Cesium (Cs)-Total		0.0453	0.0446		mg/kg	1.5	40	14-DEC-18
Chromium (Cr)-Total		<0.050	<0.050	RPD-NA	mg/kg	N/A	40	14-DEC-18
Cobalt (Co)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Copper (Cu)-Total		0.55	0.50		mg/kg	8.4	40	14-DEC-18
Iron (Fe)-Total		6.4	6.0		mg/kg	6.2	40	14-DEC-18
Lead (Pb)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Lithium (Li)-Total		<0.50	<0.50	RPD-NA	mg/kg	N/A	40	14-DEC-18
Magnesium (Mg)-Total		1600	1520		mg/kg	4.9	40	14-DEC-18
Manganese (Mn)-Total		0.620	0.584		mg/kg	5.9	40	14-DEC-18
Molybdenum (Mo)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Nickel (Ni)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	14-DEC-18
Phosphorus (P)-Total		11900	11400		mg/kg	4.6	40	14-DEC-18
Potassium (K)-Total		23600	22800		mg/kg	3.1	40	14-DEC-18
Rubidium (Rb)-Total		41.2	39.5		mg/kg	4.2	40	14-DEC-18
Selenium (Se)-Total		1.20	1.16		mg/kg	3.2	40	14-DEC-18
Sodium (Na)-Total		1070	1000		mg/kg	6.4	40	14-DEC-18
Strontium (Sr)-Total		0.138	0.085		mg/kg	48	60	14-DEC-18
Tellurium (Te)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Thallium (Tl)-Total		0.0117	0.0114		mg/kg	2.9	40	14-DEC-18
Tin (Sn)-Total		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	14-DEC-18
Uranium (U)-Total		<0.0020	<0.0020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Vanadium (V)-Total		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	14-DEC-18
Zinc (Zn)-Total		16.7	15.6		mg/kg	6.6	40	14-DEC-18
Zirconium (Zr)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	14-DEC-18
WG2952768-2 DUP		**L2173881-39**						
Aluminum (Al)-Total		3.1	2.4		mg/kg	25	40	14-DEC-18
Antimony (Sb)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952768-2 DUP		**L2173881-39**						
Arsenic (As)-Total		0.129	0.129		mg/kg	0.0	40	14-DEC-18
Barium (Ba)-Total		0.061	0.067		mg/kg	9.6	40	14-DEC-18
Beryllium (Be)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-DEC-18
Bismuth (Bi)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-DEC-18
Boron (B)-Total		<1.0	<1.0	RPD-NA	mg/kg	N/A	40	14-DEC-18
Cadmium (Cd)-Total		0.870	0.892		mg/kg	2.6	40	14-DEC-18
Calcium (Ca)-Total		304	319		mg/kg	4.7	60	14-DEC-18
Cesium (Cs)-Total		0.0397	0.0388		mg/kg	2.2	40	14-DEC-18
Chromium (Cr)-Total		<0.050	<0.050	RPD-NA	mg/kg	N/A	40	14-DEC-18
Cobalt (Co)-Total		0.283	0.280		mg/kg	1.0	40	14-DEC-18
Copper (Cu)-Total		6.35	6.57		mg/kg	3.4	40	14-DEC-18
Iron (Fe)-Total		543	556		mg/kg	2.4	40	14-DEC-18
Lead (Pb)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Lithium (Li)-Total		<0.50	<0.50	RPD-NA	mg/kg	N/A	40	14-DEC-18
Magnesium (Mg)-Total		888	918		mg/kg	3.3	40	14-DEC-18
Manganese (Mn)-Total		8.51	8.86		mg/kg	4.0	40	14-DEC-18
Molybdenum (Mo)-Total		0.396	0.403		mg/kg	1.9	40	14-DEC-18
Nickel (Ni)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	14-DEC-18
Phosphorus (P)-Total		14300	15100		mg/kg	5.3	40	14-DEC-18
Potassium (K)-Total		12800	13400		mg/kg	4.4	40	14-DEC-18
Rubidium (Rb)-Total		42.6	43.5		mg/kg	2.1	40	14-DEC-18
Selenium (Se)-Total		3.29	3.32		mg/kg	0.9	40	14-DEC-18
Sodium (Na)-Total		5700	5860		mg/kg	2.7	40	14-DEC-18
Strontium (Sr)-Total		0.191	0.191		mg/kg	0.2	60	14-DEC-18
Tellurium (Te)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Thallium (Tl)-Total		0.0250	0.0255		mg/kg	2.0	40	14-DEC-18
Tin (Sn)-Total		0.20	0.21		mg/kg	2.8	40	14-DEC-18
Uranium (U)-Total		<0.0020	<0.0020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Vanadium (V)-Total		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	14-DEC-18
Zinc (Zn)-Total		88.6	89.9		mg/kg	1.4	40	14-DEC-18
Zirconium (Zr)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	14-DEC-18
WG2952795-10 DUP		**L2173881-64**						
Aluminum (Al)-Total		<2.0	<2.0	RPD-NA	mg/kg	N/A	40	14-DEC-18
Antimony (Sb)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952795-10 DUP		**L2173881-64**						
Arsenic (As)-Total		0.069	0.066		mg/kg	4.6	40	14-DEC-18
Barium (Ba)-Total		0.156	0.168		mg/kg	7.4	40	14-DEC-18
Beryllium (Be)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-DEC-18
Bismuth (Bi)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	14-DEC-18
Boron (B)-Total		<1.0	<1.0	RPD-NA	mg/kg	N/A	40	14-DEC-18
Cadmium (Cd)-Total		0.0140	0.0131		mg/kg	6.6	40	14-DEC-18
Calcium (Ca)-Total		787	783		mg/kg	0.5	60	14-DEC-18
Cesium (Cs)-Total		0.0497	0.0509		mg/kg	2.5	40	14-DEC-18
Chromium (Cr)-Total		<0.050	<0.050	RPD-NA	mg/kg	N/A	40	14-DEC-18
Cobalt (Co)-Total		0.197	0.195		mg/kg	1.1	40	14-DEC-18
Copper (Cu)-Total		2.87	2.83		mg/kg	1.6	40	14-DEC-18
Iron (Fe)-Total		69.7	70.2		mg/kg	0.8	40	14-DEC-18
Lead (Pb)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Lithium (Li)-Total		<0.50	<0.50	RPD-NA	mg/kg	N/A	40	14-DEC-18
Magnesium (Mg)-Total		1120	1090		mg/kg	1.9	40	14-DEC-18
Manganese (Mn)-Total		10.2	9.87		mg/kg	3.6	40	14-DEC-18
Molybdenum (Mo)-Total		0.033	0.033		mg/kg	1.0	40	14-DEC-18
Nickel (Ni)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	14-DEC-18
Phosphorus (P)-Total		10100	9730		mg/kg	3.4	40	14-DEC-18
Potassium (K)-Total		12000	11700		mg/kg	2.2	40	14-DEC-18
Rubidium (Rb)-Total		33.2	32.8		mg/kg	0.9	40	14-DEC-18
Selenium (Se)-Total		2.51	2.44		mg/kg	2.8	40	14-DEC-18
Sodium (Na)-Total		3560	3500		mg/kg	1.8	40	14-DEC-18
Strontium (Sr)-Total		0.188	0.186		mg/kg	1.3	60	14-DEC-18
Tellurium (Te)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Thallium (Tl)-Total		0.0147	0.0144		mg/kg	1.9	40	14-DEC-18
Tin (Sn)-Total		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	14-DEC-18
Uranium (U)-Total		<0.0020	<0.0020	RPD-NA	mg/kg	N/A	40	14-DEC-18
Vanadium (V)-Total		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	14-DEC-18
Zinc (Zn)-Total		122	118		mg/kg	3.4	40	14-DEC-18
Zirconium (Zr)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	14-DEC-18
WG2952745-4 LCS								
Aluminum (Al)-Total			109.1		%		70-130	14-DEC-18
Antimony (Sb)-Total			112.0		%		70-130	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952745-4 LCS								
Arsenic (As)-Total			106.0		%		70-130	14-DEC-18
Barium (Ba)-Total			109.8		%		70-130	14-DEC-18
Beryllium (Be)-Total			107.0		%		70-130	14-DEC-18
Bismuth (Bi)-Total			101.8		%		70-130	14-DEC-18
Boron (B)-Total			109.6		%		70-130	14-DEC-18
Cadmium (Cd)-Total			104.4		%		70-130	14-DEC-18
Calcium (Ca)-Total			108.3		%		70-130	14-DEC-18
Cesium (Cs)-Total			115.0		%		70-130	14-DEC-18
Chromium (Cr)-Total			106.4		%		70-130	14-DEC-18
Cobalt (Co)-Total			108.1		%		70-130	14-DEC-18
Copper (Cu)-Total			104.9		%		70-130	14-DEC-18
Iron (Fe)-Total			108.6		%		70-130	14-DEC-18
Lead (Pb)-Total			103.9		%		70-130	14-DEC-18
Lithium (Li)-Total			108.0		%		70-130	14-DEC-18
Magnesium (Mg)-Total			108.9		%		70-130	14-DEC-18
Manganese (Mn)-Total			108.6		%		70-130	14-DEC-18
Molybdenum (Mo)-Total			111.0		%		70-130	14-DEC-18
Nickel (Ni)-Total			105.8		%		70-130	14-DEC-18
Phosphorus (P)-Total			109.7		%		70-130	14-DEC-18
Potassium (K)-Total			108.1		%		70-130	14-DEC-18
Rubidium (Rb)-Total			104.5		%		70-130	14-DEC-18
Selenium (Se)-Total			104.5		%		70-130	14-DEC-18
Sodium (Na)-Total			102.3		%		70-130	14-DEC-18
Strontium (Sr)-Total			106.1		%		70-130	14-DEC-18
Tellurium (Te)-Total			110.0		%		70-130	14-DEC-18
Thallium (Tl)-Total			101.9		%		70-130	14-DEC-18
Tin (Sn)-Total			106.8		%		70-130	14-DEC-18
Uranium (U)-Total			105.4		%		70-130	14-DEC-18
Vanadium (V)-Total			109.3		%		70-130	14-DEC-18
Zinc (Zn)-Total			103.5		%		70-130	14-DEC-18
Zirconium (Zr)-Total			110.1		%		70-130	14-DEC-18
WG2952768-4 LCS								
Aluminum (Al)-Total			115.3		%		70-130	14-DEC-18
Antimony (Sb)-Total			113.4		%		70-130	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952768-4 LCS								
Arsenic (As)-Total			111.8		%		70-130	14-DEC-18
Barium (Ba)-Total			112.0		%		70-130	14-DEC-18
Beryllium (Be)-Total			110.1		%		70-130	14-DEC-18
Bismuth (Bi)-Total			105.3		%		70-130	14-DEC-18
Boron (B)-Total			111.9		%		70-130	14-DEC-18
Cadmium (Cd)-Total			109.2		%		70-130	14-DEC-18
Calcium (Ca)-Total			109.9		%		70-130	14-DEC-18
Cesium (Cs)-Total			114.0		%		70-130	14-DEC-18
Chromium (Cr)-Total			112.4		%		70-130	14-DEC-18
Cobalt (Co)-Total			104.1		%		70-130	14-DEC-18
Copper (Cu)-Total			107.1		%		70-130	14-DEC-18
Iron (Fe)-Total			124.6		%		70-130	14-DEC-18
Lead (Pb)-Total			108.2		%		70-130	14-DEC-18
Lithium (Li)-Total			113.2		%		70-130	14-DEC-18
Magnesium (Mg)-Total			113.7		%		70-130	14-DEC-18
Manganese (Mn)-Total			110.3		%		70-130	14-DEC-18
Molybdenum (Mo)-Total			110.4		%		70-130	14-DEC-18
Nickel (Ni)-Total			109.2		%		70-130	14-DEC-18
Phosphorus (P)-Total			115.3		%		70-130	14-DEC-18
Potassium (K)-Total			105.5		%		70-130	14-DEC-18
Rubidium (Rb)-Total			112.7		%		70-130	14-DEC-18
Selenium (Se)-Total			112.9		%		70-130	14-DEC-18
Sodium (Na)-Total			112.0		%		70-130	14-DEC-18
Strontium (Sr)-Total			115.1		%		70-130	14-DEC-18
Tellurium (Te)-Total			111.8		%		70-130	14-DEC-18
Thallium (Tl)-Total			104.2		%		70-130	14-DEC-18
Tin (Sn)-Total			109.1		%		70-130	14-DEC-18
Uranium (U)-Total			105.0		%		70-130	14-DEC-18
Vanadium (V)-Total			112.5		%		70-130	14-DEC-18
Zinc (Zn)-Total			109.7		%		70-130	14-DEC-18
Zirconium (Zr)-Total			117.2		%		70-130	14-DEC-18
WG2952795-12 LCS								
Aluminum (Al)-Total			109.7		%		70-130	14-DEC-18
Antimony (Sb)-Total			113.1		%		70-130	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952795-12 LCS								
Arsenic (As)-Total			104.7		%		70-130	14-DEC-18
Barium (Ba)-Total			108.5		%		70-130	14-DEC-18
Beryllium (Be)-Total			105.1		%		70-130	14-DEC-18
Bismuth (Bi)-Total			101.9		%		70-130	14-DEC-18
Boron (B)-Total			115.0		%		70-130	14-DEC-18
Cadmium (Cd)-Total			103.7		%		70-130	14-DEC-18
Calcium (Ca)-Total			106.9		%		70-130	14-DEC-18
Cesium (Cs)-Total			115.9		%		70-130	14-DEC-18
Chromium (Cr)-Total			105.1		%		70-130	14-DEC-18
Cobalt (Co)-Total			105.2		%		70-130	14-DEC-18
Copper (Cu)-Total			102.9		%		70-130	14-DEC-18
Iron (Fe)-Total			106.1		%		70-130	14-DEC-18
Lead (Pb)-Total			103.9		%		70-130	14-DEC-18
Lithium (Li)-Total			108.9		%		70-130	14-DEC-18
Magnesium (Mg)-Total			105.4		%		70-130	14-DEC-18
Manganese (Mn)-Total			103.1		%		70-130	14-DEC-18
Molybdenum (Mo)-Total			113.1		%		70-130	14-DEC-18
Nickel (Ni)-Total			102.9		%		70-130	14-DEC-18
Phosphorus (P)-Total			107.2		%		70-130	14-DEC-18
Potassium (K)-Total			104.1		%		70-130	14-DEC-18
Rubidium (Rb)-Total			99.8		%		70-130	14-DEC-18
Selenium (Se)-Total			106.7		%		70-130	14-DEC-18
Sodium (Na)-Total			100.4		%		70-130	14-DEC-18
Strontium (Sr)-Total			108.8		%		70-130	14-DEC-18
Tellurium (Te)-Total			110.5		%		70-130	14-DEC-18
Thallium (Tl)-Total			103.3		%		70-130	14-DEC-18
Tin (Sn)-Total			104.7		%		70-130	14-DEC-18
Uranium (U)-Total			105.9		%		70-130	14-DEC-18
Vanadium (V)-Total			107.1		%		70-130	14-DEC-18
Zinc (Zn)-Total			100.9		%		70-130	14-DEC-18
Zirconium (Zr)-Total			113.3		%		70-130	14-DEC-18
WG2952745-1 MB								
Aluminum (Al)-Total			<2.0		mg/kg		2	14-DEC-18
Antimony (Sb)-Total			<0.010		mg/kg		0.01	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952745-1 MB								
Arsenic (As)-Total			<0.020		mg/kg		0.02	14-DEC-18
Barium (Ba)-Total			<0.050		mg/kg		0.05	14-DEC-18
Beryllium (Be)-Total			<0.010		mg/kg		0.01	14-DEC-18
Bismuth (Bi)-Total			<0.010		mg/kg		0.01	14-DEC-18
Boron (B)-Total			<1.0		mg/kg		1	14-DEC-18
Cadmium (Cd)-Total			<0.0050		mg/kg		0.005	14-DEC-18
Calcium (Ca)-Total			<20		mg/kg		20	14-DEC-18
Cesium (Cs)-Total			<0.0050		mg/kg		0.005	14-DEC-18
Chromium (Cr)-Total			<0.050		mg/kg		0.05	14-DEC-18
Cobalt (Co)-Total			<0.020		mg/kg		0.02	14-DEC-18
Copper (Cu)-Total			<0.10		mg/kg		0.1	14-DEC-18
Iron (Fe)-Total			<3.0		mg/kg		3	14-DEC-18
Lead (Pb)-Total			<0.020		mg/kg		0.02	14-DEC-18
Lithium (Li)-Total			<0.50		mg/kg		0.5	14-DEC-18
Magnesium (Mg)-Total			<2.0		mg/kg		2	14-DEC-18
Manganese (Mn)-Total			<0.050		mg/kg		0.05	14-DEC-18
Molybdenum (Mo)-Total			<0.020		mg/kg		0.02	14-DEC-18
Nickel (Ni)-Total			<0.20		mg/kg		0.2	14-DEC-18
Phosphorus (P)-Total			<10		mg/kg		10	14-DEC-18
Potassium (K)-Total			<20		mg/kg		20	14-DEC-18
Rubidium (Rb)-Total			<0.050		mg/kg		0.05	14-DEC-18
Selenium (Se)-Total			<0.050		mg/kg		0.05	14-DEC-18
Sodium (Na)-Total			<20		mg/kg		20	14-DEC-18
Strontium (Sr)-Total			<0.050		mg/kg		0.05	14-DEC-18
Tellurium (Te)-Total			<0.020		mg/kg		0.02	14-DEC-18
Thallium (Tl)-Total			<0.0020		mg/kg		0.002	14-DEC-18
Tin (Sn)-Total			<0.10		mg/kg		0.1	14-DEC-18
Uranium (U)-Total			<0.0020		mg/kg		0.002	14-DEC-18
Vanadium (V)-Total			<0.10		mg/kg		0.1	14-DEC-18
Zinc (Zn)-Total			<0.50		mg/kg		0.5	14-DEC-18
Zirconium (Zr)-Total			<0.20		mg/kg		0.2	14-DEC-18
WG2952768-1 MB								
Aluminum (Al)-Total			<2.0		mg/kg		2	14-DEC-18
Antimony (Sb)-Total			<0.010		mg/kg		0.01	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952768-1 MB								
Arsenic (As)-Total			<0.020		mg/kg		0.02	14-DEC-18
Barium (Ba)-Total			<0.050		mg/kg		0.05	14-DEC-18
Beryllium (Be)-Total			<0.010		mg/kg		0.01	14-DEC-18
Bismuth (Bi)-Total			<0.010		mg/kg		0.01	14-DEC-18
Boron (B)-Total			<1.0		mg/kg		1	14-DEC-18
Cadmium (Cd)-Total			<0.0050		mg/kg		0.005	14-DEC-18
Calcium (Ca)-Total			<20		mg/kg		20	14-DEC-18
Cesium (Cs)-Total			<0.0050		mg/kg		0.005	14-DEC-18
Chromium (Cr)-Total			<0.050		mg/kg		0.05	14-DEC-18
Cobalt (Co)-Total			<0.020		mg/kg		0.02	14-DEC-18
Copper (Cu)-Total			<0.10		mg/kg		0.1	14-DEC-18
Iron (Fe)-Total			<3.0		mg/kg		3	14-DEC-18
Lead (Pb)-Total			<0.020		mg/kg		0.02	14-DEC-18
Lithium (Li)-Total			<0.50		mg/kg		0.5	14-DEC-18
Magnesium (Mg)-Total			<2.0		mg/kg		2	14-DEC-18
Manganese (Mn)-Total			<0.050		mg/kg		0.05	14-DEC-18
Molybdenum (Mo)-Total			<0.020		mg/kg		0.02	14-DEC-18
Nickel (Ni)-Total			<0.20		mg/kg		0.2	14-DEC-18
Phosphorus (P)-Total			<10		mg/kg		10	14-DEC-18
Potassium (K)-Total			<20		mg/kg		20	14-DEC-18
Rubidium (Rb)-Total			<0.050		mg/kg		0.05	14-DEC-18
Selenium (Se)-Total			<0.050		mg/kg		0.05	14-DEC-18
Sodium (Na)-Total			<20		mg/kg		20	14-DEC-18
Strontium (Sr)-Total			<0.050		mg/kg		0.05	14-DEC-18
Tellurium (Te)-Total			<0.020		mg/kg		0.02	14-DEC-18
Thallium (Tl)-Total			<0.0020		mg/kg		0.002	14-DEC-18
Tin (Sn)-Total			<0.10		mg/kg		0.1	14-DEC-18
Uranium (U)-Total			<0.0020		mg/kg		0.002	14-DEC-18
Vanadium (V)-Total			<0.10		mg/kg		0.1	14-DEC-18
Zinc (Zn)-Total			<0.50		mg/kg		0.5	14-DEC-18
Zirconium (Zr)-Total			<0.20		mg/kg		0.2	14-DEC-18
WG2952795-9 MB								
Aluminum (Al)-Total			<2.0		mg/kg		2	14-DEC-18
Antimony (Sb)-Total			<0.010		mg/kg		0.01	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4396096								
WG2952795-9 MB								
Arsenic (As)-Total			<0.020		mg/kg		0.02	14-DEC-18
Barium (Ba)-Total			<0.050		mg/kg		0.05	14-DEC-18
Beryllium (Be)-Total			<0.010		mg/kg		0.01	14-DEC-18
Bismuth (Bi)-Total			<0.010		mg/kg		0.01	14-DEC-18
Boron (B)-Total			<1.0		mg/kg		1	14-DEC-18
Cadmium (Cd)-Total			<0.0050		mg/kg		0.005	14-DEC-18
Calcium (Ca)-Total			<20		mg/kg		20	14-DEC-18
Cesium (Cs)-Total			<0.0050		mg/kg		0.005	14-DEC-18
Chromium (Cr)-Total			<0.050		mg/kg		0.05	14-DEC-18
Cobalt (Co)-Total			<0.020		mg/kg		0.02	14-DEC-18
Copper (Cu)-Total			<0.10		mg/kg		0.1	14-DEC-18
Iron (Fe)-Total			<3.0		mg/kg		3	14-DEC-18
Lead (Pb)-Total			<0.020		mg/kg		0.02	14-DEC-18
Lithium (Li)-Total			<0.50		mg/kg		0.5	14-DEC-18
Magnesium (Mg)-Total			<2.0		mg/kg		2	14-DEC-18
Manganese (Mn)-Total			<0.050		mg/kg		0.05	14-DEC-18
Molybdenum (Mo)-Total			<0.020		mg/kg		0.02	14-DEC-18
Nickel (Ni)-Total			<0.20		mg/kg		0.2	14-DEC-18
Phosphorus (P)-Total			<10		mg/kg		10	14-DEC-18
Potassium (K)-Total			<20		mg/kg		20	14-DEC-18
Rubidium (Rb)-Total			<0.050		mg/kg		0.05	14-DEC-18
Selenium (Se)-Total			<0.050		mg/kg		0.05	14-DEC-18
Sodium (Na)-Total			<20		mg/kg		20	14-DEC-18
Strontium (Sr)-Total			<0.050		mg/kg		0.05	14-DEC-18
Tellurium (Te)-Total			<0.020		mg/kg		0.02	14-DEC-18
Thallium (Tl)-Total			<0.0020		mg/kg		0.002	14-DEC-18
Tin (Sn)-Total			<0.10		mg/kg		0.1	14-DEC-18
Uranium (U)-Total			<0.0020		mg/kg		0.002	14-DEC-18
Vanadium (V)-Total			<0.10		mg/kg		0.1	14-DEC-18
Zinc (Zn)-Total			<0.50		mg/kg		0.5	14-DEC-18
Zirconium (Zr)-Total			<0.20		mg/kg		0.2	14-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-CCMS-N-VA	**Tissue**							
Batch R4399989								
WG2952768-3 CRM		**VA-NRC-DORM4**						
Thallium (Tl)-Total			107.1		%		70-130	17-DEC-18
MET-DRY-MICR-HRMS-VA	**Tissue**							
Batch R4420889								
WG2960876-7 CRM		**VA-NRC-DORM4**						
Aluminum (Al)-Total			85.4		%		70-130	28-DEC-18
Arsenic (As)-Total			84.7		%		70-130	28-DEC-18
Barium (Ba)-Total			119.4		%		70-130	28-DEC-18
Beryllium (Be)-Total			0.018		mg/kg		0.005-0.025	28-DEC-18
Bismuth (Bi)-Total			0.011		mg/kg		0.002-0.022	28-DEC-18
Boron (B)-Total			125.4		%		70-130	28-DEC-18
Cadmium (Cd)-Total			111.5		%		70-130	28-DEC-18
Calcium (Ca)-Total			111.3		%		70-130	28-DEC-18
Chromium (Cr)-Total			103.0		%		70-130	28-DEC-18
Cobalt (Co)-Total			88.8		%		70-130	28-DEC-18
Copper (Cu)-Total			93.2		%		70-130	28-DEC-18
Iron (Fe)-Total			87.2		%		70-130	28-DEC-18
Lead (Pb)-Total			122.6		%		70-130	28-DEC-18
Lithium (Li)-Total			1.38		mg/kg		0.71-1.71	28-DEC-18
Magnesium (Mg)-Total			88.1		%		70-130	28-DEC-18
Manganese (Mn)-Total			96.7		%		70-130	28-DEC-18
Molybdenum (Mo)-Total			110.0		%		70-130	28-DEC-18
Nickel (Ni)-Total			86.5		%		70-130	28-DEC-18
Phosphorus (P)-Total			88.6		%		70-130	28-DEC-18
Potassium (K)-Total			89.5		%		70-130	28-DEC-18
Rubidium (Rb)-Total			101.4		%		70-130	28-DEC-18
Selenium (Se)-Total			107.8		%		70-130	28-DEC-18
Sodium (Na)-Total			96.8		%		70-130	28-DEC-18
Strontium (Sr)-Total			99.9		%		70-130	28-DEC-18
Thallium (Tl)-Total			119.6		%		70-130	28-DEC-18
Uranium (U)-Total			110.3		%		70-130	28-DEC-18
Vanadium (V)-Total			92.9		%		70-130	28-DEC-18
Zinc (Zn)-Total			99.1		%		70-130	28-DEC-18
Zirconium (Zr)-Total			0.28		mg/kg		0.05-0.45	28-DEC-18
WG2960876-6 DUP		**L2173881-60**						

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-MICR-HRMS-VA	**Tissue**							
Batch	**R4420889**							
WG2960876-6	**DUP**	**L2173881-60**						
Aluminum (Al)-Total		7.6	6.7		mg/kg	13	40	28-DEC-18
Antimony (Sb)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	28-DEC-18
Arsenic (As)-Total		0.159	0.136		mg/kg	15	40	28-DEC-18
Barium (Ba)-Total		0.596	0.545		mg/kg	9.0	40	28-DEC-18
Beryllium (Be)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	28-DEC-18
Bismuth (Bi)-Total		0.050	0.050		mg/kg	0.7	40	28-DEC-18
Boron (B)-Total		<1.0	<1.0	RPD-NA	mg/kg	N/A	40	28-DEC-18
Cadmium (Cd)-Total		0.383	0.401		mg/kg	4.7	40	28-DEC-18
Calcium (Ca)-Total		238	212		mg/kg	12	60	28-DEC-18
Cesium (Cs)-Total		0.0284	0.0301		mg/kg	5.7	40	28-DEC-18
Chromium (Cr)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	28-DEC-18
Cobalt (Co)-Total		0.369	0.371		mg/kg	0.5	40	28-DEC-18
Copper (Cu)-Total		229	224		mg/kg	1.9	40	28-DEC-18
Iron (Fe)-Total		1100	1070		mg/kg	2.8	40	28-DEC-18
Lead (Pb)-Total		<0.050	<0.050	RPD-NA	mg/kg	N/A	40	28-DEC-18
Lithium (Li)-Total		<0.50	<0.50	RPD-NA	mg/kg	N/A	40	28-DEC-18
Magnesium (Mg)-Total		723	741		mg/kg	2.5	40	28-DEC-18
Manganese (Mn)-Total		6.54	6.18		mg/kg	5.7	40	28-DEC-18
Molybdenum (Mo)-Total		1.32	1.27		mg/kg	4.3	40	28-DEC-18
Nickel (Ni)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	28-DEC-18
Phosphorus (P)-Total		13100	13500		mg/kg	3.2	40	28-DEC-18
Potassium (K)-Total		11900	11600		mg/kg	3.2	40	28-DEC-18
Rubidium (Rb)-Total		29.0	30.3		mg/kg	4.4	40	28-DEC-18
Selenium (Se)-Total		10.1	9.11		mg/kg	11	40	28-DEC-18
Sodium (Na)-Total		4490	4390		mg/kg	2.3	40	28-DEC-18
Strontium (Sr)-Total		0.23	0.19		mg/kg	15	60	28-DEC-18
Tellurium (Te)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	28-DEC-18
Thallium (Tl)-Total		0.0096	0.0099		mg/kg	2.9	40	28-DEC-18
Tin (Sn)-Total		<0.10	<0.10	RPD-NA	mg/kg	N/A	40	28-DEC-18
Uranium (U)-Total		0.0043	0.0040		mg/kg	7.0	40	28-DEC-18
Vanadium (V)-Total		1.96	1.80		mg/kg	8.0	40	28-DEC-18
Zinc (Zn)-Total		212	194		mg/kg	9.1	40	28-DEC-18
Zirconium (Zr)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	28-DEC-18
WG2960876-8	**LCS**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-MICR-HRMS-VA	**Tissue**							
Batch	**R4420889**							
WG2960876-8	**LCS**							
Aluminum (Al)-Total			83.9		%		70-130	28-DEC-18
Antimony (Sb)-Total			92.5		%		70-130	28-DEC-18
Arsenic (As)-Total			85.3		%		70-130	28-DEC-18
Barium (Ba)-Total			104.0		%		70-130	28-DEC-18
Beryllium (Be)-Total			84.9		%		70-130	28-DEC-18
Bismuth (Bi)-Total			101.2		%		70-130	28-DEC-18
Boron (B)-Total			95.7		%		70-130	28-DEC-18
Cadmium (Cd)-Total			91.1		%		70-130	28-DEC-18
Calcium (Ca)-Total			95.3		%		70-130	28-DEC-18
Cesium (Cs)-Total			96.7		%		70-130	28-DEC-18
Chromium (Cr)-Total			99.2		%		70-130	28-DEC-18
Cobalt (Co)-Total			93.2		%		70-130	28-DEC-18
Copper (Cu)-Total			91.3		%		70-130	28-DEC-18
Iron (Fe)-Total			90.9		%		70-130	28-DEC-18
Lead (Pb)-Total			104.4		%		70-130	28-DEC-18
Lithium (Li)-Total			92.6		%		70-130	28-DEC-18
Magnesium (Mg)-Total			89.1		%		70-130	28-DEC-18
Manganese (Mn)-Total			103.2		%		70-130	28-DEC-18
Molybdenum (Mo)-Total			94.6		%		70-130	28-DEC-18
Nickel (Ni)-Total			94.1		%		70-130	28-DEC-18
Phosphorus (P)-Total			90.9		%		70-130	28-DEC-18
Potassium (K)-Total			84.3		%		70-130	28-DEC-18
Rubidium (Rb)-Total			87.7		%		70-130	28-DEC-18
Selenium (Se)-Total			103.4		%		70-130	28-DEC-18
Sodium (Na)-Total			90.9		%		70-130	28-DEC-18
Strontium (Sr)-Total			92.4		%		70-130	28-DEC-18
Tellurium (Te)-Total			99.9		%		70-130	28-DEC-18
Thallium (Tl)-Total			97.3		%		70-130	28-DEC-18
Tin (Sn)-Total			91.7		%		70-130	28-DEC-18
Uranium (U)-Total			112.8		%		70-130	28-DEC-18
Vanadium (V)-Total			88.0		%		70-130	28-DEC-18
Zinc (Zn)-Total			85.6		%		70-130	28-DEC-18
Zirconium (Zr)-Total			100.0		%		70-130	28-DEC-18
WG2960876-5	**MB**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-MICR-HRMS-VA	**Tissue**							
Batch R4420889								
WG2960876-5 MB								
Aluminum (Al)-Total			<5.0		mg/kg		5	28-DEC-18
Antimony (Sb)-Total			<0.010		mg/kg		0.01	28-DEC-18
Arsenic (As)-Total			<0.030		mg/kg		0.03	28-DEC-18
Barium (Ba)-Total			<0.050		mg/kg		0.05	28-DEC-18
Beryllium (Be)-Total			<0.010		mg/kg		0.01	28-DEC-18
Bismuth (Bi)-Total			<0.010		mg/kg		0.01	28-DEC-18
Boron (B)-Total			<1.0		mg/kg		1	28-DEC-18
Cadmium (Cd)-Total			<0.010		mg/kg		0.01	28-DEC-18
Calcium (Ca)-Total			<20		mg/kg		20	28-DEC-18
Cesium (Cs)-Total			<0.0050		mg/kg		0.005	28-DEC-18
Chromium (Cr)-Total			<0.20		mg/kg		0.2	28-DEC-18
Cobalt (Co)-Total			<0.020		mg/kg		0.02	28-DEC-18
Copper (Cu)-Total			<0.20		mg/kg		0.2	28-DEC-18
Iron (Fe)-Total			<5.0		mg/kg		5	28-DEC-18
Lead (Pb)-Total			<0.050		mg/kg		0.05	28-DEC-18
Lithium (Li)-Total			<0.50		mg/kg		0.5	28-DEC-18
Magnesium (Mg)-Total			<2.0		mg/kg		2	28-DEC-18
Manganese (Mn)-Total			<0.050		mg/kg		0.05	28-DEC-18
Molybdenum (Mo)-Total			<0.040		mg/kg		0.04	28-DEC-18
Nickel (Ni)-Total			<0.20		mg/kg		0.2	28-DEC-18
Phosphorus (P)-Total			<10		mg/kg		10	28-DEC-18
Potassium (K)-Total			<20		mg/kg		20	28-DEC-18
Rubidium (Rb)-Total			<0.050		mg/kg		0.05	28-DEC-18
Selenium (Se)-Total			<0.10		mg/kg		0.1	28-DEC-18
Sodium (Na)-Total			<20		mg/kg		20	28-DEC-18
Strontium (Sr)-Total			<0.10		mg/kg		0.1	28-DEC-18
Tellurium (Te)-Total			<0.020		mg/kg		0.02	28-DEC-18
Thallium (Tl)-Total			<0.0020		mg/kg		0.002	28-DEC-18
Tin (Sn)-Total			<0.10		mg/kg		0.1	28-DEC-18
Uranium (U)-Total			<0.0020		mg/kg		0.002	28-DEC-18
Vanadium (V)-Total			<0.10		mg/kg		0.1	28-DEC-18
Zinc (Zn)-Total			<1.0		mg/kg		1	28-DEC-18
Zirconium (Zr)-Total			<0.20		mg/kg		0.2	28-DEC-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-MICR-HRMS-VA	**Tissue**							
Batch R4425197								
WG2960889-3 CRM		**VA-NRC-DORM4**						
Aluminum (Al)-Total			90.7		%		70-130	02-JAN-19
Arsenic (As)-Total			85.5		%		70-130	02-JAN-19
Barium (Ba)-Total			100.7		%		70-130	02-JAN-19
Beryllium (Be)-Total			0.017		mg/kg		0.005-0.025	02-JAN-19
Bismuth (Bi)-Total			0.022		mg/kg		0.002-0.022	02-JAN-19
Boron (B)-Total			103.1		%		70-130	02-JAN-19
Cadmium (Cd)-Total			97.3		%		70-130	02-JAN-19
Calcium (Ca)-Total			99.6		%		70-130	02-JAN-19
Chromium (Cr)-Total			92.3		%		70-130	02-JAN-19
Cobalt (Co)-Total			86.1		%		70-130	02-JAN-19
Copper (Cu)-Total			82.3		%		70-130	02-JAN-19
Iron (Fe)-Total			89.4		%		70-130	02-JAN-19
Lead (Pb)-Total			97.2		%		70-130	02-JAN-19
Lithium (Li)-Total			1.18		mg/kg		0.71-1.71	02-JAN-19
Magnesium (Mg)-Total			87.4		%		70-130	02-JAN-19
Manganese (Mn)-Total			82.9		%		70-130	02-JAN-19
Molybdenum (Mo)-Total			90.2		%		70-130	02-JAN-19
Nickel (Ni)-Total			79.2		%		70-130	02-JAN-19
Phosphorus (P)-Total			89.9		%		70-130	02-JAN-19
Potassium (K)-Total			94.6		%		70-130	02-JAN-19
Rubidium (Rb)-Total			104.1		%		70-130	02-JAN-19
Selenium (Se)-Total			98.4		%		70-130	02-JAN-19
Sodium (Na)-Total			91.0		%		70-130	02-JAN-19
Strontium (Sr)-Total			89.0		%		70-130	02-JAN-19
Thallium (Tl)-Total			96.7		%		70-130	02-JAN-19
Uranium (U)-Total			100.4		%		70-130	02-JAN-19
Vanadium (V)-Total			88.7		%		70-130	02-JAN-19
Zinc (Zn)-Total			95.4		%		70-130	02-JAN-19
Zirconium (Zr)-Total			0.24		mg/kg		0.05-0.45	02-JAN-19
WG2960889-2 DUP		**L2173881-43**						
Aluminum (Al)-Total		<5.0	<5.0	RPD-NA	mg/kg	N/A	40	02-JAN-19
Antimony (Sb)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	02-JAN-19
Arsenic (As)-Total		0.340	0.343		mg/kg	0.8	40	02-JAN-19
Barium (Ba)-Total		0.115	0.172	J	mg/kg	0.058	0.1	02-JAN-19

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-MICR-HRMS-VA	**Tissue**							
Batch	**R4425197**							
WG2960889-2	**DUP**	**L2173881-43**						
Beryllium (Be)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	02-JAN-19
Bismuth (Bi)-Total		<0.010	<0.010	RPD-NA	mg/kg	N/A	40	02-JAN-19
Boron (B)-Total		<1.0	<1.0	RPD-NA	mg/kg	N/A	40	02-JAN-19
Cadmium (Cd)-Total		0.624	0.705		mg/kg	12	40	02-JAN-19
Calcium (Ca)-Total		444	549		mg/kg	21	60	02-JAN-19
Cesium (Cs)-Total		0.0187	0.0217		mg/kg	15	40	02-JAN-19
Chromium (Cr)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	02-JAN-19
Cobalt (Co)-Total		0.901	1.06		mg/kg	16	40	02-JAN-19
Copper (Cu)-Total		6.57	7.94		mg/kg	19	40	02-JAN-19
Iron (Fe)-Total		456	556		mg/kg	20	40	02-JAN-19
Lead (Pb)-Total		<0.050	<0.050	RPD-NA	mg/kg	N/A	40	02-JAN-19
Lithium (Li)-Total		<0.50	<0.50	RPD-NA	mg/kg	N/A	40	02-JAN-19
Magnesium (Mg)-Total		598	719		mg/kg	18	40	02-JAN-19
Manganese (Mn)-Total		5.37	6.68		mg/kg	22	40	02-JAN-19
Molybdenum (Mo)-Total		0.685	0.767		mg/kg	11	40	02-JAN-19
Nickel (Ni)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	02-JAN-19
Phosphorus (P)-Total		10500	12500		mg/kg	17	40	02-JAN-19
Potassium (K)-Total		9390	11200		mg/kg	17	40	02-JAN-19
Rubidium (Rb)-Total		22.2	25.8		mg/kg	15	40	02-JAN-19
Selenium (Se)-Total		3.18	3.84		mg/kg	19	40	02-JAN-19
Sodium (Na)-Total		4680	5510		mg/kg	16	40	02-JAN-19
Strontium (Sr)-Total		0.24	0.31		mg/kg	23	60	02-JAN-19
Tellurium (Te)-Total		<0.020	<0.020	RPD-NA	mg/kg	N/A	40	02-JAN-19
Thallium (Tl)-Total		0.0289	0.0321		mg/kg	11	40	02-JAN-19
Tin (Sn)-Total		0.27	0.35		mg/kg	27	40	02-JAN-19
Uranium (U)-Total		<0.0020	<0.0020	RPD-NA	mg/kg	N/A	40	02-JAN-19
Vanadium (V)-Total		0.13	0.18		mg/kg	32	40	02-JAN-19
Zinc (Zn)-Total		73.8	88.1		mg/kg	18	40	02-JAN-19
Zirconium (Zr)-Total		<0.20	<0.20	RPD-NA	mg/kg	N/A	40	02-JAN-19
WG2960889-4	**LCS**							
Aluminum (Al)-Total			93.1		%		70-130	02-JAN-19
Antimony (Sb)-Total			86.4		%		70-130	02-JAN-19
Arsenic (As)-Total			89.4		%		70-130	02-JAN-19
Barium (Ba)-Total			95.6		%		70-130	02-JAN-19

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-MICR-HRMS-VA	**Tissue**							
Batch R4425197								
WG2960889-4 LCS								
Beryllium (Be)-Total			90.2		%		70-130	02-JAN-19
Bismuth (Bi)-Total			88.2		%		70-130	02-JAN-19
Boron (B)-Total			98.1		%		70-130	02-JAN-19
Cadmium (Cd)-Total			88.4		%		70-130	02-JAN-19
Calcium (Ca)-Total			93.3		%		70-130	02-JAN-19
Cesium (Cs)-Total			87.6		%		70-130	02-JAN-19
Chromium (Cr)-Total			96.4		%		70-130	02-JAN-19
Cobalt (Co)-Total			96.0		%		70-130	02-JAN-19
Copper (Cu)-Total			113.3		%		70-130	02-JAN-19
Iron (Fe)-Total			113.1		%		70-130	02-JAN-19
Lead (Pb)-Total			89.0		%		70-130	02-JAN-19
Lithium (Li)-Total			100.4		%		70-130	02-JAN-19
Magnesium (Mg)-Total			94.4		%		70-130	02-JAN-19
Manganese (Mn)-Total			100.4		%		70-130	02-JAN-19
Molybdenum (Mo)-Total			94.0		%		70-130	02-JAN-19
Nickel (Ni)-Total			96.6		%		70-130	02-JAN-19
Phosphorus (P)-Total			94.6		%		70-130	02-JAN-19
Potassium (K)-Total			97.9		%		70-130	02-JAN-19
Rubidium (Rb)-Total			94.5		%		70-130	02-JAN-19
Selenium (Se)-Total			88.1		%		70-130	02-JAN-19
Sodium (Na)-Total			94.2		%		70-130	02-JAN-19
Strontium (Sr)-Total			97.5		%		70-130	02-JAN-19
Tellurium (Te)-Total			88.9		%		70-130	02-JAN-19
Thallium (Tl)-Total			88.3		%		70-130	02-JAN-19
Tin (Sn)-Total			86.6		%		70-130	02-JAN-19
Uranium (U)-Total			94.6		%		70-130	02-JAN-19
Vanadium (V)-Total			95.2		%		70-130	02-JAN-19
Zinc (Zn)-Total			86.4		%		70-130	02-JAN-19
Zirconium (Zr)-Total			92.5		%		70-130	02-JAN-19
WG2960889-1 MB								
Aluminum (Al)-Total			<5.0		mg/kg		5	02-JAN-19
Antimony (Sb)-Total			<0.010		mg/kg		0.01	02-JAN-19
Arsenic (As)-Total			<0.030		mg/kg		0.03	02-JAN-19
Barium (Ba)-Total			<0.050		mg/kg		0.05	02-JAN-19

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-DRY-MICR-HRMS-VA	**Tissue**							
Batch **R4425197**								
WG2960889-1 **MB**								
Beryllium (Be)-Total			<0.010		mg/kg		0.01	02-JAN-19
Bismuth (Bi)-Total			<0.010		mg/kg		0.01	02-JAN-19
Boron (B)-Total			<1.0		mg/kg		1	02-JAN-19
Cadmium (Cd)-Total			<0.010		mg/kg		0.01	02-JAN-19
Calcium (Ca)-Total			<20		mg/kg		20	02-JAN-19
Cesium (Cs)-Total			<0.0050		mg/kg		0.005	02-JAN-19
Chromium (Cr)-Total			<0.20		mg/kg		0.2	02-JAN-19
Cobalt (Co)-Total			<0.020		mg/kg		0.02	02-JAN-19
Copper (Cu)-Total			<0.20		mg/kg		0.2	02-JAN-19
Iron (Fe)-Total			<5.0		mg/kg		5	02-JAN-19
Lead (Pb)-Total			<0.050		mg/kg		0.05	02-JAN-19
Lithium (Li)-Total			<0.50		mg/kg		0.5	02-JAN-19
Magnesium (Mg)-Total			<2.0		mg/kg		2	02-JAN-19
Manganese (Mn)-Total			<0.050		mg/kg		0.05	02-JAN-19
Molybdenum (Mo)-Total			<0.040		mg/kg		0.04	02-JAN-19
Nickel (Ni)-Total			<0.20		mg/kg		0.2	02-JAN-19
Phosphorus (P)-Total			<10		mg/kg		10	02-JAN-19
Potassium (K)-Total			<20		mg/kg		20	02-JAN-19
Rubidium (Rb)-Total			<0.050		mg/kg		0.05	02-JAN-19
Selenium (Se)-Total			<0.10		mg/kg		0.1	02-JAN-19
Sodium (Na)-Total			<20		mg/kg		20	02-JAN-19
Strontium (Sr)-Total			<0.10		mg/kg		0.1	02-JAN-19
Tellurium (Te)-Total			<0.020		mg/kg		0.02	02-JAN-19
Thallium (Tl)-Total			<0.0020		mg/kg		0.002	02-JAN-19
Tin (Sn)-Total			<0.10		mg/kg		0.1	02-JAN-19
Uranium (U)-Total			<0.0020		mg/kg		0.002	02-JAN-19
Vanadium (V)-Total			<0.10		mg/kg		0.1	02-JAN-19
Zinc (Zn)-Total			<1.0		mg/kg		1	02-JAN-19
Zirconium (Zr)-Total			<0.20		mg/kg		0.2	02-JAN-19
MOISTURE-MICR-VA	**Tissue**							
Batch **R4423636**								
WG2960892-3 **DUP**		**L2173881-43**						
% Moisture		74.1	75.3		%	1.5	20	27-DEC-18
WG2960892-2 **LCS**								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-MICR-VA	**Tissue**							
Batch R4423636								
WG2960892-2 LCS								
% Moisture			100.0		%		90-110	27-DEC-18
WG2960892-1 MB								
% Moisture			<2.0		%		2	27-DEC-18
MOISTURE-TISS-VA	**Tissue**							
Batch R4333030								
WG2929746-3 DUP		**L2173881-1**						
% Moisture		78.9	78.9		%	0.0	20	13-NOV-18
WG2929746-6 DUP		**L2173881-30**						
% Moisture		80.1	80.1		%	0.0	20	13-NOV-18
WG2929746-2 LCS								
% Moisture			100.4		%		90-110	13-NOV-18
WG2929746-5 LCS								
% Moisture			100.2		%		90-110	13-NOV-18
WG2929746-1 MB								
% Moisture			<0.50		%		0.5	13-NOV-18
WG2929746-4 MB								
% Moisture			<0.50		%		0.5	13-NOV-18
Batch R4383673								
WG2949291-3 DUP		**L2173881-55**						
% Moisture		75.0	74.7		%	0.5	20	08-DEC-18
WG2949291-2 LCS								
% Moisture			94.7		%		90-110	08-DEC-18
WG2949291-1 MB								
% Moisture			<0.50		%		0.5	08-DEC-18
Batch R4383686								
WG2949351-3 DUP		**L2173881-64**						
% Moisture		71.7	72.5		%	1.1	20	08-DEC-18
WG2949351-2 LCS								
% Moisture			99.8		%		90-110	08-DEC-18
WG2949351-1 MB								
% Moisture			<0.50		%		0.5	08-DEC-18

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2173881-COFC

COC Number: 15 -

Page 1 of 7

Report To	Contact and company name below will appear on the final report
Company:	Minnow Environmental Inc.
Contact:	Tyrell Worrall
Phone:	905-873-3371 ext 234
	Company address below will appear on the final report
Street:	2 Lamb Street
City/Province:	Georgetown, ON
Postal Code:	L7G 3M9
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	tworrall@minnow.ca
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☑ MAIL ☐ FAX
Email 1 or Fax	tworrall@minnow.ca
Email 2	

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

* Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information	
ALS Account # / Quote #:	Q62002
Job #:	18-45
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2173881

ALS Contact: Selam Worku Sampler: GC, TW

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	ICPMS Metals (Dry)	Total Mercury (Dry)	Moisture Content	Number of Containers
	WA-01 (Muscle)	12-Sep-18		Tissue	R	R	R	1
	WA-02 (Muscle)	12-Sep-18		Tissue	R	R	R	1
	WA-03 (Muscle)	12-Sep-18		Tissue	R	R	R	1
	WA-04 (Muscle)	12-Sep-18		Tissue	R	R	R	1
	WA-05 (Muscle)	12-Sep-18		Tissue	R	R	R	1
	WA-06 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	WA-07 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	WA-08 (muscle)	13-Sep-18		Tissue	R	R	R	1
	WA-09 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	WA-10 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	WA-11 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	WA-12 (Muscle)	13-Sep-18		Tissue	R	R	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-3.2					

SHIPMENT RELEASE (client use)		
Released by:	Date:	Time:

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date: 2018 Oct 1	Time: 420

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2173881-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	Minnow Environmental Inc.
Contact:	Tyrell Worrall
Phone:	905-873-3371 ext 234
	Company address below will appear on the final report
Street:	2 Lamb Street
City/Province:	Georgetown, ON
Postal Code:	L7G 3M9
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax tworrall@minnow.ca
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax tworrall@minnow.ca
Email 2

Project Information

ALS Account # / Quote #:	Q62002
Job #:	18-45
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only) L2173881 **ALS Contact:** Selam Worku **Sampler:** GC, TW

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

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	ICPMS Metals (Dry)	Total Mercury (Dry)	Moisture Content	Number of Containers
	WA-13 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	WA-14 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	WA-15 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-01 (Muscle)	12-Sep-18		Tissue	R	R	R	1
	NP-02 (Muscle)	12-Sep-18		Tissue	R	R	R	1
	NP-03 (Muscle)	12-Sep-18		Tissue	R	R	R	1
	NP-04 (Muscle)	12-Sep-18		Tissue	R	R	R	1
	NP-05 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-06 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-07 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-08 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-09 (Muscle)	13-Sep-18		Tissue	R	R	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-3.2					

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:
				Oct 1 2018	420			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L2173881-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	
Company:	Minnow Environmental Inc.	Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Contact:	Tyrell Worrall	Quality Control (QC) Report with Report	☑ YES ☐ NO
Phone:	905-873-3371 ext 234	☐ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Street:	2 Lamb Street	Email 1 or Fax	tworrall@minnow.ca
City/Province:	Georgetown, ON	Email 2	
Postal Code:	L7G 3M9	Email 3	
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	tworrall@minnow.ca
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q62002	AFE/Cost Center:	PO#
Job #:	18-45	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): L2173881 **ALS Contact:** Selam Worku **Sampler:** GC, TW

Select Service Level: E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

EMERGENCY: 1 Business day [E1] ☐ | Same Day, Weekend or Statutory holiday [E0] ☐

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

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	ICPMS Metals (Dry)	Total Mercury (Dry)	Moisture Content	Number of Containers
	NP-10 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-11 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-12 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-13 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-14 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	NP-15 (Muscle)	13-Sep-18		Tissue	R	R	R	1
	WA-01 (Liver)	12-Sep-18		Tissue	R	R	R	1
	WA-02 (Liver)	12-Sep-18		Tissue	R	R	R	1
	WA-03 (liver)	12-Sep-18		Tissue	R	R	R	1
	WA-04 (Liver)	12-Sep-18		Tissue	R	R	R	1
	WA-05 (Liver)	12-Sep-18		Tissue	R	R	R	1
	WA-06 (Liver)	13-Sep-18		Tissue	R	R	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-3.2					

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:
				Oct 1 2018	920			

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OCTOBER 2015 FRONT

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Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2173881-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	Minnow Environmental Inc.
Contact:	Tyrell Worrall
Phone:	905-873-3371 ext 234
	Company address below will appear on the final report
Street:	2 Lamb Street
City/Province:	Georgetown, ON
Postal Code:	L7G 3M9
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	tworrall@minnow.ca
Email 2	
Email 3	
Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	tworrall@minnow.ca
Email 2	

Select Service Level Below - Please contact your AM to confirm all E&P TATs

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q62002	AFE/Cost Center:	PO#
Job #:	18-45	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): L2173881 **ALS Contact:** Selam Worku **Sampler:** GC, TW

Analysis Request

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	WA-10 (Liver)	13-Sep-18		Tissue	R	R	R	1
	WA-11 (Liver)	13-Sep-18		Tissue	R	R	R	1
	WA-12 (Liver)	13-Sep-18		Tissue	R	R	R	1
	WA-13 (Liver)	13-Sep-18		Tissue	R	R	R	1
	WA-14 (Liver)	13-Sep-18		Tissue	R	R	R	1
	WA-15 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-01 (Liver)	12-Sep-18		Tissue	R	R	R	1
	NP-02 (Liver)	12-Sep-18		Tissue	R	R	R	1
	NP-03 (Liver)	12-Sep-18		Tissue	R	R	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-3.20					

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:
				OCT 1 2016	420			

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Postal Code:	L7G 3M9
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	tworrall@minnow.ca
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	tworrall@minnow.ca
Email 2	

Project Information	
ALS Account # / Quote #:	Q62002
Job #:	18-45
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2173881

ALS Contact: Selam Worku **Sampler:** GC, TW

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

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	ICPMS Metals (Dry)	Total Mercury (Dry)	Moisture Content	Number of Containers
	NP-04 (Liver)	12-Sep-18		Tissue	R	R	R	1
	NP-05 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-06 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-07 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-08 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-09 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-10 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-11 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-12 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-13 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-14 (Liver)	13-Sep-18		Tissue	R	R	R	1
	NP-15 (Liver)	13-Sep-18		Tissue	R	R	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-3.2					

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:
				OCT 1 2018	420			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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OCTOBER 2015 FRONT

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.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2173881-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	Minnow Environmental Inc.
Contact:	Tyrell Worrall
Phone:	905-873-3371 ext 234
	Company address below will appear on the final report
Street:	2 Lamb Street
City/Province:	Georgetown, ON
Postal Code:	L7G 3M9
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	tworrall@minnow.ca
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	tworrall@minnow.ca
Email 2	

Project Information	
ALS Account # / Quote #:	Q62002
Job #:	18-45
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2173881 **ALS Contact:** Selam Worku **Sampler:** GC, TW

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4]	☐	1 Business day [E1]	☐
3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐
2 day [P2]	☐		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

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	ICPMS Metals (Dry)	Total Mercury (Dry)	Moisture Content	Number of Containers
	WA-01 (Ovary)	12-Sep-18		Tissue	R	R	R	1
	WA-04 (Ovary)	12-Sep-18		Tissue	R	R	R	1
	WA-08 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	WA-09 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	WA-11 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	WA-12 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	NP-02 (Ovary)	12-Sep-18		Tissue	R	R	R	1
	NP-06 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	NP-07 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	NP-08 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	NP-09 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	NP-10 (Ovary)	13-Sep-18		Tissue	R	R	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-3.2					

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:
				Oct 1 2016	420			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2173881-COFC

COC Number: 15 -

Report To	Contact and company name below will appear on the final report
Company:	Minnow Environmental Inc.
Contact:	Tyrell Worrall
Phone:	905-873-3371 ext 234
	Company address below will appear on the final report
Street:	2 Lamb Street
City/Province:	Georgetown, ON
Postal Code:	L7G 3M9
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax tworrall@minnow.ca

Email 2

Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax tworrall@minnow.ca

Email 2

Project Information

ALS Account # / Quote #:	Q62002
Job #:	18-45
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2173881 **ALS Contact:** Selam Worku **Sampler:** GC, TW

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

EMERGENCY: 1 Business day [E1] ☐ | Same Day, Weekend or Statutory holiday [E0] ☐

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

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	ICPMS Metals (Dry)	Total Mercury (Dry)	Moisture Content	Number of Containers
	NP-12 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	NP-13 (Ovary)	13-Sep-18		Tissue	R	R	R	1
	NP-15 (Ovary)	13-Sep-18		Tissue	R	R	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
-3.2					

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:
				Oct 1 2018	1420			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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OCTOBER 2015 FRONT

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.

Client: Minnow

L2173881-COFC

	Verified By	Date	Time	Sample Integrity Enter information on back page
Sample Layout Verification:		Oct 2/18	11:15	
Labels Verification:	Verified By / LM			Do any samples require prep? (NO) P F/P

Sample #:		L-75															
1L	Plastic																
500mL	Plastic																
250mL	Plastic																
145mL	Plastic																
60mL	Plastic																
Micro																	
Toxicity Pail																	
1L	Glass																
500mL	Glass																
250mL	Glass																
120mL	Glass																
60mL	Glass																
40mL	Vial (Glass)																
40mL	Methanol Vials																
Soil Jar (120, 250 or 500mL)																	
Other:	FISH	1															
Other:																	
Total Number of Bottles																	

Trip/Travel/Field Blank Information

Solids Batch#:	Metals Batch#:	T:	D:
Routine Batch#:	Mercury Batch#:	T:	D:
BOD Batch#:	Cyanide Batch#:	T:	D:
Nutrients Batch#:	OGG Batch#:		
DOC/Carbon Batch#:	Phenols Batch#:		
VOC Batch#:			
Other:			

COOLER TRACKING

EPP		Coleman	
Small		Micro (5QT)	
Med		Sm(9QT)	
Lrg		Med(16QT)	
Micro Box		Lrg(28QT)	1
		Lrg(48QT)	