

Appendix H-1

Analysis certificates for EEM samples



Your P.O. #: OL-762849
 Site#: 63°01'44.6" 92°09'14.6"
 Site Location: MELIADINE
 Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/02
 Report #: R5823889
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J9465

Received: 2019/07/19, 10:14

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity	1	N/A	2019/07/22	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	1	N/A	2019/07/23	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	1	N/A	2019/07/22	CAM SOP-00463	SM 4500-Cl E m
Conductivity	1	N/A	2019/07/22	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide	1	N/A	2019/07/22	CAM SOP-00457	OMOE E3015 m
Total Cyanide	1	2019/07/22	2019/07/22	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (4)	1	N/A	2019/07/23	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen	1	2019/07/19	2019/07/19	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2019/07/24	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (5)	1	2019/07/25	2019/07/26	CAM SOP-00316	CCME PHC-CWS m
Mercury (low level)	1	2019/07/22	2019/07/22	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (1)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (2, 6)	1	N/A	2019/07/25	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (2)	1	N/A	2019/07/24	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (2)	1	N/A	2019/07/24	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (2)	1	N/A	2019/07/23	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (2)	1	2019/07/19	2019/07/25	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (2)	1	2019/07/24	2019/07/24	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (1)	1	N/A	2019/07/24	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N	1	N/A	2019/07/21	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (7)	1	N/A	2019/07/21	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	1	2019/07/19	2019/07/22	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	1	N/A	2019/07/22	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (3, 8)	1	N/A	2019/07/31	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry	1	N/A	2019/07/22	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids	1	2019/07/20	2019/07/22	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water	1	2019/07/22	2019/07/23	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (9)	1	N/A	2019/07/23	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric)	1	2019/07/23	2019/07/23	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	1	2019/07/20	2019/07/22	CAM SOP-00428	SM 23 2540D m



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 CANADA X0C 0G0

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CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J9465

Received: 2019/07/19, 10:14

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Turbidity	1	N/A	2019/07/22	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) This test was performed by Campo to Calgary - Offsite
- (2) This test was performed by Campo to Burnaby - Offsite
- (3) This test was performed by Bureau Veritas Laboratories Kitimat
- (4) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
- (5) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
- (6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
- (7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
- (8) Radium-226 results have not been corrected for blanks.
- (9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



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CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J9465

Received: 2019/07/19, 10:14

Encryption Key

Alisha Williamson
Project Manager
02 Aug 2019 09:58:05

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BV Labs Job #: B9J9465
Report Date: 2019/08/02

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KHT799		
Sampling Date		2019/07/14 18:15		
COC Number		na		
	UNITS	MEL-13	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	6243265
Toluene	ug/L	<0.20	0.20	6243265
Ethylbenzene	ug/L	<0.20	0.20	6243265
o-Xylene	ug/L	<0.20	0.20	6243265
p+m-Xylene	ug/L	<0.40	0.40	6243265
Total Xylenes	ug/L	<0.40	0.40	6243265
F1 (C6-C10)	ug/L	<25	25	6243265
F1 (C6-C10) - BTEX	ug/L	<25	25	6243265
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6248263
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6248263
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6248263
Reached Baseline at C50	ug/L	Yes		6248263
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	102		6243265
4-Bromofluorobenzene	%	96		6243265
D10-Ethylbenzene	%	98		6243265
D4-1,2-Dichloroethane	%	93		6243265
o-Terphenyl	%	103		6248263
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9J9465
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Agnico-Eagle
Site Location: MELIADINE
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Sampler Initials: DG

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KHT799		
Sampling Date		2019/07/14 18:15		
COC Number		na		
	UNITS	MEL-13	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	21.7	0.50	6247418
Metals				
Dissolved Aluminum (Al)	ug/L	<3.0	3.0	6247420
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6247420
Dissolved Arsenic (As)	ug/L	0.27	0.10	6247420
Dissolved Barium (Ba)	ug/L	7.4	1.0	6247420
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6247420
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6247420
Dissolved Boron (B)	ug/L	<50	50	6247420
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	6247420
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6247420
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	6247420
Dissolved Copper (Cu)	ug/L	0.68	0.20	6247420
Dissolved Iron (Fe)	ug/L	11.8	5.0	6247420
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6247420
Dissolved Lithium (Li)	ug/L	<2.0	2.0	6247420
Dissolved Manganese (Mn)	ug/L	12.1	1.0	6247420
Dissolved Molybdenum (Mo)	ug/L	9.7 (1)	1.0	6247420
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	6247420
Dissolved Selenium (Se)	ug/L	<0.10	0.10	6247420
Dissolved Silicon (Si)	ug/L	222	100	6247420
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6247420
Dissolved Strontium (Sr)	ug/L	37.1	1.0	6247420
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	6247420
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6247420
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6247420
Dissolved Uranium (U)	ug/L	<0.10	0.10	6247420
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6247420
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6247420
RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) Dissolved greater than total. Reanalysis yields similar results.				



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Sampler Initials: DG

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KHT799		
Sampling Date		2019/07/14 18:15		
COC Number		na		
	UNITS	MEL-13	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6247420
Dissolved Calcium (Ca)	mg/L	6.72	0.050	6247419
Dissolved Magnesium (Mg)	mg/L	1.20	0.050	6247419
Dissolved Potassium (K)	mg/L	0.876	0.050	6247419
Dissolved Sodium (Na)	mg/L	4.73	0.050	6247419
Dissolved Sulphur (S)	mg/L	<3.0	3.0	6247419
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KHT799		
Sampling Date		2019/07/14 18:15		
COC Number		na		
	UNITS	MEL-13	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	5.7	3.0	6247417
Total Antimony (Sb)	ug/L	<0.50	0.50	6247417
Total Arsenic (As)	ug/L	0.29	0.10	6247417
Total Barium (Ba)	ug/L	7.9	1.0	6247417
Total Beryllium (Be)	ug/L	<0.10	0.10	6247417
Total Bismuth (Bi)	ug/L	<1.0	1.0	6247417
Total Boron (B)	ug/L	<50	50	6247417
Total Cadmium (Cd)	ug/L	<0.010	0.010	6247417
Total Chromium (Cr)	ug/L	<1.0	1.0	6247417
Total Cobalt (Co)	ug/L	<0.20	0.20	6247417
Total Copper (Cu)	ug/L	0.65	0.50	6247417
Total Iron (Fe)	ug/L	36	10	6247417
Total Lead (Pb)	ug/L	<0.20	0.20	6247417
Total Lithium (Li)	ug/L	<2.0	2.0	6247417
Total Manganese (Mn)	ug/L	17.9	1.0	6247417
Total Molybdenum (Mo)	ug/L	<1.0	1.0	6247417
Total Nickel (Ni)	ug/L	<1.0	1.0	6247417
Total Selenium (Se)	ug/L	<0.10	0.10	6247417
Total Silicon (Si)	ug/L	240	100	6247417
Total Silver (Ag)	ug/L	<0.020	0.020	6247417
Total Strontium (Sr)	ug/L	39.1	1.0	6247417
Total Thallium (Tl)	ug/L	<0.010	0.010	6247417
Total Tin (Sn)	ug/L	<5.0	5.0	6247417
Total Titanium (Ti)	ug/L	<5.0	5.0	6247417
Total Uranium (U)	ug/L	<0.10	0.10	6247417
Total Vanadium (V)	ug/L	<5.0	5.0	6247417
Total Zinc (Zn)	ug/L	<5.0	5.0	6247417
Total Zirconium (Zr)	ug/L	<0.10	0.10	6247417
Total Calcium (Ca)	ug/L	6990	50	6247416
Total Magnesium (Mg)	ug/L	1210	50	6247416
Total Potassium (K)	ug/L	893	50	6247416
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				



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Sampler Initials: DG

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KHT799		
Sampling Date		2019/07/14 18:15		
COC Number		na		
	UNITS	MEL-13	RDL	QC Batch
Total Sodium (Na)	ug/L	4900	50	6247416
Total Sulphur (S)	ug/L	<3000	3000	6247416
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	22400	500	6247415
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9J9465
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Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

RESULTS OF ANALYSES OF WATER

BV Labs ID		KHT799			KHT799		
Sampling Date		2019/07/14 18:15			2019/07/14 18:15		
COC Number		na			na		
	UNITS	MEL-13	RDL	QC Batch	MEL-13 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	14	1.0	6237619			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6237619			
Inorganics							
Total Ammonia-N	mg/L	<0.050	0.050	6238968			
Conductivity	umho/cm	79	1.0	6238180			
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6253119			
Total Dissolved Solids	mg/L	65	10	6239076			
Total Kjeldahl Nitrogen (TKN)	mg/L	0.15	0.10	6241283			
Dissolved Organic Carbon	mg/L	2.7	0.50	6238819			
Total Organic Carbon (TOC)	mg/L	3.0	0.50	6241306			
Orthophosphate (P)	mg/L	<0.010	0.010	6239100			
Dissolved Oxygen	mg/L	9.73		6238315	9.75		6238315
pH	pH	7.45		6238181			
Total Phosphorus	mg/L	<0.020	0.020	6242019			
Reactive Silica (SiO ₂)	mg/L	0.42	0.050	6245481			
Total Suspended Solids	mg/L	<1	1	6239113			
Dissolved Sulphate (SO ₄)	mg/L	3.8	1.0	6239095			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6240763	<0.0050	0.0050	6240763
Turbidity	NTU	0.3	0.1	6238165			
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6240766	<0.0010	0.0010	6240766
Alkalinity (Total as CaCO ₃)	mg/L	14	1.0	6238179			
Dissolved Chloride (Cl ⁻)	mg/L	11	1.0	6239093			
Nitrite (N)	mg/L	<0.010	0.010	6238216			
Nitrate (N)	mg/L	<0.10	0.10	6238216			
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	6238216			
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6242312			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W							



BV Labs Job #: B9J9465
Report Date: 2019/08/02

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KHT799	KHT799		
Sampling Date		2019/07/14 18:15	2019/07/14 18:15		
COC Number		na	na		
	UNITS	MEL-13	MEL-13 Lab-Dup	RDL	QC Batch
Metals					
Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6239712
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate					



BV Labs Job #: B9J9465
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Site Location: MELIADINE
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Sampler Initials: DG

TEST SUMMARY

BV Labs ID: KHT799
Sample ID: MEL-13
Matrix: Water

Collected: 2019/07/14
Shipped:
Received: 2019/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6238179	N/A	2019/07/22	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6237619	N/A	2019/07/23	Automated Statchk
Chloride by Automated Colourimetry	KONE	6239093	N/A	2019/07/22	Deonarine Ramnarine
Conductivity	AT	6238180	N/A	2019/07/22	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6240766	N/A	2019/07/22	Gnana Thomas
Total Cyanide	SKAL/CN	6240763	2019/07/22	2019/07/22	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6238819	N/A	2019/07/23	Mandeep Kaur
Dissolved Oxygen	DO	6238315	2019/07/19	2019/07/19	Prakash Piya
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6243265	N/A	2019/07/24	Ravinder Gaidhu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6248263	2019/07/25	2019/07/26	Prabhjot Gulati
Mercury (low level)	CV/AA	6239712	2019/07/22	2019/07/22	Medhat Nasr
Cyanide (Free)	SPEC	6253119	2019/07/26	2019/07/26	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6247415	N/A	2019/07/25	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6247418	N/A	2019/07/24	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6247419	N/A	2019/07/24	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6247420	N/A	2019/07/23	Valentina Balada
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6247416	2019/07/25	2019/07/25	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6247417	2019/07/24	2019/07/24	Andrew An
Silica (Reactive)	KONE	6245481	N/A	2019/07/24	Serena Tian
Total Ammonia-N	LACH/NH ₄	6238968	N/A	2019/07/21	Amanpreet Sappal
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6238216	N/A	2019/07/21	Amanpreet Sappal
pH	AT	6238181	2019/07/19	2019/07/22	Surinder Rai
Orthophosphate	KONE	6239100	N/A	2019/07/22	Alina Doboreanu
Radium-226 Low Level	AS	6242312	N/A	2019/07/31	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6239095	N/A	2019/07/22	Alina Doboreanu
Total Dissolved Solids	BAL	6239076	2019/07/20	2019/07/22	Nilam Borole
Total Kjeldahl Nitrogen in Water	SKAL	6241283	2019/07/22	2019/07/23	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6241306	N/A	2019/07/23	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6242019	2019/07/23	2019/07/23	Nimarta Singh
Low Level Total Suspended Solids	BAL	6239113	2019/07/20	2019/07/22	Mandeep Kaur
Turbidity	AT	6238165	N/A	2019/07/22	Kazzandra Adeva

BV Labs ID: KHT799 Dup
Sample ID: MEL-13
Matrix: Water

Collected: 2019/07/14
Shipped:
Received: 2019/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6240766	N/A	2019/07/22	Gnana Thomas
Total Cyanide	SKAL/CN	6240763	2019/07/22	2019/07/22	Gnana Thomas
Dissolved Oxygen	DO	6238315	2019/07/19	2019/07/19	Prakash Piya
Mercury (low level)	CV/AA	6239712	2019/07/22	2019/07/22	Medhat Nasr



BUREAU
VERITAS

BV Labs Job #: B9J9465

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DG

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.3°C
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Sample KHT799 [MEL-13] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Results relate only to the items tested.



BV Labs Job #: B9J9465
Report Date: 2019/08/02

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6243265	1,4-Difluorobenzene	2019/07/24	102	70 - 130	102	70 - 130	102	%				
6243265	4-Bromofluorobenzene	2019/07/24	100	70 - 130	100	70 - 130	96	%				
6243265	D10-Ethylbenzene	2019/07/24	94	70 - 130	96	70 - 130	100	%				
6243265	D4-1,2-Dichloroethane	2019/07/24	95	70 - 130	95	70 - 130	95	%				
6248263	o-Terphenyl	2019/07/26	106	60 - 130	106	60 - 130	104	%				
6238165	Turbidity	2019/07/22			94	85 - 115	<0.1	NTU	13	20		
6238179	Alkalinity (Total as CaCO3)	2019/07/22			95	85 - 115	<1.0	mg/L	0.32	20		
6238180	Conductivity	2019/07/22			101	85 - 115	<1.0	umho/cm	0.42	25		
6238181	pH	2019/07/22			102	98 - 103			0.63	N/A		
6238216	Nitrate (N)	2019/07/21	101	80 - 120	101	80 - 120	<0.10	mg/L	NC	20		
6238216	Nitrite (N)	2019/07/21	104	80 - 120	102	80 - 120	<0.010	mg/L	NC	20		
6238819	Dissolved Organic Carbon	2019/07/22	100	80 - 120	98	80 - 120	<0.50	mg/L	0.67	20		
6238968	Total Ammonia-N	2019/07/21	98	75 - 125	100	80 - 120	<0.050	mg/L	NC	20		
6239076	Total Dissolved Solids	2019/07/22					<10	mg/L	1.4	25	102	90 - 110
6239093	Dissolved Chloride (Cl-)	2019/07/22	NC	80 - 120	102	80 - 120	<1.0	mg/L	0.12	20		
6239095	Dissolved Sulphate (SO4)	2019/07/22	NC	75 - 125	98	80 - 120	<1.0	mg/L	0.99	20		
6239100	Orthophosphate (P)	2019/07/22	95	75 - 125	99	80 - 120	<0.010	mg/L	NC	25		
6239113	Total Suspended Solids	2019/07/22					<1	mg/L	13	25	95	85 - 115
6239712	Mercury (Hg)	2019/07/22	101	75 - 125	98	80 - 120	<0.00001	mg/L	NC	20		
6240763	Total Cyanide (CN)	2019/07/22	97	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20		
6240766	WAD Cyanide (Free)	2019/07/22	97	80 - 120	98	80 - 120	<0.0010	mg/L	NC	20		
6241283	Total Kjeldahl Nitrogen (TKN)	2019/07/23	107	80 - 120	97	80 - 120	<0.10	mg/L			97	80 - 120
6241306	Total Organic Carbon (TOC)	2019/07/23	95	80 - 120	98	80 - 120	<0.50	mg/L	2.0	20		
6242019	Total Phosphorus	2019/07/23	94	80 - 120	97	80 - 120	<0.020	mg/L	3.2	20	97	80 - 120
6242312	Radium-226	2019/07/31			98	85 - 115	<0.0050	Bq/L	7.9	N/A		
6243265	Benzene	2019/07/24	101	70 - 130	103	70 - 130	<0.20	ug/L	NC	30		
6243265	Ethylbenzene	2019/07/24	105	70 - 130	104	70 - 130	<0.20	ug/L	NC	30		
6243265	F1 (C6-C10) - BTEX	2019/07/24					<25	ug/L	NC	30		
6243265	F1 (C6-C10)	2019/07/24	99	70 - 130	103	70 - 130	<25	ug/L	NC	30		
6243265	o-Xylene	2019/07/24	104	70 - 130	99	70 - 130	<0.20	ug/L	NC	30		
6243265	p+m-Xylene	2019/07/24	105	70 - 130	102	70 - 130	<0.40	ug/L	NC	30		



BV Labs Job #: B9J9465
Report Date: 2019/08/02

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6243265	Toluene	2019/07/24	111	70 - 130	108	70 - 130	<0.20	ug/L	NC	30		
6243265	Total Xylenes	2019/07/24					<0.40	ug/L	NC	30		
6245481	Reactive Silica (SiO ₂)	2019/07/24	109	80 - 120	101	80 - 120	<0.050	mg/L				
6247417	Total Aluminum (Al)	2019/07/24	114	80 - 120	103	80 - 120	<3.0	ug/L				
6247417	Total Antimony (Sb)	2019/07/24	104	80 - 120	99	80 - 120	<0.50	ug/L				
6247417	Total Arsenic (As)	2019/07/24	107	80 - 120	101	80 - 120	<0.10	ug/L				
6247417	Total Barium (Ba)	2019/07/24	104	80 - 120	101	80 - 120	<1.0	ug/L				
6247417	Total Beryllium (Be)	2019/07/24	102	80 - 120	104	80 - 120	<0.10	ug/L				
6247417	Total Bismuth (Bi)	2019/07/24	100	80 - 120	103	80 - 120	<1.0	ug/L				
6247417	Total Boron (B)	2019/07/24	104	80 - 120	106	80 - 120	<50	ug/L				
6247417	Total Cadmium (Cd)	2019/07/24	100	80 - 120	100	80 - 120	<0.010	ug/L				
6247417	Total Chromium (Cr)	2019/07/24	99	80 - 120	101	80 - 120	<1.0	ug/L				
6247417	Total Cobalt (Co)	2019/07/24	94	80 - 120	98	80 - 120	<0.20	ug/L				
6247417	Total Copper (Cu)	2019/07/24	92	80 - 120	99	80 - 120	<0.50	ug/L				
6247417	Total Iron (Fe)	2019/07/24	103	80 - 120	105	80 - 120	<10	ug/L				
6247417	Total Lead (Pb)	2019/07/24	104	80 - 120	106	80 - 120	<0.20	ug/L				
6247417	Total Lithium (Li)	2019/07/24	NC	80 - 120	103	80 - 120	<2.0	ug/L				
6247417	Total Manganese (Mn)	2019/07/24	100	80 - 120	102	80 - 120	<1.0	ug/L				
6247417	Total Molybdenum (Mo)	2019/07/24	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6247417	Total Nickel (Ni)	2019/07/24	93	80 - 120	100	80 - 120	<1.0	ug/L				
6247417	Total Selenium (Se)	2019/07/24	100	80 - 120	101	80 - 120	<0.10	ug/L				
6247417	Total Silicon (Si)	2019/07/24	108	80 - 120	105	80 - 120	<100	ug/L				
6247417	Total Silver (Ag)	2019/07/24	101	80 - 120	102	80 - 120	<0.020	ug/L				
6247417	Total Strontium (Sr)	2019/07/24	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6247417	Total Thallium (Tl)	2019/07/24	103	80 - 120	101	80 - 120	<0.010	ug/L				
6247417	Total Tin (Sn)	2019/07/24	105	80 - 120	99	80 - 120	<5.0	ug/L				
6247417	Total Titanium (Ti)	2019/07/24	105	80 - 120	101	80 - 120	<5.0	ug/L				
6247417	Total Uranium (U)	2019/07/24	108	80 - 120	100	80 - 120	<0.10	ug/L				
6247417	Total Vanadium (V)	2019/07/24	103	80 - 120	100	80 - 120	<5.0	ug/L				
6247417	Total Zinc (Zn)	2019/07/24	91	80 - 120	100	80 - 120	<5.0	ug/L				
6247417	Total Zirconium (Zr)	2019/07/24	113	80 - 120	99	80 - 120	<0.10	ug/L				
6247420	Dissolved Aluminum (Al)	2019/07/23	130 (1)	80 - 120	98	80 - 120	<3.0	ug/L				



BV Labs Job #: B9J9465
Report Date: 2019/08/02

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6247420	Dissolved Antimony (Sb)	2019/07/23	98	80 - 120	98	80 - 120	<0.50	ug/L				
6247420	Dissolved Arsenic (As)	2019/07/23	99	80 - 120	99	80 - 120	<0.10	ug/L				
6247420	Dissolved Barium (Ba)	2019/07/23	95	80 - 120	101	80 - 120	<1.0	ug/L				
6247420	Dissolved Beryllium (Be)	2019/07/23	96	80 - 120	97	80 - 120	<0.10	ug/L				
6247420	Dissolved Bismuth (Bi)	2019/07/23	97	80 - 120	101	80 - 120	<1.0	ug/L				
6247420	Dissolved Boron (B)	2019/07/23	99	80 - 120	96	80 - 120	<50	ug/L				
6247420	Dissolved Cadmium (Cd)	2019/07/23	96	80 - 120	99	80 - 120	<0.010	ug/L				
6247420	Dissolved Chromium (Cr)	2019/07/23	94	80 - 120	99	80 - 120	<1.0	ug/L				
6247420	Dissolved Cobalt (Co)	2019/07/23	91	80 - 120	96	80 - 120	<0.20	ug/L				
6247420	Dissolved Copper (Cu)	2019/07/23	90	80 - 120	98	80 - 120	<0.20	ug/L				
6247420	Dissolved Iron (Fe)	2019/07/23	NC	80 - 120	102	80 - 120	<5.0	ug/L				
6247420	Dissolved Lead (Pb)	2019/07/23	99	80 - 120	101	80 - 120	<0.20	ug/L				
6247420	Dissolved Lithium (Li)	2019/07/23	101	80 - 120	97	80 - 120	<2.0	ug/L				
6247420	Dissolved Manganese (Mn)	2019/07/23	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6247420	Dissolved Molybdenum (Mo)	2019/07/23	101	80 - 120	100	80 - 120	<1.0	ug/L				
6247420	Dissolved Nickel (Ni)	2019/07/23	91	80 - 120	99	80 - 120	<1.0	ug/L				
6247420	Dissolved Selenium (Se)	2019/07/23	98	80 - 120	100	80 - 120	<0.10	ug/L				
6247420	Dissolved Silicon (Si)	2019/07/23	NC	80 - 120	99	80 - 120	<100	ug/L				
6247420	Dissolved Silver (Ag)	2019/07/23	97	80 - 120	100	80 - 120	<0.020	ug/L				
6247420	Dissolved Strontium (Sr)	2019/07/23	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6247420	Dissolved Thallium (Tl)	2019/07/23	100	80 - 120	101	80 - 120	<0.010	ug/L				
6247420	Dissolved Tin (Sn)	2019/07/23	95	80 - 120	105	80 - 120	<5.0	ug/L				
6247420	Dissolved Titanium (Ti)	2019/07/23	113	80 - 120	99	80 - 120	<5.0	ug/L				
6247420	Dissolved Uranium (U)	2019/07/23	99	80 - 120	102	80 - 120	<0.10	ug/L				
6247420	Dissolved Vanadium (V)	2019/07/23	97	80 - 120	99	80 - 120	<5.0	ug/L				
6247420	Dissolved Zinc (Zn)	2019/07/23	95	80 - 120	99	80 - 120	<5.0	ug/L				
6247420	Dissolved Zirconium (Zr)	2019/07/23	103	80 - 120	99	80 - 120	<0.10	ug/L				
6248263	F2 (C10-C16 Hydrocarbons)	2019/07/26	104	50 - 130	115	60 - 130	<100	ug/L	NC	30		
6248263	F3 (C16-C34 Hydrocarbons)	2019/07/26	104	50 - 130	120	60 - 130	<200	ug/L	NC	30		
6248263	F4 (C34-C50 Hydrocarbons)	2019/07/26	101	50 - 130	115	60 - 130	<200	ug/L	NC	30		



BV Labs Job #: B9J9465
Report Date: 2019/08/02

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6253119	Free Cyanide (CN)	2019/07/26	102	80 - 120	98	80 - 120	<1.0	ug/L	13	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9J9465

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DG

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Danish Samad, Senior Analyst – Team Lead

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Lisa Thum, C.E.T., QP, Manager, Inorganics

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BUREAU
VERITAS

BV Labs Job #: B9J9465

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DG

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63°01'44.6" 92°09'14.6"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/01
 Report #: R5822327
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K5125

Received: 2019/07/25, 09:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Dissolved Mercury (low level) (1)	1	2019/07/30	2019/07/31	CAM SOP-00453	EPA 7470 m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

Encryption Key

Alisha Williamson
 Project Manager
 01 Aug 2019 11:34:46

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
 Email: Alisha.Williamson@bvlabs.com
 Phone# (613)274-0573

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BUREAU
VERITAS

BV Labs Job #: B9K5125
Report Date: 2019/08/01

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KIY315	KIY315		
Sampling Date		2019/07/14 18:15	2019/07/14 18:15		
	UNITS	MEL-13	MEL-13 Lab-Dup	RDL	QC Batch
Metals					
Dissolved Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6254397
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate					



BV Labs Job #: B9K5125
Report Date: 2019/08/01

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

TEST SUMMARY

BV Labs ID: KIY315
Sample ID: MEL-13
Matrix: Water

Collected: 2019/07/14
Shipped:
Received: 2019/07/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Mercury (low level)	CV/AA	6254397	2019/07/30	2019/07/31	Ron Morrison

BV Labs ID: KIY315 Dup
Sample ID: MEL-13
Matrix: Water

Collected: 2019/07/14
Shipped:
Received: 2019/07/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Mercury (low level)	CV/AA	6254397	2019/07/30	2019/07/31	Ron Morrison



BV Labs Job #: B9K5125
Report Date: 2019/08/01

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	19.7°C
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Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B9K5125

Report Date: 2019/08/01

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6254397	Dissolved Mercury (Hg)	2019/07/31	98	75 - 125	97	80 - 120	<0.00001	mg/L	NC	20
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.										
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.										
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.										
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.										
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference \leq 2x RDL).										



BUREAU
VERITAS

BV Labs Job #: B9K5125

Report Date: 2019/08/01

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DG

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

A handwritten signature in black ink, appearing to read "Brad Newman".

Brad Newman, Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9K5125
Report Date: 2019/08/01

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DG

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63°01'44.6" 92°09'14.6"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/29
 Report #: R5859422
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M5881

Received: 2019/08/15, 09:30

Sample Matrix: Surface Water
 # Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	3	N/A	2019/08/17	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	3	N/A	2019/08/19	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	3	N/A	2019/08/19	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	3	N/A	2019/08/17	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	3	N/A	2019/08/19	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	3	2019/08/19	2019/08/19	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	3	N/A	2019/08/17	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	3	2019/08/16	2019/08/16	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	3	N/A	2019/08/20	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	3	2019/08/20	2019/08/20	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/08/19	2019/08/19	CAM SOP-00453	EPA 7470 m
Dissolved Mercury (low level) (1)	2	2019/08/20	2019/08/20	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	2	2019/08/19	2019/08/19	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/20	2019/08/20	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	3	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	3	N/A	2019/08/21	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	3	N/A	2019/08/21	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	3	N/A	2019/08/21	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	3	N/A	2019/08/21	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	3	2019/08/15	2019/08/21	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	3	2019/08/20	2019/08/20	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	3	N/A	2019/08/20	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/20	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N (1)	2	N/A	2019/08/21	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	2	N/A	2019/08/17	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/08/18	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	3	2019/08/16	2019/08/17	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	3	N/A	2019/08/21	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/08/26	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry



Your P.O. #: OL-762849
 Site#: 63°01'44.6" 92°09'14.6"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/29
 Report #: R5859422
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M5881

Received: 2019/08/15, 09:30

Sample Matrix: Surface Water
 # Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Radium-226 Low Level (4, 9)	2	N/A	2019/08/27	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	3	N/A	2019/08/19	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	3	2019/08/17	2019/08/19	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	3	2019/08/19	2019/08/20	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	3	N/A	2019/08/20	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/08/20	2019/08/20	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric) (1)	2	2019/08/20	2019/08/21	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	3	2019/08/17	2019/08/19	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	3	N/A	2019/08/16	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite



Your P.O. #: OL-762849
Site#: 63°01'44.6" 92°09'14.6"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/29
Report #: R5859422
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M5881

Received: 2019/08/15, 09:30

- (3) This test was performed by Campo to Burnaby - Offsite
- (4) This test was performed by Bureau Veritas Laboratories Kitimat
- (5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
- (6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
- (7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
- (9) Radium-226 results have not been corrected for blanks.
- (10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
29 Aug 2019 14:09:23

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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VERITAS

BV Labs Job #: B9M5881

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

CCME PHCS, BTEX/F1-F4 (SURFACE WATER)

BV Labs ID		KNG861	KNG862			KNG862			KNG863		
Sampling Date		2019/08/10 13:15	2019/08/10 13:15			2019/08/10 13:15			2019/08/10 13:25		
	UNITS	MEL-13	MEL-13-DUP	RDL	QC Batch	MEL-13-DUP Lab-Dup	RDL	QC Batch	MEL-13-FB	RDL	QC Batch
BTEX & F1 Hydrocarbons											
Benzene	ug/L	<0.20	<0.20	0.20	6288243				<0.20	0.20	6288243
Toluene	ug/L	<0.20	<0.20	0.20	6288243				0.37	0.20	6288243
Ethylbenzene	ug/L	<0.20	<0.20	0.20	6288243				<0.20	0.20	6288243
o-Xylene	ug/L	<0.20	<0.20	0.20	6288243				<0.20	0.20	6288243
p+m-Xylene	ug/L	<0.40	<0.40	0.40	6288243				<0.40	0.40	6288243
Total Xylenes	ug/L	<0.40	<0.40	0.40	6288243				<0.40	0.40	6288243
F1 (C6-C10)	ug/L	<25	<25	25	6288243				<25	25	6288243
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	6288243				<25	25	6288243
F2-F4 Hydrocarbons											
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	6289107	<100	100	6289107	<100	100	6289107
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	6289107	<200	200	6289107	<200	200	6289107
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	6289107	<200	200	6289107	<200	200	6289107
Reached Baseline at C50	ug/L	Yes	Yes		6289107	Yes		6289107	Yes		6289107
Surrogate Recovery (%)											
1,4-Difluorobenzene	%	100	101		6288243				100		6288243
4-Bromofluorobenzene	%	98	98		6288243				99		6288243
D10-Ethylbenzene	%	95	95		6288243				94		6288243
D4-1,2-Dichloroethane	%	97	98		6288243				98		6288243
o-Terphenyl	%	99	100		6289107	94		6289107	100		6289107
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate											



BV Labs Job #: B9M5881
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (SURFACE WATER)

BV Labs ID		KNG861	KNG862	KNG863		
Sampling Date		2019/08/10 13:15	2019/08/10 13:15	2019/08/10 13:25		
	UNITS	MEL-13	MEL-13-DUP	MEL-13-FB	RDL	QC Batch
Calculated Parameters						
Dissolved Hardness (CaCO ₃)	mg/L	23.0	23.2	<0.50	0.50	6288345
Metals						
Dissolved Aluminum (Al)	ug/L	<3.0	<3.0	<3.0	3.0	6291995
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	0.50	6291995
Dissolved Arsenic (As)	ug/L	0.34	0.35	<0.10	0.10	6291995
Dissolved Barium (Ba)	ug/L	7.3	7.3	<1.0	1.0	6291995
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	0.10	6291995
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	1.0	6291995
Dissolved Boron (B)	ug/L	<50	<50	<50	50	6291995
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	0.010	6291995
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	6291995
Dissolved Cobalt (Co)	ug/L	<0.20	<0.20	<0.20	0.20	6291995
Dissolved Copper (Cu)	ug/L	1.40	0.63	<0.20	0.20	6291995
Dissolved Iron (Fe)	ug/L	6.5	6.3	<5.0	5.0	6291995
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	0.20	6291995
Dissolved Lithium (Li)	ug/L	<2.0	<2.0	<2.0	2.0	6291995
Dissolved Manganese (Mn)	ug/L	<1.0	<1.0	<1.0	1.0	6291995
Dissolved Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	1.0	6291995
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	1.0	6291995
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	<0.10	0.10	6291995
Dissolved Silicon (Si)	ug/L	187	186	<100	100	6291995
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	0.020	6291995
Dissolved Strontium (Sr)	ug/L	40.2	41.0	<1.0	1.0	6291995
Dissolved Thallium (Tl)	ug/L	<0.010	<0.010	<0.010	0.010	6291995
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	5.0	6291995
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	5.0	6291995
Dissolved Uranium (U)	ug/L	<0.10	<0.10	<0.10	0.10	6291995
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	5.0	6291995
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	6291995
Dissolved Zirconium (Zr)	ug/L	<0.10	<0.10	<0.10	0.10	6291995
Dissolved Calcium (Ca)	mg/L	7.12	7.17	<0.050	0.050	6288346
Dissolved Magnesium (Mg)	mg/L	1.28	1.28	<0.050	0.050	6288346
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BV Labs Job #: B9M5881
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (SURFACE WATER)

BV Labs ID		KNG861	KNG862	KNG863		
Sampling Date		2019/08/10 13:15	2019/08/10 13:15	2019/08/10 13:25		
	UNITS	MEL-13	MEL-13-DUP	MEL-13-FB	RDL	QC Batch
Dissolved Potassium (K)	mg/L	0.935	0.946	<0.050	0.050	6288346
Dissolved Sodium (Na)	mg/L	5.07	5.06	<0.050	0.050	6288346
Dissolved Sulphur (S)	mg/L	<3.0	<3.0	<3.0	3.0	6288346
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



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BV Labs Job #: B9M5881

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (SURFACE WATER)

BV Labs ID		KNG861	KNG862	KNG863		
Sampling Date		2019/08/10 13:15	2019/08/10 13:15	2019/08/10 13:25		
	UNITS	MEL-13	MEL-13-DUP	MEL-13-FB	RDL	QC Batch
Metals						
Total Aluminum (Al)	ug/L	5.1	5.7	<3.0	3.0	6291713
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	0.50	6291713
Total Arsenic (As)	ug/L	0.33	0.37	<0.10	0.10	6291713
Total Barium (Ba)	ug/L	7.1	7.3	<1.0	1.0	6291713
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	0.10	6291713
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	1.0	6291713
Total Boron (B)	ug/L	<50	<50	<50	50	6291713
Total Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	0.010	6291713
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	6291713
Total Cobalt (Co)	ug/L	<0.20	<0.20	<0.20	0.20	6291713
Total Copper (Cu)	ug/L	0.66	0.73	<0.50	0.50	6291713
Total Iron (Fe)	ug/L	23	22	<10	10	6291713
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	0.20	6291713
Total Lithium (Li)	ug/L	<2.0	<2.0	<2.0	2.0	6291713
Total Manganese (Mn)	ug/L	4.5	5.1	<1.0	1.0	6291713
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	1.0	6291713
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	1.0	6291713
Total Selenium (Se)	ug/L	<0.10	<0.10	<0.10	0.10	6291713
Total Silicon (Si)	ug/L	184	195	<100	100	6291713
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	0.020	6291713
Total Strontium (Sr)	ug/L	37.6	39.0	<1.0	1.0	6291713
Total Thallium (Tl)	ug/L	<0.010	<0.010	<0.010	0.010	6291713
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	5.0	6291713
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	5.0	6291713
Total Uranium (U)	ug/L	<0.10	<0.10	<0.10	0.10	6291713
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	5.0	6291713
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	6291713
Total Zirconium (Zr)	ug/L	<0.10	<0.10	<0.10	0.10	6291713
Total Calcium (Ca)	ug/L	6860	7000	<50	50	6288349
Total Magnesium (Mg)	ug/L	1270	1280	<50	50	6288349
Total Potassium (K)	ug/L	901	929	<50	50	6288349
Total Sodium (Na)	ug/L	5010	5150	<50	50	6288349
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



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VERITAS

BV Labs Job #: B9M5881

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (SURFACE WATER)

BV Labs ID		KNG861	KNG862	KNG863		
Sampling Date		2019/08/10 13:15	2019/08/10 13:15	2019/08/10 13:25		
	UNITS	MEL-13	MEL-13-DUP	MEL-13-FB	RDL	QC Batch
Total Sulphur (S)	ug/L	<3000	<3000	<3000	3000	6288349
Calculated Parameters						
Total Hardness (CaCO ₃)	ug/L	22400	22700	<500	500	6289748
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BUREAU
VERITAS

BV Labs Job #: B9M5881

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

RESULTS OF ANALYSES OF SURFACE WATER

BV Labs ID		KNG861			KNG861			KNG862		
Sampling Date		2019/08/10 13:15			2019/08/10 13:15			2019/08/10 13:15		
	UNITS	MEL-13	RDL	QC Batch	MEL-13 Lab-Dup	RDL	QC Batch	MEL-13-DUP	RDL	QC Batch

Calculated Parameters

Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	16	1.0	6281848				15	1.0	6281848
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6281848				<1.0	1.0	6281848

Inorganics

Total Ammonia-N	mg/L	0.13	0.050	6289003				0.066	0.050	6289003
Conductivity	umho/cm	84	1.0	6285224				83	1.0	6285224
Free Cyanide (CN)	ug/L	1.1 (1)	1.0	6290148				1.6 (1)	1.0	6290148
Total Dissolved Solids	mg/L	45	10	6286027				45	10	6286027
Total Kjeldahl Nitrogen (TKN)	mg/L	0.37	0.10	6287497	0.24	0.10	6287497	0.15	0.10	6287145
Dissolved Organic Carbon	mg/L	3.0	0.50	6284097				3.0	0.50	6284097
Total Organic Carbon (TOC)	mg/L	3.0	0.50	6287105				3.0	0.50	6288212
Orthophosphate (P)	mg/L	<0.010	0.010	6285782				<0.010	0.010	6285782
Dissolved Oxygen	mg/L	11.6		6284385				11.2		6284385
pH	pH	7.26		6285228				7.14		6285228
Total Phosphorus	mg/L	<0.020	0.020	6289897				<0.020	0.020	6289419
Reactive Silica (SiO ₂)	mg/L	0.80	0.050	6291768				0.36	0.050	6291768
Total Suspended Solids	mg/L	1	1	6285893				2	1	6285893
Dissolved Sulphate (SO ₄)	mg/L	3.6	1.0	6285780				3.4	1.0	6285780
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6287854				<0.0050	0.0050	6287854
Turbidity	NTU	<0.1	0.1	6284179				0.2	0.1	6284179
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6287861				<0.0010	0.0010	6287861
Alkalinity (Total as CaCO ₃)	mg/L	16	1.0	6285216				15	1.0	6285216
Dissolved Chloride (Cl ⁻)	mg/L	12	1.0	6285778				12	1.0	6285778
Nitrite (N)	mg/L	<0.010	0.010	6285229				<0.010	0.010	6284146
Nitrate (N)	mg/L	<0.10	0.10	6285229				<0.10	0.10	6284146
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	6285229				<0.10	0.10	6284146

RADIONUCLIDE

Radium-226	Bq/L	<0.0050	0.0050	6287025				<0.0050	0.0050	6287025
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) See general comments for notes regarding CNFREE-W



BV Labs Job #: B9M5881
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

RESULTS OF ANALYSES OF SURFACE WATER

BV Labs ID		KNG862			KNG863			KNG863		
Sampling Date		2019/08/10 13:15			2019/08/10 13:25			2019/08/10 13:25		
	UNITS	MEL-13-DUP Lab-Dup	RDL	QC Batch	MEL-13-FB	RDL	QC Batch	MEL-13-FB Lab-Dup	RDL	QC Batch
Calculated Parameters										
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L				<1.0	1.0	6281848			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L				<1.0	1.0	6281848			
Inorganics										
Total Ammonia-N	mg/L				<0.050	0.050	6288996			
Conductivity	umho/cm				<1.0	1.0	6285224			
Free Cyanide (CN)	ug/L				1.1 (1)	1.0	6290148			
Total Dissolved Solids	mg/L				<10	10	6286027			
Total Kjeldahl Nitrogen (TKN)	mg/L				<0.10	0.10	6287145			
Dissolved Organic Carbon	mg/L				<0.50	0.50	6284097			
Total Organic Carbon (TOC)	mg/L				<0.50	0.50	6288212	<0.50	0.50	6288212
Orthophosphate (P)	mg/L	<0.010	0.010	6285782	<0.010	0.010	6285782			
Dissolved Oxygen	mg/L				11.2		6284385			
pH	pH				5.72		6285228			
Total Phosphorus	mg/L				<0.020	0.020	6289419			
Reactive Silica (SiO ₂)	mg/L				<0.050	0.050	6291768			
Total Suspended Solids	mg/L				<1	1	6285893			
Dissolved Sulphate (SO ₄)	mg/L	3.5	1.0	6285780	<1.0	1.0	6285780			
Total Cyanide (CN)	mg/L				<0.0050	0.0050	6287854			
Turbidity	NTU	0.2	0.1	6284179	<0.1	0.1	6284179			
WAD Cyanide (Free)	mg/L				<0.0010	0.0010	6287861			
Alkalinity (Total as CaCO ₃)	mg/L				<1.0	1.0	6285216			
Dissolved Chloride (Cl ⁻)	mg/L	12	1.0	6285778	<1.0	1.0	6285778			
Nitrite (N)	mg/L				<0.010	0.010	6284146			
Nitrate (N)	mg/L				<0.10	0.10	6284146			
Nitrate + Nitrite (N)	mg/L				<0.10	0.10	6284146			
RADIONUCLIDE										
Radium-226	Bq/L				<0.0050	0.0050	6287025			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W										



BUREAU
VERITAS

BV Labs Job #: B9M5881

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

ELEMENTS BY ATOMIC SPECTROSCOPY (SURFACE WATER)

BV Labs ID		KNG861	KNG862		KNG863			KNG863		
Sampling Date		2019/08/10 13:15	2019/08/10 13:15		2019/08/10 13:25			2019/08/10 13:25		
	UNITS	MEL-13	MEL-13-DUP	QC Batch	MEL-13-FB	RDL	QC Batch	MEL-13-FB Lab-Dup	RDL	QC Batch

Metals										
Mercury (Hg)	mg/L	<0.00001	<0.00001	6286866	<0.00001	0.00001	6289103	<0.00001	0.00001	6289103
Dissolved Mercury (Hg)	mg/L	<0.00001	<0.00001	6289091	<0.00001	0.00001	6286927			

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



BV Labs Job #: B9M5881
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KNG861
Sample ID: MEL-13
Matrix: Surface Water

Collected: 2019/08/10
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6285216	N/A	2019/08/17	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6281848	N/A	2019/08/19	Automated Statchk
Chloride by Automated Colourimetry	KONE	6285778	N/A	2019/08/19	Deonarine Ramnarine
Conductivity	AT	6285224	N/A	2019/08/17	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6287861	N/A	2019/08/19	Gnana Thomas
Total Cyanide	SKAL/CN	6287854	2019/08/19	2019/08/19	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6284097	N/A	2019/08/17	Mandeep Kaur
Dissolved Oxygen	DO	6284385	2019/08/16	2019/08/16	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6288243	N/A	2019/08/20	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6289107	2019/08/20	2019/08/20	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6289091	2019/08/20	2019/08/20	Ron Morrison
Mercury (low level)	CV/AA	6286866	2019/08/19	2019/08/19	Ron Morrison
Cyanide (Free)	SPEC	6290148	2019/08/20	2019/08/20	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6289748	N/A	2019/08/21	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6288345	N/A	2019/08/21	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6288346	N/A	2019/08/21	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6291995	N/A	2019/08/21	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6288349	2019/08/21	2019/08/21	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6291713	2019/08/20	2019/08/20	Vanessa Chan
Silica (Reactive)	KONE	6291768	N/A	2019/08/20	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6289003	N/A	2019/08/21	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6285229	N/A	2019/08/18	Amanpreet Sappal
pH	AT	6285228	2019/08/16	2019/08/17	Neil Dassanayake
Orthophosphate	KONE	6285782	N/A	2019/08/21	Alina Dobreanu
Radium-226 Low Level	AS	6287025	N/A	2019/08/26	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6285780	N/A	2019/08/19	Deonarine Ramnarine
Total Dissolved Solids	BAL	6286027	2019/08/17	2019/08/19	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6287497	2019/08/19	2019/08/20	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6287105	N/A	2019/08/20	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6289897	2019/08/20	2019/08/21	Nimarta Singh
Low Level Total Suspended Solids	BAL	6285893	2019/08/17	2019/08/19	Mandeep Kaur
Turbidity	AT	6284179	N/A	2019/08/16	Kazzandra Adeva

BV Labs ID: KNG861 Dup
Sample ID: MEL-13
Matrix: Surface Water

Collected: 2019/08/10
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Kjeldahl Nitrogen in Water	SKAL	6287497	2019/08/19	2019/08/20	Rajni Tyagi



BV Labs Job #: B9M5881
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KNG862
Sample ID: MEL-13-DUP
Matrix: Surface Water

Collected: 2019/08/10
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6285216	N/A	2019/08/17	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6281848	N/A	2019/08/19	Automated Statchk
Chloride by Automated Colourimetry	KONE	6285778	N/A	2019/08/19	Deonarine Ramnarine
Conductivity	AT	6285224	N/A	2019/08/17	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6287861	N/A	2019/08/19	Gnana Thomas
Total Cyanide	SKAL/CN	6287854	2019/08/19	2019/08/19	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6284097	N/A	2019/08/17	Mandeep Kaur
Dissolved Oxygen	DO	6284385	2019/08/16	2019/08/16	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6288243	N/A	2019/08/20	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6289107	2019/08/20	2019/08/20	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6289091	2019/08/20	2019/08/20	Ron Morrison
Mercury (low level)	CV/AA	6286866	2019/08/19	2019/08/19	Ron Morrison
Cyanide (Free)	SPEC	6290148	2019/08/20	2019/08/20	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6289748	N/A	2019/08/21	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6288345	N/A	2019/08/21	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6288346	N/A	2019/08/21	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6291995	N/A	2019/08/21	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6288349	2019/08/21	2019/08/21	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6291713	2019/08/20	2019/08/20	Vanessa Chan
Silica (Reactive)	KONE	6291768	N/A	2019/08/20	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6289003	N/A	2019/08/21	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6284146	N/A	2019/08/17	Amanpreet Sappal
pH	AT	6285228	2019/08/16	2019/08/17	Neil Dassanayake
Orthophosphate	KONE	6285782	N/A	2019/08/21	Alina Dobreanu
Radium-226 Low Level	AS	6287025	N/A	2019/08/27	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6285780	N/A	2019/08/19	Deonarine Ramnarine
Total Dissolved Solids	BAL	6286027	2019/08/17	2019/08/19	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6287145	2019/08/19	2019/08/20	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6288212	N/A	2019/08/20	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6289419	2019/08/20	2019/08/21	Nimarta Singh
Low Level Total Suspended Solids	BAL	6285893	2019/08/17	2019/08/19	Mandeep Kaur
Turbidity	AT	6284179	N/A	2019/08/16	Kazzandra Adeva

BV Labs ID: KNG862 Dup
Sample ID: MEL-13-DUP
Matrix: Surface Water

Collected: 2019/08/10
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	6285778	N/A	2019/08/19	Deonarine Ramnarine
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6289107	2019/08/20	2019/08/20	Prabhjot Gulati
Orthophosphate	KONE	6285782	N/A	2019/08/21	Alina Dobreanu
Sulphate by Automated Colourimetry	KONE	6285780	N/A	2019/08/19	Deonarine Ramnarine
Turbidity	AT	6284179	N/A	2019/08/16	Kazzandra Adeva



BV Labs Job #: B9M5881
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KNG863
Sample ID: MEL-13-FB
Matrix: Surface Water

Collected: 2019/08/10
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6285216	N/A	2019/08/17	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6281848	N/A	2019/08/19	Automated Statchk
Chloride by Automated Colourimetry	KONE	6285778	N/A	2019/08/19	Deonarine Ramnarine
Conductivity	AT	6285224	N/A	2019/08/17	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6287861	N/A	2019/08/19	Gnana Thomas
Total Cyanide	SKAL/CN	6287854	2019/08/19	2019/08/19	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6284097	N/A	2019/08/17	Mandeep Kaur
Dissolved Oxygen	DO	6284385	2019/08/16	2019/08/16	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6288243	N/A	2019/08/20	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6289107	2019/08/20	2019/08/20	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6286927	2019/08/19	2019/08/19	Ron Morrison
Mercury (low level)	CV/AA	6289103	2019/08/20	2019/08/20	Ron Morrison
Cyanide (Free)	SPEC	6290148	2019/08/20	2019/08/20	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6289748	N/A	2019/08/21	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6288345	N/A	2019/08/21	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6288346	N/A	2019/08/21	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6291995	N/A	2019/08/21	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6288349	2019/08/21	2019/08/21	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6291713	2019/08/20	2019/08/20	Vanessa Chan
Silica (Reactive)	KONE	6291768	N/A	2019/08/20	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6288996	N/A	2019/08/20	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6284146	N/A	2019/08/17	Amanpreet Sappal
pH	AT	6285228	2019/08/16	2019/08/17	Neil Dassanayake
Orthophosphate	KONE	6285782	N/A	2019/08/21	Alina Doboreanu
Radium-226 Low Level	AS	6287025	N/A	2019/08/27	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6285780	N/A	2019/08/19	Deonarine Ramnarine
Total Dissolved Solids	BAL	6286027	2019/08/17	2019/08/19	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6287145	2019/08/19	2019/08/20	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6288212	N/A	2019/08/20	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6289419	2019/08/20	2019/08/20	Nimarta Singh
Low Level Total Suspended Solids	BAL	6285893	2019/08/17	2019/08/19	Mandeep Kaur
Turbidity	AT	6284179	N/A	2019/08/16	Kazzandra Adeva

BV Labs ID: KNG863 Dup
Sample ID: MEL-13-FB
Matrix: Surface Water

Collected: 2019/08/10
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (low level)	CV/AA	6289103	2019/08/20	2019/08/20	Ron Morrison
Total Organic Carbon (TOC)	TOCV/NDIR	6288212	N/A	2019/08/20	Mandeep Kaur



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.7°C
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Sample KNG861 [MEL-13] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample KNG862 [MEL-13-DUP] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample KNG863 [MEL-13-FB] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Results relate only to the items tested.



BV Labs Job #: B9M5881
Report Date: 2019/08/29

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6288243	1,4-Difluorobenzene	2019/08/19	103	70 - 130	103	70 - 130	98	%				
6288243	4-Bromofluorobenzene	2019/08/19	99	70 - 130	100	70 - 130	99	%				
6288243	D10-Ethylbenzene	2019/08/19	98	70 - 130	94	70 - 130	93	%				
6288243	D4-1,2-Dichloroethane	2019/08/19	96	70 - 130	99	70 - 130	101	%				
6289107	o-Terphenyl	2019/08/20	112	60 - 130	102	60 - 130	98	%				
6284097	Dissolved Organic Carbon	2019/08/17	93	80 - 120	97	80 - 120	<0.50	mg/L	1.0	20		
6284146	Nitrate (N)	2019/08/17	98	80 - 120	99	80 - 120	<0.10	mg/L	NC	20		
6284146	Nitrite (N)	2019/08/17	104	80 - 120	104	80 - 120	<0.010	mg/L	5.8	20		
6284179	Turbidity	2019/08/16			94	85 - 115	<0.1	NTU	4.5	20		
6285216	Alkalinity (Total as CaCO3)	2019/08/17			98	85 - 115	<1.0	mg/L	1.1	20		
6285224	Conductivity	2019/08/17			101	85 - 115	<1.0	umho/cm	0	25		
6285228	pH	2019/08/17			102	98 - 103			0.42	N/A		
6285229	Nitrate (N)	2019/08/18	NC	80 - 120	100	80 - 120	<0.10	mg/L	0.11	20		
6285229	Nitrite (N)	2019/08/18	95	80 - 120	104	80 - 120	<0.010	mg/L	0.16	20		
6285778	Dissolved Chloride (Cl-)	2019/08/19	117	80 - 120	103	80 - 120	<1.0	mg/L	1.1	20		
6285780	Dissolved Sulphate (SO4)	2019/08/19	105	75 - 125	102	80 - 120	<1.0	mg/L	2.9	20		
6285782	Orthophosphate (P)	2019/08/21	104	75 - 125	99	80 - 120	<0.010	mg/L	NC	25		
6285893	Total Suspended Solids	2019/08/19					<1	mg/L	NC	25	100	85 - 115
6286027	Total Dissolved Solids	2019/08/19					<10	mg/L	2.0	25	97	90 - 110
6286866	Mercury (Hg)	2019/08/19	101	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6286927	Dissolved Mercury (Hg)	2019/08/19	93	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6287025	Radium-226	2019/08/21			100	85 - 115	<0.0050	Bq/L	NC	N/A		
6287105	Total Organic Carbon (TOC)	2019/08/20	92	80 - 120	97	80 - 120	<0.50	mg/L	2.4	20		
6287145	Total Kjeldahl Nitrogen (TKN)	2019/08/20	NC	80 - 120	94	80 - 120	<0.10	mg/L	2.4 (1)	20	96	80 - 120
6287497	Total Kjeldahl Nitrogen (TKN)	2019/08/20	96	80 - 120	100	80 - 120	<0.10	mg/L	NC	20	101	80 - 120
6287854	Total Cyanide (CN)	2019/08/19	103	80 - 120	100	80 - 120	<0.0050	mg/L	NC	20		
6287861	WAD Cyanide (Free)	2019/08/19	105	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20		
6288212	Total Organic Carbon (TOC)	2019/08/20	92	80 - 120	97	80 - 120	<0.50	mg/L	NC	20		
6288243	Benzene	2019/08/19	99	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
6288243	Ethylbenzene	2019/08/19	100	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
6288243	F1 (C6-C10) - BTEX	2019/08/19					<25	ug/L	NC	30		



BV Labs Job #: B9M5881
Report Date: 2019/08/29

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6288243	F1 (C6-C10)	2019/08/19	81	70 - 130	100	70 - 130	<25	ug/L	NC	30		
6288243	o-Xylene	2019/08/19	98	70 - 130	96	70 - 130	<0.20	ug/L	NC	30		
6288243	p+m-Xylene	2019/08/19	99	70 - 130	97	70 - 130	<0.40	ug/L	NC	30		
6288243	Toluene	2019/08/19	101	70 - 130	99	70 - 130	<0.20	ug/L	NC	30		
6288243	Total Xylenes	2019/08/19					<0.40	ug/L	NC	30		
6288996	Total Ammonia-N	2019/08/20	100	75 - 125	100	80 - 120	<0.050	mg/L	NC	20		
6289003	Total Ammonia-N	2019/08/21	100	75 - 125	100	80 - 120	<0.050	mg/L	17	20		
6289091	Dissolved Mercury (Hg)	2019/08/20	99	75 - 125	98	80 - 120	<0.00001	mg/L	NC	20		
6289103	Mercury (Hg)	2019/08/20	94	75 - 125	98	80 - 120	<0.00001	mg/L	NC	20		
6289107	F2 (C10-C16 Hydrocarbons)	2019/08/20	105	50 - 130	87	60 - 130	<100	ug/L	NC	30		
6289107	F3 (C16-C34 Hydrocarbons)	2019/08/20	96	50 - 130	82	60 - 130	<200	ug/L	NC	30		
6289107	F4 (C34-C50 Hydrocarbons)	2019/08/20	103	50 - 130	90	60 - 130	<200	ug/L	NC	30		
6289419	Total Phosphorus	2019/08/20	100	80 - 120	101	80 - 120	<0.020	mg/L	1.9	20	101	80 - 120
6289897	Total Phosphorus	2019/08/21	96	80 - 120	97	80 - 120	<0.020	mg/L	NC	20	99	80 - 120
6290148	Free Cyanide (CN)	2019/08/20	93	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Aluminum (Al)	2019/08/20	101	80 - 120	101	80 - 120	<3.0	ug/L	1.8	20		
6291713	Total Antimony (Sb)	2019/08/20	101	80 - 120	101	80 - 120	<0.50	ug/L	1.4	20		
6291713	Total Arsenic (As)	2019/08/20	104	80 - 120	100	80 - 120	<0.10	ug/L	12	20		
6291713	Total Barium (Ba)	2019/08/20	101	80 - 120	103	80 - 120	<1.0	ug/L	1.2	20		
6291713	Total Beryllium (Be)	2019/08/20	94	80 - 120	95	80 - 120	<0.10	ug/L	NC	20		
6291713	Total Bismuth (Bi)	2019/08/20	99	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Boron (B)	2019/08/20	96	80 - 120	97	80 - 120	<50	ug/L	NC	20		
6291713	Total Cadmium (Cd)	2019/08/20	99	80 - 120	99	80 - 120	<0.010	ug/L	NC	20		
6291713	Total Chromium (Cr)	2019/08/20	99	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Cobalt (Co)	2019/08/20	95	80 - 120	98	80 - 120	<0.20	ug/L	NC	20		
6291713	Total Copper (Cu)	2019/08/20	94	80 - 120	99	80 - 120	<0.50	ug/L	0.68	20		
6291713	Total Iron (Fe)	2019/08/20	96	80 - 120	102	80 - 120	<10	ug/L	NC	20		
6291713	Total Lead (Pb)	2019/08/20	102	80 - 120	103	80 - 120	<0.20	ug/L	NC	20		
6291713	Total Lithium (Li)	2019/08/20	94	80 - 120	95	80 - 120	<2.0	ug/L	NC	20		
6291713	Total Manganese (Mn)	2019/08/20	98	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Molybdenum (Mo)	2019/08/20	107	80 - 120	99	80 - 120	<1.0	ug/L	2.7	20		
6291713	Total Nickel (Ni)	2019/08/20	95	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		



BV Labs Job #: B9M5881
Report Date: 2019/08/29

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6291713	Total Selenium (Se)	2019/08/20	105	80 - 120	101	80 - 120	<0.10	ug/L	3.5	20		
6291713	Total Silicon (Si)	2019/08/20	97	80 - 120	102	80 - 120	<100	ug/L	0.18	20		
6291713	Total Silver (Ag)	2019/08/20	98	80 - 120	98	80 - 120	<0.020	ug/L	NC	20		
6291713	Total Strontium (Sr)	2019/08/20	NC	80 - 120	101	80 - 120	<1.0	ug/L	0.39	20		
6291713	Total Thallium (Tl)	2019/08/20	102	80 - 120	102	80 - 120	<0.010	ug/L	NC	20		
6291713	Total Tin (Sn)	2019/08/20	100	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Titanium (Ti)	2019/08/20	102	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Uranium (U)	2019/08/20	105	80 - 120	102	80 - 120	<0.10	ug/L	0.91	20		
6291713	Total Vanadium (V)	2019/08/20	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Zinc (Zn)	2019/08/20	93	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Zirconium (Zr)	2019/08/20	108	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		
6291768	Reactive Silica (SiO2)	2019/08/20	NC	80 - 120	100	80 - 120	<0.050	mg/L	0.39	20		
6291995	Dissolved Aluminum (Al)	2019/08/21	100	80 - 120	103	80 - 120	<3.0	ug/L	1.9	20		
6291995	Dissolved Antimony (Sb)	2019/08/21	99	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
6291995	Dissolved Arsenic (As)	2019/08/21	100	80 - 120	102	80 - 120	<0.10	ug/L	12	20		
6291995	Dissolved Barium (Ba)	2019/08/21	98	80 - 120	100	80 - 120	<1.0	ug/L	0.95	20		
6291995	Dissolved Beryllium (Be)	2019/08/21	99	80 - 120	104	80 - 120	<0.10	ug/L	NC	20		
6291995	Dissolved Bismuth (Bi)	2019/08/21	99	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
6291995	Dissolved Boron (B)	2019/08/21	98	80 - 120	99	80 - 120	<50	ug/L	NC	20		
6291995	Dissolved Cadmium (Cd)	2019/08/21	99	80 - 120	103	80 - 120	<0.010	ug/L	NC	20		
6291995	Dissolved Chromium (Cr)	2019/08/21	99	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
6291995	Dissolved Cobalt (Co)	2019/08/21	96	80 - 120	103	80 - 120	<0.20	ug/L	NC	20		
6291995	Dissolved Copper (Cu)	2019/08/21	92	80 - 120	101	80 - 120	<0.20	ug/L	0.53	20		
6291995	Dissolved Iron (Fe)	2019/08/21	99	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Lead (Pb)	2019/08/21	99	80 - 120	103	80 - 120	<0.20	ug/L	NC	20		
6291995	Dissolved Lithium (Li)	2019/08/21	99	80 - 120	103	80 - 120	<2.0	ug/L	0.83	20		
6291995	Dissolved Manganese (Mn)	2019/08/21	98	80 - 120	104	80 - 120	<1.0	ug/L	1.5	20		
6291995	Dissolved Molybdenum (Mo)	2019/08/21	107	80 - 120	107	80 - 120	<1.0	ug/L	1.5	20		
6291995	Dissolved Nickel (Ni)	2019/08/21	93	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
6291995	Dissolved Selenium (Se)	2019/08/21	102	80 - 120	103	80 - 120	<0.10	ug/L	13	20		
6291995	Dissolved Silicon (Si)	2019/08/21	100	80 - 120	106	80 - 120	<100	ug/L	0.67	20		
6291995	Dissolved Silver (Ag)	2019/08/21	99	80 - 120	102	80 - 120	<0.020	ug/L	NC	20		



BUREAU
VERITAS

BV Labs Job #: B9M5881
Report Date: 2019/08/29

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6291995	Dissolved Strontium (Sr)	2019/08/21	NC	80 - 120	105	80 - 120	<1.0	ug/L	0.69	20		
6291995	Dissolved Thallium (Tl)	2019/08/21	99	80 - 120	104	80 - 120	<0.010	ug/L	NC	20		
6291995	Dissolved Tin (Sn)	2019/08/21	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Titanium (Ti)	2019/08/21	101	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Uranium (U)	2019/08/21	102	80 - 120	104	80 - 120	<0.10	ug/L	1.7	20		
6291995	Dissolved Vanadium (V)	2019/08/21	100	80 - 120	105	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Zinc (Zn)	2019/08/21	97	80 - 120	105	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Zirconium (Zr)	2019/08/21	105	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) TKN < NH₄: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.



BUREAU
VERITAS

BV Labs Job #: B9M5881

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Harry (Peng) Liang, Senior Analyst



Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9M5881

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site Location: MELIADINE
 Your C.O.C. #: N/A

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/10
 Report #: R5916780
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Q6869

Received: 2019/09/23, 10:00

Sample Matrix: Surface Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/09/26	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/09/27	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/09/25	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/09/26	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/09/25	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/09/25	2019/09/25	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/09/25	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/09/24	2019/09/24	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/09/26	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/09/26	2019/09/27	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/09/27	2019/09/27	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/09/27	2019/09/27	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/10/01	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/09/28	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/09/28	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/09/27	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/24	2019/10/01	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/09/30	2019/10/01	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/09/30	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/09/27	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/09/25	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/09/24	2019/09/26	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/09/25	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/10/09	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/09/25	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/09/25	2019/09/26	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/09/25	2019/09/27	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/09/26	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/09/26	2019/09/26	CAM SOP-00407	SM 23 4500 P B H m



Your P.O. #: OL-762849
Site Location: MELIADINE
Your C.O.C. #: N/A

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/10
Report #: R5916780
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Q6869

Received: 2019/09/23, 10:00

Sample Matrix: Surface Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Low Level Total Suspended Solids (1)	1	2019/09/24	2019/09/25	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/09/24	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.



Your P.O. #: OL-762849
Site Location: MELIADINE
Your C.O.C. #: N/A

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/10
Report #: R5916780
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Q6869

Received: 2019/09/23, 10:00

- (9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Keshani Vijh
Supervisor - Environmental
Customer Service
11 Oct 2019 16:25:02

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9Q6869

Report Date: 2019/10/10

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

CCME PHCS, BTEX/F1-F4 (SURFACE WATER)

BV Labs ID		KVZ380		
Sampling Date		2019/09/18 10:00		
COC Number		N/A		
	UNITS	MEL-13	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	6354022
Toluene	ug/L	<0.20	0.20	6354022
Ethylbenzene	ug/L	<0.20	0.20	6354022
o-Xylene	ug/L	<0.20	0.20	6354022
p+m-Xylene	ug/L	<0.40	0.40	6354022
Total Xylenes	ug/L	<0.40	0.40	6354022
F1 (C6-C10)	ug/L	<25	25	6354022
F1 (C6-C10) - BTEX	ug/L	<25	25	6354022
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6355643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6355643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6355643
Reached Baseline at C50	ug/L	Yes		6355643
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	102		6354022
4-Bromofluorobenzene	%	101		6354022
D10-Ethylbenzene	%	114		6354022
D4-1,2-Dichloroethane	%	108		6354022
o-Terphenyl	%	94		6355643
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9Q6869

Report Date: 2019/10/10

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (SURFACE WATER)

BV Labs ID		KVZ380		
Sampling Date		2019/09/18 10:00		
COC Number		N/A		
	UNITS	MEL-13	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	23.7	0.50	6363021
Metals				
Dissolved Aluminum (Al)	ug/L	<3.0	3.0	6363023
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6363023
Dissolved Arsenic (As)	ug/L	0.39	0.10	6363023
Dissolved Barium (Ba)	ug/L	7.2	1.0	6363023
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6363023
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6363023
Dissolved Boron (B)	ug/L	<50	50	6363023
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	6363023
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6363023
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	6363023
Dissolved Copper (Cu)	ug/L	0.72	0.20	6363023
Dissolved Iron (Fe)	ug/L	5.1	5.0	6363023
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6363023
Dissolved Lithium (Li)	ug/L	<2.0	2.0	6363023
Dissolved Manganese (Mn)	ug/L	<1.0	1.0	6363023
Dissolved Molybdenum (Mo)	ug/L	2.7	1.0	6363023
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	6363023
Dissolved Selenium (Se)	ug/L	<0.10	0.10	6363023
Dissolved Silicon (Si)	ug/L	133	100	6363023
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6363023
Dissolved Strontium (Sr)	ug/L	44.8	1.0	6363023
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	6363023
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6363023
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6363023
Dissolved Uranium (U)	ug/L	<0.10	0.10	6363023
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6363023
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6363023
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6363023
Dissolved Calcium (Ca)	mg/L	7.30	0.050	6363022
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9Q6869

Report Date: 2019/10/10

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (SURFACE WATER)

BV Labs ID		KVZ380		
Sampling Date		2019/09/18 10:00		
COC Number		N/A		
	UNITS	MEL-13	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	1.34	0.050	6363022
Dissolved Potassium (K)	mg/L	0.969	0.050	6363022
Dissolved Sodium (Na)	mg/L	5.53	0.050	6363022
Dissolved Sulphur (S)	mg/L	<3.0	3.0	6363022
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9Q6869
Report Date: 2019/10/10

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (SURFACE WATER)

BV Labs ID		KVZ380		
Sampling Date		2019/09/18 10:00		
COC Number		N/A		
	UNITS	MEL-13	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	11.5	3.0	6363017
Total Antimony (Sb)	ug/L	<0.50	0.50	6363017
Total Arsenic (As)	ug/L	0.43	0.10	6363017
Total Barium (Ba)	ug/L	7.8	1.0	6363017
Total Beryllium (Be)	ug/L	<0.10	0.10	6363017
Total Bismuth (Bi)	ug/L	<1.0	1.0	6363017
Total Boron (B)	ug/L	<50	50	6363017
Total Cadmium (Cd)	ug/L	<0.010	0.010	6363017
Total Chromium (Cr)	ug/L	<1.0	1.0	6363017
Total Cobalt (Co)	ug/L	<0.20	0.20	6363017
Total Copper (Cu)	ug/L	0.84	0.50	6363017
Total Iron (Fe)	ug/L	31	10	6363017
Total Lead (Pb)	ug/L	<0.20	0.20	6363017
Total Lithium (Li)	ug/L	<2.0	2.0	6363017
Total Manganese (Mn)	ug/L	3.5	1.0	6363017
Total Molybdenum (Mo)	ug/L	<1.0	1.0	6363017
Total Nickel (Ni)	ug/L	<1.0	1.0	6363017
Total Selenium (Se)	ug/L	<0.10	0.10	6363017
Total Silicon (Si)	ug/L	153	100	6363017
Total Silver (Ag)	ug/L	<0.020	0.020	6363017
Total Strontium (Sr)	ug/L	45.9	1.0	6363017
Total Thallium (Tl)	ug/L	<0.010	0.010	6363017
Total Tin (Sn)	ug/L	<5.0	5.0	6363017
Total Titanium (Ti)	ug/L	<5.0	5.0	6363017
Total Uranium (U)	ug/L	<0.10	0.10	6363017
Total Vanadium (V)	ug/L	<5.0	5.0	6363017
Total Zinc (Zn)	ug/L	<5.0	5.0	6363017
Total Zirconium (Zr)	ug/L	<0.10	0.10	6363017
Total Calcium (Ca)	ug/L	7900	50	6360650
Total Magnesium (Mg)	ug/L	1440	50	6360650
Total Potassium (K)	ug/L	1050	50	6360650
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9Q6869

Report Date: 2019/10/10

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (SURFACE WATER)

BV Labs ID		KVZ380		
Sampling Date		2019/09/18 10:00		
COC Number		N/A		
	UNITS	MEL-13	RDL	QC Batch
Total Sodium (Na)	ug/L	5880	50	6360650
Total Sulphur (S)	ug/L	<3000	3000	6360650
Calculated Parameters				
Total Hardness (CaCO ₃)	ug/L	25700	500	6363016
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9Q6869
Report Date: 2019/10/10

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

RESULTS OF ANALYSES OF SURFACE WATER

BV Labs ID		KVZ380			KVZ380		
Sampling Date		2019/09/18 10:00			2019/09/18 10:00		
COC Number		N/A			N/A		
	UNITS	MEL-13	RDL	QC Batch	MEL-13 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	16	1.0	6348963			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6348963			
Inorganics							
Total Ammonia-N	mg/L	0.055	0.050	6352057			
Conductivity	umho/cm	90	1.0	6350019			
Free Cyanide (CN)	ug/L	1.6 (1)	1.0	6368183			
Total Dissolved Solids	mg/L	55	10	6352722			
Total Kjeldahl Nitrogen (TKN)	mg/L	0.16	0.10	6351997			
Dissolved Organic Carbon	mg/L	2.9	0.50	6349438			
Total Organic Carbon (TOC)	mg/L	3.2	0.50	6352161			
Orthophosphate (P)	mg/L	<0.010	0.010	6350313			
Dissolved Oxygen	mg/L	9.77		6349286			
pH	pH	7.56		6350029			
Total Phosphorus	mg/L	0.025	0.020	6353846			
Reactive Silica (SiO ₂)	mg/L	0.26	0.050	6363014			
Total Suspended Solids	mg/L	1	1	6349829			
Dissolved Sulphate (SO ₄)	mg/L	3.8	1.0	6350309			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6351953	<0.0050	0.0050	6351953
Turbidity	NTU	0.2	0.1	6349797			
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6351958	<0.0010	0.0010	6351958
Alkalinity (Total as CaCO ₃)	mg/L	16	1.0	6350018			
Dissolved Chloride (Cl ⁻)	mg/L	13	1.0	6350301			
Nitrite (N)	mg/L	<0.010	0.010	6349936			
Nitrate (N)	mg/L	<0.10	0.10	6349936			
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	6349936			
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6370167			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W							



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VERITAS

BV Labs Job #: B9Q6869

Report Date: 2019/10/10

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (SURFACE WATER)

BV Labs ID		KVZ380			KVZ380		
Sampling Date		2019/09/18 10:00			2019/09/18 10:00		
COC Number		N/A			N/A		
	UNITS	MEL-13	RDL	QC Batch	MEL-13 Lab-Dup	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	<0.00001	0.00001	6356265			
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6356269	<0.00001	0.00001	6356269
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BV Labs Job #: B9Q6869
Report Date: 2019/10/10

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KVZ380
Sample ID: MEL-13
Matrix: Surface Water

Collected: 2019/09/18
Shipped:
Received: 2019/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6350018	N/A	2019/09/26	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6348963	N/A	2019/09/27	Automated Statchk
Chloride by Automated Colourimetry	KONE	6350301	N/A	2019/09/25	Deonarine Ramnarine
Conductivity	AT	6350019	N/A	2019/09/26	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6351958	N/A	2019/09/25	Gnana Thomas
Total Cyanide	SKAL/CN	6351953	2019/09/25	2019/09/25	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6349438	N/A	2019/09/25	Mandeep Kaur
Dissolved Oxygen	DO	6349286	2019/09/24	2019/09/24	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6354022	N/A	2019/09/26	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6355643	2019/09/26	2019/09/27	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6356269	2019/09/27	2019/09/27	Medhat Nasr
Mercury (low level)	CV/AA	6356265	2019/09/27	2019/09/27	Medhat Nasr
Cyanide (Free)	SPEC	6368183	2019/09/30	2019/10/01	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6363016	N/A	2019/10/01	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6363021	N/A	2019/09/28	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6363022	N/A	2019/09/28	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6363023	N/A	2019/09/27	Valentina Balada
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6360650	2019/10/01	2019/10/01	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6363017	2019/09/30	2019/10/01	Andrew An
Silica (Reactive)	KONE	6363014	N/A	2019/09/30	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6352057	N/A	2019/09/27	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6349936	N/A	2019/09/25	Chandra Nandlal
pH	AT	6350029	2019/09/24	2019/09/26	Surinder Rai
Orthophosphate	KONE	6350313	N/A	2019/09/25	Alina Dobreanu
Radium-226 Low Level	AS	6370167	N/A	2019/10/09	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6350309	N/A	2019/09/25	Alina Dobreanu
Total Dissolved Solids	BAL	6352722	2019/09/25	2019/09/26	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6351997	2019/09/25	2019/09/27	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6352161	N/A	2019/09/26	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6353846	2019/09/26	2019/09/26	Shivani Shivani
Low Level Total Suspended Solids	BAL	6349829	2019/09/24	2019/09/25	Nilam Borole
Turbidity	AT	6349797	N/A	2019/09/24	Kazzandra Adeva

BV Labs ID: KVZ380 Dup
Sample ID: MEL-13
Matrix: Surface Water

Collected: 2019/09/18
Shipped:
Received: 2019/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6351958	N/A	2019/09/25	Gnana Thomas
Total Cyanide	SKAL/CN	6351953	2019/09/25	2019/09/25	Gnana Thomas
Dissolved Mercury (low level)	CV/AA	6356269	2019/09/27	2019/09/27	Medhat Nasr



BUREAU
VERITAS

BV Labs Job #: B9Q6869

Report Date: 2019/10/10

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	19.0°C
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Sample KVZ380 [MEL-13] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Results relate only to the items tested.



BV Labs Job #: B9Q6869
Report Date: 2019/10/10

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6354022	1,4-Difluorobenzene	2019/09/26	100	70 - 130	100	70 - 130	103	%				
6354022	4-Bromofluorobenzene	2019/09/26	102	70 - 130	102	70 - 130	102	%				
6354022	D10-Ethylbenzene	2019/09/26	104	70 - 130	106	70 - 130	119	%				
6354022	D4-1,2-Dichloroethane	2019/09/26	110	70 - 130	106	70 - 130	107	%				
6355643	o-Terphenyl	2019/09/27	100	60 - 130	101	60 - 130	100	%				
6349438	Dissolved Organic Carbon	2019/09/25	91	80 - 120	97	80 - 120	<0.50	mg/L	0.23	20		
6349797	Turbidity	2019/09/24			97	85 - 115	<0.1	NTU	2.9	20		
6349829	Total Suspended Solids	2019/09/25					<1	mg/L	9.5	25	101	85 - 115
6349936	Nitrate (N)	2019/09/25	98	80 - 120	101	80 - 120	<0.10	mg/L	NC	20		
6349936	Nitrite (N)	2019/09/25	101	80 - 120	102	80 - 120	<0.010	mg/L	NC	20		
6350018	Alkalinity (Total as CaCO3)	2019/09/26			96	85 - 115	<1.0	mg/L	0.49	20		
6350019	Conductivity	2019/09/26			101	85 - 115	<1.0	umho/cm	0	25		
6350029	pH	2019/09/26			102	98 - 103			0.26	N/A		
6350301	Dissolved Chloride (Cl-)	2019/09/25	NC	80 - 120	102	80 - 120	<1.0	mg/L	0.99	20		
6350309	Dissolved Sulphate (SO4)	2019/09/25	NC	75 - 125	105	80 - 120	<1.0	mg/L	0.00074	20		
6350313	Orthophosphate (P)	2019/09/25	112	75 - 125	100	80 - 120	<0.010	mg/L	NC	25		
6351953	Total Cyanide (CN)	2019/09/25	97	80 - 120	96	80 - 120	<0.0050	mg/L	NC	20		
6351958	WAD Cyanide (Free)	2019/09/25	92	80 - 120	93	80 - 120	<0.0010	mg/L	NC	20		
6351997	Total Kjeldahl Nitrogen (TKN)	2019/09/27	105	80 - 120	100	80 - 120	<0.10	mg/L	NC	20	97	80 - 120
6352057	Total Ammonia-N	2019/09/27	100	75 - 125	98	80 - 120	<0.050	mg/L	NC	20		
6352161	Total Organic Carbon (TOC)	2019/09/26	86	80 - 120	97	80 - 120	<0.50	mg/L	0.70	20		
6352722	Total Dissolved Solids	2019/09/26					<10	mg/L	0.71	25	98	90 - 110
6353846	Total Phosphorus	2019/09/26	99	80 - 120	99	80 - 120	<0.020	mg/L	1.1	20	101	80 - 120
6354022	Benzene	2019/09/26	102	70 - 130	99	70 - 130	<0.20	ug/L	NC	30		
6354022	Ethylbenzene	2019/09/26	105	70 - 130	106	70 - 130	<0.20	ug/L	NC	30		
6354022	F1 (C6-C10) - BTEX	2019/09/26					<25	ug/L	NC	30		
6354022	F1 (C6-C10)	2019/09/26	96	70 - 130	97	70 - 130	<25	ug/L	NC	30		
6354022	o-Xylene	2019/09/26	107	70 - 130	105	70 - 130	<0.20	ug/L	NC	30		
6354022	p+m-Xylene	2019/09/26	109	70 - 130	109	70 - 130	<0.40	ug/L	NC	30		
6354022	Toluene	2019/09/26	98	70 - 130	95	70 - 130	<0.20	ug/L	NC	30		
6354022	Total Xylenes	2019/09/26					<0.40	ug/L	NC	30		



BV Labs Job #: B9Q6869
Report Date: 2019/10/10

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6355643	F2 (C10-C16 Hydrocarbons)	2019/09/27	105	50 - 130	103	60 - 130	<100	ug/L	NC	30		
6355643	F3 (C16-C34 Hydrocarbons)	2019/09/27	NC	50 - 130	106	60 - 130	<200	ug/L	NC	30		
6355643	F4 (C34-C50 Hydrocarbons)	2019/09/27	113	50 - 130	114	60 - 130	<200	ug/L	NC	30		
6356265	Mercury (Hg)	2019/09/27	95	75 - 125	97	80 - 120	<0.00001	mg/L	NC	20		
6356269	Dissolved Mercury (Hg)	2019/09/27	99	75 - 125	96	80 - 120	<0.00001	mg/L	NC	20		
6363014	Reactive Silica (SiO2)	2019/09/30	NC	80 - 120	96	80 - 120	<0.050	mg/L	2.7	20		
6363017	Total Aluminum (Al)	2019/10/01	104	80 - 120	101	80 - 120	<3.0	ug/L				
6363017	Total Antimony (Sb)	2019/10/01	NC	80 - 120	100	80 - 120	<0.50	ug/L				
6363017	Total Arsenic (As)	2019/10/01	107	80 - 120	104	80 - 120	<0.10	ug/L				
6363017	Total Barium (Ba)	2019/10/01	112	80 - 120	104	80 - 120	<1.0	ug/L				
6363017	Total Beryllium (Be)	2019/10/01	99	80 - 120	100	80 - 120	<0.10	ug/L				
6363017	Total Bismuth (Bi)	2019/10/01	78 (1)	80 - 120	101	80 - 120	<1.0	ug/L				
6363017	Total Boron (B)	2019/10/01	107	80 - 120	104	80 - 120	<50	ug/L				
6363017	Total Cadmium (Cd)	2019/10/01	103	80 - 120	103	80 - 120	<0.010	ug/L				
6363017	Total Chromium (Cr)	2019/10/01	96	80 - 120	98	80 - 120	<1.0	ug/L				
6363017	Total Cobalt (Co)	2019/10/01	94	80 - 120	103	80 - 120	<0.20	ug/L				
6363017	Total Copper (Cu)	2019/10/01	74 (1)	80 - 120	98	80 - 120	<0.50	ug/L				
6363017	Total Iron (Fe)	2019/10/01	105	80 - 120	103	80 - 120	<10	ug/L				
6363017	Total Lead (Pb)	2019/10/01	107	80 - 120	105	80 - 120	<0.20	ug/L				
6363017	Total Lithium (Li)	2019/10/01	108	80 - 120	103	80 - 120	<2.0	ug/L				
6363017	Total Manganese (Mn)	2019/10/01	NC	80 - 120	96	80 - 120	<1.0	ug/L				
6363017	Total Molybdenum (Mo)	2019/10/01	NC	80 - 120	103	80 - 120	<1.0	ug/L				
6363017	Total Nickel (Ni)	2019/10/01	99	80 - 120	102	80 - 120	<1.0	ug/L				
6363017	Total Selenium (Se)	2019/10/01	101	80 - 120	101	80 - 120	<0.10	ug/L				
6363017	Total Silicon (Si)	2019/10/01	108	80 - 120	103	80 - 120	<100	ug/L				
6363017	Total Silver (Ag)	2019/10/01	94	80 - 120	102	80 - 120	<0.020	ug/L				
6363017	Total Strontium (Sr)	2019/10/01	NC	80 - 120	98	80 - 120	<1.0	ug/L				
6363017	Total Thallium (Tl)	2019/10/01	107	80 - 120	105	80 - 120	<0.010	ug/L				
6363017	Total Tin (Sn)	2019/10/01	96	80 - 120	92	80 - 120	<5.0	ug/L				
6363017	Total Titanium (Ti)	2019/10/01	105	80 - 120	104	80 - 120	<5.0	ug/L				
6363017	Total Uranium (U)	2019/10/01	109	80 - 120	103	80 - 120	<0.10	ug/L				
6363017	Total Vanadium (V)	2019/10/01	98	80 - 120	97	80 - 120	<5.0	ug/L				



BV Labs Job #: B9Q6869
Report Date: 2019/10/10

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6363017	Total Zinc (Zn)	2019/10/01	97	80 - 120	104	80 - 120	<5.0	ug/L				
6363017	Total Zirconium (Zr)	2019/10/01	108	80 - 120	99	80 - 120	<0.10	ug/L				
6363023	Dissolved Aluminum (Al)	2019/09/27	95	80 - 120	99	80 - 120	<3.0	ug/L				
6363023	Dissolved Antimony (Sb)	2019/09/27	97	80 - 120	99	80 - 120	<0.50	ug/L				
6363023	Dissolved Arsenic (As)	2019/09/27	104	80 - 120	99	80 - 120	<0.10	ug/L				
6363023	Dissolved Barium (Ba)	2019/09/27	96	80 - 120	101	80 - 120	<1.0	ug/L				
6363023	Dissolved Beryllium (Be)	2019/09/27	96	80 - 120	98	80 - 120	<0.10	ug/L				
6363023	Dissolved Bismuth (Bi)	2019/09/27	92	80 - 120	100	80 - 120	<1.0	ug/L				
6363023	Dissolved Boron (B)	2019/09/27	90	80 - 120	95	80 - 120	<50	ug/L				
6363023	Dissolved Cadmium (Cd)	2019/09/27	95	80 - 120	100	80 - 120	<0.010	ug/L				
6363023	Dissolved Chromium (Cr)	2019/09/27	93	80 - 120	97	80 - 120	<1.0	ug/L				
6363023	Dissolved Cobalt (Co)	2019/09/27	91	80 - 120	98	80 - 120	<0.20	ug/L				
6363023	Dissolved Copper (Cu)	2019/09/27	89	80 - 120	98	80 - 120	<0.20	ug/L				
6363023	Dissolved Iron (Fe)	2019/09/27	92	80 - 120	100	80 - 120	<5.0	ug/L				
6363023	Dissolved Lead (Pb)	2019/09/27	96	80 - 120	103	80 - 120	<0.20	ug/L				
6363023	Dissolved Lithium (Li)	2019/09/27	95	80 - 120	99	80 - 120	<2.0	ug/L				
6363023	Dissolved Manganese (Mn)	2019/09/27	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6363023	Dissolved Molybdenum (Mo)	2019/09/27	101	80 - 120	101	80 - 120	<1.0	ug/L				
6363023	Dissolved Nickel (Ni)	2019/09/27	89	80 - 120	98	80 - 120	<1.0	ug/L				
6363023	Dissolved Selenium (Se)	2019/09/27	101	80 - 120	98	80 - 120	<0.10	ug/L				
6363023	Dissolved Silicon (Si)	2019/09/27	NC	80 - 120	102	80 - 120	<100	ug/L				
6363023	Dissolved Silver (Ag)	2019/09/27	93	80 - 120	99	80 - 120	<0.020	ug/L				
6363023	Dissolved Strontium (Sr)	2019/09/27	NC	80 - 120	103	80 - 120	<1.0	ug/L				
6363023	Dissolved Thallium (Tl)	2019/09/27	95	80 - 120	100	80 - 120	<0.010	ug/L				
6363023	Dissolved Tin (Sn)	2019/09/27	90	80 - 120	92	80 - 120	<5.0	ug/L				
6363023	Dissolved Titanium (Ti)	2019/09/27	97	80 - 120	100	80 - 120	<5.0	ug/L				
6363023	Dissolved Uranium (U)	2019/09/27	101	80 - 120	104	80 - 120	<0.10	ug/L				
6363023	Dissolved Vanadium (V)	2019/09/27	96	80 - 120	98	80 - 120	<5.0	ug/L				
6363023	Dissolved Zinc (Zn)	2019/09/27	92	80 - 120	100	80 - 120	<5.0	ug/L				
6363023	Dissolved Zirconium (Zr)	2019/09/27	105	80 - 120	102	80 - 120	<0.10	ug/L				
6368183	Free Cyanide (CN)	2019/10/01	85	80 - 120	93	80 - 120	<1.0	ug/L	0	20		



BV Labs Job #: B9Q6869
Report Date: 2019/10/10

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6370167	Radium-226	2019/10/08			86	85 - 115	<0.0050	Bq/L	NC	N/A		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference \leq 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9Q6869

Report Date: 2019/10/10

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

Rob Reinert, B.Sc., Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9Q6869

Report Date: 2019/10/10

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63°01'44.6" 92°09'14.6"
 Site Location: MELIADINE
 Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/09/13
 Report #: R5878996
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N2989

Received: 2019/08/21, 11:30

Sample Matrix: Surface Water
 # Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	3	N/A	2019/08/23	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	3	N/A	2019/08/26	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	3	N/A	2019/08/23	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	3	N/A	2019/08/23	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	3	N/A	2019/08/26	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	3	2019/08/26	2019/08/26	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	3	N/A	2019/08/23	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	3	2019/08/22	2019/08/22	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	3	N/A	2019/08/25	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/08/27	2019/08/27	CAM SOP-00316	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	2	2019/08/27	2019/08/28	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	3	2019/08/23	2019/08/23	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	3	2019/08/23	2019/08/23	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	3	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	3	N/A	2019/08/25	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	3	N/A	2019/08/24	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	3	N/A	2019/08/24	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	3	N/A	2019/08/24	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	3	2019/08/22	2019/08/25	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	3	2019/08/24	2019/08/24	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	3	N/A	2019/08/26	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/26	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N (1)	1	N/A	2019/08/27	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N (1)	1	N/A	2019/08/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	3	N/A	2019/08/25	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	3	2019/08/22	2019/08/23	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	3	N/A	2019/08/23	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	3	N/A	2019/09/11	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	3	N/A	2019/08/23	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	3	2019/08/24	2019/08/26	CAM SOP-00428	SM 23 2540C m



Your P.O. #: OL-762849
Site#: 63°01'44.6" 92°09'14.6"
Site Location: MELIADINE
Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/13
Report #: R5878996
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N2989

Received: 2019/08/21, 11:30

Sample Matrix: Surface Water
Samples Received: 3

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Total Kjeldahl Nitrogen in Water (1)	2	2019/08/24	2019/08/27	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water (1)	1	2019/08/27	2019/08/28	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	3	N/A	2019/08/27	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	3	2019/08/26	2019/08/26	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	3	2019/08/23	2019/08/26	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	3	N/A	2019/08/22	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods"



Your P.O. #: OL-762849
Site#: 63°01'44.6" 92°09'14.6"
Site Location: MELIADINE
Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/13
Report #: R5878996
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N2989

Received: 2019/08/21, 11:30

September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(9) Radium-226 results have not been corrected for blanks.

(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
13 Sep 2019 17:23:56

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager

Email: Alisha.Williamson@bvlabs.com

Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9N2989

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

CCME PHCS, BTEX/F1-F4 (SURFACE WATER)

BV Labs ID		KOT154	KOT155			KOT155			KOT156		
Sampling Date		2019/08/18 04:30	2019/08/18 04:30			2019/08/18 04:30			2019/08/18 04:40		
COC Number		n/a	n/a			n/a			n/a		
	UNITS	MEL-13	MEL-13-DUP	RDL	QC Batch	MEL-13-DUP Lab-Dup	RDL	QC Batch	MEL-13-FB	RDL	QC Batch
BTEX & F1 Hydrocarbons											
Benzene	ug/L	<0.20	<0.20	0.20	6298547				<0.20	0.20	6298547
Toluene	ug/L	<0.20	<0.20	0.20	6298547				0.59	0.20	6298547
Ethylbenzene	ug/L	<0.20	<0.20	0.20	6298547				<0.20	0.20	6298547
o-Xylene	ug/L	<0.20	<0.20	0.20	6298547				<0.20	0.20	6298547
p+m-Xylene	ug/L	<0.40	<0.40	0.40	6298547				<0.40	0.40	6298547
Total Xylenes	ug/L	<0.40	<0.40	0.40	6298547				<0.40	0.40	6298547
F1 (C6-C10)	ug/L	<25	<25	25	6298547				<25	25	6298547
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	6298547				<25	25	6298547
F2-F4 Hydrocarbons											
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	6302157	<100	100	6302157	<100	100	6302157
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	6302157	<200	200	6302157	<200	200	6302157
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	6302157	<200	200	6302157	<200	200	6302157
Reached Baseline at C50	ug/L	Yes	Yes		6302157	Yes		6302157	Yes		6302157
Surrogate Recovery (%)											
1,4-Difluorobenzene	%	100	101		6298547				100		6298547
4-Bromofluorobenzene	%	94	93		6298547				95		6298547
D10-Ethylbenzene	%	83	83		6298547				84		6298547
D4-1,2-Dichloroethane	%	83	84		6298547				82		6298547
o-Terphenyl	%	92	94		6302157	95		6302157	97		6302157
RDL = Reportable Detection Limit											
QC Batch = Quality Control Batch											
Lab-Dup = Laboratory Initiated Duplicate											



BUREAU
VERITAS

BV Labs Job #: B9N2989

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (SURFACE WATER)

BV Labs ID		KOT154	KOT155	KOT156		
Sampling Date		2019/08/18 04:30	2019/08/18 04:30	2019/08/18 04:40		
COC Number		n/a	n/a	n/a		
	UNITS	MEL-13	MEL-13-DUP	MEL-13-FB	RDL	QC Batch
Calculated Parameters						
Dissolved Hardness (CaCO ₃)	mg/L	23.0	23.0	<0.50	0.50	6295409
Metals						
Dissolved Aluminum (Al)	ug/L	<3.0	<3.0	<3.0	3.0	6299780
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	0.50	6299780
Dissolved Arsenic (As)	ug/L	0.37	0.36	<0.10	0.10	6299780
Dissolved Barium (Ba)	ug/L	7.2	7.2	<1.0	1.0	6299780
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	0.10	6299780
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	1.0	6299780
Dissolved Boron (B)	ug/L	<50	<50	<50	50	6299780
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	0.010	6299780
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	6299780
Dissolved Cobalt (Co)	ug/L	<0.20	<0.20	<0.20	0.20	6299780
Dissolved Copper (Cu)	ug/L	0.66	0.66	<0.20	0.20	6299780
Dissolved Iron (Fe)	ug/L	8.5	7.5	<5.0	5.0	6299780
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	0.20	6299780
Dissolved Lithium (Li)	ug/L	<2.0	<2.0	<2.0	2.0	6299780
Dissolved Manganese (Mn)	ug/L	1.3	1.3	<1.0	1.0	6299780
Dissolved Molybdenum (Mo)	ug/L	2.0	<1.0	<1.0	1.0	6299780
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	1.0	6299780
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	<0.10	0.10	6299780
Dissolved Silicon (Si)	ug/L	183	189	<100	100	6299780
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	0.020	6299780
Dissolved Strontium (Sr)	ug/L	39.7	39.9	<1.0	1.0	6299780
Dissolved Thallium (Tl)	ug/L	<0.010	<0.010	<0.010	0.010	6299780
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	5.0	6299780
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	5.0	6299780
Dissolved Uranium (U)	ug/L	<0.10	<0.10	<0.10	0.10	6299780
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	5.0	6299780
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	6299780
Dissolved Zirconium (Zr)	ug/L	<0.10	<0.10	<0.10	0.10	6299780
Dissolved Calcium (Ca)	mg/L	7.12	7.10	<0.050	0.050	6295410
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BUREAU
VERITAS

BV Labs Job #: B9N2989

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (SURFACE WATER)

BV Labs ID		KOT154	KOT155	KOT156		
Sampling Date		2019/08/18 04:30	2019/08/18 04:30	2019/08/18 04:40		
COC Number		n/a	n/a	n/a		
	UNITS	MEL-13	MEL-13-DUP	MEL-13-FB	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	1.27	1.27	<0.050	0.050	6295410
Dissolved Potassium (K)	mg/L	0.930	0.932	<0.050	0.050	6295410
Dissolved Sodium (Na)	mg/L	5.03	5.06	<0.050	0.050	6295410
Dissolved Sulphur (S)	mg/L	<3.0	<3.0	<3.0	3.0	6295410
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BUREAU
VERITAS

BV Labs Job #: B9N2989

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (SURFACE WATER)

BV Labs ID		KOT154	KOT155	KOT156		
Sampling Date		2019/08/18 04:30	2019/08/18 04:30	2019/08/18 04:40		
COC Number		n/a	n/a	n/a		
	UNITS	MEL-13	MEL-13-DUP	MEL-13-FB	RDL	QC Batch
Metals						
Total Aluminum (Al)	ug/L	5.5	5.7	<3.0	3.0	6299779
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	0.50	6299779
Total Arsenic (As)	ug/L	0.39	0.38	<0.10	0.10	6299779
Total Barium (Ba)	ug/L	7.4	7.4	<1.0	1.0	6299779
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	0.10	6299779
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	1.0	6299779
Total Boron (B)	ug/L	<50	<50	<50	50	6299779
Total Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	0.010	6299779
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	6299779
Total Cobalt (Co)	ug/L	<0.20	<0.20	<0.20	0.20	6299779
Total Copper (Cu)	ug/L	0.72	0.70	<0.50	0.50	6299779
Total Iron (Fe)	ug/L	23	22	<10	10	6299779
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	0.20	6299779
Total Lithium (Li)	ug/L	<2.0	<2.0	<2.0	2.0	6299779
Total Manganese (Mn)	ug/L	5.0	4.9	<1.0	1.0	6299779
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	1.0	6299779
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	1.0	6299779
Total Selenium (Se)	ug/L	<0.10	<0.10	<0.10	0.10	6299779
Total Silicon (Si)	ug/L	200	201	<100	100	6299779
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	0.020	6299779
Total Strontium (Sr)	ug/L	39.4	39.4	<1.0	1.0	6299779
Total Thallium (Tl)	ug/L	<0.010	<0.010	<0.010	0.010	6299779
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	5.0	6299779
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	5.0	6299779
Total Uranium (U)	ug/L	<0.10	<0.10	<0.10	0.10	6299779
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	5.0	6299779
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	6299779
Total Zirconium (Zr)	ug/L	<0.10	<0.10	<0.10	0.10	6299779
Total Calcium (Ca)	ug/L	7150	7190	<50	50	6299778
Total Magnesium (Mg)	ug/L	1280	1270	<50	50	6299778
Total Potassium (K)	ug/L	984	970	<50	50	6299778
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BV Labs Job #: B9N2989
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (SURFACE WATER)

BV Labs ID		KOT154	KOT155	KOT156		
Sampling Date		2019/08/18 04:30	2019/08/18 04:30	2019/08/18 04:40		
COC Number		n/a	n/a	n/a		
	UNITS	MEL-13	MEL-13-DUP	MEL-13-FB	RDL	QC Batch
Total Sodium (Na)	ug/L	5170	5090	<50	50	6299778
Total Sulphur (S)	ug/L	<3000	<3000	<3000	3000	6299778
Calculated Parameters						
Total Hardness (CaCO ₃)	ug/L	23100	23200	<500	500	6297656
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BV Labs Job #: B9N2989
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

RESULTS OF ANALYSES OF SURFACE WATER

BV Labs ID		KOT154			KOT154			KOT155		
Sampling Date		2019/08/18 04:30			2019/08/18 04:30			2019/08/18 04:30		
COC Number		n/a			n/a			n/a		
	UNITS	MEL-13	RDL	QC Batch	MEL-13 Lab-Dup	RDL	QC Batch	MEL-13-DUP	RDL	QC Batch

Calculated Parameters										
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	16	1.0	6293714				15	1.0	6293714
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6293714				<1.0	1.0	6293714
Inorganics										
Total Ammonia-N	mg/L	0.22	0.050	6296775				0.12 (1)	0.050	6296772
Conductivity	umho/cm	86	1.0	6295189				83	1.0	6295189
Free Cyanide (CN)	ug/L	2.1 (2)	1.0	6302380				1.1 (2)	1.0	6302380
Total Dissolved Solids	mg/L	70	10	6297229				80	10	6297229
Total Kjeldahl Nitrogen (TKN)	mg/L	0.18	0.10	6298440				0.11 (1)	0.10	6298440
Dissolved Organic Carbon	mg/L	2.6	0.50	6295374				2.7	0.50	6295374
Total Organic Carbon (TOC)	mg/L	3.2	0.50	6298570				3.1	0.50	6298570
Orthophosphate (P)	mg/L	<0.010	0.010	6295296				<0.010	0.010	6295296
Dissolved Oxygen	mg/L	10.3		6294925				10.4		6294925
pH	pH	7.59		6295191				7.50		6295191
Total Phosphorus	mg/L	<0.020	0.020	6299390				<0.020	0.020	6299390
Reactive Silica (SiO ₂)	mg/L	0.31	0.050	6304154				0.30	0.050	6304154
Total Suspended Solids	mg/L	1	1	6296976				2	1	6296976
Dissolved Sulphate (SO ₄)	mg/L	3.3	1.0	6295294				3.6	1.0	6295294
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6299343	<0.0050	0.0050	6299343	<0.0050	0.0050	6299343
Turbidity	NTU	0.2	0.1	6294802				0.1	0.1	6294802
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6299356	<0.0010	0.0010	6299356	0.0015	0.0010	6299356
Alkalinity (Total as CaCO ₃)	mg/L	16	1.0	6295172				15	1.0	6295172
Dissolved Chloride (Cl ⁻)	mg/L	12	1.0	6295288				11	1.0	6295288
Nitrite (N)	mg/L	<0.010	0.010	6295153				<0.010	0.010	6295153
Nitrate (N)	mg/L	<0.10	0.10	6295153				<0.10	0.10	6295153
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	6295153				<0.10	0.10	6295153
RADIONUCLIDE										
Radium-226	Bq/L	<0.0050	0.0050	6318582				<0.0050	0.0050	6318582
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) TKN < NH ₄ : Both values fall within acceptable RPD limits for duplicates and are likely equivalent. (2) See general comments for notes regarding CNFREE-W.										

BUREAU
VERITAS

BV Labs Job #: B9N2989

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

RESULTS OF ANALYSES OF SURFACE WATER

BV Labs ID		KOT155			KOT156			KOT156		
Sampling Date		2019/08/18 04:30			2019/08/18 04:40			2019/08/18 04:40		
COC Number		n/a			n/a			n/a		
	UNITS	MEL-13-DUP Lab-Dup	RDL	QC Batch	MEL-13-FB	RDL	QC Batch	MEL-13-FB Lab-Dup	RDL	QC Batch

Calculated Parameters

Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L				<1.0	1.0	6293714			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L				<1.0	1.0	6293714			

Inorganics

Total Ammonia-N	mg/L				<0.050	0.050	6302989	<0.050	0.050	6302989
Conductivity	umho/cm				1.0	1.0	6295189			
Free Cyanide (CN)	ug/L				2.1 (1)	1.0	6305161			
Total Dissolved Solids	mg/L				<10	10	6297229			
Total Kjeldahl Nitrogen (TKN)	mg/L				<0.10	0.10	6300766			
Dissolved Organic Carbon	mg/L	2.6	0.50	6295374	<0.50	0.50	6295374			
Total Organic Carbon (TOC)	mg/L				<0.50	0.50	6298570			
Orthophosphate (P)	mg/L				<0.010	0.010	6295296			
Dissolved Oxygen	mg/L				10.6		6294925			
pH	pH				5.93		6295191			
Total Phosphorus	mg/L				<0.020	0.020	6299390			
Reactive Silica (SiO ₂)	mg/L				<0.050	0.050	6304154			
Total Suspended Solids	mg/L				<1	1	6296976			
Dissolved Sulphate (SO ₄)	mg/L				<1.0	1.0	6295294			
Total Cyanide (CN)	mg/L				<0.0050	0.0050	6299343			
Turbidity	NTU				<0.1	0.1	6294802			
WAD Cyanide (Free)	mg/L				<0.0010	0.0010	6299356			
Alkalinity (Total as CaCO ₃)	mg/L				<1.0	1.0	6295172			
Dissolved Chloride (Cl ⁻)	mg/L				<1.0	1.0	6295288			
Nitrite (N)	mg/L				<0.010	0.010	6295153	<0.010	0.010	6295153
Nitrate (N)	mg/L				<0.10	0.10	6295153	<0.10	0.10	6295153
Nitrate + Nitrite (N)	mg/L				<0.10	0.10	6295153	<0.10	0.10	6295153

RADIONUCLIDE

Radium-226	Bq/L				<0.0050	0.0050	6318582			
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) See general comments for notes regarding CNFREE-W.



BUREAU
VERITAS

BV Labs Job #: B9N2989
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

ELEMENTS BY ATOMIC SPECTROSCOPY (SURFACE WATER)

BV Labs ID		KOT154			KOT154			KOT155		
Sampling Date		2019/08/18 04:30			2019/08/18 04:30			2019/08/18 04:30		
COC Number		n/a			n/a			n/a		
	UNITS	MEL-13	RDL	QC Batch	MEL-13 Lab-Dup	RDL	QC Batch	MEL-13-DUP	RDL	QC Batch

Metals										
Mercury (Hg)	mg/L	<0.00001	0.00001	6296535				<0.00001	0.00001	6296535
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6296541	<0.00001	0.00001	6296541	<0.00001	0.00001	6296541
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										
Lab-Dup = Laboratory Initiated Duplicate										

BV Labs ID		KOT156		
Sampling Date		2019/08/18 04:40		
COC Number		n/a		
	UNITS	MEL-13-FB	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6296535
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6296541
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9N2989
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KOT154
Sample ID: MEL-13
Matrix: Surface Water

Collected: 2019/08/18
Shipped:
Received: 2019/08/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6295172	N/A	2019/08/23	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6293714	N/A	2019/08/26	Automated Statchk
Chloride by Automated Colourimetry	KONE	6295288	N/A	2019/08/23	Deonarine Ramnarine
Conductivity	AT	6295189	N/A	2019/08/23	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6299356	N/A	2019/08/26	Gnana Thomas
Total Cyanide	SKAL/CN	6299343	2019/08/26	2019/08/26	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6295374	N/A	2019/08/23	Mandeep Kaur
Dissolved Oxygen	DO	6294925	2019/08/22	2019/08/22	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6298547	N/A	2019/08/25	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6302157	2019/08/27	2019/08/27	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6296541	2019/08/23	2019/08/23	Medhat Nasr
Mercury (low level)	CV/AA	6296535	2019/08/23	2019/08/23	Medhat Nasr
Cyanide (Free)	SPEC	6302380	2019/08/26	2019/08/26	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6297656	N/A	2019/08/25	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6295409	N/A	2019/08/24	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6295410	N/A	2019/08/24	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6299780	N/A	2019/08/24	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6299778	2019/08/25	2019/08/25	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6299779	2019/08/24	2019/08/24	Valentina Balada
Silica (Reactive)	KONE	6304154	N/A	2019/08/26	Serena Tian
Total Ammonia-N	LACH/NH ₄	6296775	N/A	2019/08/27	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6295153	N/A	2019/08/25	Amanpreet Sappal
pH	AT	6295191	2019/08/22	2019/08/23	Surinder Rai
Orthophosphate	KONE	6295296	N/A	2019/08/23	Alina Dobreanu
Radium-226 Low Level	AS	6318582	N/A	2019/09/11	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6295294	N/A	2019/08/23	Alina Dobreanu
Total Dissolved Solids	BAL	6297229	2019/08/24	2019/08/26	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6298440	2019/08/24	2019/08/27	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6298570	N/A	2019/08/27	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6299390	2019/08/26	2019/08/26	Shivani Shivani
Low Level Total Suspended Solids	BAL	6296976	2019/08/23	2019/08/26	Xinyue (Sarah) Hou
Turbidity	AT	6294802	N/A	2019/08/22	Kazzandra Adeva

BV Labs ID: KOT154 Dup
Sample ID: MEL-13
Matrix: Surface Water

Collected: 2019/08/18
Shipped:
Received: 2019/08/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6299356	N/A	2019/08/26	Gnana Thomas
Total Cyanide	SKAL/CN	6299343	2019/08/26	2019/08/26	Gnana Thomas
Dissolved Mercury (low level)	CV/AA	6296541	2019/08/23	2019/08/23	Medhat Nasr



BV Labs Job #: B9N2989
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KOT155
Sample ID: MEL-13-DUP
Matrix: Surface Water

Collected: 2019/08/18
Shipped:
Received: 2019/08/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6295172	N/A	2019/08/23	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6293714	N/A	2019/08/26	Automated Statchk
Chloride by Automated Colourimetry	KONE	6295288	N/A	2019/08/23	Deonarine Ramnarine
Conductivity	AT	6295189	N/A	2019/08/23	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6299356	N/A	2019/08/26	Gnana Thomas
Total Cyanide	SKAL/CN	6299343	2019/08/26	2019/08/26	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6295374	N/A	2019/08/23	Mandeep Kaur
Dissolved Oxygen	DO	6294925	2019/08/22	2019/08/22	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6298547	N/A	2019/08/25	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6302157	2019/08/27	2019/08/28	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6296541	2019/08/23	2019/08/23	Medhat Nasr
Mercury (low level)	CV/AA	6296535	2019/08/23	2019/08/23	Medhat Nasr
Cyanide (Free)	SPEC	6302380	2019/08/26	2019/08/26	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6297656	N/A	2019/08/25	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6295409	N/A	2019/08/24	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6295410	N/A	2019/08/24	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6299780	N/A	2019/08/24	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6299778	2019/08/25	2019/08/25	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6299779	2019/08/24	2019/08/24	Valentina Balada
Silica (Reactive)	KONE	6304154	N/A	2019/08/26	Serena Tian
Total Ammonia-N	LACH/NH ₄	6296772	N/A	2019/08/26	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6295153	N/A	2019/08/25	Amanpreet Sappal
pH	AT	6295191	2019/08/22	2019/08/23	Surinder Rai
Orthophosphate	KONE	6295296	N/A	2019/08/23	Alina Dobreanu
Radium-226 Low Level	AS	6318582	N/A	2019/09/11	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6295294	N/A	2019/08/23	Alina Dobreanu
Total Dissolved Solids	BAL	6297229	2019/08/24	2019/08/26	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6298440	2019/08/24	2019/08/27	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6298570	N/A	2019/08/27	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6299390	2019/08/26	2019/08/26	Shivani Shivani
Low Level Total Suspended Solids	BAL	6296976	2019/08/23	2019/08/26	Xinyue (Sarah) Hou
Turbidity	AT	6294802	N/A	2019/08/22	Kazzandra Adeva

BV Labs ID: KOT155 Dup
Sample ID: MEL-13-DUP
Matrix: Surface Water

Collected: 2019/08/18
Shipped:
Received: 2019/08/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6295374	N/A	2019/08/23	Mandeep Kaur
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6302157	2019/08/27	2019/08/28	Prabhjot Gulati



BV Labs Job #: B9N2989
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KOT156
Sample ID: MEL-13-FB
Matrix: Surface Water

Collected: 2019/08/18
Shipped:
Received: 2019/08/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6295172	N/A	2019/08/23	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6293714	N/A	2019/08/26	Automated Statchk
Chloride by Automated Colourimetry	KONE	6295288	N/A	2019/08/23	Deonarine Ramnarine
Conductivity	AT	6295189	N/A	2019/08/23	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6299356	N/A	2019/08/26	Gnana Thomas
Total Cyanide	SKAL/CN	6299343	2019/08/26	2019/08/26	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6295374	N/A	2019/08/23	Mandeep Kaur
Dissolved Oxygen	DO	6294925	2019/08/22	2019/08/22	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6298547	N/A	2019/08/25	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6302157	2019/08/27	2019/08/28	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6296541	2019/08/23	2019/08/23	Medhat Nasr
Mercury (low level)	CV/AA	6296535	2019/08/23	2019/08/23	Medhat Nasr
Cyanide (Free)	SPEC	6305161	2019/08/28	2019/08/28	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6297656	N/A	2019/08/25	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6295409	N/A	2019/08/24	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6295410	N/A	2019/08/24	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6299780	N/A	2019/08/24	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6299778	2019/08/25	2019/08/25	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6299779	2019/08/24	2019/08/24	Valentina Balada
Silica (Reactive)	KONE	6304154	N/A	2019/08/26	Serena Tian
Total Ammonia-N	LACH/NH ₄	6302989	N/A	2019/08/28	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6295153	N/A	2019/08/25	Amanpreet Sappal
pH	AT	6295191	2019/08/22	2019/08/23	Surinder Rai
Orthophosphate	KONE	6295296	N/A	2019/08/23	Alina Dobreanu
Radium-226 Low Level	AS	6318582	N/A	2019/09/11	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6295294	N/A	2019/08/23	Alina Dobreanu
Total Dissolved Solids	BAL	6297229	2019/08/24	2019/08/26	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6300766	2019/08/27	2019/08/28	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6298570	N/A	2019/08/27	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6299390	2019/08/26	2019/08/26	Shivani Shivani
Low Level Total Suspended Solids	BAL	6296976	2019/08/23	2019/08/26	Xinyue (Sarah) Hou
Turbidity	AT	6294802	N/A	2019/08/22	Kazzandra Adeva

BV Labs ID: KOT156 Dup
Sample ID: MEL-13-FB
Matrix: Surface Water

Collected: 2019/08/18
Shipped:
Received: 2019/08/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Ammonia-N	LACH/NH ₄	6302989	N/A	2019/08/28	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6295153	N/A	2019/08/25	Amanpreet Sappal



BUREAU
VERITAS

BV Labs Job #: B9N2989

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.3°C
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Sample KOT154 [MEL-13] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample KOT155 [MEL-13-DUP] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide. Total Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample KOT156 [MEL-13-FB] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (SURFACE WATER)

Matrix Spike Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.



BV Labs Job #: B9N2989
Report Date: 2019/09/13

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6298547	1,4-Difluorobenzene	2019/08/24	101	70 - 130	102	70 - 130	99	%				
6298547	4-Bromofluorobenzene	2019/08/24	96	70 - 130	96	70 - 130	95	%				
6298547	D10-Ethylbenzene	2019/08/24	83	70 - 130	83	70 - 130	82	%				
6298547	D4-1,2-Dichloroethane	2019/08/24	82	70 - 130	83	70 - 130	82	%				
6302157	o-Terphenyl	2019/08/27	98	60 - 130	96	60 - 130	95	%				
6294802	Turbidity	2019/08/22			92	85 - 115	<0.1	NTU	NC	20		
6295153	Nitrate (N)	2019/08/25	101	80 - 120	103	80 - 120	<0.10	mg/L	NC	20		
6295153	Nitrite (N)	2019/08/25	104	80 - 120	105	80 - 120	<0.010	mg/L	NC	20		
6295172	Alkalinity (Total as CaCO3)	2019/08/23			94	85 - 115	<1.0	mg/L	1.9	20		
6295189	Conductivity	2019/08/23			101	85 - 115	<1.0	umho/cm	0.0000010	25		
6295191	pH	2019/08/23			102	98 - 103			0.75	N/A		
6295288	Dissolved Chloride (Cl-)	2019/08/23	NC	80 - 120	105	80 - 120	<1.0	mg/L	8.4	20		
6295294	Dissolved Sulphate (SO4)	2019/08/23	NC	75 - 125	104	80 - 120	<1.0	mg/L	0.46	20		
6295296	Orthophosphate (P)	2019/08/23	111	75 - 125	101	80 - 120	<0.010	mg/L	NC	25		
6295374	Dissolved Organic Carbon	2019/08/23	92	80 - 120	97	80 - 120	<0.50	mg/L	1.2	20		
6296535	Mercury (Hg)	2019/08/23	101	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6296541	Dissolved Mercury (Hg)	2019/08/23	99	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6296772	Total Ammonia-N	2019/08/26	NC	75 - 125	91	80 - 120	<0.050	mg/L	0.85	20		
6296775	Total Ammonia-N	2019/08/27	99	75 - 125	101	80 - 120	<0.050	mg/L				
6296976	Total Suspended Solids	2019/08/26					<1	mg/L	0	25	95	85 - 115
6297229	Total Dissolved Solids	2019/08/26					<10	mg/L	3.9	25	102	90 - 110
6298440	Total Kjeldahl Nitrogen (TKN)	2019/08/27	101	80 - 120	103	80 - 120	<0.10	mg/L			97	80 - 120
6298547	Benzene	2019/08/24	96	70 - 130	97	70 - 130	<0.20	ug/L	1.8	30		
6298547	Ethylbenzene	2019/08/24	87	70 - 130	87	70 - 130	<0.20	ug/L	NC	30		
6298547	F1 (C6-C10) - BTEX	2019/08/24					<25	ug/L	NC	30		
6298547	F1 (C6-C10)	2019/08/24	79	70 - 130	96	70 - 130	<25	ug/L	NC	30		
6298547	o-Xylene	2019/08/24	76	70 - 130	76	70 - 130	<0.20	ug/L	NC	30		
6298547	p+m-Xylene	2019/08/24	82	70 - 130	83	70 - 130	<0.40	ug/L	NC	30		
6298547	Toluene	2019/08/24	97	70 - 130	99	70 - 130	<0.20	ug/L	NC	30		
6298547	Total Xylenes	2019/08/24					<0.40	ug/L	NC	30		
6298570	Total Organic Carbon (TOC)	2019/08/27	92	80 - 120	99	80 - 120	<0.50	mg/L	1.1	20		



BV Labs Job #: B9N2989
Report Date: 2019/09/13

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6299343	Total Cyanide (CN)	2019/08/26	105	80 - 120	104	80 - 120	<0.0050	mg/L	NC	20		
6299356	WAD Cyanide (Free)	2019/08/26	108	80 - 120	109	80 - 120	<0.0010	mg/L	NC	20		
6299390	Total Phosphorus	2019/08/26	105	80 - 120	102	80 - 120	<0.020	mg/L	1.3	20	101	80 - 120
6299779	Total Aluminum (Al)	2019/08/24	102	80 - 120	103	80 - 120	<3.0	ug/L				
6299779	Total Antimony (Sb)	2019/08/24	NC	80 - 120	103	80 - 120	<0.50	ug/L				
6299779	Total Arsenic (As)	2019/08/24	104	80 - 120	101	80 - 120	<0.10	ug/L				
6299779	Total Barium (Ba)	2019/08/24	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6299779	Total Beryllium (Be)	2019/08/24	99	80 - 120	104	80 - 120	<0.10	ug/L				
6299779	Total Bismuth (Bi)	2019/08/24	95	80 - 120	102	80 - 120	<1.0	ug/L				
6299779	Total Boron (B)	2019/08/24	101	80 - 120	102	80 - 120	<50	ug/L				
6299779	Total Cadmium (Cd)	2019/08/24	98	80 - 120	101	80 - 120	<0.010	ug/L				
6299779	Total Chromium (Cr)	2019/08/24	96	80 - 120	99	80 - 120	<1.0	ug/L				
6299779	Total Cobalt (Co)	2019/08/24	93	80 - 120	98	80 - 120	<0.20	ug/L				
6299779	Total Copper (Cu)	2019/08/24	88	80 - 120	96	80 - 120	<0.50	ug/L				
6299779	Total Iron (Fe)	2019/08/24	99	80 - 120	103	80 - 120	<10	ug/L				
6299779	Total Lead (Pb)	2019/08/24	NC	80 - 120	103	80 - 120	<0.20	ug/L				
6299779	Total Lithium (Li)	2019/08/24	99	80 - 120	101	80 - 120	<2.0	ug/L				
6299779	Total Manganese (Mn)	2019/08/24	NC	80 - 120	98	80 - 120	<1.0	ug/L				
6299779	Total Molybdenum (Mo)	2019/08/24	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6299779	Total Nickel (Ni)	2019/08/24	91	80 - 120	98	80 - 120	<1.0	ug/L				
6299779	Total Selenium (Se)	2019/08/24	104	80 - 120	102	80 - 120	<0.10	ug/L				
6299779	Total Silicon (Si)	2019/08/24	103	80 - 120	107	80 - 120	<100	ug/L				
6299779	Total Silver (Ag)	2019/08/24	95	80 - 120	98	80 - 120	<0.020	ug/L				
6299779	Total Strontium (Sr)	2019/08/24	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6299779	Total Thallium (Tl)	2019/08/24	102	80 - 120	103	80 - 120	<0.010	ug/L				
6299779	Total Tin (Sn)	2019/08/24	99	80 - 120	103	80 - 120	<5.0	ug/L				
6299779	Total Titanium (Ti)	2019/08/24	101	80 - 120	101	80 - 120	<5.0	ug/L				
6299779	Total Uranium (U)	2019/08/24	103	80 - 120	103	80 - 120	<0.10	ug/L				
6299779	Total Vanadium (V)	2019/08/24	96	80 - 120	101	80 - 120	<5.0	ug/L				
6299779	Total Zinc (Zn)	2019/08/24	NC	80 - 120	101	80 - 120	<5.0	ug/L				
6299779	Total Zirconium (Zr)	2019/08/24	103	80 - 120	103	80 - 120	<0.10	ug/L				
6299780	Dissolved Aluminum (Al)	2019/08/24	99	80 - 120	102	80 - 120	<3.0	ug/L				



BV Labs Job #: B9N2989
Report Date: 2019/09/13

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6299780	Dissolved Antimony (Sb)	2019/08/24	97	80 - 120	99	80 - 120	<0.50	ug/L				
6299780	Dissolved Arsenic (As)	2019/08/24	100	80 - 120	101	80 - 120	<0.10	ug/L				
6299780	Dissolved Barium (Ba)	2019/08/24	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6299780	Dissolved Beryllium (Be)	2019/08/24	96	80 - 120	100	80 - 120	<0.10	ug/L				
6299780	Dissolved Bismuth (Bi)	2019/08/24	99	80 - 120	103	80 - 120	<1.0	ug/L				
6299780	Dissolved Boron (B)	2019/08/24	93	80 - 120	97	80 - 120	<50	ug/L				
6299780	Dissolved Cadmium (Cd)	2019/08/24	97	80 - 120	100	80 - 120	<0.010	ug/L				
6299780	Dissolved Chromium (Cr)	2019/08/24	97	80 - 120	101	80 - 120	<1.0	ug/L				
6299780	Dissolved Cobalt (Co)	2019/08/24	95	80 - 120	100	80 - 120	<0.20	ug/L				
6299780	Dissolved Copper (Cu)	2019/08/24	94	80 - 120	99	80 - 120	<0.20	ug/L				
6299780	Dissolved Iron (Fe)	2019/08/24	99	80 - 120	104	80 - 120	<5.0	ug/L				
6299780	Dissolved Lead (Pb)	2019/08/24	102	80 - 120	104	80 - 120	<0.20	ug/L				
6299780	Dissolved Lithium (Li)	2019/08/24	97	80 - 120	101	80 - 120	<2.0	ug/L				
6299780	Dissolved Manganese (Mn)	2019/08/24	97	80 - 120	102	80 - 120	<1.0	ug/L				
6299780	Dissolved Molybdenum (Mo)	2019/08/24	102	80 - 120	102	80 - 120	<1.0	ug/L				
6299780	Dissolved Nickel (Ni)	2019/08/24	95	80 - 120	101	80 - 120	<1.0	ug/L				
6299780	Dissolved Selenium (Se)	2019/08/24	101	80 - 120	102	80 - 120	<0.10	ug/L				
6299780	Dissolved Silicon (Si)	2019/08/24	103	80 - 120	106	80 - 120	<100	ug/L				
6299780	Dissolved Silver (Ag)	2019/08/24	97	80 - 120	99	80 - 120	<0.020	ug/L				
6299780	Dissolved Strontium (Sr)	2019/08/24	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6299780	Dissolved Thallium (Tl)	2019/08/24	102	80 - 120	104	80 - 120	<0.010	ug/L				
6299780	Dissolved Tin (Sn)	2019/08/24	98	80 - 120	99	80 - 120	<5.0	ug/L				
6299780	Dissolved Titanium (Ti)	2019/08/24	99	80 - 120	105	80 - 120	<5.0	ug/L				
6299780	Dissolved Uranium (U)	2019/08/24	103	80 - 120	102	80 - 120	<0.10	ug/L				
6299780	Dissolved Vanadium (V)	2019/08/24	99	80 - 120	102	80 - 120	<5.0	ug/L				
6299780	Dissolved Zinc (Zn)	2019/08/24	98	80 - 120	104	80 - 120	<5.0	ug/L				
6299780	Dissolved Zirconium (Zr)	2019/08/24	102	80 - 120	100	80 - 120	<0.10	ug/L				
6300766	Total Kjeldahl Nitrogen (TKN)	2019/08/28	NC	80 - 120	100	80 - 120	<0.10	mg/L	2.3	20	97	80 - 120
6302157	F2 (C10-C16 Hydrocarbons)	2019/08/28	102	50 - 130	99	60 - 130	<100	ug/L	NC	30		
6302157	F3 (C16-C34 Hydrocarbons)	2019/08/28	97	50 - 130	100	60 - 130	<200	ug/L	NC	30		
6302157	F4 (C34-C50 Hydrocarbons)	2019/08/28	103	50 - 130	103	60 - 130	<200	ug/L	NC	30		
6302380	Free Cyanide (CN)	2019/08/26	81	80 - 120	81	80 - 120	<1.0	ug/L	NC	20		



BV Labs Job #: B9N2989
Report Date: 2019/09/13

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6302989	Total Ammonia-N	2019/08/28	107	75 - 125	101	80 - 120	<0.050	mg/L	NC	20		
6304154	Reactive Silica (SiO2)	2019/08/27	94	80 - 120	98	80 - 120	<0.050	mg/L	18	20		
6305161	Free Cyanide (CN)	2019/08/28	80	80 - 120	97	80 - 120	<1.0	ug/L	19	20		
6318582	Radium-226	2019/09/11			91	85 - 115	<0.0050	Bq/L				
N/A = Not Applicable												
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.												
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.												
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.												
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.												
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.												
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.												
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)												
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).												



BUREAU
VERITAS

BV Labs Job #: B9N2989

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Marjolen Busslinger, Scientific Specialist

Robert Allen, Scientific Specialist

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BUREAU
VERITAS

BV Labs Job #: B9N2989

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63° 02' 15.5" 92° 13' 06.3"
 Site Location: MELIADINE
 Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/07/24
 Report #: R5811453
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J1427

Received: 2019/07/11, 09:04

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/07/16	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/07/17	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/07/13	2019/07/18	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/07/15	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	1	N/A	2019/07/16	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/07/15	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/07/15	2019/07/15	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/07/15	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/07/12	2019/07/12	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/07/23	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/07/22	2019/07/23	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/07/15	2019/07/17	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/07/15	2019/07/17	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/07/17	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/07/17	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/07/17	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/07/16	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/07/12	2019/07/17	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/07/15	2019/07/17	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/07/16	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/07/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/07/13	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/07/13	2019/07/16	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/07/15	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/07/19	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/07/15	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/07/15	2019/07/16	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/07/15	2019/07/17	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/07/16	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
Site#: 63° 02' 15.5" 92° 13' 06.3"
Site Location: MELIADINE
Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/07/24
Report #: R5811453
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J1427

Received: 2019/07/11, 09:04

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Total Phosphorus (Colourimetric) (1)	1	2019/07/16	2019/07/16	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/07/13	2019/07/15	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/07/15	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 63° 02' 15.5" 92° 13' 06.3"
Site Location: MELIADINE
Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/07/24
Report #: R5811453
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J1427

Received: 2019/07/11, 09:04

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
24 Jul 2019 17:54:14

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KGB896			KGB896		
Sampling Date		2019/07/09 06:41			2019/07/09 06:41		
COC Number		n/a			n/a		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
BTEX & F1 Hydrocarbons							
Benzene	ug/L	<0.20	0.20	6240085	<0.20	0.20	6240085
Toluene	ug/L	<0.20	0.20	6240085	<0.20	0.20	6240085
Ethylbenzene	ug/L	<0.20	0.20	6240085	<0.20	0.20	6240085
o-Xylene	ug/L	<0.20	0.20	6240085	<0.20	0.20	6240085
p+m-Xylene	ug/L	<0.40	0.40	6240085	<0.40	0.40	6240085
Total Xylenes	ug/L	<0.40	0.40	6240085	<0.40	0.40	6240085
F1 (C6-C10)	ug/L	<25	25	6240085	<25	25	6240085
F1 (C6-C10) - BTEX	ug/L	<25	25	6240085	<25	25	6240085
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6241290			
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6241290			
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6241290			
Reached Baseline at C50	ug/L	Yes		6241290			
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	101		6240085	103		6240085
4-Bromofluorobenzene	%	100		6240085	98		6240085
D10-Ethylbenzene	%	93		6240085	96		6240085
D4-1,2-Dichloroethane	%	94		6240085	95		6240085
o-Terphenyl	%	103		6241290			
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KGB896		
Sampling Date		2019/07/09 06:41		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	380	0.50	6232956
Metals				
Dissolved Aluminum (Al)	ug/L	31.6	3.0	6232833
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6232833
Dissolved Arsenic (As)	ug/L	2.16	0.10	6232833
Dissolved Barium (Ba)	ug/L	55.7	1.0	6232833
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6232833
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6232833
Dissolved Boron (B)	ug/L	274	50	6232833
Dissolved Cadmium (Cd)	ug/L	0.020	0.010	6232833
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6232833
Dissolved Cobalt (Co)	ug/L	0.85	0.20	6232833
Dissolved Copper (Cu)	ug/L	1.29	0.20	6232833
Dissolved Iron (Fe)	ug/L	173	5.0	6232833
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6232833
Dissolved Lithium (Li)	ug/L	82.1	2.0	6232833
Dissolved Manganese (Mn)	ug/L	69.5	1.0	6232833
Dissolved Molybdenum (Mo)	ug/L	1.5	1.0	6232833
Dissolved Nickel (Ni)	ug/L	3.4	1.0	6232833
Dissolved Selenium (Se)	ug/L	<0.10	0.10	6232833
Dissolved Silicon (Si)	ug/L	561	100	6232833
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6232833
Dissolved Strontium (Sr)	ug/L	2270	1.0	6232833
Dissolved Thallium (Tl)	ug/L	0.029	0.010	6232833
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6232833
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6232833
Dissolved Uranium (U)	ug/L	<0.10	0.10	6232833
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6232833
Dissolved Zinc (Zn)	ug/L	7.1	5.0	6232833
Dissolved Zirconium (Zr)	ug/L	0.10	0.10	6232833
Dissolved Calcium (Ca)	mg/L	109	0.050	6232832
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KGB896		
Sampling Date		2019/07/09 06:41		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	26.3	0.050	6232832
Dissolved Potassium (K)	mg/L	14.3	0.050	6232832
Dissolved Sodium (Na)	mg/L	192	0.050	6232832
Dissolved Sulphur (S)	mg/L	23.8	3.0	6232832
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KGB896		
Sampling Date		2019/07/09 06:41		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	452	3.0	6232830
Total Antimony (Sb)	ug/L	<0.50	0.50	6232830
Total Arsenic (As)	ug/L	2.43	0.10	6232830
Total Barium (Ba)	ug/L	51.9	1.0	6232830
Total Beryllium (Be)	ug/L	<0.10	0.10	6232830
Total Bismuth (Bi)	ug/L	<1.0	1.0	6232830
Total Boron (B)	ug/L	283	50	6232830
Total Cadmium (Cd)	ug/L	0.021	0.010	6232830
Total Chromium (Cr)	ug/L	<1.0	1.0	6232830
Total Cobalt (Co)	ug/L	0.83	0.20	6232830
Total Copper (Cu)	ug/L	1.39	0.50	6232830
Total Iron (Fe)	ug/L	240	10	6232830
Total Lead (Pb)	ug/L	<0.20	0.20	6232830
Total Lithium (Li)	ug/L	77.1	2.0	6232830
Total Manganese (Mn)	ug/L	79.8	1.0	6232830
Total Molybdenum (Mo)	ug/L	1.6	1.0	6232830
Total Nickel (Ni)	ug/L	3.4	1.0	6232830
Total Selenium (Se)	ug/L	<0.10	0.10	6232830
Total Silicon (Si)	ug/L	580	100	6232830
Total Silver (Ag)	ug/L	<0.020	0.020	6232830
Total Strontium (Sr)	ug/L	2150	1.0	6232830
Total Thallium (Tl)	ug/L	0.028	0.010	6232830
Total Tin (Sn)	ug/L	<5.0	5.0	6232830
Total Titanium (Ti)	ug/L	<5.0	5.0	6232830
Total Uranium (U)	ug/L	0.20	0.10	6232830
Total Vanadium (V)	ug/L	<5.0	5.0	6232830
Total Zinc (Zn)	ug/L	6.7	5.0	6232830
Total Zirconium (Zr)	ug/L	<0.10	0.10	6232830
Total Calcium (Ca)	ug/L	105000	50	6232829
Total Magnesium (Mg)	ug/L	24200	50	6232829
Total Potassium (K)	ug/L	14200	50	6232829
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KGB896		
Sampling Date		2019/07/09 06:41		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Total Sodium (Na)	ug/L	192000	50	6232829
Total Sulphur (S)	ug/L	24400	3000	6232829
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	361000	500	6232828
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9J1427
Report Date: 2019/07/24

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KGB896			KGB896		
Sampling Date		2019/07/09 06:41			2019/07/09 06:41		
COC Number		n/a			n/a		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	13	1.0	6224782			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6224782			
Inorganics							
Total Ammonia-N	mg/L	3.7	0.050	6227923			
Total BOD	mg/L	<2	2	6226794			
Conductivity	umho/cm	1900	1.0	6226987			
Free Cyanide (CN)	ug/L	1.4	1.0	6237853	1.8	1.0	6237853
Total Dissolved Solids	mg/L	1190	10	6228700	1180	10	6228700
Total Kjeldahl Nitrogen (TKN)	mg/L	4.3	1.0	6227913			
Dissolved Organic Carbon	mg/L	4.4	0.50	6226811			
Total Organic Carbon (TOC)	mg/L	5.2	0.50	6228543			
Orthophosphate (P)	mg/L	<0.010	0.010	6227042			
Dissolved Oxygen	mg/L	10.0		6225928			
pH	pH	7.23		6226990			
Total Phosphorus	mg/L	0.027	0.020	6229799			
Reactive Silica (SiO ₂)	mg/L	0.99	0.050	6239550			
Total Suspended Solids	mg/L	4	1	6226878			
Dissolved Sulphate (SO ₄)	mg/L	56	1.0	6227040			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6228052			
Turbidity	NTU	1.7	0.1	6226609	1.6	0.1	6226609
WAD Cyanide (Free)	mg/L	0.0014	0.0010	6228067			
Alkalinity (Total as CaCO ₃)	mg/L	13	1.0	6226989			
Dissolved Chloride (Cl ⁻)	mg/L	500	6.0	6227039			
Nitrite (N)	mg/L	0.373	0.010	6226991			
Nitrate (N)	mg/L	13.2	0.10	6226991			
Nitrate + Nitrite (N)	mg/L	13.6	0.10	6226991			
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6228787			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KGB896		
Sampling Date		2019/07/09 06:41		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6228203
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6228171
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9J1427
Report Date: 2019/07/24

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KGB896
Sample ID: MEL-14
Matrix: Water

Collected: 2019/07/09
Shipped:
Received: 2019/07/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6226989	N/A	2019/07/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6224782	N/A	2019/07/17	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6226794	2019/07/13	2019/07/18	Hinal Shah
Chloride by Automated Colourimetry	KONE	6227039	N/A	2019/07/15	Deonarine Ramnarine
Conductivity	AT	6226987	N/A	2019/07/16	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6228067	N/A	2019/07/15	Louise Harding
Total Cyanide	SKAL/CN	6228052	2019/07/15	2019/07/15	Louise Harding
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6226811	N/A	2019/07/15	Mandeep Kaur
Dissolved Oxygen	DO	6225928	2019/07/12	2019/07/12	Prakash Piya
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6240085	N/A	2019/07/23	Ravinder Gaidhu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6241290	2019/07/22	2019/07/23	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6228171	2019/07/15	2019/07/17	Medhat Nasr
Mercury (low level)	CV/AA	6228203	2019/07/15	2019/07/17	Medhat Nasr
Cyanide (Free)	SPEC	6237853	2019/07/17	2019/07/17	Taylor Mullings
Hardness Total (calculated as CaCO3)	CALC	6232828	N/A	2019/07/17	Automated Statchk
Hardness (calculated as CaCO3)	CALC	6232956	N/A	2019/07/17	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6232832	N/A	2019/07/17	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6232833	N/A	2019/07/16	John Choo
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6232829	2019/07/17	2019/07/17	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6232830	2019/07/15	2019/07/17	John Choo
Silica (Reactive)	KONE	6239550	N/A	2019/07/16	Serena Tian
Total Ammonia-N	LACH/NH4	6227923	N/A	2019/07/15	Mazin Wakai
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6226991	N/A	2019/07/13	Amanpreet Sappal
pH	AT	6226990	2019/07/13	2019/07/16	Surinder Rai
Orthophosphate	KONE	6227042	N/A	2019/07/15	Alina Doboreanu
Radium-226 Low Level	AS	6228787	N/A	2019/07/19	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6227040	N/A	2019/07/15	Alina Doboreanu
Total Dissolved Solids	BAL	6228700	2019/07/15	2019/07/16	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6227913	2019/07/15	2019/07/17	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6228543	N/A	2019/07/16	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6229799	2019/07/16	2019/07/16	Nimarta Singh
Low Level Total Suspended Solids	BAL	6226878	2019/07/13	2019/07/15	Nilam Borole
Turbidity	AT	6226609	N/A	2019/07/15	Kazzandra Adeva

BV Labs ID: KGB896 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/07/09
Shipped:
Received: 2019/07/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6240085	N/A	2019/07/23	Ravinder Gaidhu
Cyanide (Free)	SPEC	6237853	2019/07/17	2019/07/17	Taylor Mullings
Total Dissolved Solids	BAL	6228700	2019/07/15	2019/07/16	Mandeep Kaur
Turbidity	AT	6226609	N/A	2019/07/15	Kazzandra Adeva



BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	21.0°C
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Sample KGB896 [MEL-14] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for free cyanide analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide Total Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.



BV Labs Job #: B9J1427
Report Date: 2019/07/24

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6240085	1,4-Difluorobenzene	2019/07/23	101	70 - 130	97	70 - 130	103	%				
6240085	4-Bromofluorobenzene	2019/07/23	100	70 - 130	105	70 - 130	97	%				
6240085	D10-Ethylbenzene	2019/07/23	92	70 - 130	105	70 - 130	98	%				
6240085	D4-1,2-Dichloroethane	2019/07/23	94	70 - 130	93	70 - 130	95	%				
6241290	o-Terphenyl	2019/07/23	109	60 - 130	107	60 - 130	104	%				
6226609	Turbidity	2019/07/15			96	85 - 115	<0.1	NTU	4.6	20		
6226794	Total BOD	2019/07/18					<2	mg/L	NC	30	102	80 - 120
6226811	Dissolved Organic Carbon	2019/07/15	93	80 - 120	101	80 - 120	<0.50	mg/L	0.25	20		
6226878	Total Suspended Solids	2019/07/15					<1	mg/L	8.7	25	99	85 - 115
6226987	Conductivity	2019/07/16			102	85 - 115	<1.0	umho/cm	0.28	25		
6226989	Alkalinity (Total as CaCO3)	2019/07/16			95	85 - 115	<1.0	mg/L	0.60	20		
6226990	pH	2019/07/16			102	98 - 103			0.024	N/A		
6226991	Nitrate (N)	2019/07/13	97	80 - 120	103	80 - 120	<0.10	mg/L	1.1	20		
6226991	Nitrite (N)	2019/07/13	101	80 - 120	104	80 - 120	<0.010	mg/L	10	20		
6227039	Dissolved Chloride (Cl-)	2019/07/15	NC	80 - 120	102	80 - 120	<1.0	mg/L	2.5	20		
6227040	Dissolved Sulphate (SO4)	2019/07/15	NC	75 - 125	101	80 - 120	<1.0	mg/L	2.6	20		
6227042	Orthophosphate (P)	2019/07/15	101	75 - 125	100	80 - 120	<0.010	mg/L	NC	25		
6227913	Total Kjeldahl Nitrogen (TKN)	2019/07/16	107	80 - 120	103	80 - 120	<0.10	mg/L	NC	20	109	80 - 120
6227923	Total Ammonia-N	2019/07/15	100	75 - 125	94	80 - 120	<0.050	mg/L	NC	20		
6228052	Total Cyanide (CN)	2019/07/15	94	80 - 120	103	80 - 120	<0.0050	mg/L	NC	20		
6228067	WAD Cyanide (Free)	2019/07/15	94	80 - 120	102	80 - 120	<0.0010	mg/L	NC	20		
6228171	Dissolved Mercury (Hg)	2019/07/17	100	75 - 125	104	80 - 120	<0.00001	mg/L				
6228203	Mercury (Hg)	2019/07/17	99	75 - 125	104	80 - 120	<0.00001	mg/L	NC	20		
6228543	Total Organic Carbon (TOC)	2019/07/15	92	80 - 120	97	80 - 120	<0.50	mg/L	NC	20		
6228700	Total Dissolved Solids	2019/07/16					<10	mg/L	0.42	25	102	90 - 110
6228787	Radium-226	2019/07/19			87	85 - 115	<0.0050	Bq/L	NC	N/A		
6229799	Total Phosphorus	2019/07/16	101	80 - 120	101	80 - 120	<0.020	mg/L	0.26	20	102	80 - 120
6232830	Total Aluminum (Al)	2019/07/17	NC	80 - 120	101	80 - 120	<3.0	ug/L				
6232830	Total Antimony (Sb)	2019/07/17	105	80 - 120	105	80 - 120	<0.50	ug/L				
6232830	Total Arsenic (As)	2019/07/17	103	80 - 120	101	80 - 120	<0.10	ug/L				
6232830	Total Barium (Ba)	2019/07/17	110	80 - 120	104	80 - 120	<1.0	ug/L				



BV Labs Job #: B9J1427
Report Date: 2019/07/24

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6232830	Total Beryllium (Be)	2019/07/17	98	80 - 120	97	80 - 120	<0.10	ug/L				
6232830	Total Bismuth (Bi)	2019/07/17	96	80 - 120	103	80 - 120	<1.0	ug/L				
6232830	Total Boron (B)	2019/07/17	98	80 - 120	98	80 - 120	<50	ug/L				
6232830	Total Cadmium (Cd)	2019/07/17	102	80 - 120	106	80 - 120	<0.010	ug/L				
6232830	Total Chromium (Cr)	2019/07/17	100	80 - 120	100	80 - 120	<1.0	ug/L				
6232830	Total Cobalt (Co)	2019/07/17	94	80 - 120	101	80 - 120	<0.20	ug/L				
6232830	Total Copper (Cu)	2019/07/17	91	80 - 120	98	80 - 120	<0.50	ug/L				
6232830	Total Iron (Fe)	2019/07/17	NC	80 - 120	105	80 - 120	<10	ug/L				
6232830	Total Lead (Pb)	2019/07/17	98	80 - 120	103	80 - 120	<0.20	ug/L				
6232830	Total Lithium (Li)	2019/07/17	102	80 - 120	104	80 - 120	<2.0	ug/L				
6232830	Total Manganese (Mn)	2019/07/17	NC	80 - 120	103	80 - 120	<1.0	ug/L				
6232830	Total Molybdenum (Mo)	2019/07/17	110	80 - 120	107	80 - 120	<1.0	ug/L				
6232830	Total Nickel (Ni)	2019/07/17	91	80 - 120	96	80 - 120	<1.0	ug/L				
6232830	Total Selenium (Se)	2019/07/17	108	80 - 120	103	80 - 120	<0.10	ug/L				
6232830	Total Silicon (Si)	2019/07/17	NC	80 - 120	108	80 - 120	<100	ug/L				
6232830	Total Silver (Ag)	2019/07/17	105	80 - 120	102	80 - 120	<0.020	ug/L				
6232830	Total Strontium (Sr)	2019/07/17	NC	80 - 120	104	80 - 120	<1.0	ug/L				
6232830	Total Thallium (Tl)	2019/07/17	101	80 - 120	103	80 - 120	<0.010	ug/L				
6232830	Total Tin (Sn)	2019/07/17	101	80 - 120	105	80 - 120	<5.0	ug/L				
6232830	Total Titanium (Ti)	2019/07/17	NC	80 - 120	102	80 - 120	<5.0	ug/L				
6232830	Total Uranium (U)	2019/07/17	103	80 - 120	100	80 - 120	<0.10	ug/L				
6232830	Total Vanadium (V)	2019/07/17	102	80 - 120	102	80 - 120	<5.0	ug/L				
6232830	Total Zinc (Zn)	2019/07/17	95	80 - 120	100	80 - 120	<5.0	ug/L				
6232830	Total Zirconium (Zr)	2019/07/17	124 (1)	80 - 120	109	80 - 120	<0.10	ug/L				
6232833	Dissolved Aluminum (Al)	2019/07/16	NC	80 - 120	104	80 - 120	<3.0	ug/L				
6232833	Dissolved Antimony (Sb)	2019/07/16	104	80 - 120	106	80 - 120	<0.50	ug/L				
6232833	Dissolved Arsenic (As)	2019/07/16	104	80 - 120	106	80 - 120	<0.10	ug/L				
6232833	Dissolved Barium (Ba)	2019/07/16	105	80 - 120	102	80 - 120	<1.0	ug/L				
6232833	Dissolved Beryllium (Be)	2019/07/16	100	80 - 120	102	80 - 120	<0.10	ug/L				
6232833	Dissolved Bismuth (Bi)	2019/07/16	103	80 - 120	107	80 - 120	<1.0	ug/L				
6232833	Dissolved Boron (B)	2019/07/16	104	80 - 120	98	80 - 120	<50	ug/L				
6232833	Dissolved Cadmium (Cd)	2019/07/16	105	80 - 120	105	80 - 120	<0.010	ug/L				



BV Labs Job #: B9J1427
Report Date: 2019/07/24

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6232833	Dissolved Chromium (Cr)	2019/07/16	101	80 - 120	102	80 - 120	<1.0	ug/L				
6232833	Dissolved Cobalt (Co)	2019/07/16	97	80 - 120	101	80 - 120	<0.20	ug/L				
6232833	Dissolved Copper (Cu)	2019/07/16	NC	80 - 120	99	80 - 120	<0.20	ug/L				
6232833	Dissolved Iron (Fe)	2019/07/16	97	80 - 120	110	80 - 120	<5.0	ug/L				
6232833	Dissolved Lead (Pb)	2019/07/16	106	80 - 120	107	80 - 120	<0.20	ug/L				
6232833	Dissolved Lithium (Li)	2019/07/16	107	80 - 120	103	80 - 120	<2.0	ug/L				
6232833	Dissolved Manganese (Mn)	2019/07/16	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6232833	Dissolved Molybdenum (Mo)	2019/07/16	110	80 - 120	105	80 - 120	<1.0	ug/L				
6232833	Dissolved Nickel (Ni)	2019/07/16	99	80 - 120	97	80 - 120	<1.0	ug/L				
6232833	Dissolved Selenium (Se)	2019/07/16	102	80 - 120	105	80 - 120	<0.10	ug/L				
6232833	Dissolved Silicon (Si)	2019/07/16	101	80 - 120	111	80 - 120	<100	ug/L				
6232833	Dissolved Silver (Ag)	2019/07/16	103	80 - 120	102	80 - 120	<0.020	ug/L				
6232833	Dissolved Strontium (Sr)	2019/07/16	NC	80 - 120	105	80 - 120	<1.0	ug/L				
6232833	Dissolved Thallium (Tl)	2019/07/16	108	80 - 120	107	80 - 120	<0.010	ug/L				
6232833	Dissolved Tin (Sn)	2019/07/16	103	80 - 120	102	80 - 120	<5.0	ug/L				
6232833	Dissolved Titanium (Ti)	2019/07/16	110	80 - 120	101	80 - 120	<5.0	ug/L				
6232833	Dissolved Uranium (U)	2019/07/16	107	80 - 120	104	80 - 120	<0.10	ug/L				
6232833	Dissolved Vanadium (V)	2019/07/16	103	80 - 120	103	80 - 120	<5.0	ug/L				
6232833	Dissolved Zinc (Zn)	2019/07/16	NC	80 - 120	104	80 - 120	<5.0	ug/L				
6232833	Dissolved Zirconium (Zr)	2019/07/16	105	80 - 120	106	80 - 120	<0.10	ug/L				
6237853	Free Cyanide (CN)	2019/07/17	95	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
6239550	Reactive Silica (SiO2)	2019/07/16	105	80 - 120	102	80 - 120	<0.050	mg/L	1.6	20		
6240085	Benzene	2019/07/23	102	70 - 130	102	70 - 130	<0.20	ug/L	NC	30		
6240085	Ethylbenzene	2019/07/23	106	70 - 130	114	70 - 130	<0.20	ug/L	NC	30		
6240085	F1 (C6-C10) - BTEX	2019/07/23					<25	ug/L	NC	30		
6240085	F1 (C6-C10)	2019/07/23	113	70 - 130	103	70 - 130	<25	ug/L	NC	30		
6240085	o-Xylene	2019/07/23	103	70 - 130	108	70 - 130	<0.20	ug/L	NC	30		
6240085	p+m-Xylene	2019/07/23	106	70 - 130	114	70 - 130	<0.40	ug/L	NC	30		
6240085	Toluene	2019/07/23	111	70 - 130	112	70 - 130	<0.20	ug/L	NC	30		
6240085	Total Xylenes	2019/07/23					<0.40	ug/L	NC	30		
6241290	F2 (C10-C16 Hydrocarbons)	2019/07/23	113	50 - 130	108	60 - 130	<100	ug/L	2.3	30		
6241290	F3 (C16-C34 Hydrocarbons)	2019/07/23	109	50 - 130	109	60 - 130	<200	ug/L	NC	30		



BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6241290	F4 (C34-C50 Hydrocarbons)	2019/07/23	105	50 - 130	103	60 - 130	<200	ug/L	NC	30		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Brad Newman, Scientific Service Specialist

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9J1427

Report Date: 2019/07/24

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63°02'15.5" 92°13'06.3"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/02
 Report #: R5823823
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J7572

Received: 2019/07/18, 08:52

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/07/22	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/07/23	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/07/19	2019/07/24	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/07/22	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	1	N/A	2019/07/22	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/07/19	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/07/19	2019/07/19	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/07/19	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/07/19	2019/07/19	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/07/23	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/07/24	2019/07/25	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/07/22	2019/07/22	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/07/22	2019/07/22	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/07/24	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/07/24	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/07/24	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/07/23	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/07/18	2019/07/24	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/07/23	2019/07/23	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/07/24	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/07/21	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/07/21	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/07/19	2019/07/22	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/07/22	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/07/31	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/07/22	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/07/20	2019/07/22	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/07/20	2019/07/23	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/07/24	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/02
Report #: R5823823
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J7572

Received: 2019/07/18, 08:52

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Total Phosphorus (Colourimetric) (1)	1	2019/07/23	2019/07/23	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/07/19	2019/07/22	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/07/19	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/02
Report #: R5823823
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J7572

Received: 2019/07/18, 08:52

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
02 Aug 2019 09:27:26

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9J7572

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KHJ666		
Sampling Date		2019/07/15 14:00		
	UNITS	MEL-14	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	6240085
Toluene	ug/L	<0.20	0.20	6240085
Ethylbenzene	ug/L	<0.20	0.20	6240085
o-Xylene	ug/L	<0.20	0.20	6240085
p+m-Xylene	ug/L	<0.40	0.40	6240085
Total Xylenes	ug/L	<0.40	0.40	6240085
F1 (C6-C10)	ug/L	<25	25	6240085
F1 (C6-C10) - BTEX	ug/L	<25	25	6240085
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6244328
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6244328
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6244328
Reached Baseline at C50	ug/L	Yes		6244328
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	102		6240085
4-Bromofluorobenzene	%	98		6240085
D10-Ethylbenzene	%	96		6240085
D4-1,2-Dichloroethane	%	97		6240085
o-Terphenyl	%	98		6244328
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9J7572

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KHJ666		
Sampling Date		2019/07/15 14:00		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	292	0.50	6246011
Metals				
Dissolved Aluminum (Al)	ug/L	52.7	3.0	6246013
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6246013
Dissolved Arsenic (As)	ug/L	1.63	0.10	6246013
Dissolved Barium (Ba)	ug/L	42.4	1.0	6246013
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6246013
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6246013
Dissolved Boron (B)	ug/L	333	50	6246013
Dissolved Cadmium (Cd)	ug/L	0.013	0.010	6246013
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6246013
Dissolved Cobalt (Co)	ug/L	0.65	0.20	6246013
Dissolved Copper (Cu)	ug/L	0.95	0.20	6246013
Dissolved Iron (Fe)	ug/L	71.7	5.0	6246013
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6246013
Dissolved Lithium (Li)	ug/L	73.5	2.0	6246013
Dissolved Manganese (Mn)	ug/L	19.3	1.0	6246013
Dissolved Molybdenum (Mo)	ug/L	1.2	1.0	6246013
Dissolved Nickel (Ni)	ug/L	2.6	1.0	6246013
Dissolved Selenium (Se)	ug/L	<0.10	0.10	6246013
Dissolved Silicon (Si)	ug/L	433	100	6246013
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6246013
Dissolved Strontium (Sr)	ug/L	1840	1.0	6246013
Dissolved Thallium (Tl)	ug/L	0.030	0.010	6246013
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6246013
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6246013
Dissolved Uranium (U)	ug/L	0.19	0.10	6246013
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6246013
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6246013
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6246013
Dissolved Calcium (Ca)	mg/L	82.7	0.050	6246012
Dissolved Magnesium (Mg)	mg/L	20.9	0.050	6246012
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9J7572
Report Date: 2019/08/02

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KHJ666		
Sampling Date		2019/07/15 14:00		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Potassium (K)	mg/L	12.7	0.050	6246012
Dissolved Sodium (Na)	mg/L	184	0.050	6246012
Dissolved Sulphur (S)	mg/L	18.8	3.0	6246012
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9J7572

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KHJ666		
Sampling Date		2019/07/15 14:00		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	180	3.0	6246010
Total Antimony (Sb)	ug/L	<0.50	0.50	6246010
Total Arsenic (As)	ug/L	1.79	0.10	6246010
Total Barium (Ba)	ug/L	43.4	1.0	6246010
Total Beryllium (Be)	ug/L	<0.10	0.10	6246010
Total Bismuth (Bi)	ug/L	<1.0	1.0	6246010
Total Boron (B)	ug/L	349	50	6246010
Total Cadmium (Cd)	ug/L	0.018	0.010	6246010
Total Chromium (Cr)	ug/L	<1.0	1.0	6246010
Total Cobalt (Co)	ug/L	0.68	0.20	6246010
Total Copper (Cu)	ug/L	1.03	0.50	6246010
Total Iron (Fe)	ug/L	110	10	6246010
Total Lead (Pb)	ug/L	<0.20	0.20	6246010
Total Lithium (Li)	ug/L	75.4	2.0	6246010
Total Manganese (Mn)	ug/L	25.3	1.0	6246010
Total Molybdenum (Mo)	ug/L	1.3	1.0	6246010
Total Nickel (Ni)	ug/L	2.7	1.0	6246010
Total Selenium (Se)	ug/L	<0.10	0.10	6246010
Total Silicon (Si)	ug/L	455	100	6246010
Total Silver (Ag)	ug/L	<0.020	0.020	6246010
Total Strontium (Sr)	ug/L	1900	1.0	6246010
Total Thallium (Tl)	ug/L	0.031	0.010	6246010
Total Tin (Sn)	ug/L	<5.0	5.0	6246010
Total Titanium (Ti)	ug/L	<5.0	5.0	6246010
Total Uranium (U)	ug/L	0.24	0.10	6246010
Total Vanadium (V)	ug/L	<5.0	5.0	6246010
Total Zinc (Zn)	ug/L	<5.0	5.0	6246010
Total Zirconium (Zr)	ug/L	<0.10	0.10	6246010
Total Calcium (Ca)	ug/L	84300	50	6243211
Total Magnesium (Mg)	ug/L	20900	50	6243211
Total Potassium (K)	ug/L	12600	50	6243211
Total Sodium (Na)	ug/L	185000	50	6243211
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9J7572
Report Date: 2019/08/02

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KHJ666		
Sampling Date		2019/07/15 14:00		
	UNITS	MEL-14	RDL	QC Batch
Total Sulphur (S)	ug/L	18200	3000	6243211
Calculated Parameters				
Total Hardness (CaCO ₃)	ug/L	297000	500	6243210
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9J7572
Report Date: 2019/08/02

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

RESULTS OF ANALYSES OF WATER

BV Labs ID		KHJ666			KHJ666		
Sampling Date		2019/07/15 14:00			2019/07/15 14:00		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	16	1.0	6234992			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6234992			
Inorganics							
Total Ammonia-N	mg/L	4.5	0.050	6239127	4.6	0.050	6239127
Total BOD	mg/L	<2	2	6236966			
Conductivity	umho/cm	1800	1.0	6237071	1800	1.0	6237071
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6245480			
Total Dissolved Solids	mg/L	1190	10	6239076			
Total Kjeldahl Nitrogen (TKN)	mg/L	5.5	0.50	6238949			
Dissolved Organic Carbon	mg/L	4.7	0.50	6235976			
Total Organic Carbon (TOC)	mg/L	5.1	0.50	6239135			
Orthophosphate (P)	mg/L	<0.010	0.010	6238048	<0.010	0.010	6238048
Dissolved Oxygen	mg/L	9.46		6237113			
pH	pH	7.38		6237070	7.45		6237070
Total Phosphorus	mg/L	0.025	0.020	6241832			
Reactive Silica (SiO ₂)	mg/L	0.92	0.050	6245481			
Total Suspended Solids	mg/L	<1	1	6237882			
Dissolved Sulphate (SO ₄)	mg/L	53	1.0	6238040	54	1.0	6238040
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6237839	<0.0050	0.0050	6237839
Turbidity	NTU	1.0	0.1	6237682	1.0	0.1	6237682
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6237851	<0.0010	0.0010	6237851
Alkalinity (Total as CaCO ₃)	mg/L	16	1.0	6237068	17	1.0	6237068
Dissolved Chloride (Cl ⁻)	mg/L	470	5.0	6238023	480	5.0	6238023
Nitrite (N)	mg/L	0.347	0.010	6237885			
Nitrate (N)	mg/L	13.8	0.10	6237885			
Nitrate + Nitrite (N)	mg/L	14.1	0.10	6237885			
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6242312			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W							



BUREAU
VERITAS

BV Labs Job #: B9J7572

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KHJ666		
Sampling Date		2019/07/15 14:00		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6239712
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6239716
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9J7572
Report Date: 2019/08/02

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

TEST SUMMARY

BV Labs ID: KHJ666
Sample ID: MEL-14
Matrix: Water

Collected: 2019/07/15
Shipped:
Received: 2019/07/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6237068	N/A	2019/07/22	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6234992	N/A	2019/07/23	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6236966	2019/07/19	2019/07/24	Nusrat Naz
Chloride by Automated Colourimetry	KONE	6238023	N/A	2019/07/22	Deonarine Ramnarine
Conductivity	AT	6237071	N/A	2019/07/22	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6237851	N/A	2019/07/19	Gnana Thomas
Total Cyanide	SKAL/CN	6237839	2019/07/19	2019/07/19	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6235976	N/A	2019/07/19	Mandeep Kaur
Dissolved Oxygen	DO	6237113	2019/07/19	2019/07/19	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6240085	N/A	2019/07/23	Ravinder Gaidhu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6244328	2019/07/24	2019/07/25	(Kent) Maolin Li
Dissolved Mercury (low level)	CV/AA	6239716	2019/07/22	2019/07/22	Medhat Nasr
Mercury (low level)	CV/AA	6239712	2019/07/22	2019/07/22	Medhat Nasr
Cyanide (Free)	SPEC	6245480	2019/07/23	2019/07/23	Taylor Mullings
Hardness Total (calculated as CaCO3)	CALC	6243210	N/A	2019/07/24	Report Automation Engine
Hardness (calculated as CaCO3)	CALC	6246011	N/A	2019/07/24	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6246012	N/A	2019/07/24	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6246013	N/A	2019/07/23	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6243211	2019/07/24	2019/07/24	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6246010	2019/07/23	2019/07/23	Andrew An
Silica (Reactive)	KONE	6245481	N/A	2019/07/24	Serena Tian
Total Ammonia-N	LACH/NH4	6239127	N/A	2019/07/21	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6237885	N/A	2019/07/21	Amanpreet Sappal
pH	AT	6237070	2019/07/19	2019/07/22	Surinder Rai
Orthophosphate	KONE	6238048	N/A	2019/07/22	Alina Dobreanu
Radium-226 Low Level	AS	6242312	N/A	2019/07/31	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6238040	N/A	2019/07/22	Alina Dobreanu
Total Dissolved Solids	BAL	6239076	2019/07/20	2019/07/22	Nilam Borole
Total Kjeldahl Nitrogen in Water	SKAL	6238949	2019/07/20	2019/07/23	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6239135	N/A	2019/07/24	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6241832	2019/07/23	2019/07/23	Nimarta Singh
Low Level Total Suspended Solids	BAL	6237882	2019/07/19	2019/07/22	Nilam Borole
Turbidity	AT	6237682	N/A	2019/07/19	Kazzandra Adeva

BV Labs ID: KHJ666 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/07/15
Shipped:
Received: 2019/07/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6237068	N/A	2019/07/22	Surinder Rai
Chloride by Automated Colourimetry	KONE	6238023	N/A	2019/07/22	Deonarine Ramnarine
Conductivity	AT	6237071	N/A	2019/07/22	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6237851	N/A	2019/07/19	Gnana Thomas
Total Cyanide	SKAL/CN	6237839	2019/07/19	2019/07/19	Gnana Thomas
Total Ammonia-N	LACH/NH4	6239127	N/A	2019/07/21	Amanpreet Sappal



BUREAU
VERITAS

BV Labs Job #: B9J7572

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

TEST SUMMARY

BV Labs ID: KHJ666 Dup

Sample ID: MEL-14

Matrix: Water

Collected: 2019/07/15

Shipped:

Received: 2019/07/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH	AT	6237070	2019/07/19	2019/07/22	Surinder Rai
Orthophosphate	KONE	6238048	N/A	2019/07/22	Alina Dobreanu
Sulphate by Automated Colourimetry	KONE	6238040	N/A	2019/07/22	Alina Dobreanu
Turbidity	AT	6237682	N/A	2019/07/19	Kazzandra Adeva



BUREAU
VERITAS

BV Labs Job #: B9J7572

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.7°C
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GPS Coordinates

Sample KHJ666 [MEL-14] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Results relate only to the items tested.



BV Labs Job #: 89J7572
Report Date: 2019/08/02

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6240085	1,4-Difluorobenzene	2019/07/23	101	70 - 130	97	70 - 130	103	%				
6240085	4-Bromofluorobenzene	2019/07/23	100	70 - 130	105	70 - 130	97	%				
6240085	D10-Ethylbenzene	2019/07/23	92	70 - 130	105	70 - 130	98	%				
6240085	D4-1,2-Dichloroethane	2019/07/23	94	70 - 130	93	70 - 130	95	%				
6244328	o-Terphenyl	2019/07/25	103	60 - 130	102	60 - 130	97	%				
6235976	Dissolved Organic Carbon	2019/07/19	94	80 - 120	97	80 - 120	<0.50	mg/L	0.11	20		
6236966	Total BOD	2019/07/24					<2	mg/L	13	30	96	80 - 120
6237068	Alkalinity (Total as CaCO ₃)	2019/07/22			97	85 - 115	<1.0	mg/L	5.6	20		
6237070	pH	2019/07/22			102	98 - 103			0.93	N/A		
6237071	Conductivity	2019/07/22			100	85 - 115	<1.0	umho/cm	0.33	25		
6237682	Turbidity	2019/07/19			96	85 - 115	<0.1	NTU	0.94	20		
6237839	Total Cyanide (CN)	2019/07/19	97	80 - 120	101	80 - 120	<0.0050	mg/L	NC	20		
6237851	WAD Cyanide (Free)	2019/07/19	99	80 - 120	99	80 - 120	<0.0010	mg/L	NC	20		
6237882	Total Suspended Solids	2019/07/22					<1	mg/L	NC	25	102	85 - 115
6237885	Nitrate (N)	2019/07/21	99	80 - 120	98	80 - 120	<0.10	mg/L	NC	20		
6237885	Nitrite (N)	2019/07/21	105	80 - 120	104	80 - 120	<0.010	mg/L	NC	20		
6238023	Dissolved Chloride (Cl ⁻)	2019/07/22	NC	80 - 120	102	80 - 120	<1.0	mg/L	2.3	20		
6238040	Dissolved Sulphate (SO ₄)	2019/07/22	NC	75 - 125	103	80 - 120	<1.0	mg/L	1.2	20		
6238048	Orthophosphate (P)	2019/07/22	100	75 - 125	100	80 - 120	<0.010	mg/L	NC	25		
6238949	Total Kjeldahl Nitrogen (TKN)	2019/07/22	NC	80 - 120	99	80 - 120	<0.10	mg/L	4.7	20	99	80 - 120
6239076	Total Dissolved Solids	2019/07/22					<10	mg/L	1.4	25	102	90 - 110
6239127	Total Ammonia-N	2019/07/21	95	75 - 125	99	80 - 120	<0.050	mg/L	0.94	20		
6239135	Total Organic Carbon (TOC)	2019/07/24	94	80 - 120	98	80 - 120	<0.50	mg/L	0.55	20		
6239712	Mercury (Hg)	2019/07/22	101	75 - 125	98	80 - 120	<0.00001	mg/L	NC	20		
6239716	Dissolved Mercury (Hg)	2019/07/22	87	75 - 125	98	80 - 120	<0.00001	mg/L	NC	20		
6240085	Benzene	2019/07/23	102	70 - 130	102	70 - 130	<0.20	ug/L	NC	30		
6240085	Ethylbenzene	2019/07/23	106	70 - 130	114	70 - 130	<0.20	ug/L	NC	30		
6240085	F1 (C6-C10) - BTEX	2019/07/23					<25	ug/L	NC	30		
6240085	F1 (C6-C10)	2019/07/23	113	70 - 130	103	70 - 130	<25	ug/L	NC	30		
6240085	o-Xylene	2019/07/23	103	70 - 130	108	70 - 130	<0.20	ug/L	NC	30		
6240085	p+m-Xylene	2019/07/23	106	70 - 130	114	70 - 130	<0.40	ug/L	NC	30		



BV Labs Job #: B9J7572
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QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6240085	Toluene	2019/07/23	111	70 - 130	112	70 - 130	<0.20	ug/L	NC	30		
6240085	Total Xylenes	2019/07/23					<0.40	ug/L	NC	30		
6241832	Total Phosphorus	2019/07/23	97	80 - 120	98	80 - 120	<0.020	mg/L	NC	20	99	80 - 120
6242312	Radium-226	2019/07/31			98	85 - 115	<0.0050	Bq/L	7.9	N/A		
6244328	F2 (C10-C16 Hydrocarbons)	2019/07/25	NC	50 - 130	91	60 - 130	<100	ug/L	0.015	30		
6244328	F3 (C16-C34 Hydrocarbons)	2019/07/25	NC	50 - 130	97	60 - 130	<200	ug/L	3.1	30		
6244328	F4 (C34-C50 Hydrocarbons)	2019/07/25	NC	50 - 130	95	60 - 130	<200	ug/L	1.8	30		
6245480	Free Cyanide (CN)	2019/07/23	91	80 - 120	93	80 - 120	<1.0	ug/L				
6245481	Reactive Silica (SiO2)	2019/07/24	109	80 - 120	101	80 - 120	<0.050	mg/L				
6246010	Total Aluminum (Al)	2019/07/23	103	80 - 120	101	80 - 120	<3.0	ug/L				
6246010	Total Antimony (Sb)	2019/07/23	100	80 - 120	100	80 - 120	<0.50	ug/L				
6246010	Total Arsenic (As)	2019/07/23	106	80 - 120	101	80 - 120	<0.10	ug/L				
6246010	Total Barium (Ba)	2019/07/23	101	80 - 120	102	80 - 120	<1.0	ug/L				
6246010	Total Beryllium (Be)	2019/07/23	105	80 - 120	101	80 - 120	<0.10	ug/L				
6246010	Total Bismuth (Bi)	2019/07/23	106	80 - 120	103	80 - 120	<1.0	ug/L				
6246010	Total Boron (B)	2019/07/23	106	80 - 120	100	80 - 120	<50	ug/L				
6246010	Total Cadmium (Cd)	2019/07/23	102	80 - 120	99	80 - 120	<0.010	ug/L				
6246010	Total Chromium (Cr)	2019/07/23	103	80 - 120	99	80 - 120	<1.0	ug/L				
6246010	Total Cobalt (Co)	2019/07/23	99	80 - 120	97	80 - 120	<0.20	ug/L				
6246010	Total Copper (Cu)	2019/07/23	99	80 - 120	96	80 - 120	<0.50	ug/L				
6246010	Total Iron (Fe)	2019/07/23	106	80 - 120	104	80 - 120	<10	ug/L				
6246010	Total Lead (Pb)	2019/07/23	107	80 - 120	105	80 - 120	<0.20	ug/L				
6246010	Total Lithium (Li)	2019/07/23	105	80 - 120	102	80 - 120	<2.0	ug/L				
6246010	Total Manganese (Mn)	2019/07/23	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6246010	Total Molybdenum (Mo)	2019/07/23	103	80 - 120	99	80 - 120	<1.0	ug/L				
6246010	Total Nickel (Ni)	2019/07/23	101	80 - 120	98	80 - 120	<1.0	ug/L				
6246010	Total Selenium (Se)	2019/07/23	103	80 - 120	99	80 - 120	<0.10	ug/L				
6246010	Total Silicon (Si)	2019/07/23	NC	80 - 120	102	80 - 120	<100	ug/L				
6246010	Total Silver (Ag)	2019/07/23	103	80 - 120	99	80 - 120	<0.020	ug/L				
6246010	Total Strontium (Sr)	2019/07/23	105	80 - 120	101	80 - 120	<1.0	ug/L				
6246010	Total Thallium (Tl)	2019/07/23	109	80 - 120	104	80 - 120	<0.010	ug/L				
6246010	Total Tin (Sn)	2019/07/23	100	80 - 120	99	80 - 120	<5.0	ug/L				



BV Labs Job #: B9J7572
Report Date: 2019/08/02

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6246010	Total Titanium (Ti)	2019/07/23	103	80 - 120	101	80 - 120	<5.0	ug/L				
6246010	Total Uranium (U)	2019/07/23	105	80 - 120	103	80 - 120	<0.10	ug/L				
6246010	Total Vanadium (V)	2019/07/23	102	80 - 120	98	80 - 120	<5.0	ug/L				
6246010	Total Zinc (Zn)	2019/07/23	NC	80 - 120	101	80 - 120	<5.0	ug/L				
6246010	Total Zirconium (Zr)	2019/07/23	103	80 - 120	97	80 - 120	<0.10	ug/L				
6246013	Dissolved Aluminum (Al)	2019/07/23	NC	80 - 120	104	80 - 120	<3.0	ug/L				
6246013	Dissolved Antimony (Sb)	2019/07/23	98	80 - 120	102	80 - 120	<0.50	ug/L				
6246013	Dissolved Arsenic (As)	2019/07/23	102	80 - 120	104	80 - 120	<0.10	ug/L				
6246013	Dissolved Barium (Ba)	2019/07/23	102	80 - 120	102	80 - 120	<1.0	ug/L				
6246013	Dissolved Beryllium (Be)	2019/07/23	95	80 - 120	101	80 - 120	<0.10	ug/L				
6246013	Dissolved Bismuth (Bi)	2019/07/23	98	80 - 120	105	80 - 120	<1.0	ug/L				
6246013	Dissolved Boron (B)	2019/07/23	92	80 - 120	100	80 - 120	<50	ug/L				
6246013	Dissolved Cadmium (Cd)	2019/07/23	96	80 - 120	104	80 - 120	<0.010	ug/L				
6246013	Dissolved Chromium (Cr)	2019/07/23	96	80 - 120	105	80 - 120	<1.0	ug/L				
6246013	Dissolved Cobalt (Co)	2019/07/23	90	80 - 120	100	80 - 120	<0.20	ug/L				
6246013	Dissolved Copper (Cu)	2019/07/23	90	80 - 120	102	80 - 120	<0.20	ug/L				
6246013	Dissolved Iron (Fe)	2019/07/23	NC	80 - 120	104	80 - 120	<5.0	ug/L				
6246013	Dissolved Lead (Pb)	2019/07/23	98	80 - 120	106	80 - 120	<0.20	ug/L				
6246013	Dissolved Lithium (Li)	2019/07/23	93	80 - 120	102	80 - 120	<2.0	ug/L				
6246013	Dissolved Manganese (Mn)	2019/07/23	NC	80 - 120	106	80 - 120	<1.0	ug/L				
6246013	Dissolved Molybdenum (Mo)	2019/07/23	108	80 - 120	102	80 - 120	<1.0	ug/L				
6246013	Dissolved Nickel (Ni)	2019/07/23	91	80 - 120	105	80 - 120	<1.0	ug/L				
6246013	Dissolved Selenium (Se)	2019/07/23	93	80 - 120	104	80 - 120	<0.10	ug/L				
6246013	Dissolved Silicon (Si)	2019/07/23	111	80 - 120	105	80 - 120	<100	ug/L				
6246013	Dissolved Silver (Ag)	2019/07/23	78 (1)	80 - 120	104	80 - 120	<0.020	ug/L				
6246013	Dissolved Strontium (Sr)	2019/07/23	NC	80 - 120	103	80 - 120	<1.0	ug/L				
6246013	Dissolved Thallium (Tl)	2019/07/23	101	80 - 120	106	80 - 120	<0.010	ug/L				
6246013	Dissolved Tin (Sn)	2019/07/23	99	80 - 120	107	80 - 120	<5.0	ug/L				
6246013	Dissolved Titanium (Ti)	2019/07/23	101	80 - 120	104	80 - 120	<5.0	ug/L				
6246013	Dissolved Uranium (U)	2019/07/23	108	80 - 120	106	80 - 120	<0.10	ug/L				
6246013	Dissolved Vanadium (V)	2019/07/23	100	80 - 120	104	80 - 120	<5.0	ug/L				
6246013	Dissolved Zinc (Zn)	2019/07/23	95	80 - 120	111	80 - 120	<5.0	ug/L				



BV Labs Job #: B9J7572
Report Date: 2019/08/02

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6246013	Dissolved Zirconium (Zr)	2019/07/23	104	80 - 120	102	80 - 120	<0.10	ug/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9J7572

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Danish Samad, Senior Analyst – Team Lead

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9J7572

Report Date: 2019/08/02

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site Location: MELIADINE
 Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/09
 Report #: R5832764
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K9242

Received: 2019/07/29, 14:00

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/07/30	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/07/31	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/07/30	2019/08/04	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/07/31	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	1	N/A	2019/07/30	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/07/31	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/07/31	2019/07/31	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/07/31	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/07/30	2019/07/30	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/08/02	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/08/02	2019/08/06	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/08/01	2019/08/01	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/01	2019/08/01	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/08/01	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/08/02	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/08/02	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/08/01	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/07/30	2019/08/01	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/07/31	2019/08/01	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/08/01	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/01	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/08/01	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/07/30	2019/07/30	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/07/31	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/08/07	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/07/31	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/07/30	2019/07/31	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/07/31	2019/07/31	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/07/31	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
Site Location: MELIADINE
Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/09
Report #: R5832764
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K9242

Received: 2019/07/29, 14:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Total Phosphorus (Colourimetric) (1)	1	2019/08/01	2019/08/01	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/07/30	2019/07/31	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/07/30	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site Location: MELIADINE
Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/09
Report #: R5832764
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K9242

Received: 2019/07/29, 14:00

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
09 Aug 2019 17:02:58

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9K9242
Report Date: 2019/08/09

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KJU442		
Sampling Date		2019/07/25 06:50		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	6260467
Toluene	ug/L	<0.20	0.20	6260467
Ethylbenzene	ug/L	<0.20	0.20	6260467
o-Xylene	ug/L	<0.20	0.20	6260467
p+m-Xylene	ug/L	<0.40	0.40	6260467
Total Xylenes	ug/L	<0.40	0.40	6260467
F1 (C6-C10)	ug/L	<25	25	6260467
F1 (C6-C10) - BTEX	ug/L	<25	25	6260467
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6261230
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6261230
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6261230
Reached Baseline at C50	ug/L	Yes		6261230
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	103		6260467
4-Bromofluorobenzene	%	102		6260467
D10-Ethylbenzene	%	100		6260467
D4-1,2-Dichloroethane	%	98		6260467
o-Terphenyl	%	105		6261230
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9K9242

Report Date: 2019/08/09

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KJU442		
Sampling Date		2019/07/25 06:50		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	300	0.50	6261812
Metals				
Dissolved Aluminum (Al)	ug/L	37.7	3.0	6261814
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6261814
Dissolved Arsenic (As)	ug/L	1.55	0.10	6261814
Dissolved Barium (Ba)	ug/L	48.3	1.0	6261814
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6261814
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6261814
Dissolved Boron (B)	ug/L	349	50	6261814
Dissolved Cadmium (Cd)	ug/L	0.015	0.010	6261814
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6261814
Dissolved Cobalt (Co)	ug/L	0.60	0.20	6261814
Dissolved Copper (Cu)	ug/L	0.89	0.20	6261814
Dissolved Iron (Fe)	ug/L	58.7	5.0	6261814
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6261814
Dissolved Lithium (Li)	ug/L	66.5	2.0	6261814
Dissolved Manganese (Mn)	ug/L	10.5	1.0	6261814
Dissolved Molybdenum (Mo)	ug/L	1.3	1.0	6261814
Dissolved Nickel (Ni)	ug/L	2.8	1.0	6261814
Dissolved Selenium (Se)	ug/L	<0.10	0.10	6261814
Dissolved Silicon (Si)	ug/L	417	100	6261814
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6261814
Dissolved Strontium (Sr)	ug/L	1890	1.0	6261814
Dissolved Thallium (Tl)	ug/L	0.030	0.010	6261814
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6261814
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6261814
Dissolved Uranium (U)	ug/L	0.22	0.10	6261814
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6261814
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6261814
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6261814
Dissolved Calcium (Ca)	mg/L	82.9	0.050	6261813
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9K9242
Report Date: 2019/08/09

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KJU442		
Sampling Date		2019/07/25 06:50		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	22.6	0.050	6261813
Dissolved Potassium (K)	mg/L	12.5	0.050	6261813
Dissolved Sodium (Na)	mg/L	184	0.050	6261813
Dissolved Sulphur (S)	mg/L	19.2	3.0	6261813
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9K9242
Report Date: 2019/08/09

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KJU442		
Sampling Date		2019/07/25 06:50		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	91.5	3.0	6261811
Total Antimony (Sb)	ug/L	<0.50	0.50	6261811
Total Arsenic (As)	ug/L	1.48	0.10	6261811
Total Barium (Ba)	ug/L	46.3	1.0	6261811
Total Beryllium (Be)	ug/L	<0.10	0.10	6261811
Total Bismuth (Bi)	ug/L	<1.0	1.0	6261811
Total Boron (B)	ug/L	324	50	6261811
Total Cadmium (Cd)	ug/L	0.015	0.010	6261811
Total Chromium (Cr)	ug/L	<1.0	1.0	6261811
Total Cobalt (Co)	ug/L	0.59	0.20	6261811
Total Copper (Cu)	ug/L	0.94	0.50	6261811
Total Iron (Fe)	ug/L	91	10	6261811
Total Lead (Pb)	ug/L	<0.20	0.20	6261811
Total Lithium (Li)	ug/L	62.4	2.0	6261811
Total Manganese (Mn)	ug/L	11.7	1.0	6261811
Total Molybdenum (Mo)	ug/L	1.2	1.0	6261811
Total Nickel (Ni)	ug/L	2.8	1.0	6261811
Total Selenium (Se)	ug/L	<0.10	0.10	6261811
Total Silicon (Si)	ug/L	427	100	6261811
Total Silver (Ag)	ug/L	<0.020	0.020	6261811
Total Strontium (Sr)	ug/L	1840	1.0	6261811
Total Thallium (Tl)	ug/L	0.027	0.010	6261811
Total Tin (Sn)	ug/L	<5.0	5.0	6261811
Total Titanium (Ti)	ug/L	<5.0	5.0	6261811
Total Uranium (U)	ug/L	0.23	0.10	6261811
Total Vanadium (V)	ug/L	<5.0	5.0	6261811
Total Zinc (Zn)	ug/L	<5.0	5.0	6261811
Total Zirconium (Zr)	ug/L	<0.10	0.10	6261811
Total Calcium (Ca)	ug/L	79600	50	6261810
Total Magnesium (Mg)	ug/L	21800	50	6261810
Total Potassium (K)	ug/L	11900	50	6261810
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9K9242
Report Date: 2019/08/09

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KJU442		
Sampling Date		2019/07/25 06:50		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Total Sodium (Na)	ug/L	174000	50	6261810
Total Sulphur (S)	ug/L	18300	3000	6261810
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	289000	500	6261809
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9K9242
Report Date: 2019/08/09

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KJU442		
Sampling Date		2019/07/25 06:50		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	25	1.0	6254294
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6254294
Inorganics				
Total Ammonia-N	mg/L	4.9	0.050	6257051
Total BOD	mg/L	<2	2	6254515
Conductivity	umho/cm	1700	1.0	6255184
Free Cyanide (CN)	ug/L	1.4 (1)	1.0	6264907
Total Dissolved Solids	mg/L	935	10	6255686
Total Kjeldahl Nitrogen (TKN)	mg/L	5.1	0.50	6257033
Dissolved Organic Carbon	mg/L	4.0	0.50	6255021
Total Organic Carbon (TOC)	mg/L	4.4	0.50	6257011
Orthophosphate (P)	mg/L	<0.010	0.010	6255223
Dissolved Oxygen	mg/L	8.45		6255125
pH	pH	7.41		6255178
Total Phosphorus	mg/L	<0.020	0.020	6258779
Reactive Silica (SiO ₂)	mg/L	0.82	0.050	6264906
Total Suspended Solids	mg/L	2	1	6255366
Dissolved Sulphate (SO ₄)	mg/L	55	1.0	6255222
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6256924
Turbidity	NTU	0.4	0.1	6255095
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6256930
Alkalinity (Total as CaCO ₃)	mg/L	25	1.0	6255172
Dissolved Chloride (Cl ⁻)	mg/L	440	5.0	6255218
Nitrite (N)	mg/L	0.402	0.010	6255233
Nitrate (N)	mg/L	13.7	0.10	6255233
Nitrate + Nitrite (N)	mg/L	14.1	0.10	6255233
RADIONUCLIDE				
Radium-226	Bq/L	<0.0050	0.0050	6259305
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
(1) See general comments for notes regarding CNFREE-W				



BUREAU
VERITAS

BV Labs Job #: B9K9242
Report Date: 2019/08/09

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KJU442		
Sampling Date		2019/07/25 06:50		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6258729
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6258732
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9K9242
Report Date: 2019/08/09

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TEST SUMMARY

BV Labs ID: KJU442
Sample ID: MEL-14
Matrix: Water

Collected: 2019/07/25
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6255172	N/A	2019/07/30	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6254294	N/A	2019/07/31	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6254515	2019/07/30	2019/08/04	Frank Zhang
Chloride by Automated Colourimetry	KONE	6255218	N/A	2019/07/31	Alina Dobreanu
Conductivity	AT	6255184	N/A	2019/07/30	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6256930	N/A	2019/07/31	Gnana Thomas
Total Cyanide	SKAL/CN	6256924	2019/07/31	2019/07/31	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6255021	N/A	2019/07/31	Nimarta Singh
Dissolved Oxygen	DO	6255125	2019/07/30	2019/07/30	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6260467	N/A	2019/08/02	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6261230	2019/08/02	2019/08/06	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6258732	2019/08/01	2019/08/01	Ron Morrison
Mercury (low level)	CV/AA	6258729	2019/08/01	2019/08/01	Ron Morrison
Cyanide (Free)	SPEC	6264907	2019/08/02	2019/08/02	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6261809	N/A	2019/08/01	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6261812	N/A	2019/08/02	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6261813	N/A	2019/08/02	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6261814	N/A	2019/08/01	Valentina Balada
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6261810	2019/08/01	2019/08/01	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6261811	2019/07/31	2019/08/01	Valentina Balada
Silica (Reactive)	KONE	6264906	N/A	2019/08/01	Serena Tian
Total Ammonia-N	LACH/NH ₄	6257051	N/A	2019/08/01	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6255233	N/A	2019/08/01	Chandra Nandlal
pH	AT	6255178	2019/07/30	2019/07/30	Neil Dassanayake
Orthophosphate	KONE	6255223	N/A	2019/07/31	Alina Dobreanu
Radium-226 Low Level	AS	6259305	N/A	2019/08/07	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6255222	N/A	2019/07/31	Alina Dobreanu
Total Dissolved Solids	BAL	6255686	2019/07/30	2019/07/31	Nilam Borole
Total Kjeldahl Nitrogen in Water	SKAL	6257033	2019/07/31	2019/07/31	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6257011	N/A	2019/07/31	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6258779	2019/08/01	2019/08/01	Nimarta Singh
Low Level Total Suspended Solids	BAL	6255366	2019/07/30	2019/07/31	Nilam Borole
Turbidity	AT	6255095	N/A	2019/07/30	Kazzandra Adeva



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	22.3°C
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Sample KJU442 [MEL-14] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Results relate only to the items tested.



BV Labs Job #: B9K9242
Report Date: 2019/08/09

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6260467	1,4-Difluorobenzene	2019/08/02	104	70 - 130	102	70 - 130	99	%				
6260467	4-Bromofluorobenzene	2019/08/02	102	70 - 130	101	70 - 130	101	%				
6260467	D10-Ethylbenzene	2019/08/02	100	70 - 130	97	70 - 130	93	%				
6260467	D4-1,2-Dichloroethane	2019/08/02	96	70 - 130	97	70 - 130	95	%				
6261230	o-Terphenyl	2019/08/06	109	60 - 130	104	60 - 130	104	%				
6254515	Total BOD	2019/08/04					<2	mg/L	NC	30	110	80 - 120
6255021	Dissolved Organic Carbon	2019/07/30	94	80 - 120	101	80 - 120	<0.50	mg/L	1.3	20		
6255095	Turbidity	2019/07/30			95	85 - 115	<0.1	NTU	2.9	20		
6255172	Alkalinity (Total as CaCO3)	2019/07/30			96	85 - 115	<1.0	mg/L	0.31	20		
6255178	pH	2019/07/30			102	98 - 103			0.24	N/A		
6255184	Conductivity	2019/07/30			101	85 - 115	<1.0	umho/cm	0.53	25		
6255218	Dissolved Chloride (Cl-)	2019/07/31	NC	80 - 120	104	80 - 120	<1.0	mg/L	2.9	20		
6255222	Dissolved Sulphate (SO4)	2019/07/31	NC	75 - 125	105	80 - 120	<1.0	mg/L	0.051	20		
6255223	Orthophosphate (P)	2019/07/31	100	75 - 125	102	80 - 120	<0.010	mg/L	NC	25		
6255233	Nitrate (N)	2019/08/01	100	80 - 120	104	80 - 120	<0.10	mg/L	0.45	20		
6255233	Nitrite (N)	2019/08/01	102	80 - 120	102	80 - 120	<0.010	mg/L	0.42	20		
6255366	Total Suspended Solids	2019/07/31					<1	mg/L	NC	25	101	85 - 115
6255686	Total Dissolved Solids	2019/07/31					<10	mg/L	1.6	25	95	90 - 110
6256924	Total Cyanide (CN)	2019/07/31	96	80 - 120	100	80 - 120	<0.0050	mg/L	NC	20		
6256930	WAD Cyanide (Free)	2019/07/31	83	80 - 120	99	80 - 120	<0.0010	mg/L	NC	20		
6257011	Total Organic Carbon (TOC)	2019/07/31	91	80 - 120	96	80 - 120	<0.50	mg/L	0.52	20		
6257033	Total Kjeldahl Nitrogen (TKN)	2019/07/31	101	80 - 120	100	80 - 120	<0.10	mg/L	3.2	20	101	80 - 120
6257051	Total Ammonia-N	2019/08/01	93	75 - 125	98	80 - 120	<0.050	mg/L	3.6	20		
6258729	Mercury (Hg)	2019/08/01	102	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6258732	Dissolved Mercury (Hg)	2019/08/01	103	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6258779	Total Phosphorus	2019/08/01	100	80 - 120	103	80 - 120	<0.020	mg/L	3.4	20	101	80 - 120
6259305	Radium-226	2019/08/07			95	85 - 115	<0.0050	Bq/L	4.8	N/A		
6260467	Benzene	2019/08/02	99	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
6260467	Ethylbenzene	2019/08/02	99	70 - 130	97	70 - 130	<0.20	ug/L	NC	30		
6260467	F1 (C6-C10) - BTEX	2019/08/02					<25	ug/L	NC	30		
6260467	F1 (C6-C10)	2019/08/02	104	70 - 130	119	70 - 130	<25	ug/L	NC	30		



BV Labs Job #: B9K9242
Report Date: 2019/08/09

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6260467	o-Xylene	2019/08/02	104	70 - 130	101	70 - 130	<0.20	ug/L	NC	30		
6260467	p+m-Xylene	2019/08/02	103	70 - 130	100	70 - 130	<0.40	ug/L	NC	30		
6260467	Toluene	2019/08/02	105	70 - 130	103	70 - 130	<0.20	ug/L	NC	30		
6260467	Total Xylenes	2019/08/02					<0.40	ug/L	NC	30		
6261230	F2 (C10-C16 Hydrocarbons)	2019/08/06	106	50 - 130	101	60 - 130	<100	ug/L	NC	30		
6261230	F3 (C16-C34 Hydrocarbons)	2019/08/06	119	50 - 130	116	60 - 130	<200	ug/L	NC	30		
6261230	F4 (C34-C50 Hydrocarbons)	2019/08/06	118	50 - 130	115	60 - 130	<200	ug/L	NC	30		
6261811	Total Aluminum (Al)	2019/08/01	100	80 - 120	102	80 - 120	<3.0	ug/L				
6261811	Total Antimony (Sb)	2019/08/01	99	80 - 120	98	80 - 120	<0.50	ug/L				
6261811	Total Arsenic (As)	2019/08/01	101	80 - 120	101	80 - 120	<0.10	ug/L				
6261811	Total Barium (Ba)	2019/08/01	98	80 - 120	98	80 - 120	<1.0	ug/L				
6261811	Total Beryllium (Be)	2019/08/01	100	80 - 120	100	80 - 120	<0.10	ug/L				
6261811	Total Bismuth (Bi)	2019/08/01	99	80 - 120	97	80 - 120	<1.0	ug/L				
6261811	Total Boron (B)	2019/08/01	94	80 - 120	94	80 - 120	<50	ug/L				
6261811	Total Cadmium (Cd)	2019/08/01	98	80 - 120	98	80 - 120	<0.010	ug/L				
6261811	Total Chromium (Cr)	2019/08/01	96	80 - 120	99	80 - 120	<1.0	ug/L				
6261811	Total Cobalt (Co)	2019/08/01	95	80 - 120	98	80 - 120	<0.20	ug/L				
6261811	Total Copper (Cu)	2019/08/01	95	80 - 120	98	80 - 120	<0.50	ug/L				
6261811	Total Iron (Fe)	2019/08/01	101	80 - 120	100	80 - 120	<10	ug/L				
6261811	Total Lead (Pb)	2019/08/01	102	80 - 120	101	80 - 120	<0.20	ug/L				
6261811	Total Lithium (Li)	2019/08/01	98	80 - 120	99	80 - 120	<2.0	ug/L				
6261811	Total Manganese (Mn)	2019/08/01	97	80 - 120	100	80 - 120	<1.0	ug/L				
6261811	Total Molybdenum (Mo)	2019/08/01	101	80 - 120	100	80 - 120	<1.0	ug/L				
6261811	Total Nickel (Ni)	2019/08/01	96	80 - 120	99	80 - 120	<1.0	ug/L				
6261811	Total Selenium (Se)	2019/08/01	101	80 - 120	100	80 - 120	<0.10	ug/L				
6261811	Total Silicon (Si)	2019/08/01	101	80 - 120	103	80 - 120	<100	ug/L				
6261811	Total Silver (Ag)	2019/08/01	99	80 - 120	100	80 - 120	<0.020	ug/L				
6261811	Total Strontium (Sr)	2019/08/01	100	80 - 120	100	80 - 120	<1.0	ug/L				
6261811	Total Thallium (Tl)	2019/08/01	101	80 - 120	99	80 - 120	<0.010	ug/L				
6261811	Total Tin (Sn)	2019/08/01	97	80 - 120	97	80 - 120	<5.0	ug/L				
6261811	Total Titanium (Ti)	2019/08/01	98	80 - 120	103	80 - 120	<5.0	ug/L				
6261811	Total Uranium (U)	2019/08/01	100	80 - 120	99	80 - 120	<0.10	ug/L				



BV Labs Job #: B9K9242
Report Date: 2019/08/09

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6261811	Total Vanadium (V)	2019/08/01	97	80 - 120	99	80 - 120	<5.0	ug/L				
6261811	Total Zinc (Zn)	2019/08/01	99	80 - 120	100	80 - 120	<5.0	ug/L				
6261811	Total Zirconium (Zr)	2019/08/01	102	80 - 120	102	80 - 120	<0.10	ug/L				
6261814	Dissolved Aluminum (Al)	2019/08/01	99	80 - 120	106	80 - 120	<3.0	ug/L				
6261814	Dissolved Antimony (Sb)	2019/08/01	98	80 - 120	99	80 - 120	<0.50	ug/L				
6261814	Dissolved Arsenic (As)	2019/08/01	103	80 - 120	103	80 - 120	<0.10	ug/L				
6261814	Dissolved Barium (Ba)	2019/08/01	96	80 - 120	101	80 - 120	<1.0	ug/L				
6261814	Dissolved Beryllium (Be)	2019/08/01	98	80 - 120	104	80 - 120	<0.10	ug/L				
6261814	Dissolved Bismuth (Bi)	2019/08/01	94	80 - 120	103	80 - 120	<1.0	ug/L				
6261814	Dissolved Boron (B)	2019/08/01	94	80 - 120	101	80 - 120	<50	ug/L				
6261814	Dissolved Cadmium (Cd)	2019/08/01	94	80 - 120	99	80 - 120	<0.010	ug/L				
6261814	Dissolved Chromium (Cr)	2019/08/01	94	80 - 120	99	80 - 120	<1.0	ug/L				
6261814	Dissolved Cobalt (Co)	2019/08/01	93	80 - 120	100	80 - 120	<0.20	ug/L				
6261814	Dissolved Copper (Cu)	2019/08/01	89	80 - 120	98	80 - 120	<0.20	ug/L				
6261814	Dissolved Iron (Fe)	2019/08/01	95	80 - 120	104	80 - 120	<5.0	ug/L				
6261814	Dissolved Lead (Pb)	2019/08/01	99	80 - 120	105	80 - 120	<0.20	ug/L				
6261814	Dissolved Lithium (Li)	2019/08/01	99	80 - 120	106	80 - 120	<2.0	ug/L				
6261814	Dissolved Manganese (Mn)	2019/08/01	93	80 - 120	99	80 - 120	<1.0	ug/L				
6261814	Dissolved Molybdenum (Mo)	2019/08/01	103	80 - 120	101	80 - 120	<1.0	ug/L				
6261814	Dissolved Nickel (Ni)	2019/08/01	90	80 - 120	99	80 - 120	<1.0	ug/L				
6261814	Dissolved Selenium (Se)	2019/08/01	100	80 - 120	102	80 - 120	<0.10	ug/L				
6261814	Dissolved Silicon (Si)	2019/08/01	NC	80 - 120	106	80 - 120	<100	ug/L				
6261814	Dissolved Silver (Ag)	2019/08/01	95	80 - 120	101	80 - 120	<0.020	ug/L				
6261814	Dissolved Strontium (Sr)	2019/08/01	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6261814	Dissolved Thallium (Tl)	2019/08/01	98	80 - 120	104	80 - 120	<0.010	ug/L				
6261814	Dissolved Tin (Sn)	2019/08/01	97	80 - 120	100	80 - 120	<5.0	ug/L				
6261814	Dissolved Titanium (Ti)	2019/08/01	98	80 - 120	101	80 - 120	<5.0	ug/L				
6261814	Dissolved Uranium (U)	2019/08/01	102	80 - 120	104	80 - 120	<0.10	ug/L				
6261814	Dissolved Vanadium (V)	2019/08/01	99	80 - 120	104	80 - 120	<5.0	ug/L				
6261814	Dissolved Zinc (Zn)	2019/08/01	92	80 - 120	101	80 - 120	<5.0	ug/L				
6261814	Dissolved Zirconium (Zr)	2019/08/01	103	80 - 120	101	80 - 120	<0.10	ug/L				
6264906	Reactive Silica (SiO2)	2019/08/01	102	80 - 120	102	80 - 120	<0.050	mg/L				



BUREAU
VERITAS

BV Labs Job #: B9K9242

Report Date: 2019/08/09

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6264907	Free Cyanide (CN)	2019/08/02	92	80 - 120	96	80 - 120	<1.0	ug/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

BV Labs Job #: B9K9242
Report Date: 2019/08/09

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9K9242

Report Date: 2019/08/09

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site Location: MELIADINE
 Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/22
 Report #: R5850075
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M0110

Received: 2019/08/08, 13:00

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/08/12	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/08/13	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/08/10	2019/08/15	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/08/13	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	1	N/A	2019/08/12	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/08/12	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/08/12	2019/08/12	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/08/12	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/08/09	2019/08/09	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/08/13	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/08/14	2019/08/15	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/08/12	2019/08/12	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/12	2019/08/12	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/08/15	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/08/14	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/08/14	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/08/13	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/08/09	2019/08/15	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/08/14	2019/08/14	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/08/19	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/11	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/08/10	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/08/10	2019/08/12	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/08/12	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/08/20	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/08/12	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/08/10	2019/08/12	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/08/10	2019/08/12	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/08/13	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
 Site Location: MELIADINE
 Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/22
 Report #: R5850075
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M0110

Received: 2019/08/08, 13:00

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Total Phosphorus (Colourimetric) (1)	1	2019/08/13	2019/08/13	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/08/10	2019/08/12	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/08/09	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site Location: MELIADINE
Your C.O.C. #: n/a

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/22
Report #: R5850075
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M0110

Received: 2019/08/08, 13:00

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
22 Aug 2019 16:56:37

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9M0110

Report Date: 2019/08/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KMB124		
Sampling Date		2019/08/06 07:00		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	6274866
Toluene	ug/L	<0.20	0.20	6274866
Ethylbenzene	ug/L	<0.20	0.20	6274866
o-Xylene	ug/L	<0.20	0.20	6274866
p+m-Xylene	ug/L	<0.40	0.40	6274866
Total Xylenes	ug/L	<0.40	0.40	6274866
F1 (C6-C10)	ug/L	<25	25	6274866
F1 (C6-C10) - BTEX	ug/L	<25	25	6274866
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6280830
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6280830
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6280830
Reached Baseline at C50	ug/L	Yes		6280830
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	100		6274866
4-Bromofluorobenzene	%	96		6274866
D10-Ethylbenzene	%	99		6274866
D4-1,2-Dichloroethane	%	99		6274866
o-Terphenyl	%	109		6280830
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9M0110

Report Date: 2019/08/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KMB124		
Sampling Date		2019/08/06 07:00		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	234	0.50	6279884
Metals				
Dissolved Aluminum (Al)	ug/L	27.2	3.0	6279919
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6279919
Dissolved Arsenic (As)	ug/L	0.87	0.10	6279919
Dissolved Barium (Ba)	ug/L	38.9	1.0	6279919
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6279919
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6279919
Dissolved Boron (B)	ug/L	406	50	6279919
Dissolved Cadmium (Cd)	ug/L	0.018	0.010	6279919
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6279919
Dissolved Cobalt (Co)	ug/L	0.35	0.20	6279919
Dissolved Copper (Cu)	ug/L	0.67	0.20	6279919
Dissolved Iron (Fe)	ug/L	152	5.0	6279919
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6279919
Dissolved Lithium (Li)	ug/L	57.1	2.0	6279919
Dissolved Manganese (Mn)	ug/L	10.5	1.0	6279919
Dissolved Molybdenum (Mo)	ug/L	6.1 (1)	1.0	6279919
Dissolved Nickel (Ni)	ug/L	2.3	1.0	6279919
Dissolved Selenium (Se)	ug/L	<0.10	0.10	6279919
Dissolved Silicon (Si)	ug/L	256	100	6279919
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6279919
Dissolved Strontium (Sr)	ug/L	1290	1.0	6279919
Dissolved Thallium (Tl)	ug/L	0.024	0.010	6279919
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6279919
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6279919
Dissolved Uranium (U)	ug/L	0.17	0.10	6279919
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6279919
Dissolved Zinc (Zn)	ug/L	7.5	5.0	6279919
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
(1) Dissolved greater than total. Reanalysis yields similar results.				



BUREAU
VERITAS

BV Labs Job #: B9M0110

Report Date: 2019/08/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KMB124		
Sampling Date		2019/08/06 07:00		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6279919
Dissolved Calcium (Ca)	mg/L	66.2	0.050	6279885
Dissolved Magnesium (Mg)	mg/L	16.7	0.050	6279885
Dissolved Potassium (K)	mg/L	11.7	0.050	6279885
Dissolved Sodium (Na)	mg/L	162	0.050	6279885
Dissolved Sulphur (S)	mg/L	15.9	3.0	6279885
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

BV Labs Job #: B9M0110

Report Date: 2019/08/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KMB124		
Sampling Date		2019/08/06 07:00		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	67.4	3.0	6282265
Total Antimony (Sb)	ug/L	<0.50	0.50	6282265
Total Arsenic (As)	ug/L	0.90	0.10	6282265
Total Barium (Ba)	ug/L	37.8	1.0	6282265
Total Beryllium (Be)	ug/L	<0.10	0.10	6282265
Total Bismuth (Bi)	ug/L	<1.0	1.0	6282265
Total Boron (B)	ug/L	392	50	6282265
Total Cadmium (Cd)	ug/L	0.012	0.010	6282265
Total Chromium (Cr)	ug/L	<1.0	1.0	6282265
Total Cobalt (Co)	ug/L	0.34	0.20	6282265
Total Copper (Cu)	ug/L	0.62	0.50	6282265
Total Iron (Fe)	ug/L	133	10	6282265
Total Lead (Pb)	ug/L	<0.20	0.20	6282265
Total Lithium (Li)	ug/L	55.7	2.0	6282265
Total Manganese (Mn)	ug/L	9.3	1.0	6282265
Total Molybdenum (Mo)	ug/L	<1.0	1.0	6282265
Total Nickel (Ni)	ug/L	2.2	1.0	6282265
Total Selenium (Se)	ug/L	<0.10	0.10	6282265
Total Silicon (Si)	ug/L	238	100	6282265
Total Silver (Ag)	ug/L	<0.020	0.020	6282265
Total Strontium (Sr)	ug/L	1370	1.0	6282265
Total Thallium (Tl)	ug/L	0.023	0.010	6282265
Total Tin (Sn)	ug/L	<5.0	5.0	6282265
Total Titanium (Ti)	ug/L	<5.0	5.0	6282265
Total Uranium (U)	ug/L	0.18	0.10	6282265
Total Vanadium (V)	ug/L	<5.0	5.0	6282265
Total Zinc (Zn)	ug/L	5.5	5.0	6282265
Total Zirconium (Zr)	ug/L	<0.10	0.10	6282265
Total Calcium (Ca)	ug/L	64900	50	6279888
Total Magnesium (Mg)	ug/L	17000	50	6279888
Total Potassium (K)	ug/L	10500	50	6279888
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9M0110
Report Date: 2019/08/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KMB124		
Sampling Date		2019/08/06 07:00		
COC Number		n/a		
	UNITS	MEL-14	RDL	QC Batch
Total Sodium (Na)	ug/L	161000	50	6279888
Total Sulphur (S)	ug/L	14300	3000	6279888
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	232000	500	6279887
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9M0110
Report Date: 2019/08/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KMB124			KMB124		
Sampling Date		2019/08/06 07:00			2019/08/06 07:00		
COC Number		n/a			n/a		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	18	1.0	6271553			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6271553			
Inorganics							
Total Ammonia-N	mg/L	3.8	0.050	6273700			
Total BOD	mg/L	<2	2	6273484			
Conductivity	umho/cm	1500	1.0	6273649			
Free Cyanide (CN)	ug/L	1.1 (1)	1.0	6287071			
Total Dissolved Solids	mg/L	1070	10	6273820			
Total Kjeldahl Nitrogen (TKN)	mg/L	4.1	0.50	6273722			
Dissolved Organic Carbon	mg/L	2.8	0.50	6272050			
Total Organic Carbon (TOC)	mg/L	3.3	0.50	6273778	3.3	0.50	6273778
Orthophosphate (P)	mg/L	<0.010	0.010	6273680			
Dissolved Oxygen	mg/L	10.3		6272775	10.3		6272775
pH	pH	7.26		6273650			
Total Phosphorus	mg/L	<0.020	0.020	6276548			
Reactive Silica (SiO ₂)	mg/L	0.43	0.050	6287991	0.43	0.050	6287991
Total Suspended Solids	mg/L	2	1	6273615			
Dissolved Sulphate (SO ₄)	mg/L	39	1.0	6273683			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6275414			
Turbidity	NTU	0.3	0.1	6272761			
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6275429			
Alkalinity (Total as CaCO ₃)	mg/L	18	1.0	6273647			
Dissolved Chloride (Cl ⁻)	mg/L	370	4.0	6273684			
Nitrite (N)	mg/L	0.573	0.010	6272497			
Nitrate (N)	mg/L	13.6	0.10	6272497			
Nitrate + Nitrite (N)	mg/L	14.2	0.10	6272497			
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6276644	<0.0050	0.0050	6276644
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W							



BUREAU
VERITAS

BV Labs Job #: B9M0110

Report Date: 2019/08/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KMB124			KMB124		
Sampling Date		2019/08/06 07:00			2019/08/06 07:00		
COC Number		n/a			n/a		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	<0.00001	0.00001	6274885			
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6274533	<0.00001	0.00001	6274533
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BV Labs Job #: B9M0110
Report Date: 2019/08/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KMB124
Sample ID: MEL-14
Matrix: Water

Collected: 2019/08/06
Shipped:
Received: 2019/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6273647	N/A	2019/08/12	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6271553	N/A	2019/08/13	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6273484	2019/08/10	2019/08/15	Hinal Shah
Chloride by Automated Colourimetry	KONE	6273684	N/A	2019/08/13	Alina Dobreanu
Conductivity	AT	6273649	N/A	2019/08/12	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6275429	N/A	2019/08/12	Barbara Kalbasi Esfahani
Total Cyanide	SKAL/CN	6275414	2019/08/12	2019/08/12	Barbara Kalbasi Esfahani
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6272050	N/A	2019/08/12	Mandeep Kaur
Dissolved Oxygen	DO	6272775	2019/08/09	2019/08/09	Prakash Piya
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6274866	N/A	2019/08/13	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6280830	2019/08/14	2019/08/15	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6274533	2019/08/12	2019/08/12	Ron Morrison
Mercury (low level)	CV/AA	6274885	2019/08/12	2019/08/12	Ron Morrison
Cyanide (Free)	SPEC	6287071	2019/08/15	2019/08/15	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6279887	N/A	2019/08/15	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6279884	N/A	2019/08/14	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6279885	N/A	2019/08/14	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6279919	N/A	2019/08/13	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6279888	2019/08/15	2019/08/15	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6282265	2019/08/14	2019/08/14	Andrew An
Silica (Reactive)	KONE	6287991	N/A	2019/08/19	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6273700	N/A	2019/08/11	Amanpreet Sappal
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6272497	N/A	2019/08/10	Amanpreet Sappal
pH	AT	6273650	2019/08/10	2019/08/12	Surinder Rai
Orthophosphate	KONE	6273680	N/A	2019/08/12	Alina Dobreanu
Radium-226 Low Level	AS	6276644	N/A	2019/08/20	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6273683	N/A	2019/08/12	Alina Dobreanu
Total Dissolved Solids	BAL	6273820	2019/08/10	2019/08/12	Nilam Borole
Total Kjeldahl Nitrogen in Water	SKAL	6273722	2019/08/10	2019/08/12	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6273778	N/A	2019/08/13	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6276548	2019/08/13	2019/08/13	Nimarta Singh
Low Level Total Suspended Solids	BAL	6273615	2019/08/10	2019/08/12	Nilam Borole
Turbidity	AT	6272761	N/A	2019/08/09	Kazzandra Adeva

BV Labs ID: KMB124 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/08/06
Shipped:
Received: 2019/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Oxygen	DO	6272775	2019/08/09	2019/08/09	Prakash Piya
Dissolved Mercury (low level)	CV/AA	6274533	2019/08/12	2019/08/12	Ron Morrison
Silica (Reactive)	KONE	6287991	N/A	2019/08/19	Zafar Iqbal
Radium-226 Low Level	AS	6276644	N/A	2019/08/21	Priya Sharma
Total Organic Carbon (TOC)	TOCV/NDIR	6273778	N/A	2019/08/13	Mandeep Kaur



BUREAU
VERITAS

BV Labs Job #: B9M0110

Report Date: 2019/08/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.3°C
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Sample KMB124 [MEL-14] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Matrix Spike Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.



BV Labs Job #: B9M0110
Report Date: 2019/08/22

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6274866	1,4-Difluorobenzene	2019/08/12	99	70 - 130	101	70 - 130	102	%				
6274866	4-Bromofluorobenzene	2019/08/12	99	70 - 130	98	70 - 130	95	%				
6274866	D10-Ethylbenzene	2019/08/12	105	70 - 130	106	70 - 130	103	%				
6274866	D4-1,2-Dichloroethane	2019/08/12	99	70 - 130	101	70 - 130	103	%				
6280830	o-Terphenyl	2019/08/15	110	60 - 130	111	60 - 130	104	%				
6272050	Dissolved Organic Carbon	2019/08/12	90	80 - 120	99	80 - 120	<0.50	mg/L	NC	20		
6272497	Nitrate (N)	2019/08/10	109	80 - 120	107	80 - 120	<0.10	mg/L	NC	20		
6272497	Nitrite (N)	2019/08/10	106	80 - 120	108	80 - 120	<0.010	mg/L				
6272761	Turbidity	2019/08/09			95	85 - 115	<0.1	NTU	15	20		
6273484	Total BOD	2019/08/15					<2	mg/L	NC	30	98	80 - 120
6273615	Total Suspended Solids	2019/08/12					<1	mg/L	11	25	97	85 - 115
6273647	Alkalinity (Total as CaCO3)	2019/08/12			94	85 - 115	<1.0	mg/L	0.27	20		
6273649	Conductivity	2019/08/12			101	85 - 115	<1.0	umho/cm	0.38	25		
6273650	pH	2019/08/12			102	98 - 103			0.11	N/A		
6273680	Orthophosphate (P)	2019/08/12	NC	75 - 125	99	80 - 120	<0.010	mg/L	0.83	25		
6273683	Dissolved Sulphate (SO4)	2019/08/12	NC	75 - 125	107	80 - 120	<1.0	mg/L	0.54	20		
6273684	Dissolved Chloride (Cl-)	2019/08/13	NC	80 - 120	106	80 - 120	<1.0	mg/L	1.3	20		
6273700	Total Ammonia-N	2019/08/11	99	75 - 125	100	80 - 120	<0.050	mg/L	2.7	20		
6273722	Total Kjeldahl Nitrogen (TKN)	2019/08/12	103	80 - 120	104	80 - 120	<0.10	mg/L	20	20	107	80 - 120
6273778	Total Organic Carbon (TOC)	2019/08/13	93	80 - 120	94	80 - 120	<0.50	mg/L	0.67	20		
6273820	Total Dissolved Solids	2019/08/12					<10	mg/L	0	25	100	90 - 110
6274533	Dissolved Mercury (Hg)	2019/08/12	107	75 - 125	106	80 - 120	<0.00001	mg/L	NC	20		
6274866	Benzene	2019/08/12	107	70 - 130	105	70 - 130	<0.20	ug/L	NC	30		
6274866	Ethylbenzene	2019/08/12	97	70 - 130	99	70 - 130	<0.20	ug/L	NC	30		
6274866	F1 (C6-C10) - BTEX	2019/08/12					<25	ug/L	NC	30		
6274866	F1 (C6-C10)	2019/08/12	93	70 - 130	99	70 - 130	<25	ug/L	NC	30		
6274866	o-Xylene	2019/08/12	95	70 - 130	96	70 - 130	<0.20	ug/L	NC	30		
6274866	p+m-Xylene	2019/08/12	96	70 - 130	99	70 - 130	<0.40	ug/L	NC	30		
6274866	Toluene	2019/08/12	96	70 - 130	99	70 - 130	<0.20	ug/L	NC	30		
6274866	Total Xylenes	2019/08/12					<0.40	ug/L	NC	30		
6274885	Mercury (Hg)	2019/08/12	105	75 - 125	105	80 - 120	<0.00001	mg/L	NC	20		



BV Labs Job #: B9M0110
Report Date: 2019/08/22

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6275414	Total Cyanide (CN)	2019/08/12	75 (1)	80 - 120	101	80 - 120	<0.0050	mg/L	8.7	20		
6275429	WAD Cyanide (Free)	2019/08/12	70 (1)	80 - 120	99	80 - 120	<0.0010	mg/L	12	20		
6276548	Total Phosphorus	2019/08/13	101	80 - 120	100	80 - 120	<0.020	mg/L	0.38	20	100	80 - 120
6276644	Radium-226	2019/08/21			90	85 - 115	<0.0050	Bq/L	NC	N/A		
6279919	Dissolved Aluminum (Al)	2019/08/13	96	80 - 120	97	80 - 120	<3.0	ug/L				
6279919	Dissolved Antimony (Sb)	2019/08/13	98	80 - 120	94	80 - 120	<0.50	ug/L				
6279919	Dissolved Arsenic (As)	2019/08/13	100	80 - 120	100	80 - 120	<0.10	ug/L				
6279919	Dissolved Barium (Ba)	2019/08/13	94	80 - 120	96	80 - 120	<1.0	ug/L				
6279919	Dissolved Beryllium (Be)	2019/08/13	95	80 - 120	96	80 - 120	<0.10	ug/L				
6279919	Dissolved Bismuth (Bi)	2019/08/13	90	80 - 120	100	80 - 120	<1.0	ug/L				
6279919	Dissolved Boron (B)	2019/08/13	106	80 - 120	99	80 - 120	<50	ug/L				
6279919	Dissolved Cadmium (Cd)	2019/08/13	94	80 - 120	98	80 - 120	<0.010	ug/L				
6279919	Dissolved Chromium (Cr)	2019/08/13	93	80 - 120	99	80 - 120	<1.0	ug/L				
6279919	Dissolved Cobalt (Co)	2019/08/13	91	80 - 120	97	80 - 120	<0.20	ug/L				
6279919	Dissolved Copper (Cu)	2019/08/13	86	80 - 120	95	80 - 120	<0.20	ug/L				
6279919	Dissolved Iron (Fe)	2019/08/13	NC	80 - 120	100	80 - 120	<5.0	ug/L				
6279919	Dissolved Lead (Pb)	2019/08/13	91	80 - 120	100	80 - 120	<0.20	ug/L				
6279919	Dissolved Lithium (Li)	2019/08/13	NC	80 - 120	96	80 - 120	<2.0	ug/L				
6279919	Dissolved Manganese (Mn)	2019/08/13	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6279919	Dissolved Molybdenum (Mo)	2019/08/13	99	80 - 120	100	80 - 120	<1.0	ug/L				
6279919	Dissolved Nickel (Ni)	2019/08/13	87	80 - 120	97	80 - 120	<1.0	ug/L				
6279919	Dissolved Selenium (Se)	2019/08/13	99	80 - 120	96	80 - 120	<0.10	ug/L				
6279919	Dissolved Silicon (Si)	2019/08/13	NC	80 - 120	105	80 - 120	<100	ug/L				
6279919	Dissolved Silver (Ag)	2019/08/13	84	80 - 120	99	80 - 120	<0.020	ug/L				
6279919	Dissolved Strontium (Sr)	2019/08/13	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6279919	Dissolved Thallium (Tl)	2019/08/13	93	80 - 120	100	80 - 120	<0.010	ug/L				
6279919	Dissolved Tin (Sn)	2019/08/13	96	80 - 120	99	80 - 120	<5.0	ug/L				
6279919	Dissolved Titanium (Ti)	2019/08/13	93	80 - 120	99	80 - 120	<5.0	ug/L				
6279919	Dissolved Uranium (U)	2019/08/13	101	80 - 120	103	80 - 120	<0.10	ug/L				
6279919	Dissolved Vanadium (V)	2019/08/13	96	80 - 120	99	80 - 120	<5.0	ug/L				
6279919	Dissolved Zinc (Zn)	2019/08/13	96	80 - 120	98	80 - 120	<5.0	ug/L				
6279919	Dissolved Zirconium (Zr)	2019/08/13	97	80 - 120	104	80 - 120	<0.10	ug/L				



BV Labs Job #: B9M0110
Report Date: 2019/08/22

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6280830	F2 (C10-C16 Hydrocarbons)	2019/08/15	109	50 - 130	107	60 - 130	<100	ug/L	NC	30		
6280830	F3 (C16-C34 Hydrocarbons)	2019/08/15	103	50 - 130	102	60 - 130	<200	ug/L	NC	30		
6280830	F4 (C34-C50 Hydrocarbons)	2019/08/15	104	50 - 130	103	60 - 130	<200	ug/L	NC	30		
6282265	Total Aluminum (Al)	2019/08/14	101	80 - 120	98	80 - 120	<3.0	ug/L				
6282265	Total Antimony (Sb)	2019/08/14	102	80 - 120	100	80 - 120	<0.50	ug/L				
6282265	Total Arsenic (As)	2019/08/14	105	80 - 120	100	80 - 120	<0.10	ug/L				
6282265	Total Barium (Ba)	2019/08/14	101	80 - 120	99	80 - 120	<1.0	ug/L				
6282265	Total Beryllium (Be)	2019/08/14	100	80 - 120	98	80 - 120	<0.10	ug/L				
6282265	Total Bismuth (Bi)	2019/08/14	101	80 - 120	101	80 - 120	<1.0	ug/L				
6282265	Total Boron (B)	2019/08/14	109	80 - 120	106	80 - 120	<50	ug/L				
6282265	Total Cadmium (Cd)	2019/08/14	102	80 - 120	101	80 - 120	<0.010	ug/L				
6282265	Total Chromium (Cr)	2019/08/14	97	80 - 120	97	80 - 120	<1.0	ug/L				
6282265	Total Cobalt (Co)	2019/08/14	96	80 - 120	95	80 - 120	<0.20	ug/L				
6282265	Total Copper (Cu)	2019/08/14	96	80 - 120	97	80 - 120	<0.50	ug/L				
6282265	Total Iron (Fe)	2019/08/14	102	80 - 120	101	80 - 120	<10	ug/L				
6282265	Total Lead (Pb)	2019/08/14	104	80 - 120	103	80 - 120	<0.20	ug/L				
6282265	Total Lithium (Li)	2019/08/14	99	80 - 120	100	80 - 120	<2.0	ug/L				
6282265	Total Manganese (Mn)	2019/08/14	99	80 - 120	98	80 - 120	<1.0	ug/L				
6282265	Total Molybdenum (Mo)	2019/08/14	105	80 - 120	98	80 - 120	<1.0	ug/L				
6282265	Total Nickel (Ni)	2019/08/14	99	80 - 120	99	80 - 120	<1.0	ug/L				
6282265	Total Selenium (Se)	2019/08/14	105	80 - 120	101	80 - 120	<0.10	ug/L				
6282265	Total Silicon (Si)	2019/08/14	104	80 - 120	102	80 - 120	<100	ug/L				
6282265	Total Silver (Ag)	2019/08/14	101	80 - 120	100	80 - 120	<0.020	ug/L				
6282265	Total Strontium (Sr)	2019/08/14	NC	80 - 120	96	80 - 120	<1.0	ug/L				
6282265	Total Thallium (Tl)	2019/08/14	102	80 - 120	103	80 - 120	<0.010	ug/L				
6282265	Total Tin (Sn)	2019/08/14	105	80 - 120	103	80 - 120	<5.0	ug/L				
6282265	Total Titanium (Ti)	2019/08/14	102	80 - 120	97	80 - 120	<5.0	ug/L				
6282265	Total Uranium (U)	2019/08/14	105	80 - 120	103	80 - 120	<0.10	ug/L				
6282265	Total Vanadium (V)	2019/08/14	101	80 - 120	98	80 - 120	<5.0	ug/L				
6282265	Total Zinc (Zn)	2019/08/14	98	80 - 120	99	80 - 120	<5.0	ug/L				
6282265	Total Zirconium (Zr)	2019/08/14	105	80 - 120	99	80 - 120	<0.10	ug/L				
6287071	Free Cyanide (CN)	2019/08/15	94	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		



BV Labs Job #: B9M0110
Report Date: 2019/08/22

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6287991	Reactive Silica (SiO ₂)	2019/08/19	105	80 - 120	98	80 - 120	<0.050	mg/L	0.63	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference \leq 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9M0110

Report Date: 2019/08/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Robert Allen, Scientific Specialist

Rob Reinert, B.Sc., Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9M0110

Report Date: 2019/08/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63°02'15.5" 92°13'06.3"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/15
 Report #: R5840328
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9L2327

Received: 2019/08/01, 10:00

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/08/08	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/08/08	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/08/02	2019/08/07	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/08/06	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	1	N/A	2019/08/08	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/08/07	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/08/07	2019/08/07	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/08/02	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/08/02	2019/08/02	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/08/07	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/08/08	2019/08/08	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/08/06	2019/08/06	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/06	2019/08/06	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/08/08	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/08/07	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/08/07	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/08/06	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/08/01	2019/08/08	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/08/06	2019/08/07	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/08/06	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/04	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/08/04	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/08/02	2019/08/08	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/08/06	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/08/13	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/08/06	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/08/03	2019/08/06	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/08/03	2019/08/07	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/08/07	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/15
Report #: R5840328
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9L2327

Received: 2019/08/01, 10:00

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Total Phosphorus (Colourimetric) (1)	1	2019/08/07	2019/08/07	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/08/02	2019/08/03	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/08/02	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/15
Report #: R5840328
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9L2327

Received: 2019/08/01, 10:00

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
15 Aug 2019 14:53:57

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9L2327
Report Date: 2019/08/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KKL595		
Sampling Date		2019/07/30 06:30		
	UNITS	MEL-14	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	6268184
Toluene	ug/L	<0.20	0.20	6268184
Ethylbenzene	ug/L	<0.20	0.20	6268184
o-Xylene	ug/L	<0.20	0.20	6268184
p+m-Xylene	ug/L	<0.40	0.40	6268184
Total Xylenes	ug/L	<0.40	0.40	6268184
F1 (C6-C10)	ug/L	<25	25	6268184
F1 (C6-C10) - BTEX	ug/L	<25	25	6268184
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6269023
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6269023
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6269023
Reached Baseline at C50	ug/L	Yes		6269023
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	98		6268184
4-Bromofluorobenzene	%	99		6268184
D10-Ethylbenzene	%	104		6268184
D4-1,2-Dichloroethane	%	95		6268184
o-Terphenyl	%	98		6269023
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9L2327
Report Date: 2019/08/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KKL595		
Sampling Date		2019/07/30 06:30		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	266	0.50	6269878
Metals				
Dissolved Aluminum (Al)	ug/L	24.3	3.0	6269880
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6269880
Dissolved Arsenic (As)	ug/L	0.96	0.10	6269880
Dissolved Barium (Ba)	ug/L	36.9	1.0	6269880
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6269880
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6269880
Dissolved Boron (B)	ug/L	361	50	6269880
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	6269880
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6269880
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	6269880
Dissolved Copper (Cu)	ug/L	<0.20	0.20	6269880
Dissolved Iron (Fe)	ug/L	9.8	5.0	6269880
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6269880
Dissolved Lithium (Li)	ug/L	67.4	2.0	6269880
Dissolved Manganese (Mn)	ug/L	53.1	1.0	6269880
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	6269880
Dissolved Nickel (Ni)	ug/L	1.4	1.0	6269880
Dissolved Selenium (Se)	ug/L	<0.10	0.10	6269880
Dissolved Silicon (Si)	ug/L	211	100	6269880
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6269880
Dissolved Strontium (Sr)	ug/L	1500	1.0	6269880
Dissolved Thallium (Tl)	ug/L	0.013	0.010	6269880
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6269880
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6269880
Dissolved Uranium (U)	ug/L	0.11	0.10	6269880
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6269880
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6269880
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6269880
Dissolved Calcium (Ca)	mg/L	73.4	0.050	6269879
Dissolved Magnesium (Mg)	mg/L	20.1	0.050	6269879
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9L2327
Report Date: 2019/08/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KKL595		
Sampling Date		2019/07/30 06:30		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Potassium (K)	mg/L	12.5	0.050	6269879
Dissolved Sodium (Na)	mg/L	179	0.050	6269879
Dissolved Sulphur (S)	mg/L	18.4	3.0	6269879
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
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BV Labs Job #: B9L2327
Report Date: 2019/08/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KKL595		
Sampling Date		2019/07/30 06:30		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	73.4	3.0	6269882
Total Antimony (Sb)	ug/L	<0.50	0.50	6269882
Total Arsenic (As)	ug/L	1.13	0.10	6269882
Total Barium (Ba)	ug/L	37.9	1.0	6269882
Total Beryllium (Be)	ug/L	<0.10	0.10	6269882
Total Bismuth (Bi)	ug/L	<1.0	1.0	6269882
Total Boron (B)	ug/L	363	50	6269882
Total Cadmium (Cd)	ug/L	<0.010	0.010	6269882
Total Chromium (Cr)	ug/L	<1.0	1.0	6269882
Total Cobalt (Co)	ug/L	0.24	0.20	6269882
Total Copper (Cu)	ug/L	<0.50	0.50	6269882
Total Iron (Fe)	ug/L	2370	10	6269882
Total Lead (Pb)	ug/L	<0.20	0.20	6269882
Total Lithium (Li)	ug/L	67.5	2.0	6269882
Total Manganese (Mn)	ug/L	64.8	1.0	6269882
Total Molybdenum (Mo)	ug/L	<1.0	1.0	6269882
Total Nickel (Ni)	ug/L	1.8	1.0	6269882
Total Selenium (Se)	ug/L	<0.10	0.10	6269882
Total Silicon (Si)	ug/L	214	100	6269882
Total Silver (Ag)	ug/L	<0.020	0.020	6269882
Total Strontium (Sr)	ug/L	1630	1.0	6269882
Total Thallium (Tl)	ug/L	0.013	0.010	6269882
Total Tin (Sn)	ug/L	<5.0	5.0	6269882
Total Titanium (Ti)	ug/L	<5.0	5.0	6269882
Total Uranium (U)	ug/L	0.13	0.10	6269882
Total Vanadium (V)	ug/L	<5.0	5.0	6269882
Total Zinc (Zn)	ug/L	6.6	5.0	6269882
Total Zirconium (Zr)	ug/L	<0.10	0.10	6269882
Total Calcium (Ca)	ug/L	71700	50	6269881
Total Magnesium (Mg)	ug/L	19700	50	6269881
Total Potassium (K)	ug/L	11600	50	6269881
Total Sodium (Na)	ug/L	179000	50	6269881
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9L2327
Report Date: 2019/08/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KKL595		
Sampling Date		2019/07/30 06:30		
	UNITS	MEL-14	RDL	QC Batch
Total Sulphur (S)	ug/L	16500	3000	6269881
Calculated Parameters				
Total Hardness (CaCO ₃)	ug/L	260000	500	6262591
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9L2327
Report Date: 2019/08/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KKL595		
Sampling Date		2019/07/30 06:30		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	22	1.0	6259390
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6259390
Inorganics				
Total Ammonia-N	mg/L	5.6 (1)	0.050	6263453
Total BOD	mg/L	<2	2	6261400
Conductivity	umho/cm	1600	1.0	6261990
Free Cyanide (CN)	ug/L	1.4 (2)	1.0	6279656
Total Dissolved Solids	mg/L	1090	10	6263216
Total Kjeldahl Nitrogen (TKN)	mg/L	5.2 (1)	0.50	6263477
Dissolved Organic Carbon	mg/L	2.8	0.50	6261538
Total Organic Carbon (TOC)	mg/L	3.1	0.50	6263472
Orthophosphate (P)	mg/L	<0.010	0.010	6262862
Dissolved Oxygen	mg/L	10.4		6261875
pH	pH	7.47		6261998
Total Phosphorus	mg/L	<0.020	0.020	6266642
Reactive Silica (SiO ₂)	mg/L	0.42	0.050	6267406
Total Suspended Solids	mg/L	8	1	6262851
Dissolved Sulphate (SO ₄)	mg/L	44	1.0	6262860
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6266699
Turbidity	NTU	17	0.1	6260268
WAD Cyanide (Free)	mg/L	0.0010	0.0010	6266751
Alkalinity (Total as CaCO ₃)	mg/L	22	1.0	6261987
Dissolved Chloride (Cl ⁻)	mg/L	410	5.0	6262859
Nitrite (N)	mg/L	0.366	0.010	6263290
Nitrate (N)	mg/L	11.1	0.10	6263290
Nitrate + Nitrite (N)	mg/L	11.4	0.10	6263290
RADIONUCLIDE				
Radium-226	Bq/L	<0.0050	0.0050	6264949
RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) TKN < NH ₄ : Both values fall within acceptable RPD limits for duplicates and are likely equivalent. (2) See general comments for notes regarding CNFREE-W				



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BV Labs Job #: B9L2327
Report Date: 2019/08/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KKL595			KKL595		
Sampling Date		2019/07/30 06:30			2019/07/30 06:30		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	<0.00001	0.00001	6264491			
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6264656	<0.00001	0.00001	6264656
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BV Labs Job #: B9L2327
Report Date: 2019/08/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TEST SUMMARY

BV Labs ID: KKL595
Sample ID: MEL-14
Matrix: Water

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6261987	N/A	2019/08/08	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6259390	N/A	2019/08/08	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6261400	2019/08/02	2019/08/07	Nusrat Naz
Chloride by Automated Colourimetry	KONE	6262859	N/A	2019/08/06	Alina Dobreanu
Conductivity	AT	6261990	N/A	2019/08/08	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6266751	N/A	2019/08/07	Gnana Thomas
Total Cyanide	SKAL/CN	6266699	2019/08/07	2019/08/07	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6261538	N/A	2019/08/02	Mandeep Kaur
Dissolved Oxygen	DO	6261875	2019/08/02	2019/08/02	Prakash Piya
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6268184	N/A	2019/08/07	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6269023	2019/08/08	2019/08/08	Anna Stuglik Rolland
Dissolved Mercury (low level)	CV/AA	6264656	2019/08/06	2019/08/06	Ron Morrison
Mercury (low level)	CV/AA	6264491	2019/08/06	2019/08/06	Ron Morrison
Cyanide (Free)	SPEC	6279656	2019/08/08	2019/08/08	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6262591	N/A	2019/08/08	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6269878	N/A	2019/08/07	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6269879	N/A	2019/08/07	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6269880	N/A	2019/08/06	John Choo
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6269881	2019/08/08	2019/08/08	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6269882	2019/08/06	2019/08/07	Andrew An
Silica (Reactive)	KONE	6267406	N/A	2019/08/06	Serena Tian
Total Ammonia-N	LACH/NH ₄	6263453	N/A	2019/08/04	Amanpreet Sappal
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6263290	N/A	2019/08/04	Amanpreet Sappal
pH	AT	6261998	2019/08/02	2019/08/08	Neil Dassanayake
Orthophosphate	KONE	6262862	N/A	2019/08/06	Alina Dobreanu
Radium-226 Low Level	AS	6264949	N/A	2019/08/13	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6262860	N/A	2019/08/06	Alina Dobreanu
Total Dissolved Solids	BAL	6263216	2019/08/03	2019/08/06	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6263477	2019/08/03	2019/08/07	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6263472	N/A	2019/08/07	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6266642	2019/08/07	2019/08/07	Nimarta Singh
Low Level Total Suspended Solids	BAL	6262851	2019/08/02	2019/08/03	Nilam Borole
Turbidity	AT	6260268	N/A	2019/08/02	Kazzandra Adeva

BV Labs ID: KKL595 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/07/30
Shipped:
Received: 2019/08/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Mercury (low level)	CV/AA	6264656	2019/08/06	2019/08/06	Ron Morrison



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VERITAS

BV Labs Job #: B9L2327

Report Date: 2019/08/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.7°C
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Sample KKL595 [MEL-14] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Total Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.



BV Labs Job #: B9L2327
Report Date: 2019/08/15

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6268184	1,4-Difluorobenzene	2019/08/07	101	70 - 130	100	70 - 130	98	%				
6268184	4-Bromofluorobenzene	2019/08/07	100	70 - 130	99	70 - 130	96	%				
6268184	D10-Ethylbenzene	2019/08/07	106	70 - 130	97	70 - 130	103	%				
6268184	D4-1,2-Dichloroethane	2019/08/07	98	70 - 130	103	70 - 130	100	%				
6269023	o-Terphenyl	2019/08/08	104	60 - 130	97	60 - 130	100	%				
6260268	Turbidity	2019/08/02			93	85 - 115	<0.1	NTU	NC	20		
6261400	Total BOD	2019/08/07					<2	mg/L	7.4	30	97	80 - 120
6261538	Dissolved Organic Carbon	2019/08/02	93	80 - 120	99	80 - 120	<0.50	mg/L	0.026	20		
6261987	Alkalinity (Total as CaCO3)	2019/08/08			99	85 - 115	<1.0	mg/L	0.92	20		
6261990	Conductivity	2019/08/08			100	85 - 115	<1.0	umho/cm	0.63	25		
6261998	pH	2019/08/08			102	98 - 103			0.23	N/A		
6262851	Total Suspended Solids	2019/08/03					<1	mg/L	15	25	102	85 - 115
6262859	Dissolved Chloride (Cl-)	2019/08/06	NC	80 - 120	104	80 - 120	<1.0	mg/L	1.6	20		
6262860	Dissolved Sulphate (SO4)	2019/08/06	NC	75 - 125	103	80 - 120	<1.0	mg/L	0.28	20		
6262862	Orthophosphate (P)	2019/08/06	97	75 - 125	100	80 - 120	<0.010	mg/L	NC	25		
6263216	Total Dissolved Solids	2019/08/06					<10	mg/L	0.88	25	102	90 - 110
6263290	Nitrate (N)	2019/08/04	81	80 - 120	100	80 - 120	<0.10	mg/L	1.1	20		
6263290	Nitrite (N)	2019/08/04	104	80 - 120	102	80 - 120	<0.010	mg/L				
6263453	Total Ammonia-N	2019/08/04	103	75 - 125	101	80 - 120	<0.050	mg/L	NC	20		
6263472	Total Organic Carbon (TOC)	2019/08/07	92	80 - 120	96	80 - 120	<0.50	mg/L	2.5	20		
6263477	Total Kjeldahl Nitrogen (TKN)	2019/08/07	98	80 - 120	103	80 - 120	<0.10	mg/L	13	20	94	80 - 120
6264491	Mercury (Hg)	2019/08/06	95	75 - 125	101	80 - 120	<0.00001	mg/L	NC	20		
6264656	Dissolved Mercury (Hg)	2019/08/06	99	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6264949	Radium-226	2019/08/13			91	85 - 115	<0.0050	Bq/L	8.7	N/A		
6266642	Total Phosphorus	2019/08/07	97	80 - 120	99	80 - 120	<0.020	mg/L	1.7	20	99	80 - 120
6266699	Total Cyanide (CN)	2019/08/07	100	80 - 120	102	80 - 120	<0.0050	mg/L	1.1	20		
6266751	WAD Cyanide (Free)	2019/08/07	99	80 - 120	100	80 - 120	<0.0010	mg/L	NC	20		
6267406	Reactive Silica (SiO2)	2019/08/06	NC	80 - 120	102	80 - 120	<0.050	mg/L	0.78	20		
6268184	Benzene	2019/08/07	107	70 - 130	103	70 - 130	<0.20	ug/L	NC	30		
6268184	Ethylbenzene	2019/08/07	108	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
6268184	F1 (C6-C10) - BTEX	2019/08/07					<25	ug/L	NC	30		



BV Labs Job #: B9L2327
Report Date: 2019/08/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6268184	F1 (C6-C10)	2019/08/07	93	70 - 130	95	70 - 130	<25	ug/L	NC	30		
6268184	o-Xylene	2019/08/07	103	70 - 130	97	70 - 130	<0.20	ug/L	NC	30		
6268184	p+m-Xylene	2019/08/07	106	70 - 130	98	70 - 130	<0.40	ug/L	NC	30		
6268184	Toluene	2019/08/07	105	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
6268184	Total Xylenes	2019/08/07					<0.40	ug/L	NC	30		
6269023	F2 (C10-C16 Hydrocarbons)	2019/08/08	123	50 - 130	111	60 - 130	<100	ug/L	NC	30		
6269023	F3 (C16-C34 Hydrocarbons)	2019/08/08	114	50 - 130	109	60 - 130	<200	ug/L	NC	30		
6269023	F4 (C34-C50 Hydrocarbons)	2019/08/08	116	50 - 130	109	60 - 130	<200	ug/L	NC	30		
6269880	Dissolved Aluminum (Al)	2019/08/06	96	80 - 120	95	80 - 120	<3.0	ug/L				
6269880	Dissolved Antimony (Sb)	2019/08/06	106	80 - 120	99	80 - 120	<0.50	ug/L				
6269880	Dissolved Arsenic (As)	2019/08/06	101	80 - 120	103	80 - 120	<0.10	ug/L				
6269880	Dissolved Barium (Ba)	2019/08/06	NC	80 - 120	98	80 - 120	<1.0	ug/L				
6269880	Dissolved Beryllium (Be)	2019/08/06	94	80 - 120	97	80 - 120	<0.10	ug/L				
6269880	Dissolved Bismuth (Bi)	2019/08/06	100	80 - 120	104	80 - 120	<1.0	ug/L				
6269880	Dissolved Boron (B)	2019/08/06	100	80 - 120	102	80 - 120	<50	ug/L				
6269880	Dissolved Cadmium (Cd)	2019/08/06	99	80 - 120	97	80 - 120	<0.010	ug/L				
6269880	Dissolved Chromium (Cr)	2019/08/06	89	80 - 120	88	80 - 120	<1.0	ug/L				
6269880	Dissolved Cobalt (Co)	2019/08/06	84	80 - 120	87	80 - 120	<0.20	ug/L				
6269880	Dissolved Copper (Cu)	2019/08/06	82	80 - 120	86	80 - 120	<0.20	ug/L				
6269880	Dissolved Iron (Fe)	2019/08/06	96	80 - 120	96	80 - 120	<5.0	ug/L				
6269880	Dissolved Lead (Pb)	2019/08/06	103	80 - 120	102	80 - 120	<0.20	ug/L				
6269880	Dissolved Lithium (Li)	2019/08/06	95	80 - 120	100	80 - 120	<2.0	ug/L				
6269880	Dissolved Manganese (Mn)	2019/08/06	94	80 - 120	94	80 - 120	<1.0	ug/L				
6269880	Dissolved Molybdenum (Mo)	2019/08/06	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6269880	Dissolved Nickel (Ni)	2019/08/06	84	80 - 120	87	80 - 120	<1.0	ug/L				
6269880	Dissolved Selenium (Se)	2019/08/06	97	80 - 120	97	80 - 120	<0.10	ug/L				
6269880	Dissolved Silicon (Si)	2019/08/06	106	80 - 120	109	80 - 120	<100	ug/L				
6269880	Dissolved Silver (Ag)	2019/08/06	98	80 - 120	97	80 - 120	<0.020	ug/L				
6269880	Dissolved Strontium (Sr)	2019/08/06	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6269880	Dissolved Thallium (Tl)	2019/08/06	103	80 - 120	102	80 - 120	<0.010	ug/L				
6269880	Dissolved Tin (Sn)	2019/08/06	106	80 - 120	98	80 - 120	<5.0	ug/L				
6269880	Dissolved Titanium (Ti)	2019/08/06	95	80 - 120	96	80 - 120	<5.0	ug/L				



BV Labs Job #: B9L2327
Report Date: 2019/08/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6269880	Dissolved Uranium (U)	2019/08/06	107	80 - 120	101	80 - 120	<0.10	ug/L				
6269880	Dissolved Vanadium (V)	2019/08/06	90	80 - 120	89	80 - 120	<5.0	ug/L				
6269880	Dissolved Zinc (Zn)	2019/08/06	86	80 - 120	93	80 - 120	<5.0	ug/L				
6269880	Dissolved Zirconium (Zr)	2019/08/06	102	80 - 120	97	80 - 120	<0.10	ug/L				
6269882	Total Aluminum (Al)	2019/08/07	102	80 - 120	103	80 - 120	<3.0	ug/L				
6269882	Total Antimony (Sb)	2019/08/07	100	80 - 120	99	80 - 120	<0.50	ug/L				
6269882	Total Arsenic (As)	2019/08/07	103	80 - 120	101	80 - 120	<0.10	ug/L				
6269882	Total Barium (Ba)	2019/08/07	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6269882	Total Beryllium (Be)	2019/08/07	100	80 - 120	99	80 - 120	<0.10	ug/L				
6269882	Total Bismuth (Bi)	2019/08/07	98	80 - 120	102	80 - 120	<1.0	ug/L				
6269882	Total Boron (B)	2019/08/07	104	80 - 120	102	80 - 120	<50	ug/L				
6269882	Total Cadmium (Cd)	2019/08/07	100	80 - 120	101	80 - 120	<0.010	ug/L				
6269882	Total Chromium (Cr)	2019/08/07	101	80 - 120	102	80 - 120	<1.0	ug/L				
6269882	Total Cobalt (Co)	2019/08/07	97	80 - 120	99	80 - 120	<0.20	ug/L				
6269882	Total Copper (Cu)	2019/08/07	97	80 - 120	101	80 - 120	<0.50	ug/L				
6269882	Total Iron (Fe)	2019/08/07	99	80 - 120	101	80 - 120	<10	ug/L				
6269882	Total Lead (Pb)	2019/08/07	101	80 - 120	103	80 - 120	<0.20	ug/L				
6269882	Total Lithium (Li)	2019/08/07	99	80 - 120	99	80 - 120	<2.0	ug/L				
6269882	Total Manganese (Mn)	2019/08/07	101	80 - 120	102	80 - 120	<1.0	ug/L				
6269882	Total Molybdenum (Mo)	2019/08/07	106	80 - 120	101	80 - 120	<1.0	ug/L				
6269882	Total Nickel (Ni)	2019/08/07	97	80 - 120	101	80 - 120	<1.0	ug/L				
6269882	Total Selenium (Se)	2019/08/07	105	80 - 120	101	80 - 120	<0.10	ug/L				
6269882	Total Silicon (Si)	2019/08/07	NC	80 - 120	101	80 - 120	<100	ug/L				
6269882	Total Silver (Ag)	2019/08/07	100	80 - 120	100	80 - 120	<0.020	ug/L				
6269882	Total Strontium (Sr)	2019/08/07	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6269882	Total Thallium (Tl)	2019/08/07	102	80 - 120	103	80 - 120	<0.010	ug/L				
6269882	Total Tin (Sn)	2019/08/07	100	80 - 120	100	80 - 120	<5.0	ug/L				
6269882	Total Titanium (Ti)	2019/08/07	104	80 - 120	103	80 - 120	<5.0	ug/L				
6269882	Total Uranium (U)	2019/08/07	102	80 - 120	100	80 - 120	<0.10	ug/L				
6269882	Total Vanadium (V)	2019/08/07	102	80 - 120	101	80 - 120	<5.0	ug/L				
6269882	Total Zinc (Zn)	2019/08/07	97	80 - 120	101	80 - 120	<5.0	ug/L				
6269882	Total Zirconium (Zr)	2019/08/07	104	80 - 120	100	80 - 120	<0.10	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9L2327

Report Date: 2019/08/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6279656	Free Cyanide (CN)	2019/08/08	90	80 - 120	97	80 - 120	<1.0	ug/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference \leq 2x RDL).



BUREAU
VERITAS

BV Labs Job #: B9L2327
Report Date: 2019/08/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9L2327

Report Date: 2019/08/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63°02'15.5" 92°13'06.3"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/29
 Report #: R5859418
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M5838

Received: 2019/08/15, 09:50

Sample Matrix: Water
 # Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	3	N/A	2019/08/17	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	3	N/A	2019/08/19	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	3	2019/08/16	2019/08/21	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	3	N/A	2019/08/19	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	3	N/A	2019/08/17	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	3	N/A	2019/08/19	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	3	2019/08/19	2019/08/19	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	3	N/A	2019/08/17	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	3	2019/08/16	2019/08/16	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	3	N/A	2019/08/20	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	3	2019/08/20	2019/08/20	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	2	2019/08/19	2019/08/19	CAM SOP-00453	EPA 7470 m
Dissolved Mercury (low level) (1)	1	2019/08/20	2019/08/20	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	3	2019/08/19	2019/08/19	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	3	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	3	N/A	2019/08/21	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	3	N/A	2019/08/21	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	3	N/A	2019/08/21	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	3	N/A	2019/08/21	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	3	2019/08/15	2019/08/21	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	3	2019/08/20	2019/08/20	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	3	N/A	2019/08/20	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	3	N/A	2019/08/20	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	3	N/A	2019/08/18	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	3	2019/08/16	2019/08/17	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	3	N/A	2019/08/21	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/08/21	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Radium-226 Low Level (4, 9)	2	N/A	2019/08/26	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/29
Report #: R5859418
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M5838

Received: 2019/08/15, 09:50

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Sulphate by Automated Colourimetry (1)	3	N/A	2019/08/19	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	3	2019/08/17	2019/08/19	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	3	2019/08/19	2019/08/20	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	3	N/A	2019/08/20	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/08/20	2019/08/20	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric) (1)	2	2019/08/20	2019/08/21	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	3	2019/08/17	2019/08/19	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	3	N/A	2019/08/16	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/29
Report #: R5859418
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M5838

Received: 2019/08/15, 09:50

elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
(8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
29 Aug 2019 14:06:51

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KNG700	KNG701			KNG701			KNG702		
Sampling Date		2019/08/13 07:15	2019/08/13 07:15			2019/08/13 07:15			2019/08/13 07:15		
	UNITS	ME-14	ME-14 DUP	RDL	QC Batch	ME-14 DUP Lab-Dup	RDL	QC Batch	ME-14-FB	RDL	QC Batch

BTEX & F1 Hydrocarbons											
Benzene	ug/L	<0.20	<0.20	0.20	6288243				<0.20	0.20	6288243
Toluene	ug/L	<0.20	<0.20	0.20	6288243				0.51	0.20	6288243
Ethylbenzene	ug/L	<0.20	<0.20	0.20	6288243				<0.20	0.20	6288243
o-Xylene	ug/L	<0.20	<0.20	0.20	6288243				<0.20	0.20	6288243
p+m-Xylene	ug/L	<0.40	<0.40	0.40	6288243				<0.40	0.40	6288243
Total Xylenes	ug/L	<0.40	<0.40	0.40	6288243				<0.40	0.40	6288243
F1 (C6-C10)	ug/L	<25	<25	25	6288243				<25	25	6288243
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	6288243				<25	25	6288243

F2-F4 Hydrocarbons											
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	6288758	<100	100	6288758	<100	100	6288758
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	6288758	<200	200	6288758	<200	200	6288758
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	6288758	<200	200	6288758	<200	200	6288758
Reached Baseline at C50	ug/L	Yes	Yes		6288758	Yes		6288758	Yes		6288758

Surrogate Recovery (%)											
1,4-Difluorobenzene	%	100	99		6288243				100		6288243
4-Bromofluorobenzene	%	98	97		6288243				97		6288243
D10-Ethylbenzene	%	94	95		6288243				94		6288243
D4-1,2-Dichloroethane	%	99	98		6288243				97		6288243
o-Terphenyl	%	109	107		6288758	108		6288758	106		6288758

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



BV Labs Job #: B9M5838
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SK

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KNG700	KNG701	KNG702		
Sampling Date		2019/08/13 07:15	2019/08/13 07:15	2019/08/13 07:15		
	UNITS	ME-14	ME-14 DUP	ME-14-FB	RDL	QC Batch
Calculated Parameters						
Dissolved Hardness (CaCO ₃)	mg/L	271	271	<0.50	0.50	6288345
Metals						
Dissolved Aluminum (Al)	ug/L	32.3	32.2	<3.0	3.0	6291995
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	0.50	6291995
Dissolved Arsenic (As)	ug/L	1.04	1.05	<0.10	0.10	6291995
Dissolved Barium (Ba)	ug/L	45.6	46.0	<1.0	1.0	6291995
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	0.10	6291995
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	1.0	6291995
Dissolved Boron (B)	ug/L	341	343	<50	50	6291995
Dissolved Cadmium (Cd)	ug/L	<0.010	0.011	<0.010	0.010	6291995
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	6291995
Dissolved Cobalt (Co)	ug/L	0.37	0.36	<0.20	0.20	6291995
Dissolved Copper (Cu)	ug/L	0.60	0.60	<0.20	0.20	6291995
Dissolved Iron (Fe)	ug/L	53.8	55.0	<5.0	5.0	6291995
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	0.20	6291995
Dissolved Lithium (Li)	ug/L	54.0	55.3	<2.0	2.0	6291995
Dissolved Manganese (Mn)	ug/L	5.3	5.5	<1.0	1.0	6291995
Dissolved Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	1.0	6291995
Dissolved Nickel (Ni)	ug/L	2.4	2.3	<1.0	1.0	6291995
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	<0.10	0.10	6291995
Dissolved Silicon (Si)	ug/L	247	252	<100	100	6291995
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	0.020	6291995
Dissolved Strontium (Sr)	ug/L	1630	1660	<1.0	1.0	6291995
Dissolved Thallium (Tl)	ug/L	0.024	0.026	<0.010	0.010	6291995
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	5.0	6291995
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	5.0	6291995
Dissolved Uranium (U)	ug/L	0.13	0.14	<0.10	0.10	6291995
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	5.0	6291995
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	6291995
Dissolved Zirconium (Zr)	ug/L	<0.10	<0.10	<0.10	0.10	6291995
Dissolved Calcium (Ca)	mg/L	75.4	75.2	<0.050	0.050	6288346
Dissolved Magnesium (Mg)	mg/L	20.0	20.2	<0.050	0.050	6288346
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



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BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KNG700	KNG701	KNG702		
Sampling Date		2019/08/13 07:15	2019/08/13 07:15	2019/08/13 07:15		
	UNITS	ME-14	ME-14 DUP	ME-14-FB	RDL	QC Batch
Dissolved Potassium (K)	mg/L	11.0	11.0	<0.050	0.050	6288346
Dissolved Sodium (Na)	mg/L	162	161	<0.050	0.050	6288346
Dissolved Sulphur (S)	mg/L	17.8	18.0	<3.0	3.0	6288346
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BV Labs Job #: B9M5838
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SK

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KNG700	KNG701	KNG702		
Sampling Date		2019/08/13 07:15	2019/08/13 07:15	2019/08/13 07:15		
	UNITS	ME-14	ME-14 DUP	ME-14-FB	RDL	QC Batch
Metals						
Total Aluminum (Al)	ug/L	99.2	98.9	<3.0	3.0	6291713
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	0.50	6291713
Total Arsenic (As)	ug/L	1.16	1.16	<0.10	0.10	6291713
Total Barium (Ba)	ug/L	51.9	50.7	<1.0	1.0	6291713
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	0.10	6291713
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	1.0	6291713
Total Boron (B)	ug/L	323	323	<50	50	6291713
Total Cadmium (Cd)	ug/L	0.012	0.013	<0.010	0.010	6291713
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	6291713
Total Cobalt (Co)	ug/L	0.37	0.38	<0.20	0.20	6291713
Total Copper (Cu)	ug/L	0.65	0.96	<0.50	0.50	6291713
Total Iron (Fe)	ug/L	49	50	<10	10	6291713
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	0.20	6291713
Total Lithium (Li)	ug/L	52.6	52.2	<2.0	2.0	6291713
Total Manganese (Mn)	ug/L	5.6	5.5	<1.0	1.0	6291713
Total Molybdenum (Mo)	ug/L	1.0	1.0	<1.0	1.0	6291713
Total Nickel (Ni)	ug/L	2.5	2.5	<1.0	1.0	6291713
Total Selenium (Se)	ug/L	<0.10	<0.10	<0.10	0.10	6291713
Total Silicon (Si)	ug/L	266	265	<100	100	6291713
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	0.020	6291713
Total Strontium (Sr)	ug/L	1850	1830	<1.0	1.0	6291713
Total Thallium (Tl)	ug/L	0.026	0.026	<0.010	0.010	6291713
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	5.0	6291713
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	5.0	6291713
Total Uranium (U)	ug/L	0.17	0.16	<0.10	0.10	6291713
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	5.0	6291713
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	6291713
Total Zirconium (Zr)	ug/L	<0.10	<0.10	<0.10	0.10	6291713
Total Calcium (Ca)	ug/L	82200	81600	<50	50	6288349
Total Magnesium (Mg)	ug/L	21400	21200	<50	50	6288349
Total Potassium (K)	ug/L	12000	12000	<50	50	6288349
Total Sodium (Na)	ug/L	171000	170000	<50	50	6288349
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BUREAU
VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KNG700	KNG701	KNG702		
Sampling Date		2019/08/13 07:15	2019/08/13 07:15	2019/08/13 07:15		
	UNITS	ME-14	ME-14 DUP	ME-14-FB	RDL	QC Batch
Total Sulphur (S)	ug/L	18800	18900	<3000	3000	6288349
Calculated Parameters						
Total Hardness (CaCO ₃)	ug/L	293000	291000	<500	500	6288348
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BUREAU
VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

RESULTS OF ANALYSES OF WATER

BV Labs ID		KNG700			KNG700			KNG701		
Sampling Date		2019/08/13 07:15			2019/08/13 07:15			2019/08/13 07:15		
	UNITS	ME-14	RDL	QC Batch	ME-14 Lab-Dup	RDL	QC Batch	ME-14 DUP	RDL	QC Batch

Calculated Parameters

Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	22	1.0	6281848				22	1.0	6281848
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6281848				<1.0	1.0	6281848

Inorganics

Total Ammonia-N	mg/L	3.2	0.050	6288996				3.3 (1)	0.050	6288996
Total BOD	mg/L	<2	2	6283790	<2	2	6283790	<2	2	6283790
Conductivity	umho/cm	1700	1.0	6285224				1700	1.0	6285224
Free Cyanide (CN)	ug/L	1.1 (2)	1.0	6290148				1.1 (2)	1.0	6290148
Total Dissolved Solids	mg/L	1130	10	6286027				1110	10	6286027
Total Kjeldahl Nitrogen (TKN)	mg/L	3.3	0.50	6287145				3.0 (1)	0.50	6287145
Dissolved Organic Carbon	mg/L	3.7	0.50	6284097				3.6	0.50	6284097
Total Organic Carbon (TOC)	mg/L	3.7	0.50	6287105				3.7	0.50	6287105
Orthophosphate (P)	mg/L	<0.010	0.010	6285782				<0.010	0.010	6285782
Dissolved Oxygen	mg/L	10.2		6284385				10.4		6284385
pH	pH	7.36		6285228				7.32		6285228
Total Phosphorus	mg/L	<0.020	0.020	6289897				<0.020	0.020	6289897
Reactive Silica (SiO ₂)	mg/L	0.53	0.050	6291768				0.52	0.050	6291768
Total Suspended Solids	mg/L	2	1	6285893				3	1	6285893
Dissolved Sulphate (SO ₄)	mg/L	50	1.0	6285780				50	1.0	6285780
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6287854				<0.0050	0.0050	6287854
Turbidity	NTU	0.2	0.1	6284179				0.3	0.1	6284179
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6287861				<0.0010	0.0010	6287861
Alkalinity (Total as CaCO ₃)	mg/L	22	1.0	6285216				22	1.0	6285216
Dissolved Chloride (Cl ⁻)	mg/L	410	5.0	6285778				420	4.0	6285778
Nitrite (N)	mg/L	0.753	0.010	6285229				0.754	0.010	6285229
Nitrate (N)	mg/L	12.9	0.10	6285229				12.9	0.10	6285229
Nitrate + Nitrite (N)	mg/L	13.7	0.10	6285229				13.7	0.10	6285229

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) TKN < NH₄: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.

(2) See general comments for notes regarding CNFREE-W



BUREAU
VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

RESULTS OF ANALYSES OF WATER

BV Labs ID		KNG700			KNG700			KNG701		
Sampling Date		2019/08/13 07:15			2019/08/13 07:15			2019/08/13 07:15		
	UNITS	ME-14	RDL	QC Batch	ME-14 Lab-Dup	RDL	QC Batch	ME-14 DUP	RDL	QC Batch

RADIONUCLIDE										
Radium-226	Bq/L	<0.0050	0.0050	6287025				0.053	0.0050	6287025

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



BUREAU
VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

RESULTS OF ANALYSES OF WATER

BV Labs ID		KNG701			KNG702			KNG702		
Sampling Date		2019/08/13 07:15			2019/08/13 07:15			2019/08/13 07:15		
	UNITS	ME-14 DUP Lab-Dup	RDL	QC Batch	ME-14-FB	RDL	QC Batch	ME-14-FB Lab-Dup	RDL	QC Batch

Calculated Parameters										
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L				<1.0	1.0	6281848			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L				<1.0	1.0	6281848			
Inorganics										
Total Ammonia-N	mg/L				0.091	0.050	6288996			
Total BOD	mg/L				<2	2	6283790			
Conductivity	umho/cm				<1.0	1.0	6285224			
Free Cyanide (CN)	ug/L				<1.0 (1)	1.0	6290148	<1.0	1.0	6290148
Total Dissolved Solids	mg/L				<10	10	6286027			
Total Kjeldahl Nitrogen (TKN)	mg/L	2.9 (2)	0.50	6287145	<0.10	0.10	6287145			
Dissolved Organic Carbon	mg/L				<0.50	0.50	6284097			
Total Organic Carbon (TOC)	mg/L				<0.50	0.50	6287105			
Orthophosphate (P)	mg/L				<0.010	0.010	6285782			
Dissolved Oxygen	mg/L				10.3		6284385			
pH	pH				5.78		6285228			
Total Phosphorus	mg/L	<0.020	0.020	6289897	<0.020	0.020	6289419			
Reactive Silica (SiO ₂)	mg/L				<0.050	0.050	6291768			
Total Suspended Solids	mg/L				<1	1	6285893			
Dissolved Sulphate (SO ₄)	mg/L				<1.0	1.0	6285780			
Total Cyanide (CN)	mg/L				<0.0050	0.0050	6287854	<0.0050	0.0050	6287854
Turbidity	NTU				<0.1	0.1	6284179			
WAD Cyanide (Free)	mg/L				<0.0010	0.0010	6287861	<0.0010	0.0010	6287861
Alkalinity (Total as CaCO ₃)	mg/L				<1.0	1.0	6285216			
Dissolved Chloride (Cl ⁻)	mg/L				<1.0	1.0	6285778			
Nitrite (N)	mg/L				<0.010	0.010	6285229			
Nitrate (N)	mg/L				<0.10	0.10	6285229			
Nitrate + Nitrite (N)	mg/L				<0.10	0.10	6285229			

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) See general comments for notes regarding CNFREE-W

(2) TKN < NH₄: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.



BUREAU
VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

RESULTS OF ANALYSES OF WATER

BV Labs ID		KNG701			KNG702			KNG702		
Sampling Date		2019/08/13 07:15			2019/08/13 07:15			2019/08/13 07:15		
	UNITS	ME-14 DUP Lab-Dup	RDL	QC Batch	ME-14-FB	RDL	QC Batch	ME-14-FB Lab-Dup	RDL	QC Batch

RADIONUCLIDE										
Radium-226	Bq/L				<0.0050	0.0050	6287025			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										



BUREAU
VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KNG700		KNG701	KNG702		
Sampling Date		2019/08/13 07:15		2019/08/13 07:15	2019/08/13 07:15		
	UNITS	ME-14	QC Batch	ME-14 DUP	ME-14-FB	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	<0.00001	6286866	<0.00001	<0.00001	0.00001	6286866
Dissolved Mercury (Hg)	mg/L	<0.00001	6289091	<0.00001	<0.00001	0.00001	6286927
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



BV Labs Job #: B9M5838
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SK

TEST SUMMARY

BV Labs ID: KNG700
Sample ID: ME-14
Matrix: Water

Collected: 2019/08/13
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6285216	N/A	2019/08/17	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6281848	N/A	2019/08/19	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6283790	2019/08/16	2019/08/21	Nusrat Naz
Chloride by Automated Colourimetry	KONE	6285778	N/A	2019/08/19	Deonarine Ramnarine
Conductivity	AT	6285224	N/A	2019/08/17	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6287861	N/A	2019/08/19	Gnana Thomas
Total Cyanide	SKAL/CN	6287854	2019/08/19	2019/08/19	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6284097	N/A	2019/08/17	Mandeep Kaur
Dissolved Oxygen	DO	6284385	2019/08/16	2019/08/16	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6288243	N/A	2019/08/20	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6288758	2019/08/20	2019/08/20	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6289091	2019/08/20	2019/08/20	Ron Morrison
Mercury (low level)	CV/AA	6286866	2019/08/19	2019/08/19	Ron Morrison
Cyanide (Free)	SPEC	6290148	2019/08/20	2019/08/20	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6288348	N/A	2019/08/21	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6288345	N/A	2019/08/21	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6288346	N/A	2019/08/21	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6291995	N/A	2019/08/21	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6288349	2019/08/21	2019/08/21	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6291713	2019/08/20	2019/08/20	Vanessa Chan
Silica (Reactive)	KONE	6291768	N/A	2019/08/20	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6288996	N/A	2019/08/20	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6285229	N/A	2019/08/18	Amanpreet Sappal
pH	AT	6285228	2019/08/16	2019/08/17	Neil Dassanayake
Orthophosphate	KONE	6285782	N/A	2019/08/21	Alina Doboreanu
Radium-226 Low Level	AS	6287025	N/A	2019/08/21	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6285780	N/A	2019/08/19	Deonarine Ramnarine
Total Dissolved Solids	BAL	6286027	2019/08/17	2019/08/19	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6287145	2019/08/19	2019/08/20	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6287105	N/A	2019/08/20	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6289897	2019/08/20	2019/08/21	Nimarta Singh
Low Level Total Suspended Solids	BAL	6285893	2019/08/17	2019/08/19	Mandeep Kaur
Turbidity	AT	6284179	N/A	2019/08/16	Kazzandra Adeva

BV Labs ID: KNG700 Dup
Sample ID: ME-14
Matrix: Water

Collected: 2019/08/13
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Biochemical Oxygen Demand (BOD)	DO	6283790	2019/08/16	2019/08/21	Nusrat Naz



BV Labs Job #: B9M5838
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SK

TEST SUMMARY

BV Labs ID: KNG701
Sample ID: ME-14 DUP
Matrix: Water

Collected: 2019/08/13
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6285216	N/A	2019/08/17	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6281848	N/A	2019/08/19	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6283790	2019/08/16	2019/08/21	Nusrat Naz
Chloride by Automated Colourimetry	KONE	6285778	N/A	2019/08/19	Deonarine Ramnarine
Conductivity	AT	6285224	N/A	2019/08/17	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6287861	N/A	2019/08/19	Gnana Thomas
Total Cyanide	SKAL/CN	6287854	2019/08/19	2019/08/19	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6284097	N/A	2019/08/17	Mandeep Kaur
Dissolved Oxygen	DO	6284385	2019/08/16	2019/08/16	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6288243	N/A	2019/08/20	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6288758	2019/08/20	2019/08/20	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6286927	2019/08/19	2019/08/19	Ron Morrison
Mercury (low level)	CV/AA	6286866	2019/08/19	2019/08/19	Ron Morrison
Cyanide (Free)	SPEC	6290148	2019/08/20	2019/08/20	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6288348	N/A	2019/08/21	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6288345	N/A	2019/08/21	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6288346	N/A	2019/08/21	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6291995	N/A	2019/08/21	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6288349	2019/08/21	2019/08/21	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6291713	2019/08/20	2019/08/20	Vanessa Chan
Silica (Reactive)	KONE	6291768	N/A	2019/08/20	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6288996	N/A	2019/08/20	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6285229	N/A	2019/08/18	Amanpreet Sappal
pH	AT	6285228	2019/08/16	2019/08/17	Neil Dassanayake
Orthophosphate	KONE	6285782	N/A	2019/08/21	Alina Dobreanu
Radium-226 Low Level	AS	6287025	N/A	2019/08/26	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6285780	N/A	2019/08/19	Deonarine Ramnarine
Total Dissolved Solids	BAL	6286027	2019/08/17	2019/08/19	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6287145	2019/08/19	2019/08/20	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6287105	N/A	2019/08/20	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6289897	2019/08/20	2019/08/21	Nimarta Singh
Low Level Total Suspended Solids	BAL	6285893	2019/08/17	2019/08/19	Mandeep Kaur
Turbidity	AT	6284179	N/A	2019/08/16	Kazzandra Adeva

BV Labs ID: KNG701 Dup
Sample ID: ME-14 DUP
Matrix: Water

Collected: 2019/08/13
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6288758	2019/08/20	2019/08/20	Prabhjot Gulati
Total Kjeldahl Nitrogen in Water	SKAL	6287145	2019/08/19	2019/08/20	Shivani Shivani
Total Phosphorus (Colourimetric)	LACH/P	6289897	2019/08/20	2019/08/21	Nimarta Singh



BV Labs Job #: B9M5838
Report Date: 2019/08/29

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SK

TEST SUMMARY

BV Labs ID: KNG702
Sample ID: ME-14-FB
Matrix: Water

Collected: 2019/08/13
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6285216	N/A	2019/08/17	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6281848	N/A	2019/08/19	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6283790	2019/08/16	2019/08/21	Nusrat Naz
Chloride by Automated Colourimetry	KONE	6285778	N/A	2019/08/19	Deonarine Ramnarine
Conductivity	AT	6285224	N/A	2019/08/17	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6287861	N/A	2019/08/19	Gnana Thomas
Total Cyanide	SKAL/CN	6287854	2019/08/19	2019/08/19	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6284097	N/A	2019/08/17	Mandeep Kaur
Dissolved Oxygen	DO	6284385	2019/08/16	2019/08/16	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6288243	N/A	2019/08/20	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6288758	2019/08/20	2019/08/20	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6286927	2019/08/19	2019/08/19	Ron Morrison
Mercury (low level)	CV/AA	6286866	2019/08/19	2019/08/19	Ron Morrison
Cyanide (Free)	SPEC	6290148	2019/08/20	2019/08/20	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6288348	N/A	2019/08/21	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6288345	N/A	2019/08/21	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6288346	N/A	2019/08/21	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6291995	N/A	2019/08/21	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6288349	2019/08/21	2019/08/21	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6291713	2019/08/20	2019/08/20	Vanessa Chan
Silica (Reactive)	KONE	6291768	N/A	2019/08/20	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6288996	N/A	2019/08/20	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6285229	N/A	2019/08/18	Amanpreet Sappal
pH	AT	6285228	2019/08/16	2019/08/17	Neil Dassanayake
Orthophosphate	KONE	6285782	N/A	2019/08/21	Alina Dobreanu
Radium-226 Low Level	AS	6287025	N/A	2019/08/26	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6285780	N/A	2019/08/19	Deonarine Ramnarine
Total Dissolved Solids	BAL	6286027	2019/08/17	2019/08/19	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6287145	2019/08/19	2019/08/20	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6287105	N/A	2019/08/20	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6289419	2019/08/20	2019/08/20	Nimarta Singh
Low Level Total Suspended Solids	BAL	6285893	2019/08/17	2019/08/19	Mandeep Kaur
Turbidity	AT	6284179	N/A	2019/08/16	Kazzandra Adeva

BV Labs ID: KNG702 Dup
Sample ID: ME-14-FB
Matrix: Water

Collected: 2019/08/13
Shipped:
Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6287861	N/A	2019/08/19	Gnana Thomas
Total Cyanide	SKAL/CN	6287854	2019/08/19	2019/08/19	Gnana Thomas
Cyanide (Free)	SPEC	6290148	2019/08/20	2019/08/20	Taylor Mullings



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.3°C
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Sample KNG700 [ME-14] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

TOC < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample KNG701 [ME-14 DUP] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide. TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample KNG702 [ME-14-FB] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.



BV Labs Job #: B9M5838
Report Date: 2019/08/29

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SK

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6288243	1,4-Difluorobenzene	2019/08/19	103	70 - 130	103	70 - 130	98	%				
6288243	4-Bromofluorobenzene	2019/08/19	99	70 - 130	100	70 - 130	99	%				
6288243	D10-Ethylbenzene	2019/08/19	98	70 - 130	94	70 - 130	93	%				
6288243	D4-1,2-Dichloroethane	2019/08/19	96	70 - 130	99	70 - 130	101	%				
6288758	o-Terphenyl	2019/08/20	113	60 - 130	105	60 - 130	110	%				
6283790	Total BOD	2019/08/21					<2	mg/L	NC	30	103	80 - 120
6284097	Dissolved Organic Carbon	2019/08/17	93	80 - 120	97	80 - 120	<0.50	mg/L	1.0	20		
6284179	Turbidity	2019/08/16			94	85 - 115	<0.1	NTU	4.5	20		
6285216	Alkalinity (Total as CaCO3)	2019/08/17			98	85 - 115	<1.0	mg/L	1.1	20		
6285224	Conductivity	2019/08/17			101	85 - 115	<1.0	umho/cm	0	25		
6285228	pH	2019/08/17			102	98 - 103			0.42	N/A		
6285229	Nitrate (N)	2019/08/18	NC	80 - 120	100	80 - 120	<0.10	mg/L	0.11	20		
6285229	Nitrite (N)	2019/08/18	95	80 - 120	104	80 - 120	<0.010	mg/L	0.16	20		
6285778	Dissolved Chloride (Cl-)	2019/08/19	117	80 - 120	103	80 - 120	<1.0	mg/L	1.1	20		
6285780	Dissolved Sulphate (SO4)	2019/08/19	105	75 - 125	102	80 - 120	<1.0	mg/L	2.9	20		
6285782	Orthophosphate (P)	2019/08/21	104	75 - 125	99	80 - 120	<0.010	mg/L	NC	25		
6285893	Total Suspended Solids	2019/08/19					<1	mg/L	NC	25	100	85 - 115
6286027	Total Dissolved Solids	2019/08/19					<10	mg/L	2.0	25	97	90 - 110
6286866	Mercury (Hg)	2019/08/19	101	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6286927	Dissolved Mercury (Hg)	2019/08/19	93	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6287025	Radium-226	2019/08/21			100	85 - 115	<0.0050	Bq/L	NC	N/A		
6287105	Total Organic Carbon (TOC)	2019/08/20	92	80 - 120	97	80 - 120	<0.50	mg/L	2.4	20		
6287145	Total Kjeldahl Nitrogen (TKN)	2019/08/20	NC	80 - 120	94	80 - 120	<0.10	mg/L	2.4 (1)	20	96	80 - 120
6287854	Total Cyanide (CN)	2019/08/19	103	80 - 120	100	80 - 120	<0.0050	mg/L	NC	20		
6287861	WAD Cyanide (Free)	2019/08/19	105	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20		
6288243	Benzene	2019/08/19	99	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
6288243	Ethylbenzene	2019/08/19	100	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
6288243	F1 (C6-C10) - BTEX	2019/08/19					<25	ug/L	NC	30		
6288243	F1 (C6-C10)	2019/08/19	81	70 - 130	100	70 - 130	<25	ug/L	NC	30		
6288243	o-Xylene	2019/08/19	98	70 - 130	96	70 - 130	<0.20	ug/L	NC	30		
6288243	p+m-Xylene	2019/08/19	99	70 - 130	97	70 - 130	<0.40	ug/L	NC	30		



BV Labs Job #: B9M5838
Report Date: 2019/08/29

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SK

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6288243	Toluene	2019/08/19	101	70 - 130	99	70 - 130	<0.20	ug/L	NC	30		
6288243	Total Xylenes	2019/08/19					<0.40	ug/L	NC	30		
6288758	F2 (C10-C16 Hydrocarbons)	2019/08/20	101	50 - 130	92	60 - 130	<100	ug/L	NC	30		
6288758	F3 (C16-C34 Hydrocarbons)	2019/08/20	102	50 - 130	96	60 - 130	<200	ug/L	NC	30		
6288758	F4 (C34-C50 Hydrocarbons)	2019/08/20	100	50 - 130	94	60 - 130	<200	ug/L	NC	30		
6288996	Total Ammonia-N	2019/08/20	100	75 - 125	100	80 - 120	<0.050	mg/L	NC	20		
6289091	Dissolved Mercury (Hg)	2019/08/20	99	75 - 125	98	80 - 120	<0.00001	mg/L	NC	20		
6289419	Total Phosphorus	2019/08/20	100	80 - 120	101	80 - 120	<0.020	mg/L	1.9	20	101	80 - 120
6289897	Total Phosphorus	2019/08/21	96	80 - 120	97	80 - 120	<0.020	mg/L	NC	20	99	80 - 120
6290148	Free Cyanide (CN)	2019/08/20	93	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Aluminum (Al)	2019/08/20	101	80 - 120	101	80 - 120	<3.0	ug/L	1.8	20		
6291713	Total Antimony (Sb)	2019/08/20	101	80 - 120	101	80 - 120	<0.50	ug/L	1.4	20		
6291713	Total Arsenic (As)	2019/08/20	104	80 - 120	100	80 - 120	<0.10	ug/L	12	20		
6291713	Total Barium (Ba)	2019/08/20	101	80 - 120	103	80 - 120	<1.0	ug/L	1.2	20		
6291713	Total Beryllium (Be)	2019/08/20	94	80 - 120	95	80 - 120	<0.10	ug/L	NC	20		
6291713	Total Bismuth (Bi)	2019/08/20	99	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Boron (B)	2019/08/20	96	80 - 120	97	80 - 120	<50	ug/L	NC	20		
6291713	Total Cadmium (Cd)	2019/08/20	99	80 - 120	99	80 - 120	<0.010	ug/L	NC	20		
6291713	Total Chromium (Cr)	2019/08/20	99	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Cobalt (Co)	2019/08/20	95	80 - 120	98	80 - 120	<0.20	ug/L	NC	20		
6291713	Total Copper (Cu)	2019/08/20	94	80 - 120	99	80 - 120	<0.50	ug/L	0.68	20		
6291713	Total Iron (Fe)	2019/08/20	96	80 - 120	102	80 - 120	<10	ug/L	NC	20		
6291713	Total Lead (Pb)	2019/08/20	102	80 - 120	103	80 - 120	<0.20	ug/L	NC	20		
6291713	Total Lithium (Li)	2019/08/20	94	80 - 120	95	80 - 120	<2.0	ug/L	NC	20		
6291713	Total Manganese (Mn)	2019/08/20	98	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Molybdenum (Mo)	2019/08/20	107	80 - 120	99	80 - 120	<1.0	ug/L	2.7	20		
6291713	Total Nickel (Ni)	2019/08/20	95	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Selenium (Se)	2019/08/20	105	80 - 120	101	80 - 120	<0.10	ug/L	3.5	20		
6291713	Total Silicon (Si)	2019/08/20	97	80 - 120	102	80 - 120	<100	ug/L	0.18	20		
6291713	Total Silver (Ag)	2019/08/20	98	80 - 120	98	80 - 120	<0.020	ug/L	NC	20		
6291713	Total Strontium (Sr)	2019/08/20	NC	80 - 120	101	80 - 120	<1.0	ug/L	0.39	20		
6291713	Total Thallium (Tl)	2019/08/20	102	80 - 120	102	80 - 120	<0.010	ug/L	NC	20		



BV Labs Job #: B9M5838
Report Date: 2019/08/29

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SK

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6291713	Total Tin (Sn)	2019/08/20	100	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Titanium (Ti)	2019/08/20	102	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Uranium (U)	2019/08/20	105	80 - 120	102	80 - 120	<0.10	ug/L	0.91	20		
6291713	Total Vanadium (V)	2019/08/20	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Zinc (Zn)	2019/08/20	93	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Zirconium (Zr)	2019/08/20	108	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		
6291768	Reactive Silica (SiO2)	2019/08/20	NC	80 - 120	100	80 - 120	<0.050	mg/L	0.39	20		
6291995	Dissolved Aluminum (Al)	2019/08/21	100	80 - 120	103	80 - 120	<3.0	ug/L	1.9	20		
6291995	Dissolved Antimony (Sb)	2019/08/21	99	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
6291995	Dissolved Arsenic (As)	2019/08/21	100	80 - 120	102	80 - 120	<0.10	ug/L	12	20		
6291995	Dissolved Barium (Ba)	2019/08/21	98	80 - 120	100	80 - 120	<1.0	ug/L	0.95	20		
6291995	Dissolved Beryllium (Be)	2019/08/21	99	80 - 120	104	80 - 120	<0.10	ug/L	NC	20		
6291995	Dissolved Bismuth (Bi)	2019/08/21	99	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
6291995	Dissolved Boron (B)	2019/08/21	98	80 - 120	99	80 - 120	<50	ug/L	NC	20		
6291995	Dissolved Cadmium (Cd)	2019/08/21	99	80 - 120	103	80 - 120	<0.010	ug/L	NC	20		
6291995	Dissolved Chromium (Cr)	2019/08/21	99	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
6291995	Dissolved Cobalt (Co)	2019/08/21	96	80 - 120	103	80 - 120	<0.20	ug/L	NC	20		
6291995	Dissolved Copper (Cu)	2019/08/21	92	80 - 120	101	80 - 120	<0.20	ug/L	0.53	20		
6291995	Dissolved Iron (Fe)	2019/08/21	99	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Lead (Pb)	2019/08/21	99	80 - 120	103	80 - 120	<0.20	ug/L	NC	20		
6291995	Dissolved Lithium (Li)	2019/08/21	99	80 - 120	103	80 - 120	<2.0	ug/L	0.83	20		
6291995	Dissolved Manganese (Mn)	2019/08/21	98	80 - 120	104	80 - 120	<1.0	ug/L	1.5	20		
6291995	Dissolved Molybdenum (Mo)	2019/08/21	107	80 - 120	107	80 - 120	<1.0	ug/L	1.5	20		
6291995	Dissolved Nickel (Ni)	2019/08/21	93	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
6291995	Dissolved Selenium (Se)	2019/08/21	102	80 - 120	103	80 - 120	<0.10	ug/L	13	20		
6291995	Dissolved Silicon (Si)	2019/08/21	100	80 - 120	106	80 - 120	<100	ug/L	0.67	20		
6291995	Dissolved Silver (Ag)	2019/08/21	99	80 - 120	102	80 - 120	<0.020	ug/L	NC	20		
6291995	Dissolved Strontium (Sr)	2019/08/21	NC	80 - 120	105	80 - 120	<1.0	ug/L	0.69	20		
6291995	Dissolved Thallium (Tl)	2019/08/21	99	80 - 120	104	80 - 120	<0.010	ug/L	NC	20		
6291995	Dissolved Tin (Sn)	2019/08/21	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Titanium (Ti)	2019/08/21	101	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Uranium (U)	2019/08/21	102	80 - 120	104	80 - 120	<0.10	ug/L	1.7	20		



BUREAU
VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SK

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6291995	Dissolved Vanadium (V)	2019/08/21	100	80 - 120	105	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Zinc (Zn)	2019/08/21	97	80 - 120	105	80 - 120	<5.0	ug/L	NC	20		
6291995	Dissolved Zirconium (Zr)	2019/08/21	105	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) TKN < NH4: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.



BUREAU
VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

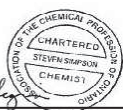
VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Rob Reinert, B.Sc., Scientific Specialist



Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9M5838

Report Date: 2019/08/29

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SK

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63°02'15.5" 92°13'06.3"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/09/13
 Report #: R5879006
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N3261

Received: 2019/08/22, 11:45

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/08/24	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/08/26	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/08/23	2019/08/28	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/08/27	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/08/24	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/08/26	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/08/26	2019/08/26	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/08/23	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/08/23	2019/08/23	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/08/26	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/08/28	2019/08/29	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/08/23	2019/08/23	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/23	2019/08/23	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/08/28	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/08/28	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/08/28	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/08/27	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/08/22	2019/08/28	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/08/26	2019/08/27	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/08/26	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/29	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/08/25	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/08/23	2019/08/24	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/08/26	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/09/11	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/08/26	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/08/24	2019/08/26	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/08/24	2019/08/27	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/08/27	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/13
Report #: R5879006
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N3261

Received: 2019/08/22, 11:45

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Total Phosphorus (Colourimetric) (1)	1	2019/08/26	2019/08/27	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/08/23	2019/08/26	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/08/23	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/13
Report #: R5879006
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N3261

Received: 2019/08/22, 11:45

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
13 Sep 2019 17:22:22

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9N3261

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KOU558			KOU558		
Sampling Date		2019/08/20 06:38			2019/08/20 06:38		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
BTEX & F1 Hydrocarbons							
Benzene	ug/L	<0.20	0.20	6299625	<0.20	0.20	6299625
Toluene	ug/L	<0.20	0.20	6299625	<0.20	0.20	6299625
Ethylbenzene	ug/L	<0.20	0.20	6299625	<0.20	0.20	6299625
o-Xylene	ug/L	<0.20	0.20	6299625	<0.20	0.20	6299625
p+m-Xylene	ug/L	<0.40	0.40	6299625	<0.40	0.40	6299625
Total Xylenes	ug/L	<0.40	0.40	6299625	<0.40	0.40	6299625
F1 (C6-C10)	ug/L	<25	25	6299625	<25	25	6299625
F1 (C6-C10) - BTEX	ug/L	<25	25	6299625	<25	25	6299625
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6304688			
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6304688			
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6304688			
Reached Baseline at C50	ug/L	Yes		6304688			
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	102		6299625	101		6299625
4-Bromofluorobenzene	%	97		6299625	99		6299625
D10-Ethylbenzene	%	86		6299625	87		6299625
D4-1,2-Dichloroethane	%	104		6299625	106		6299625
o-Terphenyl	%	97		6304688			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B9N3261

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KOU558		
Sampling Date		2019/08/20 06:38		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	388	0.50	6295409
Metals				
Dissolved Aluminum (Al)	ug/L	112	3.0	6304414
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6304414
Dissolved Arsenic (As)	ug/L	1.88	0.10	6304414
Dissolved Barium (Ba)	ug/L	68.5	1.0	6304414
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6304414
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6304414
Dissolved Boron (B)	ug/L	181	50	6304414
Dissolved Cadmium (Cd)	ug/L	0.013	0.010	6304414
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6304414
Dissolved Cobalt (Co)	ug/L	0.47	0.20	6304414
Dissolved Copper (Cu)	ug/L	1.29	0.20	6304414
Dissolved Iron (Fe)	ug/L	36.0	5.0	6304414
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6304414
Dissolved Lithium (Li)	ug/L	54.2	2.0	6304414
Dissolved Manganese (Mn)	ug/L	10.5	1.0	6304414
Dissolved Molybdenum (Mo)	ug/L	9.8 (1)	1.0	6304414
Dissolved Nickel (Ni)	ug/L	3.6	1.0	6304414
Dissolved Selenium (Se)	ug/L	0.12	0.10	6304414
Dissolved Silicon (Si)	ug/L	415	100	6304414
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6304414
Dissolved Strontium (Sr)	ug/L	2010	1.0	6304414
Dissolved Thallium (Tl)	ug/L	0.032	0.010	6304414
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6304414
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6304414
Dissolved Uranium (U)	ug/L	0.44	0.10	6304414
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6304414
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6304414
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6304414
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
(1) Dissolved greater than total. Reanalysis yields similar results.				



BUREAU
VERITAS

BV Labs Job #: B9N3261

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KOU558		
Sampling Date		2019/08/20 06:38		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Calcium (Ca)	mg/L	108	0.050	6295410
Dissolved Magnesium (Mg)	mg/L	28.8	0.050	6295410
Dissolved Potassium (K)	mg/L	12.9	0.050	6295410
Dissolved Sodium (Na)	mg/L	181	0.050	6295410
Dissolved Sulphur (S)	mg/L	25.0	3.0	6295410
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9N3261

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KOU558		
Sampling Date		2019/08/20 06:38		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	529	3.0	6305208
Total Antimony (Sb)	ug/L	<0.50	0.50	6305208
Total Arsenic (As)	ug/L	2.06	0.10	6305208
Total Barium (Ba)	ug/L	68.0	1.0	6305208
Total Beryllium (Be)	ug/L	<0.10	0.10	6305208
Total Bismuth (Bi)	ug/L	<1.0	1.0	6305208
Total Boron (B)	ug/L	175	50	6305208
Total Cadmium (Cd)	ug/L	0.016	0.010	6305208
Total Chromium (Cr)	ug/L	<1.0	1.0	6305208
Total Cobalt (Co)	ug/L	0.50	0.20	6305208
Total Copper (Cu)	ug/L	1.49	0.50	6305208
Total Iron (Fe)	ug/L	85	10	6305208
Total Lead (Pb)	ug/L	<0.20	0.20	6305208
Total Lithium (Li)	ug/L	49.8	2.0	6305208
Total Manganese (Mn)	ug/L	23.0	1.0	6305208
Total Molybdenum (Mo)	ug/L	1.5	1.0	6305208
Total Nickel (Ni)	ug/L	3.8	1.0	6305208
Total Selenium (Se)	ug/L	0.13	0.10	6305208
Total Silicon (Si)	ug/L	419	100	6305208
Total Silver (Ag)	ug/L	<0.020	0.020	6305208
Total Strontium (Sr)	ug/L	2050	1.0	6305208
Total Thallium (Tl)	ug/L	0.039	0.010	6305208
Total Tin (Sn)	ug/L	<5.0	5.0	6305208
Total Titanium (Ti)	ug/L	<5.0	5.0	6305208
Total Uranium (U)	ug/L	0.46	0.10	6305208
Total Vanadium (V)	ug/L	<5.0	5.0	6305208
Total Zinc (Zn)	ug/L	<5.0	5.0	6305208
Total Zirconium (Zr)	ug/L	<0.10	0.10	6305208
Total Calcium (Ca)	ug/L	108000	50	6299778
Total Magnesium (Mg)	ug/L	29100	50	6299778
Total Potassium (K)	ug/L	12800	50	6299778
Total Sodium (Na)	ug/L	186000	50	6299778
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9N3261
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KOU558		
Sampling Date		2019/08/20 06:38		
	UNITS	MEL-14	RDL	QC Batch
Total Sulphur (S)	ug/L	24100	3000	6299778
Calculated Parameters				
Total Hardness (CaCO ₃)	ug/L	388000	500	6297656
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9N3261
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KOU558			KOU558		
Sampling Date		2019/08/20 06:38			2019/08/20 06:38		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	50	1.0	6293714			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6293714			
Inorganics							
Total Ammonia-N	mg/L	2.8	0.050	6296790			
Total BOD	mg/L	2	2	6296157			
Conductivity	umho/cm	1800	1.0	6296605			
Free Cyanide (CN)	ug/L	1.8 (1)	1.0	6302380			
Total Dissolved Solids	mg/L	1310	10	6297229			
Total Kjeldahl Nitrogen (TKN)	mg/L	3.6	0.50	6298442			
Dissolved Organic Carbon	mg/L	11	0.50	6296134	12	0.50	6296134
Total Organic Carbon (TOC)	mg/L	13	0.50	6298568			
Orthophosphate (P)	mg/L	<0.010	0.010	6296802			
Dissolved Oxygen	mg/L	10.0		6296848			
pH	pH	7.80		6296604			
Total Phosphorus	mg/L	0.025	0.020	6300212			
Reactive Silica (SiO ₂)	mg/L	0.70	0.050	6304154			
Total Suspended Solids	mg/L	7	1	6296976			
Dissolved Sulphate (SO ₄)	mg/L	63	1.0	6296801			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6299343			
Turbidity	NTU	1.5	0.1	6295148			
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6299356			
Alkalinity (Total as CaCO ₃)	mg/L	51	1.0	6296603			
Dissolved Chloride (Cl ⁻)	mg/L	460	5.0	6296793			
Nitrite (N)	mg/L	0.738	0.010	6296597			
Nitrate (N)	mg/L	11.1	0.10	6296597			
Nitrate + Nitrite (N)	mg/L	11.8	0.10	6296597			
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6318582			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W.							



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VERITAS

BV Labs Job #: B9N3261

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KOU558		
Sampling Date		2019/08/20 06:38		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6296535
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6296541
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9N3261
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KOU558
Sample ID: MEL-14
Matrix: Water

Collected: 2019/08/20
Shipped:
Received: 2019/08/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6296603	N/A	2019/08/24	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6293714	N/A	2019/08/26	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6296157	2019/08/23	2019/08/28	Nusrat Naz
Chloride by Automated Colourimetry	KONE	6296793	N/A	2019/08/27	Deonarine Ramnarine
Conductivity	AT	6296605	N/A	2019/08/24	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6299356	N/A	2019/08/26	Gnana Thomas
Total Cyanide	SKAL/CN	6299343	2019/08/26	2019/08/26	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6296134	N/A	2019/08/23	Mandeep Kaur
Dissolved Oxygen	DO	6296848	2019/08/23	2019/08/23	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6299625	N/A	2019/08/26	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6304688	2019/08/28	2019/08/29	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6296541	2019/08/23	2019/08/23	Medhat Nasr
Mercury (low level)	CV/AA	6296535	2019/08/23	2019/08/23	Medhat Nasr
Cyanide (Free)	SPEC	6302380	2019/08/26	2019/08/26	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6297656	N/A	2019/08/28	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6295409	N/A	2019/08/28	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6295410	N/A	2019/08/28	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6304414	N/A	2019/08/27	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6299778	2019/08/28	2019/08/28	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6305208	2019/08/26	2019/08/27	Andrew An
Silica (Reactive)	KONE	6304154	N/A	2019/08/26	Serena Tian
Total Ammonia-N	LACH/NH ₄	6296790	N/A	2019/08/29	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6296597	N/A	2019/08/25	Amanpreet Sappal
pH	AT	6296604	2019/08/23	2019/08/24	Surinder Rai
Orthophosphate	KONE	6296802	N/A	2019/08/26	Alina Dobreanu
Radium-226 Low Level	AS	6318582	N/A	2019/09/11	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6296801	N/A	2019/08/26	Alina Dobreanu
Total Dissolved Solids	BAL	6297229	2019/08/24	2019/08/26	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6298442	2019/08/24	2019/08/27	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6298568	N/A	2019/08/27	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6300212	2019/08/26	2019/08/27	Shivani Shivani
Low Level Total Suspended Solids	BAL	6296976	2019/08/23	2019/08/26	Xinyue (Sarah) Hou
Turbidity	AT	6295148	N/A	2019/08/23	Kazzandra Adeva

BV Labs ID: KOU558 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/08/20
Shipped:
Received: 2019/08/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6296134	N/A	2019/08/23	Mandeep Kaur
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6299625	N/A	2019/08/26	Georgeta Rusu



BUREAU
VERITAS

BV Labs Job #: B9N3261

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.7°C
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Sample KOU558 [MEL-14] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Results relate only to the items tested.



BV Labs Job #: B9N3261
Report Date: 2019/09/13

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6299625	1,4-Difluorobenzene	2019/08/26	103	70 - 130	108	70 - 130	102	%				
6299625	4-Bromofluorobenzene	2019/08/26	102	70 - 130	101	70 - 130	98	%				
6299625	D10-Ethylbenzene	2019/08/26	86	70 - 130	88	70 - 130	87	%				
6299625	D4-1,2-Dichloroethane	2019/08/26	105	70 - 130	107	70 - 130	105	%				
6304688	o-Terphenyl	2019/08/29	101	60 - 130	102	60 - 130	100	%				
6295148	Turbidity	2019/08/23			109	85 - 115	<0.1	NTU	8.9	20		
6296134	Dissolved Organic Carbon	2019/08/23	97	80 - 120	99	80 - 120	<0.50	mg/L	3.0	20		
6296157	Total BOD	2019/08/28					<2	mg/L	29	30	97	80 - 120
6296535	Mercury (Hg)	2019/08/23	101	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6296541	Dissolved Mercury (Hg)	2019/08/23	99	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6296597	Nitrate (N)	2019/08/25	NC	80 - 120	103	80 - 120	<0.10	mg/L	1.4	20		
6296597	Nitrite (N)	2019/08/25	NC	80 - 120	105	80 - 120	<0.010	mg/L	0.23	20		
6296603	Alkalinity (Total as CaCO3)	2019/08/24			98	85 - 115	<1.0	mg/L	0.73	20		
6296604	pH	2019/08/24			102	98 - 103			0.29	N/A		
6296605	Conductivity	2019/08/24			100	85 - 115	<1.0	umho/cm	0.32	25		
6296790	Total Ammonia-N	2019/08/29	87	75 - 125	101	80 - 120	<0.050	mg/L	0.18	20		
6296793	Dissolved Chloride (Cl-)	2019/08/27	NC	80 - 120	101	80 - 120	<1.0	mg/L	0.12	20		
6296801	Dissolved Sulphate (SO4)	2019/08/26	NC	75 - 125	97	80 - 120	<1.0	mg/L	1.3	20		
6296802	Orthophosphate (P)	2019/08/26	NC	75 - 125	101	80 - 120	<0.010	mg/L	1.5	25		
6296976	Total Suspended Solids	2019/08/26					<1	mg/L	0	25	95	85 - 115
6297229	Total Dissolved Solids	2019/08/26					<10	mg/L	3.9	25	102	90 - 110
6298442	Total Kjeldahl Nitrogen (TKN)	2019/08/27	NC	80 - 120	97	80 - 120	<0.10	mg/L	3.6	20	98	80 - 120
6298568	Total Organic Carbon (TOC)	2019/08/26	94	80 - 120	98	80 - 120	<0.50	mg/L	3.3	20		
6299343	Total Cyanide (CN)	2019/08/26	105	80 - 120	104	80 - 120	<0.0050	mg/L	NC	20		
6299356	WAD Cyanide (Free)	2019/08/26	108	80 - 120	109	80 - 120	<0.0010	mg/L	NC	20		
6299625	Benzene	2019/08/26	93	70 - 130	98	70 - 130	<0.20	ug/L	NC	30		
6299625	Ethylbenzene	2019/08/26	95	70 - 130	97	70 - 130	<0.20	ug/L	NC	30		
6299625	F1 (C6-C10) - BTEX	2019/08/26					<25	ug/L	NC	30		
6299625	F1 (C6-C10)	2019/08/26	104	70 - 130	108	70 - 130	<25	ug/L	NC	30		
6299625	o-Xylene	2019/08/26	93	70 - 130	94	70 - 130	<0.20	ug/L	NC	30		
6299625	p+m-Xylene	2019/08/26	95	70 - 130	99	70 - 130	<0.40	ug/L	NC	30		



BV Labs Job #: B9N3261
Report Date: 2019/09/13

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6299625	Toluene	2019/08/26	92	70 - 130	94	70 - 130	<0.20	ug/L	NC	30		
6299625	Total Xylenes	2019/08/26					<0.40	ug/L	NC	30		
6300212	Total Phosphorus	2019/08/27	100	80 - 120	106	80 - 120	<0.020	mg/L	0.93	20	102	80 - 120
6302380	Free Cyanide (CN)	2019/08/26	81	80 - 120	81	80 - 120	<1.0	ug/L	NC	20		
6304154	Reactive Silica (SiO ₂)	2019/08/27	94	80 - 120	98	80 - 120	<0.050	mg/L	18	20		
6304414	Dissolved Aluminum (Al)	2019/08/27	100	80 - 120	106	80 - 120	<3.0	ug/L				
6304414	Dissolved Antimony (Sb)	2019/08/27	101	80 - 120	103	80 - 120	<0.50	ug/L				
6304414	Dissolved Arsenic (As)	2019/08/27	105	80 - 120	102	80 - 120	<0.10	ug/L				
6304414	Dissolved Barium (Ba)	2019/08/27	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6304414	Dissolved Beryllium (Be)	2019/08/27	95	80 - 120	102	80 - 120	<0.10	ug/L				
6304414	Dissolved Bismuth (Bi)	2019/08/27	97	80 - 120	103	80 - 120	<1.0	ug/L				
6304414	Dissolved Boron (B)	2019/08/27	94	80 - 120	103	80 - 120	<50	ug/L				
6304414	Dissolved Cadmium (Cd)	2019/08/27	97	80 - 120	102	80 - 120	<0.010	ug/L				
6304414	Dissolved Chromium (Cr)	2019/08/27	95	80 - 120	102	80 - 120	<1.0	ug/L				
6304414	Dissolved Cobalt (Co)	2019/08/27	90	80 - 120	98	80 - 120	<0.20	ug/L				
6304414	Dissolved Copper (Cu)	2019/08/27	88	80 - 120	99	80 - 120	<0.20	ug/L				
6304414	Dissolved Iron (Fe)	2019/08/27	98	80 - 120	103	80 - 120	<5.0	ug/L				
6304414	Dissolved Lead (Pb)	2019/08/27	100	80 - 120	105	80 - 120	<0.20	ug/L				
6304414	Dissolved Lithium (Li)	2019/08/27	91	80 - 120	100	80 - 120	<2.0	ug/L				
6304414	Dissolved Manganese (Mn)	2019/08/27	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6304414	Dissolved Molybdenum (Mo)	2019/08/27	NC	80 - 120	105	80 - 120	<1.0	ug/L				
6304414	Dissolved Nickel (Ni)	2019/08/27	92	80 - 120	102	80 - 120	<1.0	ug/L				
6304414	Dissolved Selenium (Se)	2019/08/27	102	80 - 120	100	80 - 120	<0.10	ug/L				
6304414	Dissolved Silicon (Si)	2019/08/27	NC	80 - 120	104	80 - 120	<100	ug/L				
6304414	Dissolved Silver (Ag)	2019/08/27	96	80 - 120	101	80 - 120	<0.020	ug/L				
6304414	Dissolved Strontium (Sr)	2019/08/27	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6304414	Dissolved Thallium (Tl)	2019/08/27	100	80 - 120	103	80 - 120	<0.010	ug/L				
6304414	Dissolved Tin (Sn)	2019/08/27	100	80 - 120	102	80 - 120	<5.0	ug/L				
6304414	Dissolved Titanium (Ti)	2019/08/27	101	80 - 120	105	80 - 120	<5.0	ug/L				
6304414	Dissolved Uranium (U)	2019/08/27	105	80 - 120	103	80 - 120	<0.10	ug/L				
6304414	Dissolved Vanadium (V)	2019/08/27	99	80 - 120	102	80 - 120	<5.0	ug/L				
6304414	Dissolved Zinc (Zn)	2019/08/27	91	80 - 120	103	80 - 120	<5.0	ug/L				



BV Labs Job #: B9N3261
Report Date: 2019/09/13

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6304414	Dissolved Zirconium (Zr)	2019/08/27	107	80 - 120	103	80 - 120	<0.10	ug/L				
6304688	F2 (C10-C16 Hydrocarbons)	2019/08/29	125	50 - 130	123	60 - 130	<100	ug/L	NC	30		
6304688	F3 (C16-C34 Hydrocarbons)	2019/08/29	120	50 - 130	119	60 - 130	<200	ug/L	NC	30		
6304688	F4 (C34-C50 Hydrocarbons)	2019/08/29	115	50 - 130	112	60 - 130	<200	ug/L	NC	30		
6305208	Total Aluminum (Al)	2019/08/27	105	80 - 120	104	80 - 120	<3.0	ug/L				
6305208	Total Antimony (Sb)	2019/08/27	102	80 - 120	99	80 - 120	<0.50	ug/L				
6305208	Total Arsenic (As)	2019/08/27	103	80 - 120	101	80 - 120	<0.10	ug/L				
6305208	Total Barium (Ba)	2019/08/27	101	80 - 120	98	80 - 120	<1.0	ug/L				
6305208	Total Beryllium (Be)	2019/08/27	103	80 - 120	101	80 - 120	<0.10	ug/L				
6305208	Total Bismuth (Bi)	2019/08/27	102	80 - 120	101	80 - 120	<1.0	ug/L				
6305208	Total Boron (B)	2019/08/27	103	80 - 120	102	80 - 120	<50	ug/L				
6305208	Total Cadmium (Cd)	2019/08/27	102	80 - 120	100	80 - 120	<0.010	ug/L				
6305208	Total Chromium (Cr)	2019/08/27	100	80 - 120	100	80 - 120	<1.0	ug/L				
6305208	Total Cobalt (Co)	2019/08/27	97	80 - 120	96	80 - 120	<0.20	ug/L				
6305208	Total Copper (Cu)	2019/08/27	100	80 - 120	99	80 - 120	<0.50	ug/L				
6305208	Total Iron (Fe)	2019/08/27	103	80 - 120	102	80 - 120	<10	ug/L				
6305208	Total Lead (Pb)	2019/08/27	101	80 - 120	102	80 - 120	<0.20	ug/L				
6305208	Total Lithium (Li)	2019/08/27	102	80 - 120	100	80 - 120	<2.0	ug/L				
6305208	Total Manganese (Mn)	2019/08/27	101	80 - 120	99	80 - 120	<1.0	ug/L				
6305208	Total Molybdenum (Mo)	2019/08/27	101	80 - 120	103	80 - 120	<1.0	ug/L				
6305208	Total Nickel (Ni)	2019/08/27	100	80 - 120	100	80 - 120	<1.0	ug/L				
6305208	Total Selenium (Se)	2019/08/27	103	80 - 120	101	80 - 120	<0.10	ug/L				
6305208	Total Silicon (Si)	2019/08/27	105	80 - 120	106	80 - 120	<100	ug/L				
6305208	Total Silver (Ag)	2019/08/27	100	80 - 120	101	80 - 120	<0.020	ug/L				
6305208	Total Strontium (Sr)	2019/08/27	101	80 - 120	102	80 - 120	<1.0	ug/L				
6305208	Total Thallium (Tl)	2019/08/27	102	80 - 120	101	80 - 120	<0.010	ug/L				
6305208	Total Tin (Sn)	2019/08/27	101	80 - 120	100	80 - 120	<5.0	ug/L				
6305208	Total Titanium (Ti)	2019/08/27	102	80 - 120	102	80 - 120	<5.0	ug/L				
6305208	Total Uranium (U)	2019/08/27	100	80 - 120	100	80 - 120	<0.10	ug/L				
6305208	Total Vanadium (V)	2019/08/27	100	80 - 120	99	80 - 120	<5.0	ug/L				
6305208	Total Zinc (Zn)	2019/08/27	103	80 - 120	101	80 - 120	<5.0	ug/L				
6305208	Total Zirconium (Zr)	2019/08/27	104	80 - 120	103	80 - 120	<0.10	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9N3261

Report Date: 2019/09/13

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6318582	Radium-226	2019/09/11			91	85 - 115	<0.0050	Bq/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

BV Labs Job #: B9N3261

Report Date: 2019/09/13

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

David Huang, BBY Scientific Specialist

Marjolen Busslinger, Scientific Specialist

Robert Allen, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BV Labs Job #: B9N3261
Report Date: 2019/09/13

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/23
Report #: R5892469
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B903972

Received: 2019/09/03, 10:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/09/04	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/09/05	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/09/05	2019/09/10	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/09/06	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/09/04	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/09/10	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/09/10	2019/09/10	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/09/04	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/09/04	2019/09/04	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/09/06	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/09/07	2019/09/07	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/09/05	2019/09/05	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/09/05	2019/09/05	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/09/10	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/09/09	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/09/09	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/09/08	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/03	2019/09/10	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/09/06	2019/09/09	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/09/11	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/09/06	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/09/04	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/09/04	2019/09/04	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/09/05	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/09/21	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/09/05	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/09/04	2019/09/05	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/09/04	2019/09/06	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/09/04	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/23
Report #: R5892469
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B903972

Received: 2019/09/03, 10:00

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Total Phosphorus (Colourimetric) (1)	1	2019/09/05	2019/09/05	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/09/04	2019/09/05	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/09/04	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/23
Report #: R5892469
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B903972

Received: 2019/09/03, 10:00

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
23 Sep 2019 17:56:40

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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VERITAS

BV Labs Job #: B903972

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KRC788		
Sampling Date		2019/08/29 07:00		
	UNITS	MEL-14	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	6319221
Toluene	ug/L	<0.20	0.20	6319221
Ethylbenzene	ug/L	<0.20	0.20	6319221
o-Xylene	ug/L	<0.20	0.20	6319221
p+m-Xylene	ug/L	<0.40	0.40	6319221
Total Xylenes	ug/L	<0.40	0.40	6319221
F1 (C6-C10)	ug/L	<25	25	6319221
F1 (C6-C10) - BTEX	ug/L	<25	25	6319221
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6320468
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6320468
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6320468
Reached Baseline at C50	ug/L	Yes		6320468
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	103		6319221
4-Bromofluorobenzene	%	102		6319221
D10-Ethylbenzene	%	95		6319221
D4-1,2-Dichloroethane	%	105		6319221
o-Terphenyl	%	100		6320468
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B903972

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KRC788		
Sampling Date		2019/08/29 07:00		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	391	0.50	6324824
Metals				
Dissolved Aluminum (Al)	ug/L	64.1	3.0	6324826
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6324826
Dissolved Arsenic (As)	ug/L	1.67	0.10	6324826
Dissolved Barium (Ba)	ug/L	67.7	1.0	6324826
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6324826
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6324826
Dissolved Boron (B)	ug/L	181	50	6324826
Dissolved Cadmium (Cd)	ug/L	0.014	0.010	6324826
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6324826
Dissolved Cobalt (Co)	ug/L	0.40	0.20	6324826
Dissolved Copper (Cu)	ug/L	1.07	0.20	6324826
Dissolved Iron (Fe)	ug/L	34.9	5.0	6324826
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6324826
Dissolved Lithium (Li)	ug/L	58.1	2.0	6324826
Dissolved Manganese (Mn)	ug/L	6.9	1.0	6324826
Dissolved Molybdenum (Mo)	ug/L	1.4	1.0	6324826
Dissolved Nickel (Ni)	ug/L	3.2	1.0	6324826
Dissolved Selenium (Se)	ug/L	0.11	0.10	6324826
Dissolved Silicon (Si)	ug/L	420	100	6324826
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6324826
Dissolved Strontium (Sr)	ug/L	2180	1.0	6324826
Dissolved Thallium (Tl)	ug/L	0.029	0.010	6324826
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6324826
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6324826
Dissolved Uranium (U)	ug/L	0.27	0.10	6324826
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6324826
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6324826
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6324826
Dissolved Calcium (Ca)	mg/L	109	0.050	6324825
Dissolved Magnesium (Mg)	mg/L	28.8	0.050	6324825
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B903972
Report Date: 2019/09/23

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KRC788		
Sampling Date		2019/08/29 07:00		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Potassium (K)	mg/L	12.9	0.050	6324825
Dissolved Sodium (Na)	mg/L	177	0.050	6324825
Dissolved Sulphur (S)	mg/L	25.0	3.0	6324825
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B903972

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KRC788		
Sampling Date		2019/08/29 07:00		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	515	3.0	6324823
Total Antimony (Sb)	ug/L	<0.50	0.50	6324823
Total Arsenic (As)	ug/L	1.99	0.10	6324823
Total Barium (Ba)	ug/L	72.4	1.0	6324823
Total Beryllium (Be)	ug/L	<0.10	0.10	6324823
Total Bismuth (Bi)	ug/L	<1.0	1.0	6324823
Total Boron (B)	ug/L	181	50	6324823
Total Cadmium (Cd)	ug/L	0.013	0.010	6324823
Total Chromium (Cr)	ug/L	<1.0	1.0	6324823
Total Cobalt (Co)	ug/L	0.43	0.20	6324823
Total Copper (Cu)	ug/L	1.16	0.50	6324823
Total Iron (Fe)	ug/L	95	10	6324823
Total Lead (Pb)	ug/L	0.22	0.20	6324823
Total Lithium (Li)	ug/L	54.5	2.0	6324823
Total Manganese (Mn)	ug/L	16.5	1.0	6324823
Total Molybdenum (Mo)	ug/L	1.5	1.0	6324823
Total Nickel (Ni)	ug/L	3.3	1.0	6324823
Total Selenium (Se)	ug/L	0.12	0.10	6324823
Total Silicon (Si)	ug/L	475	100	6324823
Total Silver (Ag)	ug/L	<0.020	0.020	6324823
Total Strontium (Sr)	ug/L	2260	1.0	6324823
Total Thallium (Tl)	ug/L	0.027	0.010	6324823
Total Tin (Sn)	ug/L	<5.0	5.0	6324823
Total Titanium (Ti)	ug/L	<5.0	5.0	6324823
Total Uranium (U)	ug/L	0.35	0.10	6324823
Total Vanadium (V)	ug/L	<5.0	5.0	6324823
Total Zinc (Zn)	ug/L	<5.0	5.0	6324823
Total Zirconium (Zr)	ug/L	<0.10	0.10	6324823
Total Calcium (Ca)	ug/L	118000	50	6324822
Total Magnesium (Mg)	ug/L	35800	50	6324822
Total Potassium (K)	ug/L	13500	50	6324822
Total Sodium (Na)	ug/L	193000	50	6324822
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B903972

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KRC788		
Sampling Date		2019/08/29 07:00		
	UNITS	MEL-14	RDL	QC Batch
Total Sulphur (S)	ug/L	26300	3000	6324822
Calculated Parameters				
Total Hardness (CaCO ₃)	ug/L	441000	500	6324821
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B903972
Report Date: 2019/09/23

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KRC788			KRC788		
Sampling Date		2019/08/29 07:00			2019/08/29 07:00		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	46	1.0	6312256			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6312256			
Inorganics							
Total Ammonia-N	mg/L	2.6	0.050	6316054			
Total BOD	mg/L	<2	2	6315821			
Conductivity	umho/cm	1900	1.0	6313214			
Free Cyanide (CN)	ug/L	1.4 (1)	1.0	6333734	1.4	1.0	6333734
Total Dissolved Solids	mg/L	1170	10	6314915			
Total Kjeldahl Nitrogen (TKN)	mg/L	2.9	0.50	6314349			
Dissolved Organic Carbon	mg/L	10	0.50	6312810			
Total Organic Carbon (TOC)	mg/L	12	0.50	6314284			
Orthophosphate (P)	mg/L	<0.010	0.010	6314482			
Dissolved Oxygen	mg/L	9.60		6314579			
pH	pH	7.71		6313215			
Total Phosphorus	mg/L	0.023	0.020	6316238			
Reactive Silica (SiO ₂)	mg/L	0.75	0.050	6330991			
Total Suspended Solids	mg/L	4	1	6313206			
Dissolved Sulphate (SO ₄)	mg/L	69	1.0	6314480			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6322313			
Turbidity	NTU	1.4	0.1	6312732			
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6322321			
Alkalinity (Total as CaCO ₃)	mg/L	46	1.0	6313212			
Dissolved Chloride (Cl ⁻)	mg/L	470	5.0	6314477			
Nitrite (N)	mg/L	0.726	0.010	6313187			
Nitrate (N)	mg/L	11.5	0.10	6313187			
Nitrate + Nitrite (N)	mg/L	12.3	0.10	6313187			
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6326090			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W.							



BV Labs Job #: B903972
Report Date: 2019/09/23

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KRC788		
Sampling Date		2019/08/29 07:00		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6316097
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6316131
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B903972
Report Date: 2019/09/23

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KRC788
Sample ID: MEL-14
Matrix: Water

Collected: 2019/08/29
Shipped:
Received: 2019/09/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6313212	N/A	2019/09/04	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6312256	N/A	2019/09/05	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6315821	2019/09/05	2019/09/10	Navjot Kaur Gill
Chloride by Automated Colourimetry	KONE	6314477	N/A	2019/09/06	Deonarine Ramnarine
Conductivity	AT	6313214	N/A	2019/09/04	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6322321	N/A	2019/09/10	Gnana Thomas
Total Cyanide	SKAL/CN	6322313	2019/09/10	2019/09/10	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6312810	N/A	2019/09/04	Mandeep Kaur
Dissolved Oxygen	DO	6314579	2019/09/04	2019/09/04	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6319221	N/A	2019/09/06	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6320468	2019/09/07	2019/09/07	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6316131	2019/09/05	2019/09/05	Medhat Nasr
Mercury (low level)	CV/AA	6316097	2019/09/05	2019/09/05	Medhat Nasr
Cyanide (Free)	SPEC	6333734	2019/09/09	2019/09/09	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6324821	N/A	2019/09/10	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6324824	N/A	2019/09/09	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6324825	N/A	2019/09/09	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6324826	N/A	2019/09/08	Valentina Balada
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6324822	2019/09/10	2019/09/10	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6324823	2019/09/06	2019/09/09	Andrew An
Silica (Reactive)	KONE	6330991	N/A	2019/09/11	Serena Tian
Total Ammonia-N	LACH/NH ₄	6316054	N/A	2019/09/06	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6313187	N/A	2019/09/04	Chandra Nandlal
pH	AT	6313215	2019/09/04	2019/09/04	Surinder Rai
Orthophosphate	KONE	6314482	N/A	2019/09/05	Alina Dobreanu
Radium-226 Low Level	AS	6326090	N/A	2019/09/21	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6314480	N/A	2019/09/05	Alina Dobreanu
Total Dissolved Solids	BAL	6314915	2019/09/04	2019/09/05	Nilam Borole
Total Kjeldahl Nitrogen in Water	SKAL	6314349	2019/09/04	2019/09/06	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6314284	N/A	2019/09/04	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6316238	2019/09/05	2019/09/05	Shivani Shivani
Low Level Total Suspended Solids	BAL	6313206	2019/09/04	2019/09/05	Nilam Borole
Turbidity	AT	6312732	N/A	2019/09/04	Kazzandra Adeva

BV Labs ID: KRC788 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/08/29
Shipped:
Received: 2019/09/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Cyanide (Free)	SPEC	6333734	2019/09/09	2019/09/09	Amy Phan



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VERITAS

BV Labs Job #: B903972

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	17.3°C
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Sample KRC788 [MEL-14] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Results relate only to the items tested.



BV Labs Job #: B903972
Report Date: 2019/09/23

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6319221	1,4-Difluorobenzene	2019/09/09	107	70 - 130	99	70 - 130	105	%				
6319221	4-Bromofluorobenzene	2019/09/09	106	70 - 130	101	70 - 130	96	%				
6319221	D10-Ethylbenzene	2019/09/09	84	70 - 130	85	70 - 130	86	%				
6319221	D4-1,2-Dichloroethane	2019/09/09	106	70 - 130	99	70 - 130	101	%				
6320468	o-Terphenyl	2019/09/07	104	60 - 130	106	60 - 130	101	%				
6312732	Turbidity	2019/09/04			95	85 - 115	<0.1	NTU	4.3	20		
6312810	Dissolved Organic Carbon	2019/09/04	95	80 - 120	100	80 - 120	<0.50	mg/L	NC	20		
6313187	Nitrate (N)	2019/09/04	103	80 - 120	103	80 - 120	<0.10	mg/L	NC	20		
6313187	Nitrite (N)	2019/09/04	107	80 - 120	106	80 - 120	<0.010	mg/L	NC	20		
6313206	Total Suspended Solids	2019/09/05					<1	mg/L	8.0	25	100	85 - 115
6313212	Alkalinity (Total as CaCO3)	2019/09/04			98	85 - 115	<1.0	mg/L	0.97	20		
6313214	Conductivity	2019/09/04			102	85 - 115	<1.0	umho/cm	0.38	25		
6313215	pH	2019/09/04			102	98 - 103			0.50	N/A		
6314284	Total Organic Carbon (TOC)	2019/09/04	83	80 - 120	98	80 - 120	<0.50	mg/L	0.093	20		
6314349	Total Kjeldahl Nitrogen (TKN)	2019/09/05	100	80 - 120	98	80 - 120	<0.10	mg/L	3.1	20	99	80 - 120
6314477	Dissolved Chloride (Cl-)	2019/09/06	NC	80 - 120	103	80 - 120	<1.0	mg/L	5.1	20		
6314480	Dissolved Sulphate (SO4)	2019/09/05	NC	75 - 125	97	80 - 120	<1.0	mg/L	2.5	20		
6314482	Orthophosphate (P)	2019/09/05	110	75 - 125	101	80 - 120	<0.010	mg/L	NC	25		
6314915	Total Dissolved Solids	2019/09/05					<10	mg/L	0.90	25	102	90 - 110
6315821	Total BOD	2019/09/10					<2	mg/L	NC	30	94	80 - 120
6316054	Total Ammonia-N	2019/09/06	91	75 - 125	101	80 - 120	<0.050	mg/L	0.80	20		
6316097	Mercury (Hg)	2019/09/05	99	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6316131	Dissolved Mercury (Hg)	2019/09/05	97	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6316238	Total Phosphorus	2019/09/05	99	80 - 120	101	80 - 120	<0.020	mg/L	1.5	20	104	80 - 120
6319221	Benzene	2019/09/09	97	70 - 130	87	70 - 130	<0.20	ug/L	NC	30		
6319221	Ethylbenzene	2019/09/09	91	70 - 130	88	70 - 130	<0.20	ug/L	NC	30		
6319221	F1 (C6-C10) - BTEX	2019/09/09					<25	ug/L	NC	30		
6319221	F1 (C6-C10)	2019/09/09	97	70 - 130	100	70 - 130	<25	ug/L	NC	30		
6319221	o-Xylene	2019/09/09	93	70 - 130	86	70 - 130	<0.20	ug/L	NC	30		
6319221	p+m-Xylene	2019/09/09	94	70 - 130	90	70 - 130	<0.40	ug/L	NC	30		
6319221	Toluene	2019/09/09	93	70 - 130	89	70 - 130	<0.20	ug/L	12	30		



BV Labs Job #: B9O3972
Report Date: 2019/09/23

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6319221	Total Xylenes	2019/09/09					<0.40	ug/L	NC	30		
6320468	F2 (C10-C16 Hydrocarbons)	2019/09/07	114	50 - 130	116	60 - 130	<100	ug/L	NC	30		
6320468	F3 (C16-C34 Hydrocarbons)	2019/09/07	NC	50 - 130	109	60 - 130	<200	ug/L	NC	30		
6320468	F4 (C34-C50 Hydrocarbons)	2019/09/07	109	50 - 130	113	60 - 130	<200	ug/L	NC	30		
6322313	Total Cyanide (CN)	2019/09/09	101	80 - 120	101	80 - 120	<0.0050	mg/L	NC	20		
6322321	WAD Cyanide (Free)	2019/09/09	108	80 - 120	108	80 - 120	<0.0010	mg/L	NC	20		
6324823	Total Aluminum (Al)	2019/09/09	124 (1)	80 - 120	106	80 - 120	<3.0	ug/L				
6324823	Total Antimony (Sb)	2019/09/09	108	80 - 120	102	80 - 120	<0.50	ug/L				
6324823	Total Arsenic (As)	2019/09/09	108	80 - 120	102	80 - 120	<0.10	ug/L				
6324823	Total Barium (Ba)	2019/09/09	106	80 - 120	103	80 - 120	<1.0	ug/L				
6324823	Total Beryllium (Be)	2019/09/09	104	80 - 120	101	80 - 120	<0.10	ug/L				
6324823	Total Bismuth (Bi)	2019/09/09	105	80 - 120	101	80 - 120	<1.0	ug/L				
6324823	Total Boron (B)	2019/09/09	106	80 - 120	103	80 - 120	<50	ug/L				
6324823	Total Cadmium (Cd)	2019/09/09	107	80 - 120	102	80 - 120	<0.010	ug/L				
6324823	Total Chromium (Cr)	2019/09/09	102	80 - 120	99	80 - 120	<1.0	ug/L				
6324823	Total Cobalt (Co)	2019/09/09	102	80 - 120	98	80 - 120	<0.20	ug/L				
6324823	Total Copper (Cu)	2019/09/09	96	80 - 120	94	80 - 120	<0.50	ug/L				
6324823	Total Iron (Fe)	2019/09/09	113	80 - 120	102	80 - 120	<10	ug/L				
6324823	Total Lead (Pb)	2019/09/09	106	80 - 120	102	80 - 120	<0.20	ug/L				
6324823	Total Lithium (Li)	2019/09/09	109	80 - 120	109	80 - 120	<2.0	ug/L				
6324823	Total Manganese (Mn)	2019/09/09	104	80 - 120	100	80 - 120	<1.0	ug/L				
6324823	Total Molybdenum (Mo)	2019/09/09	107	80 - 120	103	80 - 120	<1.0	ug/L				
6324823	Total Nickel (Ni)	2019/09/09	98	80 - 120	97	80 - 120	<1.0	ug/L				
6324823	Total Selenium (Se)	2019/09/09	104	80 - 120	99	80 - 120	<0.10	ug/L				
6324823	Total Silicon (Si)	2019/09/09	117	80 - 120	110	80 - 120	<100	ug/L				
6324823	Total Silver (Ag)	2019/09/09	104	80 - 120	100	80 - 120	<0.020	ug/L				
6324823	Total Strontium (Sr)	2019/09/09	108	80 - 120	103	80 - 120	<1.0	ug/L				
6324823	Total Thallium (Tl)	2019/09/09	105	80 - 120	102	80 - 120	<0.010	ug/L				
6324823	Total Tin (Sn)	2019/09/09	76 (1)	80 - 120	103	80 - 120	<5.0	ug/L				
6324823	Total Titanium (Ti)	2019/09/09	105	80 - 120	100	80 - 120	<5.0	ug/L				
6324823	Total Uranium (U)	2019/09/09	107	80 - 120	100	80 - 120	<0.10	ug/L				
6324823	Total Vanadium (V)	2019/09/09	103	80 - 120	98	80 - 120	<5.0	ug/L				



BV Labs Job #: B9O3972
Report Date: 2019/09/23

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6324823	Total Zinc (Zn)	2019/09/09	100	80 - 120	99	80 - 120	<5.0	ug/L				
6324823	Total Zirconium (Zr)	2019/09/09	108	80 - 120	104	80 - 120	<0.10	ug/L				
6324826	Dissolved Aluminum (Al)	2019/09/08	101	80 - 120	103	80 - 120	<3.0	ug/L				
6324826	Dissolved Antimony (Sb)	2019/09/08	96	80 - 120	99	80 - 120	<0.50	ug/L				
6324826	Dissolved Arsenic (As)	2019/09/08	100	80 - 120	99	80 - 120	<0.10	ug/L				
6324826	Dissolved Barium (Ba)	2019/09/08	97	80 - 120	98	80 - 120	<1.0	ug/L				
6324826	Dissolved Beryllium (Be)	2019/09/08	104	80 - 120	105	80 - 120	<0.10	ug/L				
6324826	Dissolved Bismuth (Bi)	2019/09/08	96	80 - 120	100	80 - 120	<1.0	ug/L				
6324826	Dissolved Boron (B)	2019/09/08	98	80 - 120	101	80 - 120	<50	ug/L				
6324826	Dissolved Cadmium (Cd)	2019/09/08	94	80 - 120	97	80 - 120	<0.010	ug/L				
6324826	Dissolved Chromium (Cr)	2019/09/08	96	80 - 120	97	80 - 120	<1.0	ug/L				
6324826	Dissolved Cobalt (Co)	2019/09/08	91	80 - 120	93	80 - 120	<0.20	ug/L				
6324826	Dissolved Copper (Cu)	2019/09/08	92	80 - 120	95	80 - 120	<0.20	ug/L				
6324826	Dissolved Iron (Fe)	2019/09/08	96	80 - 120	99	80 - 120	<5.0	ug/L				
6324826	Dissolved Lead (Pb)	2019/09/08	97	80 - 120	100	80 - 120	<0.20	ug/L				
6324826	Dissolved Lithium (Li)	2019/09/08	104	80 - 120	109	80 - 120	<2.0	ug/L				
6324826	Dissolved Manganese (Mn)	2019/09/08	97	80 - 120	100	80 - 120	<1.0	ug/L				
6324826	Dissolved Molybdenum (Mo)	2019/09/08	100	80 - 120	99	80 - 120	<1.0	ug/L				
6324826	Dissolved Nickel (Ni)	2019/09/08	93	80 - 120	96	80 - 120	<1.0	ug/L				
6324826	Dissolved Selenium (Se)	2019/09/08	101	80 - 120	101	80 - 120	<0.10	ug/L				
6324826	Dissolved Silicon (Si)	2019/09/08	NC	80 - 120	107	80 - 120	<100	ug/L				
6324826	Dissolved Silver (Ag)	2019/09/08	92	80 - 120	96	80 - 120	<0.020	ug/L				
6324826	Dissolved Strontium (Sr)	2019/09/08	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6324826	Dissolved Thallium (Tl)	2019/09/08	96	80 - 120	99	80 - 120	<0.010	ug/L				
6324826	Dissolved Tin (Sn)	2019/09/08	96	80 - 120	99	80 - 120	<5.0	ug/L				
6324826	Dissolved Titanium (Ti)	2019/09/08	97	80 - 120	98	80 - 120	<5.0	ug/L				
6324826	Dissolved Uranium (U)	2019/09/08	99	80 - 120	100	80 - 120	<0.10	ug/L				
6324826	Dissolved Vanadium (V)	2019/09/08	97	80 - 120	99	80 - 120	<5.0	ug/L				
6324826	Dissolved Zinc (Zn)	2019/09/08	98	80 - 120	101	80 - 120	<5.0	ug/L				
6324826	Dissolved Zirconium (Zr)	2019/09/08	101	80 - 120	99	80 - 120	<0.10	ug/L				
6326090	Radium-226	2019/09/21			95	85 - 115	<0.0050	Bq/L	NC	N/A		
6330991	Reactive Silica (SiO2)	2019/09/11	93	80 - 120	101	80 - 120	<0.050	mg/L				



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VERITAS

BV Labs Job #: B903972
Report Date: 2019/09/23

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6333734	Free Cyanide (CN)	2019/09/09	96	80 - 120	95	80 - 120	<1.0	ug/L	0	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B903972

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

Rob Reinert, B.Sc., Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B903972

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63°02'15.5" 92°13'06.3"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/09/23
 Report #: R5892488
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O6583

Received: 2019/09/05, 10:00

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	2	N/A	2019/09/09	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	2	N/A	2019/09/10	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	2	2019/09/06	2019/09/11	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	2	N/A	2019/09/10	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	2	N/A	2019/09/09	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	2	N/A	2019/09/12	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	2	2019/09/12	2019/09/12	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	2	N/A	2019/09/07	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	2	2019/09/06	2019/09/06	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	2	N/A	2019/09/10	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	2	2019/09/12	2019/09/13	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	2	2019/09/11	2019/09/12	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	2	2019/09/10	2019/09/10	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	2	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	2	N/A	2019/09/12	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	2	N/A	2019/09/11	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	2	N/A	2019/09/11	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	2	N/A	2019/09/10	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	2	2019/09/05	2019/09/12	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	2	2019/09/11	2019/09/11	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	2	N/A	2019/09/11	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	2	N/A	2019/09/10	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	2	N/A	2019/09/08	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	2	2019/09/06	2019/09/09	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	2	N/A	2019/09/09	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	2	N/A	2019/09/22	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	2	N/A	2019/09/09	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	2	2019/09/07	2019/09/09	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	2	2019/09/07	2019/09/11	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	2	N/A	2019/09/07	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/23
Report #: R5892488
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B906583

Received: 2019/09/05, 10:00

Sample Matrix: Water
Samples Received: 2

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Total Phosphorus (Colourimetric) (1)	2	2019/09/09	2019/09/10	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	2	2019/09/06	2019/09/09	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	2	N/A	2019/09/06	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/23
Report #: R5892488
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B906583

Received: 2019/09/05, 10:00

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
23 Sep 2019 18:04:11

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

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BUREAU
VERITAS

BV Labs Job #: B906583

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KRR353	KRR354		
Sampling Date		2019/09/03 07:30	2019/09/03 07:30		
	UNITS	MEL-14	MEL-14 DUP	RDL	QC Batch
BTEX & F1 Hydrocarbons					
Benzene	ug/L	<0.20	<0.20	0.20	6322927
Toluene	ug/L	<0.20	<0.20	0.20	6322927
Ethylbenzene	ug/L	<0.20	<0.20	0.20	6322927
o-Xylene	ug/L	<0.20	<0.20	0.20	6322927
p+m-Xylene	ug/L	<0.40	<0.40	0.40	6322927
Total Xylenes	ug/L	<0.40	<0.40	0.40	6322927
F1 (C6-C10)	ug/L	<25	<25	25	6322927
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	6322927
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	6328987
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	6328987
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	6328987
Reached Baseline at C50	ug/L	Yes	Yes		6328987
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	102	94		6322927
4-Bromofluorobenzene	%	98	109		6322927
D10-Ethylbenzene	%	108	112		6322927
D4-1,2-Dichloroethane	%	102	93		6322927
o-Terphenyl	%	98	98		6328987
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B906583

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KRR353	KRR354		
Sampling Date		2019/09/03 07:30	2019/09/03 07:30		
	UNITS	MEL-14	MEL-14 DUP	RDL	QC Batch
Calculated Parameters					
Dissolved Hardness (CaCO ₃)	mg/L	450	443	0.50	6329082
Metals					
Dissolved Aluminum (Al)	ug/L	58.4	55.6	3.0	6329083
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	6329083
Dissolved Arsenic (As)	ug/L	1.76	1.74	0.10	6329083
Dissolved Barium (Ba)	ug/L	74.5	73.9	1.0	6329083
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	0.10	6329083
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	6329083
Dissolved Boron (B)	ug/L	196	195	50	6329083
Dissolved Cadmium (Cd)	ug/L	0.019	0.016	0.010	6329083
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	1.0	6329083
Dissolved Cobalt (Co)	ug/L	0.59	0.58	0.20	6329083
Dissolved Copper (Cu)	ug/L	1.01	1.00	0.20	6329083
Dissolved Iron (Fe)	ug/L	100	99.3	5.0	6329083
Dissolved Lead (Pb)	ug/L	0.36	<0.20	0.20	6329083
Dissolved Lithium (Li)	ug/L	56.4	55.3	2.0	6329083
Dissolved Manganese (Mn)	ug/L	33.5	32.7	1.0	6329083
Dissolved Molybdenum (Mo)	ug/L	5.4	6.7	1.0	6329083
Dissolved Nickel (Ni)	ug/L	3.9	3.8	1.0	6329083
Dissolved Selenium (Se)	ug/L	0.14	0.13	0.10	6329083
Dissolved Silicon (Si)	ug/L	635	653	100	6329083
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	0.020	6329083
Dissolved Strontium (Sr)	ug/L	2330	2370	1.0	6329083
Dissolved Thallium (Tl)	ug/L	0.027	0.027	0.010	6329083
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	5.0	6329083
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	6329083
Dissolved Uranium (U)	ug/L	0.30	0.30	0.10	6329083
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	5.0	6329083
Dissolved Zinc (Zn)	ug/L	10.7	7.2	5.0	6329083
Dissolved Zirconium (Zr)	ug/L	<0.10	<0.10	0.10	6329083
Dissolved Calcium (Ca)	mg/L	125	124	0.050	6326574
Dissolved Magnesium (Mg)	mg/L	33.5	32.6	0.050	6326574
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B906583

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KRR353	KRR354		
Sampling Date		2019/09/03 07:30	2019/09/03 07:30		
	UNITS	MEL-14	MEL-14 DUP	RDL	QC Batch
Dissolved Potassium (K)	mg/L	14.3	14.1	0.050	6326574
Dissolved Sodium (Na)	mg/L	201	201	0.050	6326574
Dissolved Sulphur (S)	mg/L	31.0	30.7	3.0	6326574
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BV Labs Job #: B906583
Report Date: 2019/09/23

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KRR353	KRR354		
Sampling Date		2019/09/03 07:30	2019/09/03 07:30		
	UNITS	MEL-14	MEL-14 DUP	RDL	QC Batch
Metals					
Total Aluminum (Al)	ug/L	543	542	15	6329086
Total Antimony (Sb)	ug/L	<2.5	<2.5	2.5	6329086
Total Arsenic (As)	ug/L	2.00	1.94	0.50	6329086
Total Barium (Ba)	ug/L	72.6	73.9	5.0	6329086
Total Beryllium (Be)	ug/L	<0.50	<0.50	0.50	6329086
Total Bismuth (Bi)	ug/L	<5.0	<5.0	5.0	6329086
Total Boron (B)	ug/L	<250	<250	250	6329086
Total Cadmium (Cd)	ug/L	<0.050	<0.050	0.050	6329086
Total Chromium (Cr)	ug/L	<5.0	<5.0	5.0	6329086
Total Cobalt (Co)	ug/L	<1.0	<1.0	1.0	6329086
Total Copper (Cu)	ug/L	<2.5	<2.5	2.5	6329086
Total Iron (Fe)	ug/L	122	131	50	6329086
Total Lead (Pb)	ug/L	<1.0	<1.0	1.0	6329086
Total Lithium (Li)	ug/L	58	57	10	6329086
Total Manganese (Mn)	ug/L	39.4	40.8	5.0	6329086
Total Molybdenum (Mo)	ug/L	<5.0	<5.0	5.0	6329086
Total Nickel (Ni)	ug/L	<5.0	<5.0	5.0	6329086
Total Selenium (Se)	ug/L	<0.50	<0.50	0.50	6329086
Total Silicon (Si)	ug/L	677	744	500	6329086
Total Silver (Ag)	ug/L	<0.10	<0.10	0.10	6329086
Total Strontium (Sr)	ug/L	2040	2090	5.0	6329086
Total Thallium (Tl)	ug/L	<0.050	<0.050	0.050	6329086
Total Tin (Sn)	ug/L	<25	<25	25	6329086
Total Titanium (Ti)	ug/L	<25	<25	25	6329086
Total Uranium (U)	ug/L	<0.50	<0.50	0.50	6329086
Total Vanadium (V)	ug/L	<25	<25	25	6329086
Total Zinc (Zn)	ug/L	<25	<25	25	6329086
Total Zirconium (Zr)	ug/L	<0.50	<0.50	0.50	6329086
Total Calcium (Ca)	ug/L	128000	139000	250	6329085
Total Magnesium (Mg)	ug/L	33900	34400	250	6329085
Total Potassium (K)	ug/L	13900	14300	250	6329085
Total Sodium (Na)	ug/L	201000	208000	250	6329085
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B906583

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KRR353	KRR354		
Sampling Date		2019/09/03 07:30	2019/09/03 07:30		
	UNITS	MEL-14	MEL-14 DUP	RDL	QC Batch
Total Sulphur (S)	ug/L	28500	27400	15000	6329085
Calculated Parameters					
Total Hardness (CaCO ₃)	ug/L	460000	489000	500	6329084
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BV Labs Job #: B906583
Report Date: 2019/09/23

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

RESULTS OF ANALYSES OF WATER

BV Labs ID		KRR353			KRR353			KRR354		
Sampling Date		2019/09/03 07:30			2019/09/03 07:30			2019/09/03 07:30		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch	MEL-14 DUP	RDL	QC Batch

Calculated Parameters

Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	47	1.0	6316385				47	1.0	6316385
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6316385				<1.0	1.0	6316385

Inorganics

Total Ammonia-N	mg/L	3.4	0.050	6320681				3.5	0.050	6320684
Total BOD	mg/L	<2	2	6318047	<2	2	6318047	<2	2	6318047
Conductivity	umho/cm	2100	1.0	6319060				2100	1.0	6319060
Free Cyanide (CN)	ug/L	2.1 (1)	1.0	6333734				1.9 (1)	1.0	6333734
Total Dissolved Solids	mg/L	1300	10	6320579				1290	10	6320579
Total Kjeldahl Nitrogen (TKN)	mg/L	4.2	0.50	6320655				4.3	0.50	6320655
Dissolved Organic Carbon	mg/L	10	0.50	6318935				10	0.50	6318935
Total Organic Carbon (TOC)	mg/L	12	0.50	6320673				12	0.50	6320673
Orthophosphate (P)	mg/L	<0.010	0.010	6319195				<0.010	0.010	6319195
Dissolved Oxygen	mg/L	10.4		6319125	10.5		6319125	10.7		6319125
pH	pH	7.53		6319064				7.56		6319064
Total Phosphorus	mg/L	<0.020	0.020	6322845				<0.020	0.020	6322845
Reactive Silica (SiO ₂)	mg/L	1.2	0.050	6330991				1.2	0.050	6334506
Total Suspended Solids	mg/L	5	1	6319162				5	1	6319162
Dissolved Sulphate (SO ₄)	mg/L	82	1.0	6319191				81	1.0	6319191
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6328646				<0.0050	0.0050	6328646
Turbidity	NTU	1.0	0.1	6318945	0.9	0.1	6318945	1.0	0.1	6318945
WAD Cyanide (Free)	mg/L	0.0010	0.0010	6328655				0.0016	0.0010	6328655
Alkalinity (Total as CaCO ₃)	mg/L	47	1.0	6319052				47	1.0	6319052
Dissolved Chloride (Cl ⁻)	mg/L	530	5.0	6319187				520	5.0	6319187
Nitrite (N)	mg/L	0.595	0.010	6319329				0.594	0.010	6319329
Nitrate (N)	mg/L	12.3	0.10	6319329				12.3	0.10	6319329
Nitrate + Nitrite (N)	mg/L	12.9	0.10	6319329				12.9	0.10	6319329

RADIONUCLIDE

Radium-226	Bq/L	<0.0050	0.0050	6326090				<0.0050	0.0050	6326090
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) See general comments for notes regarding CNFREE-W.



BUREAU
VERITAS

BV Labs Job #: B9O6583

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

RESULTS OF ANALYSES OF WATER

BV Labs ID		KRR354		
Sampling Date		2019/09/03 07:30		
	UNITS	MEL-14 DUP Lab-Dup	RDL	QC Batch

Inorganics				
Total Organic Carbon (TOC)	mg/L	12	0.50	6320673
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
Lab-Dup = Laboratory Initiated Duplicate				



BV Labs Job #: B906583
Report Date: 2019/09/23

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KRR353	KRR354		
Sampling Date		2019/09/03 07:30	2019/09/03 07:30		
	UNITS	MEL-14	MEL-14 DUP	RDL	QC Batch
Metals					
Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6323652
Dissolved Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6325823
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BV Labs Job #: B906583
Report Date: 2019/09/23

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

TEST SUMMARY

BV Labs ID: KRR353
Sample ID: MEL-14
Matrix: Water

Collected: 2019/09/03
Shipped:
Received: 2019/09/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6319052	N/A	2019/09/09	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6316385	N/A	2019/09/10	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6318047	2019/09/06	2019/09/11	Navjot Kaur Gill
Chloride by Automated Colourimetry	KONE	6319187	N/A	2019/09/10	Deonarine Ramnarine
Conductivity	AT	6319060	N/A	2019/09/09	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6328655	N/A	2019/09/12	Gnana Thomas
Total Cyanide	SKAL/CN	6328646	2019/09/12	2019/09/12	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6318935	N/A	2019/09/07	Nimarta Singh
Dissolved Oxygen	DO	6319125	2019/09/06	2019/09/06	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6322927	N/A	2019/09/10	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6328987	2019/09/12	2019/09/13	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6325823	2019/09/11	2019/09/12	Medhat Nasr
Mercury (low level)	CV/AA	6323652	2019/09/10	2019/09/10	Medhat Nasr
Cyanide (Free)	SPEC	6333734	2019/09/09	2019/09/09	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6329084	N/A	2019/09/12	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6329082	N/A	2019/09/11	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6326574	N/A	2019/09/11	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6329083	N/A	2019/09/10	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6329085	2019/09/12	2019/09/12	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6329086	2019/09/11	2019/09/11	John Choo
Silica (Reactive)	KONE	6330991	N/A	2019/09/11	Serena Tian
Total Ammonia-N	LACH/NH ₄	6320681	N/A	2019/09/10	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6319329	N/A	2019/09/08	Amanpreet Sappal
pH	AT	6319064	2019/09/06	2019/09/09	Surinder Rai
Orthophosphate	KONE	6319195	N/A	2019/09/09	Alina Dobreanu
Radium-226 Low Level	AS	6326090	N/A	2019/09/22	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6319191	N/A	2019/09/09	Alina Dobreanu
Total Dissolved Solids	BAL	6320579	2019/09/07	2019/09/09	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6320655	2019/09/07	2019/09/11	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6320673	N/A	2019/09/07	Nimarta Singh
Total Phosphorus (Colourimetric)	LACH/P	6322845	2019/09/09	2019/09/10	Shivani Shivani
Low Level Total Suspended Solids	BAL	6319162	2019/09/06	2019/09/09	Mandeep Kaur
Turbidity	AT	6318945	N/A	2019/09/06	Kazzandra Adeva

BV Labs ID: KRR353 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/09/03
Shipped:
Received: 2019/09/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Biochemical Oxygen Demand (BOD)	DO	6318047	2019/09/06	2019/09/11	Navjot Kaur Gill
Dissolved Oxygen	DO	6319125	2019/09/06	2019/09/06	Frank Zhang
Turbidity	AT	6318945	N/A	2019/09/06	Kazzandra Adeva



BV Labs Job #: B906583
Report Date: 2019/09/23

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

TEST SUMMARY

BV Labs ID: KRR354
Sample ID: MEL-14 DUP
Matrix: Water

Collected: 2019/09/03
Shipped:
Received: 2019/09/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6319052	N/A	2019/09/09	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6316385	N/A	2019/09/10	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6318047	2019/09/06	2019/09/11	Navjot Kaur Gill
Chloride by Automated Colourimetry	KONE	6319187	N/A	2019/09/10	Deonarine Ramnarine
Conductivity	AT	6319060	N/A	2019/09/09	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6328655	N/A	2019/09/12	Gnana Thomas
Total Cyanide	SKAL/CN	6328646	2019/09/12	2019/09/12	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6318935	N/A	2019/09/07	Nimarta Singh
Dissolved Oxygen	DO	6319125	2019/09/06	2019/09/06	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6322927	N/A	2019/09/10	Joe Paino
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6328987	2019/09/12	2019/09/13	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6325823	2019/09/11	2019/09/12	Medhat Nasr
Mercury (low level)	CV/AA	6323652	2019/09/10	2019/09/10	Medhat Nasr
Cyanide (Free)	SPEC	6333734	2019/09/09	2019/09/09	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6329084	N/A	2019/09/12	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6329082	N/A	2019/09/11	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6326574	N/A	2019/09/11	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6329083	N/A	2019/09/10	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6329085	2019/09/12	2019/09/12	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6329086	2019/09/11	2019/09/11	John Choo
Silica (Reactive)	KONE	6334506	N/A	2019/09/11	Serena Tian
Total Ammonia-N	LACH/NH ₄	6320684	N/A	2019/09/10	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6319329	N/A	2019/09/08	Amanpreet Sappal
pH	AT	6319064	2019/09/06	2019/09/09	Surinder Rai
Orthophosphate	KONE	6319195	N/A	2019/09/09	Alina Dobreanu
Radium-226 Low Level	AS	6326090	N/A	2019/09/22	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6319191	N/A	2019/09/09	Alina Dobreanu
Total Dissolved Solids	BAL	6320579	2019/09/07	2019/09/09	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6320655	2019/09/07	2019/09/11	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6320673	N/A	2019/09/07	Nimarta Singh
Total Phosphorus (Colourimetric)	LACH/P	6322845	2019/09/09	2019/09/10	Shivani Shivani
Low Level Total Suspended Solids	BAL	6319162	2019/09/06	2019/09/09	Mandeep Kaur
Turbidity	AT	6318945	N/A	2019/09/06	Kazzandra Adeva

BV Labs ID: KRR354 Dup
Sample ID: MEL-14 DUP
Matrix: Water

Collected: 2019/09/03
Shipped:
Received: 2019/09/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Organic Carbon (TOC)	TOCV/NDIR	6320673	N/A	2019/09/07	Nimarta Singh



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	10.3°C
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Sample KRR353 [MEL-14] : Total Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample KRR354 [MEL-14 DUP] : Total Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KRR353 [MEL-14] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required

Sample KRR354 [MEL-14 DUP] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required

Results relate only to the items tested.



BV Labs Job #: B9O6583
Report Date: 2019/09/23

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6322927	1,4-Difluorobenzene	2019/09/10	103	70 - 130	102	70 - 130	99	%				
6322927	4-Bromofluorobenzene	2019/09/10	98	70 - 130	98	70 - 130	98	%				
6322927	D10-Ethylbenzene	2019/09/10	100	70 - 130	97	70 - 130	102	%				
6322927	D4-1,2-Dichloroethane	2019/09/10	101	70 - 130	102	70 - 130	100	%				
6328987	o-Terphenyl	2019/09/13	106	60 - 130	99	60 - 130	103	%				
6318047	Total BOD	2019/09/11					<2	mg/L	NC	30	101	80 - 120
6318935	Dissolved Organic Carbon	2019/09/07	93	80 - 120	97	80 - 120	<0.50	mg/L	NC	20		
6318945	Turbidity	2019/09/06			97	85 - 115	<0.1	NTU	3.2	20		
6319052	Alkalinity (Total as CaCO3)	2019/09/09			94	85 - 115	<1.0	mg/L				
6319060	Conductivity	2019/09/09			101	85 - 115	<1.0	umho/cm				
6319064	pH	2019/09/09			102	98 - 103						
6319162	Total Suspended Solids	2019/09/09					<1	mg/L	NC	25	95	85 - 115
6319187	Dissolved Chloride (Cl-)	2019/09/10	NC	80 - 120	105	80 - 120	<1.0	mg/L	13	20		
6319191	Dissolved Sulphate (SO4)	2019/09/09	NC	75 - 125	101	80 - 120	<1.0	mg/L	0.95	20		
6319195	Orthophosphate (P)	2019/09/09	94	75 - 125	101	80 - 120	<0.010	mg/L	NC	25		
6319329	Nitrate (N)	2019/09/08	102	80 - 120	101	80 - 120	<0.10	mg/L	NC	20		
6319329	Nitrite (N)	2019/09/08	91	80 - 120	90	80 - 120	<0.010	mg/L	NC	20		
6320579	Total Dissolved Solids	2019/09/09					<10	mg/L	1.8	25	102	90 - 110
6320655	Total Kjeldahl Nitrogen (TKN)	2019/09/11	NC	80 - 120	100	80 - 120	<0.10	mg/L	0.91	20	100	80 - 120
6320673	Total Organic Carbon (TOC)	2019/09/07	93	80 - 120	97	80 - 120	<0.50	mg/L	0.34	20		
6320681	Total Ammonia-N	2019/09/10	99	75 - 125	102	80 - 120	<0.050	mg/L	NC	20		
6320684	Total Ammonia-N	2019/09/10	80	75 - 125	101	80 - 120	<0.050	mg/L	1.2	20		
6322845	Total Phosphorus	2019/09/10	98	80 - 120	98	80 - 120	<0.020	mg/L	4.4	20	98	80 - 120
6322927	Benzene	2019/09/10	99	70 - 130	94	70 - 130	<0.20	ug/L	NC	30		
6322927	Ethylbenzene	2019/09/10	97	70 - 130	93	70 - 130	<0.20	ug/L	4.7	30		
6322927	F1 (C6-C10) - BTEX	2019/09/10					<25	ug/L	NC	30		
6322927	F1 (C6-C10)	2019/09/10	87	70 - 130	99	70 - 130	<25	ug/L	NC	30		
6322927	o-Xylene	2019/09/10	94	70 - 130	91	70 - 130	<0.20	ug/L	4.3	30		
6322927	p+m-Xylene	2019/09/10	97	70 - 130	92	70 - 130	<0.40	ug/L	8.0	30		
6322927	Toluene	2019/09/10	98	70 - 130	96	70 - 130	<0.20	ug/L	3.7	30		
6322927	Total Xylenes	2019/09/10					<0.40	ug/L	7.4	30		



BV Labs Job #: B9O6583
Report Date: 2019/09/23

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6323652	Mercury (Hg)	2019/09/10	95	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6325823	Dissolved Mercury (Hg)	2019/09/12	101	75 - 125	98	80 - 120	<0.00001	mg/L	NC	20		
6326090	Radium-226	2019/09/21			95	85 - 115	<0.0050	Bq/L	NC	N/A		
6328646	Total Cyanide (CN)	2019/09/12	98	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20		
6328655	WAD Cyanide (Free)	2019/09/12	100	80 - 120	100	80 - 120	<0.0010	mg/L	NC	20		
6328987	F2 (C10-C16 Hydrocarbons)	2019/09/13	109	50 - 130	103	60 - 130	<100	ug/L	NC	30		
6328987	F3 (C16-C34 Hydrocarbons)	2019/09/13	118	50 - 130	115	60 - 130	<200	ug/L	NC	30		
6328987	F4 (C34-C50 Hydrocarbons)	2019/09/13	118	50 - 130	115	60 - 130	<200	ug/L	NC	30		
6329083	Dissolved Aluminum (Al)	2019/09/10	101	80 - 120	101	80 - 120	<3.0	ug/L	NC	20		
6329083	Dissolved Antimony (Sb)	2019/09/10	101	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
6329083	Dissolved Arsenic (As)	2019/09/10	100	80 - 120	99	80 - 120	<0.10	ug/L	1.0	20		
6329083	Dissolved Barium (Ba)	2019/09/10	99	80 - 120	101	80 - 120	<1.0	ug/L	0.12	20		
6329083	Dissolved Beryllium (Be)	2019/09/10	101	80 - 120	100	80 - 120	<0.10	ug/L	NC	20		
6329083	Dissolved Bismuth (Bi)	2019/09/10	101	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
6329083	Dissolved Boron (B)	2019/09/10	98	80 - 120	97	80 - 120	<50	ug/L	1.7	20		
6329083	Dissolved Cadmium (Cd)	2019/09/10	99	80 - 120	100	80 - 120	<0.010	ug/L	2.1	20		
6329083	Dissolved Chromium (Cr)	2019/09/10	98	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
6329083	Dissolved Cobalt (Co)	2019/09/10	97	80 - 120	100	80 - 120	<0.20	ug/L	0.28	20		
6329083	Dissolved Copper (Cu)	2019/09/10	96	80 - 120	101	80 - 120	<0.20	ug/L	0.095	20		
6329083	Dissolved Iron (Fe)	2019/09/10	102	80 - 120	106	80 - 120	<5.0	ug/L	NC	20		
6329083	Dissolved Lead (Pb)	2019/09/10	102	80 - 120	103	80 - 120	<0.20	ug/L	NC	20		
6329083	Dissolved Lithium (Li)	2019/09/10	103	80 - 120	101	80 - 120	<2.0	ug/L	1.6	20		
6329083	Dissolved Manganese (Mn)	2019/09/10	98	80 - 120	102	80 - 120	<1.0	ug/L	0.038	20		
6329083	Dissolved Molybdenum (Mo)	2019/09/10	101	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
6329083	Dissolved Nickel (Ni)	2019/09/10	98	80 - 120	101	80 - 120	<1.0	ug/L	0.31	20		
6329083	Dissolved Selenium (Se)	2019/09/10	100	80 - 120	101	80 - 120	<0.10	ug/L	NC	20		
6329083	Dissolved Silicon (Si)	2019/09/10	101	80 - 120	102	80 - 120	<100	ug/L	4.1	20		
6329083	Dissolved Silver (Ag)	2019/09/10	98	80 - 120	99	80 - 120	<0.020	ug/L	NC	20		
6329083	Dissolved Strontium (Sr)	2019/09/10	99	80 - 120	100	80 - 120	<1.0	ug/L	1.1	20		
6329083	Dissolved Thallium (Tl)	2019/09/10	102	80 - 120	102	80 - 120	<0.010	ug/L	1.1	20		
6329083	Dissolved Tin (Sn)	2019/09/10	101	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
6329083	Dissolved Titanium (Ti)	2019/09/10	99	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		



BV Labs Job #: B9O6583
Report Date: 2019/09/23

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6329083	Dissolved Uranium (U)	2019/09/10	103	80 - 120	102	80 - 120	<0.10	ug/L	0.38	20		
6329083	Dissolved Vanadium (V)	2019/09/10	99	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
6329083	Dissolved Zinc (Zn)	2019/09/10	102	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
6329083	Dissolved Zirconium (Zr)	2019/09/10	102	80 - 120	101	80 - 120	<0.10	ug/L	NC	20		
6329086	Total Aluminum (Al)	2019/09/12	NC	80 - 120	103	80 - 120	3.8, RDL=3.0 (1)	ug/L				
6329086	Total Antimony (Sb)	2019/09/12	98	80 - 120	97	80 - 120	<0.50	ug/L				
6329086	Total Arsenic (As)	2019/09/12	97	80 - 120	95	80 - 120	<0.10	ug/L				
6329086	Total Barium (Ba)	2019/09/12	101	80 - 120	100	80 - 120	<1.0	ug/L				
6329086	Total Beryllium (Be)	2019/09/12	92	80 - 120	95	80 - 120	<0.10	ug/L				
6329086	Total Bismuth (Bi)	2019/09/12	99	80 - 120	100	80 - 120	<1.0	ug/L				
6329086	Total Boron (B)	2019/09/12	98	80 - 120	102	80 - 120	<50	ug/L				
6329086	Total Cadmium (Cd)	2019/09/12	96	80 - 120	96	80 - 120	<0.010	ug/L				
6329086	Total Chromium (Cr)	2019/09/12	92	80 - 120	93	80 - 120	<1.0	ug/L				
6329086	Total Cobalt (Co)	2019/09/12	89	80 - 120	92	80 - 120	<0.20	ug/L				
6329086	Total Copper (Cu)	2019/09/12	87	80 - 120	91	80 - 120	<0.50	ug/L				
6329086	Total Iron (Fe)	2019/09/12	NC	80 - 120	103	80 - 120	<10	ug/L				
6329086	Total Lead (Pb)	2019/09/12	99	80 - 120	100	80 - 120	<0.20	ug/L				
6329086	Total Lithium (Li)	2019/09/12	100	80 - 120	99	80 - 120	<2.0	ug/L				
6329086	Total Manganese (Mn)	2019/09/12	NC	80 - 120	94	80 - 120	<1.0	ug/L				
6329086	Total Molybdenum (Mo)	2019/09/12	103	80 - 120	99	80 - 120	<1.0	ug/L				
6329086	Total Nickel (Ni)	2019/09/12	89	80 - 120	91	80 - 120	<1.0	ug/L				
6329086	Total Selenium (Se)	2019/09/12	99	80 - 120	98	80 - 120	<0.10	ug/L				
6329086	Total Silicon (Si)	2019/09/12	NC	80 - 120	107	80 - 120	<100	ug/L				
6329086	Total Silver (Ag)	2019/09/12	97	80 - 120	96	80 - 120	<0.020	ug/L				
6329086	Total Strontium (Sr)	2019/09/12	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6329086	Total Thallium (Tl)	2019/09/12	101	80 - 120	100	80 - 120	<0.010	ug/L				
6329086	Total Tin (Sn)	2019/09/12	100	80 - 120	97	80 - 120	<5.0	ug/L				
6329086	Total Titanium (Ti)	2019/09/12	107	80 - 120	98	80 - 120	<5.0	ug/L				
6329086	Total Uranium (U)	2019/09/12	103	80 - 120	98	80 - 120	<0.10	ug/L				
6329086	Total Vanadium (V)	2019/09/12	94	80 - 120	92	80 - 120	<5.0	ug/L				
6329086	Total Zinc (Zn)	2019/09/12	NC	80 - 120	91	80 - 120	<5.0	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9O6583

Report Date: 2019/09/23

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6329086	Total Zirconium (Zr)	2019/09/12	108	80 - 120	103	80 - 120	<0.10	ug/L				
6330991	Reactive Silica (SiO2)	2019/09/11	93	80 - 120	101	80 - 120	<0.050	mg/L				
6333734	Free Cyanide (CN)	2019/09/09	96	80 - 120	95	80 - 120	<1.0	ug/L	0	20		
6334506	Reactive Silica (SiO2)	2019/09/11	87	80 - 120	101	80 - 120	<0.050	mg/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Method Blank exceeds acceptance limits for AI. Sample values for AI are >10x the concentration of the method blank and the contamination is considered irrelevant.



BUREAU
VERITAS

BV Labs Job #: B906583

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Brad Newman, Scientific Service Specialist

Harry (Peng) Liang, Senior Analyst



Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B906583

Report Date: 2019/09/23

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site Location: MELIADINE
 Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/15
 Report #: R5922065
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9P8919

Received: 2019/09/16, 10:05

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	2	N/A	2019/09/19	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	2	N/A	2019/09/20	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	2	2019/09/17	2019/09/22	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	2	N/A	2019/09/18	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	2	N/A	2019/09/19	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	2	N/A	2019/09/20	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	2	2019/09/20	2019/09/20	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	2	N/A	2019/09/19	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	2	2019/09/17	2019/09/17	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	2	N/A	2019/09/20	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	2	2019/09/20	2019/09/20	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	2	2019/09/18	2019/09/18	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	2	2019/09/23	2019/09/23	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	2	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/09/23	BBY WI-00033	Auto Calc
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/09/24	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	2	N/A	2019/09/23	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	2	N/A	2019/09/23	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	2	N/A	2019/09/23	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/17	2019/09/23	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/17	2019/09/24	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/09/21	2019/09/22	BBY7SOP-00003/02	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/09/21	2019/09/24	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	2	N/A	2019/09/22	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	2	N/A	2019/09/19	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	2	N/A	2019/09/19	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	2	2019/09/17	2019/09/19	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	2	N/A	2019/09/18	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	2	N/A	2019/10/12	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	2	N/A	2019/09/18	CAM SOP-00464	EPA 375.4 m



Your P.O. #: OL-762849
Site Location: MELIADINE
Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/15
Report #: R5922065
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9P8919

Received: 2019/09/16, 10:05

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Total Dissolved Solids (1)	2	2019/09/18	2019/09/19	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/09/18	2019/09/19	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water (1)	1	2019/09/19	2019/09/20	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	2	N/A	2019/09/20	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/09/18	2019/09/18	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric) (1)	1	2019/09/19	2019/09/19	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	2	2019/09/18	2019/09/19	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	2	N/A	2019/09/17	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed



Your P.O. #: OL-762849
Site Location: MELIADINE
Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/15
Report #: R5922065
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9P8919

Received: 2019/09/16, 10:05

elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
(8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
15 Oct 2019 17:45:10

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KUH648			KUH648			KUH649		
Sampling Date		2019/09/12 06:45			2019/09/12 06:45			2019/09/12 06:45		
COC Number		na			na			na		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch	MEL-14 FB	RDL	QC Batch
BTEX & F1 Hydrocarbons										
Benzene	ug/L	<0.20	0.20	6341938	<0.20	0.20	6341938	<0.20	0.20	6341938
Toluene	ug/L	<0.20	0.20	6341938	<0.20	0.20	6341938	0.55	0.20	6341938
Ethylbenzene	ug/L	<0.20	0.20	6341938	<0.20	0.20	6341938	<0.20	0.20	6341938
o-Xylene	ug/L	<0.20	0.20	6341938	<0.20	0.20	6341938	<0.20	0.20	6341938
p+m-Xylene	ug/L	<0.40	0.40	6341938	<0.40	0.40	6341938	<0.40	0.40	6341938
Total Xylenes	ug/L	<0.40	0.40	6341938	<0.40	0.40	6341938	<0.40	0.40	6341938
F1 (C6-C10)	ug/L	<25	25	6341938	<25	25	6341938	<25	25	6341938
F1 (C6-C10) - BTEX	ug/L	<25	25	6341938	<25	25	6341938	<25	25	6341938
F2-F4 Hydrocarbons										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6344582				<100	100	6344582
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6344582				<200	200	6344582
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6344582				<200	200	6344582
Reached Baseline at C50	ug/L	Yes		6344582				Yes		6344582
Surrogate Recovery (%)										
1,4-Difluorobenzene	%	103		6341938	105		6341938	106		6341938
4-Bromofluorobenzene	%	99		6341938	98		6341938	99		6341938
D10-Ethylbenzene	%	89		6341938	88		6341938	90		6341938
D4-1,2-Dichloroethane	%	96		6341938	95		6341938	94		6341938
o-Terphenyl	%	93		6344582				93		6344582
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										
Lab-Dup = Laboratory Initiated Duplicate										



BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KUH648	KUH649		
Sampling Date		2019/09/12 06:45	2019/09/12 06:45		
COC Number		na	na		
	UNITS	MEL-14	MEL-14 FB	RDL	QC Batch
Calculated Parameters					
Dissolved Hardness (CaCO ₃)	mg/L	453	<0.50	0.50	6350501
Metals					
Dissolved Aluminum (Al)	ug/L	42.7	<3.0	3.0	6350675
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	6350675
Dissolved Arsenic (As)	ug/L	2.20	<0.10	0.10	6350675
Dissolved Barium (Ba)	ug/L	78.4	<1.0	1.0	6350675
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	0.10	6350675
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	6350675
Dissolved Boron (B)	ug/L	188	<50	50	6350675
Dissolved Cadmium (Cd)	ug/L	0.014	<0.010	0.010	6350675
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	1.0	6350675
Dissolved Cobalt (Co)	ug/L	0.56	<0.20	0.20	6350675
Dissolved Copper (Cu)	ug/L	0.87	<0.20	0.20	6350675
Dissolved Iron (Fe)	ug/L	69.8	<5.0	5.0	6350675
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	0.20	6350675
Dissolved Lithium (Li)	ug/L	54.1	<2.0	2.0	6350675
Dissolved Manganese (Mn)	ug/L	31.6	<1.0	1.0	6350675
Dissolved Molybdenum (Mo)	ug/L	2.1	<1.0	1.0	6350675
Dissolved Nickel (Ni)	ug/L	3.9	<1.0	1.0	6350675
Dissolved Selenium (Se)	ug/L	0.12	<0.10	0.10	6350675
Dissolved Silicon (Si)	ug/L	575	<100	100	6350675
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	0.020	6350675
Dissolved Strontium (Sr)	ug/L	2420	<1.0	1.0	6350675
Dissolved Thallium (Tl)	ug/L	0.011	<0.010	0.010	6350675
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	5.0	6350675
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	6350675
Dissolved Uranium (U)	ug/L	0.29	<0.10	0.10	6350675
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	5.0	6350675
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	6350675
Dissolved Zirconium (Zr)	ug/L	<0.10	<0.10	0.10	6350675
Dissolved Calcium (Ca)	mg/L	128	<0.050	0.050	6350674
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KUH648	KUH649		
Sampling Date		2019/09/12 06:45	2019/09/12 06:45		
COC Number		na	na		
	UNITS	MEL-14	MEL-14 FB	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	32.7	<0.050	0.050	6350674
Dissolved Potassium (K)	mg/L	14.7	<0.050	0.050	6350674
Dissolved Sodium (Na)	mg/L	205	<0.050	0.050	6350674
Dissolved Sulphur (S)	mg/L	30.0	<3.0	3.0	6350674
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KUH648			KUH648			KUH649		
Sampling Date		2019/09/12 06:45			2019/09/12 06:45			2019/09/12 06:45		
COC Number		na			na			na		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch	MEL-14 FB	RDL	QC Batch
Metals										
Total Aluminum (Al)	ug/L	254	3.0	6350500	266	3.0	6350500	<3.0	3.0	6350505
Total Antimony (Sb)	ug/L	<0.50	0.50	6350500	<0.50	0.50	6350500	<0.50	0.50	6350505
Total Arsenic (As)	ug/L	2.07	0.10	6350500	2.26	0.10	6350500	<0.10	0.10	6350505
Total Barium (Ba)	ug/L	72.7	1.0	6350500	77.4	1.0	6350500	<1.0	1.0	6350505
Total Beryllium (Be)	ug/L	<0.10	0.10	6350500	<0.10	0.10	6350500	<0.10	0.10	6350505
Total Bismuth (Bi)	ug/L	<1.0	1.0	6350500	<1.0	1.0	6350500	<1.0	1.0	6350505
Total Boron (B)	ug/L	184	50	6350500	199	50	6350500	<50	50	6350505
Total Cadmium (Cd)	ug/L	0.016	0.010	6350500	0.016	0.010	6350500	<0.010	0.010	6350505
Total Chromium (Cr)	ug/L	<1.0	1.0	6350500	<1.0	1.0	6350500	<1.0	1.0	6350505
Total Cobalt (Co)	ug/L	0.51	0.20	6350500	0.52	0.20	6350500	<0.20	0.20	6350505
Total Copper (Cu)	ug/L	0.88	0.50	6350500	0.83	0.50	6350500	<0.50	0.50	6350505
Total Iron (Fe)	ug/L	106	10	6350500	118	10	6350500	<10	10	6350505
Total Lead (Pb)	ug/L	<0.20	0.20	6350500	<0.20	0.20	6350500	<0.20	0.20	6350505
Total Lithium (Li)	ug/L	54.1	2.0	6350500	57.5	2.0	6350500	<2.0	2.0	6350505
Total Manganese (Mn)	ug/L	34.2	1.0	6350500	34.7	1.0	6350500	<1.0	1.0	6350505
Total Molybdenum (Mo)	ug/L	1.8	1.0	6350500	1.9	1.0	6350500	<1.0	1.0	6350505
Total Nickel (Ni)	ug/L	3.6	1.0	6350500	3.6	1.0	6350500	<1.0	1.0	6350505
Total Selenium (Se)	ug/L	0.11	0.10	6350500	0.12	0.10	6350500	<0.10	0.10	6350505
Total Silicon (Si)	ug/L	606	100	6350500	695	100	6350500	<100	100	6350505
Total Silver (Ag)	ug/L	<0.020	0.020	6350500	<0.020	0.020	6350500	<0.020	0.020	6350505
Total Strontium (Sr)	ug/L	1960	1.0	6350500	2120	1.0	6350500	<1.0	1.0	6350505
Total Thallium (Tl)	ug/L	<0.010	0.010	6350500	0.010	0.010	6350500	<0.010	0.010	6350505
Total Tin (Sn)	ug/L	<5.0	5.0	6350500	<5.0	5.0	6350500	<5.0	5.0	6350505
Total Titanium (Ti)	ug/L	<5.0	5.0	6350500	<5.0	5.0	6350500	<5.0	5.0	6350505
Total Uranium (U)	ug/L	0.26	0.10	6350500	0.28	0.10	6350500	<0.10	0.10	6350505
Total Vanadium (V)	ug/L	<5.0	5.0	6350500	<5.0	5.0	6350500	<5.0	5.0	6350505
Total Zinc (Zn)	ug/L	<5.0	5.0	6350500	<5.0	5.0	6350500	<5.0	5.0	6350505
Total Zirconium (Zr)	ug/L	<0.10	0.10	6350500	<0.10	0.10	6350500	<0.10	0.10	6350505
Total Calcium (Ca)	ug/L	120000	50	6350499				<50	50	6350499
Total Magnesium (Mg)	ug/L	29800	50	6350499				<50	50	6350499
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										
Lab-Dup = Laboratory Initiated Duplicate										



BUREAU
VERITAS

BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KUH648			KUH648			KUH649		
Sampling Date		2019/09/12 06:45			2019/09/12 06:45			2019/09/12 06:45		
COC Number		na			na			na		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch	MEL-14 FB	RDL	QC Batch
Total Potassium (K)	ug/L	15100	50	6350499				<50	50	6350499
Total Sodium (Na)	ug/L	190000	50	6350499				<50	50	6350499
Total Sulphur (S)	ug/L	31300	3000	6350499				<3000	3000	6350499
Calculated Parameters										
Total Hardness (CaCO3)	ug/L	422000	500	6350498				<500	500	6350498
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										



BUREAU
VERITAS

BV Labs Job #: B9P8919

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KUH648			KUH648			KUH649		
Sampling Date		2019/09/12 06:45			2019/09/12 06:45			2019/09/12 06:45		
COC Number		na			na			na		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch	MEL-14 FB	RDL	QC Batch

Calculated Parameters

Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	51	1.0	6336510				<1.0	1.0	6336510
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6336510				<1.0	1.0	6336510

Inorganics

Total Ammonia-N	mg/L	3.5	0.050	6339340				0.16	0.050	6339340
Total BOD	mg/L	<2	2	6337440				<2	2	6337440
Conductivity	umho/cm	2300	1.0	6337672				1.2	1.0	6337672
Free Cyanide (CN)	ug/L	<1.0	1.0	6359390				1.9	1.0	6346444
Total Dissolved Solids	mg/L	1400	10	6339316				<10	10	6339316
Total Kjeldahl Nitrogen (TKN)	mg/L	4.2	0.50	6341810				<0.10	0.10	6335596
Dissolved Organic Carbon	mg/L	11	0.50	6337494				<0.50	0.50	6337494
Total Organic Carbon (TOC)	mg/L	12	0.50	6341297	12	0.50	6341297	<0.50	0.50	6339372
Orthophosphate (P)	mg/L	0.019	0.010	6337817				<0.010	0.010	6337817
Dissolved Oxygen	mg/L	9.49		6337954	9.51		6337954	9.34		6337954
pH	pH	7.59		6337673				6.11		6337673
Total Phosphorus	mg/L	<0.020	0.020	6341102				<0.020	0.020	6339032
Reactive Silica (SiO ₂)	mg/L	1.2	0.050	6359389				<0.050	0.050	6359391
Total Suspended Solids	mg/L	3	1	6338628				<1	1	6338628
Dissolved Sulphate (SO ₄)	mg/L	90	1.0	6337815				<1.0	1.0	6337815
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6343795				<0.0050	0.0050	6343795
Turbidity	NTU	0.4	0.1	6337640				<0.1	0.1	6337640
WAD Cyanide (Free)	mg/L	0.0010	0.0010	6343800				<0.0010	0.0010	6343800
Alkalinity (Total as CaCO ₃)	mg/L	51	1.0	6337659				<1.0	1.0	6337659
Dissolved Chloride (Cl ⁻)	mg/L	550	5.0	6337810				<1.0	1.0	6337810
Nitrite (N)	mg/L	0.585	0.010	6337696				<0.010	0.010	6337696
Nitrate (N)	mg/L	13.5	0.10	6337696				<0.10	0.10	6337696
Nitrate + Nitrite (N)	mg/L	14.1	0.10	6337696				<0.10	0.10	6337696

RADIONUCLIDE

Radium-226	Bq/L	<0.0050	0.0050	6346941				<0.0050	0.0050	6346941
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



BUREAU
VERITAS

BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KUH649		
Sampling Date		2019/09/12 06:45		
COC Number		na		
	UNITS	MEL-14 FB Lab-Dup	RDL	QC Batch
Inorganics				
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6343795
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6343800
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate				



BUREAU
VERITAS

BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KUH648	KUH649			KUH649		
Sampling Date		2019/09/12 06:45	2019/09/12 06:45			2019/09/12 06:45		
COC Number		na	na			na		
	UNITS	MEL-14	MEL-14 FB	RDL	QC Batch	MEL-14 FB Lab-Dup	RDL	QC Batch
Metals								
Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6346709	<0.00001	0.00001	6346709
Dissolved Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6338946			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate								



BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TEST SUMMARY

BV Labs ID: KUH648
Sample ID: MEL-14
Matrix: Water

Collected: 2019/09/12
Shipped:
Received: 2019/09/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6337659	N/A	2019/09/19	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6336510	N/A	2019/09/20	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6337440	2019/09/17	2019/09/22	Frank Zhang
Chloride by Automated Colourimetry	KONE	6337810	N/A	2019/09/18	Deonarine Ramnarine
Conductivity	AT	6337672	N/A	2019/09/19	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6343800	N/A	2019/09/20	Gnana Thomas
Total Cyanide	SKAL/CN	6343795	2019/09/20	2019/09/20	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6337494	N/A	2019/09/19	Mandeep Kaur
Dissolved Oxygen	DO	6337954	2019/09/17	2019/09/17	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6341938	N/A	2019/09/20	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6344582	2019/09/20	2019/09/20	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6338946	2019/09/18	2019/09/18	Medhat Nasr
Mercury (low level)	CV/AA	6346709	2019/09/23	2019/09/23	Medhat Nasr
Cyanide (Free)	SPEC	6359390	2019/09/23	2019/09/23	Taylor Mullings
Hardness Total (calculated as CaCO3)	CALC	6350498	N/A	2019/09/24	Automated Statchk
Hardness (calculated as CaCO3)	CALC	6350501	N/A	2019/09/23	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6350674	N/A	2019/09/23	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6350675	N/A	2019/09/23	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6350499	2019/09/24	2019/09/24	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6350500	2019/09/21	2019/09/24	John Choo
Silica (Reactive)	KONE	6359389	N/A	2019/09/22	Serena Tian
Total Ammonia-N	LACH/NH4	6339340	N/A	2019/09/19	Mazin Wakai
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6337696	N/A	2019/09/19	Chandra Nandlal
pH	AT	6337673	2019/09/17	2019/09/19	Surinder Rai
Orthophosphate	KONE	6337817	N/A	2019/09/18	Alina Dobreanu
Radium-226 Low Level	AS	6346941	N/A	2019/10/12	Barbara Kalbasi Esfahani
Sulphate by Automated Colourimetry	KONE	6337815	N/A	2019/09/18	Alina Dobreanu
Total Dissolved Solids	BAL	6339316	2019/09/18	2019/09/19	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6341810	2019/09/19	2019/09/20	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6341297	N/A	2019/09/20	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6341102	2019/09/19	2019/09/19	Shivani Shivani
Low Level Total Suspended Solids	BAL	6338628	2019/09/18	2019/09/19	Mandeep Kaur
Turbidity	AT	6337640	N/A	2019/09/17	Neil Dassanayake

BV Labs ID: KUH648 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/09/12
Shipped:
Received: 2019/09/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Oxygen	DO	6337954	2019/09/17	2019/09/17	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6341938	N/A	2019/09/20	Anca Ganea
Elements by CRC ICPMS (total)	ICP/MS	6350500	2019/09/21	2019/09/24	John Choo
Total Organic Carbon (TOC)	TOCV/NDIR	6341297	N/A	2019/09/20	Mandeep Kaur



BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TEST SUMMARY

BV Labs ID: KUH649
Sample ID: MEL-14 FB
Matrix: Water

Collected: 2019/09/12
Shipped:
Received: 2019/09/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6337659	N/A	2019/09/19	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6336510	N/A	2019/09/20	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6337440	2019/09/17	2019/09/22	Frank Zhang
Chloride by Automated Colourimetry	KONE	6337810	N/A	2019/09/18	Deonarine Ramnarine
Conductivity	AT	6337672	N/A	2019/09/19	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6343800	N/A	2019/09/20	Gnana Thomas
Total Cyanide	SKAL/CN	6343795	2019/09/20	2019/09/20	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6337494	N/A	2019/09/19	Mandeep Kaur
Dissolved Oxygen	DO	6337954	2019/09/17	2019/09/17	Frank Zhang
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6341938	N/A	2019/09/20	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6344582	2019/09/20	2019/09/20	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6338946	2019/09/18	2019/09/18	Medhat Nasr
Mercury (low level)	CV/AA	6346709	2019/09/23	2019/09/23	Medhat Nasr
Cyanide (Free)	SPEC	6346444	2019/09/20	2019/09/20	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6350498	N/A	2019/09/23	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6350501	N/A	2019/09/23	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6350674	N/A	2019/09/23	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6350675	N/A	2019/09/23	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6350499	2019/09/23	2019/09/23	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6350505	2019/09/21	2019/09/22	Vanessa Chan
Silica (Reactive)	KONE	6359391	N/A	2019/09/22	Serena Tian
Total Ammonia-N	LACH/NH ₄	6339340	N/A	2019/09/19	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6337696	N/A	2019/09/19	Chandra Nandlal
pH	AT	6337673	2019/09/17	2019/09/19	Surinder Rai
Orthophosphate	KONE	6337817	N/A	2019/09/18	Alina Dobreanu
Radium-226 Low Level	AS	6346941	N/A	2019/10/12	Barbara Kalbasi Esfahani
Sulphate by Automated Colourimetry	KONE	6337815	N/A	2019/09/18	Alina Dobreanu
Total Dissolved Solids	BAL	6339316	2019/09/18	2019/09/19	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6335596	2019/09/18	2019/09/19	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6339372	N/A	2019/09/20	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6339032	2019/09/18	2019/09/18	Shivani Shivani
Low Level Total Suspended Solids	BAL	6338628	2019/09/18	2019/09/19	Mandeep Kaur
Turbidity	AT	6337640	N/A	2019/09/17	Neil Dassanayake

BV Labs ID: KUH649 Dup
Sample ID: MEL-14 FB
Matrix: Water

Collected: 2019/09/12
Shipped:
Received: 2019/09/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6343800	N/A	2019/09/20	Gnana Thomas
Total Cyanide	SKAL/CN	6343795	2019/09/20	2019/09/20	Gnana Thomas
Mercury (low level)	CV/AA	6346709	2019/09/23	2019/09/23	Medhat Nasr



BUREAU
VERITAS

BV Labs Job #: B9P8919

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	17.0°C
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Sample KUH648 [MEL-14] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for free cyanide analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Total Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent. ortho-Phosphate > Total Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample KUH649 [MEL-14 FB] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

WAD Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for free cyanide analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Matrix Spike Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required

Results relate only to the items tested.



BV Labs Job #: B9P8919
Report Date: 2019/10/15

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6341938	1,4-Difluorobenzene	2019/09/20	104	70 - 130	103	70 - 130	104	%				
6341938	4-Bromofluorobenzene	2019/09/20	99	70 - 130	100	70 - 130	99	%				
6341938	D10-Ethylbenzene	2019/09/20	91	70 - 130	90	70 - 130	88	%				
6341938	D4-1,2-Dichloroethane	2019/09/20	96	70 - 130	98	70 - 130	97	%				
6344582	o-Terphenyl	2019/09/20	102	60 - 130	101	60 - 130	98	%				
6335596	Total Kjeldahl Nitrogen (TKN)	2019/09/18	98	80 - 120	99	80 - 120	<0.10	mg/L	5.6	20	99	80 - 120
6337440	Total BOD	2019/09/22					<2	mg/L	NC	30	94	80 - 120
6337494	Dissolved Organic Carbon	2019/09/19	93	80 - 120	98	80 - 120	<0.50	mg/L	0.039	20		
6337640	Turbidity	2019/09/17			95	85 - 115	<0.1	NTU	16	20		
6337659	Alkalinity (Total as CaCO3)	2019/09/19			95	85 - 115	<1.0	mg/L	0.35	20		
6337672	Conductivity	2019/09/19			102	85 - 115	<1.0	umho/cm	0.24	25		
6337673	pH	2019/09/19			102	98 - 103			0.61	N/A		
6337696	Nitrate (N)	2019/09/19	NC	80 - 120	103	80 - 120	<0.10	mg/L	0.11	20		
6337696	Nitrite (N)	2019/09/19	101	80 - 120	102	80 - 120	<0.010	mg/L	4.7	20		
6337810	Dissolved Chloride (Cl-)	2019/09/18	NC	80 - 120	103	80 - 120	<1.0	mg/L	0.0094	20		
6337815	Dissolved Sulphate (SO4)	2019/09/18	NC	75 - 125	106	80 - 120	<1.0	mg/L	0.71	20		
6337817	Orthophosphate (P)	2019/09/18	108	75 - 125	100	80 - 120	<0.010	mg/L	NC	25		
6338628	Total Suspended Solids	2019/09/19					<1	mg/L	0	25	98	85 - 115
6338946	Dissolved Mercury (Hg)	2019/09/18	80	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6339032	Total Phosphorus	2019/09/18	96	80 - 120	98	80 - 120	<0.020	mg/L	NC	20	99	80 - 120
6339316	Total Dissolved Solids	2019/09/19					<10	mg/L	1.4	25	98	90 - 110
6339340	Total Ammonia-N	2019/09/19	97	75 - 125	99	80 - 120	<0.050	mg/L	NC	20		
6339372	Total Organic Carbon (TOC)	2019/09/19	NC	80 - 120	96	80 - 120	<0.50	mg/L	1.0	20		
6341102	Total Phosphorus	2019/09/19	96	80 - 120	97	80 - 120	<0.020	mg/L	1.3	20	98	80 - 120
6341297	Total Organic Carbon (TOC)	2019/09/20	97	80 - 120	100	80 - 120	<0.50	mg/L	0.17	20		
6341810	Total Kjeldahl Nitrogen (TKN)	2019/09/19	96	80 - 120	99	80 - 120	<0.10	mg/L	0.97	20	99	80 - 120
6341938	Benzene	2019/09/20	93	70 - 130	93	70 - 130	<0.20	ug/L	NC	30		
6341938	Ethylbenzene	2019/09/20	96	70 - 130	96	70 - 130	<0.20	ug/L	NC	30		
6341938	F1 (C6-C10) - BTEX	2019/09/20					<25	ug/L	NC	30		
6341938	F1 (C6-C10)	2019/09/20	111	70 - 130	106	70 - 130	<25	ug/L	NC	30		
6341938	o-Xylene	2019/09/20	92	70 - 130	93	70 - 130	<0.20	ug/L	NC	30		



BV Labs Job #: B9P8919
Report Date: 2019/10/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6341938	p+m-Xylene	2019/09/20	92	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		
6341938	Toluene	2019/09/20	81	70 - 130	81	70 - 130	<0.20	ug/L	NC	30		
6341938	Total Xylenes	2019/09/20					<0.40	ug/L	NC	30		
6343795	Total Cyanide (CN)	2019/09/20	118	80 - 120	97	80 - 120	<0.0050	mg/L	NC	20		
6343800	WAD Cyanide (Free)	2019/09/20	115	80 - 120	100	80 - 120	<0.0010	mg/L	NC	20		
6344582	F2 (C10-C16 Hydrocarbons)	2019/09/21	96	50 - 130	104	60 - 130	<100	ug/L	NC	30		
6344582	F3 (C16-C34 Hydrocarbons)	2019/09/21	101	50 - 130	107	60 - 130	<200	ug/L	NC	30		
6344582	F4 (C34-C50 Hydrocarbons)	2019/09/21	106	50 - 130	115	60 - 130	<200	ug/L	NC	30		
6346444	Free Cyanide (CN)	2019/09/20	84	80 - 120	93	80 - 120	<1.0	ug/L	4.9	20		
6346709	Mercury (Hg)	2019/09/23	91	75 - 125	97	80 - 120	<0.00001	mg/L	NC	20		
6346941	Radium-226	2019/10/12			94	85 - 115	<0.0050	Bq/L	NC	N/A		
6350500	Total Aluminum (Al)	2019/09/24	98	80 - 120	104	80 - 120	<3.0	ug/L	4.7	20		
6350500	Total Antimony (Sb)	2019/09/24	106	80 - 120	107	80 - 120	<0.50	ug/L	NC	20		
6350500	Total Arsenic (As)	2019/09/24	111	80 - 120	105	80 - 120	<0.10	ug/L	8.8	20		
6350500	Total Barium (Ba)	2019/09/24	109	80 - 120	111	80 - 120	<1.0	ug/L	6.2	20		
6350500	Total Beryllium (Be)	2019/09/24	99	80 - 120	98	80 - 120	<0.10	ug/L	NC	20		
6350500	Total Bismuth (Bi)	2019/09/24	93	80 - 120	108	80 - 120	<1.0	ug/L	NC	20		
6350500	Total Boron (B)	2019/09/24	NC	80 - 120	101	80 - 120	<50	ug/L	7.6	20		
6350500	Total Cadmium (Cd)	2019/09/24	98	80 - 120	108	80 - 120	<0.010	ug/L	0	20		
6350500	Total Chromium (Cr)	2019/09/24	95	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
6350500	Total Cobalt (Co)	2019/09/24	93	80 - 120	95	80 - 120	<0.20	ug/L	1.9	20		
6350500	Total Copper (Cu)	2019/09/24	86	80 - 120	92	80 - 120	<0.50	ug/L	6.4	20		
6350500	Total Iron (Fe)	2019/09/24	110	80 - 120	112	80 - 120	<10	ug/L	11	20		
6350500	Total Lead (Pb)	2019/09/24	95	80 - 120	106	80 - 120	<0.20	ug/L	NC	20		
6350500	Total Lithium (Li)	2019/09/24	NC	80 - 120	103	80 - 120	<2.0	ug/L	6.2	20		
6350500	Total Manganese (Mn)	2019/09/24	101	80 - 120	98	80 - 120	<1.0	ug/L	1.7	20		
6350500	Total Molybdenum (Mo)	2019/09/24	NC	80 - 120	110	80 - 120	<1.0	ug/L	2.9	20		
6350500	Total Nickel (Ni)	2019/09/24	91	80 - 120	95	80 - 120	<1.0	ug/L	1.1	20		
6350500	Total Selenium (Se)	2019/09/24	102	80 - 120	105	80 - 120	<0.10	ug/L	5.3	20		
6350500	Total Silicon (Si)	2019/09/24	120	80 - 120	114	80 - 120	<100	ug/L	14	20		
6350500	Total Silver (Ag)	2019/09/24	96	80 - 120	110	80 - 120	<0.020	ug/L	NC	20		
6350500	Total Strontium (Sr)	2019/09/24	NC	80 - 120	113	80 - 120	<1.0	ug/L	7.9	20		



BV Labs Job #: B9P8919
Report Date: 2019/10/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6350500	Total Thallium (Tl)	2019/09/24	103	80 - 120	109	80 - 120	<0.010	ug/L	0	20		
6350500	Total Tin (Sn)	2019/09/24	105	80 - 120	108	80 - 120	<5.0	ug/L	NC	20		
6350500	Total Titanium (Ti)	2019/09/24	98	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
6350500	Total Uranium (U)	2019/09/24	99	80 - 120	106	80 - 120	<0.10	ug/L	8.1	20		
6350500	Total Vanadium (V)	2019/09/24	108	80 - 120	94	80 - 120	<5.0	ug/L	NC	20		
6350500	Total Zinc (Zn)	2019/09/24	100	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
6350500	Total Zirconium (Zr)	2019/09/24	98	80 - 120	113	80 - 120	<0.10	ug/L	NC	20		
6350505	Total Aluminum (Al)	2019/09/22	102	80 - 120	99	80 - 120	<3.0	ug/L				
6350505	Total Antimony (Sb)	2019/09/22	105	80 - 120	101	80 - 120	<0.50	ug/L				
6350505	Total Arsenic (As)	2019/09/22	104	80 - 120	99	80 - 120	<0.10	ug/L				
6350505	Total Barium (Ba)	2019/09/22	103	80 - 120	100	80 - 120	<1.0	ug/L				
6350505	Total Beryllium (Be)	2019/09/22	96	80 - 120	91	80 - 120	<0.10	ug/L				
6350505	Total Bismuth (Bi)	2019/09/22	91	80 - 120	101	80 - 120	<1.0	ug/L				
6350505	Total Boron (B)	2019/09/22	89	80 - 120	88	80 - 120	<50	ug/L				
6350505	Total Cadmium (Cd)	2019/09/22	105	80 - 120	99	80 - 120	<0.010	ug/L				
6350505	Total Chromium (Cr)	2019/09/22	100	80 - 120	99	80 - 120	<1.0	ug/L				
6350505	Total Cobalt (Co)	2019/09/22	100	80 - 120	98	80 - 120	<0.20	ug/L				
6350505	Total Copper (Cu)	2019/09/22	100	80 - 120	98	80 - 120	<0.50	ug/L				
6350505	Total Iron (Fe)	2019/09/22	102	80 - 120	101	80 - 120	<10	ug/L				
6350505	Total Lead (Pb)	2019/09/22	102	80 - 120	101	80 - 120	<0.20	ug/L				
6350505	Total Lithium (Li)	2019/09/22	94	80 - 120	91	80 - 120	<2.0	ug/L				
6350505	Total Manganese (Mn)	2019/09/22	100	80 - 120	98	80 - 120	<1.0	ug/L				
6350505	Total Molybdenum (Mo)	2019/09/22	100	80 - 120	102	80 - 120	<1.0	ug/L				
6350505	Total Nickel (Ni)	2019/09/22	100	80 - 120	99	80 - 120	<1.0	ug/L				
6350505	Total Selenium (Se)	2019/09/22	107	80 - 120	99	80 - 120	<0.10	ug/L				
6350505	Total Silicon (Si)	2019/09/22	102	80 - 120	93	80 - 120	<100	ug/L				
6350505	Total Silver (Ag)	2019/09/22	99	80 - 120	99	80 - 120	<0.020	ug/L				
6350505	Total Strontium (Sr)	2019/09/22	102	80 - 120	99	80 - 120	<1.0	ug/L				
6350505	Total Thallium (Tl)	2019/09/22	102	80 - 120	101	80 - 120	<0.010	ug/L				
6350505	Total Tin (Sn)	2019/09/22	103	80 - 120	100	80 - 120	<5.0	ug/L				
6350505	Total Titanium (Ti)	2019/09/22	103	80 - 120	98	80 - 120	<5.0	ug/L				
6350505	Total Uranium (U)	2019/09/22	101	80 - 120	100	80 - 120	<0.10	ug/L				



BV Labs Job #: B9P8919
Report Date: 2019/10/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6350505	Total Vanadium (V)	2019/09/22	100	80 - 120	98	80 - 120	<5.0	ug/L				
6350505	Total Zinc (Zn)	2019/09/22	115	80 - 120	105	80 - 120	<5.0	ug/L				
6350505	Total Zirconium (Zr)	2019/09/22	103	80 - 120	97	80 - 120	<0.10	ug/L				
6350675	Dissolved Aluminum (Al)	2019/09/23	140 (1)	80 - 120	98	80 - 120	<3.0	ug/L				
6350675	Dissolved Antimony (Sb)	2019/09/23	99	80 - 120	102	80 - 120	<0.50	ug/L				
6350675	Dissolved Arsenic (As)	2019/09/23	97	80 - 120	102	80 - 120	<0.10	ug/L				
6350675	Dissolved Barium (Ba)	2019/09/23	99	80 - 120	101	80 - 120	<1.0	ug/L				
6350675	Dissolved Beryllium (Be)	2019/09/23	90	80 - 120	93	80 - 120	<0.10	ug/L				
6350675	Dissolved Bismuth (Bi)	2019/09/23	99	80 - 120	102	80 - 120	<1.0	ug/L				
6350675	Dissolved Boron (B)	2019/09/23	87	80 - 120	90	80 - 120	<50	ug/L				
6350675	Dissolved Cadmium (Cd)	2019/09/23	97	80 - 120	100	80 - 120	<0.010	ug/L				
6350675	Dissolved Chromium (Cr)	2019/09/23	95	80 - 120	99	80 - 120	<1.0	ug/L				
6350675	Dissolved Cobalt (Co)	2019/09/23	94	80 - 120	99	80 - 120	<0.20	ug/L				
6350675	Dissolved Copper (Cu)	2019/09/23	94	80 - 120	99	80 - 120	<0.20	ug/L				
6350675	Dissolved Iron (Fe)	2019/09/23	NC	80 - 120	101	80 - 120	<5.0	ug/L				
6350675	Dissolved Lead (Pb)	2019/09/23	102	80 - 120	103	80 - 120	<0.20	ug/L				
6350675	Dissolved Lithium (Li)	2019/09/23	88	80 - 120	90	80 - 120	<2.0	ug/L				
6350675	Dissolved Manganese (Mn)	2019/09/23	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6350675	Dissolved Molybdenum (Mo)	2019/09/23	100	80 - 120	100	80 - 120	<1.0	ug/L				
6350675	Dissolved Nickel (Ni)	2019/09/23	94	80 - 120	100	80 - 120	<1.0	ug/L				
6350675	Dissolved Selenium (Se)	2019/09/23	101	80 - 120	104	80 - 120	<0.10	ug/L				
6350675	Dissolved Silicon (Si)	2019/09/23	NC	80 - 120	97	80 - 120	<100	ug/L				
6350675	Dissolved Silver (Ag)	2019/09/23	92	80 - 120	100	80 - 120	<0.020	ug/L				
6350675	Dissolved Strontium (Sr)	2019/09/23	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6350675	Dissolved Thallium (Tl)	2019/09/23	100	80 - 120	103	80 - 120	<0.010	ug/L				
6350675	Dissolved Tin (Sn)	2019/09/23	98	80 - 120	101	80 - 120	<5.0	ug/L				
6350675	Dissolved Titanium (Ti)	2019/09/23	105	80 - 120	101	80 - 120	<5.0	ug/L				
6350675	Dissolved Uranium (U)	2019/09/23	104	80 - 120	103	80 - 120	<0.10	ug/L				
6350675	Dissolved Vanadium (V)	2019/09/23	97	80 - 120	98	80 - 120	<5.0	ug/L				
6350675	Dissolved Zinc (Zn)	2019/09/23	102	80 - 120	105	80 - 120	<5.0	ug/L				
6350675	Dissolved Zirconium (Zr)	2019/09/23	102	80 - 120	98	80 - 120	<0.10	ug/L				
6359389	Reactive Silica (SiO2)	2019/09/22	100	80 - 120	100	80 - 120	<0.050	mg/L	6.3	20		



BUREAU
VERITAS

BV Labs Job #: B9P8919
Report Date: 2019/10/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6359390	Free Cyanide (CN)	2019/09/23	82	80 - 120	104	80 - 120	<1.0	ug/L				
6359391	Reactive Silica (SiO2)	2019/09/22	88	80 - 120	101	80 - 120	<0.050	mg/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Brad Newman, Scientific Service Specialist

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

Rob Reinert, B.Sc., Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BV Labs Job #: B9P8919
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: 573773
 Site#: 63°02'15.5" 92°13'06.3"
 Site Location: MELIADINE
 Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/16
 Report #: R5922975
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Q3637

Received: 2019/09/19, 11:20

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/09/25	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/09/26	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/09/20	2019/09/25	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/09/24	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/09/25	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/09/24	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/09/23	2019/09/24	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/09/22	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/09/20	2019/09/21	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/09/27	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/09/28	2019/09/30	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/09/23	2019/09/23	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/09/23	2019/09/23	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/09/27	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/09/26	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/09/26	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/09/25	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/20	2019/09/27	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/09/25	2019/09/26	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/09/27	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/09/21	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/09/22	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/09/21	2019/09/25	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/09/24	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/10/08	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/09/24	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/09/21	2019/09/23	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/09/21	2019/09/24	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/09/21	CAM SOP-00446	SM 23 5310B m



Your P.O. #: 573773
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE
Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/16
Report #: R5922975
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Q3637

Received: 2019/09/19, 11:20

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Total Phosphorus (Colourimetric) (1)	1	2019/09/23	2019/09/24	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/09/21	2019/09/23	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/09/23	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: 573773
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE
Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/16
Report #: R5922975
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Q3637

Received: 2019/09/19, 11:20

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
16 Oct 2019 12:34:53

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: 573773

Sampler Initials: BH

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KVG143		
Sampling Date		2019/09/17 06:52		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	6357407
Toluene	ug/L	<0.20	0.20	6357407
Ethylbenzene	ug/L	<0.20	0.20	6357407
o-Xylene	ug/L	<0.20	0.20	6357407
p+m-Xylene	ug/L	<0.40	0.40	6357407
Total Xylenes	ug/L	<0.40	0.40	6357407
F1 (C6-C10)	ug/L	<25	25	6357407
F1 (C6-C10) - BTEX	ug/L	<25	25	6357407
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6358667
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6358667
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6358667
Reached Baseline at C50	ug/L	Yes		6358667
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	104		6357407
4-Bromofluorobenzene	%	96		6357407
D10-Ethylbenzene	%	111		6357407
D4-1,2-Dichloroethane	%	100		6357407
o-Terphenyl	%	95		6358667
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: 573773

Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KVG143		
Sampling Date		2019/09/17 06:52		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	392	0.50	6357243
Metals				
Dissolved Aluminum (Al)	ug/L	28.0	3.0	6357245
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6357245
Dissolved Arsenic (As)	ug/L	1.14	0.10	6357245
Dissolved Barium (Ba)	ug/L	50.6	1.0	6357245
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6357245
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6357245
Dissolved Boron (B)	ug/L	350	50	6357245
Dissolved Cadmium (Cd)	ug/L	0.019	0.010	6357245
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6357245
Dissolved Cobalt (Co)	ug/L	0.37	0.20	6357245
Dissolved Copper (Cu)	ug/L	0.59	0.20	6357245
Dissolved Iron (Fe)	ug/L	43.5	5.0	6357245
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6357245
Dissolved Lithium (Li)	ug/L	65.7	2.0	6357245
Dissolved Manganese (Mn)	ug/L	12.8	1.0	6357245
Dissolved Molybdenum (Mo)	ug/L	1.1	1.0	6357245
Dissolved Nickel (Ni)	ug/L	3.2	1.0	6357245
Dissolved Selenium (Se)	ug/L	0.10	0.10	6357245
Dissolved Silicon (Si)	ug/L	480	100	6357245
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6357245
Dissolved Strontium (Sr)	ug/L	2240	1.0	6357245
Dissolved Thallium (Tl)	ug/L	0.024	0.010	6357245
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6357245
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6357245
Dissolved Uranium (U)	ug/L	0.35	0.10	6357245
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6357245
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6357245
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6357245
Dissolved Calcium (Ca)	mg/L	108	0.050	6357244
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: 573773

Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KVG143		
Sampling Date		2019/09/17 06:52		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	29.8	0.050	6357244
Dissolved Potassium (K)	mg/L	14.7	0.050	6357244
Dissolved Sodium (Na)	mg/L	236	0.050	6357244
Dissolved Sulphur (S)	mg/L	30.1	3.0	6357244
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: 573773

Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KVG143		
Sampling Date		2019/09/17 06:52		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	77.4	3.0	6357242
Total Antimony (Sb)	ug/L	<0.50	0.50	6357242
Total Arsenic (As)	ug/L	1.19	0.10	6357242
Total Barium (Ba)	ug/L	53.0	1.0	6357242
Total Beryllium (Be)	ug/L	<0.10	0.10	6357242
Total Bismuth (Bi)	ug/L	<1.0	1.0	6357242
Total Boron (B)	ug/L	327	50	6357242
Total Cadmium (Cd)	ug/L	0.019	0.010	6357242
Total Chromium (Cr)	ug/L	<1.0	1.0	6357242
Total Cobalt (Co)	ug/L	0.43	0.20	6357242
Total Copper (Cu)	ug/L	0.65	0.50	6357242
Total Iron (Fe)	ug/L	276	10	6357242
Total Lead (Pb)	ug/L	<0.20	0.20	6357242
Total Lithium (Li)	ug/L	68.1	2.0	6357242
Total Manganese (Mn)	ug/L	33.8	1.0	6357242
Total Molybdenum (Mo)	ug/L	1.1	1.0	6357242
Total Nickel (Ni)	ug/L	3.4	1.0	6357242
Total Selenium (Se)	ug/L	0.11	0.10	6357242
Total Silicon (Si)	ug/L	419	100	6357242
Total Silver (Ag)	ug/L	<0.020	0.020	6357242
Total Strontium (Sr)	ug/L	2180	1.0	6357242
Total Thallium (Tl)	ug/L	0.022	0.010	6357242
Total Tin (Sn)	ug/L	<5.0	5.0	6357242
Total Titanium (Ti)	ug/L	<5.0	5.0	6357242
Total Uranium (U)	ug/L	0.34	0.10	6357242
Total Vanadium (V)	ug/L	<5.0	5.0	6357242
Total Zinc (Zn)	ug/L	<5.0	5.0	6357242
Total Zirconium (Zr)	ug/L	<0.10	0.10	6357242
Total Calcium (Ca)	ug/L	112000	50	6357241
Total Magnesium (Mg)	ug/L	28700	50	6357241
Total Potassium (K)	ug/L	14300	50	6357241
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9Q3637
Report Date: 2019/10/16

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: 573773
Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KVG143		
Sampling Date		2019/09/17 06:52		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Total Sodium (Na)	ug/L	227000	50	6357241
Total Sulphur (S)	ug/L	26400	3000	6357241
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	399000	500	6355900
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9Q3637
Report Date: 2019/10/16

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: 573773
Sampler Initials: BH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KVG143			KVG143		
Sampling Date		2019/09/17 06:52			2019/09/17 06:52		
COC Number		na			na		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	25	1.0	6343537			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6343537			
Inorganics							
Total Ammonia-N	mg/L	3.6 (1)	0.050	6345955			
Total BOD	mg/L	<2	2	6344727			
Conductivity	umho/cm	2100	1.0	6345878	2100	1.0	6345878
Free Cyanide (CN)	ug/L	<1.0 (2)	1.0	6362949			
Total Dissolved Solids	mg/L	1290	10	6345856			
Total Kjeldahl Nitrogen (TKN)	mg/L	3.3 (1)	0.50	6345968	3.7	0.50	6345968
Dissolved Organic Carbon	mg/L	4.0	0.50	6345930			
Total Organic Carbon (TOC)	mg/L	4.3	0.50	6346015			
Orthophosphate (P)	mg/L	<0.010	0.010	6345929			
Dissolved Oxygen	mg/L	10.0		6344801	10.0		6344801
pH	pH	7.50		6345880	7.54		6345880
Total Phosphorus	mg/L	<0.020	0.020	6346786	<0.020	0.020	6346786
Reactive Silica (SiO ₂)	mg/L	0.81	0.050	6362948			
Total Suspended Solids	mg/L	2	1	6345784			
Dissolved Sulphate (SO ₄)	mg/L	75	1.0	6345928			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6347178	<0.0050	0.0050	6347178
Turbidity	NTU	0.9	0.1	6346056			
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6347518	<0.0010	0.0010	6347518
Alkalinity (Total as CaCO ₃)	mg/L	25	1.0	6345874	26	1.0	6345874
Dissolved Chloride (Cl ⁻)	mg/L	530	5.0	6345927			
Nitrite (N)	mg/L	0.464	0.010	6345912			
Nitrate (N)	mg/L	13.7	0.10	6345912			
Nitrate + Nitrite (N)	mg/L	14.1	0.10	6345912			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) TKN < NH ₄ : Both values fall within acceptable RPD limits for duplicates and are likely equivalent. (2) See general comments for notes regarding CNFREE-W							



BUREAU
VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: 573773

Sampler Initials: BH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KVG143			KVG143		
Sampling Date		2019/09/17 06:52			2019/09/17 06:52		
COC Number		na			na		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6370167			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: 573773

Sampler Initials: BH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KVG143		
Sampling Date		2019/09/17 06:52		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6347148
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6347181
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9Q3637
Report Date: 2019/10/16

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: 573773
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KVG143
Sample ID: MEL-14
Matrix: Water

Collected: 2019/09/17
Shipped:
Received: 2019/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6345874	N/A	2019/09/25	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6343537	N/A	2019/09/26	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6344727	2019/09/20	2019/09/25	Prakash Piya
Chloride by Automated Colourimetry	KONE	6345927	N/A	2019/09/24	Deonarine Ramnarine
Conductivity	AT	6345878	N/A	2019/09/25	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6347518	N/A	2019/09/24	Gnana Thomas
Total Cyanide	SKAL/CN	6347178	2019/09/23	2019/09/24	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6345930	N/A	2019/09/22	Nimarta Singh
Dissolved Oxygen	DO	6344801	2019/09/20	2019/09/21	Prakash Piya
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6357407	N/A	2019/09/27	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6358667	2019/09/28	2019/09/30	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6347181	2019/09/23	2019/09/23	Medhat Nasr
Mercury (low level)	CV/AA	6347148	2019/09/23	2019/09/23	Medhat Nasr
Cyanide (Free)	SPEC	6362949	2019/09/25	2019/09/25	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6355900	N/A	2019/09/27	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6357243	N/A	2019/09/26	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6357244	N/A	2019/09/26	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6357245	N/A	2019/09/25	Valentina Balada
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6357241	2019/09/27	2019/09/27	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6357242	2019/09/25	2019/09/26	Valentina Balada
Silica (Reactive)	KONE	6362948	N/A	2019/09/27	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6345955	N/A	2019/09/21	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6345912	N/A	2019/09/22	Amanpreet Sappal
pH	AT	6345880	2019/09/21	2019/09/25	Surinder Rai
Orthophosphate	KONE	6345929	N/A	2019/09/24	Alina Dobreanu
Radium-226 Low Level	AS	6370167	N/A	2019/10/08	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6345928	N/A	2019/09/24	Alina Dobreanu
Total Dissolved Solids	BAL	6345856	2019/09/21	2019/09/23	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6345968	2019/09/21	2019/09/24	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6346015	N/A	2019/09/21	Nimarta Singh
Total Phosphorus (Colourimetric)	LACH/P	6346786	2019/09/23	2019/09/24	Shivani Shivani
Low Level Total Suspended Solids	BAL	6345784	2019/09/21	2019/09/23	Xinyue (Sarah) Hou
Turbidity	AT	6346056	N/A	2019/09/23	Kazzandra Adeva

BV Labs ID: KVG143 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/09/17
Shipped:
Received: 2019/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6345874	N/A	2019/09/25	Surinder Rai
Conductivity	AT	6345878	N/A	2019/09/25	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6347518	N/A	2019/09/24	Gnana Thomas
Total Cyanide	SKAL/CN	6347178	2019/09/23	2019/09/24	Gnana Thomas
Dissolved Oxygen	DO	6344801	2019/09/20	2019/09/21	Prakash Piya
pH	AT	6345880	2019/09/21	2019/09/25	Surinder Rai



BV Labs Job #: B9Q3637
Report Date: 2019/10/16

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: 573773
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KVG143 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/09/17
Shipped:
Received: 2019/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Kjeldahl Nitrogen in Water	SKAL	6345968	2019/09/21	2019/09/24	Shivani Shivani
Total Phosphorus (Colourimetric)	LACH/P	6346786	2019/09/23	2019/09/24	Shivani Shivani



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VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: 573773

Sampler Initials: BH

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.0°C
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Sample KVG143 [MEL-14] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Results relate only to the items tested.



BV Labs Job #: B9Q3637
Report Date: 2019/10/16

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: 573773
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6357407	1,4-Difluorobenzene	2019/09/27	103	70 - 130	104	70 - 130	104	%				
6357407	4-Bromofluorobenzene	2019/09/27	99	70 - 130	98	70 - 130	98	%				
6357407	D10-Ethylbenzene	2019/09/27	87	70 - 130	89	70 - 130	109	%				
6357407	D4-1,2-Dichloroethane	2019/09/27	100	70 - 130	99	70 - 130	99	%				
6358667	o-Terphenyl	2019/09/30	102	60 - 130	101	60 - 130	98	%				
6344727	Total BOD	2019/09/25					<2	mg/L	NC	30	97	80 - 120
6345784	Total Suspended Solids	2019/09/23					<1	mg/L	0	25	95	85 - 115
6345856	Total Dissolved Solids	2019/09/23					<10	mg/L	2.0	25	98	90 - 110
6345874	Alkalinity (Total as CaCO3)	2019/09/25			95	85 - 115	<1.0	mg/L	3.5	20		
6345878	Conductivity	2019/09/25			102	85 - 115	<1.0	umho/cm	0	25		
6345880	pH	2019/09/25			102	98 - 103			0.53	N/A		
6345912	Nitrate (N)	2019/09/22	99	80 - 120	105	80 - 120	<0.10	mg/L	NC	20		
6345912	Nitrite (N)	2019/09/22	104	80 - 120	108	80 - 120	<0.010	mg/L	NC	20		
6345927	Dissolved Chloride (Cl-)	2019/09/24	114	80 - 120	103	80 - 120	<1.0	mg/L	0.041	20		
6345928	Dissolved Sulphate (SO4)	2019/09/24	NC	75 - 125	103	80 - 120	<1.0	mg/L	0.089	20		
6345929	Orthophosphate (P)	2019/09/24	114	75 - 125	100	80 - 120	<0.010	mg/L	NC	25		
6345930	Dissolved Organic Carbon	2019/09/22	88	80 - 120	96	80 - 120	<0.50	mg/L				
6345955	Total Ammonia-N	2019/09/21	99	75 - 125	101	80 - 120	<0.050	mg/L	1.4	20		
6345968	Total Kjeldahl Nitrogen (TKN)	2019/09/24	NC	80 - 120	102	80 - 120	<0.10	mg/L	10	20	98	80 - 120
6346015	Total Organic Carbon (TOC)	2019/09/21	97	80 - 120	100	80 - 120	<0.50	mg/L	2.4	20		
6346056	Turbidity	2019/09/23			109	85 - 115	<0.1	NTU	1.5	20		
6346786	Total Phosphorus	2019/09/24	100	80 - 120	101	80 - 120	<0.020	mg/L	NC	20	102	N/A
6347148	Mercury (Hg)	2019/09/23	97	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6347178	Total Cyanide (CN)	2019/09/24	94	80 - 120	97	80 - 120	<0.0050	mg/L	NC	20		
6347181	Dissolved Mercury (Hg)	2019/09/23	98	75 - 125	101	80 - 120	<0.00001	mg/L	NC	20		
6347518	WAD Cyanide (Free)	2019/09/24	94	80 - 120	96	80 - 120	<0.0010	mg/L	NC	20		
6357242	Total Aluminum (Al)	2019/09/26	98	80 - 120	100	80 - 120	<3.0	ug/L				
6357242	Total Antimony (Sb)	2019/09/26	101	80 - 120	101	80 - 120	<0.50	ug/L				
6357242	Total Arsenic (As)	2019/09/26	104	80 - 120	100	80 - 120	<0.10	ug/L				
6357242	Total Barium (Ba)	2019/09/26	101	80 - 120	101	80 - 120	<1.0	ug/L				
6357242	Total Beryllium (Be)	2019/09/26	95	80 - 120	97	80 - 120	<0.10	ug/L				



BV Labs Job #: B9Q3637
Report Date: 2019/10/16

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: 573773
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6357242	Total Bismuth (Bi)	2019/09/26	96	80 - 120	99	80 - 120	<1.0	ug/L				
6357242	Total Boron (B)	2019/09/26	NC	80 - 120	92	80 - 120	<50	ug/L				
6357242	Total Cadmium (Cd)	2019/09/26	98	80 - 120	101	80 - 120	<0.010	ug/L				
6357242	Total Chromium (Cr)	2019/09/26	97	80 - 120	100	80 - 120	<1.0	ug/L				
6357242	Total Cobalt (Co)	2019/09/26	99	80 - 120	101	80 - 120	<0.20	ug/L				
6357242	Total Copper (Cu)	2019/09/26	92	80 - 120	98	80 - 120	<0.50	ug/L				
6357242	Total Iron (Fe)	2019/09/26	99	80 - 120	102	80 - 120	<10	ug/L				
6357242	Total Lead (Pb)	2019/09/26	99	80 - 120	102	80 - 120	<0.20	ug/L				
6357242	Total Lithium (Li)	2019/09/26	94	80 - 120	95	80 - 120	<2.0	ug/L				
6357242	Total Manganese (Mn)	2019/09/26	96	80 - 120	99	80 - 120	<1.0	ug/L				
6357242	Total Molybdenum (Mo)	2019/09/26	105	80 - 120	102	80 - 120	<1.0	ug/L				
6357242	Total Nickel (Ni)	2019/09/26	94	80 - 120	101	80 - 120	<1.0	ug/L				
6357242	Total Selenium (Se)	2019/09/26	103	80 - 120	102	80 - 120	<0.10	ug/L				
6357242	Total Silicon (Si)	2019/09/26	NC	80 - 120	95	80 - 120	<100	ug/L				
6357242	Total Silver (Ag)	2019/09/26	96	80 - 120	100	80 - 120	<0.020	ug/L				
6357242	Total Strontium (Sr)	2019/09/26	102	80 - 120	97	80 - 120	<1.0	ug/L				
6357242	Total Thallium (Tl)	2019/09/26	96	80 - 120	99	80 - 120	<0.010	ug/L				
6357242	Total Tin (Sn)	2019/09/26	100	80 - 120	101	80 - 120	<5.0	ug/L				
6357242	Total Titanium (Ti)	2019/09/26	100	80 - 120	103	80 - 120	<5.0	ug/L				
6357242	Total Uranium (U)	2019/09/26	99	80 - 120	99	80 - 120	<0.10	ug/L				
6357242	Total Vanadium (V)	2019/09/26	99	80 - 120	99	80 - 120	<5.0	ug/L				
6357242	Total Zinc (Zn)	2019/09/26	96	80 - 120	103	80 - 120	<5.0	ug/L				
6357242	Total Zirconium (Zr)	2019/09/26	105	80 - 120	100	80 - 120	<0.10	ug/L				
6357245	Dissolved Aluminum (Al)	2019/09/25	96	80 - 120	101	80 - 120	<3.0	ug/L				
6357245	Dissolved Antimony (Sb)	2019/09/25	103	80 - 120	102	80 - 120	<0.50	ug/L				
6357245	Dissolved Arsenic (As)	2019/09/25	104	80 - 120	103	80 - 120	<0.10	ug/L				
6357245	Dissolved Barium (Ba)	2019/09/25	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6357245	Dissolved Beryllium (Be)	2019/09/25	91	80 - 120	97	80 - 120	<0.10	ug/L				
6357245	Dissolved Bismuth (Bi)	2019/09/25	99	80 - 120	104	80 - 120	<1.0	ug/L				
6357245	Dissolved Boron (B)	2019/09/25	92	80 - 120	100	80 - 120	<50	ug/L				
6357245	Dissolved Cadmium (Cd)	2019/09/25	101	80 - 120	101	80 - 120	<0.010	ug/L				
6357245	Dissolved Chromium (Cr)	2019/09/25	97	80 - 120	101	80 - 120	<1.0	ug/L				



BV Labs Job #: B9Q3637
Report Date: 2019/10/16

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: 573773
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6357245	Dissolved Cobalt (Co)	2019/09/25	95	80 - 120	99	80 - 120	<0.20	ug/L				
6357245	Dissolved Copper (Cu)	2019/09/25	93	80 - 120	100	80 - 120	<0.20	ug/L				
6357245	Dissolved Iron (Fe)	2019/09/25	102	80 - 120	106	80 - 120	<5.0	ug/L				
6357245	Dissolved Lead (Pb)	2019/09/25	102	80 - 120	104	80 - 120	<0.20	ug/L				
6357245	Dissolved Lithium (Li)	2019/09/25	84	80 - 120	93	80 - 120	<2.0	ug/L				
6357245	Dissolved Manganese (Mn)	2019/09/25	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6357245	Dissolved Molybdenum (Mo)	2019/09/25	NC	80 - 120	103	80 - 120	<1.0	ug/L				
6357245	Dissolved Nickel (Ni)	2019/09/25	96	80 - 120	102	80 - 120	<1.0	ug/L				
6357245	Dissolved Selenium (Se)	2019/09/25	102	80 - 120	103	80 - 120	<0.10	ug/L				
6357245	Dissolved Silicon (Si)	2019/09/25	NC	80 - 120	104	80 - 120	<100	ug/L				
6357245	Dissolved Silver (Ag)	2019/09/25	101	80 - 120	102	80 - 120	<0.020	ug/L				
6357245	Dissolved Strontium (Sr)	2019/09/25	NC	80 - 120	104	80 - 120	<1.0	ug/L				
6357245	Dissolved Thallium (Tl)	2019/09/25	103	80 - 120	104	80 - 120	<0.010	ug/L				
6357245	Dissolved Tin (Sn)	2019/09/25	103	80 - 120	103	80 - 120	<5.0	ug/L				
6357245	Dissolved Titanium (Ti)	2019/09/25	103	80 - 120	100	80 - 120	<5.0	ug/L				
6357245	Dissolved Uranium (U)	2019/09/25	105	80 - 120	102	80 - 120	<0.10	ug/L				
6357245	Dissolved Vanadium (V)	2019/09/25	102	80 - 120	100	80 - 120	<5.0	ug/L				
6357245	Dissolved Zinc (Zn)	2019/09/25	98	80 - 120	104	80 - 120	<5.0	ug/L				
6357245	Dissolved Zirconium (Zr)	2019/09/25	106	80 - 120	104	80 - 120	<0.10	ug/L				
6357407	Benzene	2019/09/27	106	70 - 130	102	70 - 130	<0.20	ug/L	1.1	30		
6357407	Ethylbenzene	2019/09/27	117	70 - 130	104	70 - 130	<0.20	ug/L	0.88	30		
6357407	F1 (C6-C10) - BTEX	2019/09/27					<25	ug/L	0.53	30		
6357407	F1 (C6-C10)	2019/09/27	81	70 - 130	96	70 - 130	<25	ug/L	0.51	30		
6357407	o-Xylene	2019/09/27	99	70 - 130	99	70 - 130	<0.20	ug/L	7.9	30		
6357407	p+m-Xylene	2019/09/27	99	70 - 130	100	70 - 130	<0.40	ug/L	1.1	30		
6357407	Toluene	2019/09/27	95	70 - 130	95	70 - 130	<0.20	ug/L	4.1	30		
6357407	Total Xylenes	2019/09/27					<0.40	ug/L	3.0	30		
6358667	F2 (C10-C16 Hydrocarbons)	2019/09/30	106	50 - 130	116	60 - 130	<100	ug/L	NC	30		
6358667	F3 (C16-C34 Hydrocarbons)	2019/09/30	103	50 - 130	120	60 - 130	<200	ug/L	NC	30		
6358667	F4 (C34-C50 Hydrocarbons)	2019/09/30	105	50 - 130	119	60 - 130	<200	ug/L	NC	30		
6362948	Reactive Silica (SiO2)	2019/09/27	102	80 - 120	102	80 - 120	<0.050	mg/L				
6362949	Free Cyanide (CN)	2019/09/25	90	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		



BUREAU
VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: 573773
Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6370167	Radium-226	2019/10/08			86	85 - 115	<0.0050	Bq/L	NC	N/A		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference \leq 2x RDL).



BUREAU
VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: 573773

Sampler Initials: BH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Brad Newman, Scientific Service Specialist

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

Rob Reinert, B.Sc., Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9Q3637

Report Date: 2019/10/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: 573773

Sampler Initials: BH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 63°02'15.5" 92°13'06.3"
 Site Location: MELIADINE
 Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/17
 Report #: R5924161
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9R1304

Received: 2019/09/26, 10:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/10/01	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/10/01	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/09/28	2019/10/03	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/09/30	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/10/01	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/09/30	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/09/30	2019/09/30	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/09/27	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/09/27	2019/09/27	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/10/01	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/10/02	2019/10/02	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/10/01	2019/10/01	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/10/01	2019/10/01	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/10/04	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/10/03	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/10/03	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/10/03	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/27	2019/10/04	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/10/03	2019/10/03	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/10/03	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/09/29	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/09/28	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/09/27	2019/10/01	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/10/01	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/10/15	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/09/30	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/09/28	2019/09/30	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/09/28	2019/10/02	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/09/28	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
 Site#: 63°02'15.5" 92°13'06.3"
 Site Location: MELIADINE
 Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/17
 Report #: R5924161
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9R1304

Received: 2019/09/26, 10:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Total Phosphorus (Colourimetric) (1)	1	2019/10/01	2019/10/01	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/09/28	2019/09/30	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/09/27	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 63°02'15.5" 92°13'06.3"
Site Location: MELIADINE
Your C.O.C. #: na

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/17
Report #: R5924161
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9R1304

Received: 2019/09/26, 10:30

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
17 Oct 2019 08:40:26

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9R1304
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KWX262		
Sampling Date		2019/09/24 06:30		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	6360780
Toluene	ug/L	<0.20	0.20	6360780
Ethylbenzene	ug/L	<0.20	0.20	6360780
o-Xylene	ug/L	<0.20	0.20	6360780
p+m-Xylene	ug/L	<0.40	0.40	6360780
Total Xylenes	ug/L	<0.40	0.40	6360780
F1 (C6-C10)	ug/L	<25	25	6360780
F1 (C6-C10) - BTEX	ug/L	<25	25	6360780
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6364795
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6364795
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6364795
Reached Baseline at C50	ug/L	Yes		6364795
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	103		6360780
4-Bromofluorobenzene	%	96		6360780
D10-Ethylbenzene	%	106		6360780
D4-1,2-Dichloroethane	%	98		6360780
o-Terphenyl	%	95		6364795
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R1304

Report Date: 2019/10/17

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KWX262		
Sampling Date		2019/09/24 06:30		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	440	0.50	6363947
Metals				
Dissolved Aluminum (Al)	ug/L	35.5	3.0	6370556
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6370556
Dissolved Arsenic (As)	ug/L	1.77	0.10	6370556
Dissolved Barium (Ba)	ug/L	68.3	1.0	6370556
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6370556
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6370556
Dissolved Boron (B)	ug/L	302	50	6370556
Dissolved Cadmium (Cd)	ug/L	0.021	0.010	6370556
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6370556
Dissolved Cobalt (Co)	ug/L	0.49	0.20	6370556
Dissolved Copper (Cu)	ug/L	0.69	0.20	6370556
Dissolved Iron (Fe)	ug/L	33.9	5.0	6370556
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6370556
Dissolved Lithium (Li)	ug/L	61.5	2.0	6370556
Dissolved Manganese (Mn)	ug/L	42.6	1.0	6370556
Dissolved Molybdenum (Mo)	ug/L	1.8	1.0	6370556
Dissolved Nickel (Ni)	ug/L	3.9	1.0	6370556
Dissolved Silicon (Si)	ug/L	1010	100	6370556
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6370556
Dissolved Strontium (Sr)	ug/L	2170	1.0	6370556
Dissolved Thallium (Tl)	ug/L	0.024	0.010	6370556
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6370556
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6370556
Dissolved Uranium (U)	ug/L	0.32	0.10	6370556
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6370556
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6370556
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6370556
Dissolved Calcium (Ca)	mg/L	125	0.050	6363948
Dissolved Magnesium (Mg)	mg/L	31.1	0.050	6363948
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R1304
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KWX262		
Sampling Date		2019/09/24 06:30		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Potassium (K)	mg/L	14.0	0.050	6363948
Dissolved Sodium (Na)	mg/L	201	0.050	6363948
Dissolved Sulphur (S)	mg/L	31.7	3.0	6363948
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R1304

Report Date: 2019/10/17

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KWX262		
Sampling Date		2019/09/24 06:30		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	166	3.0	6370497
Total Antimony (Sb)	ug/L	<0.50	0.50	6370497
Total Arsenic (As)	ug/L	1.93	0.10	6370497
Total Barium (Ba)	ug/L	72.4	1.0	6370497
Total Beryllium (Be)	ug/L	<0.10	0.10	6370497
Total Bismuth (Bi)	ug/L	<1.0	1.0	6370497
Total Boron (B)	ug/L	315	50	6370497
Total Cadmium (Cd)	ug/L	0.022	0.010	6370497
Total Chromium (Cr)	ug/L	<1.0	1.0	6370497
Total Cobalt (Co)	ug/L	0.53	0.20	6370497
Total Copper (Cu)	ug/L	0.84	0.50	6370497
Total Iron (Fe)	ug/L	52	10	6370497
Total Lead (Pb)	ug/L	<0.20	0.20	6370497
Total Lithium (Li)	ug/L	67.1	2.0	6370497
Total Manganese (Mn)	ug/L	53.9	1.0	6370497
Total Molybdenum (Mo)	ug/L	1.9	1.0	6370497
Total Nickel (Ni)	ug/L	4.2	1.0	6370497
Total Selenium (Se)	ug/L	0.14	0.10	6370497
Total Silicon (Si)	ug/L	1080	100	6370497
Total Silver (Ag)	ug/L	<0.020	0.020	6370497
Total Strontium (Sr)	ug/L	2250	1.0	6370497
Total Thallium (Tl)	ug/L	0.024	0.010	6370497
Total Tin (Sn)	ug/L	<5.0	5.0	6370497
Total Titanium (Ti)	ug/L	<5.0	5.0	6370497
Total Uranium (U)	ug/L	0.35	0.10	6370497
Total Vanadium (V)	ug/L	<5.0	5.0	6370497
Total Zinc (Zn)	ug/L	5.9	5.0	6370497
Total Zirconium (Zr)	ug/L	<0.10	0.10	6370497
Total Calcium (Ca)	ug/L	131000	50	6363945
Total Magnesium (Mg)	ug/L	32600	50	6363945
Total Potassium (K)	ug/L	14500	50	6363945
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9R1304
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KWX262		
Sampling Date		2019/09/24 06:30		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Total Sodium (Na)	ug/L	224000	50	6363945
Total Sulphur (S)	ug/L	32400	3000	6363945
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	462000	500	6363944
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9R1304
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KWX262			KWX262		
Sampling Date		2019/09/24 06:30			2019/09/24 06:30		
COC Number		na			na		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	46	1.0	6356510			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6356510			
Inorganics							
Total Ammonia-N	mg/L	3.9 (1)	0.050	6359077			
Total BOD	mg/L	<2	2	6358560			
Conductivity	umho/cm	2100	1.0	6357604			
Free Cyanide (CN)	ug/L	1.6 (2)	1.0	6368742	1.9	1.0	6368742
Total Dissolved Solids	mg/L	1320	10	6358912			
Total Kjeldahl Nitrogen (TKN)	mg/L	3.6 (1)	0.50	6359052			
Dissolved Organic Carbon	mg/L	11	0.50	6357006			
Total Organic Carbon (TOC)	mg/L	11	0.50	6359055	11	0.50	6359055
Orthophosphate (P)	mg/L	<0.010	0.010	6357314			
Dissolved Oxygen	mg/L	10.0		6357396	10.0		6357396
pH	pH	7.67		6357607			
Total Phosphorus	mg/L	0.024	0.020	6361947			
Reactive Silica (SiO ₂)	mg/L	1.9	0.050	6368743			
Total Suspended Solids	mg/L	3	1	6357645			
Dissolved Sulphate (SO ₄)	mg/L	84	1.0	6357313			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6359889			
Turbidity	NTU	0.5	0.1	6357174			
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6359892			
Alkalinity (Total as CaCO ₃)	mg/L	46	1.0	6357597			
Dissolved Chloride (Cl ⁻)	mg/L	510	5.0	6357310			
Nitrite (N)	mg/L	0.434	0.010	6357182			
Nitrate (N)	mg/L	11.6	0.10	6357182			
Nitrate + Nitrite (N)	mg/L	12.0	0.10	6357182			
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							
(1) TKN < NH ₄ : Both values fall within acceptable RPD limits for duplicates and are likely equivalent.							
(2) See general comments for notes regarding CNFREE-W							



BUREAU
VERITAS

BV Labs Job #: B9R1304

Report Date: 2019/10/17

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KWX262			KWX262		
Sampling Date		2019/09/24 06:30			2019/09/24 06:30		
COC Number		na			na		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Metals							
Dissolved Selenium (Se)	ug/L	0.15	0.10	6371592			
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6377543			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B9R1304

Report Date: 2019/10/17

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: LH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KWX262		
Sampling Date		2019/09/24 06:30		
COC Number		na		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6362146
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6362152
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9R1304
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

TEST SUMMARY

BV Labs ID: KWX262
Sample ID: MEL-14
Matrix: Water

Collected: 2019/09/24
Shipped:
Received: 2019/09/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6357597	N/A	2019/10/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6356510	N/A	2019/10/01	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6358560	2019/09/28	2019/10/03	Prakash Piya
Chloride by Automated Colourimetry	KONE	6357310	N/A	2019/09/30	Deonarine Ramnarine
Conductivity	AT	6357604	N/A	2019/10/01	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6359892	N/A	2019/09/30	Gnana Thomas
Total Cyanide	SKAL/CN	6359889	2019/09/30	2019/09/30	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6357006	N/A	2019/09/27	Mandeep Kaur
Dissolved Oxygen	DO	6357396	2019/09/27	2019/09/27	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6360780	N/A	2019/10/01	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6364795	2019/10/02	2019/10/02	Margaret Kulczyk-Stanko
Dissolved Mercury (low level)	CV/AA	6362152	2019/10/01	2019/10/01	Medhat Nasr
Mercury (low level)	CV/AA	6362146	2019/10/01	2019/10/01	Medhat Nasr
Cyanide (Free)	SPEC	6368742	2019/10/02	2019/10/03	Taylor Mullings
Hardness Total (calculated as CaCO3)	CALC	6363944	N/A	2019/10/04	Report Automation Engine
Hardness (calculated as CaCO3)	CALC	6363947	N/A	2019/10/03	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6363948	N/A	2019/10/03	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6370556	N/A	2019/10/03	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6363945	2019/10/04	2019/10/04	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6370497	2019/10/03	2019/10/03	Andrew An
Silica (Reactive)	KONE	6368743	N/A	2019/10/03	Zafar Iqbal
Total Ammonia-N	LACH/NH4	6359077	N/A	2019/09/29	Amanpreet Sappal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6357182	N/A	2019/09/28	Amanpreet Sappal
pH	AT	6357607	2019/09/27	2019/10/01	Surinder Rai
Orthophosphate	KONE	6357314	N/A	2019/10/01	Alina Dobreanu
Radium-226 Low Level	AS	6377543	N/A	2019/10/15	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6357313	N/A	2019/09/30	Deonarine Ramnarine
Total Dissolved Solids	BAL	6358912	2019/09/28	2019/09/30	Nilam Borole
Total Kjeldahl Nitrogen in Water	SKAL	6359052	2019/09/28	2019/10/02	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6359055	N/A	2019/09/28	Nimarta Singh
Total Phosphorus (Colourimetric)	LACH/P	6361947	2019/10/01	2019/10/01	Nimarta Singh
Low Level Total Suspended Solids	BAL	6357645	2019/09/28	2019/09/30	Xinyue (Sarah) Hou
Turbidity	AT	6357174	N/A	2019/09/27	Kazzandra Adeva

BV Labs ID: KWX262 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/09/24
Shipped:
Received: 2019/09/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Oxygen	DO	6357396	2019/09/27	2019/09/27	Nusrat Naz
Cyanide (Free)	SPEC	6368742	2019/10/02	2019/10/03	Taylor Mullings
Total Organic Carbon (TOC)	TOCV/NDIR	6359055	N/A	2019/09/28	Nimarta Singh



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.0°C
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Sample KWX262 [MEL-14] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide TOC < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample KWX262, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.



BV Labs Job #: B9R1304
Report Date: 2019/10/17

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6360780	1,4-Difluorobenzene	2019/09/30	106	70 - 130	105	70 - 130	103	%				
6360780	4-Bromofluorobenzene	2019/09/30	99	70 - 130	100	70 - 130	98	%				
6360780	D10-Ethylbenzene	2019/09/30	102	70 - 130	98	70 - 130	108	%				
6360780	D4-1,2-Dichloroethane	2019/09/30	102	70 - 130	104	70 - 130	104	%				
6364795	o-Terphenyl	2019/10/02	104	60 - 130	99	60 - 130	96	%				
6357006	Dissolved Organic Carbon	2019/09/27	92	80 - 120	97	80 - 120	<0.50	mg/L	2.3	20		
6357174	Turbidity	2019/09/27			102	85 - 115	<0.1	NTU	0.44	20		
6357182	Nitrate (N)	2019/09/28	93	80 - 120	92	80 - 120	<0.10	mg/L	0.15	20		
6357182	Nitrite (N)	2019/09/28	105	80 - 120	104	80 - 120	<0.010	mg/L	NC	20		
6357310	Dissolved Chloride (Cl-)	2019/09/30	NC	80 - 120	103	80 - 120	<1.0	mg/L	0.38	20		
6357313	Dissolved Sulphate (SO4)	2019/09/30	NC	75 - 125	101	80 - 120	<1.0	mg/L	0.76	20		
6357314	Orthophosphate (P)	2019/10/01	102	75 - 125	100	80 - 120	<0.010	mg/L	7.4	25		
6357597	Alkalinity (Total as CaCO3)	2019/10/01			97	85 - 115	<1.0	mg/L	1.1	20		
6357604	Conductivity	2019/10/01			102	85 - 115	<1.0	umho/cm	0	25		
6357607	pH	2019/10/01			102	98 - 103			0.66	N/A		
6357645	Total Suspended Solids	2019/09/30					<1	mg/L	0	25	98	85 - 115
6358560	Total BOD	2019/10/03					<2	mg/L	NC	30	94	80 - 120
6358912	Total Dissolved Solids	2019/09/30					<10	mg/L	4.6	25	95	90 - 110
6359052	Total Kjeldahl Nitrogen (TKN)	2019/10/01	106	80 - 120	103	80 - 120	<0.10	mg/L	0.58	20	105	80 - 120
6359055	Total Organic Carbon (TOC)	2019/09/28	95	80 - 120	95	80 - 120	<0.50	mg/L	0.55	20		
6359077	Total Ammonia-N	2019/09/29	99	75 - 125	101	80 - 120	<0.050	mg/L	NC	20		
6359889	Total Cyanide (CN)	2019/09/30	103	80 - 120	104	80 - 120	<0.0050	mg/L	NC	20		
6359892	WAD Cyanide (Free)	2019/09/30	103	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20		
6360780	Benzene	2019/09/30	104	70 - 130	102	70 - 130	<0.20	ug/L	NC	30		
6360780	Ethylbenzene	2019/09/30	107	70 - 130	104	70 - 130	<0.20	ug/L	NC	30		
6360780	F1 (C6-C10) - BTEX	2019/09/30					<25	ug/L	NC	30		
6360780	F1 (C6-C10)	2019/09/30	91	70 - 130	100	70 - 130	<25	ug/L	NC	30		
6360780	o-Xylene	2019/09/30	102	70 - 130	104	70 - 130	<0.20	ug/L	NC	30		
6360780	p+m-Xylene	2019/09/30	103	70 - 130	100	70 - 130	<0.40	ug/L	NC	30		
6360780	Toluene	2019/09/30	98	70 - 130	96	70 - 130	<0.20	ug/L	NC	30		
6360780	Total Xylenes	2019/09/30					<0.40	ug/L	NC	30		



BV Labs Job #: B9R1304
Report Date: 2019/10/17

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6361947	Total Phosphorus	2019/10/01	100	80 - 120	99	80 - 120	<0.020	mg/L	0.82	20	100	80 - 120
6362146	Mercury (Hg)	2019/10/01	89	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6362152	Dissolved Mercury (Hg)	2019/10/01	95	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6364795	F2 (C10-C16 Hydrocarbons)	2019/10/02	120	50 - 130	108	60 - 130	<100	ug/L	NC	30		
6364795	F3 (C16-C34 Hydrocarbons)	2019/10/02	112	50 - 130	106	60 - 130	<200	ug/L	NC	30		
6364795	F4 (C34-C50 Hydrocarbons)	2019/10/02	115	50 - 130	107	60 - 130	<200	ug/L	NC	30		
6368742	Free Cyanide (CN)	2019/10/03	118	80 - 120	97	80 - 120	<1.0	ug/L	13	20		
6368743	Reactive Silica (SiO2)	2019/10/03	94	80 - 120	96	80 - 120	<0.050	mg/L	5.9	20		
6370497	Total Aluminum (Al)	2019/10/03	104	80 - 120	104	80 - 120	<3.0	ug/L				
6370497	Total Antimony (Sb)	2019/10/03	102	80 - 120	105	80 - 120	<0.50	ug/L				
6370497	Total Arsenic (As)	2019/10/03	101	80 - 120	105	80 - 120	<0.10	ug/L				
6370497	Total Barium (Ba)	2019/10/03	NC	80 - 120	106	80 - 120	<1.0	ug/L				
6370497	Total Beryllium (Be)	2019/10/03	99	80 - 120	103	80 - 120	<0.10	ug/L				
6370497	Total Bismuth (Bi)	2019/10/03	101	80 - 120	105	80 - 120	<1.0	ug/L				
6370497	Total Boron (B)	2019/10/03	NC	80 - 120	99	80 - 120	<50	ug/L				
6370497	Total Cadmium (Cd)	2019/10/03	101	80 - 120	108	80 - 120	<0.010	ug/L				
6370497	Total Chromium (Cr)	2019/10/03	100	80 - 120	106	80 - 120	<1.0	ug/L				
6370497	Total Cobalt (Co)	2019/10/03	96	80 - 120	102	80 - 120	<0.20	ug/L				
6370497	Total Copper (Cu)	2019/10/03	98	80 - 120	104	80 - 120	<0.50	ug/L				
6370497	Total Iron (Fe)	2019/10/03	NC	80 - 120	103	80 - 120	<10	ug/L				
6370497	Total Lead (Pb)	2019/10/03	97	80 - 120	108	80 - 120	<0.20	ug/L				
6370497	Total Lithium (Li)	2019/10/03	92	80 - 120	105	80 - 120	<2.0	ug/L				
6370497	Total Manganese (Mn)	2019/10/03	NC	80 - 120	108	80 - 120	<1.0	ug/L				
6370497	Total Molybdenum (Mo)	2019/10/03	107	80 - 120	108	80 - 120	<1.0	ug/L				
6370497	Total Nickel (Ni)	2019/10/03	102	80 - 120	109	80 - 120	<1.0	ug/L				
6370497	Total Selenium (Se)	2019/10/03	103	80 - 120	106	80 - 120	<0.10	ug/L				
6370497	Total Silicon (Si)	2019/10/03	NC	80 - 120	99	80 - 120	<100	ug/L				
6370497	Total Silver (Ag)	2019/10/03	99	80 - 120	106	80 - 120	<0.020	ug/L				
6370497	Total Strontium (Sr)	2019/10/03	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6370497	Total Thallium (Tl)	2019/10/03	98	80 - 120	104	80 - 120	<0.010	ug/L				
6370497	Total Tin (Sn)	2019/10/03	100	80 - 120	102	80 - 120	<5.0	ug/L				
6370497	Total Titanium (Ti)	2019/10/03	112	80 - 120	109	80 - 120	<5.0	ug/L				



BV Labs Job #: B9R1304
Report Date: 2019/10/17

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6370497	Total Uranium (U)	2019/10/03	98	80 - 120	106	80 - 120	<0.10	ug/L				
6370497	Total Vanadium (V)	2019/10/03	106	80 - 120	107	80 - 120	<5.0	ug/L				
6370497	Total Zinc (Zn)	2019/10/03	108	80 - 120	109	80 - 120	<5.0	ug/L				
6370497	Total Zirconium (Zr)	2019/10/03	92	80 - 120	103	80 - 120	<0.10	ug/L				
6370556	Dissolved Aluminum (Al)	2019/10/03	113	80 - 120	102	80 - 120	<3.0	ug/L				
6370556	Dissolved Antimony (Sb)	2019/10/03	NC	80 - 120	97	80 - 120	<0.50	ug/L				
6370556	Dissolved Arsenic (As)	2019/10/03	109	80 - 120	98	80 - 120	<0.10	ug/L				
6370556	Dissolved Barium (Ba)	2019/10/03	109	80 - 120	97	80 - 120	<1.0	ug/L				
6370556	Dissolved Beryllium (Be)	2019/10/03	103	80 - 120	98	80 - 120	<0.10	ug/L				
6370556	Dissolved Bismuth (Bi)	2019/10/03	11 (1)	80 - 120	97	80 - 120	<1.0	ug/L				
6370556	Dissolved Boron (B)	2019/10/03	105	80 - 120	98	80 - 120	<50	ug/L				
6370556	Dissolved Cadmium (Cd)	2019/10/03	105	80 - 120	99	80 - 120	<0.010	ug/L				
6370556	Dissolved Chromium (Cr)	2019/10/03	104	80 - 120	96	80 - 120	<1.0	ug/L				
6370556	Dissolved Cobalt (Co)	2019/10/03	105	80 - 120	98	80 - 120	<0.20	ug/L				
6370556	Dissolved Copper (Cu)	2019/10/03	79 (1)	80 - 120	96	80 - 120	<0.20	ug/L				
6370556	Dissolved Iron (Fe)	2019/10/03	112	80 - 120	98	80 - 120	<5.0	ug/L				
6370556	Dissolved Lead (Pb)	2019/10/03	112	80 - 120	102	80 - 120	<0.20	ug/L				
6370556	Dissolved Lithium (Li)	2019/10/03	104	80 - 120	95	80 - 120	<2.0	ug/L				
6370556	Dissolved Manganese (Mn)	2019/10/03	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6370556	Dissolved Molybdenum (Mo)	2019/10/03	NC	80 - 120	94	80 - 120	<1.0	ug/L				
6370556	Dissolved Nickel (Ni)	2019/10/03	105	80 - 120	99	80 - 120	<1.0	ug/L				
6370556	Dissolved Silicon (Si)	2019/10/03	109	80 - 120	94	80 - 120	<100	ug/L				
6370556	Dissolved Silver (Ag)	2019/10/03	25 (1)	80 - 120	97	80 - 120	<0.020	ug/L				
6370556	Dissolved Strontium (Sr)	2019/10/03	NC	80 - 120	95	80 - 120	<1.0	ug/L				
6370556	Dissolved Thallium (Tl)	2019/10/03	109	80 - 120	97	80 - 120	<0.010	ug/L				
6370556	Dissolved Tin (Sn)	2019/10/03	100	80 - 120	89	80 - 120	<5.0	ug/L				
6370556	Dissolved Titanium (Ti)	2019/10/03	112	80 - 120	98	80 - 120	<5.0	ug/L				
6370556	Dissolved Uranium (U)	2019/10/03	116	80 - 120	100	80 - 120	<0.10	ug/L				
6370556	Dissolved Vanadium (V)	2019/10/03	107	80 - 120	95	80 - 120	<5.0	ug/L				
6370556	Dissolved Zinc (Zn)	2019/10/03	104	80 - 120	105	80 - 120	<5.0	ug/L				
6370556	Dissolved Zirconium (Zr)	2019/10/03	110	80 - 120	96	80 - 120	<0.10	ug/L				
6371592	Dissolved Selenium (Se)	2019/10/04	101	80 - 120	100	80 - 120	<0.10	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9R1304

Report Date: 2019/10/17

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6377543	Radium-226	2019/10/15			98	85 - 115	<0.0050	Bq/L	31	N/A		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference \leq 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9R1304
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BV Labs Job #: B9R1304
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: LH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/17
Report #: R5925341
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9R7358

Received: 2019/10/03, 10:15

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/10/06	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/10/07	CAM SOP-00102	APHA 4500-CO2 D
Biochemical Oxygen Demand (BOD) (1)	1	2019/10/04	2019/10/09	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry (1)	1	N/A	2019/10/07	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/10/06	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/10/09	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/10/09	2019/10/09	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/10/04	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/10/04	2019/10/04	CAM SOP-00427	SM 23 4500 O G m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2019/10/08	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 6)	1	2019/10/09	2019/10/10	CAM SOP-00316	CCME PHC-CWS m
Dissolved Mercury (low level) (1)	1	2019/10/08	2019/10/08	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/10/09	2019/10/09	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 7)	1	N/A	2019/10/11	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/10/08	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/10/08	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/10/08	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/10/03	2019/10/11	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/10/10	2019/10/10	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/10/07	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/10/08	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/10/06	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/10/04	2019/10/06	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/10/07	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/10/16	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/10/07	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/10/07	2019/10/08	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/10/05	2019/10/09	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/10/06	CAM SOP-00446	SM 23 5310B m



Your P.O. #: OL-762849
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/17
Report #: R5925341
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9R7358

Received: 2019/10/03, 10:15

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Total Phosphorus (Colourimetric) (1)	1	2019/10/07	2019/10/07	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/10/07	2019/10/08	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/10/04	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(7) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/17
Report #: R5925341
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9R7358

Received: 2019/10/03, 10:15

- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(9) Radium-226 results have not been corrected for blanks.
(10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Alisha Williamson
Project Manager
17 Oct 2019 17:43:07

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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VERITAS

BV Labs Job #: B9R7358

Report Date: 2019/10/17

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

CCME PHCS, BTEX/F1-F4 (WATER)

BV Labs ID		KYF708			KYF708		
Sampling Date		2019/10/01 06:00			2019/10/01 06:00		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
BTEX & F1 Hydrocarbons							
Benzene	ug/L	<0.20	0.20	6376380	<0.20	0.20	6376380
Toluene	ug/L	<0.20	0.20	6376380	<0.20	0.20	6376380
Ethylbenzene	ug/L	<0.20	0.20	6376380	<0.20	0.20	6376380
o-Xylene	ug/L	<0.20	0.20	6376380	<0.20	0.20	6376380
p+m-Xylene	ug/L	<0.40	0.40	6376380	<0.40	0.40	6376380
Total Xylenes	ug/L	<0.40	0.40	6376380	<0.40	0.40	6376380
F1 (C6-C10)	ug/L	<25	25	6376380	<25	25	6376380
F1 (C6-C10) - BTEX	ug/L	<25	25	6376380	<25	25	6376380
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	6378589			
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	6378589			
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	6378589			
Reached Baseline at C50	ug/L	Yes		6378589			
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	102		6376380	104		6376380
4-Bromofluorobenzene	%	100		6376380	100		6376380
D10-Ethylbenzene	%	106		6376380	108		6376380
D4-1,2-Dichloroethane	%	98		6376380	98		6376380
o-Terphenyl	%	90		6378589			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate							



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VERITAS

BV Labs Job #: B9R7358

Report Date: 2019/10/17

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KYF708		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-14	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	385	0.50	6376859
Metals				
Dissolved Aluminum (Al)	ug/L	19.2	3.0	6381161
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6381161
Dissolved Arsenic (As)	ug/L	0.84	0.10	6381161
Dissolved Barium (Ba)	ug/L	49.9	1.0	6381161
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	6381161
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	6381161
Dissolved Boron (B)	ug/L	339	50	6381161
Dissolved Cadmium (Cd)	ug/L	0.023	0.010	6381161
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	6381161
Dissolved Cobalt (Co)	ug/L	0.48	0.20	6381161
Dissolved Copper (Cu)	ug/L	0.68	0.20	6381161
Dissolved Iron (Fe)	ug/L	44.4	5.0	6381161
Dissolved Lead (Pb)	ug/L	<0.20	0.20	6381161
Dissolved Lithium (Li)	ug/L	70.0	2.0	6381161
Dissolved Manganese (Mn)	ug/L	30.9	1.0	6381161
Dissolved Molybdenum (Mo)	ug/L	1.2	1.0	6381161
Dissolved Nickel (Ni)	ug/L	3.4	1.0	6381161
Dissolved Selenium (Se)	ug/L	0.12	0.10	6381161
Dissolved Silicon (Si)	ug/L	529	100	6381161
Dissolved Silver (Ag)	ug/L	<0.020	0.020	6381161
Dissolved Strontium (Sr)	ug/L	2070	1.0	6381161
Dissolved Tin (Sn)	ug/L	<5.0	5.0	6381161
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6381161
Dissolved Uranium (U)	ug/L	0.25	0.10	6381161
Dissolved Vanadium (V)	ug/L	<5.0	5.0	6381161
Dissolved Zinc (Zn)	ug/L	13.2	5.0	6381161
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	6381161
Dissolved Calcium (Ca)	mg/L	108	0.050	6376860
Dissolved Magnesium (Mg)	mg/L	28.0	0.050	6376860
Dissolved Potassium (K)	mg/L	14.1	0.050	6376860
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9R7358
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KYF708		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-14	RDL	QC Batch
Dissolved Sodium (Na)	mg/L	214	0.050	6376860
Dissolved Sulphur (S)	mg/L	28.4	3.0	6376860
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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BV Labs Job #: B9R7358

Report Date: 2019/10/17

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KYF708		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	117	3.0	6383677
Total Antimony (Sb)	ug/L	<0.50	0.50	6383677
Total Arsenic (As)	ug/L	1.04	0.10	6383677
Total Barium (Ba)	ug/L	55.4	1.0	6383677
Total Beryllium (Be)	ug/L	<0.10	0.10	6383677
Total Bismuth (Bi)	ug/L	<1.0	1.0	6383677
Total Boron (B)	ug/L	353	50	6383677
Total Cadmium (Cd)	ug/L	0.025	0.010	6383677
Total Chromium (Cr)	ug/L	<1.0	1.0	6383677
Total Cobalt (Co)	ug/L	0.52	0.20	6383677
Total Copper (Cu)	ug/L	0.72	0.50	6383677
Total Iron (Fe)	ug/L	80	10	6383677
Total Lead (Pb)	ug/L	<0.20	0.20	6383677
Total Lithium (Li)	ug/L	82.2	2.0	6383677
Total Manganese (Mn)	ug/L	38.0	1.0	6383677
Total Molybdenum (Mo)	ug/L	1.4	1.0	6383677
Total Nickel (Ni)	ug/L	3.4	1.0	6383677
Total Selenium (Se)	ug/L	0.14	0.10	6383677
Total Silicon (Si)	ug/L	659	100	6383677
Total Silver (Ag)	ug/L	<0.020	0.020	6383677
Total Strontium (Sr)	ug/L	2150	1.0	6383677
Total Thallium (Tl)	ug/L	0.024	0.010	6383677
Total Tin (Sn)	ug/L	<5.0	5.0	6383677
Total Titanium (Ti)	ug/L	<5.0	5.0	6383677
Total Uranium (U)	ug/L	0.28	0.10	6383677
Total Vanadium (V)	ug/L	<5.0	5.0	6383677
Total Zinc (Zn)	ug/L	14.5	5.0	6383677
Total Zirconium (Zr)	ug/L	<0.10	0.10	6383677
Total Calcium (Ca)	ug/L	124000	50	6376864
Total Magnesium (Mg)	ug/L	27500	50	6376864
Total Potassium (K)	ug/L	15300	50	6376864
Total Sodium (Na)	ug/L	215000	50	6376864
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9R7358
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KYF708		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-14	RDL	QC Batch
Total Sulphur (S)	ug/L	32700	3000	6376864
Calculated Parameters				
Total Hardness (CaCO ₃)	ug/L	422000	500	6376863
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R7358
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KYF708			KYF708		
Sampling Date		2019/10/01 06:00			2019/10/01 06:00		
	UNITS	MEL-14	RDL	QC Batch	MEL-14 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	24	1.0	6368094			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6368094			
Inorganics							
Total Ammonia-N	mg/L	4.0	0.050	6373889			
Total BOD	mg/L	<2	2	6369768			
Conductivity	umho/cm	2100	1.0	6370869	2000	1.0	6370869
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6381435			
Total Dissolved Solids	mg/L	860	10	6374062			
Total Kjeldahl Nitrogen (TKN)	mg/L	4.3	0.50	6372220			
Dissolved Organic Carbon	mg/L	3.6	0.50	6370090			
Total Organic Carbon (TOC)	mg/L	3.6	0.50	6372221			
Orthophosphate (P)	mg/L	<0.010	0.010	6370191			
Dissolved Oxygen	mg/L	10.5		6370568			
pH	pH	7.36		6370884	7.35		6370884
Total Phosphorus	mg/L	<0.020	0.020	6373234			
Reactive Silica (SiO ₂)	mg/L	0.68	0.050	6381436			
Total Suspended Solids	mg/L	2	1	6371954			
Dissolved Sulphate (SO ₄)	mg/L	74	1.0	6370180			
Total Cyanide (CN)	mg/L	0.0054	0.0050	6378880			
Turbidity	NTU	0.2	0.1	6369987			
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6378894			
Alkalinity (Total as CaCO ₃)	mg/L	24	1.0	6370851	23	1.0	6370851
Dissolved Chloride (Cl ⁻)	mg/L	530	5.0	6370157			
Nitrite (N)	mg/L	0.366	0.010	6370567			
Nitrate (N)	mg/L	13.6	0.10	6370567			
Nitrate + Nitrite (N)	mg/L	14.0	0.10	6370567			
Metals							
Dissolved Thallium (Tl)	ug/L	0.022	0.010	6384534			
RADIONUCLIDE							
Radium-226	Bq/L	<0.0050	0.0050	6382911			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W							



BUREAU
VERITAS

BV Labs Job #: B9R7358
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KYF708		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-14	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6377981
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6375572
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BV Labs Job #: B9R7358
Report Date: 2019/10/17

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KYF708
Sample ID: MEL-14
Matrix: Water

Collected: 2019/10/01
Shipped:
Received: 2019/10/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6370851	N/A	2019/10/06	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	6368094	N/A	2019/10/07	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	6369768	2019/10/04	2019/10/09	Navjot Kaur Gill
Chloride by Automated Colourimetry	KONE	6370157	N/A	2019/10/07	Deonarine Ramnarine
Conductivity	AT	6370869	N/A	2019/10/06	Yogesh Patel
Free (WAD) Cyanide	SKAL/CN	6378894	N/A	2019/10/09	Gnana Thomas
Total Cyanide	SKAL/CN	6378880	2019/10/09	2019/10/09	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6370090	N/A	2019/10/04	Mandeep Kaur
Dissolved Oxygen	DO	6370568	2019/10/04	2019/10/04	Nusrat Naz
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6376380	N/A	2019/10/08	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6378589	2019/10/09	2019/10/10	Prabhjot Gulati
Dissolved Mercury (low level)	CV/AA	6375572	2019/10/08	2019/10/08	Medhat Nasr
Mercury (low level)	CV/AA	6377981	2019/10/09	2019/10/09	Medhat Nasr
Cyanide (Free)	SPEC	6381435	2019/10/08	2019/10/08	Taylor Mullings
Hardness Total (calculated as CaCO3)	CALC	6376863	N/A	2019/10/11	Automated Statchk
Hardness (calculated as CaCO3)	CALC	6376859	N/A	2019/10/08	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6376860	N/A	2019/10/08	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6381161	N/A	2019/10/08	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6376864	2019/10/11	2019/10/11	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6383677	2019/10/10	2019/10/10	Vanessa Chan
Silica (Reactive)	KONE	6381436	N/A	2019/10/07	Serena Tian
Total Ammonia-N	LACH/NH4	6373889	N/A	2019/10/08	Mazin Wakai
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6370567	N/A	2019/10/06	Amanpreet Sappal
pH	AT	6370884	2019/10/04	2019/10/06	Yogesh Patel
Orthophosphate	KONE	6370191	N/A	2019/10/07	Alina Dobreanu
Radium-226 Low Level	AS	6382911	N/A	2019/10/16	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6370180	N/A	2019/10/07	Alina Dobreanu
Total Dissolved Solids	BAL	6374062	2019/10/07	2019/10/08	Shivani Desai
Total Kjeldahl Nitrogen in Water	SKAL	6372220	2019/10/05	2019/10/09	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6372221	N/A	2019/10/06	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6373234	2019/10/07	2019/10/07	Shivani Shivani
Low Level Total Suspended Solids	BAL	6371954	2019/10/07	2019/10/08	Mandeep Kaur
Turbidity	AT	6369987	N/A	2019/10/04	Kazzandra Adeva

BV Labs ID: KYF708 Dup
Sample ID: MEL-14
Matrix: Water

Collected: 2019/10/01
Shipped:
Received: 2019/10/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6370851	N/A	2019/10/06	Yogesh Patel
Conductivity	AT	6370869	N/A	2019/10/06	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	6376380	N/A	2019/10/08	Georgeta Rusu
pH	AT	6370884	2019/10/04	2019/10/06	Yogesh Patel



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.3°C
-----------	-------

Sample KYF708 [MEL-14] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Matrix Spike Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required

Sample KYF708, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.



BV Labs Job #: B9R7358
Report Date: 2019/10/17

QUALITY ASSURANCE REPORT

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6376380	1,4-Difluorobenzene	2019/10/08	105	70 - 130	104	70 - 130	103	%				
6376380	4-Bromofluorobenzene	2019/10/08	104	70 - 130	103	70 - 130	99	%				
6376380	D10-Ethylbenzene	2019/10/08	107	70 - 130	106	70 - 130	108	%				
6376380	D4-1,2-Dichloroethane	2019/10/08	97	70 - 130	96	70 - 130	97	%				
6378589	o-Terphenyl	2019/10/09	92	60 - 130	87	60 - 130	88	%				
6369768	Total BOD	2019/10/09					<2	mg/L	7.5	30	99	80 - 120
6369987	Turbidity	2019/10/04			95	85 - 115	<0.1	NTU	3.5	20		
6370090	Dissolved Organic Carbon	2019/10/04	94	80 - 120	97	80 - 120	<0.50	mg/L	0.42	20		
6370157	Dissolved Chloride (Cl-)	2019/10/07	NC	80 - 120	103	80 - 120	<1.0	mg/L	1.3	20		
6370180	Dissolved Sulphate (SO4)	2019/10/07	NC	75 - 125	97	80 - 120	<1.0	mg/L	0.026	20		
6370191	Orthophosphate (P)	2019/10/07	101	75 - 125	100	80 - 120	<0.010	mg/L	NC	25		
6370567	Nitrate (N)	2019/10/06	NC	80 - 120	93	80 - 120	<0.10	mg/L	0.12	20		
6370567	Nitrite (N)	2019/10/06	105	80 - 120	99	80 - 120	<0.010	mg/L	0.53	20		
6370851	Alkalinity (Total as CaCO3)	2019/10/06			97	85 - 115	<1.0	mg/L	6.2	20		
6370869	Conductivity	2019/10/06			102	85 - 115	<1.0	umho/cm	3.6	25		
6370884	pH	2019/10/06			102	98 - 103			0.086	N/A		
6371954	Total Suspended Solids	2019/10/08					<1	mg/L	8.0	25	98	85 - 115
6372220	Total Kjeldahl Nitrogen (TKN)	2019/10/08	NC	80 - 120	98	80 - 120	<0.10	mg/L	0.48	20	95	80 - 120
6372221	Total Organic Carbon (TOC)	2019/10/06	93	80 - 120	97	80 - 120	<0.50	mg/L	1.5	20		
6373234	Total Phosphorus	2019/10/07	96	80 - 120	97	80 - 120	<0.020	mg/L	0.017	20	97	80 - 120
6373889	Total Ammonia-N	2019/10/08	94	75 - 125	99	80 - 120	<0.050	mg/L	0.75	20		
6374062	Total Dissolved Solids	2019/10/08					<10	mg/L	NC	25	102	90 - 110
6375572	Dissolved Mercury (Hg)	2019/10/08	96	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6376380	Benzene	2019/10/08	94	70 - 130	95	70 - 130	<0.20	ug/L	NC	30		
6376380	Ethylbenzene	2019/10/08	99	70 - 130	100	70 - 130	<0.20	ug/L	NC	30		
6376380	F1 (C6-C10) - BTEX	2019/10/08					<25	ug/L	NC	30		
6376380	F1 (C6-C10)	2019/10/08	95	70 - 130	99	70 - 130	<25	ug/L	NC	30		
6376380	o-Xylene	2019/10/08	96	70 - 130	96	70 - 130	<0.20	ug/L	NC	30		
6376380	p+m-Xylene	2019/10/08	98	70 - 130	98	70 - 130	<0.40	ug/L	NC	30		
6376380	Toluene	2019/10/08	89	70 - 130	89	70 - 130	<0.20	ug/L	NC	30		
6376380	Total Xylenes	2019/10/08					<0.40	ug/L	NC	30		



BV Labs Job #: B9R7358
Report Date: 2019/10/17

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6377981	Mercury (Hg)	2019/10/09	98	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6378589	F2 (C10-C16 Hydrocarbons)	2019/10/10	109	50 - 130	92	60 - 130	<100	ug/L	NC	30		
6378589	F3 (C16-C34 Hydrocarbons)	2019/10/10	103	50 - 130	95	60 - 130	<200	ug/L	NC	30		
6378589	F4 (C34-C50 Hydrocarbons)	2019/10/10	83	50 - 130	76	60 - 130	<200	ug/L	NC	30		
6378880	Total Cyanide (CN)	2019/10/09	79 (1)	80 - 120	92	80 - 120	<0.0050	mg/L	7.7	20		
6378894	WAD Cyanide (Free)	2019/10/09	95	80 - 120	100	80 - 120	<0.0010	mg/L	4.9	20		
6381161	Dissolved Aluminum (Al)	2019/10/08	101	80 - 120	102	80 - 120	<3.0	ug/L				
6381161	Dissolved Antimony (Sb)	2019/10/08	101	80 - 120	104	80 - 120	<0.50	ug/L				
6381161	Dissolved Arsenic (As)	2019/10/08	104	80 - 120	101	80 - 120	<0.10	ug/L				
6381161	Dissolved Barium (Ba)	2019/10/08	100	80 - 120	107	80 - 120	<1.0	ug/L				
6381161	Dissolved Beryllium (Be)	2019/10/08	99	80 - 120	101	80 - 120	<0.10	ug/L				
6381161	Dissolved Bismuth (Bi)	2019/10/08	101	80 - 120	105	80 - 120	<1.0	ug/L				
6381161	Dissolved Boron (B)	2019/10/08	93	80 - 120	96	80 - 120	<50	ug/L				
6381161	Dissolved Cadmium (Cd)	2019/10/08	104	80 - 120	107	80 - 120	<0.010	ug/L				
6381161	Dissolved Chromium (Cr)	2019/10/08	103	80 - 120	105	80 - 120	<1.0	ug/L				
6381161	Dissolved Cobalt (Co)	2019/10/08	100	80 - 120	103	80 - 120	<0.20	ug/L				
6381161	Dissolved Copper (Cu)	2019/10/08	102	80 - 120	105	80 - 120	<0.20	ug/L				
6381161	Dissolved Iron (Fe)	2019/10/08	102	80 - 120	105	80 - 120	<5.0	ug/L				
6381161	Dissolved Lead (Pb)	2019/10/08	103	80 - 120	106	80 - 120	<0.20	ug/L				
6381161	Dissolved Lithium (Li)	2019/10/08	96	80 - 120	101	80 - 120	<2.0	ug/L				
6381161	Dissolved Manganese (Mn)	2019/10/08	103	80 - 120	105	80 - 120	<1.0	ug/L				
6381161	Dissolved Molybdenum (Mo)	2019/10/08	103	80 - 120	106	80 - 120	<1.0	ug/L				
6381161	Dissolved Nickel (Ni)	2019/10/08	103	80 - 120	105	80 - 120	<1.0	ug/L				
6381161	Dissolved Selenium (Se)	2019/10/08	104	80 - 120	102	80 - 120	<0.10	ug/L				
6381161	Dissolved Silicon (Si)	2019/10/08	99	80 - 120	103	80 - 120	<100	ug/L				
6381161	Dissolved Silver (Ag)	2019/10/08	102	80 - 120	106	80 - 120	<0.020	ug/L				
6381161	Dissolved Strontium (Sr)	2019/10/08	103	80 - 120	105	80 - 120	<1.0	ug/L				
6381161	Dissolved Tin (Sn)	2019/10/08	94	80 - 120	99	80 - 120	<5.0	ug/L				
6381161	Dissolved Titanium (Ti)	2019/10/08	100	80 - 120	106	80 - 120	<5.0	ug/L				
6381161	Dissolved Uranium (U)	2019/10/08	104	80 - 120	108	80 - 120	<0.10	ug/L				
6381161	Dissolved Vanadium (V)	2019/10/08	102	80 - 120	104	80 - 120	<5.0	ug/L				
6381161	Dissolved Zinc (Zn)	2019/10/08	108	80 - 120	108	80 - 120	<5.0	ug/L				



BV Labs Job #: B9R7358
Report Date: 2019/10/17

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6381161	Dissolved Zirconium (Zr)	2019/10/08	101	80 - 120	103	80 - 120	<0.10	ug/L				
6381435	Free Cyanide (CN)	2019/10/08	76 (1)	80 - 120	97	80 - 120	<1.0	ug/L	1.6	20		
6381436	Reactive Silica (SiO ₂)	2019/10/07	101	80 - 120	101	80 - 120	<0.050	mg/L				
6382911	Radium-226	2019/10/16			102	85 - 115	<0.0050	Bq/L	NC	N/A		
6383677	Total Aluminum (Al)	2019/10/10	102	80 - 120	106	80 - 120	<3.0	ug/L				
6383677	Total Antimony (Sb)	2019/10/10	NC	80 - 120	104	80 - 120	<0.50	ug/L				
6383677	Total Arsenic (As)	2019/10/10	111	80 - 120	101	80 - 120	<0.10	ug/L				
6383677	Total Barium (Ba)	2019/10/10	102	80 - 120	104	80 - 120	<1.0	ug/L				
6383677	Total Beryllium (Be)	2019/10/10	99	80 - 120	108	80 - 120	<0.10	ug/L				
6383677	Total Bismuth (Bi)	2019/10/10	82	80 - 120	105	80 - 120	<1.0	ug/L				
6383677	Total Boron (B)	2019/10/10	95	80 - 120	105	80 - 120	<50	ug/L				
6383677	Total Cadmium (Cd)	2019/10/10	100	80 - 120	106	80 - 120	<0.010	ug/L				
6383677	Total Chromium (Cr)	2019/10/10	98	80 - 120	96	80 - 120	<1.0	ug/L				
6383677	Total Cobalt (Co)	2019/10/10	94	80 - 120	96	80 - 120	<0.20	ug/L				
6383677	Total Copper (Cu)	2019/10/10	73 (1)	80 - 120	94	80 - 120	<0.50	ug/L				
6383677	Total Iron (Fe)	2019/10/10	101	80 - 120	102	80 - 120	<10	ug/L				
6383677	Total Lead (Pb)	2019/10/10	99	80 - 120	107	80 - 120	<0.20	ug/L				
6383677	Total Lithium (Li)	2019/10/10	103	80 - 120	109	80 - 120	<2.0	ug/L				
6383677	Total Manganese (Mn)	2019/10/10	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6383677	Total Molybdenum (Mo)	2019/10/10	NC	80 - 120	104	80 - 120	<1.0	ug/L				
6383677	Total Nickel (Ni)	2019/10/10	90	80 - 120	95	80 - 120	<1.0	ug/L				
6383677	Total Selenium (Se)	2019/10/10	106	80 - 120	103	80 - 120	<0.10	ug/L				
6383677	Total Silicon (Si)	2019/10/10	109	80 - 120	106	80 - 120	<100	ug/L				
6383677	Total Silver (Ag)	2019/10/10	93	80 - 120	106	80 - 120	<0.020	ug/L				
6383677	Total Strontium (Sr)	2019/10/10	NC	80 - 120	112	80 - 120	<1.0	ug/L				
6383677	Total Thallium (Tl)	2019/10/10	103	80 - 120	107	80 - 120	<0.010	ug/L				
6383677	Total Tin (Sn)	2019/10/10	94	80 - 120	95	80 - 120	<5.0	ug/L				
6383677	Total Titanium (Ti)	2019/10/10	105	80 - 120	104	80 - 120	<5.0	ug/L				
6383677	Total Uranium (U)	2019/10/10	115	80 - 120	112	80 - 120	<0.10	ug/L				
6383677	Total Vanadium (V)	2019/10/10	98	80 - 120	95	80 - 120	<5.0	ug/L				
6383677	Total Zinc (Zn)	2019/10/10	91	80 - 120	100	80 - 120	<5.0	ug/L				
6383677	Total Zirconium (Zr)	2019/10/10	108	80 - 120	106	80 - 120	<0.10	ug/L				



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VERITAS

BV Labs Job #: B9R7358

Report Date: 2019/10/17

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6384534	Dissolved Thallium (TI)	2019/10/11	89	80 - 120	100	80 - 120	<0.010	ug/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



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VERITAS

BV Labs Job #: B9R7358

Report Date: 2019/10/17

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

Rob Reinert, B.Sc., Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9R7358

Report Date: 2019/10/17

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						

Your C.O.C. #: N-A

Attention: Roger Turmel

H2LAB-Val d'Or
900, 5^e Avenue
Val d'or, QC
Canada J9P 1B9

Report Date: 2019/07/02

Report #: R2451972

Version: 1 - Final

CERTIFICATE OF ANALYSIS

LAB BV JOB #: B926554

Received: 2019/06/26, 10:00

Sample Matrix: Waste Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Primary Reference
	Quantity	Extracted			
Daphnia - LC50 (acute-48h)-Federal	1	N/A	2019/06/27	QUE SOP-00406	EPS1/RM/14
Hardness by ICP-MS	1	2019/06/26	2019/06/27	QUE SOP-00132	MA.200-Mét. 1.2 R5 m
Rainbow Trout - LC50 (acute-96h)	1	N/A	2019/06/27	QUE SOP - 00408	EPS1/RM/13

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the MELCC unless stated otherwise.

Your C.O.C. #: N-A

Attention: Roger Turmel

H2LAB-Val d'Or
900, 5^e Avenue
Val d'or, QC
Canada J9P 1B9

Report Date: 2019/07/02

Report #: R2451972

Version: 1 - Final

CERTIFICATE OF ANALYSIS

LAB BV JOB #: B926554

Received: 2019/06/26, 10:00

Encryption Key



**AUTHORIZED REPORT
RAPPORT AUTORISÉ**

Laboratoires Bureau Veritas

02 Jul 2019 08:28:09

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alexe Martineau,

Email: Alexe.MARTINEAU@bvlab.com

Phone# (418) 658-5784

=====

This report has been generated and distributed using a secure automated process.

Lab BV has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

ECOTOXICOLOGY (WASTE WATER)

Lab BV ID		GP4558	
Sampling Date		2019/06/24 07:00	
COC Number		N-A	
Received Temperature (°C)		19.3	
	Units	87738 MEL-14	QC Batch
Daphnia Magna - Can			
LC50	%v/v	ATTACHED	2003009
Rainbow Trout			
LC50	%v/v	ATTACHED	2003012
QC Batch = Quality Control Batch			
N/A = Not Applicable			



Lab BV Job #: B926554
Report Date: 2019/07/02

H2LAB-Val d'Or
Sampler Initials: BH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Roxane Champagne, B.Sc. Biologist, Analyst 2

Lab BV has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005 (E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



RESULTS OF RAINBOW TROUT - LC50 (ACUTE-96H)

Client : 6088 H2LAB

Job Number: B926554

Client Project Name & Number: -

Test Result:

96 hrs LC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Toxic unit: <1

Comment: Pass

Sample Name : 87738 MEL-14

Description: Beige, translucent, no suspended solids

Sample Collected: Jun 24, 2019 07:00 AM Sampling Method : Grab

Sample Collected By: BH/MG Volume Received: 40L

Sample Received: Jun 26, 2019 10:00 AM pH: 6.6

Analysis Start : Jun 27, 2019 11:25 AM Temperature : 16 °C

Sample Matrix : Waste Water

Sample Number: GP4558-01

Site Collection: MEL-14

Temp.Upon Arrival: 19 °C Storage: 2-6°C

Dissolved Oxygen: 91.0 mg/L

Sample Conductance: 1780 µS/cm

Concentration	Temperature (°C)	pH (pH)	Conductivity (uS/cm)	Dissolved oxygen (%)	Temperature (°C)	pH (pH)	Dissolved oxygen (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
%v/v	0 hr	0 hr	0 hr	0 hr	96 hrs	96 hr	96 hrs	24 hrs	24 hrs	24 hrs	24 hrs	48 hrs
0	16	6.9	173	102.0	15	7.1	97.0	0	0	0	0	0
6.25	16	7.0	269	101.0	15	7.1	98.0	0	0	0	0	0
12.5	16	7.0	379	100.0	15	7.0	95.0	0	0	0	0	0
25	16	7.0	594	91.0	15	7.0	96.0	0	0	0	0	0
50	16	7.0	968	94.0	15	7.1	98.0	0	0	0	0	0
100	16	6.9	1727	103.0	15	7.0	98.0	0	0	0	0	0

Concentration	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)
%v/v	48 hrs	48 hrs	48 hrs	72 hrs	72 hrs	72 hrs	72 hrs	96 hrs	96 hrs	96 hrs	96 hrs
0	0	0	0	0	0	0	0	0	0	0	0
6.25	0	0	0	0	0	0	0	0	0	0	0
12.5	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0

Comments :

Culture/Control/Dilution Water

Dechlorinated municipal tap water

Hardness:

48 mg/l CaCO₃

Other parameters available on request.

Test Conditions

Test concentration : 0,6.25,12.5,25,50,100 (%v/v)

Organisms per Vessel : 10 Test Temperature : 15 ± 1 °C Solution Depth : 35 cm
 Total # of Organisms Used : 60 Pre-aeration Time : 30 min. Rate of Aeration : 6.5±1 mL/min/L
 Test Volume : 16 L Vessel Volume : 20L Test pH Adjusted: No
 Loading Density : 0.4 g/L Photoperiod : 16 hours of light; 8 hours of darkness
 Test vessel: Plastic container with polyethylene bag.

Test Organism :

Rainbow Trout (*Oncorhynchus mykiss*) Source : Piscicultures Les Arpents Verts

Culture Temperature : 15 ± 2 °C Weight (Mean) +- SD : 0.7 ± 0.2 g Length (Mean) +- SD : 4.21 ± 0.30 cm
 Culture Water Renewal : 2 liters/min Weight (Range) : 0.4 – 0.9 g Length (Range) : 3.60 – 4.70 cm
 Culture Photoperiod : 16 hours of light; 8 hours of darkness % Mortality within 7 days : 0%
 Feeding rate and frequency : 1-2x a day; 1-5% of the body weights. Acclimation Time: >14 days

The results contained in this report refer only to the testing of the sample submitted. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

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RESULTS OF RAINBOW TROUT - LC50 (ACUTE-96H)

Client : 6088 H2LAB
Client Project Name & Number: -

Job Number: B926554
Sample Number: GP4558-01

Reference chemical:

Phenol

Test Date:

Jun 27, 2019

Test Endpoint 96 hrs LC50 (95% confidence interval) :

9.00 (6.00, 13.0)mg/L

Statistical Method :

Binomial

Historical Mean LC50 (warning limits) :

10.4 (9.09, 11.9) mg/L

Concentration : 0,4,6,9,13,18 mg/L

Test Method

QUE SOP - 00408. Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout.
EPS1/RM/13 - Second Edition. Environment Canada. 2000. (Including Amendments: May 2007).

This is essentially a 96H static test. Ten individuals are submitted to different effluent concentrations in order to measure the LC50 in controlled temperature, light intensity and loading density.

Method Deviations :

No change

Analyst : Andriy Bukhtiyarov, Jennifer Tremblay

Verified By : Roxane Champagne, Analyst 2

Date: Jul 01, 2019 03:49 PM



RESULTS OF DAPHNIA - LC50 (ACUTE-48H)-FEDERAL

Client : 6088 H2LAB

Job Number: B926554

Client Project Name & Number: -

No. d'échantillon : GP4558-02

Test Result:

48 hrs LC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Toxic unit: <1

48 hrs EC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Comment: Pass

Sample Name : 87738 MEL-14

Sample Matrix : Waste Water

Description: Colorless, translucent, no suspended solids

Sample Prior to Analysis:

Sample Collected: Jun 24, 2019 07:00 AM

Sampling Method : Grab

pH: 7.0

Sample Collected By: BH/MG

Site Collection: MEL-14

Temperature : 20 °C

Sample Received: Jun 26, 2019 10:00 AM

Volume Received: 1L

Dissolved Oxygen: 98.0 mg/L

Analysis Start : Jun 27, 2019 11:00 AM

Temp.Upon Arrival: 19 °C

Sample Conductance: 1788 µS/cm

End : Jun 29, 2019 11:00 AM

Storage: 2-6°C

Hardness: 353 mg CaCO₃/L

Concentration	Temperature (°C)	pH (pH)	Conductivity (µS/cm)	Dissolved oxygen (%)	Temperature (°C)	pH (pH)	Dissolved oxygen (%)	Immobility (#)	Immobility (%)	Mortality (#)	Mortality (%)
%v/v	0 hr	0 hr	0 hr	0 hr	48 hrs	48 hr	48 hrs	48 hrs	48 hrs	48 hrs	48 hrs
0	21	7.8	499	97.0	19	7.9	94.0	0	0	1	10.0
6.25	21	7.8	587	96.0	19	7.9	95.0	0	0	1	10.0
12.5	21	7.7	668	97.0	18	7.9	96.0	0	0	0	0
25	20	7.7	835	98.0	19	7.8	95.0	0	0	1	10.0
50	20	7.5	1152	98.0	19	7.7	97.0	0	0	1	10.0
100	20	7.2	1800	99.0	19	7.4	96.0	0	0	0	0

Comments :

Culture/Control/Dilution Water:

Reconstituted water for Daphnia

Hardness:

170 mg/l CaCO₃

Other parameters available on request.

Test Conditions

Test concentration : 0,6.25,12.5,25,50,100 (%v/v)

Organisms per Vessel :

10

Pre-aeration Time :

0 min

Rate of Pre-aeration :

40±5 mL/min/L

Total # of Organisms Used :

60

Test Temperature :

20 ± 2 °C

Test Hardness Adjusted :

No

Test Volume :

150 mL

Vessel Volume :

200 ml

Test pH Adjusted:

No

Loading Density :

15.0 mL/Daphnia

Photoperiod :

16 hours of light; 8 hours of darkness

Test Organism :

Daphnia magna

Source : BV Lab Culture

Age at Test Initiation :

<24 hres

Average Brood Size :

27.9

Culture Photoperiod :

16 hours of light; 8 hours of darkness

% Mortality within 7 days :

0

Culture Temperature :

20 ± 2 °C

Time To First Brood :

11 Days

Culture Diet

Fed once a day.

Reference chemical:

Potassium Dichromate

Test Date:

Jun 18, 2019

Test Endpoint 48 hrs LC50 (95% confidence interval) :

0.15 (<0.0625, 0.25)mg/L

Statistical Method :

Binomial

Historical Mean LC50 (warning limits) :

0.17 (0.13, 0.23) mg/L

Concentration : 0,0.0625,0.125,0.25,0.5,1 mg/L

Test Method

QUE SOP-00406. Reference Method for Determining Acute Lethality of Effluents to Daphnia magna. EPS1/RM/14 - Second Edition. Environment Canada. 2000.

This is essentially a 48H static test. Ten individuals are submitted to different effluent concentrations in order to measure the LC50 in controlled temperature, light intensity and loading density.

Method Deviations:

No change

The results contained in this report refer only to the testing of the sample submitted. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

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RESULTS OF DAPHNIA - LC50 (ACUTE-48H)-FEDERAL

Client : 6088 H2LAB

Job Number: B926554

Client Project Name & Number: -

No. d'échantillon : GP4558-02

Analyst : Roxane Champagne

A handwritten signature in black ink, appearing to read "Roxane Champagne", written over a horizontal line.

Verified By : Roxane Champagne, Analyst 2

Date: Jul 01, 2019 03:56 PM

Your C.O.C. #: N-A

Attention: Roger Turmel

H2LAB-Val d'Or
900, 5^e Avenue
Val d'Or, QC
Canada J9P 1B9

Report Date: 2019/07/26

Report #: R2459448

Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

LAB BV JOB #: B930060

Received: 2019/07/11, 09:30

Sample Matrix: Waste Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Primary Reference
	Quantity	Extracted			
Daphnia - LC50 (acute-48h)-Federal	1	N/A	2019/07/13	QUE SOP-00406	EPS1/RM/14
Hardness by ICP-MS	1	2019/07/11	2019/07/11	QUE SOP-00132	MA.200–Mét. 1.2 R5 m
Rainbow Trout - LC50 (acute-96h)	1	N/A	2019/07/12	QUE SOP - 00408	EPS1/RM/13

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the MELCC unless stated otherwise.

Your C.O.C. #: N-A

Attention: Roger Turmel

H2LAB-Val d'Or
900, 5^e Avenue
Val d'or, QC
Canada J9P 1B9

Report Date: 2019/07/26

Report #: R2459448

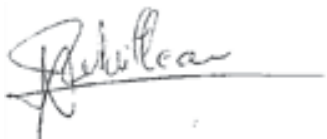
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

LAB BV JOB #: B930060

Received: 2019/07/11, 09:30

Encryption Key



Sophie Retailleau
Project Manager
26 Jul 2019 10:19:20

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Sophie Retailleau, Project Manager

Email: Sophie.RETAILLEAU@bvlabs.com

Phone# (514)448-9001 Ext:7066232

=====

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Lab BV Job #: B930060

Report Date: 2019/07/26

H2LAB-Val d'Or

Sampler Initials: DM

ECOTOXICOLOGY (WASTE WATER)

Lab BV ID		GR2607	
Sampling Date		2019/07/09 06:41	
COC Number		N-A	
Received Temperature (°C)		22	
	Units	88662 MEL-14	QC Batch
Daphnia Magna - Can			
LC50	%v/v	CI-JOINT	2008105
Rainbow Trout			
LC50	%v/v	CI-JOINT	2007647
QC Batch = Quality Control Batch			
N/A = Not Applicable			



BUREAU
VERITAS

Lab BV Job #: B930060

Report Date: 2019/07/26

H2LAB-Val d'Or

Sampler Initials: DM

GENERAL COMMENTS

Results relate only to the items tested.



BUREAU
VERITAS

Lab BV Job #: B930060

Report Date: 2019/07/26

H2LAB-Val d'Or

Sampler Initials: DM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Angela Paquet-Walsh, M.Sc. Biologist, Senior Analyst

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RESULTS OF RAINBOW TROUT - LC50 (ACUTE-96H)

Client : 6088 H2LAB

Job Number: B930060

Client Project Name & Number: -

Test Result:

96 hrs LC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Toxic unit: <1

Comment: Non-toxic

Sample Name : 88662 MEL-14

Description: Beige, translucent, no suspended solids

Sample Collected: Jul 09, 2019 06:41 AM Sampling Method : Grab

Sample Collected By: DM/AG Volume Received: 40L

Sample Received: Jul 11, 2019 09:30 AM pH: 6.7

Analysis Start : Jul 12, 2019 11:30 AM Temperature : 16 °C

Sample Matrix : Waste Water

Sample Number: GR2607-01

Site Collection: MELIADINE PROJECT

Temp.Upon Arrival: 22 °C Storage: 2-6 °C

Dissolved Oxygen: 91.0 mg/L

Sample Conductance: 1653 µS/cm

Concentration	Temperature (°C)	pH (pH)	Conductivity (µS/cm)	Dissolved oxygen (%)	Temperature (°C)	pH (pH)	Dissolved oxygen (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
%v/v	0 hr	0 hr	0 hr	0 hr	96 hrs	96 hr	96 hrs	24 hrs	24 hrs	24 hrs	24 hrs	48 hrs
0	16	7.0	200	98.0	15	7.1	93.0	0	0	0	0	0
6.25	16	7.0	294	97.0	15	7.1	95.0	0	0	0	0	0
12.5	16	7.0	390	97.0	15	7.1	94.0	0	0	0	0	0
25	16	7.0	581	98.0	15	7.1	95.0	0	0	0	0	0
50	16	6.9	953	97.0	15	7.1	95.0	0	0	0	0	0
100	16	6.8	1652	95.0	15	7.0	96.0	0	0	0	0	0

Concentration	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)
%v/v	48 hrs	48 hrs	48 hrs	72 hrs	72 hrs	72 hrs	72 hrs	96 hrs	96 hrs	96 hrs	96 hrs
0	0	0	0	0	0	0	0	0	0	0	0
6.25	0	0	0	0	0	0	0	0	0	0	0
12.5	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0

Comments : Note that all dissolved oxygen values are in%, although for the result before analysis the unit entered is in mg / L.
V2 rapport: anglais

Culture/Control/Dilution Water

Dechlorinated municipal tap water

Hardness:

54 mg/l CaCO₃

Other parameters available on request.

Test Conditions

Test concentration : 0,6.25,12.5,25,50,100 (%v/v)

Organisms per Vessel : 10 Test Temperature : 15 ± 1 °C Solution Depth : 35 cm
Total # of Organisms Used : 60 Pre-aeration Time : 30 min. Rate of Aeration : 6.5±1 mL/min/L
Test Volume : 16 L Vessel Volume : 20L Test pH Adjusted: No
Loading Density : 0.2 g/L Photoperiod : 16 hours of light; 8 hours of darkness
Test vessel: Plastic container with polyethylene bag.

Test Organism :

Rainbow Trout (*Oncorhynchus mykiss*)

Source :

Piscicultures Les Arpents Verts

Culture Temperature : 15 ± 2 °C Weight (Mean) +- SD : 0.3 ± 0.1 g Length (Mean) +- SD : 3.37 ± 0.35 cm

Culture Water Renewal : 2 liters/min Weight (Range) : 0.2 – 0.6 g Length (Range) : 2.90 – 4.10 cm

Culture Photoperiod : 16 hours of light; 8 hours of darkness % Mortality within 7 days : 0%

Feeding rate and frequency : 1-2x a day; 1-5% of the body weights. Acclimation Time: >14 days

The results contained in this report refer only to the testing of the sample submitted. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.



RESULTS OF RAINBOW TROUT - LC50 (ACUTE-96H)

Client : 6088 H2LAB
Client Project Name & Number: -

Job Number: B930060
Sample Number: GR2607-01

Reference chemical:

Phenol

Test Date:

Jul 18, 2019

Test Endpoint 96 hrs LC50 (95% confidence interval) :

10.1 (6.00, 13.0)mg/L

Statistical Method :

Binomial

Historical Mean LC50 (warning limits) :

10.3 (8.93, 11.8) mg/L

Concentration : 0,4,6,9,13,18 mg/L

Test Method

QUE SOP - 00408. Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout.
EPS1/RM/13 - Second Edition. Environment Canada. 2000. (Including Amendments: May 2007).

This is essentially a 96H static test. Ten individuals are submitted to different effluent concentrations in order to measure the LC50 in controlled temperature, light intensity and loading density.

Method Deviations :

No change was made to the method.

Analyst : Andriy Bukhtiyarov, Jennifer Tremblay, Vincent Langevin

Verified By : Angela Paquet-Walsh, Senior Analyst

Date: Jul 26, 2019 10:11 AM



RESULTS OF DAPHNIA - LC50 (ACUTE-48H)-FEDERAL

Client : 6088 H2LAB

Job Number: B930060

Client Project Name & Number: -

No. d'échantillon : GR2607-02

Test Result:

48 hrs LC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Toxic unit: <1

48 hrs EC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Comment: Non-toxic

Sample Name : 88662 MEL-14

Sample Matrix : Waste Water

Description: Colorless, translucent, no suspended solids

Sample Prior to Analysis:

Sample Collected: Jul 09, 2019 06:41 AM

Sampling Method : Grab

pH: 6.9

Sample Collected By: DM

Site Collection: MELIADINE PROJECT

Temperature : 19 °C

Sample Received: Jul 11, 2019 09:30 AM

Volume Received: 1L

Dissolved Oxygen: 93.0 mg/L

Analysis Start : Jul 13, 2019 12:40 PM

Temp.Upon Arrival: 22 °C

Sample Conductance: 1849 µS/cm

End : Jul 15, 2019 12:45 PM

Storage: 2-6°C

Hardness: 361 mg CaCO₃/L

Concentration	Temperature (°C)	pH (pH)	Conductivity (µS/cm)	Dissolved oxygen (%)	Temperature (°C)	pH (pH)	Dissolved oxygen (%)	Immobility (#)	Immobility (%)	Mortality (#)	Mortality (%)
%v/v	0 hr	0 hr	0 hr	0 hr	48 hrs	48 hr	48 hrs	48 hrs	48 hrs	48 hrs	48 hrs
0	20	7.9	497	94.0	20	7.9	93.0	0	0	0	0
6.25	20	7.9	570	96.0	20	7.9	94.0	0	0	0	0
12.5	20	7.8	657	94.0	20	7.9	94.0	0	0	0	0
25	20	7.7	834	96.0	20	7.8	93.0	0	0	0	0
50	20	7.6	1173	95.0	20	7.7	95.0	0	0	0	0
100	19	7.1	1857	94.0	20	7.5	92.0	0	0	0	0

Comments : Note that all dissolved oxygen values are in%, although for the result before analysis the unit entered is in mg / L.
V2 rapport: anglais

Culture/Control/Dilution Water:

Reconstituted water for Daphnia

Hardness: 180 mg/l CaCO₃

Other parameters available on request.

Test Conditions

Test concentration : 0,6.25,12.5,25,50,100 (%v/v)

Organisms per Vessel : 10 Pre-aeration Time : 0 min Rate of Pre-aeration : 40±5 mL/min/L

Total # of Organisms Used : 60 Test Temperature : 20 ± 2 °C Test Hardness Adjusted : No

Test Volume : 150 mL Vessel Volume : 200 ml Test pH Adjusted: No

Loading Density : 15.0 mL/Daphnia Photoperiod : 16 hours of light; 8 hours of darkness

Test Organism :

Daphnia magna

Source : BV Lab Culture

Age at Test Initiation : <24 hres Average Brood Size : 31.9

Culture Photoperiod : 16 hours of light; 8 hours of darkness % Mortality within 7 days : 1.0

Culture Temperature : 20 ± 2 °C Time To First Brood : 8 Days

Culture Diet Fed once a day.

Reference chemical:

Potassium Dichromate

Test Date: Jul 18, 2019

Test Endpoint 48 hrs LC50 (95% confidence interval) : 0.090 (0.070, 0.13)mg/L

Statistical Method : Probit

Historical Mean LC50 (warning limits) : 0.14 (0.078, 0.25) mg/L

Concentration : 0,0.0625,0.125,0.25,0.5,1 mg/L

Test Method

QUE SOP-00406. Reference Method for Determining Acute Lethality of Effluents to Daphnia magna. EPS1/RM/14 - Second Edition. Environment Canada. 2000.

This is essentially a 48H static test. Ten individuals are submitted to different effluent concentrations in order to measure the LC50 in controlled temperature, light intensity and loading density.

Method Deviations: No change was made to the method.

The results contained in this report refer only to the testing of the sample submitted. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

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RESULTS OF DAPHNIA - LC50 (ACUTE-48H)-FEDERAL

Client : 6088 H2LAB

Job Number: B930060

Client Project Name & Number: -

No. d'échantillon : GR2607-02

Analyst : Angela Paquet-Walsh, Mariem Barhoumi, Pierre Chabot, Sarah Derosby

A handwritten signature in blue ink that reads "Angela PW".

Verified By : Angela Paquet-Walsh, Senior Analyst

Date: Jul 26, 2019 10:13 AM

Your C.O.C. #: N-A

Attention: Roger TurmelH2LAB-Val d'Or
900, 5^e Avenue
Val d'Or, QC
Canada J9P 1B9**Report Date: 2019/08/26**

Report #: R2495403

Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT**LAB BV JOB #: B936249****Received: 2019/08/08, 09:30**Sample Matrix: Waste Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Primary Reference
	Quantity	Extracted			
Daphnia - LC50 (acute-48h)-Federal	1	N/A	2019/08/09	QUE SOP-00406	EPS1/RM/14
Hardness by ICP-MS	1	2019/08/08	2019/08/08	QUE SOP-00132	MA.200–Mét. 1.2 R5 m
Rainbow Trout - LC50 (acute-96h)	1	N/A	2019/08/09	QUE SOP - 00408	EPS1/RM/13

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the MELCC unless stated otherwise.

Your C.O.C. #: N-A

Attention: Roger Turmel

H2LAB-Val d'Or
900, 5^e Avenue
Val d'or, QC
Canada J9P 1B9

Report Date: 2019/08/26

Report #: R2495403

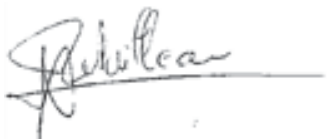
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

LAB BV JOB #: B936249

Received: 2019/08/08, 09:30

Encryption Key



Sophie Retailleau
Project Manager
27 Aug 2019 16:42:31

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alexe Martineau,

Email: Alexe.MARTINEAU@bvlabs.com

Phone# (418) 658-5784

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Lab BV Job #: B936249
Report Date: 2019/08/26

H2LAB-Val d'Or
Sampler Initials: N/D

ECOTOXICOLOGY (WASTE WATER)

Lab BV ID		GU7354	
Sampling Date		2019/08/06 07:00	
COC Number		N-A	
Received Temperature (°C)		21.7	
	Units	89906 MEL-14	QC Batch
Daphnia Magna - Can			
LC50	%v/v	CI-JOINT	2016939
Rainbow Trout			
LC50	%v/v	CI-JOINT	2016892
QC Batch = Quality Control Batch			
N/A = Not Applicable			



BUREAU
VERITAS

Lab BV Job #: B936249

Report Date: 2019/08/26

H2LAB-Val d'Or

Sampler Initials: N/D

GENERAL COMMENTS

Version 2 : the client asked this report in english.

Results relate only to the items tested.



BUREAU
VERITAS

Lab BV Job #: B936249

Report Date: 2019/08/26

H2LAB-Val d'Or

Sampler Initials: N/D

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Olivier Roberge, B.Sc. Biologist, Analyst 2

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



RESULTS OF DAPHNIA - LC50 (ACUTE-48H)-FEDERAL

Client : 6088 H2LAB

Job Number: B936249

Client Project Name & Number: -

No. d'échantillon : GU7354-02

Test Result:

48 hrs LC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Toxic unit: <1

48 hrs EC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Comment: non-toxic

Sample Name : 89906 MEL-14

Sample Matrix : Waste Water

Description: Colorless, translucent, no suspended solids

Sample Prior to Analysis:

Sample Collected: Aug 06, 2019 07:00 AM

Sampling Method : Grab

pH: 7.3

Sample Collected By: N/D

Site Collection: N/D

Temperature : 19 °C

Sample Received: Aug 08, 2019 09:30 AM

Volume Received: 1L

Dissolved Oxygen: 93.0 mg/L

Analysis Start : Aug 09, 2019 12:30 PM

Temp.Upon Arrival: 22 °C

Sample Conductance: 1421 µS/cm

End : Aug 11, 2019 11:30 AM

Storage: 2-6°C

Hardness: 211 mg CaCO₃/L

Concentration	Temperature (°C)	pH (pH)	Conductivity (µS/cm)	Dissolved oxygen (%)	Temperature (°C)	pH (pH)	Dissolved oxygen (%)	Immobility (#)	Immobility (%)	Mortality (#)	Mortality (%)
%v/v	0 hr	0 hr	0 hr	0 hr	48 hrs	48 hr	48 hrs	48 hrs	48 hrs	48 hrs	48 hrs
0	19	7.9	475	95.0	21	7.9	86.0	0	0	1	10.0
6.25	20	7.9	569	95.0	21	7.9	87.0	0	0	0	0
12.5	20	7.9	626	97.0	20	7.9	88.0	0	0	0	0
25	20	7.9	743	96.0	21	7.8	88.0	0	0	0	0
50	20	7.8	963	97.0	21	7.8	87.0	0	0	1	10.0
100	19	7.6	1425	98.0	21	7.5	87.0	0	0	0	0

Comments : Please note that all dissolved oxygen data are in %, even if the result before analysis is expressed in mg/L.

Culture/Control/Dilution Water:

Reconstituted water for Daphnia

Hardness:

180 mg/l CaCO₃

Other parameters available on request.

Test Conditions

Test concentration : 0,6.25,12.5,25,50,100 (%v/v)

Organisms per Vessel : 10

Pre-aeration Time : 0 min

Rate of Pre-aeration : 40±5 mL/min/L

Total # of Organisms Used : 60

Test Temperature : 20 ± 2 °C

Test Hardness Adjusted : No

Test Volume : 150 mL

Vessel Volume : 200 ml

Test pH Adjusted: No

Loading Density : 15.0 mL/Daphnia

Photoperiod : 16 hours of light; 8 hours of darkness

Test Organism :

Daphnia magna

Source : BV Lab Culture

Age at Test Initiation : <24 hres

Average Brood Size : 29.6

Culture Photoperiod : 16 hours of light; 8 hours of darkness

% Mortality within 7 days : 1

Culture Temperature : 20 ± 2 °C

Time To First Brood : 9 Days

Culture Diet

Fed once a day.

Reference chemical:

Potassium Dichromate

Test Date: Aug 05, 2019

Test Endpoint 48 hrs LC50 (95% confidence interval) :

0.11 (0.080, 0.14)mg/L

Statistical Method : Probit

Historical Mean LC50 (warning limits) :

0.13 (0.073, 0.23) mg/L

Concentration : 0,0.0625,0.125,0.25,0.5,1 mg/L

Test Method

QUE SOP-00406. Reference Method for Determining Acute Lethality of Effluents to Daphnia magna. EPS1/RM/14 - Second Edition. Environment Canada. 2000.

This is essentially a 48H static test. Ten individuals are submitted to different effluent concentrations in order to measure the LC50 in controlled temperature, light intensity and loading density.

Method Deviations:

Aucune

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RESULTS OF DAPHNIA - LC50 (ACUTE-48H)-FEDERAL

Client : 6088 H2LAB

Job Number: B936249

Client Project Name & Number: -

No. d'échantillon : GU7354-02

Analyst : Clement Balac, Pierre Chabot, Roxane Champagne

Verified By : Olivier Roberge, Analyst 2

Date: Aug 26, 2019 12:21 PM

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RESULTS OF RAINBOW TROUT - LC50 (ACUTE-96H)

Client : 6088 H2LAB

Job Number: B936249

Client Project Name & Number: -

Test Result:

96 hrs LC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Toxic unit: <1

Comment: Non-Toxic

Sample Name : 89906 MEL-14

Description: Colorless, translucent, no suspended solids

Sample Matrix : Waste Water

Sample Collected: Aug 06, 2019 07:00 AM Sampling Method : Grab

Sample Number: GU7354-01

Sample Collected By: N/D Volume Received: 40l

Site Collection: N/D

Sample Received: Aug 08, 2019 09:30 AM pH: 6.9

Temp. Upon Arrival: 22 °C Storage: 2-6 °C

Analysis Start : Aug 09, 2019 11:30 AM Temperature : 16 °C

Dissolved Oxygen: 96.0 mg/L

Sample Conductance: 1449 µS/cm

Concentration	Temperature (°C)	pH (pH)	Conductivity (µS/cm)	Dissolved oxygen (%)	Temperature (°C)	pH (pH)	Dissolved oxygen (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
%v/v	0 hr	0 hr	0 hr	0 hr	96 hrs	96 hr	96 hrs	24 hrs	24 hrs	24 hrs	24 hrs	48 hrs
0	15	7.1	228	100.0	15	7.2	98.0	0	0	0	0	0
6.25	15	7.1	301	100.0	15	7.2	98.0	0	0	0	0	0
12.5	15	7.1	384	101.0	15	7.3	99.0	0	0	0	0	0
25	15	7.1	550	100.0	15	7.3	99.0	0	0	0	0	0
50	16	7.1	845	100.0	15	7.2	99.0	0	0	0	0	0
100	16	6.9	1447	99.0	15	7.1	98.0	0	0	0	0	0

Concentration	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)
%v/v	48 hrs	48 hrs	48 hrs	72 hrs	72 hrs	72 hrs	72 hrs	96 hrs	96 hrs	96 hrs	96 hrs
0	0	0	0	0	0	0	0	0	0	0	0
6.25	0	0	0	0	0	0	0	0	0	0	0
12.5	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0

Comments : Please note that all dissolved oxygen data are in %, even if the result before analysis is expressed in mg/L.

Culture/Control/Dilution Water

Dechlorinated municipal tap water

Hardness:

55.4 mg/l CaCO₃

Other parameters available on request.

Test Conditions

Test concentration : 0,6.25,12.5,25,50,100 (%v/v)

Organisms per Vessel : 10 Test Temperature : 15 ± 1 °C Solution Depth : 35 cm
 Total # of Organisms Used : 60 Pre-aeration Time : 30 min. Rate of Aeration : 6.5±1 mL/min/L
 Test Volume : 16 L Vessel Volume : 20L Test pH Adjusted: No
 Loading Density : 0.3 g/L Photoperiod : 16 hours of light; 8 hours of darkness
 Test vessel: Plastic container with polyethylene bag.

Test Organism :

Rainbow Trout (*Oncorhynchus mykiss*) Source : Piscicultures Les Arpents Verts

Culture Temperature : 15 ± 2 °C Weight (Mean) +- SD : 0.4 ± 0.1 g Length (Mean) +- SD : 3.29 ± 0.23 cm
 Culture Water Renewal : 2 liters/min Weight (Range) : 0.3 – 0.6 g Length (Range) : 3.00 – 3.50 cm
 Culture Photoperiod : 16 hours of light; 8 hours of darkness % Mortality within 7 days : 0.0%
 Feeding rate and frequency : 1-2x a day; 1-5% of the body weights. Acclimation Time: >14 days

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RESULTS OF RAINBOW TROUT - LC50 (ACUTE-96H)

Client : 6088 H2LAB
Client Project Name & Number: -

Job Number: B936249
Sample Number: GU7354-01

Reference chemical:	Phenol	Test Date:	Aug 08, 2019
Test Endpoint 96 hrs LC50 (95% confidence interval) :	9.00 (6.00, 13.0)mg/L	Statistical Method :	Binomial
Historical Mean LC50 (warning limits) :	10.2 (8.84, 11.7) mg/L	Concentration :	0,4,6,9,13,18 mg/L

Test Method QUE SOP - 00408. Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout. EPS1/RM/13 - Second Edition. Environment Canada. 2000. (Including Amendments: May 2007).

This is essentially a 96H static test. Ten individuals are submitted to different effluent concentrations in order to measure the LC50 in controlled temperature, light intensity and loading density.

Method Deviations : Aucune

Analyst : Andriy Bukhtiyarov, Jennifer Tremblay, Olivier Roberge, Pierre Chabot

Verified By : Olivier Roberge, Analyst 2

Date: Aug 26, 2019 12:19 PM



RESULTS OF DAPHNIA - LC50 (ACUTE-48H)-FEDERAL

BUREAU
VERITAS

Client : 6088 H2LAB

Job Number: B948016

Client Project Name & Number: -

No. d'échantillon : HB4060-01

Test Result:

48 hrs LC50 %v/v (95% CL): > 100 (N/A) Statistical Method: Visual

Toxic unit: < 1

48 hrs EC50 %v/v (95% CL): > 100 (N/A) Statistical Method: Visual

Comment: Non Toxique

Sample Name : 92753 MEL-14

Sample Matrix : Waste Water

Description: Colorless, translucent, no suspended solids

Sample Prior to Analysis:

Sample Collected: Oct 01, 2019 06:00 AM

Sampling Method : Grab

pH: 7.3

Sample Collected By: RS

Site Collection: Meliadine

Temperature : 21 °C

Sample Received: Oct 03, 2019 10:00 AM

Volume Received: 1L

Dissolved Oxygen: 109.0 %

Analysis Start : Oct 06, 2019 12:30 PM

Temp. Upon Arrival: 13 °C

Sample Conductance: 2005 µS/cm

End : Oct 08, 2019 11:25 AM

Storage: 2-6°C

Hardness: 410 mg CaCO₃/L

Concentration	Temperature (°C)	pH (pH)	Conductivity (µS/cm)	Dissolved oxygen (%)	Temperature (°C)	pH (pH)	Dissolved oxygen (%)	Immobility (#)	Immobility (%)	Mortality (#)	Mortality (%)
%v/v	0 hr	0 hr	0 hr	0 hr	48 hrs	48 hr	48 hrs	48 hrs	48 hrs	48 hrs	48 hrs
0	20	7.8	463	95.0	20	7.7	94.0	0	0	0	0
6.25	20	7.7	582	96.0	21	7.8	97.0	0	0	0	0
12.5	20	7.7	685	95.0	21	7.8	97.0	0	0	0	0
25	20	7.7	872	95.0	20	7.7	96.0	0	0	0	0
50	20	7.6	1256	95.0	20	7.7	97.0	0	0	0	0
100	21	7.5	2012	94.0	20	7.5	97.0	0	0	0	0

Comments : No discrepancies observed during the test. No change was made to the method.

Culture/Control/Dilution Water:

Reconstituted water for Daphnia

Hardness:

170 mg/l CaCO₃

Other parameters available on request.

Test Conditions

Test concentration : 0,6.25,12.5,25,50,100 (%v/v)

Organisms per Vessel :

10

Pre-aeration Time :

30 min

Rate of Pre-aeration :

40±5 mL/min/L

Total # of Organisms Used :

60

Test Temperature :

20 ± 2 °C

Test Hardness Adjusted :

No

Test Volume :

150 mL

Vessel Volume :

200 ml

Test pH Adjusted:

No

Loading Density :

15.0 mL/Daphnia

Photoperiod :

16 hours of light; 8 hours of darkness

Test Organism :

Daphnia magna

Source : BV Lab Culture

Age at Test Initiation :

<24 hres

Average Brood Size :

34.1

Culture Photoperiod :

16 hours of light; 8 hours of darkness

% Mortality within 7 days :

8.1

Culture Temperature :

20 ± 2 °C

Time To First Brood :

8 Days

Culture Diet

Fed once a day.

Reference chemical:

Potassium Dichromate

Test Date:

Oct 09, 2019

Test Endpoint 48 hrs LC50 (95% confidence interval) :

0.11 (0.070, 0.15)mg/L

Statistical Method :

Probit

Historical Mean LC50 (warning limits) :

0.11 (0.073, 0.18) mg/L

Concentration : 0,0.0625,0.125,0.25,0.5,1 mg/L

Test Method

QUE SOP-00406. Reference Method for Determining Acute Lethality of Effluents to Daphnia magna. EPS1/RM/14 - Second Edition. Environment Canada. 2000.

This is essentially a 48H static test. Ten individuals are submitted to different effluent concentrations in order to measure the LC50 in controlled temperature, light intensity and loading density.

Method Deviations:

Aucune

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RESULTS OF DAPHNIA - LC50 (ACUTE-48H)-FEDERAL


Client : 6088 H2LAB

Job Number: B948016

Client Project Name & Number: -

No. d'échantillon : HB4060-01

Analyst : Aurore Becker, Jennifer Tremblay, Mariem Barhoumi, Maude Marcoux, Olivier Roberge

Verified By : 
Aurélie Lebel, Ecotoxicologist

Date: Nov 05, 2019 02:23 PM

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RESULTS OF RAINBOW TROUT - LC50 (ACUTE-96H)

Client : 6088 H2LAB

Job Number: B948016

Client Project Name & Number: -

Test Result:

96 hrs LC50 %v/v (95% CL): >100 (N/A) Statistical Method: Visual

Toxic unit: <1

Comment: Non-toxique

Sample Name : 92753 MEL-14

Description: Beige, translucent, no suspended solids

Sample Matrix : Waste Water

Sample Collected: Oct 01, 2019 06:00 AM Sampling Method : Grab

Sample Number: HB4060-02

Sample Collected By: RS Volume Received: 40 L

Site Collection: Meliadine

Sample Received: Oct 03, 2019 10:00 AM pH: 7.0

Temp. Upon Arrival: 13 °C Storage: 2-6 °C

Analysis Start : Oct 04, 2019 02:18 PM Temperature : 15 °C

Dissolved Oxygen: 99.0 %

Sample Conductance: 1963 µS/cm

Concentration	Temperature (°C)	pH (pH)	Conductivity (µS/cm)	Dissolved oxygen (%)	Temperature (°C)	pH (pH)	Dissolved oxygen (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
%v/v	0 hr	0 hr	0 hr	0 hr	96 hrs	96 hr	96 hrs	24 hrs	24 hrs	24 hrs	24 hrs	48 hrs
0	15	7.3	192	99.0	15	7.1	99.0	0	0	0	0	0
6.25	15	7.2	301	98.0	15	7.2	99.0	0	0	0	0	0
12.5	15	7.2	422	99.0	15	7.2	99.0	0	0	0	0	0
25	15	7.2	642	98.0	15	7.2	99.0	0	0	0	0	0
50	15	7.2	1100	99.0	15	7.2	98.0	0	0	0	0	0
100	15	7.1	1960	99.0	15	7.2	99.0	0	0	0	0	0

Concentration	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)
%v/v	48 hrs	48 hrs	48 hrs	72 hrs	72 hrs	72 hrs	72 hrs	96 hrs	96 hrs	96 hrs	96 hrs
0	0	0	0	0	0	0	0	0	0	0	0
6.25	0	0	0	0	0	0	0	0	0	0	0
12.5	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0

Comments : No discrepancies observed during the test. No change was made to the method.

Culture/Control/Dilution Water

Dechlorinated municipal tap water

Hardness:

49.2 mg/l CaCO₃

Other parameters available on request.

Test Conditions

Test concentration : 0,6.25,12.5,25,50,100 (%v/v)

Organisms per Vessel : 10

Test Temperature : 15 ± 1 °C

Solution Depth : 35 cm

Total # of Organisms Used : 60

Pre-aeration Time : 30 min.

Rate of Aeration : 6.5±1 mL/min/L

Test Volume : 16 L

Vessel Volume : 20L

Test pH Adjusted: No

Loading Density : 0.3 g/L

Photoperiod : 16 hours of light; 8 hours of darkness

Test vessel:

Plastic container with polyethylene bag.

Test Organism :

Rainbow Trout (*Oncorhynchus mykiss*)

Source : Piscicultures Les Arpents Verts

Culture Temperature : 15 ± 2 °C

Weight (Mean) +- SD : 0.5 ± 0.1 g

Length (Mean) +- SD : 3.59 ± 0.31 cm

Culture Water Renewal : 2 liters/min

Weight (Range) : 0.3 – 0.7 g

Length (Range) : 3.20 – 4.20 cm

Culture Photoperiod : 16 hours of light; 8 hours of darkness

% Mortality within 7 days : 0.0%

Feeding rate and frequency : 1-2x a day; 1-5% of the body weights.

Acclimation Time: >14 days

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RESULTS OF RAINBOW TROUT - LC50 (ACUTE-96H)

Client : 6088 H2LAB
Client Project Name & Number: -

Job Number: B948016
Sample Number: HB4060-02

Reference chemical:	Phenol	Test Date:	Oct 04, 2019
Test Endpoint 96 hrs LC50 (95% confidence interval) :	10.1 (6.00, 13.0)mg/L	Statistical Method :	Binomial
Historical Mean LC50 (warning limits) :	10.2 (8.78, 11.7) mg/L	Concentration :	0,4,6,9,13,18 mg/L

Test Method QUE SOP - 00408. Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout. EPS1/RM/13 - Second Edition. Environment Canada. 2000. (Including Amendments: May 2007).

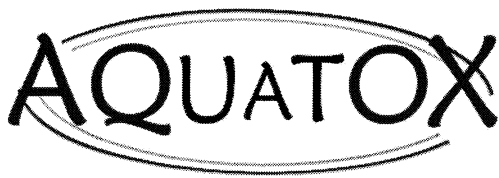
This is essentially a 96H static test. Ten individuals are submitted to different effluent concentrations in order to measure the LC50 in controlled temperature, light intensity and loading density.

Method Deviations : Aucune

Analyst : Andriy Bukhtiyarov, Jennifer Tremblay, Simon-Pierre Tchang

Verified By : Aurélie Lebel, Ecotoxicologist

Date: Nov 05, 2019 02:24 PM



AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

August 12, 2019

Martin Theriault
Agnico Eagle Mines Limited - Meliadine Project
Meliadine Division
Rankin Inlet NU
X0C 0G0

Dear Martin,

Re: Report on Sublethal Toxicity Analysis of Wastewater for MDMER - July 2019

Enclosed are the reports for sublethal testing conducted on the sample of Mel-14d collected 2019-07-09 .
Data are presented in electronic format.

Sublethal toxicity reporting for facilities subject to the MDMER has been modernized in the new Mining Effluent Reporting System (MERS). As part of our services, for a fee, we would be pleased to enter this sublethal toxicity information on your behalf via SWIM/MERS. In an email to reporter@aquatox.ca, please provide an 'ECCC Key', which is supplied to you by SWIM (Single Window Information Manager). In addition, you must have your facility information registered, and you must create a report (Information Related to Effluent and Water Quality Monitoring Studies) in MERS.

We will notify you by email once data entry has been completed, however you are responsible for final submission of the data, as we do not have permissions to release the report.

If you have any questions about the results, do not hesitate to contact me.

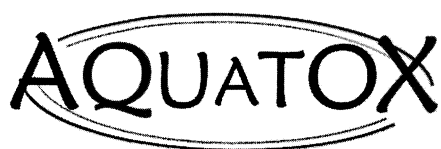
Sincerely,

AQUATOX TESTING & CONSULTING INC.

A handwritten signature in black ink, appearing to read "Nancy Kreager". The signature is fluid and cursive, with the first name "Nancy" being more prominent than the last name "Kreager".

Nancy Kreager
Project Manager

NK/jl



AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

TOXICITY TEST REPORT

Lemna minor
EPS 1/RM/37
Page 1 of 4

Work Order : 239745
Sample Number : 59893

SAMPLE IDENTIFICATION

Company :	Agnico Eagle Mines Limited - Meliadine Project	Date Collected :	2019-07-09
Location :	Rankin Inlet NU	Time Collected :	06:41
Substance :	Mel-14d	Date Received :	2019-07-12
Sampling Method :	Grab	Time Received :	15:35
Sampled By :	C. DeForge/ R. Shwandt	Date Tested :	2019-07-12
Temp. on arrival :	23.0°C		
Sample Description :	Clear, colourless, moderate odour.		
Test Method :	Test for Measuring the Inhibition of Growth using the Freshwater Macrophyte, <i>Lemna minor</i> . Method Development and Application Section, Environmental Technology Centre, Environment Canada. Ottawa, Ontario. Report EPS 1/RM/37, 2nd ed. (January 2007) with deviation(s) as noted below.		

TEST RESULTS

Effect	Value	95% Confidence Limits	Statistical Method
IC25 (Weight)	>97.0%	-	Nonlinear Regression (CETIS) a
IC25 (Frond Production)	>97.0%	-	-

The results reported relate only to the sample tested and as received.

POTASSIUM CHLORIDE REFERENCE TOXICANT DATA

Date Tested :	2019-07-24	Statistical Method :	Non-Linear Regression (CETIS) ^a
Analyst(s) :	RK	Historical Mean IC25 :	2.23 g/L
Test Duration :	7 days	Warning Limits (\pm 2SD) :	1.59 - 3.13 g/L
IC25 (Frond Production) :	2.61 g/L	Growth Medium :	Modified APHA
95% Confidence Limits :	2.20 - 3.01 g/L		

The reference toxicant test was performed under the same experimental conditions as those used with the test sample.

TEST CONDITIONS

Test Organism :	<i>Lemna minor</i> L., Strain 7730	Test Type :	Static (no sub-samples required)
Organism Batch :	Lm19-07	Control/Dilution Medium :	Modified APHA
Culture Origin :	UTCC 492	Medium Preparation Water :	Distilled Water
Test Organism Source :	Axenic in-house culture	Source of Water :	Morning Mist
Culture Medium :	Modified Hoaglands E+	Medium Preparation Chemicals :	Modified APHA stocks A, B, C (10 mL/L)
Age (on Test Day 0) :	10 days	Nutrient Spiking of Sample :	Modified APHA stocks A, B, C (10 mL/L)
Health Criteria (in APHA) :	17-fold frond increase in 7 days	Replicates per Concentration :	4
Organism Acclimation :	25 h in APHA medium	Test Volume per Replicate :	100 mL
Inoculum (Test Day 0) :	2 plants (3 fronds per plant)	Test Vessel :	210 mL glass jar
Sample Filtration :	1 μ m (Whatman GF/C)	Depth of Test Solution :	4.0 cm
Sample Pre-aeration :	20 min. at \leq 100 bubbles/min.	Photoperiod/Light Intensity :	Continuous, 5100 - 5520 lux
pH Adjustment :	None	Test Method Deviation(s) :	See 'Comments'
Hardness Adjustment :	None		

COMMENTS

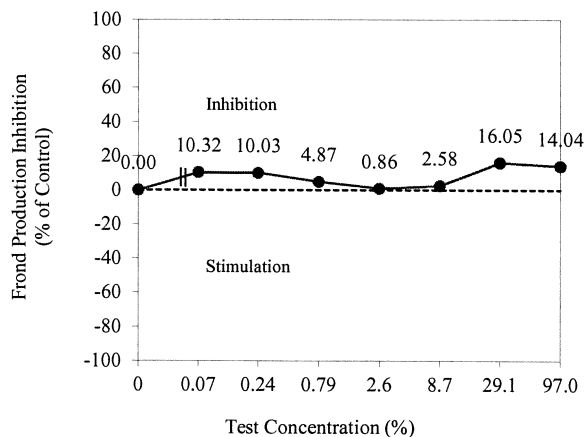
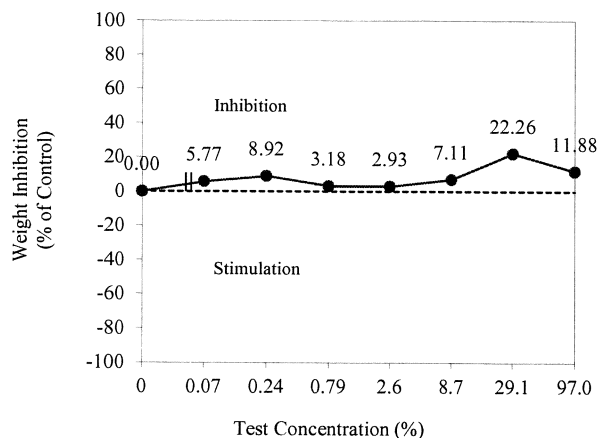
•All test validity criteria as specified in the test method cited above were satisfied.

Noted Deviation(s) : Acclimation of test organisms exceeded the maximum of 24 hours allowed by the test method. Organisms were acclimated for 25 hours. Testing was conducted with the knowledge and consent of the client.

Work Order : 239745

Sample Number : 59893

Lemna minor Growth Inhibition



TEST MONITORING

Initiation Date : 2019-07-12

Initiation Time : 17:20

Initiated By : RK/NK

Termination Date : 2019-07-19

Termination Time : 15:45

Terminated By : NK/RK

Temperature Monitoring

Test Day	Date	Temperature (°C)
0 (unmodified sample)	2019-07-12	24.0
0	2019-07-12	26.0
1	2019-07-13	26.0
2	2019-07-14	26.0
3	2019-07-15	25.0
4	2019-07-16	25.0
5	2019-07-17	25.0
6	2019-07-18	25.5
7	2019-07-19	24.5

pH Monitoring

Concentration (%)	Day 0	Day 7
100 (unmodified sample)	6.7	—
Control	8.2	8.5
0.07	8.2	8.6
0.24	—	—
0.79	—	—
2.6	8.2	8.6
8.7	—	—
29.1	—	—
97.0	7.9	8.3

"—" = not required

REFERENCES

^a CETIS™, © 2000-2018. V.1.9.4.7. Comprehensive Environmental Toxicity Information System. Tidepool Scientific Software, LLC, McKinleyville, CA 95519 [Program on disk and printed User's Guide].

^b Grubbs, F.E., 1969. Procedures for detecting outlying observations in samples. *Technometrics*, 11:1-21.

Date : 2019-08-12
yyyy-mm-dd

Approved By: Nancy Shup
Project Manager

Work Order : 239745

Sample Number : 59893

***Lemna minor* Frond Increase**

Test Concentration (%)	Replicate	Frond Count Day 0*	Frond Count Day 7	Frond Increase	Mean Frond Increase	Standard Deviation	CV (%)	Frond/Root Appearance (Day 7)
Control	A	6	89	83	87.25	8.26	9.5	Fronds healthy, appearance normal in all replicates.
	B	6	95	89				
	C	6	104	98				
	D	6	85	79				
0.07	A	6	83	77	78.25	1.89	2.4	Fronds healthy, appearance normal in all replicates.
	B	6	87	81				
	C	6	84	78				
	D	6	83	77				
0.24	A	6	82	76	78.50	5.69	7.2	Fronds healthy, appearance normal in all replicates.
	B	6	82	76				
	C	6	81	75				
	D	6	93	87				
0.79	A	6	88	82	83.00	5.77	7.0	Fronds healthy, appearance normal in all replicates.
	B	6	96	90				
	C	6	90	84				
	D	6	82	76				
2.6	A	6	94	88	86.50	8.10	9.4	Fronds healthy, appearance normal in all replicates.
	B	6	84	78				
	C	6	89	83				
	D	6	103	97				
8.7	A	6	83	77	85.00	6.27	7.4	Fronds healthy, appearance normal in all replicates.
	B	6	93	87				
	C	6	90	84				
	D	6	98	92				
29.1	A	6	82	76	73.25	7.27	9.9	Fronds healthy, appearance normal in all replicates.
	B	6	86	80				
	C	6	69	63				
	D	6	80	74				
97.0	A	6	80	74	75.00	2.58	3.4	Fronds healthy, appearance normal in all replicates.
	B	6	78	72				
	C	6	82	76				
	D	6	84	78				

NOTES: *No unusual appearance or treatment of culture prior to testing. Test inoculated with healthy plants.

•No stimulation of frond increase compared to the control was observed at any test level.

•A 15.5-fold increase in frond number was observed in the control over the testing period.

•No outlying data points were detected according to Grubbs Test^b.

"-" = not available/not required

Test Data Reviewed By : AW

Date : 2019-08-09

Work Order : 239745
 Sample Number : 59893

***Lemna minor* Frond Weight Data**

Test Concentration (%)	Replicate	Dry Weight of Fronds (mg)	Treatment Mean Dry Weight (mg)	Standard Deviation
Control	A	8.02	8.19	0.59
	B	8.94		
	C	8.26		
	D	7.53		
0.07	A	7.16	7.72	0.37
	B	7.94		
	C	7.88		
	D	7.88		
0.24	A	7.57	7.46	0.47
	B	7.19		
	C	7.00		
	D	8.07		
0.79	A	7.67	7.93	0.51
	B	8.67		
	C	7.84		
	D	7.53		
2.6	A	8.23	7.95	0.59
	B	7.25		
	C	7.72		
	D	8.59		
8.7	A	7.25	7.61	0.29
	B	7.50		
	C	7.77		
	D	7.90		
29.1	A	6.83	6.37	0.39
	B	6.53		
	C	5.96		
	D	6.14		
97.0	A	7.17	7.22	0.16
	B	7.08		
	C	7.17		
	D	7.44		

NOTES :

- No stimulation of weight compared to the control was observed at any test level.
- No outlying data points were detected according to Grubbs Test (CETIS)^a.

"—" = not available/not required

Test Data Reviewed By : IL
 Date : 2019-08-09

AQUATOX

039745

Voice: (519) 763-4412 **Fax:** (519) 763-4419

P.O. Number:	644699
Field Sampler Name (print):	Cassandra DeForge / Randy Shwandt
Signature:	
Affiliation:	Agnico Eagle Mines Ltd - Heliadine Division
Sample Storage (prior to shipping):	Shipped immediately after
Custody Relinquished by:	Sampling Cassandra DeForge
Date/Time Shipped:	2019-07-09

Client:	Agnico-Eagle Mines Limited Helix Mine Project Kenkin Inc., Neenawut, Canada XDC 060
Phone:	(819) 759-3555 (ext 3996)
Fax:	
Contact:	Dan Gordon or Sean Arruda

[illegible]

Please list any special requests or instructions:

For Lab Use Only

Received By: mw/TA

Date: 2019-07-10

Time: 15:35

Storage Location: _____

Storage Temp. (°C) _____



AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

September 11, 2019

Martin Theriault
Agnico Eagle Mines Limited - Meliadine Project
Meliadine Division
Rankin Inlet NU
X0C 0G0

Dear Martin,

Re: Report on Sublethal Toxicity Analysis of Wastewater for MDMER - August 2019

Enclosed are the reports for sublethal testing conducted on the sample of MEL-14d collected 2019-08-13. Data are presented in electronic format.

Sublethal toxicity reporting for facilities subject to the MDMER has been modernized in the new Mining Effluent Reporting System (MERS). As part of our services, for a fee, we would be pleased to enter this sublethal toxicity information on your behalf via SWIM/MERS. In an email to reporter@aquatox.ca, please provide an 'ECCC Key', which is supplied to you by SWIM (Single Window Information Manager). In addition, you must have your facility information registered, and you must create a report (Information Related to Effluent and Water Quality Monitoring Studies) in MERS.

We will notify you by email once data entry has been completed, however you are responsible for final submission of the data, as we do not have permissions to release the report.

If you have any questions about the results, do not hesitate to contact me.

Sincerely,

AQUATOX TESTING & CONSULTING INC.

A handwritten signature in cursive script that reads "Nancy Kreager".

Nancy Kreager
Project Manager

NK/jl



AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

TOXICITY TEST REPORT

Lemna minor
EPS 1/RM/37
Page 1 of 4

Work Order : 240044
Sample Number : 60334

SAMPLE IDENTIFICATION

Company :	Agnico Eagle Mines Limited - Meliadine Project	Date Collected :	2019-08-13
Location :	Rankin Inlet NU	Time Collected :	07:15
Substance :	MEL-14d	Date Received :	2019-08-16
Sampling Method :	Grab	Time Received :	09:45
Sampled By :	B. Hodgins	Date Tested :	2019-08-16
Temp. on arrival :	19.0°C		
Sample Description :	Clear, colourless, odourless.		
Test Method :	Test for Measuring the Inhibition of Growth using the Freshwater Macrophyte, <i>Lemna minor</i> . Method Development and Application Section, Environmental Technology Centre, Environment Canada. Ottawa, Ontario. Report EPS 1/RM/37, 2nd ed. (January 2007).		

TEST RESULTS

Effect	Value	95% Confidence Limits	Statistical Method
IC25 (Weight)	>97.0%	-	-
IC25 (Frond Production)	>97.0%	-	-

The results reported relate only to the sample tested and as received.

POTASSIUM CHLORIDE REFERENCE TOXICANT DATA

Date Tested :	2019-08-22	Statistical Method :	Non-Linear Regression (CETIS) ^a
Analyst(s) :	MJT, AS	Historical Mean IC25 :	2.25 g/L
Test Duration :	7 days	Warning Limits (\pm 2SD) :	1.59 - 3.18 g/L
IC25 (Frond Production) :	1.99 g/L	Growth Medium :	Modified APHA
95% Confidence Limits :	1.63 - 2.36 g/L		

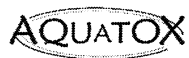
The reference toxicant test was performed under the same experimental conditions as those used with the test sample.

TEST CONDITIONS

Test Organism :	<i>Lemna minor</i> L., Strain 7730	Test Type :	Static (no sub-samples required)
Organism Batch :	Lm19-08	Control/Dilution Medium :	Modified APHA
Culture Origin :	UTCC 492	Medium Preparation Water :	Distilled Water
Test Organism Source :	Axenic in-house culture	Source of Water :	Morning Mist
Culture Medium :	Modified Hoaglands E+	Medium Preparation Chemicals :	Modified APHA stocks A, B, C (10 mL/L)
Age (on Test Day 0) :	10 days	Nutrient Spiking of Sample :	Modified APHA stocks A, B, C (10 mL/L)
Health Criteria (in APHA) :	23.33-fold frond increase in 7 days	Replicates per Concentration :	4
Organism Acclimation :	21:05 h in APHA medium	Test Volume per Replicate :	100 mL
Inoculum (Test Day 0) :	2 plants (3 fronds per plant)	Test Vessel :	210 mL glass jar
Sample Filtration :	1 μ m (Whatman GF/C)	Depth of Test Solution :	4.0 cm
Sample Pre-aeration :	20 min. at \leq 100 bubbles/min.	Photoperiod/Light Intensity :	Continuous, 4900 - 5410 lux
pH Adjustment :	None	Test Method Deviation(s) :	None
Hardness Adjustment :	None		

COMMENTS

•All test validity criteria as specified in the test method cited above were satisfied.



TOXICITY TEST REPORT

Lemna minor

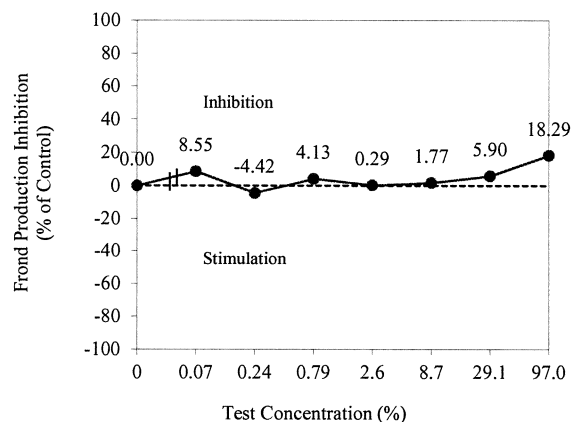
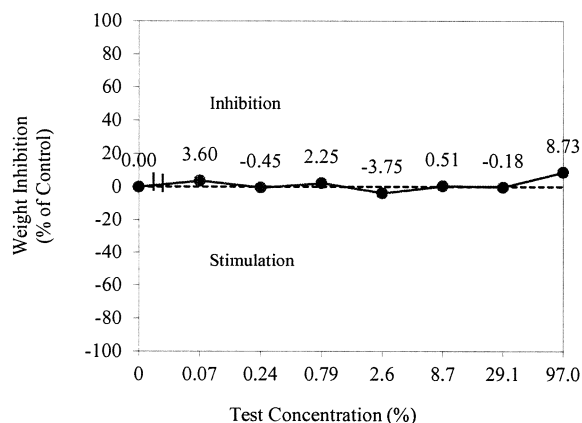
EPS 1/RM/37

Page 2 of 4

Work Order : 240044

Sample Number : 60334

Lemna minor Growth Inhibition



TEST MONITORING

Initiation Date : 2019-08-16

Initiation Time : 12:50

Initiated By : MDH

Termination Date : 2019-08-23

Termination Time : 15:00

Terminated By : MJT

Temperature Monitoring

Test Day	Date	Temperature (°C)
0 (unmodified sample)	2019-08-16	25.0
0	2019-08-16	25.0
1	2019-08-17	25.0
2	2019-08-18	25.0
3	2019-08-19	25.0
4	2019-08-20	24.5
5	2019-08-21	24.5
6	2019-08-22	24.5
7	2019-08-23	24.5

pH Monitoring

Concentration (%)	Day 0	Day 7
100 (unmodified sample)	7.1	—
Control	8.3	8.3
0.07	8.3	8.5
0.24	—	—
0.79	—	—
2.6	8.3	8.9
8.7	—	—
29.1	—	—
97.0	7.8	9.6

"—" = not required

REFERENCES

^a CETISTM, © 2000-2018. V.1.9.4.7. Comprehensive Environmental Toxicity Information System. Tidepool Scientific Software, LLC, McKinleyville, CA 95519 [Program on disk and printed User's Guide].

Date : 2019-09-11
yyyy-mm-dd

Approved By:

Nancy Kropf
Project Manager

Work Order : 240044
Sample Number : 60334

Lemna minor
EPS 1/RM/37
Page 3 of 4

***Lemna minor* Frond Increase**

Test Concentration (%)	Replicate	Frond Count Day 0*	Frond Count Day 7	Frond Increase	Mean Frond Increase	Standard Deviation	CV (%)	Frond/Root Appearance (Day 7)
Control	A	6	72	66	84.75	17.17	20.3	Fronds healthy, appearance normal in all replicates.
	B	6	85	79				
	C	6	93	87				
	D	6	113	107				
0.07	A	6	87	81	77.50	8.50	11.0	Fronds healthy, appearance normal in all replicates.
	B	6	71	65				
	C	6	86	80				
	D	6	90	84				
0.24	A	6	109	103	88.50	10.02	11.3	Fronds healthy, appearance normal in all replicates.
	B	6	86	80				
	C	6	91	85				
	D	6	92	86				
0.79	A	6	89	83	81.25	8.81	10.8	Fronds healthy, appearance normal in all replicates.
	B	6	81	75				
	C	6	99	93				
	D	6	80	74				
2.6	A	6	90	84	84.50	6.61	7.8	Fronds healthy, appearance normal in all replicates.
	B	6	92	86				
	C	6	98	92				
	D	6	82	76				
8.7	A	6	79	73	83.25	8.26	9.9	Fronds healthy, appearance normal in all replicates.
	B	6	88	82				
	C	6	99	93				
	D	6	91	85				
29.1	A	6	93	87	79.75	5.12	6.4	Fronds healthy, appearance normal in all replicates.
	B	6	85	79				
	C	6	84	78				
	D	6	81	75				
97.0	A	6	68	62	69.25	11.30	16.3	Fronds healthy, appearance normal in all replicates.
	B	6	78	72				
	C	6	90	84				
	D	6	65	59				

NOTES: *No unusual appearance or treatment of culture prior to testing. Test inoculated with healthy plants.

•No significant stimulation ($\alpha=0.05$) of frond increase was detected by ANOVA-Dunnett Multiple Comparison Test (CETIS)^a at any test level compared to the control.

•A 15.1-fold increase in frond number was observed in the control over the testing period.

•No outlying data points were detected according to Grubbs Test (CETIS)^a.

"—" = not available/not required

Test Data Reviewed By : *IL*
Date : 2019-09-11

Work Order : 240044
Sample Number : 60334

Lemna minor
EPS 1/RM/37
Page 4 of 4

***Lemna minor* Frond Weight Data**

Test Concentration (%)	Replicate	Dry Weight of Fronds (mg)	Treatment Mean Dry Weight (mg)	Standard Deviation
Control	A	6.48	8.33	1.44
	B	8.12		
	C	8.78		
	D	9.94		
0.07	A	8.22	8.03	0.35
	B	7.56		
	C	7.97		
	D	8.37		
0.24	A	9.53	8.37	0.89
	B	7.56		
	C	7.80		
	D	8.58		
0.79	A	7.98	8.14	0.98
	B	7.33		
	C	9.55		
	D	7.71		
2.6	A	8.15	8.64	0.39
	B	8.51		
	C	8.94		
	D	8.97		
8.7	A	7.26	8.29	0.82
	B	8.11		
	C	9.19		
	D	8.59		
29.1	A	8.79	8.34	0.31
	B	8.30		
	C	8.23		
	D	8.06		
97.0	A	7.03	7.60	1.61
	B	7.76		
	C	9.73		
	D	5.89		

NOTES :

- No significant stimulation ($\alpha=0.05$) of frond weight was detected by ANOVA-Dunnnett Multiple Comparison Test (CETIS)^a at any test level compared to the control.
- No outlying data points were detected according to Grubbs Test (CETIS)^a.


"—" = not available/not required

Test Data Reviewed By : *TC*
Date : 2019-09-11

AQUATOX

AquaTox Work Order No:

240044

P.O. Number:	644699
Field Sampler Name (print):	
Signature:	
Affiliation:	Agnico Eagle Mines Ltd. - Meliadine Division
Sample Storage (prior to shipping):	Shipped immediately after sampling
Custody Relinquished by:	
Date/Time Shipped:	

Shipping Address: AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road,
Puslinch, Ontario, Canada
N0B2J0

Voice: (519) 763-4412 **Fax:** (519) 763-4419

Client:	Agnico Eagle Mines Limited Meliadine Project Rankin Inlet, Nunavut, Canada X0C 0G0
Phone:	819-759-3555 ext 3996
Fax:	
Contact:	Dan Gorton or Sean Arruda

[illegible]

For Lab Use Only	
Received By:	KP/AS
Date:	2019-08-16
Time:	9:45
Storage Location:	
Storage Temp (°C)	

Please list any special requests or instructions:

* Field Sampler name Bethany Hodgins as per
Client email WB 2019-08-16



AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

November 27, 2019

Martin Theriault
Agnico Eagle Mines Limited - Meliadine Project
Meliadine Division
Rankin Inlet NU
X0C 0G0

Dear Martin,

Re: Report on Sublethal Toxicity Analysis of Wastewater for MDMER - October 2019

Enclosed are the reports for sublethal testing conducted on the sample of MEL-14d collected 2019-10-01. Data are presented in electronic format.

Sublethal toxicity reporting for facilities subject to the MDMER has been modernized in the new Mining Effluent Reporting System (MERS). As part of our services, for a fee, we would be pleased to enter this sublethal toxicity information on your behalf via SWIM/MERS. In an email to reporter@aquatox.ca, please provide an 'ECCC Key', which is supplied to you by SWIM (Single Window Information Manager). In addition, you must have your facility information registered, and you must create a report (Information Related to Effluent and Water Quality Monitoring Studies) in MERS.

We will notify you by email once data entry has been completed, however you are responsible for final submission of the data, as we do not have permissions to release the report.

If you have any questions about the results, do not hesitate to contact me.

Sincerely,

AQUATOX TESTING & CONSULTING INC.

A handwritten signature in black ink, appearing to read "Martina Rendas", with a stylized flourish at the end.

Martina Rendas
Project Manager

MR/jl



AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

TOXICITY TEST REPORT

Lemna minor

EPS 1/RM/37

Page 1 of 4

Work Order : 240444

Sample Number : 60909

SAMPLE IDENTIFICATION

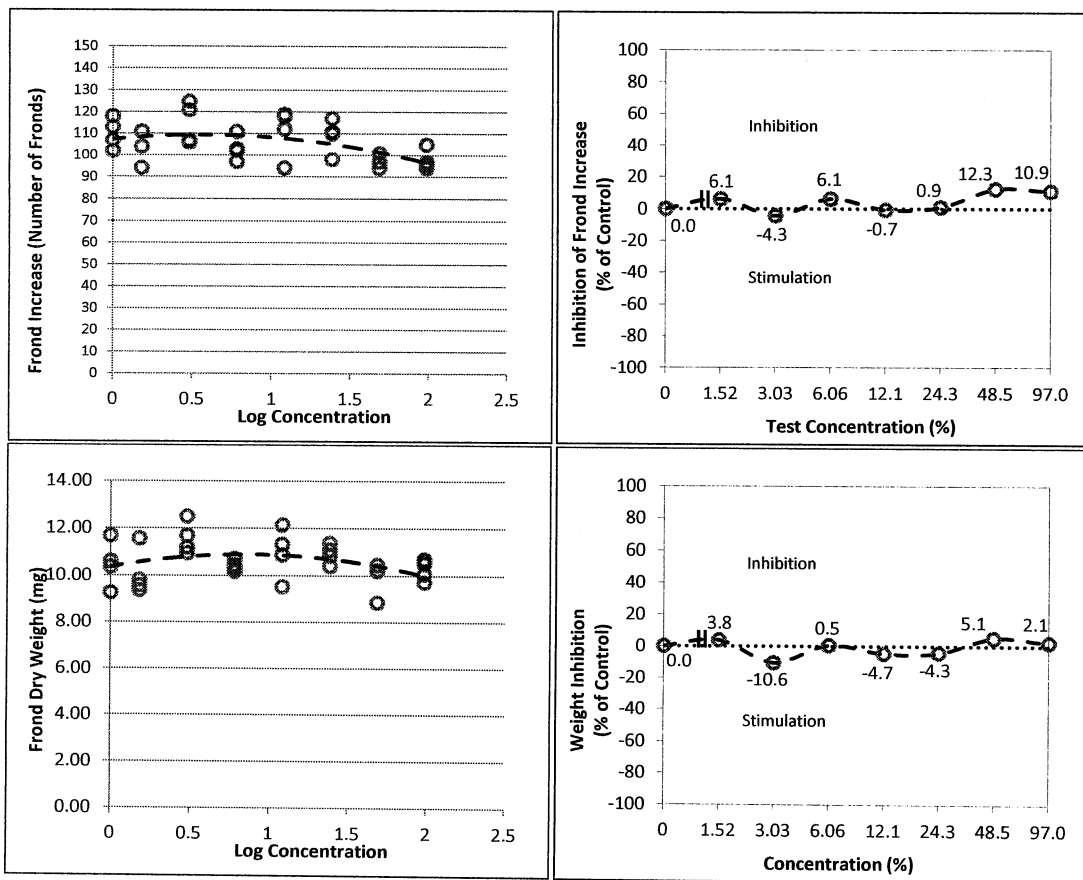
Company :	Agnico Eagle Mines Limited - Meliadine Project	Date Collected :	2019-10-01
Location :	Rankin Inlet NU	Time Collected :	6:00
Substance :	MEL-14d	Date Received :	2019-10-03
Sampling Method :	Grab	Time Received :	10:00
Sampled By :	R. Schwandt/D. Mornin	Temperature on Receipt :	8.0 °C
Sample Description :	Clear, colourless, odourless.	Date Tested :	2019-10-03

Test Method : Test for Measuring the Inhibition of Growth using the Freshwater Macrophyte, *Lemna minor*. Method Development and Application Section, Environmental Technology Centre, Environment Canada, Ottawa, Ontario. Report EPS 1/RM/37, 2nd ed. (January 2007).

7-DAY TEST RESULTS

Effect	Value	95% Confidence Limits	Statistical Method
IC25 (FronD Increase)	>97.0%	—	—
IC25 (Dry Weight)	>97.0%	—	—

The results reported relate only to the sample tested and as received.



COMMENTS

•All test validity criteria as specified in the test method cited above were satisfied.

Date : 2019-11-27
yyyy-mm-dd

Approved By :

J. M. de G.
Project Manager

Work Order : 240444
Sample Number : 60909

TEST ORGANISM

Test Organism :	<i>Lemna minor</i> L., Strain 7730	Age (on Test Day 0) :	9 days
Organism Batch :	Lm19-09	Inoculum (Test Day 0) :	2 plants (3 fronds per plant)
Culture Origin :	UTCC 492	Culture Medium :	Modified Hoaglands E+
Test Organism Source :	Axenic in-house culture	Health Criteria (in APHA) :	16.3-fold frond increase in 7 days
Organism Acclimation :	22:05 hours (in APHA medium)		

No unusual appearance or treatment of culture prior to testing. Test inoculated with healthy plants.

TEST CONDITIONS

Test Type :	Static (no sub-samples required)	Sample Pre-aeration :	20 min. at ≤ 100 bubbles/min.
Control/Dilution Medium :	Modified APHA	pH Adjustment :	None
Source of Water :	Morning Mist	Hardness Adjustment :	None
Medium Preparation Water :	Distilled Water	Replicates per Concentration :	4
Medium Preparation Chemicals :	Modified APHA ²	Test Volume per Replicate :	100 mL
Nutrient Spiking of Sample :	Modified APHA ²	Test Vessel :	200 mL glass jar
Initial pH (100% sample) :	7.6	Depth of Test Solution :	4.0 cm
Initial temperature (100% sample) :	25 °C	Photoperiod/Light Intensity :	Continuous, 4200 - 4780 lux
Sample Filtration :	1 μ m (Whatman GF/C)	Test Method Deviation(s) :	None

²stocks A, B, C (10 mL/L)

REFERENCE TOXICANT DATA

Date Tested :	2019-10-17	Statistical Method :	Non-Linear Regression ¹ (CETIS) ^a
Analyst(s) :	RK, MDH	Historical Mean IC25 :	2.25 g/L
Test Duration :	7 days	Warning Limits (\pm 2SD) :	1.60 - 3.15 g/L
IC25 (Frond Production) :	2.46 g/L	Growth Medium :	Modified APHA
95% Confidence Limits :	2.06 - 2.85 g/L		

¹Box-Cox weighting (CETIS)^a was applied

The reference toxicity test was performed under the same experimental conditions as those used with the test sample.

TEST MONITORING

Initiation Time :	14:25	Termination Time :	14:25
Initiated By :	AS	Terminated By :	MDH

Test Day :	0	1	2	3	4	5	6	7
Date :	2019-10-03	2019-10-04	2019-10-05	2019-10-06	2019-10-07	2019-10-08	2019-10-09	2019-10-10
Temperature (°C) :	26.5	25.0	26.0	26.0	26.5	26.0	26.0	26.5
pH	Control	8.4	-	-	-	-	-	8.6
	1.52	8.3	-	-	-	-	-	8.6
	3.03	-	-	-	-	-	-	-
	6.06	-	-	-	-	-	-	-
	12.13	8.2	-	-	-	-	-	8.6
	24.25	-	-	-	-	-	-	-
	48.5	-	-	-	-	-	-	-
	97	7.9	-	-	-	-	-	8.6

"-" = not required

REFERENCES

^a CETIS™, © 2000-2013. V.1.8.7.17. Comprehensive Environmental Toxicity Information System. Tidepool Scientific Software, LLC, McKinleyville, CA 95519 [Program on disk and printed User's Guide].

Work Order : 240444
Sample Number : 60909

Lemna minor
EPS 1/RM/37
Page 3 of 4

DAY 7 FROND COUNT DATA

Test Concentration %	Replicate	Frond Count	Frond Increase	Mean Frond Increase	Standard Deviation	Stimulation (%)	Frond/Root Appearance
Control	A	119	113	110.00	7.0	-	Fronds healthy, appearance normal in all replicates.
	B	113	107				
	C	108	102				
	D	124	118				
1.52	A	110	104	103.25	7.0	-6.1	Fronds healthy, appearance normal in all replicates.
	B	110	104				
	C	117	111				
	D	100	94				
3.03	A	127	121	114.75	9.7	4.3	Fronds healthy, appearance normal in all replicates.
	B	112	106				
	C	131	125				
	D	113	107				
6.06	A	117	111	103.25	5.8	-6.1	Fronds healthy, appearance normal in all replicates.
	B	103	97				
	C	109	103				
	D	108	102				
12.13	A	100	94	110.75	11.6	0.7	Fronds healthy, appearance normal in all replicates.
	B	124	118				
	C	118	112				
	D	125	119				
24.25	A	123	117	109.00	8.0	-0.9	Fronds healthy, appearance normal in all replicates.
	B	116	110				
	C	104	98				
	D	117	111				
48.5	A	103	97	96.50	3.3	-12.3	Fronds healthy, appearance normal in all replicates.
	B	107	101				
	C	100	94				
	D	100	94				
97.0	A	111	105	98.00	4.8	-10.9	Fronds healthy, appearance normal in all replicates.
	B	103	97				
	C	102	96				
	D	100	94				

NOTES: •No statistically significant stimulation ($\alpha=0.05$) was detected by ANOVA-Dunnett Multiple Comparison Test (CETIS)^a at any test level compared to the control.

•A 18.3-fold increase in frond number was observed in the control over the testing period.

•No outlying data points were detected according to Grubbs Test (CETIS)^a.

"-" = not available/not required

Test Data Reviewed By : AW
Date : 2019-11-15

Work Order : 240444

Sample Number : 60909

DAY 7 FROND WEIGHT DATA

Test Concentration %	Replicate	Dry Weight of Fronds (mg)	Treatment Mean Dry Weight (mg)	Standard Deviation	Stimulation (%)
Control	A	10.36	10.47	1.0	—
	B	10.60			
	C	9.25			
	D	11.67			
1.52	A	9.57	10.07	1.0	-3.8
	B	9.81			
	C	11.55			
	D	9.36			
3.03	A	11.67	11.58	0.7	10.6
	B	10.95			
	C	12.49			
	D	11.19			
6.06	A	10.17	10.42	0.2	-0.5
	B	10.33			
	C	10.45			
	D	10.71			
12.13	A	9.52	10.96	1.1	4.7
	B	12.13			
	C	10.87			
	D	11.32			
24.25	A	11.37	10.93	0.4	4.3
	B	11.09			
	C	10.41			
	D	10.83			
48.5	A	10.46	9.94	0.7	-5.1
	B	10.21			
	C	10.24			
	D	8.84			
97.0	A	10.51	10.25	0.4	-2.1
	B	10.69			
	C	10.06			
	D	9.72			

NOTES :

•No statistically significant stimulation ($\alpha=0.05$) was detected by ANOVA-Dunnett Multiple Comparison Test (CETIS)^a at any test level compared to the control.

•No outlying data points were detected according to Grubbs Test (CETIS)^a.

"—" = not available/not required

Test Data Reviewed By : AW

Date : 2019-11-15

CHAIN OF CUSTODY RECORD



Shipping Address: AquaTox Testing & Consulting Inc.
B-11 Nicholas Beaver Road,
Puslinch, Ontario, Canada
N0B2J0

Voice: (519) 763-4412 **Fax:** (519) 763-4419

P.O. Number:	644699
Field Sampler Name (print):	Randy Schwandt/ Daphne Mornin
Signature:	
Affiliation:	Agnico Eagle Mines Ltd. - Meliadine Division
Sample Storage (prior to shipping):	Shipped immediately after sampling
Custody Relinquished by:	
Date/Time Shipped:	2019-10-01

Client:	Agnico Eagle Mines Limited Meliadine Project Rankin Inlet, Nunavut, Canada X0C 0G0
Phone:	819-759-3555 ext 3996
Fax:	
Contact:	Dan Gorton or Sean Arruda

Sample Identification				Analyses Requested										Sample Method and Volume			
Date Collected (yyyy-mm-dd)	Time Collected (e.g. 14:30, 24 hr clock)	Sample Name	AquaTox Sample Number	Temp. on arrival	Rainbow Trout Single Concentration	Rainbow Trout LC50	Daphnia magna Single Concentration	Daphnia magna LC50	Fathead Minnow Survival & Growth	Ceriodaphnia dubia Survival & Reproduction	Lemna minor Growth	Pseudokirchnerella subcapitata Growth	RISS Data Entry	Other (please specify below)	Grab	Composite	# of Containers and Volume (eg. 2 x 1L, 3 x 10L, etc.)
2019-10-01	6:00	MEL-14d	60909	8.0							✓				✓		2L

For Lab Use Only	
Received By:	21/10/2019
Date:	2019-10-03
Time:	10:00
Storage Location:	
Storage Temp. (°C):	

Please list any special requests or instructions: TOXICOLOGY analysis required	
ADD ON CERTIFICATE GPS LOCATION 63°02'45.5" 92°13'06.3"	



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/01
 Report #: R5822101
 Version: 3 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K5086

Received: 2019/07/25, 09:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/07/26	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/07/26	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/07/26	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	1	N/A	2019/07/26	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/07/25	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/07/26	2019/07/26	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/07/26	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/07/26	2019/07/26	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/07/26	2019/07/26	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/07/26	2019/07/26	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/07/30	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/07/29	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/07/29	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/07/28	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/07/25	2019/07/30	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/07/28	2019/07/29	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/07/30	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/07/27	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	1	N/A	2019/07/26	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/07/26	2019/07/26	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/07/26	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	1	N/A	2019/07/30	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/07/26	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/07/26	2019/07/27	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/07/26	2019/07/26	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/07/26	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/07/26	2019/07/26	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/07/26	2019/07/26	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/07/26	CAM SOP-00417	SM 23 2130 B m



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/01
Report #: R5822101
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K5086

Received: 2019/07/25, 09:30

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(8) Radium-226 results have not been corrected for blanks.

(9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/01
Report #: R5822101
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K5086
Received: 2019/07/25, 09:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9K5086
Report Date: 2019/08/01

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KIY034		
Sampling Date		2019/07/22 06:30		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	4790	0.50	6254787
Metals				
Dissolved Aluminum (Al)	ug/L	<150	150	6254789
Dissolved Antimony (Sb)	ug/L	<25	25	6254789
Dissolved Arsenic (As)	ug/L	5.6	5.0	6254789
Dissolved Barium (Ba)	ug/L	143	50	6254789
Dissolved Beryllium (Be)	ug/L	<5.0	5.0	6254789
Dissolved Bismuth (Bi)	ug/L	<50	50	6254789
Dissolved Boron (B)	ug/L	<2500	2500	6254789
Dissolved Cadmium (Cd)	ug/L	<0.50	0.50	6254789
Dissolved Chromium (Cr)	ug/L	<50	50	6254789
Dissolved Cobalt (Co)	ug/L	<10	10	6254789
Dissolved Copper (Cu)	ug/L	<10	10	6254789
Dissolved Iron (Fe)	ug/L	<250	250	6254789
Dissolved Lead (Pb)	ug/L	<10	10	6254789
Dissolved Lithium (Li)	ug/L	260	100	6254789
Dissolved Manganese (Mn)	ug/L	125	50	6254789
Dissolved Molybdenum (Mo)	ug/L	<50	50	6254789
Dissolved Nickel (Ni)	ug/L	<50	50	6254789
Dissolved Selenium (Se)	ug/L	<5.0	5.0	6254789
Dissolved Silicon (Si)	ug/L	<5000	5000	6254789
Dissolved Silver (Ag)	ug/L	<1.0	1.0	6254789
Dissolved Strontium (Sr)	ug/L	19100	50	6254789
Dissolved Thallium (Tl)	ug/L	<0.50	0.50	6254789
Dissolved Tin (Sn)	ug/L	<250	250	6254789
Dissolved Titanium (Ti)	ug/L	<250	250	6254789
Dissolved Uranium (U)	ug/L	<5.0	5.0	6254789
Dissolved Vanadium (V)	ug/L	<250	250	6254789
Dissolved Zinc (Zn)	ug/L	<250	250	6254789
Dissolved Zirconium (Zr)	ug/L	<5.0	5.0	6254789
Dissolved Calcium (Ca)	mg/L	798	2.5	6254788
Dissolved Magnesium (Mg)	mg/L	679	2.5	6254788
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9K5086
Report Date: 2019/08/01

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KIY034		
Sampling Date		2019/07/22 06:30		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	210	2.5	6254788
Dissolved Sodium (Na)	mg/L	5840	2.5	6254788
Dissolved Sulphur (S)	mg/L	412	150	6254788
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9K5086

Report Date: 2019/08/01

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KIY034		
Sampling Date		2019/07/22 06:30		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	130	30	6254786
Total Antimony (Sb)	ug/L	<5.0	5.0	6254786
Total Arsenic (As)	ug/L	6.3	1.0	6254786
Total Barium (Ba)	ug/L	143	10	6254786
Total Beryllium (Be)	ug/L	<1.0	1.0	6254786
Total Bismuth (Bi)	ug/L	<10	10	6254786
Total Boron (B)	ug/L	771	500	6254786
Total Cadmium (Cd)	ug/L	<0.10	0.10	6254786
Total Chromium (Cr)	ug/L	<10	10	6254786
Total Cobalt (Co)	ug/L	2.2	2.0	6254786
Total Copper (Cu)	ug/L	<5.0	5.0	6254786
Total Iron (Fe)	ug/L	121	100	6254786
Total Lead (Pb)	ug/L	<2.0	2.0	6254786
Total Lithium (Li)	ug/L	255	20	6254786
Total Manganese (Mn)	ug/L	126	10	6254786
Total Molybdenum (Mo)	ug/L	20	10	6254786
Total Nickel (Ni)	ug/L	<10	10	6254786
Total Selenium (Se)	ug/L	<1.0	1.0	6254786
Total Silicon (Si)	ug/L	1370	1000	6254786
Total Silver (Ag)	ug/L	<0.20	0.20	6254786
Total Strontium (Sr)	ug/L	21400	10	6254786
Total Thallium (Tl)	ug/L	<0.10	0.10	6254786
Total Tin (Sn)	ug/L	<50	50	6254786
Total Titanium (Ti)	ug/L	<50	50	6254786
Total Uranium (U)	ug/L	1.2	1.0	6254786
Total Vanadium (V)	ug/L	<50	50	6254786
Total Zinc (Zn)	ug/L	<50	50	6254786
Total Zirconium (Zr)	ug/L	<1.0	1.0	6254786
Total Calcium (Ca)	ug/L	836000	500	6253516
Total Magnesium (Mg)	ug/L	693000	500	6253516
Total Potassium (K)	ug/L	215000	500	6253516
Total Sodium (Na)	ug/L	6230000	500	6253516
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9K5086
Report Date: 2019/08/01

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KIY034		
Sampling Date		2019/07/22 06:30		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	427000	30000	6253516
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	4940000	500	6250442
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9K5086

Report Date: 2019/08/01

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KIY034			KIY034		
Sampling Date		2019/07/22 06:30			2019/07/22 06:30		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	110	1.0	6247170			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	2.2	1.0	6247170			
Inorganics							
Total Ammonia-N	mg/L	7.4	0.050	6248307			
Conductivity	umho/cm	36000	1.0	6249061	36000	1.0	6249061
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6257633			
Total Dissolved Solids	mg/L	24400	20	6250059	24300	20	6250059
Total Kjeldahl Nitrogen (TKN)	mg/L	15	2.0	6248932			
Dissolved Organic Carbon	mg/L	4.5	0.50	6248878			
Total Organic Carbon (TOC)	mg/L	5.2	0.50	6248930	5.2	0.50	6248930
Orthophosphate (P)	mg/L	0.014	0.010	6248886			
Dissolved Oxygen	mg/L	9.54		6249738	9.55		6249738
pH	pH	8.35		6249059	8.38		6249059
Total Phosphorus	mg/L	0.074 (2)	0.040	6248733			
Reactive Silica (SiO ₂)	mg/L	2.7 (3)	0.50	6256922			
Total Suspended Solids	mg/L	17	1	6248818			
Dissolved Sulphate (SO ₄)	mg/L	1200	5.0	6248887			
Total Cyanide (CN)	mg/L	0.12	0.025	6246901			
Turbidity	NTU	0.2	0.1	6248199			
WAD Cyanide (Free)	mg/L	0.0011	0.0010	6247313			
Alkalinity (Total as CaCO ₃)	mg/L	110	1.0	6249054	110	1.0	6249054
Dissolved Chloride (Cl ⁻)	mg/L	14000	120	6248884			
Nitrite (N)	mg/L	0.27	0.10	6249062	0.27	0.10	6249062
Nitrate (N)	mg/L	57.9	1.0	6249062	54.1	1.0	6249062
Nitrate + Nitrite (N)	mg/L	58.2	1.0	6249062	54.4	1.0	6249062
RADIONUCLIDE							
Radium-226	Bq/L	0.20	0.0050	6247909			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W (2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. (3) Detection limits raised due to matrix interference.							



BUREAU
VERITAS

BV Labs Job #: B9K5086

Report Date: 2019/08/01

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KIY034	KIY034		
Sampling Date		2019/07/22 06:30	2019/07/22 06:30		
	UNITS	MEL-26	MEL-26 Lab-Dup	RDL	QC Batch
Metals					
Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6248953
Dissolved Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6248962
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
Lab-Dup = Laboratory Initiated Duplicate					



BUREAU
VERITAS

BV Labs Job #: B9K5086

Report Date: 2019/08/01

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KIY034
Sample ID: MEL-26
Matrix: Water

Collected: 2019/07/22
Shipped:
Received: 2019/07/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6249054	N/A	2019/07/26	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6247170	N/A	2019/07/26	Automated Statchk
Chloride by Automated Colourimetry	KONE	6248884	N/A	2019/07/26	Deonarine Ramnarine
Conductivity	AT	6249061	N/A	2019/07/26	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6247313	N/A	2019/07/25	Gnana Thomas
Total Cyanide	SKAL/CN	6246901	2019/07/26	2019/07/26	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6248878	N/A	2019/07/26	Mandeep Kaur
Dissolved Oxygen	DO	6249738	2019/07/26	2019/07/26	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6248962	2019/07/26	2019/07/26	Medhat Nasr
Mercury (low level)	CV/AA	6248953	2019/07/26	2019/07/26	Medhat Nasr
Cyanide (Free)	SPEC	6257633	2019/07/30	2019/07/30	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6250442	N/A	2019/07/30	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6254787	N/A	2019/07/29	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6254788	N/A	2019/07/29	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6254789	N/A	2019/07/28	Valentina Balada
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6253516	2019/07/30	2019/07/30	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6254786	2019/07/28	2019/07/29	Andrew An
Silica (Reactive)	KONE	6256922	N/A	2019/07/30	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6248307	N/A	2019/07/27	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6249062	N/A	2019/07/26	Bernard Antwi
pH	AT	6249059	2019/07/26	2019/07/26	Neil Dassanayake
Orthophosphate	KONE	6248886	N/A	2019/07/26	Alina Dobreanu
Radium-226 Low Level	AS	6247909	N/A	2019/07/30	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6248887	N/A	2019/07/26	Alina Dobreanu
Total Dissolved Solids	BAL	6250059	2019/07/26	2019/07/27	Nilam Borole
Total Kjeldahl Nitrogen in Water	SKAL	6248932	2019/07/26	2019/07/26	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6248930	N/A	2019/07/26	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6248733	2019/07/26	2019/07/26	Nimarta Singh
Low Level Total Suspended Solids	BAL	6248818	2019/07/26	2019/07/26	Massarat Jan
Turbidity	AT	6248199	N/A	2019/07/26	Kazzandra Adeva

BV Labs ID: KIY034 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/07/22
Shipped:
Received: 2019/07/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6249054	N/A	2019/07/26	Neil Dassanayake
Conductivity	AT	6249061	N/A	2019/07/26	Neil Dassanayake
Dissolved Oxygen	DO	6249738	2019/07/26	2019/07/26	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6248962	2019/07/26	2019/07/26	Medhat Nasr
Mercury (low level)	CV/AA	6248953	2019/07/26	2019/07/26	Medhat Nasr
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6249062	N/A	2019/07/26	Bernard Antwi
pH	AT	6249059	2019/07/26	2019/07/26	Neil Dassanayake
Total Dissolved Solids	BAL	6250059	2019/07/26	2019/07/27	Nilam Borole
Total Organic Carbon (TOC)	TOCV/NDIR	6248930	N/A	2019/07/26	Mandeep Kaur



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	19.7°C
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Sample KIY034 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Matrix Spike Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

Sample KIY034 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KIY034 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9K5086

Report Date: 2019/08/01

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6246901	Total Cyanide (CN)	2019/07/25	86	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20		
6247313	WAD Cyanide (Free)	2019/07/25	105	80 - 120	105	80 - 120	<0.0010	mg/L	NC	20		
6247909	Radium-226	2019/07/30			98	85 - 115	<0.0050	Bq/L	NC	N/A		
6248199	Turbidity	2019/07/26			93	85 - 115	<0.1	NTU	18	20		
6248307	Total Ammonia-N	2019/07/27	99	75 - 125	100	80 - 120	<0.050	mg/L	NC	20		
6248733	Total Phosphorus	2019/07/26	95	80 - 120	94	80 - 120	<0.020	mg/L	1.6	20	95	80 - 120
6248818	Total Suspended Solids	2019/07/26					<1	mg/L	5.1	25	100	85 - 115
6248878	Dissolved Organic Carbon	2019/07/26	91	80 - 120	98	80 - 120	<0.50	mg/L	1.6	20		
6248884	Dissolved Chloride (Cl-)	2019/07/26	111	80 - 120	103	80 - 120	<1.0	mg/L	0.85	20		
6248886	Orthophosphate (P)	2019/07/26	100	75 - 125	99	80 - 120	<0.010	mg/L	NC	25		
6248887	Dissolved Sulphate (SO4)	2019/07/26	120	75 - 125	104	80 - 120	<1.0	mg/L	NC	20		
6248930	Total Organic Carbon (TOC)	2019/07/26	91	80 - 120	97	80 - 120	<0.50	mg/L	0.56	20		
6248932	Total Kjeldahl Nitrogen (TKN)	2019/07/26	90	80 - 120	98	80 - 120	<0.10	mg/L	NC (1)	20	100	80 - 120
6248953	Mercury (Hg)	2019/07/26	102	75 - 125	101	80 - 120	<0.00001	mg/L	NC	20		
6248962	Dissolved Mercury (Hg)	2019/07/26	94	75 - 125	101	80 - 120	<0.00001	mg/L	NC	20		
6249054	Alkalinity (Total as CaCO3)	2019/07/26			96	85 - 115	<1.0	mg/L	0.051	20		
6249059	pH	2019/07/26			102	98 - 103			0.39	N/A		
6249061	Conductivity	2019/07/26			102	85 - 115	<1.0	umho/cm	0.29	25		
6249062	Nitrate (N)	2019/07/26	NC	80 - 120	100	80 - 120	<0.10	mg/L	6.7	20		
6249062	Nitrite (N)	2019/07/26	119	80 - 120	102	80 - 120	<0.010	mg/L	0.30	20		
6250059	Total Dissolved Solids	2019/07/27					<10	mg/L	0.49	25	100	90 - 110
6254786	Total Aluminum (Al)	2019/07/29	104	80 - 120	102	80 - 120	<3.0	ug/L				
6254786	Total Antimony (Sb)	2019/07/29	102	80 - 120	99	80 - 120	<0.50	ug/L				
6254786	Total Arsenic (As)	2019/07/29	104	80 - 120	103	80 - 120	<0.10	ug/L				
6254786	Total Barium (Ba)	2019/07/29	104	80 - 120	101	80 - 120	<1.0	ug/L				
6254786	Total Beryllium (Be)	2019/07/29	102	80 - 120	102	80 - 120	<0.10	ug/L				
6254786	Total Bismuth (Bi)	2019/07/29	104	80 - 120	104	80 - 120	<1.0	ug/L				
6254786	Total Boron (B)	2019/07/29	103	80 - 120	104	80 - 120	<50	ug/L				
6254786	Total Cadmium (Cd)	2019/07/29	104	80 - 120	102	80 - 120	<0.010	ug/L				
6254786	Total Chromium (Cr)	2019/07/29	103	80 - 120	101	80 - 120	<1.0	ug/L				
6254786	Total Cobalt (Co)	2019/07/29	100	80 - 120	100	80 - 120	<0.20	ug/L				



**BUREAU
VERITAS**

BV Labs Job #: B9K5086

Report Date: 2019/08/01

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6254786	Total Copper (Cu)	2019/07/29	101	80 - 120	99	80 - 120	<0.50	ug/L				
6254786	Total Iron (Fe)	2019/07/29	106	80 - 120	106	80 - 120	<10	ug/L				
6254786	Total Lead (Pb)	2019/07/29	107	80 - 120	106	80 - 120	<0.20	ug/L				
6254786	Total Lithium (Li)	2019/07/29	107	80 - 120	104	80 - 120	<2.0	ug/L				
6254786	Total Manganese (Mn)	2019/07/29	105	80 - 120	104	80 - 120	<1.0	ug/L				
6254786	Total Molybdenum (Mo)	2019/07/29	105	80 - 120	105	80 - 120	<1.0	ug/L				
6254786	Total Nickel (Ni)	2019/07/29	103	80 - 120	101	80 - 120	<1.0	ug/L				
6254786	Total Selenium (Se)	2019/07/29	103	80 - 120	106	80 - 120	<0.10	ug/L				
6254786	Total Silicon (Si)	2019/07/29	104	80 - 120	106	80 - 120	<100	ug/L				
6254786	Total Silver (Ag)	2019/07/29	106	80 - 120	104	80 - 120	<0.020	ug/L				
6254786	Total Strontium (Sr)	2019/07/29	103	80 - 120	101	80 - 120	<1.0	ug/L				
6254786	Total Thallium (Tl)	2019/07/29	104	80 - 120	103	80 - 120	<0.010	ug/L				
6254786	Total Tin (Sn)	2019/07/29	104	80 - 120	102	80 - 120	<5.0	ug/L				
6254786	Total Titanium (Ti)	2019/07/29	104	80 - 120	102	80 - 120	<5.0	ug/L				
6254786	Total Uranium (U)	2019/07/29	106	80 - 120	104	80 - 120	<0.10	ug/L				
6254786	Total Vanadium (V)	2019/07/29	103	80 - 120	101	80 - 120	<5.0	ug/L				
6254786	Total Zinc (Zn)	2019/07/29	102	80 - 120	103	80 - 120	<5.0	ug/L				
6254786	Total Zirconium (Zr)	2019/07/29	104	80 - 120	101	80 - 120	<0.10	ug/L				
6254789	Dissolved Aluminum (Al)	2019/07/28	88	80 - 120	99	80 - 120	<3.0	ug/L				
6254789	Dissolved Antimony (Sb)	2019/07/28	77 (2)	80 - 120	98	80 - 120	<0.50	ug/L				
6254789	Dissolved Arsenic (As)	2019/07/28	92	80 - 120	99	80 - 120	<0.10	ug/L				
6254789	Dissolved Barium (Ba)	2019/07/28	NC	80 - 120	98	80 - 120	<1.0	ug/L				
6254789	Dissolved Beryllium (Be)	2019/07/28	89	80 - 120	98	80 - 120	<0.10	ug/L				
6254789	Dissolved Bismuth (Bi)	2019/07/28	84	80 - 120	101	80 - 120	<1.0	ug/L				
6254789	Dissolved Boron (B)	2019/07/28	88	80 - 120	95	80 - 120	<50	ug/L				
6254789	Dissolved Cadmium (Cd)	2019/07/28	88	80 - 120	100	80 - 120	<0.010	ug/L				
6254789	Dissolved Chromium (Cr)	2019/07/28	85	80 - 120	98	80 - 120	<1.0	ug/L				
6254789	Dissolved Cobalt (Co)	2019/07/28	83	80 - 120	100	80 - 120	<0.20	ug/L				
6254789	Dissolved Copper (Cu)	2019/07/28	79 (2)	80 - 120	96	80 - 120	<0.20	ug/L				
6254789	Dissolved Iron (Fe)	2019/07/28	NC	80 - 120	103	80 - 120	<5.0	ug/L				
6254789	Dissolved Lead (Pb)	2019/07/28	89	80 - 120	102	80 - 120	<0.20	ug/L				
6254789	Dissolved Lithium (Li)	2019/07/28	89	80 - 120	98	80 - 120	<2.0	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9K5086

Report Date: 2019/08/01

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6254789	Dissolved Manganese (Mn)	2019/07/28	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6254789	Dissolved Molybdenum (Mo)	2019/07/28	95	80 - 120	100	80 - 120	<1.0	ug/L				
6254789	Dissolved Nickel (Ni)	2019/07/28	80	80 - 120	97	80 - 120	<1.0	ug/L				
6254789	Dissolved Selenium (Se)	2019/07/28	94	80 - 120	98	80 - 120	<0.10	ug/L				
6254789	Dissolved Silicon (Si)	2019/07/28	NC	80 - 120	102	80 - 120	<100	ug/L				
6254789	Dissolved Silver (Ag)	2019/07/28	76 (2)	80 - 120	100	80 - 120	<0.020	ug/L				
6254789	Dissolved Strontium (Sr)	2019/07/28	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6254789	Dissolved Thallium (Tl)	2019/07/28	88	80 - 120	101	80 - 120	<0.010	ug/L				
6254789	Dissolved Tin (Sn)	2019/07/28	90	80 - 120	101	80 - 120	<5.0	ug/L				
6254789	Dissolved Titanium (Ti)	2019/07/28	81	80 - 120	100	80 - 120	<5.0	ug/L				
6254789	Dissolved Uranium (U)	2019/07/28	91	80 - 120	101	80 - 120	<0.10	ug/L				
6254789	Dissolved Vanadium (V)	2019/07/28	89	80 - 120	100	80 - 120	<5.0	ug/L				
6254789	Dissolved Zinc (Zn)	2019/07/28	22 (2)	80 - 120	101	80 - 120	<5.0	ug/L				
6254789	Dissolved Zirconium (Zr)	2019/07/28	94	80 - 120	100	80 - 120	<0.10	ug/L				
6256922	Reactive Silica (SiO ₂)	2019/07/30	107	80 - 120	108	80 - 120	<0.050	mg/L	0.24	20		
6257633	Free Cyanide (CN)	2019/07/31	84	80 - 120	99	80 - 120	<1.0	ug/L	2.5	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Due to a high concentration of NO_x, the sample required dilution. The detection limit was adjusted accordingly.

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9K5086
Report Date: 2019/08/01

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9K5086

Report Date: 2019/08/01

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: MB9K5086
Site Location: MELIADINE
Your C.O.C. #: 1 of 1

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/07/29
Report #: R2759650
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B961336

Received: 2019/07/27, 12:30

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Chloride/Sulphate by Auto Colourimetry	1	N/A	2019/07/28	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Conductivity @25C	1	N/A	2019/07/29	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	1	N/A	2019/07/28	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	1	N/A	2019/07/29	AB SOP-00005	SM 23 4500-H+B m
Total Dissolved Solids (Filt. Residue)	1	2019/07/28	2019/07/28	AB SOP-00065	SM 23 2540 C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.



Your Project #: MB9K5086
Site Location: MELIADINE
Your C.O.C. #: 1 of 1

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/07/29
Report #: R2759650
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B961336
Received: 2019/07/27, 12:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bvlabs.com
Phone# (403) 291-3077

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SALINITY - WATER - FIILTERED (WATER)

BV Labs ID		WE4910			WE4910		
Sampling Date							
COC Number		1 of 1			1 of 1		
	UNITS	MEL-26(KIY034)	RDL	QC Batch	MEL-26(KIY034) Lab-Dup	RDL	QC Batch
Misc. Inorganics							
Conductivity	uS/cm	36000	2.0	9525647	36000	2.0	9525647
pH	pH	8.44	N/A	9525646	8.48	N/A	9525646
Total Dissolved Solids	mg/L	>20000 (1)	10	9525406			
Anions							
Dissolved Chloride (Cl)	mg/L	12000 (2)	100	9525418			
Dissolved Sulphate (SO4)	mg/L	1200 (2)	10	9525418			
Lab Filtered Elements							
Dissolved Calcium (Ca)	mg/L	810 (2)	6.0	9525382			
Dissolved Magnesium (Mg)	mg/L	730 (2)	4.0	9525382			
Dissolved Potassium (K)	mg/L	240	0.30	9525382			
Dissolved Sodium (Na)	mg/L	6500 (2)	10	9525382			
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Sample exceeds calibration range. (2) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B961336
Report Date: 2019/07/29

Agnico-Eagle
Client Project #: MB9K5086
Site Location: MELIADINE

TEST SUMMARY

BV Labs ID: WE4910
Sample ID: MEL-26(KIY034)
Matrix: Water

Collected:
Shipped:
Received: 2019/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9525418	N/A	2019/07/28	Serena Tian
Conductivity @25C	COND	9525647	N/A	2019/07/29	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9525382	N/A	2019/07/28	Harry (Peng) Liang
pH @25°C	AT/ALK	9525646	N/A	2019/07/29	Ilonka Kovac
Total Dissolved Solids (Filt. Residue)	BAL	9525406	2019/07/28	2019/07/28	Haydee Estilong

BV Labs ID: WE4910 Dup
Sample ID: MEL-26(KIY034)
Matrix: Water

Collected:
Shipped:
Received: 2019/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity @25C	COND	9525647	N/A	2019/07/29	Ilonka Kovac
pH @25°C	AT/ALK	9525646	N/A	2019/07/29	Ilonka Kovac



BUREAU
VERITAS

BV Labs Job #: B961336
Report Date: 2019/07/29

Agnico-Eagle
Client Project #: MB9K5086
Site Location: MELIADINE

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.0°C
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Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B961336

Report Date: 2019/07/29

QUALITY ASSURANCE REPORT

Agnico-Eagle

Client Project #: MB9K5086

Site Location: MELIADINE

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9525382	Dissolved Calcium (Ca)	2019/07/29	93	80 - 120	98	80 - 120	<0.30	mg/L	0.82	20
9525382	Dissolved Magnesium (Mg)	2019/07/29	96	80 - 120	101	80 - 120	<0.20	mg/L	1.6	20
9525382	Dissolved Potassium (K)	2019/07/29	98	80 - 120	99	80 - 120	<0.30	mg/L	0.65	20
9525382	Dissolved Sodium (Na)	2019/07/29	99	80 - 120	103	80 - 120	<0.50	mg/L	2.4	20
9525406	Total Dissolved Solids	2019/07/28	94	80 - 120	96	80 - 120	<10	mg/L	1.3	20
9525418	Dissolved Chloride (Cl)	2019/07/28	110	80 - 120	105	80 - 120	<1.0	mg/L	4.2	20
9525418	Dissolved Sulphate (SO4)	2019/07/28	98	80 - 120	98	80 - 120	<1.0	mg/L	4.9	20
9525646	pH	2019/07/29			100	97 - 103			0.41	N/A
9525647	Conductivity	2019/07/29			101	90 - 110	<2.0	uS/cm	0	10

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.



BUREAU
VERITAS

BV Labs Job #: B961336
Report Date: 2019/07/29

Agnico-Eagle
Client Project #: MB9K5086
Site Location: MELIADINE

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Harry (Peng) Liang, Senior Analyst

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Your P.O. #: B9L6967
Your Project #: MB9L6967
Site Location: MELIADINE
Your C.O.C. #: B9L6967-M060-01-01

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/08/12
Report #: R2765613
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B965468

Received: 2019/08/09, 09:50

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Chloride/Sulphate by Auto Colourimetry	1	N/A	2019/08/11	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Conductivity @25C	1	N/A	2019/08/12	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	1	N/A	2019/08/12	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	1	N/A	2019/08/12	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio	1	N/A	2019/08/12		Auto Calc
Total Dissolved Solids (Calc. from EC)	1	N/A	2019/08/12		Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.



Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Your P.O. #: B9L6967
Your Project #: MB9L6967
Site Location: MELIADINE
Your C.O.C. #: B9L6967-M060-01-01

Report Date: 2019/08/12
Report #: R2765613
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B965468
Received: 2019/08/09, 09:50

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bvlabs.com
Phone# (403) 291-3077

=====

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BUREAU
VERITAS

BV Labs Job #: B965468
Report Date: 2019/08/12

Agnico-Eagle
Client Project #: MB9L6967
Site Location: MELIADINE
Your P.O. #: B9L6967
Sampler Initials: RS

SALINITY WATER (WATER)

BV Labs ID		WG4586		
Sampling Date		2019/08/03 05:30		
COC Number		B9L6967-M060-01-01		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Sodium Adsorption Ratio	N/A	35	0.10	9541054
Total dissolved solids (calc., EC)	mg/L	33000	10	9541058
Misc. Inorganics				
Conductivity	uS/cm	34000	2.0	9543388
pH	pH	7.73	N/A	9543386
Anions				
Dissolved Chloride (Cl)	mg/L	11000 (1)	100	9543256
Dissolved Sulphate (SO4)	mg/L	1100 (1)	10	9543256
Lab Filtered Elements				
Dissolved Calcium (Ca)	mg/L	780	6.0	9543263
Dissolved Magnesium (Mg)	mg/L	730	4.0	9543263
Dissolved Potassium (K)	mg/L	190	6.0	9543263
Dissolved Sodium (Na)	mg/L	5700	10	9543263
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.				



BUREAU
VERITAS

BV Labs Job #: B965468
Report Date: 2019/08/12

Agnico-Eagle
Client Project #: MB9L6967
Site Location: MELIADINE
Your P.O. #: B9L6967
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: WG4586
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/03
Shipped:
Received: 2019/08/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9543256	N/A	2019/08/11	Serena Tian
Conductivity @25C	COND	9543388	N/A	2019/08/12	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9543263	N/A	2019/08/12	Harry (Peng) Liang
pH @25°C	AT/ALK	9543386	N/A	2019/08/12	Ilonka Kovac
Sodium Adsorption Ratio	CALC	9541054	N/A	2019/08/12	Automated Statchk
Total Dissolved Solids (Calc. from EC)	CALC	9541058	N/A	2019/08/12	Automated Statchk



BUREAU
VERITAS

BV Labs Job #: B965468
Report Date: 2019/08/12

Agnico-Eagle
Client Project #: MB9L6967
Site Location: MELIADINE
Your P.O. #: B9L6967
Sampler Initials: RS

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.3°C
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SALINITY WATER (WATER) Comments

Sample WG4586 [MEL-26] Elements by ICP-Dissolved-Lab Filtered: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B965468

Report Date: 2019/08/12

QUALITY ASSURANCE REPORT

Agnico-Eagle

Client Project #: MB9L6967

Site Location: MELIADINE

Your P.O. #: B9L6967

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9543256	Dissolved Chloride (Cl)	2019/08/11	105	80 - 120	99	80 - 120	<1.0	mg/L	5.0	20
9543256	Dissolved Sulphate (SO ₄)	2019/08/11	NC	80 - 120	102	80 - 120	<1.0	mg/L	8.2	20
9543263	Dissolved Calcium (Ca)	2019/08/11	NC	80 - 120	100	80 - 120	<0.30	mg/L	0.48	20
9543263	Dissolved Magnesium (Mg)	2019/08/11	91	80 - 120	100	80 - 120	<0.20	mg/L	0.15	20
9543263	Dissolved Potassium (K)	2019/08/11	91	80 - 120	93	80 - 120	<0.30	mg/L	0.55	20
9543263	Dissolved Sodium (Na)	2019/08/11	89	80 - 120	100	80 - 120	<0.50	mg/L	0.98	20
9543386	pH	2019/08/12			100	97 - 103			0.38	N/A
9543388	Conductivity	2019/08/12			100	90 - 110	<2.0	uS/cm	0	10

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)



BUREAU
VERITAS

BV Labs Job #: B965468
Report Date: 2019/08/12

Agnico-Eagle
Client Project #: MB9L6967
Site Location: MELIADINE
Your P.O. #: B9L6967
Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Harry (Peng) Liang, Senior Analyst

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Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/16
 Report #: R5842179
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9L6967

Received: 2019/08/07, 11:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/08/08	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/08/08	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/08/08	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	1	N/A	2019/08/08	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/08/08	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/08/08	2019/08/08	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/08/08	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/08/08	2019/08/08	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/08/08	2019/08/08	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/08	2019/08/08	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/08/12	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/08/12	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/08/12	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/08/10	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/08/07	2019/08/12	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/08/09	2019/08/12	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/08/11	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/08	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	1	N/A	2019/08/08	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/08/08	2019/08/08	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/08/08	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	1	N/A	2019/08/13	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/08/08	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/08/08	2019/08/09	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/08/08	2019/08/08	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/08/08	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/08/08	2019/08/08	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/08/08	2019/08/08	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/08/08	CAM SOP-00417	SM 23 2130 B m



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/16

Report #: R5842179

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9L6967

Received: 2019/08/07, 11:30

Remarks:

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(8) Radium-226 results have not been corrected for blanks.

(9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/16
Report #: R5842179
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9L6967

Received: 2019/08/07, 11:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9L6967

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KLK799		
Sampling Date		2019/08/03 05:30		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	5080	0.50	6276030
Metals				
Dissolved Aluminum (Al)	ug/L	76	30	6276032
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	6276032
Dissolved Arsenic (As)	ug/L	14.8	1.0	6276032
Dissolved Barium (Ba)	ug/L	128	10	6276032
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	6276032
Dissolved Bismuth (Bi)	ug/L	<10	10	6276032
Dissolved Boron (B)	ug/L	864	500	6276032
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	6276032
Dissolved Chromium (Cr)	ug/L	<10	10	6276032
Dissolved Cobalt (Co)	ug/L	<2.0	2.0	6276032
Dissolved Copper (Cu)	ug/L	<2.0	2.0	6276032
Dissolved Iron (Fe)	ug/L	<50	50	6276032
Dissolved Lead (Pb)	ug/L	<2.0	2.0	6276032
Dissolved Lithium (Li)	ug/L	350	20	6276032
Dissolved Manganese (Mn)	ug/L	84	10	6276032
Dissolved Molybdenum (Mo)	ug/L	16	10	6276032
Dissolved Nickel (Ni)	ug/L	<10	10	6276032
Dissolved Selenium (Se)	ug/L	<1.0	1.0	6276032
Dissolved Silicon (Si)	ug/L	<1000	1000	6276032
Dissolved Silver (Ag)	ug/L	<0.20	0.20	6276032
Dissolved Strontium (Sr)	ug/L	22100	10	6276032
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	6276032
Dissolved Tin (Sn)	ug/L	<50	50	6276032
Dissolved Titanium (Ti)	ug/L	<50	50	6276032
Dissolved Uranium (U)	ug/L	1.0	1.0	6276032
Dissolved Vanadium (V)	ug/L	<50	50	6276032
Dissolved Zinc (Zn)	ug/L	<50	50	6276032
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	6276032
Dissolved Calcium (Ca)	mg/L	846	0.50	6276031
Dissolved Magnesium (Mg)	mg/L	720	0.50	6276031
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9L6967
Report Date: 2019/08/16

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KLK799		
Sampling Date		2019/08/03 05:30		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	193	0.50	6276031
Dissolved Sodium (Na)	mg/L	6010	0.50	6276031
Dissolved Sulphur (S)	mg/L	441	30	6276031
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9L6967

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KLK799		
Sampling Date		2019/08/03 05:30		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	102	60	6276033
Total Antimony (Sb)	ug/L	<10	10	6276033
Total Arsenic (As)	ug/L	15.0	2.0	6276033
Total Barium (Ba)	ug/L	125	20	6276033
Total Beryllium (Be)	ug/L	<2.0	2.0	6276033
Total Bismuth (Bi)	ug/L	<20	20	6276033
Total Boron (B)	ug/L	<1000	1000	6276033
Total Cadmium (Cd)	ug/L	<0.20	0.20	6276033
Total Chromium (Cr)	ug/L	<20	20	6276033
Total Cobalt (Co)	ug/L	<4.0	4.0	6276033
Total Copper (Cu)	ug/L	<10	10	6276033
Total Iron (Fe)	ug/L	<200	200	6276033
Total Lead (Pb)	ug/L	<4.0	4.0	6276033
Total Lithium (Li)	ug/L	350	40	6276033
Total Manganese (Mn)	ug/L	108	20	6276033
Total Molybdenum (Mo)	ug/L	<20	20	6276033
Total Nickel (Ni)	ug/L	<20	20	6276033
Total Selenium (Se)	ug/L	<2.0	2.0	6276033
Total Silicon (Si)	ug/L	<2000	2000	6276033
Total Silver (Ag)	ug/L	<0.40	0.40	6276033
Total Strontium (Sr)	ug/L	21500	20	6276033
Total Thallium (Tl)	ug/L	<0.20	0.20	6276033
Total Tin (Sn)	ug/L	<100	100	6276033
Total Titanium (Ti)	ug/L	<100	100	6276033
Total Uranium (U)	ug/L	<2.0	2.0	6276033
Total Vanadium (V)	ug/L	<100	100	6276033
Total Zinc (Zn)	ug/L	<100	100	6276033
Total Zirconium (Zr)	ug/L	<2.0	2.0	6276033
Total Calcium (Ca)	ug/L	800000	1000	6270820
Total Magnesium (Mg)	ug/L	723000	1000	6270820
Total Potassium (K)	ug/L	195000	1000	6270820
Total Sodium (Na)	ug/L	5780000	1000	6270820
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9L6967

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KLK799		
Sampling Date		2019/08/03 05:30		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	437000	60000	6270820
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	4970000	500	6270819
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

BUREAU
VERITAS

BV Labs Job #: B9L6967

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KLK799			KLK799		
Sampling Date		2019/08/03 05:30			2019/08/03 05:30		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	82	1.0	6267066			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6267066			
Inorganics							
Total Ammonia-N	mg/L	4.1	0.050	6269155			
Conductivity	umho/cm	34000	1.0	6267358			
Free Cyanide (CN)	ug/L	2.5 (1)	1.0	6277129	1.8	1.0	6277129
Total Dissolved Solids	mg/L	22000	20	6270030			
Total Kjeldahl Nitrogen (TKN)	mg/L	13	2.0	6269150			
Dissolved Organic Carbon	mg/L	4.3	0.50	6267975			
Total Organic Carbon (TOC)	mg/L	5.0	0.50	6269147	4.8	0.50	6269147
Orthophosphate (P)	mg/L	<0.010	0.010	6269158	<0.010	0.010	6269158
Dissolved Oxygen	mg/L	9.67		6269531			
pH	pH	7.82		6266043			
Total Phosphorus	mg/L	0.068	0.020	6269100			
Reactive Silica (SiO ₂)	mg/L	2.1	0.050	6277130			
Total Suspended Solids	mg/L	27	1	6269129			
Dissolved Sulphate (SO ₄)	mg/L	1100	5.0	6269161	1100	5.0	6269161
Total Cyanide (CN)	mg/L	0.0064	0.0050	6269409			
Turbidity	NTU	1.7	0.1	6268047			
WAD Cyanide (Free)	mg/L	0.0014	0.0010	6269415			
Alkalinity (Total as CaCO ₃)	mg/L	82	1.0	6266040			
Dissolved Chloride (Cl ⁻)	mg/L	12000	100	6269157	12000	100	6269157
Nitrite (N)	mg/L	0.387	0.010	6269168			
Nitrate (N)	mg/L	41.0	0.50	6269168			
Nitrate + Nitrite (N)	mg/L	41.4	0.50	6269168			
RADIONUCLIDE							
Radium-226	Bq/L	0.12	0.0050	6264949			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W							



BUREAU
VERITAS

BV Labs Job #: B9L6967
Report Date: 2019/08/16

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KLK799		
Sampling Date		2019/08/03 05:30		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6268815
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6268817
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9L6967
Report Date: 2019/08/16

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KLK799
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/03
Shipped:
Received: 2019/08/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6266040	N/A	2019/08/08	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6267066	N/A	2019/08/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6269157	N/A	2019/08/08	Deonarine Ramnarine
Conductivity	AT	6267358	N/A	2019/08/08	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6269415	N/A	2019/08/08	Gnana Thomas
Total Cyanide	SKAL/CN	6269409	2019/08/08	2019/08/08	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6267975	N/A	2019/08/08	Nimarta Singh
Dissolved Oxygen	DO	6269531	2019/08/08	2019/08/08	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6268817	2019/08/08	2019/08/08	Ron Morrison
Mercury (low level)	CV/AA	6268815	2019/08/08	2019/08/08	Ron Morrison
Cyanide (Free)	SPEC	6277129	2019/08/12	2019/08/12	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6270819	N/A	2019/08/12	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6276030	N/A	2019/08/12	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6276031	N/A	2019/08/12	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6276032	N/A	2019/08/10	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6270820	2019/08/12	2019/08/12	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6276033	2019/08/09	2019/08/12	Valentina Balada
Silica (Reactive)	KONE	6277130	N/A	2019/08/11	Serena Tian
Total Ammonia-N	LACH/NH ₄	6269155	N/A	2019/08/08	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6269168	N/A	2019/08/08	Chandra Nandlal
pH	AT	6266043	2019/08/08	2019/08/08	Neil Dassanayake
Orthophosphate	KONE	6269158	N/A	2019/08/08	Alina Dobreanu
Radium-226 Low Level	AS	6264949	N/A	2019/08/13	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6269161	N/A	2019/08/08	Alina Dobreanu
Total Dissolved Solids	BAL	6270030	2019/08/08	2019/08/09	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6269150	2019/08/08	2019/08/08	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6269147	N/A	2019/08/08	Nimarta Singh
Total Phosphorus (Colourimetric)	LACH/P	6269100	2019/08/08	2019/08/08	Nimarta Singh
Low Level Total Suspended Solids	BAL	6269129	2019/08/08	2019/08/08	Massarat Jan
Turbidity	AT	6268047	N/A	2019/08/08	Kazzandra Adeva

BV Labs ID: KLK799 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/03
Shipped:
Received: 2019/08/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	6269157	N/A	2019/08/08	Deonarine Ramnarine
Cyanide (Free)	SPEC	6277129	2019/08/12	2019/08/12	Taylor Mullings
Orthophosphate	KONE	6269158	N/A	2019/08/08	Alina Dobreanu
Sulphate by Automated Colourimetry	KONE	6269161	N/A	2019/08/08	Alina Dobreanu
Total Organic Carbon (TOC)	TOCV/NDIR	6269147	N/A	2019/08/08	Nimarta Singh



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	16.0°C
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Sample KLK799 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KLK799 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KLK799 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

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VERITAS

BV Labs Job #: B9L6967

Report Date: 2019/08/16

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6264949	Radium-226	2019/08/13			91	85 - 115	<0.0050	Bq/L	8.7	N/A		
6266040	Alkalinity (Total as CaCO3)	2019/08/08			97	85 - 115	<1.0	mg/L	NC	20		
6266043	pH	2019/08/08			102	98 - 103			0.54	N/A		
6267358	Conductivity	2019/08/08			101	85 - 115	<1.0	umho/cm	0.29	25		
6267975	Dissolved Organic Carbon	2019/08/08	91	80 - 120	94	80 - 120	<0.50	mg/L	NC	20		
6268047	Turbidity	2019/08/08			95	85 - 115	<0.1	NTU	6.9	20		
6268815	Mercury (Hg)	2019/08/08	100	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6268817	Dissolved Mercury (Hg)	2019/08/08	107	75 - 125	98	80 - 120	<0.00001	mg/L	NC	20		
6269100	Total Phosphorus	2019/08/08	104	80 - 120	101	80 - 120	<0.020	mg/L	3.4	20	102	80 - 120
6269129	Total Suspended Solids	2019/08/08					<1	mg/L	5.1	25	99	85 - 115
6269147	Total Organic Carbon (TOC)	2019/08/08	95	80 - 120	97	80 - 120	<0.50	mg/L	2.9	20		
6269150	Total Kjeldahl Nitrogen (TKN)	2019/08/08	NC	80 - 120	98	80 - 120	<0.10	mg/L	16	20	93	80 - 120
6269155	Total Ammonia-N	2019/08/08	100	75 - 125	101	80 - 120	<0.050	mg/L	7.0	20		
6269157	Dissolved Chloride (Cl-)	2019/08/08	NC	80 - 120	103	80 - 120	<1.0	mg/L	2.3	20		
6269158	Orthophosphate (P)	2019/08/08	104	75 - 125	101	80 - 120	<0.010	mg/L	NC	25		
6269161	Dissolved Sulphate (SO4)	2019/08/08	NC	75 - 125	99	80 - 120	<1.0	mg/L	0.38	20		
6269168	Nitrate (N)	2019/08/08	94	80 - 120	98	80 - 120	<0.10	mg/L	1.6	20		
6269168	Nitrite (N)	2019/08/08	96	80 - 120	101	80 - 120	<0.010	mg/L	2.6	20		
6269409	Total Cyanide (CN)	2019/08/08	68 (1)	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20		
6269415	WAD Cyanide (Free)	2019/08/08	68 (1)	80 - 120	98	80 - 120	<0.0010	mg/L	NC	20		
6270030	Total Dissolved Solids	2019/08/09					<10	mg/L	0.55	25	95	90 - 110
6276032	Dissolved Aluminum (Al)	2019/08/10	95	80 - 120	100	80 - 120	<3.0	ug/L				
6276032	Dissolved Antimony (Sb)	2019/08/10	97	80 - 120	100	80 - 120	<0.50	ug/L				
6276032	Dissolved Arsenic (As)	2019/08/10	104	80 - 120	101	80 - 120	<0.10	ug/L				
6276032	Dissolved Barium (Ba)	2019/08/10	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6276032	Dissolved Beryllium (Be)	2019/08/10	93	80 - 120	100	80 - 120	<0.10	ug/L				
6276032	Dissolved Bismuth (Bi)	2019/08/10	93	80 - 120	105	80 - 120	<1.0	ug/L				
6276032	Dissolved Boron (B)	2019/08/10	95	80 - 120	103	80 - 120	<50	ug/L				
6276032	Dissolved Cadmium (Cd)	2019/08/10	92	80 - 120	100	80 - 120	<0.010	ug/L				
6276032	Dissolved Chromium (Cr)	2019/08/10	93	80 - 120	102	80 - 120	<1.0	ug/L				
6276032	Dissolved Cobalt (Co)	2019/08/10	90	80 - 120	100	80 - 120	<0.20	ug/L				

BUREAU
VERITAS

BV Labs Job #: B9L6967

Report Date: 2019/08/16

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6276032	Dissolved Copper (Cu)	2019/08/10	86	80 - 120	100	80 - 120	<0.20	ug/L				
6276032	Dissolved Iron (Fe)	2019/08/10	94	80 - 120	102	80 - 120	<5.0	ug/L				
6276032	Dissolved Lead (Pb)	2019/08/10	99	80 - 120	105	80 - 120	<0.20	ug/L				
6276032	Dissolved Lithium (Li)	2019/08/10	NC	80 - 120	99	80 - 120	<2.0	ug/L				
6276032	Dissolved Manganese (Mn)	2019/08/10	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6276032	Dissolved Molybdenum (Mo)	2019/08/10	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6276032	Dissolved Nickel (Ni)	2019/08/10	86	80 - 120	102	80 - 120	<1.0	ug/L				
6276032	Dissolved Selenium (Se)	2019/08/10	103	80 - 120	98	80 - 120	<0.10	ug/L				
6276032	Dissolved Silicon (Si)	2019/08/10	96	80 - 120	105	80 - 120	<100	ug/L				
6276032	Dissolved Silver (Ag)	2019/08/10	93	80 - 120	102	80 - 120	<0.020	ug/L				
6276032	Dissolved Strontium (Sr)	2019/08/10	NC	80 - 120	104	80 - 120	<1.0	ug/L				
6276032	Dissolved Thallium (Tl)	2019/08/10	99	80 - 120	105	80 - 120	<0.010	ug/L				
6276032	Dissolved Tin (Sn)	2019/08/10	95	80 - 120	101	80 - 120	<5.0	ug/L				
6276032	Dissolved Titanium (Ti)	2019/08/10	98	80 - 120	104	80 - 120	<5.0	ug/L				
6276032	Dissolved Uranium (U)	2019/08/10	105	80 - 120	107	80 - 120	<0.10	ug/L				
6276032	Dissolved Vanadium (V)	2019/08/10	97	80 - 120	100	80 - 120	<5.0	ug/L				
6276032	Dissolved Zinc (Zn)	2019/08/10	84	80 - 120	101	80 - 120	<5.0	ug/L				
6276032	Dissolved Zirconium (Zr)	2019/08/10	110	80 - 120	103	80 - 120	<0.10	ug/L				
6276033	Total Aluminum (Al)	2019/08/10	101	80 - 120	102	80 - 120	<3.0	ug/L				
6276033	Total Antimony (Sb)	2019/08/10	101	80 - 120	100	80 - 120	<0.50	ug/L				
6276033	Total Arsenic (As)	2019/08/10	101	80 - 120	99	80 - 120	<0.10	ug/L				
6276033	Total Barium (Ba)	2019/08/10	99	80 - 120	100	80 - 120	<1.0	ug/L				
6276033	Total Beryllium (Be)	2019/08/10	100	80 - 120	101	80 - 120	<0.10	ug/L				
6276033	Total Bismuth (Bi)	2019/08/10	98	80 - 120	101	80 - 120	<1.0	ug/L				
6276033	Total Boron (B)	2019/08/10	103	80 - 120	102	80 - 120	<50	ug/L				
6276033	Total Cadmium (Cd)	2019/08/10	99	80 - 120	100	80 - 120	<0.010	ug/L				
6276033	Total Chromium (Cr)	2019/08/10	98	80 - 120	99	80 - 120	<1.0	ug/L				
6276033	Total Cobalt (Co)	2019/08/10	95	80 - 120	97	80 - 120	<0.20	ug/L				
6276033	Total Copper (Cu)	2019/08/10	94	80 - 120	99	80 - 120	<0.50	ug/L				
6276033	Total Iron (Fe)	2019/08/10	98	80 - 120	101	80 - 120	<10	ug/L				
6276033	Total Lead (Pb)	2019/08/10	100	80 - 120	103	80 - 120	<0.20	ug/L				
6276033	Total Lithium (Li)	2019/08/10	99	80 - 120	100	80 - 120	<2.0	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9L6967

Report Date: 2019/08/16

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6276033	Total Manganese (Mn)	2019/08/10	99	80 - 120	100	80 - 120	<1.0	ug/L				
6276033	Total Molybdenum (Mo)	2019/08/10	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6276033	Total Nickel (Ni)	2019/08/10	95	80 - 120	99	80 - 120	<1.0	ug/L				
6276033	Total Selenium (Se)	2019/08/10	100	80 - 120	100	80 - 120	<0.10	ug/L				
6276033	Total Silicon (Si)	2019/08/10	NC	80 - 120	105	80 - 120	<100	ug/L				
6276033	Total Silver (Ag)	2019/08/10	98	80 - 120	100	80 - 120	<0.020	ug/L				
6276033	Total Strontium (Sr)	2019/08/10	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6276033	Total Thallium (Tl)	2019/08/10	101	80 - 120	101	80 - 120	<0.010	ug/L				
6276033	Total Tin (Sn)	2019/08/10	101	80 - 120	101	80 - 120	<5.0	ug/L				
6276033	Total Titanium (Ti)	2019/08/10	99	80 - 120	100	80 - 120	<5.0	ug/L				
6276033	Total Uranium (U)	2019/08/10	103	80 - 120	102	80 - 120	<0.10	ug/L				
6276033	Total Vanadium (V)	2019/08/10	100	80 - 120	100	80 - 120	<5.0	ug/L				
6276033	Total Zinc (Zn)	2019/08/10	95	80 - 120	100	80 - 120	<5.0	ug/L				
6276033	Total Zirconium (Zr)	2019/08/10	103	80 - 120	102	80 - 120	<0.10	ug/L				
6277129	Free Cyanide (CN)	2019/08/12	89	80 - 120	91	80 - 120	<1.0	ug/L	NC	20		
6277130	Reactive Silica (SiO ₂)	2019/08/11	100	80 - 120	102	80 - 120	<0.050	mg/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9L6967

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Brad Newman, Scientific Service Specialist

Harry (Peng) Liang, Senior Analyst

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Rob Reinert, B.Sc., Scientific Specialist

Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9L6967

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: B9L6974
Your Project #: MB9L6974
Site Location: MELIADINE
Your C.O.C. #: B9L6974-M060-01-01

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/08/12
Report #: R2765615
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B965472

Received: 2019/08/09, 09:50

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Chloride/Sulphate by Auto Colourimetry	1	N/A	2019/08/11	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Conductivity @25C	1	N/A	2019/08/12	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	1	N/A	2019/08/12	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	1	N/A	2019/08/12	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio	1	N/A	2019/08/12		Auto Calc
Total Dissolved Solids (Calc. from EC)	1	N/A	2019/08/12		Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.



Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Your P.O. #: B9L6974
Your Project #: MB9L6974
Site Location: MELIADINE
Your C.O.C. #: B9L6974-M060-01-01

Report Date: 2019/08/12
Report #: R2765615
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B965472
Received: 2019/08/09, 09:50

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bvlabs.com
Phone# (403) 291-3077

=====

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BUREAU
VERITAS

BV Labs Job #: B965472
Report Date: 2019/08/12

Agnico-Eagle
Client Project #: MB9L6974
Site Location: MELIADINE
Your P.O. #: B9L6974
Sampler Initials: RS

SALINITY WATER (WATER)

BV Labs ID		WG4597		
Sampling Date		2019/08/05 06:14		
COC Number		B9L6974-M060-01-01		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Sodium Adsorption Ratio	N/A	31	0.10	9541054
Total dissolved solids (calc., EC)	mg/L	30000	10	9541058
Misc. Inorganics				
Conductivity	uS/cm	30000	2.0	9543388
pH	pH	7.60	N/A	9543386
Anions				
Dissolved Chloride (Cl)	mg/L	9700 (1)	100	9543256
Dissolved Sulphate (SO4)	mg/L	1000 (1)	10	9543256
Lab Filtered Elements				
Dissolved Calcium (Ca)	mg/L	930	6.0	9543263
Dissolved Magnesium (Mg)	mg/L	640	4.0	9543263
Dissolved Potassium (K)	mg/L	180	6.0	9543263
Dissolved Sodium (Na)	mg/L	5000	10	9543263
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.				



BUREAU
VERITAS

BV Labs Job #: B965472
Report Date: 2019/08/12

Agnico-Eagle
Client Project #: MB9L6974
Site Location: MELIADINE
Your P.O. #: B9L6974
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: WG4597
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/05
Shipped:
Received: 2019/08/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9543256	N/A	2019/08/11	Serena Tian
Conductivity @25C	COND	9543388	N/A	2019/08/12	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9543263	N/A	2019/08/12	Harry (Peng) Liang
pH @25°C	AT/ALK	9543386	N/A	2019/08/12	Ilonka Kovac
Sodium Adsorption Ratio	CALC	9541054	N/A	2019/08/12	Automated Statchk
Total Dissolved Solids (Calc. from EC)	CALC	9541058	N/A	2019/08/12	Report Automation Engine



BUREAU
VERITAS

BV Labs Job #: B965472
Report Date: 2019/08/12

Agnico-Eagle
Client Project #: MB9L6974
Site Location: MELIADINE
Your P.O. #: B9L6974
Sampler Initials: RS

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.3°C
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SALINITY WATER (WATER) Comments

Sample WG4597 [MEL-26] Elements by ICP-Dissolved-Lab Filtered: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B965472

Report Date: 2019/08/12

QUALITY ASSURANCE REPORT

Agnico-Eagle

Client Project #: MB9L6974

Site Location: MELIADINE

Your P.O. #: B9L6974

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9543256	Dissolved Chloride (Cl)	2019/08/11	105	80 - 120	99	80 - 120	<1.0	mg/L	5.0	20
9543256	Dissolved Sulphate (SO ₄)	2019/08/11	NC	80 - 120	102	80 - 120	<1.0	mg/L	8.2	20
9543263	Dissolved Calcium (Ca)	2019/08/11	NC	80 - 120	100	80 - 120	<0.30	mg/L	0.48	20
9543263	Dissolved Magnesium (Mg)	2019/08/11	91	80 - 120	100	80 - 120	<0.20	mg/L	0.15	20
9543263	Dissolved Potassium (K)	2019/08/11	91	80 - 120	93	80 - 120	<0.30	mg/L	0.55	20
9543263	Dissolved Sodium (Na)	2019/08/11	89	80 - 120	100	80 - 120	<0.50	mg/L	0.98	20
9543386	pH	2019/08/12			100	97 - 103			0.38	N/A
9543388	Conductivity	2019/08/12			100	90 - 110	<2.0	uS/cm	0	10

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)



BUREAU
VERITAS

BV Labs Job #: B965472
Report Date: 2019/08/12

Agnico-Eagle
Client Project #: MB9L6974
Site Location: MELIADINE
Your P.O. #: B9L6974
Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Harry (Peng) Liang, Senior Analyst

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/08/16
 Report #: R5842146
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9L6974

Received: 2019/08/07, 11:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/08/08	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/08/08	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/08/08	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	1	N/A	2019/08/08	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/08/08	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/08/08	2019/08/08	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/08/08	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/08/08	2019/08/08	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/08/08	2019/08/08	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/08	2019/08/08	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/08/12	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/08/12	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/08/12	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/08/10	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/08/07	2019/08/12	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/08/09	2019/08/10	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/08/11	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/08	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	1	N/A	2019/08/08	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/08/08	2019/08/08	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/08/08	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	1	N/A	2019/08/13	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/08/08	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/08/08	2019/08/09	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/08/08	2019/08/08	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/08/08	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/08/08	2019/08/08	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/08/08	2019/08/08	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/08/08	CAM SOP-00417	SM 23 2130 B m



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/16
Report #: R5842146
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9L6974

Received: 2019/08/07, 11:30

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Laboratory Method	Reference
	Quantity	Extracted Analyzed		
Low Level Volatile Suspended Solids (1)	1	2019/08/08 2019/08/08	CAM SOP-00428	SM 23 2540

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(8) Radium-226 results have not been corrected for blanks.

(9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/16
Report #: R5842146
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9L6974
Received: 2019/08/07, 11:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9L6974
Report Date: 2019/08/16

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KLK830		
Sampling Date		2019/08/05 06:14		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	4900	0.50	6276030
Metals				
Dissolved Aluminum (Al)	ug/L	46	30	6276032
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	6276032
Dissolved Arsenic (As)	ug/L	11.2	1.0	6276032
Dissolved Barium (Ba)	ug/L	180	10	6276032
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	6276032
Dissolved Bismuth (Bi)	ug/L	<10	10	6276032
Dissolved Boron (B)	ug/L	863	500	6276032
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	6276032
Dissolved Chromium (Cr)	ug/L	<10	10	6276032
Dissolved Cobalt (Co)	ug/L	<2.0	2.0	6276032
Dissolved Copper (Cu)	ug/L	<2.0	2.0	6276032
Dissolved Iron (Fe)	ug/L	<50	50	6276032
Dissolved Lead (Pb)	ug/L	<2.0	2.0	6276032
Dissolved Lithium (Li)	ug/L	499	20	6276032
Dissolved Manganese (Mn)	ug/L	62	10	6276032
Dissolved Molybdenum (Mo)	ug/L	12	10	6276032
Dissolved Nickel (Ni)	ug/L	<10	10	6276032
Dissolved Selenium (Se)	ug/L	<1.0	1.0	6276032
Dissolved Silicon (Si)	ug/L	<1000	1000	6276032
Dissolved Silver (Ag)	ug/L	<0.20	0.20	6276032
Dissolved Strontium (Sr)	ug/L	24700	10	6276032
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	6276032
Dissolved Tin (Sn)	ug/L	<50	50	6276032
Dissolved Titanium (Ti)	ug/L	<50	50	6276032
Dissolved Uranium (U)	ug/L	<1.0	1.0	6276032
Dissolved Vanadium (V)	ug/L	<50	50	6276032
Dissolved Zinc (Zn)	ug/L	<50	50	6276032
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	6276032
Dissolved Calcium (Ca)	mg/L	943	0.50	6276031
Dissolved Magnesium (Mg)	mg/L	618	0.50	6276031
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KLK830		
Sampling Date		2019/08/05 06:14		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	182	0.50	6276031
Dissolved Sodium (Na)	mg/L	5240	0.50	6276031
Dissolved Sulphur (S)	mg/L	379	30	6276031
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KLK830		
Sampling Date		2019/08/05 06:14		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	74	30	6276033
Total Antimony (Sb)	ug/L	5.9	5.0	6276033
Total Arsenic (As)	ug/L	12.0	1.0	6276033
Total Barium (Ba)	ug/L	176	10	6276033
Total Beryllium (Be)	ug/L	<1.0	1.0	6276033
Total Bismuth (Bi)	ug/L	<10	10	6276033
Total Boron (B)	ug/L	827	500	6276033
Total Cadmium (Cd)	ug/L	<0.10	0.10	6276033
Total Chromium (Cr)	ug/L	<10	10	6276033
Total Cobalt (Co)	ug/L	2.1	2.0	6276033
Total Copper (Cu)	ug/L	8.7	5.0	6276033
Total Iron (Fe)	ug/L	<100	100	6276033
Total Lead (Pb)	ug/L	<2.0	2.0	6276033
Total Lithium (Li)	ug/L	470	20	6276033
Total Manganese (Mn)	ug/L	71	10	6276033
Total Molybdenum (Mo)	ug/L	15	10	6276033
Total Nickel (Ni)	ug/L	<10	10	6276033
Total Selenium (Se)	ug/L	1.1	1.0	6276033
Total Silicon (Si)	ug/L	<1000	1000	6276033
Total Silver (Ag)	ug/L	<0.20	0.20	6276033
Total Strontium (Sr)	ug/L	23000	10	6276033
Total Thallium (Tl)	ug/L	<0.10	0.10	6276033
Total Tin (Sn)	ug/L	<50	50	6276033
Total Titanium (Ti)	ug/L	<50	50	6276033
Total Uranium (U)	ug/L	1.0	1.0	6276033
Total Vanadium (V)	ug/L	<50	50	6276033
Total Zinc (Zn)	ug/L	<50	50	6276033
Total Zirconium (Zr)	ug/L	<1.0	1.0	6276033
Total Calcium (Ca)	ug/L	922000	500	6270820
Total Magnesium (Mg)	ug/L	604000	500	6270820
Total Potassium (K)	ug/L	175000	500	6270820
Total Sodium (Na)	ug/L	4820000	500	6270820
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KLK830		
Sampling Date		2019/08/05 06:14		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	393000	30000	6270820
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	4790000	500	6270819
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KLK830			KLK830		
Sampling Date		2019/08/05 06:14			2019/08/05 06:14		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	79	1.0	6267066			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6267066			
Inorganics							
Total Ammonia-N	mg/L	3.1	0.050	6269155			
Conductivity	umho/cm	30000	1.0	6267358			
Free Cyanide (CN)	ug/L	1.1 (1)	1.0	6277129			
Total Dissolved Solids	mg/L	20000	20	6270030	19900	20	6270030
Total Kjeldahl Nitrogen (TKN)	mg/L	9.3	2.0	6269150	11	2.0	6269150
Dissolved Organic Carbon	mg/L	5.3	0.50	6267975			
Total Organic Carbon (TOC)	mg/L	6.1	0.50	6269147			
Orthophosphate (P)	mg/L	<0.010	0.010	6269158			
Dissolved Oxygen	mg/L	9.52		6269531			
pH	pH	7.69		6266043			
Total Phosphorus	mg/L	0.054	0.020	6269100			
Reactive Silica (SiO ₂)	mg/L	2.1 (2)	0.50	6277130	1.1	0.50	6277130
Total Suspended Solids	mg/L	19	1	6269129	20	1	6269129
Dissolved Sulphate (SO ₄)	mg/L	980	5.0	6269161			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6269409	<0.0050	0.0050	6269409
Turbidity	NTU	0.7	0.1	6268047			
Volatile Suspended Solids	mg/L	10	1	6269134	10	1	6269134
WAD Cyanide (Free)	mg/L	<0.0010	0.0010	6269415	<0.0010	0.0010	6269415
Alkalinity (Total as CaCO ₃)	mg/L	80	1.0	6266040			
Dissolved Chloride (Cl ⁻)	mg/L	11000	100	6269157			
Nitrite (N)	mg/L	0.296	0.010	6269168			
Nitrate (N)	mg/L	46.2	0.50	6269168			
Nitrate + Nitrite (N)	mg/L	46.5	0.50	6269168			
RADIONUCLIDE							
Radium-226	Bq/L	0.17	0.0050	6264949			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W (2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.							



BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KLK830		
Sampling Date		2019/08/05 06:14		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6268815
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6268817
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KLK830
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/05
Shipped:
Received: 2019/08/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6266040	N/A	2019/08/08	Neil Dassanayake
Carbonate, Bicarbonate and Hydroxide	CALC	6267066	N/A	2019/08/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6269157	N/A	2019/08/08	Deonarine Ramnarine
Conductivity	AT	6267358	N/A	2019/08/08	Neil Dassanayake
Free (WAD) Cyanide	SKAL/CN	6269415	N/A	2019/08/08	Gnana Thomas
Total Cyanide	SKAL/CN	6269409	2019/08/08	2019/08/08	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6267975	N/A	2019/08/08	Nimarta Singh
Dissolved Oxygen	DO	6269531	2019/08/08	2019/08/08	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6268817	2019/08/08	2019/08/08	Ron Morrison
Mercury (low level)	CV/AA	6268815	2019/08/08	2019/08/08	Ron Morrison
Cyanide (Free)	SPEC	6277129	2019/08/12	2019/08/12	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6270819	N/A	2019/08/12	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6276030	N/A	2019/08/12	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6276031	N/A	2019/08/12	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6276032	N/A	2019/08/10	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6270820	2019/08/12	2019/08/12	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6276033	2019/08/09	2019/08/10	Valentina Balada
Silica (Reactive)	KONE	6277130	N/A	2019/08/11	Serena Tian
Total Ammonia-N	LACH/NH ₄	6269155	N/A	2019/08/08	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6269168	N/A	2019/08/08	Chandra Nandlal
pH	AT	6266043	2019/08/08	2019/08/08	Neil Dassanayake
Orthophosphate	KONE	6269158	N/A	2019/08/08	Alina Dobreanu
Radium-226 Low Level	AS	6264949	N/A	2019/08/13	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6269161	N/A	2019/08/08	Alina Dobreanu
Total Dissolved Solids	BAL	6270030	2019/08/08	2019/08/09	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6269150	2019/08/08	2019/08/08	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6269147	N/A	2019/08/08	Nimarta Singh
Total Phosphorus (Colourimetric)	LACH/P	6269100	2019/08/08	2019/08/08	Nimarta Singh
Low Level Total Suspended Solids	BAL	6269129	2019/08/08	2019/08/08	Massarat Jan
Turbidity	AT	6268047	N/A	2019/08/08	Kazzandra Adeva
Low Level Volatile Suspended Solids	BAL	6269134	2019/08/08	2019/08/08	Massarat Jan

BV Labs ID: KLK830 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/05
Shipped:
Received: 2019/08/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6269415	N/A	2019/08/08	Gnana Thomas
Total Cyanide	SKAL/CN	6269409	2019/08/08	2019/08/08	Gnana Thomas
Silica (Reactive)	KONE	6277130	N/A	2019/08/11	Serena Tian
Total Dissolved Solids	BAL	6270030	2019/08/08	2019/08/09	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6269150	2019/08/08	2019/08/08	Shivani Shivani
Low Level Total Suspended Solids	BAL	6269129	2019/08/08	2019/08/08	Massarat Jan
Low Level Volatile Suspended Solids	BAL	6269134	2019/08/08	2019/08/08	Massarat Jan



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	16.0°C
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Sample KLK830 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KLK830 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KLK830 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6264949	Radium-226	2019/08/13			91	85 - 115	<0.0050	Bq/L	8.7	N/A		
6266040	Alkalinity (Total as CaCO ₃)	2019/08/08			97	85 - 115	<1.0	mg/L	NC	20		
6266043	pH	2019/08/08			102	98 - 103			0.54	N/A		
6267358	Conductivity	2019/08/08			101	85 - 115	<1.0	umho/cm	0.29	25		
6267975	Dissolved Organic Carbon	2019/08/08	91	80 - 120	94	80 - 120	<0.50	mg/L	NC	20		
6268047	Turbidity	2019/08/08			95	85 - 115	<0.1	NTU	6.9	20		
6268815	Mercury (Hg)	2019/08/08	100	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6268817	Dissolved Mercury (Hg)	2019/08/08	107	75 - 125	98	80 - 120	<0.00001	mg/L	NC	20		
6269100	Total Phosphorus	2019/08/08	104	80 - 120	101	80 - 120	<0.020	mg/L	3.4	20	102	80 - 120
6269129	Total Suspended Solids	2019/08/08					<1	mg/L	5.1	25	99	85 - 115
6269134	Volatile Suspended Solids	2019/08/08					<1	mg/L	3.9	25		
6269147	Total Organic Carbon (TOC)	2019/08/08	95	80 - 120	97	80 - 120	<0.50	mg/L	2.9	20		
6269150	Total Kjeldahl Nitrogen (TKN)	2019/08/08	NC	80 - 120	98	80 - 120	<0.10	mg/L	16	20	93	80 - 120
6269155	Total Ammonia-N	2019/08/08	100	75 - 125	101	80 - 120	<0.050	mg/L	7.0	20		
6269157	Dissolved Chloride (Cl ⁻)	2019/08/08	NC	80 - 120	103	80 - 120	<1.0	mg/L	2.3	20		
6269158	Orthophosphate (P)	2019/08/08	104	75 - 125	101	80 - 120	<0.010	mg/L	NC	25		
6269161	Dissolved Sulphate (SO ₄)	2019/08/08	NC	75 - 125	99	80 - 120	<1.0	mg/L	0.38	20		
6269168	Nitrate (N)	2019/08/08	94	80 - 120	98	80 - 120	<0.10	mg/L	1.6	20		
6269168	Nitrite (N)	2019/08/08	96	80 - 120	101	80 - 120	<0.010	mg/L	2.6	20		
6269409	Total Cyanide (CN)	2019/08/08	68 (1)	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20		
6269415	WAD Cyanide (Free)	2019/08/08	68 (1)	80 - 120	98	80 - 120	<0.0010	mg/L	NC	20		
6270030	Total Dissolved Solids	2019/08/09					<10	mg/L	0.55	25	95	90 - 110
6276032	Dissolved Aluminum (Al)	2019/08/10	95	80 - 120	100	80 - 120	<3.0	ug/L				
6276032	Dissolved Antimony (Sb)	2019/08/10	97	80 - 120	100	80 - 120	<0.50	ug/L				
6276032	Dissolved Arsenic (As)	2019/08/10	104	80 - 120	101	80 - 120	<0.10	ug/L				
6276032	Dissolved Barium (Ba)	2019/08/10	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6276032	Dissolved Beryllium (Be)	2019/08/10	93	80 - 120	100	80 - 120	<0.10	ug/L				
6276032	Dissolved Bismuth (Bi)	2019/08/10	93	80 - 120	105	80 - 120	<1.0	ug/L				
6276032	Dissolved Boron (B)	2019/08/10	95	80 - 120	103	80 - 120	<50	ug/L				
6276032	Dissolved Cadmium (Cd)	2019/08/10	92	80 - 120	100	80 - 120	<0.010	ug/L				
6276032	Dissolved Chromium (Cr)	2019/08/10	93	80 - 120	102	80 - 120	<1.0	ug/L				

BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6276032	Dissolved Cobalt (Co)	2019/08/10	90	80 - 120	100	80 - 120	<0.20	ug/L				
6276032	Dissolved Copper (Cu)	2019/08/10	86	80 - 120	100	80 - 120	<0.20	ug/L				
6276032	Dissolved Iron (Fe)	2019/08/10	94	80 - 120	102	80 - 120	<5.0	ug/L				
6276032	Dissolved Lead (Pb)	2019/08/10	99	80 - 120	105	80 - 120	<0.20	ug/L				
6276032	Dissolved Lithium (Li)	2019/08/10	NC	80 - 120	99	80 - 120	<2.0	ug/L				
6276032	Dissolved Manganese (Mn)	2019/08/10	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6276032	Dissolved Molybdenum (Mo)	2019/08/10	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6276032	Dissolved Nickel (Ni)	2019/08/10	86	80 - 120	102	80 - 120	<1.0	ug/L				
6276032	Dissolved Selenium (Se)	2019/08/10	103	80 - 120	98	80 - 120	<0.10	ug/L				
6276032	Dissolved Silicon (Si)	2019/08/10	96	80 - 120	105	80 - 120	<100	ug/L				
6276032	Dissolved Silver (Ag)	2019/08/10	93	80 - 120	102	80 - 120	<0.020	ug/L				
6276032	Dissolved Strontium (Sr)	2019/08/10	NC	80 - 120	104	80 - 120	<1.0	ug/L				
6276032	Dissolved Thallium (Tl)	2019/08/10	99	80 - 120	105	80 - 120	<0.010	ug/L				
6276032	Dissolved Tin (Sn)	2019/08/10	95	80 - 120	101	80 - 120	<5.0	ug/L				
6276032	Dissolved Titanium (Ti)	2019/08/10	98	80 - 120	104	80 - 120	<5.0	ug/L				
6276032	Dissolved Uranium (U)	2019/08/10	105	80 - 120	107	80 - 120	<0.10	ug/L				
6276032	Dissolved Vanadium (V)	2019/08/10	97	80 - 120	100	80 - 120	<5.0	ug/L				
6276032	Dissolved Zinc (Zn)	2019/08/10	84	80 - 120	101	80 - 120	<5.0	ug/L				
6276032	Dissolved Zirconium (Zr)	2019/08/10	110	80 - 120	103	80 - 120	<0.10	ug/L				
6276033	Total Aluminum (Al)	2019/08/10	101	80 - 120	102	80 - 120	<3.0	ug/L				
6276033	Total Antimony (Sb)	2019/08/10	101	80 - 120	100	80 - 120	<0.50	ug/L				
6276033	Total Arsenic (As)	2019/08/10	101	80 - 120	99	80 - 120	<0.10	ug/L				
6276033	Total Barium (Ba)	2019/08/10	99	80 - 120	100	80 - 120	<1.0	ug/L				
6276033	Total Beryllium (Be)	2019/08/10	100	80 - 120	101	80 - 120	<0.10	ug/L				
6276033	Total Bismuth (Bi)	2019/08/10	98	80 - 120	101	80 - 120	<1.0	ug/L				
6276033	Total Boron (B)	2019/08/10	103	80 - 120	102	80 - 120	<50	ug/L				
6276033	Total Cadmium (Cd)	2019/08/10	99	80 - 120	100	80 - 120	<0.010	ug/L				
6276033	Total Chromium (Cr)	2019/08/10	98	80 - 120	99	80 - 120	<1.0	ug/L				
6276033	Total Cobalt (Co)	2019/08/10	95	80 - 120	97	80 - 120	<0.20	ug/L				
6276033	Total Copper (Cu)	2019/08/10	94	80 - 120	99	80 - 120	<0.50	ug/L				
6276033	Total Iron (Fe)	2019/08/10	98	80 - 120	101	80 - 120	<10	ug/L				
6276033	Total Lead (Pb)	2019/08/10	100	80 - 120	103	80 - 120	<0.20	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6276033	Total Lithium (Li)	2019/08/10	99	80 - 120	100	80 - 120	<2.0	ug/L				
6276033	Total Manganese (Mn)	2019/08/10	99	80 - 120	100	80 - 120	<1.0	ug/L				
6276033	Total Molybdenum (Mo)	2019/08/10	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6276033	Total Nickel (Ni)	2019/08/10	95	80 - 120	99	80 - 120	<1.0	ug/L				
6276033	Total Selenium (Se)	2019/08/10	100	80 - 120	100	80 - 120	<0.10	ug/L				
6276033	Total Silicon (Si)	2019/08/10	NC	80 - 120	105	80 - 120	<100	ug/L				
6276033	Total Silver (Ag)	2019/08/10	98	80 - 120	100	80 - 120	<0.020	ug/L				
6276033	Total Strontium (Sr)	2019/08/10	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6276033	Total Thallium (Tl)	2019/08/10	101	80 - 120	101	80 - 120	<0.010	ug/L				
6276033	Total Tin (Sn)	2019/08/10	101	80 - 120	101	80 - 120	<5.0	ug/L				
6276033	Total Titanium (Ti)	2019/08/10	99	80 - 120	100	80 - 120	<5.0	ug/L				
6276033	Total Uranium (U)	2019/08/10	103	80 - 120	102	80 - 120	<0.10	ug/L				
6276033	Total Vanadium (V)	2019/08/10	100	80 - 120	100	80 - 120	<5.0	ug/L				
6276033	Total Zinc (Zn)	2019/08/10	95	80 - 120	100	80 - 120	<5.0	ug/L				
6276033	Total Zirconium (Zr)	2019/08/10	103	80 - 120	102	80 - 120	<0.10	ug/L				
6277129	Free Cyanide (CN)	2019/08/12	89	80 - 120	91	80 - 120	<1.0	ug/L	NC	20		
6277130	Reactive Silica (SiO2)	2019/08/11	100	80 - 120	102	80 - 120	<0.050	mg/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Rob Reinert, B.Sc., Scientific Specialist

Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9L6974

Report Date: 2019/08/16

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: MB9M5773
Site Location: MELIADINE
Your C.O.C. #: 1 of 1

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/08/21
Report #: R2770317
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B968223

Received: 2019/08/17, 10:30

Sample Matrix: Agua
Samples Received: 1

Analyses	Quantity	DateDEL Extraido	Date Analyzed	Analytical Method	Reference
Chloride/Sulphate by AC	1	N/A	2019/08/21	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Conductivity @25C	1	N/A	2019/08/20	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered	1	N/A	2019/08/20	AB SOP-00042	EPA 6010d R5 m
pH @25°C	1	N/A	2019/08/20	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio	1	N/A	2019/08/21		Auto Calc
Total Dissolved Solids (Calc. from EC)	1	N/A	2019/08/21		Auto Calc

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDCOMMENT

Encryption Key

COVERPAGECOMMENT1

Customer Solutions,
Email: customersolutionswest@bvlabs.com
Phone# (403) 291-3077

EAUTOSEND1

ESIGCOMMENT1



BUREAU
VERITAS

BV Labs Job #: B968223
Report Date: 2019/08/21

Agnico-Eagle
Client Project #: MB9M5773
Site Location: MELIADINE
Sampler Initials: DM

SALINITY WATER (AGUA)

BV Labs ID		WH8382			WH8382		
Sampling Date		2019/08/12 06:15			2019/08/12 06:15		
COC Number		1 of 1			1 of 1		
	Units	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup.	RDL	QC Batch
Sodium Adsorption Ratio	N/A	29	0.10	9552742			
Total dissolved solids (calc., EC)	mg/L	34000	10	9552743			
Conductivity	uS/cm	34000	2.0	9555018			
pH	pH	7.75	N/A	9555013			
Chloride (Cl)	mg/L	11000 (1)	100	9556637	11000	100	9556637
Sulphate (SO4)	mg/L	1300 (1)	10	9556637	1400	10	9556637
Calcium (Ca)	mg/L	1500	6.0	9554339	1500	6.0	9554339
Magnesium (Mg)	mg/L	740	4.0	9554339	750	4.0	9554339
Potassium (K)	mg/L	220	6.0	9554339	220	6.0	9554339
Sodium (Na)	mg/L	5400	10	9554339	5500	10	9554339
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B968223
Report Date: 2019/08/21

Agnico-Eagle
Client Project #: MB9M5773
Site Location: MELIADINE
Sampler Initials: DM

TEST SUMMARY

BV Labs ID: WH8382
Sample ID: MEL-26
Matrix: Agua

Collected: 2019/08/12
Shipped:
Received: 2019/08/17

Test Description	Instrumentation	Batch		Date Analyzed	Analyst
Chloride/Sulphate by AC	KONE	9556637	N/A	2019/08/21	Zafar Iqbal
Conductivity @25C	COND	9555018	N/A	2019/08/20	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9554339	N/A	2019/08/20	Mary Anne Dela Cruz
pH @25°C	AT/ALK	9555013	N/A	2019/08/20	Ilonka Kovac
Sodium Adsorption Ratio	CALC	9552742	N/A	2019/08/21	Report Automation Engine
Total Dissolved Solids (Calc. from EC)	CALC	9552743	N/A	2019/08/21	Report Automation Engine

BV Labs ID: WH8382 Dup
Sample ID: MEL-26
Matrix: Agua

Collected: 2019/08/12
Shipped:
Received: 2019/08/17

Test Description	Instrumentation	Batch		Date Analyzed	Analyst
Chloride/Sulphate by AC	KONE	9556637	N/A	2019/08/21	Zafar Iqbal
Elements by ICP-Dissolved-Lab Filtered	ICPA	9554339	N/A	2019/08/20	Mary Anne Dela Cruz



BUREAU
VERITAS

BV Labs Job #: B968223
Report Date: 2019/08/21

Agnico-Eagle
Client Project #: MB9M5773
Site Location: MELIADINE
Sampler Initials: DM

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.3°C
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SALINITY WATER (AGUA) Comments

Sample WH8382 [MEL-26] Elements by ICP-Dissolved-Lab Filtered: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B968223

Report Date: 2019/08/21

QUALITY ASSURANCE REPORT

Agnico-Eagle

Client Project #: MB9M5773

Site Location: MELIADINE

Sampler Initials: DM

QC Batch	Parameter	Date	MATRIX SPIKE		SPIKE		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
9554339	Calcium (Ca)	2019/08/20	NC	80 - 120	100	80 - 120	<0.30	mg/L	1.3	20
9554339	Magnesium (Mg)	2019/08/20	NC	80 - 120	104	80 - 120	<0.20	mg/L	1.2	20
9554339	Potassium (K)	2019/08/20	NC	80 - 120	104	80 - 120	<0.30	mg/L	1.2	20
9554339	Sodium (Na)	2019/08/20	NC	80 - 120	106	80 - 120	<0.50	mg/L	1.5	20
9555013	pH	2019/08/20			101	97 - 103			0.71	N/A
9555018	Conductivity	2019/08/20			99	90 - 110	<2.0	uS/cm	4.5	10
9556637	Chloride (Cl)	2019/08/21	NC	80 - 120	99	80 - 120	<1.0	mg/L	5.9	20
9556637	Sulphate (SO4)	2019/08/21	NC	80 - 120	101	80 - 120	<1.0	mg/L	8.7	20
CAMP_99992										
CAMP_99995										
CAMP_99998										
CAMP_99999										
CAMP_NCMATRIX										



BUREAU
VERITAS

BV Labs Job #: B968223

Report Date: 2019/08/21

Agnico-Eagle

Client Project #: MB9M5773

Site Location: MELIADINE

Sampler Initials: DM

VALIDATION SIGNATURE PAGE

SIGPAGECOMMENT1

A handwritten signature in cursive script, appearing to read "Peng Liang".

Harry (Peng) Liang

ESIGCOMMENT1



Your P.O. #: OL-762849
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/26
Report #: R5854041
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M5773

Received: 2019/08/15, 09:30

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/08/16	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/08/16	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/08/16	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	1	N/A	2019/08/16	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/08/16	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/08/16	2019/08/16	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/08/16	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/08/16	2019/08/16	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/08/16	2019/08/16	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/16	2019/08/16	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/08/20	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/08/20	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/08/20	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/08/20	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/08/15	2019/08/20	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/08/20	2019/08/20	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/08/20	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/16	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	1	N/A	2019/08/16	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/08/16	2019/08/16	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/08/16	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	1	N/A	2019/08/21	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/08/16	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/08/16	2019/08/19	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/08/16	2019/08/16	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/08/16	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/08/16	2019/08/16	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/08/16	2019/08/16	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/08/16	CAM SOP-00417	SM 23 2130 B m



Your P.O. #: OL-762849
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/26
Report #: R5854041
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M5773

Received: 2019/08/15, 09:30

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(8) Radium-226 results have not been corrected for blanks.

(9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/08/26
Report #: R5854041
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9M5773
Received: 2019/08/15, 09:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KNG385		
Sampling Date		2019/08/12 06:15		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	6450	0.50	6288345
Metals				
Dissolved Aluminum (Al)	ug/L	188	60	6291712
Dissolved Antimony (Sb)	ug/L	<10	10	6291712
Dissolved Arsenic (As)	ug/L	12.4	2.0	6291712
Dissolved Barium (Ba)	ug/L	315	20	6291712
Dissolved Beryllium (Be)	ug/L	<2.0	2.0	6291712
Dissolved Bismuth (Bi)	ug/L	<20	20	6291712
Dissolved Boron (B)	ug/L	<1000	1000	6291712
Dissolved Cadmium (Cd)	ug/L	<0.20	0.20	6291712
Dissolved Chromium (Cr)	ug/L	<20	20	6291712
Dissolved Cobalt (Co)	ug/L	4.5	4.0	6291712
Dissolved Copper (Cu)	ug/L	<4.0	4.0	6291712
Dissolved Iron (Fe)	ug/L	<100	100	6291712
Dissolved Lead (Pb)	ug/L	<4.0	4.0	6291712
Dissolved Lithium (Li)	ug/L	903	40	6291712
Dissolved Manganese (Mn)	ug/L	66	20	6291712
Dissolved Molybdenum (Mo)	ug/L	<20	20	6291712
Dissolved Nickel (Ni)	ug/L	37	20	6291712
Dissolved Selenium (Se)	ug/L	<2.0	2.0	6291712
Dissolved Silicon (Si)	ug/L	<2000	2000	6291712
Dissolved Silver (Ag)	ug/L	<0.40	0.40	6291712
Dissolved Strontium (Sr)	ug/L	33800	20	6291712
Dissolved Thallium (Tl)	ug/L	<0.20	0.20	6291712
Dissolved Tin (Sn)	ug/L	<100	100	6291712
Dissolved Titanium (Ti)	ug/L	<100	100	6291712
Dissolved Uranium (U)	ug/L	<2.0	2.0	6291712
Dissolved Vanadium (V)	ug/L	<100	100	6291712
Dissolved Zinc (Zn)	ug/L	<100	100	6291712
Dissolved Zirconium (Zr)	ug/L	<2.0	2.0	6291712
Dissolved Calcium (Ca)	mg/L	1450	1.0	6291711
Dissolved Magnesium (Mg)	mg/L	690	1.0	6291711
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KNG385		
Sampling Date		2019/08/12 06:15		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	215	1.0	6291711
Dissolved Sodium (Na)	mg/L	5420	1.0	6291711
Dissolved Sulphur (S)	mg/L	475	60	6291711
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KNG385		
Sampling Date		2019/08/12 06:15		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	273	60	6291713
Total Antimony (Sb)	ug/L	<10	10	6291713
Total Arsenic (As)	ug/L	13.1	2.0	6291713
Total Barium (Ba)	ug/L	321	20	6291713
Total Beryllium (Be)	ug/L	<2.0	2.0	6291713
Total Bismuth (Bi)	ug/L	<20	20	6291713
Total Boron (B)	ug/L	<1000	1000	6291713
Total Cadmium (Cd)	ug/L	<0.20	0.20	6291713
Total Chromium (Cr)	ug/L	<20	20	6291713
Total Cobalt (Co)	ug/L	4.7	4.0	6291713
Total Copper (Cu)	ug/L	<10	10	6291713
Total Iron (Fe)	ug/L	215	200	6291713
Total Lead (Pb)	ug/L	<4.0	4.0	6291713
Total Lithium (Li)	ug/L	780	40	6291713
Total Manganese (Mn)	ug/L	92	20	6291713
Total Molybdenum (Mo)	ug/L	<20	20	6291713
Total Nickel (Ni)	ug/L	37	20	6291713
Total Selenium (Se)	ug/L	<2.0	2.0	6291713
Total Silicon (Si)	ug/L	<2000	2000	6291713
Total Silver (Ag)	ug/L	<0.40	0.40	6291713
Total Strontium (Sr)	ug/L	35000	20	6291713
Total Thallium (Tl)	ug/L	<0.20	0.20	6291713
Total Tin (Sn)	ug/L	<100	100	6291713
Total Titanium (Ti)	ug/L	<100	100	6291713
Total Uranium (U)	ug/L	<2.0	2.0	6291713
Total Vanadium (V)	ug/L	<100	100	6291713
Total Zinc (Zn)	ug/L	<100	100	6291713
Total Zirconium (Zr)	ug/L	<2.0	2.0	6291713
Total Calcium (Ca)	ug/L	1440000	1000	6288349
Total Magnesium (Mg)	ug/L	638000	1000	6288349
Total Potassium (K)	ug/L	208000	1000	6288349
Total Sodium (Na)	ug/L	4950000	1000	6288349
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KNG385		
Sampling Date		2019/08/12 06:15		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	454000	60000	6288349
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	6220000	500	6288348
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

BUREAU
VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

RESULTS OF ANALYSES OF WATER

BV Labs ID		KNG385			KNG385		
Sampling Date		2019/08/12 06:15			2019/08/12 06:15		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch

Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	91	1.0	6281848			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6281848			
Inorganics							
Total Ammonia-N	mg/L	4.6	0.050	6283592			
Conductivity	umho/cm	33000	1.0	6283784	34000	1.0	6283784
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6290148			
Total Dissolved Solids	mg/L	22600	20	6284601			
Total Kjeldahl Nitrogen (TKN)	mg/L	11	5.0	6283752			
Dissolved Organic Carbon	mg/L	20	0.50	6283901			
Total Organic Carbon (TOC)	mg/L	20	0.50	6283745			
Orthophosphate (P)	mg/L	<0.010	0.010	6283779			
Dissolved Oxygen	mg/L	9.93		6284385			
pH	pH	7.69		6283785	7.73		6283785
Total Phosphorus	mg/L	0.078	0.040	6283708			
Reactive Silica (SiO ₂)	mg/L	1.7 (2)	0.50	6290149	1.8	0.50	6290149
Total Suspended Solids	mg/L	22	1	6283706			
Dissolved Sulphate (SO ₄)	mg/L	1200	5.0	6283777			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6284036			
Turbidity	NTU	0.2	0.1	6283731			
WAD Cyanide (Free)	mg/L	0.017	0.0010	6284037			
Alkalinity (Total as CaCO ₃)	mg/L	91	1.0	6283781	92	1.0	6283781
Dissolved Chloride (Cl ⁻)	mg/L	12000	120	6283776			
Nitrite (N)	mg/L	0.087	0.010	6283765			
Nitrate (N)	mg/L	75.7	1.0	6283765			
Nitrate + Nitrite (N)	mg/L	75.8	1.0	6283765			
RADIONUCLIDE							
Radium-226	Bq/L	0.14	0.0050	6287025			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W (2) Detection limits raised due to matrix interference.							



BUREAU
VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KNG385		
Sampling Date		2019/08/12 06:15		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6283696
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6283697
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

TEST SUMMARY

BV Labs ID: KNG385

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/12

Shipped:

Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6283781	N/A	2019/08/16	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6281848	N/A	2019/08/16	Automated Statchk
Chloride by Automated Colourimetry	KONE	6283776	N/A	2019/08/16	Deonarine Ramnarine
Conductivity	AT	6283784	N/A	2019/08/16	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6284037	N/A	2019/08/16	Gnana Thomas
Total Cyanide	SKAL/CN	6284036	2019/08/16	2019/08/16	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6283901	N/A	2019/08/16	Mandeep Kaur
Dissolved Oxygen	DO	6284385	2019/08/16	2019/08/16	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6283697	2019/08/16	2019/08/16	Ron Morrison
Mercury (low level)	CV/AA	6283696	2019/08/16	2019/08/16	Ron Morrison
Cyanide (Free)	SPEC	6290148	2019/08/20	2019/08/20	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6288348	N/A	2019/08/20	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6288345	N/A	2019/08/20	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6291711	N/A	2019/08/20	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6291712	N/A	2019/08/20	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6288349	2019/08/20	2019/08/20	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6291713	2019/08/20	2019/08/20	Vanessa Chan
Silica (Reactive)	KONE	6290149	N/A	2019/08/20	Zafar Iqbal
Total Ammonia-N	LACH/NH ₄	6283592	N/A	2019/08/16	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6283765	N/A	2019/08/16	Chandra Nandlal
pH	AT	6283785	2019/08/16	2019/08/16	Surinder Rai
Orthophosphate	KONE	6283779	N/A	2019/08/16	Alina Dobreanu
Radium-226 Low Level	AS	6287025	N/A	2019/08/21	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6283777	N/A	2019/08/16	Alina Dobreanu
Total Dissolved Solids	BAL	6284601	2019/08/16	2019/08/19	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6283752	2019/08/16	2019/08/16	Shivani Shivani
Total Organic Carbon (TOC)	TOCV/NDIR	6283745	N/A	2019/08/16	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6283708	2019/08/16	2019/08/16	Nimarta Singh
Low Level Total Suspended Solids	BAL	6283706	2019/08/16	2019/08/16	Xinyue (Sarah) Hou
Turbidity	AT	6283731	N/A	2019/08/16	Kazzandra Adeva

BV Labs ID: KNG385 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/12

Shipped:

Received: 2019/08/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6283781	N/A	2019/08/16	Surinder Rai
Conductivity	AT	6283784	N/A	2019/08/16	Surinder Rai
Silica (Reactive)	KONE	6290149	N/A	2019/08/20	Zafar Iqbal
pH	AT	6283785	2019/08/16	2019/08/16	Surinder Rai



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	17.0°C
-----------	--------

Sample KNG385 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

TOC < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KNG385 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KNG385 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6283592	Total Ammonia-N	2019/08/16	99	75 - 125	102	80 - 120	<0.050	mg/L	NC	20		
6283696	Mercury (Hg)	2019/08/16	101	75 - 125	101	80 - 120	<0.00001	mg/L	NC	20		
6283697	Dissolved Mercury (Hg)	2019/08/16	84	75 - 125	103	80 - 120	<0.00001	mg/L	NC	20		
6283706	Total Suspended Solids	2019/08/16					<1	mg/L	NC	25	98	85 - 115
6283708	Total Phosphorus	2019/08/16	98	80 - 120	100	80 - 120	<0.020	mg/L	NC	20	101	80 - 120
6283731	Turbidity	2019/08/16			95	85 - 115	<0.1	NTU	2.8	20		
6283745	Total Organic Carbon (TOC)	2019/08/16	89	80 - 120	98	80 - 120	<0.50	mg/L	1.1	20		
6283752	Total Kjeldahl Nitrogen (TKN)	2019/08/16	91	80 - 120	99	80 - 120	<0.10	mg/L	NC (1)	20	103	80 - 120
6283765	Nitrate (N)	2019/08/16	NC	80 - 120	102	80 - 120	<0.10	mg/L	0.84	20		
6283765	Nitrite (N)	2019/08/16	107	80 - 120	107	80 - 120	<0.010	mg/L	3.4	20		
6283776	Dissolved Chloride (Cl-)	2019/08/16	NC	80 - 120	100	80 - 120	<1.0	mg/L	1.6	20		
6283777	Dissolved Sulphate (SO4)	2019/08/16	NC	75 - 125	101	80 - 120	<1.0	mg/L	0.044	20		
6283779	Orthophosphate (P)	2019/08/16	101	75 - 125	101	80 - 120	<0.010	mg/L	18	25		
6283781	Alkalinity (Total as CaCO3)	2019/08/16			96	85 - 115	<1.0	mg/L	0.53	20		
6283784	Conductivity	2019/08/16			101	85 - 115	<1.0	umho/cm	0.65	25		
6283785	pH	2019/08/16			102	98 - 103			0.57	N/A		
6283901	Dissolved Organic Carbon	2019/08/16	89	80 - 120	98	80 - 120	<0.50	mg/L	0.33	20		
6284036	Total Cyanide (CN)	2019/08/16	NC	80 - 120	99	80 - 120	<0.0050	mg/L	4.4	20		
6284037	WAD Cyanide (Free)	2019/08/16	67 (2)	80 - 120	98	80 - 120	<0.0010	mg/L	16	20		
6284601	Total Dissolved Solids	2019/08/19					<10	mg/L	0.98	25	100	90 - 110
6287025	Radium-226	2019/08/21			100	85 - 115	<0.0050	Bq/L	NC	N/A		
6290148	Free Cyanide (CN)	2019/08/20	93	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
6290149	Reactive Silica (SiO2)	2019/08/20	98	80 - 120	101	80 - 120	<0.050	mg/L	5.8	20		
6291712	Dissolved Aluminum (Al)	2019/08/20	99	80 - 120	104	80 - 120	<3.0	ug/L				
6291712	Dissolved Antimony (Sb)	2019/08/20	101	80 - 120	101	80 - 120	<0.50	ug/L				
6291712	Dissolved Arsenic (As)	2019/08/20	104	80 - 120	102	80 - 120	<0.10	ug/L				
6291712	Dissolved Barium (Ba)	2019/08/20	99	80 - 120	101	80 - 120	<1.0	ug/L				
6291712	Dissolved Beryllium (Be)	2019/08/20	101	80 - 120	100	80 - 120	<0.10	ug/L				
6291712	Dissolved Bismuth (Bi)	2019/08/20	67 (2)	80 - 120	104	80 - 120	<1.0	ug/L				
6291712	Dissolved Boron (B)	2019/08/20	100	80 - 120	102	80 - 120	<50	ug/L				
6291712	Dissolved Cadmium (Cd)	2019/08/20	103	80 - 120	103	80 - 120	<0.010	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6291712	Dissolved Chromium (Cr)	2019/08/20	91	80 - 120	98	80 - 120	<1.0	ug/L				
6291712	Dissolved Cobalt (Co)	2019/08/20	94	80 - 120	101	80 - 120	<0.20	ug/L				
6291712	Dissolved Copper (Cu)	2019/08/20	91	80 - 120	97	80 - 120	<0.20	ug/L				
6291712	Dissolved Iron (Fe)	2019/08/20	99	80 - 120	105	80 - 120	<5.0	ug/L				
6291712	Dissolved Lead (Pb)	2019/08/20	99	80 - 120	105	80 - 120	<0.20	ug/L				
6291712	Dissolved Lithium (Li)	2019/08/20	105	80 - 120	106	80 - 120	<2.0	ug/L				
6291712	Dissolved Manganese (Mn)	2019/08/20	92	80 - 120	98	80 - 120	<1.0	ug/L				
6291712	Dissolved Molybdenum (Mo)	2019/08/20	90	80 - 120	101	80 - 120	<1.0	ug/L				
6291712	Dissolved Nickel (Ni)	2019/08/20	95	80 - 120	103	80 - 120	<1.0	ug/L				
6291712	Dissolved Selenium (Se)	2019/08/20	104	80 - 120	103	80 - 120	<0.10	ug/L				
6291712	Dissolved Silicon (Si)	2019/08/20	103	80 - 120	105	80 - 120	<100	ug/L				
6291712	Dissolved Silver (Ag)	2019/08/20	81	80 - 120	102	80 - 120	<0.020	ug/L				
6291712	Dissolved Strontium (Sr)	2019/08/20	97	80 - 120	98	80 - 120	<1.0	ug/L				
6291712	Dissolved Thallium (Tl)	2019/08/20	99	80 - 120	103	80 - 120	<0.010	ug/L				
6291712	Dissolved Tin (Sn)	2019/08/20	99	80 - 120	104	80 - 120	<5.0	ug/L				
6291712	Dissolved Titanium (Ti)	2019/08/20	97	80 - 120	101	80 - 120	<5.0	ug/L				
6291712	Dissolved Uranium (U)	2019/08/20	99	80 - 120	106	80 - 120	<0.10	ug/L				
6291712	Dissolved Vanadium (V)	2019/08/20	92	80 - 120	98	80 - 120	<5.0	ug/L				
6291712	Dissolved Zinc (Zn)	2019/08/20	109	80 - 120	106	80 - 120	<5.0	ug/L				
6291712	Dissolved Zirconium (Zr)	2019/08/20	100	80 - 120	103	80 - 120	<0.10	ug/L				
6291713	Total Aluminum (Al)	2019/08/20	101	80 - 120	101	80 - 120	<3.0	ug/L	1.8	20		
6291713	Total Antimony (Sb)	2019/08/20	101	80 - 120	101	80 - 120	<0.50	ug/L	1.4	20		
6291713	Total Arsenic (As)	2019/08/20	104	80 - 120	100	80 - 120	<0.10	ug/L	12	20		
6291713	Total Barium (Ba)	2019/08/20	101	80 - 120	103	80 - 120	<1.0	ug/L	1.2	20		
6291713	Total Beryllium (Be)	2019/08/20	94	80 - 120	95	80 - 120	<0.10	ug/L	NC	20		
6291713	Total Bismuth (Bi)	2019/08/20	99	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Boron (B)	2019/08/20	96	80 - 120	97	80 - 120	<50	ug/L	NC	20		
6291713	Total Cadmium (Cd)	2019/08/20	99	80 - 120	99	80 - 120	<0.010	ug/L	NC	20		
6291713	Total Chromium (Cr)	2019/08/20	99	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Cobalt (Co)	2019/08/20	95	80 - 120	98	80 - 120	<0.20	ug/L	NC	20		
6291713	Total Copper (Cu)	2019/08/20	94	80 - 120	99	80 - 120	<0.50	ug/L	0.68	20		
6291713	Total Iron (Fe)	2019/08/20	96	80 - 120	102	80 - 120	<10	ug/L	NC	20		



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VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6291713	Total Lead (Pb)	2019/08/20	102	80 - 120	103	80 - 120	<0.20	ug/L	NC	20		
6291713	Total Lithium (Li)	2019/08/20	94	80 - 120	95	80 - 120	<2.0	ug/L	NC	20		
6291713	Total Manganese (Mn)	2019/08/20	98	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Molybdenum (Mo)	2019/08/20	107	80 - 120	99	80 - 120	<1.0	ug/L	2.7	20		
6291713	Total Nickel (Ni)	2019/08/20	95	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
6291713	Total Selenium (Se)	2019/08/20	105	80 - 120	101	80 - 120	<0.10	ug/L	3.5	20		
6291713	Total Silicon (Si)	2019/08/20	97	80 - 120	102	80 - 120	<100	ug/L	0.18	20		
6291713	Total Silver (Ag)	2019/08/20	98	80 - 120	98	80 - 120	<0.020	ug/L	NC	20		
6291713	Total Strontium (Sr)	2019/08/20	NC	80 - 120	101	80 - 120	<1.0	ug/L	0.39	20		
6291713	Total Thallium (Tl)	2019/08/20	102	80 - 120	102	80 - 120	<0.010	ug/L	NC	20		
6291713	Total Tin (Sn)	2019/08/20	100	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Titanium (Ti)	2019/08/20	102	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Uranium (U)	2019/08/20	105	80 - 120	102	80 - 120	<0.10	ug/L	0.91	20		
6291713	Total Vanadium (V)	2019/08/20	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Zinc (Zn)	2019/08/20	93	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
6291713	Total Zirconium (Zr)	2019/08/20	108	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Due to a high concentration of NOx, the sample required dilution. The detection limit was adjusted accordingly.

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9M5773
Report Date: 2019/08/26

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Robert Allen, Scientific Specialist

Rob Reinert, B.Sc., Scientific Specialist

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VERITAS

BV Labs Job #: B9M5773

Report Date: 2019/08/26

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: MB9N3354
Site Location: MELIADINE
Your C.O.C. #: B9N3354-M060-01-01

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/08/28
Report #: R2773554
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B970540

Received: 2019/08/24, 10:40

Sample Matrix: Water
Samples Received: 3

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Chloride/Sulphate by Auto Colourimetry	3	N/A	2019/08/27	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Conductivity @25C	3	N/A	2019/08/28	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	3	N/A	2019/08/27	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	3	N/A	2019/08/26	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio	3	N/A	2019/08/28		Auto Calc
Total Dissolved Solids (Calc. from EC)	3	N/A	2019/08/28		Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.



Your Project #: MB9N3354
Site Location: MELIADINE
Your C.O.C. #: B9N3354-M060-01-01

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/08/28
Report #: R2773554
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B970540
Received: 2019/08/24, 10:40

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bvlabs.com
Phone# (403) 291-3077

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VERITAS

BV Labs Job #: B970540
Report Date: 2019/08/28

Agnico-Eagle
Client Project #: MB9N3354
Site Location: MELIADINE
Sampler Initials: BH

SALINITY WATER (WATER)

BV Labs ID		WI9819			WI9819		
Sampling Date		2019/08/19 10:45			2019/08/19 10:45		
COC Number		B9N3354-M060-01-01			B9N3354-M060-01-01		
	UNITS	MEL-26 (KOV038)	RDL	QC Batch	MEL-26 (KOV038) Lab-Dup	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	38	0.10	9561577			
Total dissolved solids (calc., EC)	mg/L	46000	10	9561781			
Misc. Inorganics							
Conductivity	uS/cm	46000	2.0	9562929			
pH	pH	8.04	N/A	9562918			
Anions							
Dissolved Chloride (Cl)	mg/L	14000 (1)	100	9564057	17000	100	9564057
Dissolved Sulphate (SO4)	mg/L	1800 (1)	20	9564057	1800	20	9564057
Lab Filtered Elements							
Dissolved Calcium (Ca)	mg/L	1800 (1)	6.0	9564084			
Dissolved Magnesium (Mg)	mg/L	1100 (1)	4.0	9564084			
Dissolved Potassium (K)	mg/L	310	0.30	9564084			
Dissolved Sodium (Na)	mg/L	8200 (1)	10	9564084			
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B970540
Report Date: 2019/08/28

Agnico-Eagle
Client Project #: MB9N3354
Site Location: MELIADINE
Sampler Initials: BH

SALINITY WATER (WATER)

BV Labs ID		WI9820		WI9821		
Sampling Date		2019/08/19 10:55		2019/08/19 11:05		
COC Number		B9N3354-M060-01-01		B9N3354-M060-01-01		
	UNITS	MEL-26-DUP (KOV039)	RDL	MEL-26-FB (KOV040)	RDL	QC Batch
Calculated Parameters						
Sodium Adsorption Ratio	N/A	38	0.10	NC	0.10	9561577
Total dissolved solids (calc., EC)	mg/L	46000	10	<10	10	9561781
Misc. Inorganics						
Conductivity	uS/cm	46000	2.0	<2.0	2.0	9562929
pH	pH	8.01	N/A	7.84	N/A	9562918
Anions						
Dissolved Chloride (Cl)	mg/L	15000 (1)	100	<1.0	1.0	9564057
Dissolved Sulphate (SO ₄)	mg/L	1800 (1)	20	<1.0	1.0	9564057
Lab Filtered Elements						
Dissolved Calcium (Ca)	mg/L	1800 (1)	6.0	<0.30	0.30	9564084
Dissolved Magnesium (Mg)	mg/L	1100 (1)	4.0	<0.20	0.20	9564084
Dissolved Potassium (K)	mg/L	300	0.30	<0.30	0.30	9564084
Dissolved Sodium (Na)	mg/L	8200 (1)	10	<0.50	0.50	9564084
RDL = Reportable Detection Limit						
N/A = Not Applicable						
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.						



BUREAU
VERITAS

BV Labs Job #: B970540
Report Date: 2019/08/28

Agnico-Eagle
Client Project #: MB9N3354
Site Location: MELIADINE
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: WI9819
Sample ID: MEL-26 (KOV038)
Matrix: Water

Collected: 2019/08/19
Shipped:
Received: 2019/08/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9564057	N/A	2019/08/27	Zafar Iqbal
Conductivity @25C	COND	9562929	N/A	2019/08/28	Linda Zhang
Elements by ICP-Dissolved-Lab Filtered	ICPA	9564084	N/A	2019/08/27	Ahmed Loai
pH @25°C	AT/ALK	9562918	N/A	2019/08/26	Linda Zhang
Sodium Adsorption Ratio	CALC	9561577	N/A	2019/08/28	Automated Statchk
Total Dissolved Solids (Calc. from EC)	CALC	9561781	N/A	2019/08/28	Automated Statchk

BV Labs ID: WI9819 Dup
Sample ID: MEL-26 (KOV038)
Matrix: Water

Collected: 2019/08/19
Shipped:
Received: 2019/08/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9564057	N/A	2019/08/27	Zafar Iqbal

BV Labs ID: WI9820
Sample ID: MEL-26-DUP (KOV039)
Matrix: Water

Collected: 2019/08/19
Shipped:
Received: 2019/08/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9564057	N/A	2019/08/27	Zafar Iqbal
Conductivity @25C	COND	9562929	N/A	2019/08/28	Linda Zhang
Elements by ICP-Dissolved-Lab Filtered	ICPA	9564084	N/A	2019/08/27	Ahmed Loai
pH @25°C	AT/ALK	9562918	N/A	2019/08/26	Linda Zhang
Sodium Adsorption Ratio	CALC	9561577	N/A	2019/08/28	Automated Statchk
Total Dissolved Solids (Calc. from EC)	CALC	9561781	N/A	2019/08/28	Automated Statchk

BV Labs ID: WI9821
Sample ID: MEL-26-FB (KOV040)
Matrix: Water

Collected: 2019/08/19
Shipped:
Received: 2019/08/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9564057	N/A	2019/08/27	Zafar Iqbal
Conductivity @25C	COND	9562929	N/A	2019/08/28	Linda Zhang
Elements by ICP-Dissolved-Lab Filtered	ICPA	9564084	N/A	2019/08/27	Ahmed Loai
pH @25°C	AT/ALK	9562918	N/A	2019/08/26	Linda Zhang
Sodium Adsorption Ratio	CALC	9561577	N/A	2019/08/28	Automated Statchk
Total Dissolved Solids (Calc. from EC)	CALC	9561781	N/A	2019/08/28	Report Automation Engine



BUREAU
VERITAS

BV Labs Job #: B970540
Report Date: 2019/08/28

Agnico-Eagle
Client Project #: MB9N3354
Site Location: MELIADINE
Sampler Initials: BH

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	11.3°C
Package 2	13.7°C

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B970540

Report Date: 2019/08/28

QUALITY ASSURANCE REPORT

Agnico-Eagle

Client Project #: MB9N3354

Site Location: MELIADINE

Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9562918	pH	2019/08/26			100	97 - 103			0.72	N/A
9562929	Conductivity	2019/08/26			99	90 - 110	<2.0	uS/cm	0	10
9564057	Dissolved Chloride (Cl)	2019/08/27	NC	80 - 120	100	80 - 120	<1.0	mg/L	14	20
9564057	Dissolved Sulphate (SO ₄)	2019/08/27	NC	80 - 120	99	80 - 120	<1.0	mg/L	3.1	20
9564084	Dissolved Calcium (Ca)	2019/08/27	NC	80 - 120	91	80 - 120	<0.30	mg/L	0.28	20
9564084	Dissolved Magnesium (Mg)	2019/08/27	NC	80 - 120	98	80 - 120	<0.20	mg/L	0.14	20
9564084	Dissolved Potassium (K)	2019/08/27	NC	80 - 120	97	80 - 120	<0.30	mg/L	1.0	20
9564084	Dissolved Sodium (Na)	2019/08/27	NC	80 - 120	100	80 - 120	<0.50	mg/L	0.96	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)



BUREAU
VERITAS

BV Labs Job #: B970540
Report Date: 2019/08/28

Agnico-Eagle
Client Project #: MB9N3354
Site Location: MELIADINE
Sampler Initials: BH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

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Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/09/03
 Report #: R5864402
 Version: 3 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N3354

Received: 2019/08/22, 11:45

Sample Matrix: Water
 # Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	3	N/A	2019/08/24	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	3	N/A	2019/08/26	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	3	N/A	2019/08/27	CAM SOP-00463	SM 4500-Cl E m
Conductivity (1)	3	N/A	2019/08/24	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	3	N/A	2019/08/23	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	3	2019/08/23	2019/08/23	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	3	N/A	2019/08/23	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	3	2019/08/23	2019/08/23	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	3	2019/08/23	2019/08/23	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	3	2019/08/23	2019/08/23	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	3	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	3	N/A	2019/08/27	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	3	N/A	2019/08/27	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	3	N/A	2019/08/27	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	3	N/A	2019/08/26	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	3	2019/08/22	2019/08/27	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	2	2019/08/26	2019/08/26	BBY7SOP-00003/02	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/08/26	2019/08/27	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	3	N/A	2019/08/26	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	3	N/A	2019/08/26	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	3	N/A	2019/08/25	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	3	2019/08/23	2019/08/24	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	3	N/A	2019/08/26	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	3	N/A	2019/08/29	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	3	N/A	2019/08/26	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	3	2019/08/24	2019/08/26	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	3	2019/08/23	2019/08/23	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	3	N/A	2019/08/23	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	3	2019/08/23	2019/08/24	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	3	2019/08/23	2019/08/23	CAM SOP-00428	SM 23 2540D m



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

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Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

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CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9N3354

Received: 2019/08/22, 11:45

Sample Matrix: Water
Samples Received: 3

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Turbidity (1)	3	N/A	2019/08/23	CAM SOP-00417	SM 23 2130 B m
Low Level Volatile Suspended Solids (1)	3	2019/08/23	2019/08/26	CAM SOP-00428	SM 23 2540

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) This test was performed by Bureau Veritas Laboratories Mississauga
- (2) This test was performed by Campo to Calgary - Offsite
- (3) This test was performed by Campo to Burnaby - Offsite
- (4) This test was performed by Bureau Veritas Laboratories Kitimat
- (5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
- (6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
- (7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
- (8) Radium-226 results have not been corrected for blanks.
- (9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
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Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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BV Labs Job #: B9N3354

Report Date: 2019/09/03

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KOV038	KOV039		KOV040		
Sampling Date		2019/08/19 10:45	2019/08/19 10:55		2019/08/19 11:05		
	UNITS	MEL-26	MEL-26-DUP	RDL	MEL-26-FB	RDL	QC Batch
Calculated Parameters							
Dissolved Hardness (CaCO ₃)	mg/L	8740	8580	0.50	<0.50	0.50	6295409
Metals							
Dissolved Aluminum (Al)	ug/L	<150	<150	150	<3.0	3.0	6302280
Dissolved Antimony (Sb)	ug/L	<25	<25	25	<0.50	0.50	6302280
Dissolved Arsenic (As)	ug/L	74.8	72.2	5.0	<0.10	0.10	6302280
Dissolved Barium (Ba)	ug/L	343	335	50	<1.0	1.0	6302280
Dissolved Beryllium (Be)	ug/L	<5.0	<5.0	5.0	<0.10	0.10	6302280
Dissolved Bismuth (Bi)	ug/L	<50	<50	50	<1.0	1.0	6302280
Dissolved Boron (B)	ug/L	<2500	<2500	2500	<50	50	6302280
Dissolved Cadmium (Cd)	ug/L	<0.50	<0.50	0.50	<0.010	0.010	6302280
Dissolved Chromium (Cr)	ug/L	<50	<50	50	<1.0	1.0	6302280
Dissolved Cobalt (Co)	ug/L	<10	<10	10	<0.20	0.20	6302280
Dissolved Copper (Cu)	ug/L	<10	18	10	<0.20	0.20	6302280
Dissolved Iron (Fe)	ug/L	<250	<250	250	<5.0	5.0	6302280
Dissolved Lead (Pb)	ug/L	<10	<10	10	<0.20	0.20	6302280
Dissolved Lithium (Li)	ug/L	911	920	100	<2.0	2.0	6302280
Dissolved Manganese (Mn)	ug/L	299	289	50	<1.0	1.0	6302280
Dissolved Molybdenum (Mo)	ug/L	<50	<50	50	<1.0	1.0	6302280
Dissolved Nickel (Ni)	ug/L	64	67	50	<1.0	1.0	6302280
Dissolved Selenium (Se)	ug/L	<5.0	<5.0	5.0	<0.10	0.10	6302280
Dissolved Silicon (Si)	ug/L	<5000	<5000	5000	<100	100	6302280
Dissolved Silver (Ag)	ug/L	<1.0	<1.0	1.0	<0.020	0.020	6302280
Dissolved Strontium (Sr)	ug/L	40900	39700	50	<1.0	1.0	6302280
Dissolved Thallium (Tl)	ug/L	<0.50	<0.50	0.50	<0.010	0.010	6302280
Dissolved Tin (Sn)	ug/L	<250	<250	250	<5.0	5.0	6302280
Dissolved Titanium (Ti)	ug/L	<250	<250	250	<5.0	5.0	6302280
Dissolved Uranium (U)	ug/L	6.8	6.8	5.0	<0.10	0.10	6302280
Dissolved Vanadium (V)	ug/L	<250	<250	250	<5.0	5.0	6302280
Dissolved Zinc (Zn)	ug/L	<250	<250	250	<5.0	5.0	6302280
Dissolved Zirconium (Zr)	ug/L	<5.0	<5.0	5.0	<0.10	0.10	6302280
Dissolved Calcium (Ca)	mg/L	1760	1730	2.5	<0.050	0.050	6295410
Dissolved Magnesium (Mg)	mg/L	1060	1030	2.5	<0.050	0.050	6295410
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



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BV Labs Job #: B9N3354

Report Date: 2019/09/03

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KOV038	KOV039		KOV040		
Sampling Date		2019/08/19 10:45	2019/08/19 10:55		2019/08/19 11:05		
	UNITS	MEL-26	MEL-26-DUP	RDL	MEL-26-FB	RDL	QC Batch
Dissolved Potassium (K)	mg/L	310	303	2.5	<0.050	0.050	6295410
Dissolved Sodium (Na)	mg/L	7960	7960	2.5	<0.050	0.050	6295410
Dissolved Sulphur (S)	mg/L	712	684	150	<3.0	3.0	6295410
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



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VERITAS

BV Labs Job #: B9N3354
Report Date: 2019/09/03

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KOV038		KOV039		KOV040		
Sampling Date		2019/08/19 10:45		2019/08/19 10:55		2019/08/19 11:05		
	UNITS	MEL-26	QC Batch	MEL-26-DUP	RDL	MEL-26-FB	RDL	QC Batch
Metals								
Total Aluminum (Al)	ug/L	268	6302282	286	150	<3.0	3.0	6302282
Total Antimony (Sb)	ug/L	<25	6302282	<25	25	<0.50	0.50	6302282
Total Arsenic (As)	ug/L	75.0	6302282	76.4	5.0	<0.10	0.10	6302282
Total Barium (Ba)	ug/L	331	6302282	325	50	<1.0	1.0	6302282
Total Beryllium (Be)	ug/L	<5.0	6302282	<5.0	5.0	<0.10	0.10	6302282
Total Bismuth (Bi)	ug/L	<50	6302282	<50	50	<1.0	1.0	6302282
Total Boron (B)	ug/L	<2500	6302282	<2500	2500	<50	50	6302282
Total Cadmium (Cd)	ug/L	<0.50	6302282	<0.50	0.50	<0.010	0.010	6302282
Total Chromium (Cr)	ug/L	<50	6302282	<50	50	<1.0	1.0	6302282
Total Cobalt (Co)	ug/L	<10	6302282	<10	10	<0.20	0.20	6302282
Total Copper (Cu)	ug/L	<25	6302282	<25	25	14.4	0.50	6302282
Total Iron (Fe)	ug/L	<500	6302282	<500	500	<10	10	6302282
Total Lead (Pb)	ug/L	<10	6302282	<10	10	<0.20	0.20	6302282
Total Lithium (Li)	ug/L	885	6302282	915	100	<2.0	2.0	6302282
Total Manganese (Mn)	ug/L	284	6302282	285	50	<1.0	1.0	6302282
Total Molybdenum (Mo)	ug/L	<50	6302282	<50	50	<1.0	1.0	6302282
Total Nickel (Ni)	ug/L	65	6302282	61	50	<1.0	1.0	6302282
Total Selenium (Se)	ug/L	<5.0	6302282	<5.0	5.0	<0.10	0.10	6302282
Total Silicon (Si)	ug/L	<5000	6302282	<5000	5000	<100	100	6302282
Total Silver (Ag)	ug/L	<1.0	6302282	<1.0	1.0	<0.020	0.020	6302282
Total Strontium (Sr)	ug/L	38900	6302282	38700	50	<1.0	1.0	6302282
Total Thallium (Tl)	ug/L	<0.50	6302282	<0.50	0.50	<0.010	0.010	6302282
Total Tin (Sn)	ug/L	<250	6302282	<250	250	<5.0	5.0	6302282
Total Titanium (Ti)	ug/L	<250	6302282	<250	250	<5.0	5.0	6302282
Total Uranium (U)	ug/L	7.0	6302282	7.0	5.0	<0.10	0.10	6302282
Total Vanadium (V)	ug/L	<250	6302282	<250	250	<5.0	5.0	6302282
Total Zinc (Zn)	ug/L	<250	6302282	<250	250	<5.0	5.0	6302282
Total Zirconium (Zr)	ug/L	<5.0	6302282	<5.0	5.0	<0.10	0.10	6302282
Total Calcium (Ca)	ug/L	1670000	6299778	1680000	2500	<50	50	6299778
Total Magnesium (Mg)	ug/L	976000	6299778	997000	2500	<50	50	6299778
Total Potassium (K)	ug/L	292000	6299778	296000	2500	<50	50	6299778
Total Sodium (Na)	ug/L	7440000	6299778	7500000	2500	<50	50	6299778
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



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VERITAS

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Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KOV038		KOV039		KOV040		
Sampling Date		2019/08/19 10:45		2019/08/19 10:55		2019/08/19 11:05		
	UNITS	MEL-26	QC Batch	MEL-26-DUP	RDL	MEL-26-FB	RDL	QC Batch
Total Sulphur (S)	ug/L	672000	6299778	681000	150000	<3000	3000	6299778
Calculated Parameters								
Total Hardness (CaCO ₃)	ug/L	8190000	6302281	8310000	500	<500	500	6297656
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



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BV Labs Job #: B9N3354

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Agnico-Eagle

Site Location: MELIADINE

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Sampler Initials: BH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KOV038			KOV038			KOV039		
Sampling Date		2019/08/19 10:45			2019/08/19 10:45			2019/08/19 10:55		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch	MEL-26-DUP	RDL	QC Batch

Calculated Parameters

Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	130	1.0	6293714				130	1.0	6293714
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	1.2	1.0	6293714				1.3	1.0	6293714

Inorganics

Total Ammonia-N	mg/L	39	0.50	6296387				38	0.50	6296387
Conductivity	umho/cm	46000	1.0	6296605				46000	1.0	6296605
Free Cyanide (CN)	ug/L	11 (1)	1.0	6305161	14	1.0	6305161	9.7 (1)	1.0	6305161
Total Dissolved Solids	mg/L	32000	20	6297229				31900	20	6297229
Total Kjeldahl Nitrogen (TKN)	mg/L	46	5.0	6296377				46	5.0	6296377
Dissolved Organic Carbon	mg/L	29	0.50	6296134				29	0.50	6296134
Total Organic Carbon (TOC)	mg/L	31	0.50	6296479				31	0.50	6296479
Orthophosphate (P)	mg/L	0.024	0.010	6296802				0.023	0.010	6296802
Dissolved Oxygen	mg/L	10.5		6296489				10.2		6296489
pH	pH	8.00		6296604				8.01		6296604
Total Phosphorus	mg/L	0.25	0.020	6296322				0.26	0.020	6296322
Reactive Silica (SiO ₂)	mg/L	8.1 (2)	0.10	6304154				4.1 (3)	0.50	6304154
Total Suspended Solids	mg/L	53	2	6296023	56	2	6296023	33	1	6296023
Dissolved Sulphate (SO ₄)	mg/L	1700	5.0	6296801				1700	5.0	6296801
Total Cyanide (CN)	mg/L	0.20	0.010	6296302	0.21	0.010	6296302	0.13	0.025	6296302
Turbidity	NTU	7.5	0.1	6295148				7.4	0.1	6295148
Volatile Suspended Solids	mg/L	24	2	6296026	26	2	6296026	16	1	6296026
WAD Cyanide (Free)	mg/L	0.035	0.0010	6296308	0.039	0.0010	6296308	0.037	0.0010	6296308
Alkalinity (Total as CaCO ₃)	mg/L	130	1.0	6296603				140	1.0	6296603
Dissolved Chloride (Cl ⁻)	mg/L	17000	120	6296793				17000	120	6296793
Nitrite (N)	mg/L	2.04	0.010	6296597	2.04	0.010	6296597	2.07	0.010	6296597
Nitrate (N)	mg/L	79.8	2.0	6296597	78.7	2.0	6296597	78.2	2.0	6296597
Nitrate + Nitrite (N)	mg/L	81.8	2.0	6296597	80.7	2.0	6296597	80.2	2.0	6296597

RADIONUCLIDE

Radium-226	Bq/L	0.30	0.0050	6299737				0.25	0.0050	6299737
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) See general comments for notes regarding CNFREE-W.

(2) Detection limits raised due to dilution to bring analyte within the calibrated range.

(3) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.



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VERITAS

BV Labs Job #: B9N3354

Report Date: 2019/09/03

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

RESULTS OF ANALYSES OF WATER

BV Labs ID		KOV040		
Sampling Date		2019/08/19 11:05		
	UNITS	MEL-26-FB	RDL	QC Batch
Calculated Parameters				
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	1.0	1.0	6293714
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6293714
Inorganics				
Total Ammonia-N	mg/L	<0.050	0.050	6296387
Conductivity	umho/cm	3.2	1.0	6296605
Free Cyanide (CN)	ug/L	1.8 (1)	1.0	6305161
Total Dissolved Solids	mg/L	<10	10	6297229
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.10	0.10	6296377
Dissolved Organic Carbon	mg/L	<0.50	0.50	6296134
Total Organic Carbon (TOC)	mg/L	<0.50	0.50	6296479
Orthophosphate (P)	mg/L	<0.010	0.010	6296802
Dissolved Oxygen	mg/L	10.6		6296489
pH	pH	6.44		6296604
Total Phosphorus	mg/L	<0.020	0.020	6296322
Reactive Silica (SiO ₂)	mg/L	0.15	0.050	6304154
Total Suspended Solids	mg/L	<1	1	6296023
Dissolved Sulphate (SO ₄)	mg/L	<1.0	1.0	6296801
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6296302
Turbidity	NTU	<0.1	0.1	6295148
Volatile Suspended Solids	mg/L	<1	1	6296026
WAD Cyanide (Free)	mg/L	0.0020	0.0010	6296308
Alkalinity (Total as CaCO ₃)	mg/L	1.0	1.0	6296603
Dissolved Chloride (Cl ⁻)	mg/L	<1.0	1.0	6296793
Nitrite (N)	mg/L	<0.010	0.010	6296597
Nitrate (N)	mg/L	<0.10	0.10	6296597
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	6296597
RADIONUCLIDE				
Radium-226	Bq/L	<0.0050	0.0050	6299737
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
(1) See general comments for notes regarding CNFREE-W.				



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Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KOV038	KOV039	KOV040		
Sampling Date		2019/08/19 10:45	2019/08/19 10:55	2019/08/19 11:05		
	UNITS	MEL-26	MEL-26-DUP	MEL-26-FB	RDL	QC Batch
Metals						
Mercury (Hg)	mg/L	<0.00001	<0.00001	<0.00001	0.00001	6296535
Dissolved Mercury (Hg)	mg/L	<0.00001	<0.00001	<0.00001	0.00001	6296541
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



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VERITAS

BV Labs Job #: B9N3354

Report Date: 2019/09/03

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KOV038

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/19

Shipped:

Received: 2019/08/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6296603	N/A	2019/08/24	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6293714	N/A	2019/08/26	Automated Statchk
Chloride by Automated Colourimetry	KONE	6296793	N/A	2019/08/27	Deonarine Ramnarine
Conductivity	AT	6296605	N/A	2019/08/24	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6296308	N/A	2019/08/23	Gnana Thomas
Total Cyanide	SKAL/CN	6296302	2019/08/23	2019/08/23	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6296134	N/A	2019/08/23	Mandeep Kaur
Dissolved Oxygen	DO	6296489	2019/08/23	2019/08/23	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6296541	2019/08/23	2019/08/23	Medhat Nasr
Mercury (low level)	CV/AA	6296535	2019/08/23	2019/08/23	Medhat Nasr
Cyanide (Free)	SPEC	6305161	2019/08/28	2019/08/28	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6302281	N/A	2019/08/27	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6295409	N/A	2019/08/27	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6295410	N/A	2019/08/27	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6302280	N/A	2019/08/26	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6299778	2019/08/27	2019/08/27	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6302282	2019/08/26	2019/08/26	Andrew An
Silica (Reactive)	KONE	6304154	N/A	2019/08/26	Serena Tian
Total Ammonia-N	LACH/NH ₄	6296387	N/A	2019/08/26	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6296597	N/A	2019/08/25	Amanpreet Sappal
pH	AT	6296604	2019/08/23	2019/08/24	Surinder Rai
Orthophosphate	KONE	6296802	N/A	2019/08/26	Alina Doboreanu
Radium-226 Low Level	AS	6299737	N/A	2019/08/29	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6296801	N/A	2019/08/26	Alina Doboreanu
Total Dissolved Solids	BAL	6297229	2019/08/24	2019/08/26	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6296377	2019/08/23	2019/08/23	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6296479	N/A	2019/08/23	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6296322	2019/08/23	2019/08/24	Shivani Shivani
Low Level Total Suspended Solids	BAL	6296023	2019/08/23	2019/08/23	Xinyue (Sarah) Hou
Turbidity	AT	6295148	N/A	2019/08/23	Kazzandra Adeva
Low Level Volatile Suspended Solids	BAL	6296026	2019/08/23	2019/08/26	Xinyue (Sarah) Hou

BV Labs ID: KOV038 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/19

Shipped:

Received: 2019/08/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6296308	N/A	2019/08/23	Gnana Thomas
Total Cyanide	SKAL/CN	6296302	2019/08/23	2019/08/23	Gnana Thomas
Cyanide (Free)	SPEC	6305161	2019/08/28	2019/08/28	Amy Phan
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6296597	N/A	2019/08/25	Amanpreet Sappal
Low Level Total Suspended Solids	BAL	6296023	2019/08/23	2019/08/23	Xinyue (Sarah) Hou
Low Level Volatile Suspended Solids	BAL	6296026	2019/08/23	2019/08/26	Xinyue (Sarah) Hou



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VERITAS

BV Labs Job #: B9N3354

Report Date: 2019/09/03

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KOV039
Sample ID: MEL-26-DUP
Matrix: Water

Collected: 2019/08/19
Shipped:
Received: 2019/08/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6296603	N/A	2019/08/24	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6293714	N/A	2019/08/26	Automated Statchk
Chloride by Automated Colourimetry	KONE	6296793	N/A	2019/08/27	Deonarine Ramnarine
Conductivity	AT	6296605	N/A	2019/08/24	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6296308	N/A	2019/08/23	Gnana Thomas
Total Cyanide	SKAL/CN	6296302	2019/08/23	2019/08/23	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6296134	N/A	2019/08/23	Mandeep Kaur
Dissolved Oxygen	DO	6296489	2019/08/23	2019/08/23	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6296541	2019/08/23	2019/08/23	Medhat Nasr
Mercury (low level)	CV/AA	6296535	2019/08/23	2019/08/23	Medhat Nasr
Cyanide (Free)	SPEC	6305161	2019/08/28	2019/08/28	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6297656	N/A	2019/08/27	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6295409	N/A	2019/08/27	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6295410	N/A	2019/08/27	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6302280	N/A	2019/08/26	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6299778	2019/08/27	2019/08/27	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6302282	2019/08/26	2019/08/27	Andrew An
Silica (Reactive)	KONE	6304154	N/A	2019/08/26	Serena Tian
Total Ammonia-N	LACH/NH ₄	6296387	N/A	2019/08/26	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6296597	N/A	2019/08/25	Amanpreet Sappal
pH	AT	6296604	2019/08/23	2019/08/24	Surinder Rai
Orthophosphate	KONE	6296802	N/A	2019/08/26	Alina Dobreanu
Radium-226 Low Level	AS	6299737	N/A	2019/08/29	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6296801	N/A	2019/08/26	Alina Dobreanu
Total Dissolved Solids	BAL	6297229	2019/08/24	2019/08/26	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6296377	2019/08/23	2019/08/23	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6296479	N/A	2019/08/23	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6296322	2019/08/23	2019/08/24	Shivani Shivani
Low Level Total Suspended Solids	BAL	6296023	2019/08/23	2019/08/23	Xinyue (Sarah) Hou
Turbidity	AT	6295148	N/A	2019/08/23	Kazzandra Adeva
Low Level Volatile Suspended Solids	BAL	6296026	2019/08/23	2019/08/26	Xinyue (Sarah) Hou

BV Labs ID: KOV040
Sample ID: MEL-26-FB
Matrix: Water

Collected: 2019/08/19
Shipped:
Received: 2019/08/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6296603	N/A	2019/08/24	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6293714	N/A	2019/08/26	Automated Statchk
Chloride by Automated Colourimetry	KONE	6296793	N/A	2019/08/27	Deonarine Ramnarine
Conductivity	AT	6296605	N/A	2019/08/24	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6296308	N/A	2019/08/23	Gnana Thomas
Total Cyanide	SKAL/CN	6296302	2019/08/23	2019/08/23	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6296134	N/A	2019/08/23	Mandeep Kaur
Dissolved Oxygen	DO	6296489	2019/08/23	2019/08/23	Nusrat Naz



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VERITAS

BV Labs Job #: B9N3354
Report Date: 2019/09/03

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: BH

TEST SUMMARY

BV Labs ID: KOV040
Sample ID: MEL-26-FB
Matrix: Water

Collected: 2019/08/19
Shipped:
Received: 2019/08/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Mercury (low level)	CV/AA	6296541	2019/08/23	2019/08/23	Medhat Nasr
Mercury (low level)	CV/AA	6296535	2019/08/23	2019/08/23	Medhat Nasr
Cyanide (Free)	SPEC	6305161	2019/08/28	2019/08/28	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6297656	N/A	2019/08/27	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6295409	N/A	2019/08/27	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6295410	N/A	2019/08/27	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6302280	N/A	2019/08/26	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6299778	2019/08/27	2019/08/27	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6302282	2019/08/26	2019/08/26	Andrew An
Silica (Reactive)	KONE	6304154	N/A	2019/08/26	Serena Tian
Total Ammonia-N	LACH/NH ₄	6296387	N/A	2019/08/26	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6296597	N/A	2019/08/25	Amanpreet Sappal
pH	AT	6296604	2019/08/23	2019/08/24	Surinder Rai
Orthophosphate	KONE	6296802	N/A	2019/08/26	Alina Dobreanu
Radium-226 Low Level	AS	6299737	N/A	2019/08/29	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6296801	N/A	2019/08/26	Alina Dobreanu
Total Dissolved Solids	BAL	6297229	2019/08/24	2019/08/26	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6296377	2019/08/23	2019/08/23	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6296479	N/A	2019/08/23	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6296322	2019/08/23	2019/08/24	Shivani Shivani
Low Level Total Suspended Solids	BAL	6296023	2019/08/23	2019/08/23	Xinyue (Sarah) Hou
Turbidity	AT	6295148	N/A	2019/08/23	Kazzandra Adeva
Low Level Volatile Suspended Solids	BAL	6296026	2019/08/23	2019/08/26	Xinyue (Sarah) Hou



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.7°C
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Sample KOV038 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample KOV039 [MEL-26-DUP] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample KOV040 [MEL-26-FB] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Total Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KOV038 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

Sample KOV039 [MEL-26-DUP] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KOV038 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Sample KOV039 [MEL-26-DUP] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

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VERITAS

BV Labs Job #: B9N3354

Report Date: 2019/09/03

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6295148	Turbidity	2019/08/23			109	85 - 115	<0.1	NTU	8.9	20		
6296023	Total Suspended Solids	2019/08/23					<1	mg/L	5.9	25	101	85 - 115
6296026	Volatile Suspended Solids	2019/08/26					<1	mg/L	4.8	25		
6296134	Dissolved Organic Carbon	2019/08/23	97	80 - 120	99	80 - 120	<0.50	mg/L	3.0	20		
6296302	Total Cyanide (CN)	2019/08/23	NC	80 - 120	107	80 - 120	<0.0050	mg/L	3.4	20		
6296308	WAD Cyanide (Free)	2019/08/23	56 (1)	80 - 120	107	80 - 120	<0.0010	mg/L	10	20		
6296322	Total Phosphorus	2019/08/24	102	80 - 120	100	80 - 120	<0.020	mg/L	3.7	20	102	80 - 120
6296377	Total Kjeldahl Nitrogen (TKN)	2019/08/23	NC	80 - 120	107	80 - 120	<0.10	mg/L	0.090	20	99	80 - 120
6296387	Total Ammonia-N	2019/08/26	100	75 - 125	103	80 - 120	<0.050	mg/L	NC	20		
6296479	Total Organic Carbon (TOC)	2019/08/23	93	80 - 120	98	80 - 120	<0.50	mg/L	2.5	20		
6296535	Mercury (Hg)	2019/08/23	101	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6296541	Dissolved Mercury (Hg)	2019/08/23	99	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6296597	Nitrate (N)	2019/08/25	NC	80 - 120	103	80 - 120	<0.10	mg/L	1.4	20		
6296597	Nitrite (N)	2019/08/25	NC	80 - 120	105	80 - 120	<0.010	mg/L	0.23	20		
6296603	Alkalinity (Total as CaCO3)	2019/08/24			98	85 - 115	<1.0	mg/L	0.73	20		
6296604	pH	2019/08/24			102	98 - 103			0.29	N/A		
6296605	Conductivity	2019/08/24			100	85 - 115	<1.0	umho/cm	0.32	25		
6296793	Dissolved Chloride (Cl-)	2019/08/27	NC	80 - 120	101	80 - 120	<1.0	mg/L	0.12	20		
6296801	Dissolved Sulphate (SO4)	2019/08/26	NC	75 - 125	97	80 - 120	<1.0	mg/L	1.3	20		
6296802	Orthophosphate (P)	2019/08/26	NC	75 - 125	101	80 - 120	<0.010	mg/L	1.5	25		
6297229	Total Dissolved Solids	2019/08/26					<10	mg/L	3.9	25	102	90 - 110
6299737	Radium-226	2019/08/29			92	85 - 115	<0.0050	Bq/L	NC	N/A		
6302280	Dissolved Aluminum (Al)	2019/08/26	99	80 - 120	105	80 - 120	<3.0	ug/L				
6302280	Dissolved Antimony (Sb)	2019/08/26	99	80 - 120	104	80 - 120	<0.50	ug/L				
6302280	Dissolved Arsenic (As)	2019/08/26	99	80 - 120	104	80 - 120	<0.10	ug/L				
6302280	Dissolved Barium (Ba)	2019/08/26	97	80 - 120	103	80 - 120	<1.0	ug/L				
6302280	Dissolved Beryllium (Be)	2019/08/26	97	80 - 120	102	80 - 120	<0.10	ug/L				
6302280	Dissolved Bismuth (Bi)	2019/08/26	99	80 - 120	107	80 - 120	<1.0	ug/L				
6302280	Dissolved Boron (B)	2019/08/26	99	80 - 120	102	80 - 120	<50	ug/L				
6302280	Dissolved Cadmium (Cd)	2019/08/26	99	80 - 120	103	80 - 120	<0.010	ug/L				
6302280	Dissolved Chromium (Cr)	2019/08/26	95	80 - 120	99	80 - 120	<1.0	ug/L				

BUREAU
VERITAS

BV Labs Job #: B9N3354

Report Date: 2019/09/03

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6302280	Dissolved Cobalt (Co)	2019/08/26	96	80 - 120	101	80 - 120	<0.20	ug/L				
6302280	Dissolved Copper (Cu)	2019/08/26	96	80 - 120	100	80 - 120	<0.20	ug/L				
6302280	Dissolved Iron (Fe)	2019/08/26	99	80 - 120	107	80 - 120	<5.0	ug/L				
6302280	Dissolved Lead (Pb)	2019/08/26	101	80 - 120	106	80 - 120	<0.20	ug/L				
6302280	Dissolved Lithium (Li)	2019/08/26	94	80 - 120	99	80 - 120	<2.0	ug/L				
6302280	Dissolved Manganese (Mn)	2019/08/26	99	80 - 120	103	80 - 120	<1.0	ug/L				
6302280	Dissolved Molybdenum (Mo)	2019/08/26	100	80 - 120	107	80 - 120	<1.0	ug/L				
6302280	Dissolved Nickel (Ni)	2019/08/26	98	80 - 120	102	80 - 120	<1.0	ug/L				
6302280	Dissolved Selenium (Se)	2019/08/26	99	80 - 120	103	80 - 120	<0.10	ug/L				
6302280	Dissolved Silicon (Si)	2019/08/26	96	80 - 120	105	80 - 120	<100	ug/L				
6302280	Dissolved Silver (Ag)	2019/08/26	97	80 - 120	102	80 - 120	<0.020	ug/L				
6302280	Dissolved Strontium (Sr)	2019/08/26	96	80 - 120	100	80 - 120	<1.0	ug/L				
6302280	Dissolved Thallium (Tl)	2019/08/26	99	80 - 120	106	80 - 120	<0.010	ug/L				
6302280	Dissolved Tin (Sn)	2019/08/26	98	80 - 120	103	80 - 120	<5.0	ug/L				
6302280	Dissolved Titanium (Ti)	2019/08/26	101	80 - 120	104	80 - 120	<5.0	ug/L				
6302280	Dissolved Uranium (U)	2019/08/26	99	80 - 120	104	80 - 120	<0.10	ug/L				
6302280	Dissolved Vanadium (V)	2019/08/26	99	80 - 120	102	80 - 120	<5.0	ug/L				
6302280	Dissolved Zinc (Zn)	2019/08/26	103	80 - 120	105	80 - 120	<5.0	ug/L				
6302280	Dissolved Zirconium (Zr)	2019/08/26	102	80 - 120	105	80 - 120	<0.10	ug/L				
6302282	Total Aluminum (Al)	2019/08/26	102	80 - 120	103	80 - 120	<3.0	ug/L				
6302282	Total Antimony (Sb)	2019/08/26	101	80 - 120	100	80 - 120	<0.50	ug/L				
6302282	Total Arsenic (As)	2019/08/26	102	80 - 120	99	80 - 120	<0.10	ug/L				
6302282	Total Barium (Ba)	2019/08/26	102	80 - 120	100	80 - 120	<1.0	ug/L				
6302282	Total Beryllium (Be)	2019/08/26	102	80 - 120	101	80 - 120	<0.10	ug/L				
6302282	Total Bismuth (Bi)	2019/08/26	102	80 - 120	103	80 - 120	<1.0	ug/L				
6302282	Total Boron (B)	2019/08/26	105	80 - 120	105	80 - 120	<50	ug/L				
6302282	Total Cadmium (Cd)	2019/08/26	100	80 - 120	100	80 - 120	<0.010	ug/L				
6302282	Total Chromium (Cr)	2019/08/26	95	80 - 120	97	80 - 120	<1.0	ug/L				
6302282	Total Cobalt (Co)	2019/08/26	96	80 - 120	98	80 - 120	<0.20	ug/L				
6302282	Total Copper (Cu)	2019/08/26	95	80 - 120	98	80 - 120	<0.50	ug/L				
6302282	Total Iron (Fe)	2019/08/26	102	80 - 120	103	80 - 120	<10	ug/L				
6302282	Total Lead (Pb)	2019/08/26	105	80 - 120	104	80 - 120	<0.20	ug/L				

BUREAU
VERITAS

BV Labs Job #: B9N3354

Report Date: 2019/09/03

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6302282	Total Lithium (Li)	2019/08/26	101	80 - 120	99	80 - 120	<2.0	ug/L				
6302282	Total Manganese (Mn)	2019/08/26	99	80 - 120	101	80 - 120	<1.0	ug/L				
6302282	Total Molybdenum (Mo)	2019/08/26	106	80 - 120	101	80 - 120	<1.0	ug/L				
6302282	Total Nickel (Ni)	2019/08/26	97	80 - 120	101	80 - 120	<1.0	ug/L				
6302282	Total Selenium (Se)	2019/08/26	102	80 - 120	100	80 - 120	<0.10	ug/L				
6302282	Total Silicon (Si)	2019/08/26	NC	80 - 120	102	80 - 120	<100	ug/L				
6302282	Total Silver (Ag)	2019/08/26	98	80 - 120	99	80 - 120	<0.020	ug/L				
6302282	Total Strontium (Sr)	2019/08/26	NC	80 - 120	96	80 - 120	<1.0	ug/L				
6302282	Total Thallium (Tl)	2019/08/26	103	80 - 120	101	80 - 120	<0.010	ug/L				
6302282	Total Tin (Sn)	2019/08/26	98	80 - 120	100	80 - 120	<5.0	ug/L				
6302282	Total Titanium (Ti)	2019/08/26	100	80 - 120	100	80 - 120	<5.0	ug/L				
6302282	Total Uranium (U)	2019/08/26	105	80 - 120	101	80 - 120	<0.10	ug/L				
6302282	Total Vanadium (V)	2019/08/26	101	80 - 120	100	80 - 120	<5.0	ug/L				
6302282	Total Zinc (Zn)	2019/08/26	98	80 - 120	100	80 - 120	<5.0	ug/L				
6302282	Total Zirconium (Zr)	2019/08/26	106	80 - 120	101	80 - 120	<0.10	ug/L				
6304154	Reactive Silica (SiO ₂)	2019/08/27	94	80 - 120	98	80 - 120	<0.050	mg/L	18	20		
6305161	Free Cyanide (CN)	2019/08/28	80	80 - 120	97	80 - 120	<1.0	ug/L	19	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9N3354

Report Date: 2019/09/03

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Brad Newman, Scientific Service Specialist

Marjolen Busslinger, Scientific Specialist



Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

Rob Reinert, B.Sc., Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9N3354

Report Date: 2019/09/03

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: BH

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: Campobello job# B9O0837

Attention: Alisha Williamson

BUREAU VERITAS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2019/09/16

Report #: R2781426

Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B972023

Received: 2019/08/29, 12:39

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Chloride/Sulphate by Auto Colourimetry	1	N/A	2019/09/13	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Cyanide (Free)	1	2019/09/03	2019/09/03	CAL SOP-00266	EPA 9016d R0 m
Conductivity @25C	1	N/A	2019/09/13	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	1	N/A	2019/09/14	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	1	N/A	2019/09/13	AB SOP-00005	SM 23 4500-H+B m
Silica (Reactive)	1	N/A	2019/09/05	AB SOP-00011	EPA 370.1 R1978 m
Total Dissolved Solids (Filt. Residue)	1	2019/09/12	2019/09/12	AB SOP-00065	SM 23 2540 C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.



Your Project #: Campobello job# B9O0837

Attention: Alisha Williamson

BUREAU VERITAS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2019/09/16

Report #: R2781426

Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B972023

Received: 2019/08/29, 12:39

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Customer Solutions, Western Canada Customer Experience Team

Email: customersolutionswest@bvlabs.com

Phone# (403) 291-3077

=====

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**SALINITY - WATER - FIILTERED (WATER)**

BV Labs ID		WJ7306			WJ7306		
Sampling Date		2019/08/26 11:30			2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Misc. Inorganics							
Conductivity	uS/cm	27000	2.0	9585740			
pH	pH	7.18	N/A	9585739			
Total Dissolved Solids	mg/L	>8000 (1)	10	9585163			
Anions							
Dissolved Chloride (Cl)	mg/L	8500 (2)	100	9586943	7900	100	9586943
Dissolved Sulphate (SO ₄)	mg/L	980 (2)	10	9586943	980	10	9586943
Lab Filtered Elements							
Dissolved Calcium (Ca)	mg/L	900 (2)	6.0	9588030			
Dissolved Magnesium (Mg)	mg/L	560 (2)	4.0	9588030			
Dissolved Potassium (K)	mg/L	160	0.30	9588030			
Dissolved Sodium (Na)	mg/L	4300 (2)	10	9588030			
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Sample exceeds calibration range. (2) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B972023
Report Date: 2019/09/16

BUREAU VERITAS
Client Project #: Campobello job# B9O0837
Sampler Initials: KB

RESULTS OF CHEMICAL ANALYSES OF WATER

BV Labs ID		WJ7306			WJ7306		
Sampling Date		2019/08/26 11:30			2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Misc. Inorganics							
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	9572721			
Reactive Silica	mg/L	4.4	0.050	9576053	4.7	0.050	9576053
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							
(1) See general comments for notes regarding CNFREE-W.							



BUREAU
VERITAS

BV Labs Job #: B972023
Report Date: 2019/09/16

BUREAU VERITAS
Client Project #: Campobello job# B9O0837
Sampler Initials: KB

TEST SUMMARY

BV Labs ID: WJ7306
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/26
Shipped:
Received: 2019/08/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9586943	N/A	2019/09/13	Zafar Iqbal
Cyanide (Free)	SPEC	9572721	2019/09/03	2019/09/03	Amy Phan
Conductivity @25C	COND	9585740	N/A	2019/09/13	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9588030	N/A	2019/09/14	Ahmed Loai
pH @25°C	AT/ALK	9585739	N/A	2019/09/13	Ilonka Kovac
Silica (Reactive)	KONE/SL	9576053	N/A	2019/09/05	Serena Tian
Total Dissolved Solids (Filt. Residue)	BAL	9585163	2019/09/12	2019/09/12	Haydee Estilong

BV Labs ID: WJ7306 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/26
Shipped:
Received: 2019/08/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9586943	N/A	2019/09/13	Zafar Iqbal
Silica (Reactive)	KONE/SL	9576053	N/A	2019/09/05	Serena Tian



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.7°C
-----------	-------

V2: Report re-issued with salinity results for sample MEL-26. 2019/09/16

Sample WJ7306 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B972023

Report Date: 2019/09/16

QUALITY ASSURANCE REPORT

BUREAU VERITAS

Client Project #: Campobello job# B9O0837

Sampler Initials: KB

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9572721	Free Cyanide (CN)	2019/09/03	83	80 - 120	94	80 - 120	<1.0	ug/L	4.7	20
9576053	Reactive Silica	2019/09/05	92	80 - 120	99	80 - 120	<0.050	mg/L	6.4	20
9585163	Total Dissolved Solids	2019/09/12	98	80 - 120	99	80 - 120	<10	mg/L	6.4	20
9585739	pH	2019/09/13			100	97 - 103			1.0	N/A
9585740	Conductivity	2019/09/13			102	90 - 110	<2.0	uS/cm	3.0	10
9586943	Dissolved Chloride (Cl)	2019/09/13	NC	80 - 120	101	80 - 120	<1.0	mg/L	7.4	20
9586943	Dissolved Sulphate (SO4)	2019/09/13	NC	80 - 120	99	80 - 120	<1.0	mg/L	0.29	20
9588030	Dissolved Calcium (Ca)	2019/09/13	92	80 - 120	97	80 - 120	<0.30	mg/L	1.1	20
9588030	Dissolved Magnesium (Mg)	2019/09/13	98	80 - 120	102	80 - 120	<0.20	mg/L	0.90	20
9588030	Dissolved Potassium (K)	2019/09/13	97	80 - 120	99	80 - 120	<0.30	mg/L	0.28	20
9588030	Dissolved Sodium (Na)	2019/09/13	98	80 - 120	103	80 - 120	<0.50	mg/L	1.4	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)



BUREAU
VERITAS

BV Labs Job #: B972023
Report Date: 2019/09/16

BUREAU VERITAS
Client Project #: Campobello job# B9O0837
Sampler Initials: KB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Harry (Peng) Liang, Senior Analyst

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For Service Group specific validation please refer to the Validation Signature Page.



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/09/18
 Report #: R5884395
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O0837

Received: 2019/08/30, 09:10

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/09/03	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/09/04	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/09/04	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/09/03	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/08/30	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/08/30	2019/08/30	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/08/30	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/08/30	2019/08/30	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/08/30	2019/08/30	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/08/30	2019/08/30	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/09/05	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/09/05	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/09/05	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/09/04	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/08/29	2019/09/05	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/09/04	2019/09/05	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/09/05	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/08/30	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	1	N/A	2019/09/01	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/08/30	2019/09/03	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/09/03	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	1	N/A	2019/09/16	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/09/03	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/08/30	2019/08/31	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/08/30	2019/09/03	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/08/30	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/08/30	2019/08/30	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/08/30	2019/08/30	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/08/30	CAM SOP-00417	SM 23 2130 B m



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884395
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O0837

Received: 2019/08/30, 09:10

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Low Level Volatile Suspended Solids (1)	1	2019/08/30	2019/09/03	CAM SOP-00428	SM 23 2540

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(8) Radium-226 results have not been corrected for blanks.

(9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884395
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O0837
Received: 2019/08/30, 09:10

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B900837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	4480	0.50	6316497
Metals				
Dissolved Aluminum (Al)	ug/L	161	30	6316499
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	6316499
Dissolved Arsenic (As)	ug/L	10.2	1.0	6316499
Dissolved Barium (Ba)	ug/L	181	10	6316499
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	6316499
Dissolved Bismuth (Bi)	ug/L	<10	10	6316499
Dissolved Boron (B)	ug/L	628	500	6316499
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	6316499
Dissolved Chromium (Cr)	ug/L	<10	10	6316499
Dissolved Cobalt (Co)	ug/L	3.6	2.0	6316499
Dissolved Copper (Cu)	ug/L	5.0	2.0	6316499
Dissolved Iron (Fe)	ug/L	<50	50	6316499
Dissolved Lead (Pb)	ug/L	<2.0	2.0	6316499
Dissolved Lithium (Li)	ug/L	432	20	6316499
Dissolved Manganese (Mn)	ug/L	15	10	6316499
Dissolved Molybdenum (Mo)	ug/L	13	10	6316499
Dissolved Nickel (Ni)	ug/L	19	10	6316499
Dissolved Selenium (Se)	ug/L	<1.0	1.0	6316499
Dissolved Silicon (Si)	ug/L	<1000	1000	6316499
Dissolved Silver (Ag)	ug/L	<0.20	0.20	6316499
Dissolved Strontium (Sr)	ug/L	20800	10	6316499
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	6316499
Dissolved Tin (Sn)	ug/L	<50	50	6316499
Dissolved Titanium (Ti)	ug/L	<50	50	6316499
Dissolved Uranium (U)	ug/L	4.1	1.0	6316499
Dissolved Vanadium (V)	ug/L	<50	50	6316499
Dissolved Zinc (Zn)	ug/L	67	50	6316499
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	6316499
Dissolved Calcium (Ca)	mg/L	875	0.50	6316498
Dissolved Magnesium (Mg)	mg/L	557	0.50	6316498
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	162	0.50	6316498
Dissolved Sodium (Na)	mg/L	4550	0.50	6316498
Dissolved Sulphur (S)	mg/L	368	30	6316498
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B900837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	351	300	6317652
Total Antimony (Sb)	ug/L	<50	50	6317652
Total Arsenic (As)	ug/L	12	10	6317652
Total Barium (Ba)	ug/L	181	100	6317652
Total Beryllium (Be)	ug/L	<10	10	6317652
Total Bismuth (Bi)	ug/L	<100	100	6317652
Total Boron (B)	ug/L	<5000	5000	6317652
Total Cadmium (Cd)	ug/L	<1.0	1.0	6317652
Total Chromium (Cr)	ug/L	<100	100	6317652
Total Cobalt (Co)	ug/L	<20	20	6317652
Total Copper (Cu)	ug/L	<50	50	6317652
Total Iron (Fe)	ug/L	<1000	1000	6317652
Total Lead (Pb)	ug/L	<20	20	6317652
Total Lithium (Li)	ug/L	498	200	6317652
Total Manganese (Mn)	ug/L	<100	100	6317652
Total Molybdenum (Mo)	ug/L	<100	100	6317652
Total Nickel (Ni)	ug/L	<100	100	6317652
Total Selenium (Se)	ug/L	<10	10	6317652
Total Silicon (Si)	ug/L	<10000	10000	6317652
Total Silver (Ag)	ug/L	<2.0	2.0	6317652
Total Strontium (Sr)	ug/L	20200	100	6317652
Total Thallium (Tl)	ug/L	<1.0	1.0	6317652
Total Tin (Sn)	ug/L	<500	500	6317652
Total Titanium (Ti)	ug/L	<500	500	6317652
Total Uranium (U)	ug/L	<10	10	6317652
Total Vanadium (V)	ug/L	<500	500	6317652
Total Zinc (Zn)	ug/L	<500	500	6317652
Total Zirconium (Zr)	ug/L	<10	10	6317652
Total Calcium (Ca)	ug/L	866000	5000	6317651
Total Magnesium (Mg)	ug/L	555000	5000	6317651
Total Potassium (K)	ug/L	170000	5000	6317651
Total Sodium (Na)	ug/L	4380000	5000	6317651
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	375000	300000	6317651
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	4450000	500	6317650
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

BUREAU
VERITAS

BV Labs Job #: B900837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

RESULTS OF ANALYSES OF WATER

BV Labs ID		KQL384			KQL384		
Sampling Date		2019/08/26 11:30			2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	57	1.0	6306459			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6306459			
Inorganics							
Total Ammonia-N	mg/L	3.8	0.050	6308627			
Conductivity	umho/cm	27000	1.0	6309972	27000	1.0	6309972
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6316470			
Total Dissolved Solids	mg/L	17800	20	6308855			
Total Kjeldahl Nitrogen (TKN)	mg/L	14	2.0	6308760			
Dissolved Organic Carbon	mg/L	17	0.50	6307745			
Total Organic Carbon (TOC)	mg/L	17	0.50	6309575			
Orthophosphate (P)	mg/L	0.012	0.010	6310908			
Dissolved Oxygen	mg/L	9.44		6309668	9.46		6309668
pH	pH	7.32		6309976	7.35		6309976
Total Phosphorus	mg/L	0.080	0.020	6308656			
Reactive Silica (SiO ₂)	mg/L	4.4	0.050	6321220	4.7	0.050	6321220
Total Suspended Solids	mg/L	14	1	6308560	14	1	6308560
Dissolved Sulphate (SO ₄)	mg/L	870	5.0	6310910			
Total Cyanide (CN)	mg/L	<0.0050	0.0050	6308850	<0.0050	0.0050	6308850
Turbidity	NTU	0.5	0.1	6307644			
Volatile Suspended Solids	mg/L	8	1	6307169	8	1	6307169
WAD Cyanide (Free)	mg/L	0.0035	0.0010	6308856	0.0033	0.0010	6308856
Alkalinity (Total as CaCO ₃)	mg/L	57	1.0	6309970	58	1.0	6309970
Dissolved Chloride (Cl ⁻)	mg/L	9500	100	6310907			
Nitrite (N)	mg/L	<0.010	0.010	6309619			
Nitrate (N)	mg/L	43.5	0.50	6309619			
Nitrate + Nitrite (N)	mg/L	43.5	0.50	6309619			
RADIONUCLIDE							
Radium-226	Bq/L	0.16	0.0050	6318584			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W.							



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KQL384		
Sampling Date		2019/08/26 11:30		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6308649
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6308661
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B900837
Report Date: 2019/09/18

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: KB

TEST SUMMARY

BV Labs ID: KQL384
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/26
Shipped:
Received: 2019/08/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6309970	N/A	2019/09/03	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6306459	N/A	2019/09/04	Automated Statchk
Chloride by Automated Colourimetry	KONE	6310907	N/A	2019/09/04	Deonarine Ramnarine
Conductivity	AT	6309972	N/A	2019/09/03	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6308856	N/A	2019/08/30	Barbara Kalbasi Esfahani
Total Cyanide	SKAL/CN	6308850	2019/08/30	2019/08/30	Barbara Kalbasi Esfahani
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6307745	N/A	2019/08/30	Mandeep Kaur
Dissolved Oxygen	DO	6309668	2019/08/30	2019/08/30	Prakash Piya
Dissolved Mercury (low level)	CV/AA	6308661	2019/08/30	2019/08/30	Ron Morrison
Mercury (low level)	CV/AA	6308649	2019/08/30	2019/08/30	Ron Morrison
Cyanide (Free)	SPEC	6316470	2019/09/03	2019/09/03	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6317650	N/A	2019/09/05	Report Automation Engine
Hardness (calculated as CaCO ₃)	CALC	6316497	N/A	2019/09/05	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6316498	N/A	2019/09/05	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6316499	N/A	2019/09/04	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6317651	2019/09/05	2019/09/05	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6317652	2019/09/04	2019/09/05	Andrew An
Silica (Reactive)	KONE	6321220	N/A	2019/09/05	Serena Tian
Total Ammonia-N	LACH/NH ₄	6308627	N/A	2019/08/30	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6309619	N/A	2019/09/01	Amanpreet Sappal
pH	AT	6309976	2019/08/30	2019/09/03	Surinder Rai
Orthophosphate	KONE	6310908	N/A	2019/09/03	Alina Dobreanu
Radium-226 Low Level	AS	6318584	N/A	2019/09/16	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6310910	N/A	2019/09/03	Alina Dobreanu
Total Dissolved Solids	BAL	6308855	2019/08/30	2019/08/31	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6308760	2019/08/30	2019/09/03	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6309575	N/A	2019/08/30	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6308656	2019/08/30	2019/08/30	Shivani Shivani
Low Level Total Suspended Solids	BAL	6308560	2019/08/30	2019/08/30	Xinyue (Sarah) Hou
Turbidity	AT	6307644	N/A	2019/08/30	Kazzandra Adeva
Low Level Volatile Suspended Solids	BAL	6307169	2019/08/30	2019/09/03	Xinyue (Sarah) Hou

BV Labs ID: KQL384 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/08/26
Shipped:
Received: 2019/08/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6309970	N/A	2019/09/03	Surinder Rai
Conductivity	AT	6309972	N/A	2019/09/03	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6308856	N/A	2019/08/30	Barbara Kalbasi Esfahani
Total Cyanide	SKAL/CN	6308850	2019/08/30	2019/08/30	Barbara Kalbasi Esfahani
Dissolved Oxygen	DO	6309668	2019/08/30	2019/08/30	Prakash Piya
Silica (Reactive)	KONE	6321220	N/A	2019/09/05	Serena Tian
pH	AT	6309976	2019/08/30	2019/09/03	Surinder Rai
Low Level Total Suspended Solids	BAL	6308560	2019/08/30	2019/08/30	Xinyue (Sarah) Hou



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

TEST SUMMARY

BV Labs ID: KQL384 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/26

Shipped:

Received: 2019/08/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Low Level Volatile Suspended Solids	BAL	6307169	2019/08/30	2019/09/03	Xinyue (Sarah) Hou



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	10.0°C
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Sample KQL384 [MEL-26] : Total Cyanide < Free Cyanide: Both values fall within the method uncertainty for duplicates and are likely equivalent. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. V2: Report re-issued with salinity results for sample MEL-26. 2019/09/16

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KQL384 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KQL384 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6307169	Volatile Suspended Solids	2019/09/03					<1	mg/L	2.4	25		
6307644	Turbidity	2019/08/30			96	85 - 115	<0.1	NTU	1.7	20		
6307745	Dissolved Organic Carbon	2019/08/30	93	80 - 120	95	80 - 120	<0.50	mg/L	3.1	20		
6308560	Total Suspended Solids	2019/08/30					<1	mg/L	4.3	25	95	85 - 115
6308627	Total Ammonia-N	2019/08/30	101	75 - 125	99	80 - 120	<0.050	mg/L	NC	20		
6308649	Mercury (Hg)	2019/08/30	109	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6308656	Total Phosphorus	2019/08/30	100	80 - 120	101	80 - 120	<0.020	mg/L	3.5	20	99	80 - 120
6308661	Dissolved Mercury (Hg)	2019/08/30	102	75 - 125	104	80 - 120	<0.00001	mg/L	NC	20		
6308760	Total Kjeldahl Nitrogen (TKN)	2019/08/30	102	80 - 120	97	80 - 120	<0.10	mg/L	10	20	94	80 - 120
6308850	Total Cyanide (CN)	2019/08/30	-0.10 (1)	80 - 120	104	80 - 120	<0.0050	mg/L	NC	20		
6308855	Total Dissolved Solids	2019/08/31					<10	mg/L	0	25	100	90 - 110
6308856	WAD Cyanide (Free)	2019/08/30	0.30 (1)	80 - 120	105	80 - 120	<0.0010	mg/L	5.9	20		
6309575	Total Organic Carbon (TOC)	2019/08/30	92	80 - 120	96	80 - 120	<0.50	mg/L	0.061	20		
6309619	Nitrate (N)	2019/09/01	99	80 - 120	101	80 - 120	<0.10	mg/L	1.7	20		
6309619	Nitrite (N)	2019/09/01	103	80 - 120	105	80 - 120	<0.010	mg/L	NC	20		
6309970	Alkalinity (Total as CaCO3)	2019/09/03			99	85 - 115	<1.0	mg/L	1.1	20		
6309972	Conductivity	2019/09/03			101	85 - 115	<1.0	umho/cm	0.000014	25		
6309976	pH	2019/09/03			102	98 - 103			0.36	N/A		
6310907	Dissolved Chloride (Cl-)	2019/09/04	NC	80 - 120	102	80 - 120	<1.0	mg/L	0.12	20		
6310908	Orthophosphate (P)	2019/09/03	107	75 - 125	100	80 - 120	<0.010	mg/L	NC	25		
6310910	Dissolved Sulphate (SO4)	2019/09/03	NC	75 - 125	103	80 - 120	<1.0	mg/L	0.51	20		
6316470	Free Cyanide (CN)	2019/09/03	83	80 - 120	94	80 - 120	<1.0	ug/L	4.7	20		
6316499	Dissolved Aluminum (Al)	2019/09/04	98	80 - 120	103	80 - 120	<3.0	ug/L				
6316499	Dissolved Antimony (Sb)	2019/09/04	97	80 - 120	101	80 - 120	<0.50	ug/L				
6316499	Dissolved Arsenic (As)	2019/09/04	105	80 - 120	100	80 - 120	<0.10	ug/L				
6316499	Dissolved Barium (Ba)	2019/09/04	95	80 - 120	104	80 - 120	<1.0	ug/L				
6316499	Dissolved Beryllium (Be)	2019/09/04	92	80 - 120	97	80 - 120	<0.10	ug/L				
6316499	Dissolved Bismuth (Bi)	2019/09/04	95	80 - 120	103	80 - 120	<1.0	ug/L				
6316499	Dissolved Boron (B)	2019/09/04	92	80 - 120	99	80 - 120	<50	ug/L				
6316499	Dissolved Cadmium (Cd)	2019/09/04	94	80 - 120	100	80 - 120	<0.010	ug/L				
6316499	Dissolved Chromium (Cr)	2019/09/04	91	80 - 120	99	80 - 120	<1.0	ug/L				

BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6316499	Dissolved Cobalt (Co)	2019/09/04	91	80 - 120	100	80 - 120	<0.20	ug/L				
6316499	Dissolved Copper (Cu)	2019/09/04	86	80 - 120	99	80 - 120	<0.20	ug/L				
6316499	Dissolved Iron (Fe)	2019/09/04	96	80 - 120	106	80 - 120	<5.0	ug/L				
6316499	Dissolved Lead (Pb)	2019/09/04	100	80 - 120	106	80 - 120	<0.20	ug/L				
6316499	Dissolved Lithium (Li)	2019/09/04	93	80 - 120	101	80 - 120	<2.0	ug/L				
6316499	Dissolved Manganese (Mn)	2019/09/04	93	80 - 120	103	80 - 120	<1.0	ug/L				
6316499	Dissolved Molybdenum (Mo)	2019/09/04	NC	80 - 120	104	80 - 120	<1.0	ug/L				
6316499	Dissolved Nickel (Ni)	2019/09/04	90	80 - 120	102	80 - 120	<1.0	ug/L				
6316499	Dissolved Selenium (Se)	2019/09/04	100	80 - 120	98	80 - 120	<0.10	ug/L				
6316499	Dissolved Silicon (Si)	2019/09/04	NC	80 - 120	102	80 - 120	<100	ug/L				
6316499	Dissolved Silver (Ag)	2019/09/04	94	80 - 120	101	80 - 120	<0.020	ug/L				
6316499	Dissolved Strontium (Sr)	2019/09/04	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6316499	Dissolved Thallium (Tl)	2019/09/04	99	80 - 120	104	80 - 120	<0.010	ug/L				
6316499	Dissolved Tin (Sn)	2019/09/04	96	80 - 120	104	80 - 120	<5.0	ug/L				
6316499	Dissolved Titanium (Ti)	2019/09/04	97	80 - 120	101	80 - 120	<5.0	ug/L				
6316499	Dissolved Uranium (U)	2019/09/04	106	80 - 120	105	80 - 120	<0.10	ug/L				
6316499	Dissolved Vanadium (V)	2019/09/04	96	80 - 120	100	80 - 120	<5.0	ug/L				
6316499	Dissolved Zinc (Zn)	2019/09/04	91	80 - 120	101	80 - 120	<5.0	ug/L				
6316499	Dissolved Zirconium (Zr)	2019/09/04	108	80 - 120	105	80 - 120	<0.10	ug/L				
6317652	Total Aluminum (Al)	2019/09/05	101	80 - 120	100	80 - 120	<3.0	ug/L				
6317652	Total Antimony (Sb)	2019/09/05	100	80 - 120	99	80 - 120	<0.50	ug/L				
6317652	Total Arsenic (As)	2019/09/05	106	80 - 120	100	80 - 120	<0.10	ug/L				
6317652	Total Barium (Ba)	2019/09/05	101	80 - 120	100	80 - 120	<1.0	ug/L				
6317652	Total Beryllium (Be)	2019/09/05	97	80 - 120	98	80 - 120	<0.10	ug/L				
6317652	Total Bismuth (Bi)	2019/09/05	97	80 - 120	102	80 - 120	<1.0	ug/L				
6317652	Total Boron (B)	2019/09/05	101	80 - 120	104	80 - 120	<50	ug/L				
6317652	Total Cadmium (Cd)	2019/09/05	97	80 - 120	98	80 - 120	<0.010	ug/L				
6317652	Total Chromium (Cr)	2019/09/05	96	80 - 120	97	80 - 120	<1.0	ug/L				
6317652	Total Cobalt (Co)	2019/09/05	92	80 - 120	96	80 - 120	<0.20	ug/L				
6317652	Total Copper (Cu)	2019/09/05	89	80 - 120	96	80 - 120	<0.50	ug/L				
6317652	Total Iron (Fe)	2019/09/05	101	80 - 120	103	80 - 120	<10	ug/L				
6317652	Total Lead (Pb)	2019/09/05	101	80 - 120	104	80 - 120	<0.20	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6317652	Total Lithium (Li)	2019/09/05	95	80 - 120	102	80 - 120	<2.0	ug/L				
6317652	Total Manganese (Mn)	2019/09/05	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6317652	Total Molybdenum (Mo)	2019/09/05	114	80 - 120	101	80 - 120	<1.0	ug/L				
6317652	Total Nickel (Ni)	2019/09/05	92	80 - 120	99	80 - 120	<1.0	ug/L				
6317652	Total Selenium (Se)	2019/09/05	102	80 - 120	98	80 - 120	<0.10	ug/L				
6317652	Total Silicon (Si)	2019/09/05	NC	80 - 120	105	80 - 120	<100	ug/L				
6317652	Total Silver (Ag)	2019/09/05	96	80 - 120	98	80 - 120	<0.020	ug/L				
6317652	Total Strontium (Sr)	2019/09/05	NC	80 - 120	98	80 - 120	<1.0	ug/L				
6317652	Total Thallium (Tl)	2019/09/05	100	80 - 120	102	80 - 120	<0.010	ug/L				
6317652	Total Tin (Sn)	2019/09/05	103	80 - 120	100	80 - 120	<5.0	ug/L				
6317652	Total Titanium (Ti)	2019/09/05	101	80 - 120	98	80 - 120	<5.0	ug/L				
6317652	Total Uranium (U)	2019/09/05	103	80 - 120	100	80 - 120	<0.10	ug/L				
6317652	Total Vanadium (V)	2019/09/05	100	80 - 120	98	80 - 120	<5.0	ug/L				
6317652	Total Zinc (Zn)	2019/09/05	NC	80 - 120	99	80 - 120	<5.0	ug/L				
6317652	Total Zirconium (Zr)	2019/09/05	109	80 - 120	103	80 - 120	<0.10	ug/L				
6318584	Radium-226	2019/09/16			86	85 - 115	<0.0050	Bq/L				
6321220	Reactive Silica (SiO2)	2019/09/05	92	80 - 120	99	80 - 120	<0.050	mg/L	6.4	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B900837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Harry (Peng) Liang, Senior Analyst

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

Rob Reinert, B.Sc., Scientific Specialist

Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9O0837

Report Date: 2019/09/18

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: KB

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: Campobello job# B9P4257

Attention: Alisha Williamson

BUREAU VERITAS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2019/10/04

Report #: R2791755

Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B976449

Received: 2019/09/12, 10:55

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Chloride/Sulphate by Auto Colourimetry	2	N/A	2019/10/04	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Cyanide (Free)	2	2019/09/16	2019/09/16	CAL SOP-00266	EPA 9016d R0 m
Conductivity @25C	2	N/A	2019/10/02	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	2	N/A	2019/10/04	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	2	N/A	2019/10/04	AB SOP-00005	SM 23 4500-H+B m
Salinity by Conductivity Method	2	N/A	2019/10/03		Auto Calc
Sodium Adsorption Ratio	2	N/A	2019/10/04		Auto Calc
Silica (Reactive)	2	N/A	2019/09/15	AB SOP-00011	EPA 370.1 R1978 m
Total Dissolved Solids (Calc. from EC)	2	N/A	2019/10/04		Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are



Your Project #: Campobello job# B9P4257

Attention: Alisha Williamson

BUREAU VERITAS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2019/10/04

Report #: R2791755

Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B976449

Received: 2019/09/12, 10:55

reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Customer Solutions, Western Canada Customer Experience Team

Email: customersolutionswest@bvlabs.com

Phone# (403) 291-3077

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**SALINITY WATER (WATER)**

BV Labs ID		WL9125	WL9126			WL9126	
Sampling Date		2019/08/23 14:10	2019/08/23 14:10			2019/08/23 14:10	
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch	MEL-26 DUP Lab-Dup	QC Batch

Calculated Parameters							
Sodium Adsorption Ratio	N/A	26	26	0.10	9614118		
Total dissolved solids (calc., EC)	mg/L	22000	23000	10	9614378		
Misc. Inorganics							
pH	pH	7.39	7.30	N/A	9614595	7.43	9614595
Anions							
Dissolved Chloride (Cl)	mg/L	7400 (1)	7300 (1)	50	9614975		
Dissolved Sulphate (SO ₄)	mg/L	850 (1)	850 (1)	5.0	9614975		
Lab Filtered Elements							
Dissolved Calcium (Ca)	mg/L	860 (1)	860 (1)	3.0	9614643		
Dissolved Magnesium (Mg)	mg/L	440	440	0.20	9614643		
Dissolved Potassium (K)	mg/L	140	150	0.30	9614643		
Dissolved Sodium (Na)	mg/L	3800 (1)	3800 (1)	5.0	9614643		
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							
N/A = Not Applicable							
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B976449
Report Date: 2019/10/04

BUREAU VERITAS
Client Project #: Campobello job# B9P4257
Sampler Initials: SA

RESULTS OF CHEMICAL ANALYSES OF WATER

BV Labs ID		WL9125			WL9125			WL9126		
Sampling Date		2019/08/23 14:10			2019/08/23 14:10			2019/08/23 14:10		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch	MEL-26 DUP	RDL	QC Batch
Calculated Parameters										
Salinity	N/A	14	2.0	9612737				15	2.0	9612737
Misc. Inorganics										
Conductivity	uS/cm	22000	2.0	9611237				23000	2.0	9611237
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	9589403	<1.0	1.0	9589403	<1.0	1.0	9589403
Reactive Silica	mg/L	8.0	0.050	9589312	7.6	0.050	9589312	12 (2)	0.10	9589312
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W (2) Detection limits raised due to dilution to bring analyte within the calibrated range.										



BUREAU
VERITAS

BV Labs Job #: B976449

Report Date: 2019/10/04

BUREAU VERITAS

Client Project #: Campobello job# B9P4257

Sampler Initials: SA

TEST SUMMARY

BV Labs ID: WL9125

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/23

Shipped:

Received: 2019/09/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9614975	N/A	2019/10/04	Zafar Iqbal
Cyanide (Free)	SPEC	9589403	2019/09/16	2019/09/16	Taylor Mullings
Conductivity @25C	COND	9611237	N/A	2019/10/02	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9614643	N/A	2019/10/04	Mary Anne Dela Cruz
pH @25°C	AT/ALK	9614595	N/A	2019/10/04	Ilonka Kovac
Salinity by Conductivity Method	CALC	9612737	N/A	2019/10/03	Ghayasuddin Khan
Sodium Adsorption Ratio	CALC	9614118	N/A	2019/10/04	Automated Statchk
Silica (Reactive)	KONE/SL	9589312	N/A	2019/09/15	Serena Tian
Total Dissolved Solids (Calc. from EC)	CALC	9614378	N/A	2019/10/04	Automated Statchk

BV Labs ID: WL9125 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/08/23

Shipped:

Received: 2019/09/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Cyanide (Free)	SPEC	9589403	2019/09/16	2019/09/16	Taylor Mullings
Silica (Reactive)	KONE/SL	9589312	N/A	2019/09/15	Serena Tian

BV Labs ID: WL9126

Sample ID: MEL-26 DUP

Matrix: Water

Collected: 2019/08/23

Shipped:

Received: 2019/09/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9614975	N/A	2019/10/04	Zafar Iqbal
Cyanide (Free)	SPEC	9589403	2019/09/16	2019/09/16	Taylor Mullings
Conductivity @25C	COND	9611237	N/A	2019/10/02	Ilonka Kovac
Elements by ICP-Dissolved-Lab Filtered	ICPA	9614643	N/A	2019/10/04	Mary Anne Dela Cruz
pH @25°C	AT/ALK	9614595	N/A	2019/10/04	Ilonka Kovac
Salinity by Conductivity Method	CALC	9612737	N/A	2019/10/03	Ghayasuddin Khan
Sodium Adsorption Ratio	CALC	9614118	N/A	2019/10/04	Automated Statchk
Silica (Reactive)	KONE/SL	9589312	N/A	2019/09/15	Serena Tian
Total Dissolved Solids (Calc. from EC)	CALC	9614378	N/A	2019/10/04	Automated Statchk

BV Labs ID: WL9126 Dup

Sample ID: MEL-26 DUP

Matrix: Water

Collected: 2019/08/23

Shipped:

Received: 2019/09/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH @25°C	AT/ALK	9614595	N/A	2019/10/04	Ilonka Kovac



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.0°C
-----------	-------

Sample WL9125 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample was analyzed past method specified hold time for Cyanide (Free). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample WL9126 [MEL-26 DUP] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample was analyzed past method specified hold time for Cyanide (Free). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B976449

Report Date: 2019/10/04

QUALITY ASSURANCE REPORT

BUREAU VERITAS

Client Project #: Campobello job# B9P4257

Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9589312	Reactive Silica	2019/09/15	NC	80 - 120	101	80 - 120	<0.050	mg/L	5.5	20
9589403	Free Cyanide (CN)	2019/09/16	93	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
9611237	Conductivity	2019/10/02			97	90 - 110	<2.0	uS/cm	0.88	10
9614595	pH	2019/10/04			100	97 - 103			1.8	N/A
9614643	Dissolved Calcium (Ca)	2019/10/04	94	80 - 120	100	80 - 120	<0.30	mg/L	0.43	20
9614643	Dissolved Magnesium (Mg)	2019/10/04	93	80 - 120	101	80 - 120	<0.20	mg/L	0.097	20
9614643	Dissolved Potassium (K)	2019/10/04	95	80 - 120	99	80 - 120	<0.30	mg/L	0.011	20
9614643	Dissolved Sodium (Na)	2019/10/04	NC	80 - 120	102	80 - 120	<0.50	mg/L	1.1	20
9614975	Dissolved Chloride (Cl)	2019/10/04	NC	80 - 120	104	80 - 120	<1.0	mg/L	0.21	20
9614975	Dissolved Sulphate (SO4)	2019/10/04	NC	80 - 120	103	80 - 120	<1.0	mg/L	1.4	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

BV Labs Job #: B976449
Report Date: 2019/10/04

BUREAU VERITAS
Client Project #: Campobello job# B9P4257
Sampler Initials: SA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Harry (Peng) Liang, Senior Analyst

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE
 Your C.O.C. #: N/A

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/08
 Report #: R5912435
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9P4257

Received: 2019/09/11, 10:35

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	2	N/A	2019/09/13	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	2	N/A	2019/09/16	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	2	N/A	2019/09/13	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	2	N/A	2019/09/13	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	2	N/A	2019/09/12	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	2	2019/09/12	2019/09/12	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	2	N/A	2019/09/13	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	2	2019/09/12	2019/09/12	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	2	2019/09/12	2019/09/12	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	2	2019/09/12	2019/09/12	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	2	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	2	N/A	2019/09/16	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	2	N/A	2019/09/16	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	2	N/A	2019/09/16	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	2	N/A	2019/09/16	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	2	2019/09/12	2019/09/16	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	2	2019/09/16	2019/09/16	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	2	N/A	2019/09/15	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	2	N/A	2019/09/17	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	2	N/A	2019/09/16	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	2	2019/09/12	2019/09/13	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	2	N/A	2019/09/13	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	2	N/A	2019/09/17	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	2	N/A	2019/09/13	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	2	2019/09/12	2019/09/13	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	2	2019/09/12	2019/09/17	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/09/12	CAM SOP-00446	SM 23 5310B m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/09/13	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	2	2019/09/12	2019/09/12	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	2	2019/09/12	2019/09/12	CAM SOP-00428	SM 23 2540D m



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE
Your C.O.C. #: N/A

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/08
Report #: R5912435
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9P4257

Received: 2019/09/11, 10:35

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Turbidity (1)	2	N/A	2019/09/12	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(8) Radium-226 results have not been corrected for blanks.

(9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE
Your C.O.C. #: N/A

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/08
Report #: R5912435
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9P4257
Received: 2019/09/11, 10:35

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

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BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KTH941	KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00		
COC Number		N/A	N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch
Calculated Parameters					
Dissolved Hardness (CaCO ₃)	mg/L	4010	4040	0.50	6337845
Metals					
Dissolved Aluminum (Al)	ug/L	166	168	30	6337847
Dissolved Antimony (Sb)	ug/L	<5.0	<5.0	5.0	6337847
Dissolved Arsenic (As)	ug/L	13.7	12.8	1.0	6337847
Dissolved Barium (Ba)	ug/L	187	191	10	6337847
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	1.0	6337847
Dissolved Bismuth (Bi)	ug/L	<10	<10	10	6337847
Dissolved Boron (B)	ug/L	639	637	500	6337847
Dissolved Cadmium (Cd)	ug/L	0.13	0.11	0.10	6337847
Dissolved Chromium (Cr)	ug/L	<10	<10	10	6337847
Dissolved Cobalt (Co)	ug/L	4.1	4.2	2.0	6337847
Dissolved Copper (Cu)	ug/L	4.0	4.0	2.0	6337847
Dissolved Iron (Fe)	ug/L	<50	<50	50	6337847
Dissolved Lead (Pb)	ug/L	2.2	2.1	2.0	6337847
Dissolved Lithium (Li)	ug/L	428	441	20	6337847
Dissolved Manganese (Mn)	ug/L	42	43	10	6337847
Dissolved Molybdenum (Mo)	ug/L	17	15	10	6337847
Dissolved Nickel (Ni)	ug/L	22	22	10	6337847
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	1.0	6337847
Dissolved Silicon (Si)	ug/L	1360	1370	1000	6337847
Dissolved Silver (Ag)	ug/L	<0.20	<0.20	0.20	6337847
Dissolved Strontium (Sr)	ug/L	20800	20600	10	6337847
Dissolved Thallium (Tl)	ug/L	0.10	0.10	0.10	6337847
Dissolved Tin (Sn)	ug/L	<50	<50	50	6337847
Dissolved Titanium (Ti)	ug/L	<50	<50	50	6337847
Dissolved Uranium (U)	ug/L	4.8	4.8	1.0	6337847
Dissolved Vanadium (V)	ug/L	<50	<50	50	6337847
Dissolved Zinc (Zn)	ug/L	<50	<50	50	6337847
Dissolved Zirconium (Zr)	ug/L	<1.0	<1.0	1.0	6337847
Dissolved Calcium (Ca)	mg/L	856	866	0.50	6337846
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KTH941	KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00		
COC Number		N/A	N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch
Dissolved Magnesium (Mg)	mg/L	454	457	0.50	6337846
Dissolved Potassium (K)	mg/L	139	139	0.50	6337846
Dissolved Sodium (Na)	mg/L	3530	3570	0.50	6337846
Dissolved Sulphur (S)	mg/L	320	323	30	6337846
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KTH941	KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00		
COC Number		N/A	N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch
Metals					
Total Aluminum (Al)	ug/L	310	307	30	6337844
Total Antimony (Sb)	ug/L	<5.0	<5.0	5.0	6337844
Total Arsenic (As)	ug/L	10.7	10.8	1.0	6337844
Total Barium (Ba)	ug/L	182	192	10	6337844
Total Beryllium (Be)	ug/L	<1.0	<1.0	1.0	6337844
Total Bismuth (Bi)	ug/L	<10	<10	10	6337844
Total Boron (B)	ug/L	584	607	500	6337844
Total Cadmium (Cd)	ug/L	0.13	0.13	0.10	6337844
Total Chromium (Cr)	ug/L	<10	<10	10	6337844
Total Cobalt (Co)	ug/L	4.0	4.1	2.0	6337844
Total Copper (Cu)	ug/L	<5.0	<5.0	5.0	6337844
Total Iron (Fe)	ug/L	<100	<100	100	6337844
Total Lead (Pb)	ug/L	2.2	2.2	2.0	6337844
Total Lithium (Li)	ug/L	415	436	20	6337844
Total Manganese (Mn)	ug/L	46	47	10	6337844
Total Molybdenum (Mo)	ug/L	14	14	10	6337844
Total Nickel (Ni)	ug/L	22	22	10	6337844
Total Selenium (Se)	ug/L	<1.0	<1.0	1.0	6337844
Total Silicon (Si)	ug/L	1320	1410	1000	6337844
Total Silver (Ag)	ug/L	<0.20	<0.20	0.20	6337844
Total Strontium (Sr)	ug/L	20100	21100	10	6337844
Total Thallium (Tl)	ug/L	0.10	0.11	0.10	6337844
Total Tin (Sn)	ug/L	<50	<50	50	6337844
Total Titanium (Ti)	ug/L	<50	<50	50	6337844
Total Uranium (U)	ug/L	4.7	4.9	1.0	6337844
Total Vanadium (V)	ug/L	<50	<50	50	6337844
Total Zinc (Zn)	ug/L	<50	<50	50	6337844
Total Zirconium (Zr)	ug/L	<1.0	<1.0	1.0	6337844
Total Calcium (Ca)	ug/L	832000	856000	500	6337843
Total Magnesium (Mg)	ug/L	441000	457000	500	6337843
Total Potassium (K)	ug/L	136000	142000	500	6337843
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KTH941	KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00		
COC Number		N/A	N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch
Total Sodium (Na)	ug/L	3380000	3530000	500	6337843
Total Sulphur (S)	ug/L	308000	324000	30000	6337843
Calculated Parameters					
Total Hardness (CaCO3)	ug/L	3890000	4020000	500	6337842
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

BV Labs Job #: B9P4257

Report Date: 2019/10/08

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

RESULTS OF ANALYSES OF WATER

BV Labs ID		KTH941			KTH941			KTH942		
Sampling Date		2019/09/09 06:00			2019/09/09 06:00			2019/09/09 06:00		
COC Number		N/A			N/A			N/A		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch	MEL-26 DUP	RDL	QC Batch

Calculated Parameters

Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	64	1.0	6328442				63	1.0	6328442
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6328442				<1.0	1.0	6328442

Inorganics

Total Ammonia-N	mg/L	6.0	0.050	6336357				5.7	0.050	6329171
Conductivity	umho/cm	23000	1.0	6329193				23000	1.0	6329193
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6335522	<1.0	1.0	6335522	<1.0	1.0	6335522
Total Dissolved Solids	mg/L	15300	20	6329710				14900	20	6329710
Total Kjeldahl Nitrogen (TKN)	mg/L	16	2.0	6328648				16	2.0	6328648
Dissolved Organic Carbon	mg/L	18	0.50	6328740	18	0.50	6328740	18	0.50	6328740
Total Organic Carbon (TOC)	mg/L	19	0.50	6329207	19	0.50	6329207	19	0.50	6329207
Orthophosphate (P)	mg/L	0.017	0.010	6329603				0.018	0.010	6329603
Dissolved Oxygen	mg/L	10.2		6329337				9.85		6329337
pH	pH	7.44		6329194				7.44		6329194
Total Phosphorus	mg/L	0.071	0.020	6328611				0.082	0.020	6328611
Reactive Silica (SiO ₂)	mg/L	8.0	0.050	6335535	7.6	0.050	6335535	12 (2)	0.10	6335535
Total Suspended Solids	mg/L	11	1	6328304				11	1	6328304
Dissolved Sulphate (SO ₄)	mg/L	820	5.0	6329601				820	5.0	6329601
Total Cyanide (CN)	mg/L	0.0072	0.0050	6328646				0.0074	0.0050	6328646
Turbidity	NTU	0.3	0.1	6328434				0.3	0.1	6328434
WAD Cyanide (Free)	mg/L	0.0022	0.0010	6328655				0.0023	0.0010	6328655
Alkalinity (Total as CaCO ₃)	mg/L	64	1.0	6329140				63	1.0	6329140
Dissolved Chloride (Cl ⁻)	mg/L	8500	80	6329596				8000	80	6329596
Nitrite (N)	mg/L	<0.010	0.010	6329313				<0.010	0.010	6329313
Nitrate (N)	mg/L	48.7	0.50	6329313				48.5	0.50	6329313
Nitrate + Nitrite (N)	mg/L	48.7	0.50	6329313				48.5	0.50	6329313

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) See general comments for notes regarding CNFREE-W

(2) Detection limits raised due to dilution to bring analyte within the calibrated range.



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

RESULTS OF ANALYSES OF WATER

BV Labs ID		KTH941			KTH941			KTH942		
Sampling Date		2019/09/09 06:00			2019/09/09 06:00			2019/09/09 06:00		
COC Number		N/A			N/A			N/A		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch	MEL-26 DUP	RDL	QC Batch

RADIONUCLIDE

Radium-226	Bq/L	0.13	0.0050	6331710				0.10	0.0050	6331710
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		KTH942		
Sampling Date		2019/09/09 06:00		
COC Number		N/A		
	UNITS	MEL-26 DUP Lab-Dup	RDL	QC Batch

Inorganics

Total Ammonia-N	mg/L	5.7	0.050	6329171
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KTH941	KTH942			KTH942		
Sampling Date		2019/09/09 06:00	2019/09/09 06:00			2019/09/09 06:00		
COC Number		N/A	N/A			N/A		
	UNITS	MEL-26	MEL-26 DUP	RDL	QC Batch	MEL-26 DUP Lab-Dup	RDL	QC Batch
Metals								
Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6328544	<0.00001	0.00001	6328544
Dissolved Mercury (Hg)	mg/L	<0.00001	<0.00001	0.00001	6328553			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate								



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

TEST SUMMARY

BV Labs ID: KTH941
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/09
Shipped:
Received: 2019/09/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6329140	N/A	2019/09/13	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6328442	N/A	2019/09/16	Automated Statchk
Chloride by Automated Colourimetry	KONE	6329596	N/A	2019/09/13	Deonarine Ramnarine
Conductivity	AT	6329193	N/A	2019/09/13	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6328655	N/A	2019/09/12	Gnana Thomas
Total Cyanide	SKAL/CN	6328646	2019/09/12	2019/09/12	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6328740	N/A	2019/09/13	Mandeep Kaur
Dissolved Oxygen	DO	6329337	2019/09/12	2019/09/12	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6328553	2019/09/12	2019/09/12	Medhat Nasr
Mercury (low level)	CV/AA	6328544	2019/09/12	2019/09/12	Medhat Nasr
Cyanide (Free)	SPEC	6335522	2019/09/16	2019/09/16	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6337842	N/A	2019/09/16	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6337845	N/A	2019/09/16	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6337846	N/A	2019/09/16	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6337847	N/A	2019/09/16	Adnan Dzebic
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6337843	2019/09/16	2019/09/16	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6337844	2019/09/16	2019/09/16	Vanessa Chan
Silica (Reactive)	KONE	6335535	N/A	2019/09/15	Serena Tian
Total Ammonia-N	LACH/NH ₄	6336357	N/A	2019/09/17	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6329313	N/A	2019/09/16	Chandra Nandlal
pH	AT	6329194	2019/09/12	2019/09/13	Surinder Rai
Orthophosphate	KONE	6329603	N/A	2019/09/13	Alina Dobreanu
Radium-226 Low Level	AS	6331710	N/A	2019/09/17	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6329601	N/A	2019/09/13	Alina Dobreanu
Total Dissolved Solids	BAL	6329710	2019/09/12	2019/09/13	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6328648	2019/09/12	2019/09/17	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6329207	N/A	2019/09/12	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6328611	2019/09/12	2019/09/12	Shivani Shivani
Low Level Total Suspended Solids	BAL	6328304	2019/09/12	2019/09/12	Massarat Jan
Turbidity	AT	6328434	N/A	2019/09/12	Kazzandra Adeva

BV Labs ID: KTH941 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/09
Shipped:
Received: 2019/09/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6328740	N/A	2019/09/13	Mandeep Kaur
Cyanide (Free)	SPEC	6335522	2019/09/16	2019/09/16	Taylor Mullings
Silica (Reactive)	KONE	6335535	N/A	2019/09/15	Serena Tian
Total Organic Carbon (TOC)	TOCV/NDIR	6329207	N/A	2019/09/12	Mandeep Kaur



BUREAU
VERITAS

BV Labs Job #: B9P4257

Report Date: 2019/10/08

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

TEST SUMMARY

BV Labs ID: KTH942
Sample ID: MEL-26 DUP
Matrix: Water

Collected: 2019/09/09
Shipped:
Received: 2019/09/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6329140	N/A	2019/09/13	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6328442	N/A	2019/09/16	Automated Statchk
Chloride by Automated Colourimetry	KONE	6329596	N/A	2019/09/13	Deonarine Ramnarine
Conductivity	AT	6329193	N/A	2019/09/13	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6328655	N/A	2019/09/12	Gnana Thomas
Total Cyanide	SKAL/CN	6328646	2019/09/12	2019/09/12	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6328740	N/A	2019/09/13	Mandeep Kaur
Dissolved Oxygen	DO	6329337	2019/09/12	2019/09/12	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6328553	2019/09/12	2019/09/12	Medhat Nasr
Mercury (low level)	CV/AA	6328544	2019/09/12	2019/09/12	Medhat Nasr
Cyanide (Free)	SPEC	6335522	2019/09/16	2019/09/16	Taylor Mullings
Hardness Total (calculated as CaCO ₃)	CALC	6337842	N/A	2019/09/16	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6337845	N/A	2019/09/16	Report Automation Engine
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6337846	N/A	2019/09/16	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6337847	N/A	2019/09/16	Adnan Dzebic
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6337843	2019/09/16	2019/09/16	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6337844	2019/09/16	2019/09/16	Vanessa Chan
Silica (Reactive)	KONE	6335535	N/A	2019/09/15	Serena Tian
Total Ammonia-N	LACH/NH ₄	6329171	N/A	2019/09/17	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6329313	N/A	2019/09/16	Chandra Nandlal
pH	AT	6329194	2019/09/12	2019/09/13	Surinder Rai
Orthophosphate	KONE	6329603	N/A	2019/09/13	Alina Dobreanu
Radium-226 Low Level	AS	6331710	N/A	2019/09/17	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6329601	N/A	2019/09/13	Alina Dobreanu
Total Dissolved Solids	BAL	6329710	2019/09/12	2019/09/13	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6328648	2019/09/12	2019/09/17	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6329207	N/A	2019/09/13	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6328611	2019/09/12	2019/09/12	Shivani Shivani
Low Level Total Suspended Solids	BAL	6328304	2019/09/12	2019/09/12	Massarat Jan
Turbidity	AT	6328434	N/A	2019/09/12	Kazzandra Adeva

BV Labs ID: KTH942 Dup
Sample ID: MEL-26 DUP
Matrix: Water

Collected: 2019/09/09
Shipped:
Received: 2019/09/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (low level)	CV/AA	6328544	2019/09/12	2019/09/12	Medhat Nasr
Total Ammonia-N	LACH/NH ₄	6329171	N/A	2019/09/17	Mazin Wakai



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.3°C
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Sample KTH941 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample was analyzed past method specified hold time for Cyanide (Free). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample KTH942 [MEL-26 DUP] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Sample was analyzed past method specified hold time for Cyanide (Free). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KTH941 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

Sample KTH942 [MEL-26 DUP] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KTH941 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Sample KTH942 [MEL-26 DUP] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9P4257

Report Date: 2019/10/08

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6328304	Total Suspended Solids	2019/09/12					<1	mg/L	6.3	25	98	85 - 115
6328434	Turbidity	2019/09/12			97	85 - 115	<0.1	NTU	15	20		
6328544	Mercury (Hg)	2019/09/12	99	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6328553	Dissolved Mercury (Hg)	2019/09/12	96	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6328611	Total Phosphorus	2019/09/12	99	80 - 120	98	80 - 120	<0.020	mg/L	6.8	20	101	80 - 120
6328646	Total Cyanide (CN)	2019/09/12	98	80 - 120	98	80 - 120	<0.0050	mg/L	NC	20		
6328648	Total Kjeldahl Nitrogen (TKN)	2019/09/16	95	80 - 120	100	80 - 120	<0.10	mg/L	5.3	20	97	80 - 120
6328655	WAD Cyanide (Free)	2019/09/12	100	80 - 120	100	80 - 120	<0.0010	mg/L	NC	20		
6328740	Dissolved Organic Carbon	2019/09/13	95	80 - 120	98	80 - 120	<0.50	mg/L	0.39	20		
6329140	Alkalinity (Total as CaCO3)	2019/09/13			94	85 - 115	<1.0	mg/L	1.4	20		
6329171	Total Ammonia-N	2019/09/17	93	75 - 125	101	80 - 120	<0.050	mg/L	0.070	20		
6329193	Conductivity	2019/09/13			102	85 - 115	<1.0	umho/cm	0	25		
6329194	pH	2019/09/13			102	98 - 103			0.055	N/A		
6329207	Total Organic Carbon (TOC)	2019/09/12	94	80 - 120	97	80 - 120	<0.50	mg/L	0.27	20		
6329313	Nitrate (N)	2019/09/16	105	80 - 120	106	80 - 120	<0.10	mg/L	NC	20		
6329313	Nitrite (N)	2019/09/16	104	80 - 120	104	80 - 120	<0.010	mg/L	NC	20		
6329596	Dissolved Chloride (Cl-)	2019/09/13	NC	80 - 120	103	80 - 120	<1.0	mg/L	0.029	20		
6329601	Dissolved Sulphate (SO4)	2019/09/13	114	75 - 125	100	80 - 120	<1.0	mg/L	0.59	20		
6329603	Orthophosphate (P)	2019/09/13	107	75 - 125	98	80 - 120	<0.010	mg/L	NC	25		
6329710	Total Dissolved Solids	2019/09/13					<10	mg/L	5.1	25	102	90 - 110
6331710	Radium-226	2019/09/17			89	85 - 115	<0.0050	Bq/L	NC	N/A		
6335522	Free Cyanide (CN)	2019/09/16	93	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
6335535	Reactive Silica (SiO2)	2019/09/15	NC	80 - 120	101	80 - 120	<0.050	mg/L	5.5	20		
6336357	Total Ammonia-N	2019/09/17	101	75 - 125	100	80 - 120	<0.050	mg/L	3.8 (1)	20		
6337844	Total Aluminum (Al)	2019/09/16	99	80 - 120	100	80 - 120	<3.0	ug/L				
6337844	Total Antimony (Sb)	2019/09/16	102	80 - 120	102	80 - 120	<0.50	ug/L				
6337844	Total Arsenic (As)	2019/09/16	102	80 - 120	100	80 - 120	<0.10	ug/L				
6337844	Total Barium (Ba)	2019/09/16	98	80 - 120	100	80 - 120	<1.0	ug/L				
6337844	Total Beryllium (Be)	2019/09/16	97	80 - 120	98	80 - 120	<0.10	ug/L				
6337844	Total Bismuth (Bi)	2019/09/16	98	80 - 120	103	80 - 120	<1.0	ug/L				
6337844	Total Boron (B)	2019/09/16	95	80 - 120	98	80 - 120	<50	ug/L				

BUREAU
VERITAS

BV Labs Job #: B9P4257

Report Date: 2019/10/08

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6337844	Total Cadmium (Cd)	2019/09/16	99	80 - 120	100	80 - 120	<0.010	ug/L				
6337844	Total Chromium (Cr)	2019/09/16	95	80 - 120	97	80 - 120	<1.0	ug/L				
6337844	Total Cobalt (Co)	2019/09/16	92	80 - 120	95	80 - 120	<0.20	ug/L				
6337844	Total Copper (Cu)	2019/09/16	91	80 - 120	95	80 - 120	<0.50	ug/L				
6337844	Total Iron (Fe)	2019/09/16	98	80 - 120	102	80 - 120	<10	ug/L				
6337844	Total Lead (Pb)	2019/09/16	100	80 - 120	104	80 - 120	<0.20	ug/L				
6337844	Total Lithium (Li)	2019/09/16	95	80 - 120	97	80 - 120	<2.0	ug/L				
6337844	Total Manganese (Mn)	2019/09/16	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6337844	Total Molybdenum (Mo)	2019/09/16	105	80 - 120	102	80 - 120	<1.0	ug/L				
6337844	Total Nickel (Ni)	2019/09/16	92	80 - 120	96	80 - 120	<1.0	ug/L				
6337844	Total Selenium (Se)	2019/09/16	101	80 - 120	100	80 - 120	<0.10	ug/L				
6337844	Total Silicon (Si)	2019/09/16	NC	80 - 120	107	80 - 120	<100	ug/L				
6337844	Total Silver (Ag)	2019/09/16	97	80 - 120	100	80 - 120	<0.020	ug/L				
6337844	Total Strontium (Sr)	2019/09/16	NC	80 - 120	103	80 - 120	<1.0	ug/L				
6337844	Total Thallium (Tl)	2019/09/16	100	80 - 120	102	80 - 120	<0.010	ug/L				
6337844	Total Tin (Sn)	2019/09/16	98	80 - 120	103	80 - 120	<5.0	ug/L				
6337844	Total Titanium (Ti)	2019/09/16	99	80 - 120	100	80 - 120	<5.0	ug/L				
6337844	Total Uranium (U)	2019/09/16	103	80 - 120	104	80 - 120	<0.10	ug/L				
6337844	Total Vanadium (V)	2019/09/16	98	80 - 120	100	80 - 120	<5.0	ug/L				
6337844	Total Zinc (Zn)	2019/09/16	96	80 - 120	98	80 - 120	<5.0	ug/L				
6337844	Total Zirconium (Zr)	2019/09/16	102	80 - 120	103	80 - 120	<0.10	ug/L				
6337847	Dissolved Aluminum (Al)	2019/09/16	102	80 - 120	103	80 - 120	<3.0	ug/L				
6337847	Dissolved Antimony (Sb)	2019/09/16	103	80 - 120	103	80 - 120	<0.50	ug/L				
6337847	Dissolved Arsenic (As)	2019/09/16	106	80 - 120	102	80 - 120	<0.10	ug/L				
6337847	Dissolved Barium (Ba)	2019/09/16	101	80 - 120	101	80 - 120	<1.0	ug/L				
6337847	Dissolved Beryllium (Be)	2019/09/16	102	80 - 120	102	80 - 120	<0.10	ug/L				
6337847	Dissolved Bismuth (Bi)	2019/09/16	101	80 - 120	103	80 - 120	<1.0	ug/L				
6337847	Dissolved Boron (B)	2019/09/16	97	80 - 120	99	80 - 120	<50	ug/L				
6337847	Dissolved Cadmium (Cd)	2019/09/16	101	80 - 120	102	80 - 120	<0.010	ug/L				
6337847	Dissolved Chromium (Cr)	2019/09/16	96	80 - 120	98	80 - 120	<1.0	ug/L				
6337847	Dissolved Cobalt (Co)	2019/09/16	95	80 - 120	97	80 - 120	<0.20	ug/L				
6337847	Dissolved Copper (Cu)	2019/09/16	94	80 - 120	97	80 - 120	<0.20	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9P4257

Report Date: 2019/10/08

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: SA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6337847	Dissolved Iron (Fe)	2019/09/16	NC	80 - 120	103	80 - 120	<5.0	ug/L				
6337847	Dissolved Lead (Pb)	2019/09/16	103	80 - 120	104	80 - 120	<0.20	ug/L				
6337847	Dissolved Lithium (Li)	2019/09/16	100	80 - 120	101	80 - 120	<2.0	ug/L				
6337847	Dissolved Manganese (Mn)	2019/09/16	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6337847	Dissolved Molybdenum (Mo)	2019/09/16	106	80 - 120	104	80 - 120	<1.0	ug/L				
6337847	Dissolved Nickel (Ni)	2019/09/16	95	80 - 120	98	80 - 120	<1.0	ug/L				
6337847	Dissolved Selenium (Se)	2019/09/16	108	80 - 120	102	80 - 120	<0.10	ug/L				
6337847	Dissolved Silicon (Si)	2019/09/16	NC	80 - 120	107	80 - 120	<100	ug/L				
6337847	Dissolved Silver (Ag)	2019/09/16	100	80 - 120	101	80 - 120	<0.020	ug/L				
6337847	Dissolved Strontium (Sr)	2019/09/16	NC	80 - 120	104	80 - 120	<1.0	ug/L				
6337847	Dissolved Thallium (Tl)	2019/09/16	102	80 - 120	103	80 - 120	<0.010	ug/L				
6337847	Dissolved Tin (Sn)	2019/09/16	104	80 - 120	104	80 - 120	<5.0	ug/L				
6337847	Dissolved Titanium (Ti)	2019/09/16	101	80 - 120	98	80 - 120	<5.0	ug/L				
6337847	Dissolved Uranium (U)	2019/09/16	105	80 - 120	105	80 - 120	<0.10	ug/L				
6337847	Dissolved Vanadium (V)	2019/09/16	99	80 - 120	101	80 - 120	<5.0	ug/L				
6337847	Dissolved Zinc (Zn)	2019/09/16	102	80 - 120	104	80 - 120	<5.0	ug/L				
6337847	Dissolved Zirconium (Zr)	2019/09/16	104	80 - 120	104	80 - 120	<0.10	ug/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Ammonia analysis was done from nutrient bottle



BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Harry (Peng) Liang, Senior Analyst

Rob Reinert, B.Sc., Scientific Specialist

Steven Simpson, Lab Director

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BUREAU
VERITAS

BV Labs Job #: B9P4257
Report Date: 2019/10/08

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: SA

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: MB905316
Site Location: MELIADINE
Your C.O.C. #: B905316-M060-01-01

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/09/09
Report #: R2778415
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B974697

Received: 2019/09/06, 10:00

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Chloride/Sulphate by Auto Colourimetry	1	N/A	2019/09/08	AB SOP-00020 / AB SOP-00018	SM23-4500-Cl/SO4-E m
Conductivity @25C	1	N/A	2019/09/07	AB SOP-00005	SM 23 2510 B m
Elements by ICP-Dissolved-Lab Filtered (1)	1	N/A	2019/09/07	AB SOP-00042	EPA 6010d R5 m
pH @25°C (2)	1	N/A	2019/09/07	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio	1	N/A	2019/09/09		Auto Calc
Total Dissolved Solids (Calc. from EC)	1	N/A	2019/09/09		Auto Calc

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.



Your Project #: MB905316
Site Location: MELIADINE
Your C.O.C. #: B905316-M060-01-01

Attention: Alisha Williamson

Agnico-Eagle
Meliadine
Rankin Inlet, NU
Canada X0C 0G0

Report Date: 2019/09/09
Report #: R2778415
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B974697
Received: 2019/09/06, 10:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bvlabs.com
Phone# (403) 291-3077

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BUREAU
VERITAS

BV Labs Job #: B974697
Report Date: 2019/09/09

Agnico-Eagle
Client Project #: MB9O5316
Site Location: MELIADINE
Sampler Initials: RS

SALINITY WATER (WATER)

BV Labs ID		WL1311		
Sampling Date		2019/09/02 06:50		
COC Number		B9O5316-M060-01-01		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Sodium Adsorption Ratio	N/A	29	0.10	9578263
Total dissolved solids (calc., EC)	mg/L	30000	10	9578264
Misc. Inorganics				
Conductivity	uS/cm	30000	2.0	9578985
pH	pH	7.28	N/A	9578984
Anions				
Dissolved Chloride (Cl)	mg/L	9700 (1)	100	9579880
Dissolved Sulphate (SO4)	mg/L	1100 (1)	10	9579880
Lab Filtered Elements				
Dissolved Calcium (Ca)	mg/L	950 (1)	6.0	9579697
Dissolved Magnesium (Mg)	mg/L	630 (1)	4.0	9579697
Dissolved Potassium (K)	mg/L	190	0.30	9579697
Dissolved Sodium (Na)	mg/L	4700 (1)	10	9579697
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.				



BUREAU
VERITAS

BV Labs Job #: B974697
Report Date: 2019/09/09

Agnico-Eagle
Client Project #: MB9O5316
Site Location: MELIADINE
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: WL1311
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/02
Shipped:
Received: 2019/09/06

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	9579880	N/A	2019/09/08	Serena Tian
Conductivity @25C	COND	9578985	N/A	2019/09/07	Kathleen Dalton
Elements by ICP-Dissolved-Lab Filtered	ICPA	9579697	N/A	2019/09/07	Ahmed Loai
pH @25°C	AT/ALK	9578984	N/A	2019/09/07	Kathleen Dalton
Sodium Adsorption Ratio	CALC	9578263	N/A	2019/09/09	Automated Statchk
Total Dissolved Solids (Calc. from EC)	CALC	9578264	N/A	2019/09/09	Automated Statchk



BUREAU
VERITAS

BV Labs Job #: B974697
Report Date: 2019/09/09

Agnico-Eagle
Client Project #: MB9O5316
Site Location: MELIADINE
Sampler Initials: RS

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C
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Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B974697

Report Date: 2019/09/09

QUALITY ASSURANCE REPORT

Agnico-Eagle

Client Project #: MB905316

Site Location: MELIADINE

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9578984	pH	2019/09/07			100	97 - 103			1.4	N/A
9578985	Conductivity	2019/09/07			101	90 - 110	<2.0	uS/cm	0.059	10
9579697	Dissolved Calcium (Ca)	2019/09/07	93	80 - 120	93	80 - 120	<0.30	mg/L	NC	20
9579697	Dissolved Magnesium (Mg)	2019/09/07	98	80 - 120	99	80 - 120	<0.20	mg/L	NC	20
9579697	Dissolved Potassium (K)	2019/09/07	96	80 - 120	96	80 - 120	<0.30	mg/L	NC	20
9579697	Dissolved Sodium (Na)	2019/09/07	96	80 - 120	99	80 - 120	<0.50	mg/L	NC	20
9579880	Dissolved Chloride (Cl)	2019/09/08	101	80 - 120	101	80 - 120	<1.0	mg/L	NC	20
9579880	Dissolved Sulphate (SO ₄)	2019/09/08	100	80 - 120	101	80 - 120	<1.0	mg/L	NC	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

BV Labs Job #: B974697
Report Date: 2019/09/09

Agnico-Eagle
Client Project #: MB9O5316
Site Location: MELIADINE
Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Harry (Peng) Liang, Senior Analyst

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Your P.O. #: OL-762849
Your Project #: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884397
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9O5316

Received: 2019/09/04, 10:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/09/06	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/09/09	CAM SOP-00102	APHA 4500-CO2 D
Total Chlorine (1)	1	2019/09/05	2019/09/05	CAM SOP 00425	SM 23 4500-CL G m
Chloride by Automated Colourimetry (1)	1	N/A	2019/09/06	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/09/06	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/09/05	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/09/05	2019/09/05	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/09/05	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/09/05	2019/09/05	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/09/05	2019/09/05	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/09/05	2019/09/05	CAM SOP-00453	EPA 7470 m
Cyanide (Free) (2)	1	N/A	N/A		
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/09/10	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/09/09	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/09/09	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/09/09	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/04	2019/09/10	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/09/09	2019/09/09	BBY7SOP-00003/02	EPA 6020B R2 m
Silica (Reactive) (2)	1	N/A	2019/09/11	AB SOP-00011	EPA370.1 R1978 m
Total Ammonia-N (1)	1	N/A	2019/09/06	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 7)	1	N/A	2019/09/06	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/09/05	2019/09/06	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/09/06	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 8)	1	N/A	2019/09/16	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry
Sulphate by Automated Colourimetry (1)	1	N/A	2019/09/06	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/09/05	2019/09/06	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/09/05	2019/09/09	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 9)	1	N/A	2019/09/05	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/09/05	2019/09/06	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/09/05	2019/09/05	CAM SOP-00428	SM 23 2540D m



Your P.O. #: OL-762849
Your Project #: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884397
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B905316

Received: 2019/09/04, 10:00

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Turbidity (1)	1	N/A	2019/09/05	CAM SOP-00417	SM 23 2130 B m
Low Level Volatile Suspended Solids (1)	1	2019/09/05	2019/09/06	CAM SOP-00428	SM 23 2540

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(7) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(8) Radium-226 results have not been corrected for blanks.

(9) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.



Your P.O. #: OL-762849
Your Project #: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/09/18
Report #: R5884397
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B905316
Received: 2019/09/04, 10:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager
Email: Alisha.Williamson@bvlabs.com
Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KRJ918		
Sampling Date		2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	5370	0.50	6319131
Metals				
Dissolved Aluminum (Al)	ug/L	<150	150	6324820
Dissolved Antimony (Sb)	ug/L	<25	25	6324820
Dissolved Arsenic (As)	ug/L	9.0	5.0	6324820
Dissolved Barium (Ba)	ug/L	191	50	6324820
Dissolved Beryllium (Be)	ug/L	<5.0	5.0	6324820
Dissolved Bismuth (Bi)	ug/L	<50	50	6324820
Dissolved Boron (B)	ug/L	<2500	2500	6324820
Dissolved Cadmium (Cd)	ug/L	<0.50	0.50	6324820
Dissolved Chromium (Cr)	ug/L	<50	50	6324820
Dissolved Cobalt (Co)	ug/L	<10	10	6324820
Dissolved Copper (Cu)	ug/L	<10	10	6324820
Dissolved Iron (Fe)	ug/L	<250	250	6324820
Dissolved Lead (Pb)	ug/L	<10	10	6324820
Dissolved Lithium (Li)	ug/L	539	100	6324820
Dissolved Manganese (Mn)	ug/L	<50	50	6324820
Dissolved Molybdenum (Mo)	ug/L	<50	50	6324820
Dissolved Nickel (Ni)	ug/L	<50	50	6324820
Dissolved Selenium (Se)	ug/L	<5.0	5.0	6324820
Dissolved Silicon (Si)	ug/L	<5000	5000	6324820
Dissolved Silver (Ag)	ug/L	<1.0	1.0	6324820
Dissolved Strontium (Sr)	ug/L	23500	50	6324820
Dissolved Thallium (Tl)	ug/L	<0.50	0.50	6324820
Dissolved Tin (Sn)	ug/L	<250	250	6324820
Dissolved Titanium (Ti)	ug/L	<250	250	6324820
Dissolved Uranium (U)	ug/L	<5.0	5.0	6324820
Dissolved Vanadium (V)	ug/L	<250	250	6324820
Dissolved Zinc (Zn)	ug/L	<250	250	6324820
Dissolved Zirconium (Zr)	ug/L	<5.0	5.0	6324820
Dissolved Calcium (Ca)	mg/L	967	2.5	6319132
Dissolved Magnesium (Mg)	mg/L	718	2.5	6319132
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KRJ918		
Sampling Date		2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	188	2.5	6319132
Dissolved Sodium (Na)	mg/L	5150	2.5	6319132
Dissolved Sulphur (S)	mg/L	437	150	6319132
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KRJ918		
Sampling Date		2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	223	150	6324819
Total Antimony (Sb)	ug/L	<25	25	6324819
Total Arsenic (As)	ug/L	9.1	5.0	6324819
Total Barium (Ba)	ug/L	192	50	6324819
Total Beryllium (Be)	ug/L	<5.0	5.0	6324819
Total Bismuth (Bi)	ug/L	<50	50	6324819
Total Boron (B)	ug/L	<2500	2500	6324819
Total Cadmium (Cd)	ug/L	<0.50	0.50	6324819
Total Chromium (Cr)	ug/L	<50	50	6324819
Total Cobalt (Co)	ug/L	<10	10	6324819
Total Copper (Cu)	ug/L	<25	25	6324819
Total Iron (Fe)	ug/L	<500	500	6324819
Total Lead (Pb)	ug/L	<10	10	6324819
Total Lithium (Li)	ug/L	555	100	6324819
Total Manganese (Mn)	ug/L	<50	50	6324819
Total Molybdenum (Mo)	ug/L	<50	50	6324819
Total Nickel (Ni)	ug/L	<50	50	6324819
Total Selenium (Se)	ug/L	<5.0	5.0	6324819
Total Silicon (Si)	ug/L	<5000	5000	6324819
Total Silver (Ag)	ug/L	<1.0	1.0	6324819
Total Strontium (Sr)	ug/L	23600	50	6324819
Total Thallium (Tl)	ug/L	<0.50	0.50	6324819
Total Tin (Sn)	ug/L	<250	250	6324819
Total Titanium (Ti)	ug/L	<250	250	6324819
Total Uranium (U)	ug/L	<5.0	5.0	6324819
Total Vanadium (V)	ug/L	<250	250	6324819
Total Zinc (Zn)	ug/L	<250	250	6324819
Total Zirconium (Zr)	ug/L	<5.0	5.0	6324819
Total Calcium (Ca)	ug/L	974000	2500	6319128
Total Magnesium (Mg)	ug/L	747000	2500	6319128
Total Potassium (K)	ug/L	188000	2500	6319128
Total Sodium (Na)	ug/L	5090000	2500	6319128
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KRJ918		
Sampling Date		2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	448000	150000	6319128
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	5510000	500	6319127
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

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VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KRJ918			KRJ918		
Sampling Date		2019/09/02 06:50			2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	32	1.0	6313709			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6313709			
Inorganics							
Total Ammonia-N	mg/L	7.0	0.050	6316054	7.0	0.050	6316054
Total Chlorine	mg/L	9	1	6316665	9	1	6316665
Conductivity	umho/cm	30000	1.0	6316760			
Free Cyanide (CN)	ug/L	<1.0 (1)	1.0	6333734			
Total Dissolved Solids	mg/L	19500	20	6316534	19400	20	6316534
Total Kjeldahl Nitrogen (TKN)	mg/L	18	2.0	6316939			
Dissolved Organic Carbon	mg/L	16	0.50	6315226			
Total Organic Carbon (TOC)	mg/L	16	0.50	6316899			
Orthophosphate (P)	mg/L	0.011	0.010	6317705			
Dissolved Oxygen	mg/L	9.48		6317272			
pH	pH	7.14		6316764			
Total Phosphorus	mg/L	0.076	0.020	6316507			
Reactive Silica (SiO ₂)	mg/L	13 (2)	0.10	6330991			
Total Suspended Solids	mg/L	9	1	6316018			
Dissolved Sulphate (SO ₄)	mg/L	1000	5.0	6316762	990	5.0	6316762
Total Cyanide (CN)	mg/L	0.0084	0.0050	6316630	0.0077	0.0050	6316630
Turbidity	NTU	0.4	0.1	6315282			
Volatile Suspended Solids	mg/L	6	1	6316028			
WAD Cyanide (Free)	mg/L	0.0021	0.0010	6316641	0.0020	0.0010	6316641
Alkalinity (Total as CaCO ₃)	mg/L	32	1.0	6316755			
Dissolved Chloride (Cl ⁻)	mg/L	10000	100	6316753	11000	100	6316753
Nitrite (N)	mg/L	<0.010	0.010	6316749			
Nitrate (N)	mg/L	53.3	0.50	6316749			
Nitrate + Nitrite (N)	mg/L	53.3	0.50	6316749			
RADIONUCLIDE							
Radium-226	Bq/L	0.070	0.0050	6318584			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W. (2) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KRJ918			KRJ918		
Sampling Date		2019/09/02 06:50			2019/09/02 06:50		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	<0.00001	0.00001	6316097			
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6316131	<0.00001	0.00001	6316131
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KRJ918

Sample ID: MEL-26

Matrix: Water

Collected: 2019/09/02

Shipped:

Received: 2019/09/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6316755	N/A	2019/09/06	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6313709	N/A	2019/09/09	Automated Statchk
Total Chlorine	SPEC	6316665	2019/09/05	2019/09/05	Kazzandra Adeva
Chloride by Automated Colourimetry	KONE	6316753	N/A	2019/09/06	Deonarine Ramnarine
Conductivity	AT	6316760	N/A	2019/09/06	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6316641	N/A	2019/09/05	Barbara Kalbasi Esfahani
Total Cyanide	SKAL/CN	6316630	2019/09/05	2019/09/05	Barbara Kalbasi Esfahani
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6315226	N/A	2019/09/05	Mandeep Kaur
Dissolved Oxygen	DO	6317272	2019/09/05	2019/09/05	Navjot Kaur Gill
Dissolved Mercury (low level)	CV/AA	6316131	2019/09/05	2019/09/05	Medhat Nasr
Mercury (low level)	CV/AA	6316097	2019/09/05	2019/09/05	Medhat Nasr
Cyanide (Free)	SPEC	6333734	2019/09/09	2019/09/09	Amy Phan
Hardness Total (calculated as CaCO ₃)	CALC	6319127	N/A	2019/09/10	Automated Statchk
Hardness (calculated as CaCO ₃)	CALC	6319131	N/A	2019/09/09	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6319132	N/A	2019/09/09	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6324820	N/A	2019/09/09	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6319128	2019/09/10	2019/09/10	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6324819	2019/09/09	2019/09/09	Andrew An
Silica (Reactive)	KONE	6330991	N/A	2019/09/11	Serena Tian
Total Ammonia-N	LACH/NH ₄	6316054	N/A	2019/09/06	Mazin Wakai
Nitrate (NO ₃) and Nitrite (NO ₂) in Water	LACH	6316749	N/A	2019/09/06	Chandra Nandlal
pH	AT	6316764	2019/09/05	2019/09/06	Surinder Rai
Orthophosphate	KONE	6317705	N/A	2019/09/06	Alina Dobreanu
Radium-226 Low Level	AS	6318584	N/A	2019/09/16	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6316762	N/A	2019/09/06	Alina Dobreanu
Total Dissolved Solids	BAL	6316534	2019/09/05	2019/09/06	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6316939	2019/09/05	2019/09/09	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6316899	N/A	2019/09/05	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6316507	2019/09/05	2019/09/06	Shivani Shivani
Low Level Total Suspended Solids	BAL	6316018	2019/09/05	2019/09/05	Nilam Borole
Turbidity	AT	6315282	N/A	2019/09/05	Kazzandra Adeva
Low Level Volatile Suspended Solids	BAL	6316028	2019/09/05	2019/09/06	Nilam Borole

BV Labs ID: KRJ918 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/09/02

Shipped:

Received: 2019/09/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Chlorine	SPEC	6316665	2019/09/05	2019/09/05	Kazzandra Adeva
Chloride by Automated Colourimetry	KONE	6316753	N/A	2019/09/06	Deonarine Ramnarine
Free (WAD) Cyanide	SKAL/CN	6316641	N/A	2019/09/05	Barbara Kalbasi Esfahani
Total Cyanide	SKAL/CN	6316630	2019/09/05	2019/09/05	Barbara Kalbasi Esfahani
Dissolved Mercury (low level)	CV/AA	6316131	2019/09/05	2019/09/05	Medhat Nasr
Total Ammonia-N	LACH/NH ₄	6316054	N/A	2019/09/06	Mazin Wakai
Sulphate by Automated Colourimetry	KONE	6316762	N/A	2019/09/06	Alina Dobreanu



BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KRJ918 Dup

Sample ID: MEL-26

Matrix: Water

Collected: 2019/09/02

Shipped:

Received: 2019/09/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Dissolved Solids	BAL	6316534	2019/09/05	2019/09/06	Xinyue (Sarah) Hou



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.3°C
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Sample KRJ918 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results.

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide.

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KRJ918 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KRJ918 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9O5316

Report Date: 2019/09/18

QUALITY ASSURANCE REPORT

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6315226	Dissolved Organic Carbon	2019/09/05	97	80 - 120	98	80 - 120	<0.50	mg/L	6.0	20		
6315282	Turbidity	2019/09/05			93	85 - 115	<0.1	NTU	17	20		
6316018	Total Suspended Solids	2019/09/05					<1	mg/L	NC	25	100	85 - 115
6316028	Volatile Suspended Solids	2019/09/06					<1	mg/L	NC	25		
6316054	Total Ammonia-N	2019/09/06	91	75 - 125	101	80 - 120	<0.050	mg/L	0.80	20		
6316097	Mercury (Hg)	2019/09/05	99	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6316131	Dissolved Mercury (Hg)	2019/09/05	97	75 - 125	102	80 - 120	<0.00001	mg/L	NC	20		
6316507	Total Phosphorus	2019/09/06	95	80 - 120	99	80 - 120	<0.020	mg/L	0.85	20	101	80 - 120
6316534	Total Dissolved Solids	2019/09/06					<10	mg/L	0.67	25	100	90 - 110
6316630	Total Cyanide (CN)	2019/09/05	-0.10 (1)	80 - 120	96	80 - 120	<0.0050	mg/L	8.7	20		
6316641	WAD Cyanide (Free)	2019/09/05	0.30 (1)	80 - 120	97	80 - 120	<0.0010	mg/L	4.9	20		
6316665	Total Chlorine	2019/09/05	NC	85 - 115	97	85 - 115	<0.1	mg/L	0	25		
6316749	Nitrate (N)	2019/09/06	103	80 - 120	103	80 - 120	<0.10	mg/L	NC	20		
6316749	Nitrite (N)	2019/09/06	100	80 - 120	101	80 - 120	<0.010	mg/L	NC	20		
6316753	Dissolved Chloride (Cl-)	2019/09/06	NC	80 - 120	104	80 - 120	<1.0	mg/L	3.3	20		
6316755	Alkalinity (Total as CaCO3)	2019/09/06			94	85 - 115	<1.0	mg/L	1.4	20		
6316760	Conductivity	2019/09/06			101	85 - 115	<1.0	umho/cm	0.47	25		
6316762	Dissolved Sulphate (SO4)	2019/09/06	NC	75 - 125	105	80 - 120	<1.0	mg/L	1.8	20		
6316764	pH	2019/09/06			102	98 - 103			0.41	N/A		
6316899	Total Organic Carbon (TOC)	2019/09/05	94	80 - 120	97	80 - 120	<0.50	mg/L	0.64	20		
6316939	Total Kjeldahl Nitrogen (TKN)	2019/09/06	98	80 - 120	100	80 - 120	<0.10	mg/L	0.69	20	101	80 - 120
6317705	Orthophosphate (P)	2019/09/06	100	75 - 125	101	80 - 120	<0.010	mg/L	1.2	25		
6318584	Radium-226	2019/09/16			86	85 - 115	<0.0050	Bq/L				
6324819	Total Aluminum (Al)	2019/09/09	108	80 - 120	103	80 - 120	<3.0	ug/L				
6324819	Total Antimony (Sb)	2019/09/09	102	80 - 120	104	80 - 120	<0.50	ug/L				
6324819	Total Arsenic (As)	2019/09/09	101	80 - 120	102	80 - 120	<0.10	ug/L				
6324819	Total Barium (Ba)	2019/09/09	102	80 - 120	102	80 - 120	<1.0	ug/L				
6324819	Total Beryllium (Be)	2019/09/09	99	80 - 120	102	80 - 120	<0.10	ug/L				
6324819	Total Bismuth (Bi)	2019/09/09	101	80 - 120	103	80 - 120	<1.0	ug/L				
6324819	Total Boron (B)	2019/09/09	102	80 - 120	102	80 - 120	<50	ug/L				

BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6324819	Total Cadmium (Cd)	2019/09/09	100	80 - 120	102	80 - 120	<0.010	ug/L				
6324819	Total Chromium (Cr)	2019/09/09	99	80 - 120	102	80 - 120	<1.0	ug/L				
6324819	Total Cobalt (Co)	2019/09/09	99	80 - 120	99	80 - 120	<0.20	ug/L				
6324819	Total Copper (Cu)	2019/09/09	93	80 - 120	97	80 - 120	<0.50	ug/L				
6324819	Total Iron (Fe)	2019/09/09	105	80 - 120	104	80 - 120	<10	ug/L				
6324819	Total Lead (Pb)	2019/09/09	104	80 - 120	105	80 - 120	<0.20	ug/L				
6324819	Total Lithium (Li)	2019/09/09	106	80 - 120	106	80 - 120	<2.0	ug/L				
6324819	Total Manganese (Mn)	2019/09/09	99	80 - 120	102	80 - 120	<1.0	ug/L				
6324819	Total Molybdenum (Mo)	2019/09/09	105	80 - 120	102	80 - 120	<1.0	ug/L				
6324819	Total Nickel (Ni)	2019/09/09	96	80 - 120	100	80 - 120	<1.0	ug/L				
6324819	Total Selenium (Se)	2019/09/09	101	80 - 120	101	80 - 120	<0.10	ug/L				
6324819	Total Silicon (Si)	2019/09/09	104	80 - 120	107	80 - 120	<100	ug/L				
6324819	Total Silver (Ag)	2019/09/09	98	80 - 120	101	80 - 120	<0.020	ug/L				
6324819	Total Strontium (Sr)	2019/09/09	110	80 - 120	101	80 - 120	<1.0	ug/L				
6324819	Total Thallium (Tl)	2019/09/09	104	80 - 120	103	80 - 120	<0.010	ug/L				
6324819	Total Tin (Sn)	2019/09/09	104	80 - 120	103	80 - 120	<5.0	ug/L				
6324819	Total Titanium (Ti)	2019/09/09	102	80 - 120	102	80 - 120	<5.0	ug/L				
6324819	Total Uranium (U)	2019/09/09	106	80 - 120	104	80 - 120	<0.10	ug/L				
6324819	Total Vanadium (V)	2019/09/09	99	80 - 120	99	80 - 120	<5.0	ug/L				
6324819	Total Zinc (Zn)	2019/09/09	94	80 - 120	101	80 - 120	<5.0	ug/L				
6324819	Total Zirconium (Zr)	2019/09/09	105	80 - 120	103	80 - 120	<0.10	ug/L				
6324820	Dissolved Aluminum (Al)	2019/09/09	100	80 - 120	103	80 - 120	<3.0	ug/L				
6324820	Dissolved Antimony (Sb)	2019/09/09	97	80 - 120	100	80 - 120	<0.50	ug/L				
6324820	Dissolved Arsenic (As)	2019/09/09	102	80 - 120	98	80 - 120	<0.10	ug/L				
6324820	Dissolved Barium (Ba)	2019/09/09	94	80 - 120	101	80 - 120	<1.0	ug/L				
6324820	Dissolved Beryllium (Be)	2019/09/09	99	80 - 120	99	80 - 120	<0.10	ug/L				
6324820	Dissolved Bismuth (Bi)	2019/09/09	93	80 - 120	99	80 - 120	<1.0	ug/L				
6324820	Dissolved Boron (B)	2019/09/09	100	80 - 120	99	80 - 120	<50	ug/L				
6324820	Dissolved Cadmium (Cd)	2019/09/09	97	80 - 120	99	80 - 120	<0.010	ug/L				
6324820	Dissolved Chromium (Cr)	2019/09/09	94	80 - 120	98	80 - 120	<1.0	ug/L				
6324820	Dissolved Cobalt (Co)	2019/09/09	92	80 - 120	98	80 - 120	<0.20	ug/L				

BUREAU
VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6324820	Dissolved Copper (Cu)	2019/09/09	88	80 - 120	96	80 - 120	<0.20	ug/L				
6324820	Dissolved Iron (Fe)	2019/09/09	95	80 - 120	102	80 - 120	<5.0	ug/L				
6324820	Dissolved Lead (Pb)	2019/09/09	96	80 - 120	101	80 - 120	<0.20	ug/L				
6324820	Dissolved Lithium (Li)	2019/09/09	95	80 - 120	103	80 - 120	<2.0	ug/L				
6324820	Dissolved Manganese (Mn)	2019/09/09	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6324820	Dissolved Molybdenum (Mo)	2019/09/09	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6324820	Dissolved Nickel (Ni)	2019/09/09	91	80 - 120	98	80 - 120	<1.0	ug/L				
6324820	Dissolved Selenium (Se)	2019/09/09	103	80 - 120	97	80 - 120	<0.10	ug/L				
6324820	Dissolved Silicon (Si)	2019/09/09	NC	80 - 120	103	80 - 120	<100	ug/L				
6324820	Dissolved Silver (Ag)	2019/09/09	95	80 - 120	98	80 - 120	<0.020	ug/L				
6324820	Dissolved Strontium (Sr)	2019/09/09	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6324820	Dissolved Thallium (Tl)	2019/09/09	94	80 - 120	99	80 - 120	<0.010	ug/L				
6324820	Dissolved Tin (Sn)	2019/09/09	99	80 - 120	102	80 - 120	<5.0	ug/L				
6324820	Dissolved Titanium (Ti)	2019/09/09	100	80 - 120	98	80 - 120	<5.0	ug/L				
6324820	Dissolved Uranium (U)	2019/09/09	99	80 - 120	99	80 - 120	<0.10	ug/L				
6324820	Dissolved Vanadium (V)	2019/09/09	97	80 - 120	97	80 - 120	<5.0	ug/L				
6324820	Dissolved Zinc (Zn)	2019/09/09	97	80 - 120	100	80 - 120	<5.0	ug/L				
6324820	Dissolved Zirconium (Zr)	2019/09/09	103	80 - 120	100	80 - 120	<0.10	ug/L				
6330991	Reactive Silica (SiO ₂)	2019/09/11	93	80 - 120	101	80 - 120	<0.050	mg/L				
6333734	Free Cyanide (CN)	2019/09/09	96	80 - 120	95	80 - 120	<1.0	ug/L	0	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



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VERITAS

BV Labs Job #: B905316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Brad Newman, Scientific Service Specialist

Harry (Peng) Liang, Senior Analyst



Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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VERITAS

BV Labs Job #: B9O5316

Report Date: 2019/09/18

Agnico-Eagle

Client Project #: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

**Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences**

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/15
 Report #: R5921003
 Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9R3149

Received: 2019/09/30, 10:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/10/01	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/10/04	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/10/01	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/10/01	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/10/01	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/10/01	2019/10/01	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/10/01	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/10/01	2019/10/01	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/10/01	2019/10/01	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/10/01	2019/10/01	CAM SOP-00453	EPA 7470 m
Chloride & Sulphate by Auto Colorimetry (2)	1	N/A	2019/10/03	AB SOP-00020 / AB SOP-00018	SM23 4500-CL/SO4-E m
Cyanide (Free) (2)	1	N/A	N/A		
Conductivity @25C (2)	1	2019/10/02	2019/10/03	AB SOP-00005	SM 23 2510 B m
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/10/04	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/10/03	BBY WI-00033	Auto Calc
Elements by ICP-Dissolved-Lab Filtered (2)	1	N/A	2019/10/02	AB SOP-00042	EPA 6010d R5 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/10/03	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/10/03	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/09/30	2019/10/04	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/10/03	2019/10/03	BBY7SOP-00003/02	EPA 6020B R2 m
pH @25°C (2, 7)	1	N/A	2019/10/03	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio (2)	1	N/A	2019/10/03		Auto Calc
Silica (Reactive) (2)	1	N/A	2019/10/03	AB SOP-00011	EPA370.1 R1978 m
Total Dissolved Solids (Calc. from EC) (2)	1	N/A	2019/10/03		Auto Calc
Total Ammonia-N (1)	1	N/A	2019/10/01	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/10/01	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/10/01	2019/10/01	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/10/01	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/10/09	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/15
Report #: R5921003
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9R3149

Received: 2019/09/30, 10:30

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Sulphate by Automated Colourimetry (1)	1	N/A	2019/10/01	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/10/02	2019/10/03	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/10/01	2019/10/04	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/10/02	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/10/02	2019/10/02	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/10/01	2019/10/01	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/10/01	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/15
Report #: R5921003
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9R3149

Received: 2019/09/30, 10:30

- (7) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.
- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
- (9) Radium-226 results have not been corrected for blanks.
- (10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager

Email: Alisha.Williamson@bvlabs.com

Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

SALINITY IN WATER (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Sodium Adsorption Ratio	N/A	22	0.10	6368740
Total dissolved solids (calc., EC)	mg/L	22000	10	6368741
ELEMENTS				
Dissolved Calcium (Ca)	mg/L	930 (1)	3.0	6368738
Dissolved Magnesium (Mg)	mg/L	420	0.20	6368738
Dissolved Potassium (K)	mg/L	140	0.30	6368738
Dissolved Sodium (Na)	mg/L	3200 (1)	5.0	6368738
Inorganics				
Dissolved Chloride (Cl-)	mg/L	7000 (1)	50	6368736
Conductivity	uS/cm	22000	2.0	6368737
pH	pH	7.17	N/A	6368739
Dissolved Sulphate (SO4)	mg/L	830 (1)	5.0	6368736
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.				



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	4170	0.50	6370534
Metals				
Dissolved Aluminum (Al)	ug/L	111	30	6370537
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	6370537
Dissolved Arsenic (As)	ug/L	5.0	1.0	6370537
Dissolved Barium (Ba)	ug/L	226	10	6370537
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	6370537
Dissolved Bismuth (Bi)	ug/L	<10	10	6370537
Dissolved Boron (B)	ug/L	803	500	6370537
Dissolved Cadmium (Cd)	ug/L	0.17	0.10	6370537
Dissolved Chromium (Cr)	ug/L	<10	10	6370537
Dissolved Cobalt (Co)	ug/L	5.5	2.0	6370537
Dissolved Copper (Cu)	ug/L	4.9	2.0	6370537
Dissolved Iron (Fe)	ug/L	<50	50	6370537
Dissolved Lead (Pb)	ug/L	2.7	2.0	6370537
Dissolved Lithium (Li)	ug/L	477	20	6370537
Dissolved Manganese (Mn)	ug/L	223	10	6370537
Dissolved Molybdenum (Mo)	ug/L	13	10	6370537
Dissolved Nickel (Ni)	ug/L	32	10	6370537
Dissolved Selenium (Se)	ug/L	1.3	1.0	6370537
Dissolved Silicon (Si)	ug/L	2600	1000	6370537
Dissolved Silver (Ag)	ug/L	<0.20	0.20	6370537
Dissolved Strontium (Sr)	ug/L	19900	10	6370537
Dissolved Thallium (Tl)	ug/L	0.12	0.10	6370537
Dissolved Tin (Sn)	ug/L	<50	50	6370537
Dissolved Titanium (Ti)	ug/L	<50	50	6370537
Dissolved Uranium (U)	ug/L	4.2	1.0	6370537
Dissolved Vanadium (V)	ug/L	<50	50	6370537
Dissolved Zinc (Zn)	ug/L	<50	50	6370537
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	6370537
Dissolved Calcium (Ca)	mg/L	986	0.50	6370535
Dissolved Magnesium (Mg)	mg/L	415	0.50	6370535
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	134	0.50	6370535
Dissolved Sodium (Na)	mg/L	3150	0.50	6370535
Dissolved Sulphur (S)	mg/L	332	30	6370535
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	178	30	6370497
Total Antimony (Sb)	ug/L	<5.0	5.0	6370497
Total Arsenic (As)	ug/L	4.7	1.0	6370497
Total Barium (Ba)	ug/L	223	10	6370497
Total Beryllium (Be)	ug/L	<1.0	1.0	6370497
Total Bismuth (Bi)	ug/L	<10	10	6370497
Total Boron (B)	ug/L	574	500	6370497
Total Cadmium (Cd)	ug/L	0.13	0.10	6370497
Total Chromium (Cr)	ug/L	<10	10	6370497
Total Cobalt (Co)	ug/L	5.1	2.0	6370497
Total Copper (Cu)	ug/L	<5.0	5.0	6370497
Total Iron (Fe)	ug/L	<100	100	6370497
Total Lead (Pb)	ug/L	2.5	2.0	6370497
Total Lithium (Li)	ug/L	466	20	6370497
Total Manganese (Mn)	ug/L	219	10	6370497
Total Molybdenum (Mo)	ug/L	<10	10	6370497
Total Nickel (Ni)	ug/L	31	10	6370497
Total Selenium (Se)	ug/L	1.1	1.0	6370497
Total Silicon (Si)	ug/L	2630	1000	6370497
Total Silver (Ag)	ug/L	<0.20	0.20	6370497
Total Strontium (Sr)	ug/L	19800	10	6370497
Total Thallium (Tl)	ug/L	0.11	0.10	6370497
Total Tin (Sn)	ug/L	<50	50	6370497
Total Titanium (Ti)	ug/L	<50	50	6370497
Total Uranium (U)	ug/L	3.8	1.0	6370497
Total Vanadium (V)	ug/L	<50	50	6370497
Total Zinc (Zn)	ug/L	<50	50	6370497
Total Zirconium (Zr)	ug/L	<1.0	1.0	6370497
Total Calcium (Ca)	ug/L	920000	500	6370496
Total Magnesium (Mg)	ug/L	406000	500	6370496
Total Potassium (K)	ug/L	130000	500	6370496
Total Sodium (Na)	ug/L	3010000	500	6370496
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KXI127		
Sampling Date		2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	313000	30000	6370496
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	3970000	500	6370494
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KXI127			KXI127		
Sampling Date		2019/09/26 06:00			2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	37	1.0	6359715			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6359715			
Inorganics							
Total Ammonia-N	mg/L	18	0.050	6361195			
Conductivity	umho/cm	21000	1.0	6360765			
Free Cyanide (CN)	ug/L	18 (1)	1.0	6368742			
Total Dissolved Solids	mg/L	12800	20	6366103			
Total Kjeldahl Nitrogen (TKN)	mg/L	29	5.0	6362304			
Dissolved Organic Carbon	mg/L	21	0.50	6362202			
Total Organic Carbon (TOC)	mg/L	22	0.50	6363108			
Orthophosphate (P)	mg/L	<0.010	0.010	6361234			
Dissolved Oxygen	mg/L	9.76		6362418	9.78		6362418
pH	pH	7.28		6360781			
Total Phosphorus	mg/L	0.062	0.020	6364688			
Reactive Silica (SiO ₂)	mg/L	4.5 (2)	0.50	6368743	4.8	0.50	6368743
Total Suspended Solids	mg/L	12	1	6362026			
Dissolved Sulphate (SO ₄)	mg/L	790	5.0	6358989			
Total Cyanide (CN)	mg/L	0.069	0.0050	6362288	0.065	0.0050	6362288
Turbidity	NTU	0.4	0.1	6361272			
WAD Cyanide (Free)	mg/L	0.0087	0.0010	6362290	0.0086	0.0010	6362290
Alkalinity (Total as CaCO ₃)	mg/L	37	1.0	6360764			
Dissolved Chloride (Cl ⁻)	mg/L	7100	100	6359976			
Nitrite (N)	mg/L	0.672	0.010	6362366	0.660	0.010	6362366
Nitrate (N)	mg/L	48.9	0.50	6362366	49.1	0.50	6362366
Nitrate + Nitrite (N)	mg/L	49.6	0.50	6362366	49.8	0.50	6362366
RADIONUCLIDE							
Radium-226	Bq/L	0.10	0.0050	6370167			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W (2) Detection limits raised due to matrix interference.							



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KXI127			KXI127		
Sampling Date		2019/09/26 06:00			2019/09/26 06:00		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	<0.00001	0.00001	6362141			
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6362152	<0.00001	0.00001	6362152
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KXI127
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/26
Shipped:
Received: 2019/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6360764	N/A	2019/10/01	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6359715	N/A	2019/10/04	Automated Statchk
Chloride by Automated Colourimetry	KONE	6359976	N/A	2019/10/01	Deonarine Ramnarine
Conductivity	AT	6360765	N/A	2019/10/01	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6362290	N/A	2019/10/01	Gnana Thomas
Total Cyanide	SKAL/CN	6362288	2019/10/01	2019/10/01	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6362202	N/A	2019/10/01	Mandeep Kaur
Dissolved Oxygen	DO	6362418	2019/10/01	2019/10/01	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6362152	2019/10/01	2019/10/01	Medhat Nasr
Mercury (low level)	CV/AA	6362141	2019/10/01	2019/10/01	Medhat Nasr
Chloride & Sulphate by Auto Colorimetry	KONE	6368736	N/A	2019/10/03	Serena Tian
Cyanide (Free)	SPEC	6368742	2019/10/02	2019/10/03	Taylor Mullings
Conductivity @25C	COND	6368737	2019/10/03	2019/10/03	Ilonka Kovac
Hardness Total (calculated as CaCO3)	CALC	6370494	N/A	2019/10/04	Report Automation Engine
Hardness (calculated as CaCO3)	CALC	6370534	N/A	2019/10/03	Automated Statchk
Elements by ICP-Dissolved-Lab Filtered	ICP	6368738	N/A	2019/10/02	Ahmed Loai
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6370535	N/A	2019/10/03	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6370537	N/A	2019/10/03	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6370496	2019/10/04	2019/10/04	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6370497	2019/10/03	2019/10/03	Andrew An
pH @25°C	AT/PH	6368739	N/A	2019/10/03	Ilonka Kovac
Sodium Adsorption Ratio	CALC	6368740	N/A	2019/10/03	Automated Statchk
Silica (Reactive)	KONE	6368743	N/A	2019/10/03	Zafar Iqbal
Total Dissolved Solids (Calc. from EC)	CALC	6368741	N/A	2019/10/03	Automated Statchk
Total Ammonia-N	LACH/NH4	6361195	N/A	2019/10/01	Mazin Wakai
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6362366	N/A	2019/10/01	Chandra Nandlal
pH	AT	6360781	2019/10/01	2019/10/01	Surinder Rai
Orthophosphate	KONE	6361234	N/A	2019/10/01	Alina Doboreanu
Radium-226 Low Level	AS	6370167	N/A	2019/10/09	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6358989	N/A	2019/10/01	Deonarine Ramnarine
Total Dissolved Solids	BAL	6366103	2019/10/02	2019/10/03	Shivani Desai
Total Kjeldahl Nitrogen in Water	SKAL	6362304	2019/10/01	2019/10/04	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6363108	N/A	2019/10/02	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6364688	2019/10/02	2019/10/02	Shivani Shivani
Low Level Total Suspended Solids	BAL	6362026	2019/10/01	2019/10/01	Massarat Jan
Turbidity	AT	6361272	N/A	2019/10/01	Kazzandra Adeva

BV Labs ID: KXI127 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/26
Shipped:
Received: 2019/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6362290	N/A	2019/10/01	Gnana Thomas
Total Cyanide	SKAL/CN	6362288	2019/10/01	2019/10/01	Gnana Thomas
Dissolved Oxygen	DO	6362418	2019/10/01	2019/10/01	Nusrat Naz



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KXI127 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/09/26
Shipped:
Received: 2019/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Mercury (low level)	CV/AA	6362152	2019/10/01	2019/10/01	Medhat Nasr
Silica (Reactive)	KONE	6368743	N/A	2019/10/03	Zafar Iqbal
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6362366	N/A	2019/10/01	Chandra Nandlal



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	18.7°C
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Revised Report (2019/10/15): EDD attached to report.

Sample KXI127 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

The sample for dissolved metals was filtered and preserved at the lab. Values may not reflect concentrations at the time of sampling.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KXI127 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KXI127 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6358989	Dissolved Sulphate (SO ₄)	2019/10/01	NC	75 - 125	102	80 - 120	<1.0	mg/L	2.9	20		
6359976	Dissolved Chloride (Cl ⁻)	2019/10/01	NC	80 - 120	103	80 - 120	<1.0	mg/L	1.2	20		
6360764	Alkalinity (Total as CaCO ₃)	2019/10/01			101	85 - 115	<1.0	mg/L	1.8	20		
6360765	Conductivity	2019/10/01			103	85 - 115	<1.0	umho/cm	0.061	25		
6360781	pH	2019/10/01			102	98 - 103			0.29	N/A		
6361195	Total Ammonia-N	2019/10/01	96	75 - 125	101	80 - 120	<0.050	mg/L	8.5	20		
6361234	Orthophosphate (P)	2019/10/01	103	75 - 125	101	80 - 120	<0.010	mg/L	NC	25		
6361272	Turbidity	2019/10/01			99	85 - 115	<0.1	NTU	2.3	20		
6362026	Total Suspended Solids	2019/10/01					<1	mg/L	0	25	96	85 - 115
6362141	Mercury (Hg)	2019/10/01	98	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6362152	Dissolved Mercury (Hg)	2019/10/01	95	75 - 125	99	80 - 120	<0.00001	mg/L	NC	20		
6362202	Dissolved Organic Carbon	2019/10/01	96	80 - 120	101	80 - 120	<0.50	mg/L	1.2	20		
6362288	Total Cyanide (CN)	2019/10/01	60 (1)	80 - 120	101	80 - 120	<0.0050	mg/L	4.6	20		
6362290	WAD Cyanide (Free)	2019/10/01	70 (1)	80 - 120	103	80 - 120	<0.0010	mg/L	1.2	20		
6362304	Total Kjeldahl Nitrogen (TKN)	2019/10/03	107	80 - 120	101	80 - 120	<0.10	mg/L	6.2	20	104	80 - 120
6362366	Nitrate (N)	2019/10/01	NC	80 - 120	98	80 - 120	<0.10	mg/L	0.46	20		
6362366	Nitrite (N)	2019/10/01	91	80 - 120	97	80 - 120	<0.010	mg/L	1.8	20		
6363108	Total Organic Carbon (TOC)	2019/10/02	93	80 - 120	100	80 - 120	<0.50	mg/L	0.10	20		
6364688	Total Phosphorus	2019/10/02	101	80 - 120	103	80 - 120	<0.020	mg/L	0.37	20	101	80 - 120
6366103	Total Dissolved Solids	2019/10/03					<10	mg/L	4.7	25	100	90 - 110
6368736	Dissolved Chloride (Cl ⁻)	2019/10/02	NC	80 - 120	103	80 - 120	<1.0	mg/L				
6368736	Dissolved Sulphate (SO ₄)	2019/10/02	NC	80 - 120	101	80 - 120	<1.0	mg/L				
6368737	Conductivity	2019/10/02			99	90 - 110	<2.0	uS/cm				
6368738	Dissolved Calcium (Ca)	2019/10/02	95	80 - 120	100	80 - 120	<0.30	mg/L				
6368738	Dissolved Magnesium (Mg)	2019/10/02	94	80 - 120	102	80 - 120	<0.20	mg/L				
6368738	Dissolved Potassium (K)	2019/10/02	97	80 - 120	99	80 - 120	<0.30	mg/L				
6368738	Dissolved Sodium (Na)	2019/10/02	NC	80 - 120	101	80 - 120	<0.50	mg/L				
6368739	pH	2019/10/02			99	97 - 103						
6368742	Free Cyanide (CN)	2019/10/03	118	80 - 120	97	80 - 120	<1.0	ug/L	13	20		
6368743	Reactive Silica (SiO ₂)	2019/10/03	94	80 - 120	96	80 - 120	<0.050	mg/L	5.9	20		
6370167	Radium-226	2019/10/08			86	85 - 115	<0.0050	Bq/L	NC	N/A		

BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6370497	Total Aluminum (Al)	2019/10/03	104	80 - 120	104	80 - 120	<3.0	ug/L				
6370497	Total Antimony (Sb)	2019/10/03	102	80 - 120	105	80 - 120	<0.50	ug/L				
6370497	Total Arsenic (As)	2019/10/03	101	80 - 120	105	80 - 120	<0.10	ug/L				
6370497	Total Barium (Ba)	2019/10/03	NC	80 - 120	106	80 - 120	<1.0	ug/L				
6370497	Total Beryllium (Be)	2019/10/03	99	80 - 120	103	80 - 120	<0.10	ug/L				
6370497	Total Bismuth (Bi)	2019/10/03	101	80 - 120	105	80 - 120	<1.0	ug/L				
6370497	Total Boron (B)	2019/10/03	NC	80 - 120	99	80 - 120	<50	ug/L				
6370497	Total Cadmium (Cd)	2019/10/03	101	80 - 120	108	80 - 120	<0.010	ug/L				
6370497	Total Chromium (Cr)	2019/10/03	100	80 - 120	106	80 - 120	<1.0	ug/L				
6370497	Total Cobalt (Co)	2019/10/03	96	80 - 120	102	80 - 120	<0.20	ug/L				
6370497	Total Copper (Cu)	2019/10/03	98	80 - 120	104	80 - 120	<0.50	ug/L				
6370497	Total Iron (Fe)	2019/10/03	NC	80 - 120	103	80 - 120	<10	ug/L				
6370497	Total Lead (Pb)	2019/10/03	97	80 - 120	108	80 - 120	<0.20	ug/L				
6370497	Total Lithium (Li)	2019/10/03	92	80 - 120	105	80 - 120	<2.0	ug/L				
6370497	Total Manganese (Mn)	2019/10/03	NC	80 - 120	108	80 - 120	<1.0	ug/L				
6370497	Total Molybdenum (Mo)	2019/10/03	107	80 - 120	108	80 - 120	<1.0	ug/L				
6370497	Total Nickel (Ni)	2019/10/03	102	80 - 120	109	80 - 120	<1.0	ug/L				
6370497	Total Selenium (Se)	2019/10/03	103	80 - 120	106	80 - 120	<0.10	ug/L				
6370497	Total Silicon (Si)	2019/10/03	NC	80 - 120	99	80 - 120	<100	ug/L				
6370497	Total Silver (Ag)	2019/10/03	99	80 - 120	106	80 - 120	<0.020	ug/L				
6370497	Total Strontium (Sr)	2019/10/03	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6370497	Total Thallium (Tl)	2019/10/03	98	80 - 120	104	80 - 120	<0.010	ug/L				
6370497	Total Tin (Sn)	2019/10/03	100	80 - 120	102	80 - 120	<5.0	ug/L				
6370497	Total Titanium (Ti)	2019/10/03	112	80 - 120	109	80 - 120	<5.0	ug/L				
6370497	Total Uranium (U)	2019/10/03	98	80 - 120	106	80 - 120	<0.10	ug/L				
6370497	Total Vanadium (V)	2019/10/03	106	80 - 120	107	80 - 120	<5.0	ug/L				
6370497	Total Zinc (Zn)	2019/10/03	108	80 - 120	109	80 - 120	<5.0	ug/L				
6370497	Total Zirconium (Zr)	2019/10/03	92	80 - 120	103	80 - 120	<0.10	ug/L				
6370537	Dissolved Aluminum (Al)	2019/10/03	97	80 - 120	99	80 - 120	<3.0	ug/L				
6370537	Dissolved Antimony (Sb)	2019/10/03	100	80 - 120	99	80 - 120	<0.50	ug/L				
6370537	Dissolved Arsenic (As)	2019/10/03	105	80 - 120	100	80 - 120	<0.10	ug/L				
6370537	Dissolved Barium (Ba)	2019/10/03	99	80 - 120	102	80 - 120	<1.0	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6370537	Dissolved Beryllium (Be)	2019/10/03	99	80 - 120	100	80 - 120	<0.10	ug/L				
6370537	Dissolved Bismuth (Bi)	2019/10/03	100	80 - 120	102	80 - 120	<1.0	ug/L				
6370537	Dissolved Boron (B)	2019/10/03	100	80 - 120	103	80 - 120	<50	ug/L				
6370537	Dissolved Cadmium (Cd)	2019/10/03	99	80 - 120	100	80 - 120	<0.010	ug/L				
6370537	Dissolved Chromium (Cr)	2019/10/03	95	80 - 120	98	80 - 120	<1.0	ug/L				
6370537	Dissolved Cobalt (Co)	2019/10/03	93	80 - 120	99	80 - 120	<0.20	ug/L				
6370537	Dissolved Copper (Cu)	2019/10/03	91	80 - 120	99	80 - 120	<0.20	ug/L				
6370537	Dissolved Iron (Fe)	2019/10/03	98	80 - 120	100	80 - 120	<5.0	ug/L				
6370537	Dissolved Lead (Pb)	2019/10/03	108	80 - 120	105	80 - 120	<0.20	ug/L				
6370537	Dissolved Lithium (Li)	2019/10/03	98	80 - 120	100	80 - 120	<2.0	ug/L				
6370537	Dissolved Manganese (Mn)	2019/10/03	97	80 - 120	102	80 - 120	<1.0	ug/L				
6370537	Dissolved Molybdenum (Mo)	2019/10/03	NC	80 - 120	101	80 - 120	<1.0	ug/L				
6370537	Dissolved Nickel (Ni)	2019/10/03	93	80 - 120	102	80 - 120	<1.0	ug/L				
6370537	Dissolved Selenium (Se)	2019/10/03	102	80 - 120	101	80 - 120	<0.10	ug/L				
6370537	Dissolved Silicon (Si)	2019/10/03	104	80 - 120	94	80 - 120	<100	ug/L				
6370537	Dissolved Silver (Ag)	2019/10/03	100	80 - 120	103	80 - 120	<0.020	ug/L				
6370537	Dissolved Strontium (Sr)	2019/10/03	NC	80 - 120	97	80 - 120	<1.0	ug/L				
6370537	Dissolved Thallium (Tl)	2019/10/03	106	80 - 120	103	80 - 120	<0.010	ug/L				
6370537	Dissolved Tin (Sn)	2019/10/03	93	80 - 120	95	80 - 120	<5.0	ug/L				
6370537	Dissolved Titanium (Ti)	2019/10/03	103	80 - 120	103	80 - 120	<5.0	ug/L				
6370537	Dissolved Uranium (U)	2019/10/03	107	80 - 120	106	80 - 120	<0.10	ug/L				
6370537	Dissolved Vanadium (V)	2019/10/03	101	80 - 120	101	80 - 120	<5.0	ug/L				
6370537	Dissolved Zinc (Zn)	2019/10/03	NC	80 - 120	103	80 - 120	<5.0	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9R3149

Report Date: 2019/10/15

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6370537	Dissolved Zirconium (Zr)	2019/10/03	105	80 - 120	102	80 - 120	<0.10	ug/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Brad Newman, Scientific Service Specialist

Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9R3149
Report Date: 2019/10/15

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/22
 Report #: R5930981
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9R7258

Received: 2019/10/03, 10:15

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/10/06	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/10/10	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/10/08	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/10/06	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/10/04	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/10/04	2019/10/04	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/10/04	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/10/04	2019/10/04	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/10/08	2019/10/08	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/10/09	2019/10/09	CAM SOP-00453	EPA 7470 m
Chloride & Sulphate by Auto Colorimetry (2)	1	N/A	2019/10/10	AB SOP-00020 / AB SOP-00018	SM23 4500-CL/SO4-E m
Cyanide (Free) (2)	1	N/A	N/A		
Conductivity @25C (2)	1	N/A	2019/10/09	AB SOP-00005	SM 23 2510 B m
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/10/07	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/10/08	BBY WI-00033	Auto Calc
Elements by ICP-Dissolved-Lab Filtered (2)	1	N/A	2019/10/05	AB SOP-00042	EPA 6010d R5 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/10/08	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/10/07	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/10/03	2019/10/07	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/10/07	2019/10/07	BBY7SOP-00003/02	EPA 6020B R2 m
pH @25°C (2, 7)	1	N/A	2019/10/09	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio (2)	1	N/A	2019/10/06		Auto Calc
Silica (Reactive) (2)	1	N/A	2019/10/07	AB SOP-00011	EPA370.1 R1978 m
Total Dissolved Solids (Calc. from EC) (2)	1	N/A	2019/10/10		Auto Calc
Total Ammonia-N (1)	1	N/A	2019/10/07	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/10/04	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/10/04	2019/10/06	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/10/07	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/10/19	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/22
 Report #: R5930981
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9R7258

Received: 2019/10/03, 10:15

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Sulphate by Automated Colourimetry (1)	1	N/A	2019/10/07	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/10/07	2019/10/08	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/10/04	2019/10/07	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/10/06	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/10/04	2019/10/05	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/10/04	2019/10/04	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/10/04	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/22
Report #: R5930981
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9R7258

Received: 2019/10/03, 10:15

- (7) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.
- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
- (9) Radium-226 results have not been corrected for blanks.
- (10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager

Email: Alisha.Williamson@bvlabs.com

Phone# (613)274-0573

=====

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BUREAU
VERITAS

BV Labs Job #: B9R7258
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

SALINITY IN WATER (WATER)

BV Labs ID		KYF171		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Sodium Adsorption Ratio	N/A	24	0.10	6386822
Total dissolved solids (calc., EC)	mg/L	26000	10	6386823
ELEMENTS				
Dissolved Calcium (Ca)	mg/L	1100 (1)	6.0	6386820
Dissolved Magnesium (Mg)	mg/L	550 (1)	4.0	6386820
Dissolved Potassium (K)	mg/L	170	0.30	6386820
Dissolved Sodium (Na)	mg/L	4000 (1)	10	6386820
Inorganics				
Dissolved Chloride (Cl-)	mg/L	7900 (1)	50	6386818
Conductivity	uS/cm	26000	2.0	6386819
pH	pH	6.40	N/A	6386821
Dissolved Sulphate (SO4)	mg/L	1000 (1)	10	6386818
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.				



BUREAU
VERITAS

BV Labs Job #: B9R7258
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KYF171		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	5210	0.50	6376859
Metals				
Dissolved Aluminum (Al)	ug/L	165	60	6376861
Dissolved Antimony (Sb)	ug/L	<10	10	6376861
Dissolved Arsenic (As)	ug/L	5.4	2.0	6376861
Dissolved Barium (Ba)	ug/L	276	20	6376861
Dissolved Beryllium (Be)	ug/L	<2.0	2.0	6376861
Dissolved Bismuth (Bi)	ug/L	<20	20	6376861
Dissolved Boron (B)	ug/L	<1000	1000	6376861
Dissolved Cadmium (Cd)	ug/L	0.28	0.20	6376861
Dissolved Chromium (Cr)	ug/L	<20	20	6376861
Dissolved Cobalt (Co)	ug/L	7.9	4.0	6376861
Dissolved Copper (Cu)	ug/L	6.7	4.0	6376861
Dissolved Iron (Fe)	ug/L	<100	100	6376861
Dissolved Lead (Pb)	ug/L	<4.0	4.0	6376861
Dissolved Lithium (Li)	ug/L	543	40	6376861
Dissolved Manganese (Mn)	ug/L	303	20	6376861
Dissolved Molybdenum (Mo)	ug/L	<20	20	6376861
Dissolved Nickel (Ni)	ug/L	48	20	6376861
Dissolved Selenium (Se)	ug/L	<2.0	2.0	6376861
Dissolved Silicon (Si)	ug/L	3460	2000	6376861
Dissolved Silver (Ag)	ug/L	<0.40	0.40	6376861
Dissolved Strontium (Sr)	ug/L	26400	20	6376861
Dissolved Tin (Sn)	ug/L	<100	100	6376861
Dissolved Titanium (Ti)	ug/L	<100	100	6376861
Dissolved Uranium (U)	ug/L	4.2	2.0	6376861
Dissolved Vanadium (V)	ug/L	<100	100	6376861
Dissolved Zinc (Zn)	ug/L	<100	100	6376861
Dissolved Zirconium (Zr)	ug/L	<2.0	2.0	6376861
Dissolved Calcium (Ca)	mg/L	1190	1.0	6376860
Dissolved Magnesium (Mg)	mg/L	543	1.0	6376860
Dissolved Potassium (K)	mg/L	174	1.0	6376860
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R7258

Report Date: 2019/10/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KYF171		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Sodium (Na)	mg/L	3810	1.0	6376860
Dissolved Sulphur (S)	mg/L	417	60	6376860
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R7258

Report Date: 2019/10/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KYF171		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	310	60	6374559
Total Antimony (Sb)	ug/L	<10	10	6374559
Total Arsenic (As)	ug/L	5.5	2.0	6374559
Total Barium (Ba)	ug/L	261	20	6374559
Total Beryllium (Be)	ug/L	<2.0	2.0	6374559
Total Bismuth (Bi)	ug/L	<20	20	6374559
Total Boron (B)	ug/L	<1000	1000	6374559
Total Cadmium (Cd)	ug/L	<0.20	0.20	6374559
Total Chromium (Cr)	ug/L	<20	20	6374559
Total Cobalt (Co)	ug/L	7.5	4.0	6374559
Total Copper (Cu)	ug/L	<10	10	6374559
Total Iron (Fe)	ug/L	<200	200	6374559
Total Lead (Pb)	ug/L	<4.0	4.0	6374559
Total Lithium (Li)	ug/L	544	40	6374559
Total Manganese (Mn)	ug/L	280	20	6374559
Total Molybdenum (Mo)	ug/L	<20	20	6374559
Total Nickel (Ni)	ug/L	45	20	6374559
Total Selenium (Se)	ug/L	<2.0	2.0	6374559
Total Silicon (Si)	ug/L	2840	2000	6374559
Total Silver (Ag)	ug/L	<0.40	0.40	6374559
Total Strontium (Sr)	ug/L	24900	20	6374559
Total Thallium (Tl)	ug/L	<0.20	0.20	6374559
Total Tin (Sn)	ug/L	<100	100	6374559
Total Titanium (Ti)	ug/L	<100	100	6374559
Total Uranium (U)	ug/L	4.1	2.0	6374559
Total Vanadium (V)	ug/L	<100	100	6374559
Total Zinc (Zn)	ug/L	<100	100	6374559
Total Zirconium (Zr)	ug/L	<2.0	2.0	6374559
Total Calcium (Ca)	ug/L	1170000	1000	6376864
Total Magnesium (Mg)	ug/L	523000	1000	6376864
Total Potassium (K)	ug/L	169000	1000	6376864
Total Sodium (Na)	ug/L	3760000	1000	6376864
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R7258
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KYF171		
Sampling Date		2019/10/01 06:00		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	403000	60000	6376864
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	5080000	500	6376863
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9R7258

Report Date: 2019/10/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

RESULTS OF ANALYSES OF WATER

BV Labs ID		KYF171			KYF171		
Sampling Date		2019/10/01 06:00			2019/10/01 06:00		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	11	1.0	6366969			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6366969			
Inorganics							
Total Ammonia-N	mg/L	23	0.050	6370452			
Conductivity	umho/cm	26000	1.0	6370927			
Free Cyanide (CN)	ug/L	45 (1)	1.0	6381435	44	1.0	6381435
Total Dissolved Solids	mg/L	16900	20	6372385			
Total Kjeldahl Nitrogen (TKN)	mg/L	42	5.0	6370501			
Dissolved Organic Carbon	mg/L	23	0.50	6370090			
Total Organic Carbon (TOC)	mg/L	22	0.50	6369108			
Orthophosphate (P)	mg/L	<0.010	0.010	6370706	<0.010	0.010	6370706
Dissolved Oxygen	mg/L	10.9		6370568			
pH	pH	6.46		6371046			
Total Phosphorus	mg/L	0.098	0.020	6370280			
Reactive Silica (SiO ₂)	mg/L	8.8	0.050	6381436			
Total Suspended Solids	mg/L	14	1	6369699			
Dissolved Sulphate (SO ₄)	mg/L	990	5.0	6370705	980	5.0	6370705
Total Cyanide (CN)	mg/L	0.057	0.0050	6369952	0.060	0.0050	6369952
Turbidity	NTU	0.4	0.1	6369987	0.4	0.1	6369987
WAD Cyanide (Free)	mg/L	0.015	0.0010	6369980	0.017	0.0010	6369980
Alkalinity (Total as CaCO ₃)	mg/L	11	1.0	6370923			
Dissolved Chloride (Cl ⁻)	mg/L	9100	100	6370698	9200	100	6370698
Nitrite (N)	mg/L	0.994	0.010	6369800			
Nitrate (N)	mg/L	60.2	0.50	6369800			
Nitrate + Nitrite (N)	mg/L	61.2	0.50	6369800			
Metals							
Dissolved Thallium (Tl)	ug/L	<0.20	0.20	6376862			
RADIONUCLIDE							
Radium-226	Bq/L	0.070	0.0050	6377529			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W Matrix spike exceeds acceptance limits due to probable matrix interference.							



BUREAU
VERITAS

BV Labs Job #: B9R7258
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KYF171			KYF171		
Sampling Date		2019/10/01 06:00			2019/10/01 06:00		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	<0.00001	0.00001	6377981			
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6375572	<0.00001	0.00001	6375572
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

BV Labs Job #: B9R7258
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KYF171
Sample ID: MEL-26
Matrix: Water

Collected: 2019/10/01
Shipped:
Received: 2019/10/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6370923	N/A	2019/10/06	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	6366969	N/A	2019/10/10	Brad Newman
Chloride by Automated Colourimetry	KONE	6370698	N/A	2019/10/08	Deonarine Ramnarine
Conductivity	AT	6370927	N/A	2019/10/06	Yogesh Patel
Free (WAD) Cyanide	SKAL/CN	6369980	N/A	2019/10/04	Gnana Thomas
Total Cyanide	SKAL/CN	6369952	2019/10/04	2019/10/04	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6370090	N/A	2019/10/04	Mandeep Kaur
Dissolved Oxygen	DO	6370568	2019/10/04	2019/10/04	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6375572	2019/10/08	2019/10/08	Medhat Nasr
Mercury (low level)	CV/AA	6377981	2019/10/09	2019/10/09	Medhat Nasr
Chloride & Sulphate by Auto Colorimetry	KONE	6386818	N/A	2019/10/10	Serena Tian
Cyanide (Free)	SPEC	6381435	2019/10/08	2019/10/08	Taylor Mullings
Conductivity @25C	COND	6386819	N/A	2019/10/09	Ilonka Kovac
Hardness Total (calculated as CaCO3)	CALC	6376863	N/A	2019/10/07	Automated Statchk
Hardness (calculated as CaCO3)	CALC	6376859	N/A	2019/10/08	Automated Statchk
Elements by ICP-Dissolved-Lab Filtered	ICP	6386820	N/A	2019/10/05	Ahmed Loai
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6376860	N/A	2019/10/08	Automated Statchk
Elements by CRC ICPMS (dissolved)	ICP/MS	6376861	N/A	2019/10/07	Vanessa Chan
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6376864	2019/10/07	2019/10/07	Automated Statchk
Elements by CRC ICPMS (total)	ICP/MS	6374559	2019/10/07	2019/10/07	Andrew An
pH @25°C	AT/PH	6386821	N/A	2019/10/09	Ilonka Kovac
Sodium Adsorption Ratio	CALC	6386822	N/A	2019/10/06	Automated Statchk
Silica (Reactive)	KONE	6381436	N/A	2019/10/07	Serena Tian
Total Dissolved Solids (Calc. from EC)	CALC	6386823	N/A	2019/10/10	Report Automation Engine
Total Ammonia-N	LACH/NH4	6370452	N/A	2019/10/07	Mazin Wakai
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6369800	N/A	2019/10/04	Chandra Nandlal
pH	AT	6371046	2019/10/04	2019/10/06	Yogesh Patel
Orthophosphate	KONE	6370706	N/A	2019/10/07	Alina Dobreanu
Radium-226 Low Level	AS	6377529	N/A	2019/10/19	Barbara Kalbasi Esfahani
Sulphate by Automated Colourimetry	KONE	6370705	N/A	2019/10/07	Alina Dobreanu
Total Dissolved Solids	BAL	6372385	2019/10/07	2019/10/08	Mandeep Kaur
Total Kjeldahl Nitrogen in Water	SKAL	6370501	2019/10/04	2019/10/07	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6369108	N/A	2019/10/06	Nimarta Singh
Total Phosphorus (Colourimetric)	LACH/P	6370280	2019/10/04	2019/10/05	Nimarta Singh
Low Level Total Suspended Solids	BAL	6369699	2019/10/04	2019/10/04	Mandeep Kaur
Turbidity	AT	6369987	N/A	2019/10/04	Kazzandra Adeva

BV Labs ID: KYF171 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/10/01
Shipped:
Received: 2019/10/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	6370698	N/A	2019/10/08	Deonarine Ramnarine
Free (WAD) Cyanide	SKAL/CN	6369980	N/A	2019/10/04	Gnana Thomas
Total Cyanide	SKAL/CN	6369952	2019/10/04	2019/10/04	Gnana Thomas



BUREAU
VERITAS

BV Labs Job #: B9R7258
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

TEST SUMMARY

BV Labs ID: KYF171 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/10/01
Shipped:
Received: 2019/10/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Mercury (low level)	CV/AA	6375572	2019/10/08	2019/10/08	Medhat Nasr
Cyanide (Free)	SPEC	6381435	2019/10/08	2019/10/08	Taylor Mullings
Orthophosphate	KONE	6370706	N/A	2019/10/07	Alina Dobreanu
Sulphate by Automated Colourimetry	KONE	6370705	N/A	2019/10/07	Alina Dobreanu
Turbidity	AT	6369987	N/A	2019/10/04	Kazzandra Adeva



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.7°C
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Sample KYF171 [MEL-26] : TOC< DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KYF171 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KYF171 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required.

RESULTS OF ANALYSES OF WATER

Sample KYF171 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

Sample KYF171, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9R7258

Report Date: 2019/10/22

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6369108	Total Organic Carbon (TOC)	2019/10/06	NC	80 - 120	95	80 - 120	<0.50	mg/L	0.51	20		
6369699	Total Suspended Solids	2019/10/04					<1	mg/L	NC	25	97	85 - 115
6369800	Nitrate (N)	2019/10/04	NC	80 - 120	101	80 - 120	<0.10	mg/L	0.51	20		
6369800	Nitrite (N)	2019/10/04	104	80 - 120	104	80 - 120	<0.010	mg/L	2.4	20		
6369952	Total Cyanide (CN)	2019/10/04	88	80 - 120	100	80 - 120	<0.0050	mg/L	5.5	20		
6369980	WAD Cyanide (Free)	2019/10/04	87	80 - 120	100	80 - 120	<0.0010	mg/L	12	20		
6369987	Turbidity	2019/10/04			95	85 - 115	<0.1	NTU	3.5	20		
6370090	Dissolved Organic Carbon	2019/10/04	94	80 - 120	97	80 - 120	<0.50	mg/L	0.42	20		
6370280	Total Phosphorus	2019/10/05	99	80 - 120	101	80 - 120	<0.020	mg/L	1.7	20	101	80 - 120
6370452	Total Ammonia-N	2019/10/07	83	75 - 125	98	80 - 120	<0.050	mg/L	0.78	20		
6370501	Total Kjeldahl Nitrogen (TKN)	2019/10/07	NC	80 - 120	101	80 - 120	<0.10	mg/L	12	20	99	80 - 120
6370698	Dissolved Chloride (Cl-)	2019/10/08	NC	80 - 120	102	80 - 120	<1.0	mg/L	1.3	20		
6370705	Dissolved Sulphate (SO4)	2019/10/07	NC	75 - 125	100	80 - 120	<1.0	mg/L	1.8	20		
6370706	Orthophosphate (P)	2019/10/07	108	75 - 125	101	80 - 120	<0.010	mg/L	NC	25		
6370923	Alkalinity (Total as CaCO3)	2019/10/06			94	85 - 115	<1.0	mg/L	1.5	20		
6370927	Conductivity	2019/10/06			100	85 - 115	<1.0	umho/cm	0.65	25		
6371046	pH	2019/10/06			102	98 - 103			0.21	N/A		
6372385	Total Dissolved Solids	2019/10/08					<10	mg/L	1.2	25	97	90 - 110
6374559	Total Aluminum (Al)	2019/10/07	89	80 - 120	102	80 - 120	<3.0	ug/L				
6374559	Total Antimony (Sb)	2019/10/07	NC	80 - 120	99	80 - 120	<0.50	ug/L				
6374559	Total Arsenic (As)	2019/10/07	97	80 - 120	100	80 - 120	<0.10	ug/L				
6374559	Total Barium (Ba)	2019/10/07	83	80 - 120	101	80 - 120	<1.0	ug/L				
6374559	Total Beryllium (Be)	2019/10/07	91	80 - 120	102	80 - 120	<0.10	ug/L				
6374559	Total Bismuth (Bi)	2019/10/07	73 (1)	80 - 120	104	80 - 120	<1.0	ug/L				
6374559	Total Boron (B)	2019/10/07	85	80 - 120	97	80 - 120	<50	ug/L				
6374559	Total Cadmium (Cd)	2019/10/07	92	80 - 120	101	80 - 120	<0.010	ug/L				
6374559	Total Chromium (Cr)	2019/10/07	87	80 - 120	96	80 - 120	<1.0	ug/L				
6374559	Total Cobalt (Co)	2019/10/07	88	80 - 120	104	80 - 120	<0.20	ug/L				
6374559	Total Copper (Cu)	2019/10/07	72 (1)	80 - 120	98	80 - 120	<0.50	ug/L				
6374559	Total Iron (Fe)	2019/10/07	98	80 - 120	105	80 - 120	<10	ug/L				
6374559	Total Lead (Pb)	2019/10/07	95	80 - 120	108	80 - 120	<0.20	ug/L				

BUREAU
VERITAS

BV Labs Job #: B9R7258

Report Date: 2019/10/22

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6374559	Total Lithium (Li)	2019/10/07	94	80 - 120	106	80 - 120	<2.0	ug/L				
6374559	Total Manganese (Mn)	2019/10/07	NC	80 - 120	97	80 - 120	<1.0	ug/L				
6374559	Total Molybdenum (Mo)	2019/10/07	NC	80 - 120	99	80 - 120	<1.0	ug/L				
6374559	Total Nickel (Ni)	2019/10/07	87	80 - 120	101	80 - 120	<1.0	ug/L				
6374559	Total Selenium (Se)	2019/10/07	93	80 - 120	103	80 - 120	<0.10	ug/L				
6374559	Total Silicon (Si)	2019/10/07	85	80 - 120	102	80 - 120	<100	ug/L				
6374559	Total Silver (Ag)	2019/10/07	82	80 - 120	100	80 - 120	<0.020	ug/L				
6374559	Total Strontium (Sr)	2019/10/07	NC	80 - 120	97	80 - 120	<1.0	ug/L				
6374559	Total Thallium (Tl)	2019/10/07	93	80 - 120	104	80 - 120	<0.010	ug/L				
6374559	Total Tin (Sn)	2019/10/07	88	80 - 120	94	80 - 120	<5.0	ug/L				
6374559	Total Titanium (Ti)	2019/10/07	97	80 - 120	103	80 - 120	<5.0	ug/L				
6374559	Total Uranium (U)	2019/10/07	97	80 - 120	105	80 - 120	<0.10	ug/L				
6374559	Total Vanadium (V)	2019/10/07	88	80 - 120	94	80 - 120	<5.0	ug/L				
6374559	Total Zinc (Zn)	2019/10/07	84	80 - 120	101	80 - 120	<5.0	ug/L				
6374559	Total Zirconium (Zr)	2019/10/07	98	80 - 120	100	80 - 120	<0.10	ug/L				
6375572	Dissolved Mercury (Hg)	2019/10/08	96	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6376861	Dissolved Aluminum (Al)	2019/10/07	101	80 - 120	102	80 - 120	<3.0	ug/L				
6376861	Dissolved Antimony (Sb)	2019/10/07	103	80 - 120	104	80 - 120	<0.50	ug/L				
6376861	Dissolved Arsenic (As)	2019/10/07	106	80 - 120	105	80 - 120	<0.10	ug/L				
6376861	Dissolved Barium (Ba)	2019/10/07	103	80 - 120	106	80 - 120	<1.0	ug/L				
6376861	Dissolved Beryllium (Be)	2019/10/07	98	80 - 120	100	80 - 120	<0.10	ug/L				
6376861	Dissolved Bismuth (Bi)	2019/10/07	102	80 - 120	103	80 - 120	<1.0	ug/L				
6376861	Dissolved Boron (B)	2019/10/07	105	80 - 120	104	80 - 120	<50	ug/L				
6376861	Dissolved Cadmium (Cd)	2019/10/07	104	80 - 120	105	80 - 120	<0.010	ug/L				
6376861	Dissolved Chromium (Cr)	2019/10/07	103	80 - 120	103	80 - 120	<1.0	ug/L				
6376861	Dissolved Cobalt (Co)	2019/10/07	102	80 - 120	102	80 - 120	<0.20	ug/L				
6376861	Dissolved Copper (Cu)	2019/10/07	102	80 - 120	102	80 - 120	<0.20	ug/L				
6376861	Dissolved Iron (Fe)	2019/10/07	104	80 - 120	105	80 - 120	<5.0	ug/L				
6376861	Dissolved Lead (Pb)	2019/10/07	104	80 - 120	105	80 - 120	<0.20	ug/L				
6376861	Dissolved Lithium (Li)	2019/10/07	100	80 - 120	101	80 - 120	<2.0	ug/L				
6376861	Dissolved Manganese (Mn)	2019/10/07	104	80 - 120	104	80 - 120	<1.0	ug/L				
6376861	Dissolved Molybdenum (Mo)	2019/10/07	100	80 - 120	103	80 - 120	<1.0	ug/L				



BUREAU
VERITAS

BV Labs Job #: B9R7258

Report Date: 2019/10/22

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6376861	Dissolved Nickel (Ni)	2019/10/07	102	80 - 120	103	80 - 120	<1.0	ug/L				
6376861	Dissolved Selenium (Se)	2019/10/07	107	80 - 120	105	80 - 120	<0.10	ug/L				
6376861	Dissolved Silicon (Si)	2019/10/07	102	80 - 120	107	80 - 120	<100	ug/L				
6376861	Dissolved Silver (Ag)	2019/10/07	102	80 - 120	103	80 - 120	<0.020	ug/L				
6376861	Dissolved Strontium (Sr)	2019/10/07	103	80 - 120	105	80 - 120	<1.0	ug/L				
6376861	Dissolved Tin (Sn)	2019/10/07	96	80 - 120	97	80 - 120	<5.0	ug/L				
6376861	Dissolved Titanium (Ti)	2019/10/07	105	80 - 120	105	80 - 120	<5.0	ug/L				
6376861	Dissolved Uranium (U)	2019/10/07	106	80 - 120	106	80 - 120	<0.10	ug/L				
6376861	Dissolved Vanadium (V)	2019/10/07	102	80 - 120	102	80 - 120	<5.0	ug/L				
6376861	Dissolved Zinc (Zn)	2019/10/07	108	80 - 120	107	80 - 120	<5.0	ug/L				
6376861	Dissolved Zirconium (Zr)	2019/10/07	103	80 - 120	104	80 - 120	<0.10	ug/L				
6376862	Dissolved Thallium (Tl)	2019/10/08			98	80 - 120	<0.010	ug/L				
6377529	Radium-226	2019/10/18			108	85 - 115	<0.0050	Bq/L	NC	N/A		
6377981	Mercury (Hg)	2019/10/09	98	75 - 125	100	80 - 120	<0.00001	mg/L	NC	20		
6381435	Free Cyanide (CN)	2019/10/08	76 (1)	80 - 120	97	80 - 120	<1.0	ug/L	1.6	20		
6381436	Reactive Silica (SiO2)	2019/10/07	101	80 - 120	101	80 - 120	<0.050	mg/L				
6386818	Dissolved Chloride (Cl-)	2019/10/10	110	80 - 120	103	80 - 120	<1.0	mg/L				
6386818	Dissolved Sulphate (SO4)	2019/10/10	NC	80 - 120	101	80 - 120	<1.0	mg/L				
6386819	Conductivity	2019/10/09			99	90 - 110	<2.0	uS/cm				
6386820	Dissolved Calcium (Ca)	2019/10/05	89	80 - 120	92	80 - 120	<0.30	mg/L				
6386820	Dissolved Magnesium (Mg)	2019/10/05	86	80 - 120	96	80 - 120	<0.20	mg/L				
6386820	Dissolved Potassium (K)	2019/10/05	91	80 - 120	95	80 - 120	<0.30	mg/L				
6386820	Dissolved Sodium (Na)	2019/10/05	NC	80 - 120	96	80 - 120	<0.50	mg/L				



BUREAU
VERITAS

BV Labs Job #: B9R7258

Report Date: 2019/10/22

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6386821	pH	2019/10/09			100	97 - 103						

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: B9R7258
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: RS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Brad Newman, Scientific Service Specialist

Harry (Peng) Liang, Senior Analyst

Rob Reinert, B.Sc., Scientific Specialist

Steven Simpson, Lab Director

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9R7258

Report Date: 2019/10/22

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: RS

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your P.O. #: OL-762849
 Site#: 62°48'01.99" 92°06'00.05"
 Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
 Meliadine Mine
 Rankin Inlet, NU
 CANADA X0C 0G0

Report Date: 2019/10/22
 Report #: R5930989
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9S3427

Received: 2019/10/09, 10:05

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity (1)	1	N/A	2019/10/10	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2019/10/16	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	1	N/A	2019/10/11	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	1	N/A	2019/10/10	CAM SOP-00414	SM 23 2510 m
Free (WAD) Cyanide (1)	1	N/A	2019/10/09	CAM SOP-00457	OMOE E3015 m
Total Cyanide (1)	1	2019/10/10	2019/10/10	CAM SOP-00457	OMOE E3015 5 m
Dissolved Organic Carbon (DOC) (1, 5)	1	N/A	2019/10/10	CAM SOP-00446	SM 23 5310 B m
Dissolved Oxygen (1)	1	2019/10/10	2019/10/10	CAM SOP-00427	SM 23 4500 O G m
Dissolved Mercury (low level) (1)	1	2019/10/15	2019/10/15	CAM SOP-00453	EPA 7470 m
Mercury (low level) (1)	1	2019/10/15	2019/10/15	CAM SOP-00453	EPA 7470 m
Chloride & Sulphate by Auto Colorimetry (2)	1	N/A	2019/10/17	AB SOP-00020 / AB SOP-00018	SM23 4500-CL/SO4-E m
Cyanide (Free) (2)	1	N/A	N/A		
Conductivity @25C (2)	1	N/A	2019/10/16	AB SOP-00005	SM 23 2510 B m
Hardness Total (calculated as CaCO3) (3, 6)	1	N/A	2019/10/15	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3) (3)	1	N/A	2019/10/15	BBY WI-00033	Auto Calc
Elements by ICP-Dissolved-Lab Filtered (2)	1	N/A	2019/10/16	AB SOP-00042	EPA 6010d R5 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (3)	1	N/A	2019/10/15	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (3)	1	N/A	2019/10/15	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (3)	1	2019/10/09	2019/10/15	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (total) (3)	1	2019/10/15	2019/10/15	BBY7SOP-00003/02	EPA 6020B R2 m
pH @25°C (2, 7)	1	N/A	2019/10/16	AB SOP-00005	SM 23 4500-H+B m
Sodium Adsorption Ratio (2)	1	N/A	2019/10/18		Auto Calc
Silica (Reactive) (2)	1	N/A	2019/10/16	AB SOP-00011	EPA370.1 R1978 m
Total Dissolved Solids (Calc. from EC) (2)	1	N/A	2019/10/17		Auto Calc
Total Ammonia-N (1)	1	N/A	2019/10/10	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1, 8)	1	N/A	2019/10/12	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH (1)	1	2019/10/10	2019/10/10	CAM SOP-00413	SM 4500H+ B m
Orthophosphate (1)	1	N/A	2019/10/11	CAM SOP-00461	EPA 365.1 m
Radium-226 Low Level (4, 9)	1	N/A	2019/10/16	BQL SOP-00006 BQL SOP-00017 BQL SOP-00032	Alpha Spectrometry



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/22
Report #: R5930989
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9S3427

Received: 2019/10/09, 10:05

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Sulphate by Automated Colourimetry (1)	1	N/A	2019/10/11	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (1)	1	2019/10/12	2019/10/15	CAM SOP-00428	SM 23 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2019/10/10	2019/10/15	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (1, 10)	1	N/A	2019/10/10	CAM SOP-00446	SM 23 5310B m
Total Phosphorus (Colourimetric) (1)	1	2019/10/10	2019/10/10	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids (1)	1	2019/10/10	2019/10/10	CAM SOP-00428	SM 23 2540D m
Turbidity (1)	1	N/A	2019/10/10	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga

(2) This test was performed by Campo to Calgary - Offsite

(3) This test was performed by Campo to Burnaby - Offsite

(4) This test was performed by Bureau Veritas Laboratories Kitimat

(5) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(6) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).



Your P.O. #: OL-762849
Site#: 62°48'01.99" 92°06'00.05"
Site Location: MELIADINE

Attention: Reporting

Agnico-Eagle
Meliadine Mine
Rankin Inlet, NU
CANADA X0C 0G0

Report Date: 2019/10/22
Report #: R5930989
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9S3427

Received: 2019/10/09, 10:05

- (7) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.
- (8) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
- (9) Radium-226 results have not been corrected for blanks.
- (10) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager

Email: Alisha.Williamson@bvlabs.com

Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

SALINITY IN WATER (WATER)

BV Labs ID		KZM952		
Sampling Date		2019/10/07 06:00		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Sodium Adsorption Ratio	N/A	25	0.10	6398028
Total dissolved solids (calc., EC)	mg/L	27000	10	6398029
ELEMENTS				
Dissolved Calcium (Ca)	mg/L	1400 (1)	3.0	6398026
Dissolved Magnesium (Mg)	mg/L	620 (1)	2.0	6398026
Dissolved Potassium (K)	mg/L	190	0.30	6398026
Dissolved Sodium (Na)	mg/L	4400 (1)	5.0	6398026
Inorganics				
Dissolved Chloride (Cl-)	mg/L	9000 (1)	100	6398024
Conductivity	uS/cm	28000	2.0	6398025
pH	pH	7.19	N/A	6398027
Dissolved Sulphate (SO4)	mg/L	1100 (1)	10	6398024
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range.				



BUREAU
VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KZM952		
Sampling Date		2019/10/07 06:00		
	UNITS	MEL-26	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO ₃)	mg/L	5830	0.50	6388004
Metals				
Dissolved Aluminum (Al)	ug/L	250	60	6388006
Dissolved Antimony (Sb)	ug/L	<10	10	6388006
Dissolved Arsenic (As)	ug/L	5.1	2.0	6388006
Dissolved Barium (Ba)	ug/L	321	20	6388006
Dissolved Beryllium (Be)	ug/L	<2.0	2.0	6388006
Dissolved Bismuth (Bi)	ug/L	<20	20	6388006
Dissolved Boron (B)	ug/L	<1000	1000	6388006
Dissolved Cadmium (Cd)	ug/L	0.29	0.20	6388006
Dissolved Chromium (Cr)	ug/L	<20	20	6388006
Dissolved Cobalt (Co)	ug/L	8.8	4.0	6388006
Dissolved Copper (Cu)	ug/L	8.6	4.0	6388006
Dissolved Iron (Fe)	ug/L	<100	100	6388006
Dissolved Lead (Pb)	ug/L	<4.0	4.0	6388006
Dissolved Lithium (Li)	ug/L	676	40	6388006
Dissolved Manganese (Mn)	ug/L	364	20	6388006
Dissolved Molybdenum (Mo)	ug/L	<20	20	6388006
Dissolved Nickel (Ni)	ug/L	60	20	6388006
Dissolved Selenium (Se)	ug/L	<2.0	2.0	6388006
Dissolved Silicon (Si)	ug/L	3970	2000	6388006
Dissolved Silver (Ag)	ug/L	<0.40	0.40	6388006
Dissolved Strontium (Sr)	ug/L	30100	20	6388006
Dissolved Thallium (Tl)	ug/L	<0.20	0.20	6388006
Dissolved Tin (Sn)	ug/L	<100	100	6388006
Dissolved Titanium (Ti)	ug/L	<100	100	6388006
Dissolved Uranium (U)	ug/L	6.0	2.0	6388006
Dissolved Vanadium (V)	ug/L	<100	100	6388006
Dissolved Zinc (Zn)	ug/L	<100	100	6388006
Dissolved Zirconium (Zr)	ug/L	<2.0	2.0	6388006
Dissolved Calcium (Ca)	mg/L	1370	1.0	6388005
Dissolved Magnesium (Mg)	mg/L	586	1.0	6388005
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

BV Labs ID		KZM952		
Sampling Date		2019/10/07 06:00		
	UNITS	MEL-26	RDL	QC Batch
Dissolved Potassium (K)	mg/L	189	1.0	6388005
Dissolved Sodium (Na)	mg/L	3970	1.0	6388005
Dissolved Sulphur (S)	mg/L	451	60	6388005
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KZM952		
Sampling Date		2019/10/07 06:00		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	464	30	6388003
Total Antimony (Sb)	ug/L	<5.0	5.0	6388003
Total Arsenic (As)	ug/L	6.5	1.0	6388003
Total Barium (Ba)	ug/L	324	10	6388003
Total Beryllium (Be)	ug/L	<1.0	1.0	6388003
Total Bismuth (Bi)	ug/L	<10	10	6388003
Total Boron (B)	ug/L	747	500	6388003
Total Cadmium (Cd)	ug/L	0.37	0.10	6388003
Total Chromium (Cr)	ug/L	<10	10	6388003
Total Cobalt (Co)	ug/L	9.2	2.0	6388003
Total Copper (Cu)	ug/L	8.1	5.0	6388003
Total Iron (Fe)	ug/L	<100	100	6388003
Total Lead (Pb)	ug/L	3.4	2.0	6388003
Total Lithium (Li)	ug/L	705	20	6388003
Total Manganese (Mn)	ug/L	388	10	6388003
Total Molybdenum (Mo)	ug/L	18	10	6388003
Total Nickel (Ni)	ug/L	58	10	6388003
Total Selenium (Se)	ug/L	1.8	1.0	6388003
Total Silicon (Si)	ug/L	4670	1000	6388003
Total Silver (Ag)	ug/L	<0.20	0.20	6388003
Total Strontium (Sr)	ug/L	28100	10	6388003
Total Thallium (Tl)	ug/L	0.16	0.10	6388003
Total Tin (Sn)	ug/L	<50	50	6388003
Total Titanium (Ti)	ug/L	<50	50	6388003
Total Uranium (U)	ug/L	7.3	1.0	6388003
Total Vanadium (V)	ug/L	<50	50	6388003
Total Zinc (Zn)	ug/L	<50	50	6388003
Total Zirconium (Zr)	ug/L	<1.0	1.0	6388003
Total Calcium (Ca)	ug/L	1320000	500	6388002
Total Magnesium (Mg)	ug/L	584000	500	6388002
Total Potassium (K)	ug/L	184000	500	6388002
Total Sodium (Na)	ug/L	4250000	500	6388002
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

BV Labs ID		KZM952		
Sampling Date		2019/10/07 06:00		
	UNITS	MEL-26	RDL	QC Batch
Total Sulphur (S)	ug/L	508000	30000	6388002
Calculated Parameters				
Total Hardness (CaCO3)	ug/L	5690000	500	6388001
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

RESULTS OF ANALYSES OF WATER

BV Labs ID		KZM952			KZM952		
Sampling Date		2019/10/07 06:00			2019/10/07 06:00		
	UNITS	MEL-26	RDL	QC Batch	MEL-26 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO ₃)	mg/L	57	1.0	6378058			
Carb. Alkalinity (calc. as CaCO ₃)	mg/L	<1.0	1.0	6378058			
Inorganics							
Total Ammonia-N	mg/L	28	0.050	6380190			
Conductivity	umho/cm	28000	1.0	6380761	28000	1.0	6380761
Free Cyanide (CN)	ug/L	30 (1)	1.0	6393656	30	1.0	6393656
Total Dissolved Solids	mg/L	18300	20	6381906			
Total Kjeldahl Nitrogen (TKN)	mg/L	44	5.0	6380367			
Dissolved Organic Carbon	mg/L	27	0.50	6380296			
Total Organic Carbon (TOC)	mg/L	28	0.50	6380737			
Orthophosphate (P)	mg/L	<0.010	0.010	6381836	<0.010	0.010	6381836
Dissolved Oxygen	mg/L	10.0		6381017			
pH	pH	7.29		6380759	7.29		6380759
Total Phosphorus	mg/L	0.084	0.020	6380168			
Reactive Silica (SiO ₂)	mg/L	11 (2)	0.10	6398030			
Total Suspended Solids	mg/L	17	1	6380144			
Dissolved Sulphate (SO ₄)	mg/L	1000	10	6381833	1000	10	6381833
Total Cyanide (CN)	mg/L	0.13	0.0050	6378880			
Turbidity	NTU	1.0	0.1	6379316			
WAD Cyanide (Free)	mg/L	0.018	0.0010	6378894			
Alkalinity (Total as CaCO ₃)	mg/L	57	1.0	6380746	56	1.0	6380746
Dissolved Chloride (Cl ⁻)	mg/L	9300	100	6381830	9700	100	6381830
Nitrite (N)	mg/L	1.10	0.010	6380567			
Nitrate (N)	mg/L	71.1	1.0	6380567			
Nitrate + Nitrite (N)	mg/L	72.2	1.0	6380567			
RADIONUCLIDE							
Radium-226	Bq/L	0.061	0.0050	6382911			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) See general comments for notes regarding CNFREE-W (2) Detection limits raised due to dilution to bring analyte within the calibrated range.							



BUREAU
VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		KZM952		
Sampling Date		2019/10/07 06:00		
	UNITS	MEL-26	RDL	QC Batch
Metals				
Mercury (Hg)	mg/L	<0.00001	0.00001	6386124
Dissolved Mercury (Hg)	mg/L	<0.00001	0.00001	6386573
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

TEST SUMMARY

BV Labs ID: KZM952
Sample ID: MEL-26
Matrix: Water

Collected: 2019/10/07
Shipped:
Received: 2019/10/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6380746	N/A	2019/10/10	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6378058	N/A	2019/10/16	Brad Newman
Chloride by Automated Colourimetry	KONE	6381830	N/A	2019/10/11	Deonarine Ramnarine
Conductivity	AT	6380761	N/A	2019/10/10	Surinder Rai
Free (WAD) Cyanide	SKAL/CN	6378894	N/A	2019/10/09	Gnana Thomas
Total Cyanide	SKAL/CN	6378880	2019/10/10	2019/10/10	Gnana Thomas
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6380296	N/A	2019/10/10	Mandeep Kaur
Dissolved Oxygen	DO	6381017	2019/10/10	2019/10/10	Nusrat Naz
Dissolved Mercury (low level)	CV/AA	6386573	2019/10/15	2019/10/15	Medhat Nasr
Mercury (low level)	CV/AA	6386124	2019/10/15	2019/10/15	Medhat Nasr
Chloride & Sulphate by Auto Colorimetry	KONE	6398024	N/A	2019/10/17	Zafar Iqbal
Cyanide (Free)	SPEC	6393656	2019/10/15	2019/10/15	Taylor Mullings
Conductivity @25C	COND	6398025	N/A	2019/10/16	Ilonka Kovac
Hardness Total (calculated as CaCO3)	CALC	6388001	N/A	2019/10/15	Report Automation Engine
Hardness (calculated as CaCO3)	CALC	6388004	N/A	2019/10/15	Report Automation Engine
Elements by ICP-Dissolved-Lab Filtered	ICP	6398026	N/A	2019/10/16	Mary Anne Dela Cruz
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP	6388005	N/A	2019/10/15	Report Automation Engine
Elements by CRC ICPMS (dissolved)	ICP/MS	6388006	N/A	2019/10/15	Andrew An
Na, K, Ca, Mg, S by CRC ICPMS (total)	ICP	6388002	2019/10/15	2019/10/15	Report Automation Engine
Elements by CRC ICPMS (total)	ICP/MS	6388003	2019/10/15	2019/10/15	John Choo
pH @25°C	AT/PH	6398027	N/A	2019/10/16	Ilonka Kovac
Sodium Adsorption Ratio	CALC	6398028	N/A	2019/10/18	Automated Statchk
Silica (Reactive)	KONE	6398030	N/A	2019/10/16	Serena Tian
Total Dissolved Solids (Calc. from EC)	CALC	6398029	N/A	2019/10/17	Report Automation Engine
Total Ammonia-N	LACH/NH4	6380190	N/A	2019/10/10	Mazin Wakai
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6380567	N/A	2019/10/12	Amanpreet Sappal
pH	AT	6380759	2019/10/10	2019/10/10	Surinder Rai
Orthophosphate	KONE	6381836	N/A	2019/10/11	Alina Dobreanu
Radium-226 Low Level	AS	6382911	N/A	2019/10/16	Priya Sharma
Sulphate by Automated Colourimetry	KONE	6381833	N/A	2019/10/11	Alina Dobreanu
Total Dissolved Solids	BAL	6381906	2019/10/12	2019/10/15	Xinyue (Sarah) Hou
Total Kjeldahl Nitrogen in Water	SKAL	6380367	2019/10/10	2019/10/15	Rajni Tyagi
Total Organic Carbon (TOC)	TOCV/NDIR	6380737	N/A	2019/10/10	Mandeep Kaur
Total Phosphorus (Colourimetric)	LACH/P	6380168	2019/10/10	2019/10/10	Shivani Shivani
Low Level Total Suspended Solids	BAL	6380144	2019/10/10	2019/10/10	Massarat Jan
Turbidity	AT	6379316	N/A	2019/10/10	Kazzandra Adeva

BV Labs ID: KZM952 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/10/07
Shipped:
Received: 2019/10/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6380746	N/A	2019/10/10	Surinder Rai
Chloride by Automated Colourimetry	KONE	6381830	N/A	2019/10/11	Deonarine Ramnarine
Conductivity	AT	6380761	N/A	2019/10/10	Surinder Rai



BUREAU
VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

TEST SUMMARY

BV Labs ID: KZM952 Dup
Sample ID: MEL-26
Matrix: Water

Collected: 2019/10/07
Shipped:
Received: 2019/10/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Cyanide (Free)	SPEC	6393656	2019/10/15	2019/10/15	Taylor Mullings
pH	AT	6380759	2019/10/10	2019/10/10	Surinder Rai
Orthophosphate	KONE	6381836	N/A	2019/10/11	Alina Dobreanu
Sulphate by Automated Colourimetry	KONE	6381833	N/A	2019/10/11	Alina Dobreanu



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	10.3°C
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Sample KZM952 [MEL-26] : Interference checks not performed at the time of sampling. The lab cannot guarantee that interferences were not present at the time of sampling and that there is no low bias in results

Sample was not submitted in an appropriate container for CNFREE-W analysis. Results may have a high bias due to decomposition of hexacyanoferrate and some other metal-cyanide complexes to free cyanide

Sample pH <12, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

DISS. ICPMS METALS FOR FEDERAL INT. GWQG (WATER)

Sample KZM952 [MEL-26] Elements by CRC ICPMS (dissolved): RDL raised due to concentration over linear range, sample dilution required.

TOTAL ICPMS METALS FOR CCME CEQG FOR SW (WATER)

Sample KZM952 [MEL-26] Elements by CRC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required

Results relate only to the items tested.

BUREAU
VERITAS

BV Labs Job #: B9S3427

Report Date: 2019/10/22

QUALITY ASSURANCE REPORT

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6378880	Total Cyanide (CN)	2019/10/09	79 (1)	80 - 120	92	80 - 120	<0.0050	mg/L	7.7	20		
6378894	WAD Cyanide (Free)	2019/10/09	95	80 - 120	100	80 - 120	<0.0010	mg/L	4.9	20		
6379316	Turbidity	2019/10/10			110	85 - 115	<0.1	NTU	NC	20		
6380144	Total Suspended Solids	2019/10/10					<1	mg/L	NC	25	98	85 - 115
6380168	Total Phosphorus	2019/10/10	97	80 - 120	97	80 - 120	<0.020	mg/L	0.37	20	96	80 - 120
6380190	Total Ammonia-N	2019/10/10	97	75 - 125	99	80 - 120	<0.050	mg/L	5.5	20		
6380296	Dissolved Organic Carbon	2019/10/10	94	80 - 120	97	80 - 120	<0.50	mg/L	1.0	20		
6380367	Total Kjeldahl Nitrogen (TKN)	2019/10/15	97	80 - 120	98	80 - 120	<0.10	mg/L	2.9	20	98	80 - 120
6380567	Nitrate (N)	2019/10/12	NC	80 - 120	105	80 - 120	<0.10	mg/L	0.45	20		
6380567	Nitrite (N)	2019/10/12	104	80 - 120	106	80 - 120	<0.010	mg/L	1.1	20		
6380737	Total Organic Carbon (TOC)	2019/10/10	93	80 - 120	96	80 - 120	<0.50	mg/L	0.78	20		
6380746	Alkalinity (Total as CaCO3)	2019/10/10			96	85 - 115	<1.0	mg/L	1.8	20		
6380759	pH	2019/10/10			102	98 - 103			0.055	N/A		
6380761	Conductivity	2019/10/10			101	85 - 115	<1.0	umho/cm	0.39	25		
6381830	Dissolved Chloride (Cl-)	2019/10/11	NC	80 - 120	102	80 - 120	<1.0	mg/L	3.4	20		
6381833	Dissolved Sulphate (SO4)	2019/10/11	NC	75 - 125	100	80 - 120	<1.0	mg/L	0.68	20		
6381836	Orthophosphate (P)	2019/10/11	104	75 - 125	99	80 - 120	<0.010	mg/L	NC	25		
6381906	Total Dissolved Solids	2019/10/15					<10	mg/L	1.0	25	97	90 - 110
6382911	Radium-226	2019/10/16			102	85 - 115	<0.0050	Bq/L	NC	N/A		
6386124	Mercury (Hg)	2019/10/15	106	75 - 125	106	80 - 120	<0.00001	mg/L	NC	20		
6386573	Dissolved Mercury (Hg)	2019/10/15	111	75 - 125	107	80 - 120	<0.00001	mg/L	1.0	20		
6388003	Total Aluminum (Al)	2019/10/15	124 (1)	80 - 120	104	80 - 120	<3.0	ug/L				
6388003	Total Antimony (Sb)	2019/10/15	105	80 - 120	104	80 - 120	<0.50	ug/L				
6388003	Total Arsenic (As)	2019/10/15	107	80 - 120	98	80 - 120	<0.10	ug/L				
6388003	Total Barium (Ba)	2019/10/15	NC	80 - 120	106	80 - 120	<1.0	ug/L				
6388003	Total Beryllium (Be)	2019/10/15	100	80 - 120	103	80 - 120	<0.10	ug/L				
6388003	Total Bismuth (Bi)	2019/10/15	98	80 - 120	108	80 - 120	<1.0	ug/L				
6388003	Total Boron (B)	2019/10/15	108	80 - 120	111	80 - 120	<50	ug/L				
6388003	Total Cadmium (Cd)	2019/10/15	105	80 - 120	107	80 - 120	<0.010	ug/L				
6388003	Total Chromium (Cr)	2019/10/15	91	80 - 120	96	80 - 120	<1.0	ug/L				
6388003	Total Cobalt (Co)	2019/10/15	90	80 - 120	95	80 - 120	<0.20	ug/L				

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VERITAS

BV Labs Job #: B953427

Report Date: 2019/10/22

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6388003	Total Copper (Cu)	2019/10/15	86	80 - 120	94	80 - 120	<0.50	ug/L				
6388003	Total Iron (Fe)	2019/10/15	89	80 - 120	94	80 - 120	<10	ug/L				
6388003	Total Lead (Pb)	2019/10/15	99	80 - 120	105	80 - 120	<0.20	ug/L				
6388003	Total Lithium (Li)	2019/10/15	100	80 - 120	109	80 - 120	<2.0	ug/L				
6388003	Total Manganese (Mn)	2019/10/15	93	80 - 120	99	80 - 120	<1.0	ug/L				
6388003	Total Molybdenum (Mo)	2019/10/15	NC	80 - 120	107	80 - 120	<1.0	ug/L				
6388003	Total Nickel (Ni)	2019/10/15	87	80 - 120	94	80 - 120	<1.0	ug/L				
6388003	Total Selenium (Se)	2019/10/15	104	80 - 120	100	80 - 120	<0.10	ug/L				
6388003	Total Silicon (Si)	2019/10/15	89	80 - 120	95	80 - 120	<100	ug/L				
6388003	Total Silver (Ag)	2019/10/15	101	80 - 120	106	80 - 120	<0.020	ug/L				
6388003	Total Strontium (Sr)	2019/10/15	NC	80 - 120	113	80 - 120	<1.0	ug/L				
6388003	Total Thallium (Tl)	2019/10/15	103	80 - 120	107	80 - 120	<0.010	ug/L				
6388003	Total Tin (Sn)	2019/10/15	97	80 - 120	98	80 - 120	<5.0	ug/L				
6388003	Total Titanium (Ti)	2019/10/15	98	80 - 120	97	80 - 120	<5.0	ug/L				
6388003	Total Uranium (U)	2019/10/15	111	80 - 120	108	80 - 120	<0.10	ug/L				
6388003	Total Vanadium (V)	2019/10/15	96	80 - 120	97	80 - 120	<5.0	ug/L				
6388003	Total Zinc (Zn)	2019/10/15	90	80 - 120	99	80 - 120	<5.0	ug/L				
6388003	Total Zirconium (Zr)	2019/10/15	108	80 - 120	109	80 - 120	<0.10	ug/L				
6388006	Dissolved Aluminum (Al)	2019/10/15	95	80 - 120	97	80 - 120	<3.0	ug/L				
6388006	Dissolved Antimony (Sb)	2019/10/15	97	80 - 120	99	80 - 120	<0.50	ug/L				
6388006	Dissolved Arsenic (As)	2019/10/15	98	80 - 120	99	80 - 120	<0.10	ug/L				
6388006	Dissolved Barium (Ba)	2019/10/15	NC	80 - 120	100	80 - 120	<1.0	ug/L				
6388006	Dissolved Beryllium (Be)	2019/10/15	89	80 - 120	96	80 - 120	<0.10	ug/L				
6388006	Dissolved Bismuth (Bi)	2019/10/15	93	80 - 120	99	80 - 120	<1.0	ug/L				
6388006	Dissolved Boron (B)	2019/10/15	NC	80 - 120	94	80 - 120	<50	ug/L				
6388006	Dissolved Cadmium (Cd)	2019/10/15	94	80 - 120	100	80 - 120	<0.010	ug/L				
6388006	Dissolved Chromium (Cr)	2019/10/15	90	80 - 120	98	80 - 120	<1.0	ug/L				
6388006	Dissolved Cobalt (Co)	2019/10/15	89	80 - 120	102	80 - 120	<0.20	ug/L				
6388006	Dissolved Copper (Cu)	2019/10/15	86	80 - 120	98	80 - 120	<0.20	ug/L				
6388006	Dissolved Iron (Fe)	2019/10/15	92	80 - 120	100	80 - 120	<5.0	ug/L				
6388006	Dissolved Lead (Pb)	2019/10/15	97	80 - 120	101	80 - 120	<0.20	ug/L				
6388006	Dissolved Lithium (Li)	2019/10/15	NC	80 - 120	97	80 - 120	<2.0	ug/L				



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BV Labs Job #: B9S3427

Report Date: 2019/10/22

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6388006	Dissolved Manganese (Mn)	2019/10/15	91	80 - 120	98	80 - 120	<1.0	ug/L				
6388006	Dissolved Molybdenum (Mo)	2019/10/15	NC	80 - 120	102	80 - 120	<1.0	ug/L				
6388006	Dissolved Nickel (Ni)	2019/10/15	90	80 - 120	101	80 - 120	<1.0	ug/L				
6388006	Dissolved Selenium (Se)	2019/10/15	98	80 - 120	102	80 - 120	<0.10	ug/L				
6388006	Dissolved Silicon (Si)	2019/10/15	95	80 - 120	97	80 - 120	<100	ug/L				
6388006	Dissolved Silver (Ag)	2019/10/15	94	80 - 120	100	80 - 120	<0.020	ug/L				
6388006	Dissolved Strontium (Sr)	2019/10/15	NC	80 - 120	97	80 - 120	<1.0	ug/L				
6388006	Dissolved Thallium (Tl)	2019/10/15	96	80 - 120	99	80 - 120	<0.010	ug/L				
6388006	Dissolved Tin (Sn)	2019/10/15	88	80 - 120	92	80 - 120	<5.0	ug/L				
6388006	Dissolved Titanium (Ti)	2019/10/15	100	80 - 120	102	80 - 120	<5.0	ug/L				
6388006	Dissolved Uranium (U)	2019/10/15	102	80 - 120	101	80 - 120	<0.10	ug/L				
6388006	Dissolved Vanadium (V)	2019/10/15	97	80 - 120	97	80 - 120	<5.0	ug/L				
6388006	Dissolved Zinc (Zn)	2019/10/15	90	80 - 120	101	80 - 120	<5.0	ug/L				
6388006	Dissolved Zirconium (Zr)	2019/10/15	105	80 - 120	101	80 - 120	<0.10	ug/L				
6393656	Free Cyanide (CN)	2019/10/15	92	80 - 120	101	80 - 120	<1.0	ug/L	0.82	20		
6398024	Dissolved Chloride (Cl-)	2019/10/17	NC	80 - 120	105	80 - 120	<1.0	mg/L				
6398024	Dissolved Sulphate (SO4)	2019/10/17	NC	80 - 120	100	80 - 120	<1.0	mg/L				
6398025	Conductivity	2019/10/16			100	90 - 110	<2.0	uS/cm				
6398026	Dissolved Calcium (Ca)	2019/10/16	94	80 - 120	103	80 - 120	<0.30	mg/L				
6398026	Dissolved Magnesium (Mg)	2019/10/16	92	80 - 120	104	80 - 120	<0.20	mg/L				
6398026	Dissolved Potassium (K)	2019/10/16	101	80 - 120	108	80 - 120	<0.30	mg/L				
6398026	Dissolved Sodium (Na)	2019/10/16	96	80 - 120	109	80 - 120	<0.50	mg/L				
6398027	pH	2019/10/16			100	97 - 103						



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VERITAS

BV Labs Job #: B9S3427

Report Date: 2019/10/22

QUALITY ASSURANCE REPORT(CONT'D)

Agnico-Eagle

Site Location: MELIADINE

Your P.O. #: OL-762849

Sampler Initials: DM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6398030	Reactive Silica (SiO ₂)	2019/10/16	NC	80 - 120	101	80 - 120	<0.050	mg/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



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VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Brad Newman, Scientific Service Specialist

Harry (Peng) Liang, Senior Analyst



Kurt Headrick, Ph.D., C. Chem., Laboratory Manager

Rob Reinert, B.Sc., Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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VERITAS

BV Labs Job #: B9S3427
Report Date: 2019/10/22

Agnico-Eagle
Site Location: MELIADINE
Your P.O. #: OL-762849
Sampler Initials: DM

Exceedence Summary Table – Metal Mining Effluent Reg
Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						
The exceedence summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						

CLIENT INFORMATION	TEST FACILITY INFORMATION
Aquatox/Agnico Eagle Mines - Meliadine Rankin Inlet, Nunavut, Canada Contact: Martina Rendas	Harris Industrial Testing Service Ltd. 1320 Ashdale Rd., South Rawdon Nova Scotia B0N 1Z0 Ph: 902 757-0232 Fax: 902 757-2839 office@harrisindustrial.info

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 19-361 <i>Sample Name/Location: MEL-26 GPS 62°48'01.99" 92°06'00.05"</i> <i>Sampling Method: Grab</i> Sample Homogenized: Yes <i>Sampler Name: Sean Arruda/Bethany Hodgins</i> <i>Date & Time Sampled: July 22 2019 0700 Hrs</i> <i>Date & Time Received: July 25 2019 1220 Hrs</i> Sample Description: Clear, colourless liquid.	Reference Method: EPS 1/RM/10 2 nd Ed. December 2017 Type: LC50 Tox 9B General Test Procedures held on file Test Organism: <i>Gasterosteus aculeatus</i> (Threespine stickleback)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 7.5 Pretest D.O. (%): 91 Pre-test pH: 7.4 pH Adjusted: No Sample Salinity ¹ (‰): 21.2 Seawater Control Salinity ¹ (‰): 30.0 Salinity adjusted Control (‰): 20.9	Filtration of sample: No Adjustment of sample salinity: No Mandatory Pre-aeration: Yes Duration: 30 minutes Rate: 6.5 ± 1 ml/min/L Time: 1430 hrs D.O. (mg/L): 7.9 Sample D.O. Saturation (%) 91 Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- Aeration continued throughout test by airstone

TEST CONDITIONS		
Date & Time Test Initiated: July 25 2019 1500 Hrs Date & Time Test Terminated: July 29 2019 1500 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 61 % Mortality over 7 days prior to test: 0	Loading Density (g/L): 0.30 Mean Fork Length (mm): 35 ± 4.1 SD Range (mm): 29 - 45	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500 Static Test, Duration: 96 hours Control/Dilution Water: Natural Seawater
Test Volume (L): 10 Depth (cm): 17.7 Replicates: No Number of fish per vessel: 10	Mean Wet Weight (g): 0.30 ± 0.11 SD Range (g): 0.18 – 0.57	

¹When salinity is >40‰, it is measured using refractometry method (Environment Canada, 2017). When salinity is <40‰, the salinity is measured using conductivity method (*ibid.*).

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L (%)	pH	SALINITY ‰	TEMP. °C	D.O. mg/L (%)	pH
100	15.0	7.9 (91)	7.3	20.7	14.5	8.7 (99)	7.8
50	15.0	8.1 (94)	7.6	25.2	14.5	8.5 (98)	7.8
25	15.5	7.9 (91)	7.6	27.5	14.5	8.1 (95)	7.8
12.5	16.0	7.7 (94)	7.7	29.0	14.5	8.3 (96)	7.8
6.25	15.5	8.2 (100)	7.8	30.0	14.5	8.0 (93)	7.8
Control	15.5	8.2 (100)	7.8	30.0	14.5	8.0 (93)	7.8
Salinity Adj. Control	15.5	8.7 (98)	7.8	20.9	14.5	8.0 (96)	7.8

TEST RESULTS								
CONC. %	TOTAL MORTALITY #				PERCENT MORTALITY %			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Salinity Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0
CONC. %	TOTAL STRESS #				PERCENT STRESS %			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Salinity Adj Control	0/10	0/10	0/10	0/10	0	0	0	0

96 HR LC₅₀ RESULTS

LC₅₀ Value (%): Non-lethal
Result: Pass
95% Confidence Limits (%): N/A
Statistical Method: N/A

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 61 Test Date: July 19 – 23 2019

Reference Substance: Phenol

LC₅₀ Value (mg/L): 16.5
 95% Confidence Limits (mg/L): 14.5 – 18.8
 Historical Mean (mg/L): 15.5
 Warning Limits \pm 2 SD (mg/L): 12.0 – 20.2

COMMENTS

Test meets all conditions for test validity. An additional Salinity adjusted control was run at sample salinity.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): K. Marks and A. Huybers

Verified by: C. Harris

Date: July 29 2019

Signed:

**REFERENCES**

Tidepool Scientific Software, 2001 - 2014. Comprehensive Environmental Toxicity Information System – CETIS v1.8.7.20
Environment Canada, 2017. Biological Test Method: Reference Method for Determining Acute Lethality Using Threespine Stickleback.
Environment and Climate Change Canada, Ottawa, Ontario, Report EPS 1/RM/10, 2nd Edition.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

The test included in this report is within the scope of this accreditation.

Results apply to the sample as received. The results reported apply only to the sample tested. Results are based on nominal concentrations.

CLIENT INFORMATION	TEST FACILITY INFORMATION
Aquatox/Agnico Eagle Mines - Meliadine Rankin Inlet, Nunavut, Canada Contact: Martina Rendas	Harris Industrial Testing Service Ltd. 1320 Ashdale Rd., South Rawdon Nova Scotia B0N 1Z0 Ph: 902 757-0232 Fax: 902 757-2839 office@harrisindustrial.info

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 19-381 <i>Sample Name/Location: MEL-26 GPS 62°48'01.99" 92°06'00.05"</i> <i>Sampling Method: Grab</i> Sample Homogenized: Yes <i>Sampler Name: Not supplied</i> <i>Date & Time Sampled: Aug. 05 2019 0630 Hrs</i> <i>Date & Time Received: Aug. 08 2019 1310 Hrs</i> Sample Description: Clear, colourless liquid.	Reference Method: EPS 1/RM/10 2 nd Ed. December 2017 Type: LC50 Tox 9B General Test Procedures held on file Test Organism: <i>Gasterosteus aculeatus</i> (Threespine stickleback)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 7.4 D.O. Saturation (%): 87 Pre-test pH: 7.4 pH Adjusted: No Sample Salinity ¹ (‰): 18.8 Seawater Control Salinity ¹ (‰): 30.2 Salinity adjusted Control (‰): 19.3	Filtration of sample: No Adjustment of sample salinity: No Mandatory Pre-aeration: Yes Duration: 30 minutes Rate: 6.5 ± 1 ml/min/L Time: 1400 hrs D.O. (mg/L): 7.9 Sample D.O. Saturation (%) 90 Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- Aeration continued throughout test by airstone @ 6.5 + 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Aug. 08 2019 1430 Hrs Date & Time Test Terminated: Aug. 12 2019 1430 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 61 % Mortality over 7 days prior to test: 0	Loading Density (g/L): 0.26 Mean Fork Length (mm): 33 ± 4.8 SD Range (mm): 23 - 39	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500
Test Volume (L): 10 Depth (cm): 17.7 Replicates: No Number of fish per vessel: 10	Mean Wet Weight (g): 0.26 ± 0.12 SD Range (g): 0.11 – 0.46	Static Test, Duration: 96 hours Control/Dilution Water: Natural Seawater

¹When salinity is >40‰, it is measured using refractometry method (Environment Canada, 2017). When salinity is <40‰, the salinity is measured using conductivity method (*ibid.*).

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	SALINITY ‰	TEMP. °C	D.O. mg/L (%)	pH
100	15.5	7.9	7.4	18.7	14.0	8.8	7.7
50	14.5	8.0	7.8	24.3	14.0	8.5	7.7
25	16.0	7.7	7.9	27.5	14.0	8.2	7.7
12.5	16.0	7.7	7.9	29.1	14.0	7.9	7.7
6.25	15.0	7.8	8.0	29.6	14.5	7.9	7.7
Control	15.0	7.8	7.9	30.2	14.0	8.1	7.7
Salinity Adj. Control	15.5	8.3	7.8	19.3	15.0	8.7	7.8

TEST RESULTS								
CONC. %	TOTAL MORTALITY #				PERCENT MORTALITY %			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Salinity Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0
CONC. %	TOTAL STRESS #				PERCENT STRESS %			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Salinity Adj Control	0/10	0/10	0/10	0/10	0	0	0	0

96 HR LC₅₀ RESULTS

LC₅₀ Value (%): Non-lethal
Result: Pass
95% Confidence Limits (%): N/A
Statistical Method: N/A

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 61 Test Date: Aug. 08 – 12 2019

Reference Substance: Phenol

LC₅₀ Value (mg/L): 18.8
 95% Confidence Limits (mg/L): 12.5 – 25.0
 Historical Mean (mg/L): 15.8
 Warning Limits \pm 2 SD (mg/L): 12.1 – 20.6

19-361

COMMENTS

Test meets all conditions for test validity. An additional Salinity adjusted control was run at sample salinity.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): K. Marks and A. Huybers

Verified by: C. Harris

Date: Aug. 12 2019

Signed:



REFERENCES

Tidepool Scientific Software, 2001 - 2014. Comprehensive Environmental Toxicity Information System – CETIS v1.8.7.20
Environment Canada, 2017. Biological Test Method: Reference Method for Determining Acute Lethality Using Threespine Stickleback.
Environment and Climate Change Canada, Ottawa, Ontario, Report EPS 1/RM/10, 2nd Edition December 2017.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

The test included in this report is within the scope of this accreditation.

Results apply to the sample as received. The results reported apply only to the sample tested. Results are based on nominal concentrations.



Toxicity Testing on MEL-26 (Agnico Eagle Mining Limited)

Final Report

September 25, 2019

Submitted to: **Aquatox**
Puslinch, ON

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APPENDIX B – Chain-of-Custody Form

SIGNATURE PAGE

Report By:
Ditty Kakkassery, R.P. Bio
Laboratory Biologist



Reviewed By:
Armando Tang, R.P. Bio
Senior Reviewer

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

SUMMARY

Sample Information and Test Type

Sample ID	MEL-26 (GPS Location: 62°48'01.99" 92°06'00.05")
Sample collection date	August 12, 2019
Sample receipt date	August 15, 2019
Sample receipt temperature	18.8°C
Test types	48-hour giant kelp (<i>Macrocystis pyrifera</i>) germination and germ tube growth test

Summary of Results

Endpoint	% v/v (95% CL)
<i>Macrocystis pyrifera</i>	
Germination IC25	5.3 (4.5 – 6.1)
Germination IC50	7.0 (6.7 – 7.5)
Tube Length IC25	5.7 (4.7 – 6.0)
Tube Length IC50	7.2 (6.9 – 7.5)

IC = Inhibition Concentration, CL = Confidence Limits

1.0 INTRODUCTION

Nautilus Environmental Company Inc. conducted a toxicity test for Aquatox on a sample identified as MEL-26 from Agnico Eagle Mining Limited. This sample was collected on August 12, 2019 (GPS Location: 62°48'01.99" 92°06'00.05") and delivered to the Nautilus Environmental laboratory in Burnaby, BC on August 15, 2019. The sample was transported in 1 x 2L plastic bottle and was received at a temperature of 18.8°C. The sample was tested on the day of arrival. The following toxicity test was performed on the sample:

- 48-hour giant kelp (*Macrocystis pyrifera*) germination and germ tube growth test

Testing with *M. pyrifera* was initiated on August 15, 2019. The sample was salinity adjusted using Hyper Saline Brine (HSB) solution prior to test initiation and as a result the highest concentration tested was 90% (v/v). This report describes the results of this toxicity test. Copies of raw laboratory data sheets and statistical analyses for this test species are provided in Appendix A. The chain-of-custody form is provided in Appendix B.

2.0 METHODS

The method for this toxicity test is summarized in Table 1. Testing was conducted according to procedures described by US EPA (1995). Statistical analyses were performed using CETIS (Tidepool Scientific Software, 2013).

Table 1. Summary of test conditions: 48-hour giant kelp (*Macrocystis pyrifera*) germination and germ tube growth test.

Test species	<i>Macrocystis pyrifera</i>
Organism source	Commercial supplier
Organism age	<24 hours
Test type	Static
Test duration	48 hours
Test vessel	Plastic petri dish
Test volume	30 mL
Test concentrations	Seven concentrations, plus laboratory control and salt control
Test replicates	5 per treatment
Number of organisms	7,500 spores/ mL
Control/dilution water	Natural seawater
Test solution renewal	None
Test temperature	15 ± 1°C
Test salinity	30 ± 2 ppt; sample salinity adjusted by addition of Hyper Saline Brine (HSB) resulting in highest concentration tested of 90%.
Feeding	None
Light intensity	3700 ± 740 lux (cool white fluorescent)
Photoperiod	16 hours light / 8 hours dark
Aeration	None
Test measurements	Temperature measured daily; dissolved oxygen, pH and salinity measured at test initiation and test termination
Test protocol	US EPA (1995), EPA/600/R-95-136
Statistical software	CETIS Version 1.9.4
Test endpoints	Percent germination and germ tube length
Test acceptability criteria for controls	≥70% germination; ≥10µm germ tube length
Reference toxicant	Copper (added as CuCl ₂)

3.0 RESULTS

Results of the toxicity test on sample MEL-26 are summarized in Table 2. There were adverse effects observed on *M. pyrifera* germination, resulting in IC25 and IC50 values of 5.3 and 7.0%, respectively. Adverse effects were also observed on *M. pyrifera* tube length, resulting in IC25 and IC50 values of 5.7 and 7.2%, respectively.

Table 2. Results: giant kelp (*Macrocystis pyrifera*) germination and germ tube growth test.

Concentration (% v/v)	Germination Rate (%) (Mean \pm SD)	Tube Length (μ m) (Mean \pm SD)
Seawater Control	93.4 \pm 3.0	11.5 \pm 0.6
Brine Control	95.0 \pm 2.1	12.3 \pm 0.4
Pooled Controls*	94.2 \pm 2.6	11.9 \pm 0.6
1.41	95.4 \pm 1.1	12.5 \pm 0.6
2.81	91.0 \pm 2.1	11.3 \pm 0.5
5.62	69.4 \pm 7.2	9.3 \pm 0.6
11.25	0.00 \pm 0.0	0.00 \pm 0.0
22.5	0.00 \pm 0.0	0.00 \pm 0.0
45	0.00 \pm 0.0	0.00 \pm 0.0
90	0.00 \pm 0.0	0.00 \pm 0.0
Test Endpoint (% v/v)		
IC25 (95% CL)	5.3 (4.5 – 6.1)	5.7 (4.7 – 6.0)
IC50 (95% CL)	7.0 (6.7 – 7.5)	7.2 (6.9 – 7.5)

SD = Standard Deviation, IC = Inhibition Concentration, CL = Confidence Limits

* Seawater and brine control passed acceptability criteria, therefore pooled controls for analysis

4.0 QA/QC

The health history of the test organisms used in this exposure was acceptable and met the requirements of their respective protocol. The test met all control acceptability criteria and water quality parameters remained within ranges specified in the protocol throughout the test. Uncertainty associated with this test is best described by the standard deviation around the mean and/or the confidence limits around the point estimates.

Results of the reference toxicant test conducted during the testing program are summarized in Table 3. Results fell within the range for organism performance of mean and two standard deviation range, based on historical results obtained by the laboratory with this test. Thus, the sensitivity of the organisms used in this test was appropriate. The reference toxicant test was performed under the same conditions as those used for the sample.

Table 3. Reference toxicant test results.

Test Species	Endpoint (IC50)	Historical Mean (2 SD Range)	CV (%)	Test Date
<i>M. pyrifera</i>	Germination: 51.7 µg/L Cu	56.3 (23.7 – 134.0) µg/L Cu	46	August 15, 2019
	Tube length: 102.2 µg/L Cu	70.0 (28.0 – 174.6) µg/L Cu	48	

SD = Standard Deviation, CV = Coefficient of Variation, IC = Inhibition Concentration

5.0 REFERENCES

Tidepool Scientific Software. 2013. CETIS comprehensive environmental toxicity information system, version 1.9.4.11 Tidepool Scientific Software, McKinleyville, CA. 222 pp.

US EPA (United States Environmental Protection Agency). 1995. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to west coast marine and estuarine organisms. EPA/600/R-95/136.

APPENDIX A – *Macrocystis pyrifera* Toxicity Test Data

Macrocystis pyrifera Summary Sheet

Client: Aquatox (Agnico Eagle Mining Limited)
Work Order No.: 191566

Start Date: 15-Aug-19
Set up by: DK

Sample Information:

Sample ID: MEL-26
Sample Date: 12-Aug-19
Date Received: 15-Aug-19
Sample Volume: 1 x 2-L

Test Organism Information:

Source: Kim Siewers
Batch #: 081519

CuCl Reference Toxicant Results:

Reference Toxicant ID: MP57
Stock Solution ID: 19Cu02
Date Initiated: 15-Aug-19

Germination 48-h IC50 (95% CL): 51.7 (46.3 - 58.7) µg/L Cu
Tube Length 48-h IC50 (95% CL): 102.2 (75.5 - 127.0) µg/L Cu

Germination 48-h IC50 Reference Toxicant Mean and Historical Range : 56.3 (23.7 - 134.0) µg/L Cu CV (%): 46
Tube Length 48-h IC50 Reference Toxicant Mean and Historical Range : 70.0 (28.0 - 174.6) µg/L Cu CV (%): 48

Test Results:

	Germination	Tube Length
IC25 %(v/v) (95% CL)	5.3 (4.5 - 6.1)	5.7 (4.7 - 6.0)
IC50 %(v/v) (95% CL)	7.0 (6.7 - 7.5)	7.2 (6.9 - 7.5)

Reviewed by: JOH

Date reviewed: Aug-30/19

Giant Kelp Germination and Growth Toxicity Test Water Quality Measurements

Client : Aquatox (Agrico Eagle Minus Limited)

Setup by: BA

Sample ID: MEL-26

Test Date/Time: Aug 15, 2019 ; 1420h

Work Order No.: 191566

Test Species: Macrocystis pyrifera

Culture Source: Kim Siewiers

Date Received: Aug 15, 2019

Light Intensity Range: 3900-4400

Date Measured: Aug 15, 2019

Sample Characteristics (Initial)

Temperature (°C) 18.0
DO (mg/L) 7.9
pH 7.7
Salinity (ppt) 22

After sample adjustment (e.g., salinity, pH, aeration)?

16.0
7.8
7.8
29
Salinity adjusted with HSB (Hyper Saline Buffer)

Concentration (%v/v)	Temperature (°C)			DO (mg/L)		pH		Salinity (ppt)	
	0 h	24 h	48 h	0 h	48 h	0 h	48 h	0 h	48 h
Control	15.5	14.5	15.5	8.1	2.0	7.7	7.5	28	29
Salt Control	16.0	14.5	15.5	7.4	2.0	8.1	7.8	29	30
1.41	15.5	14.5	15.5	7.9	2.1	7.7	7.6	28	28
2.81	15.5	14.5	15.5	7.9	2.0	7.7	7.6	28	28
5.62	15.5	14.5	15.5	7.9	2.1	7.7	7.6	28	28
11.25	15.5	14.5	15.5	7.8	2.1	7.7	7.6	28	28
22.5	16.0	14.5	15.5	7.7	2.0	7.8	7.6	28	29
45	16.0	14.5	15.5	7.8	2.0	7.8	7.6	29	29
90	16.0	14.5	15.5	7.8	2.0	7.8	7.6	29	29
Initials	BA	BA	m	BA	a	BA	A	BA	a

Thermometer: 3A8

DO meter: 2

pH meter: 42

Salinity meter: 2

Sample Description: clear colourless liquid, no odour, no particulates

Comments:

Reviewed:

BA

Date Reviewed:

Aug. 30/19

Giant Kelp (*M. pyrifera*) Toxicity Test Data Sheet - 48-h Germination and Tube Length

Client: Aquatox (Agnico Eagle Mines Limited)
 Work Order #: 191566
 Sample ID: MEL-26

Start Date/Time: August 15, 2019 ; 14:20h
 Termination Date/Time: August 17, 2019 ; 14:20h
 Calibration Factor: 1

Concentration %(v/v)	Rep	Number Germinated	Num. Not Germinated	Tube Length (um)										Initials
				1	2	3	4	5	6	7	8	9	10	
SW Control	A	962	0	15.6	10.8	14.9	10.9	12.5	11.5	14.5	12.5	13.4	10.6	88
	B	91	9	11.3	11.6	10.3	10.2	10.7	11.9	14.0	12.0	10.0	9.4	
	C	95	5	12.3	11.4	11.7	11.0	8.3	9.5	13.1	10.0	11.3	9.1	
	D	91	9	14.0	9.4	11.3	11.9	11.2	11.4	12.0	15.8	14.0	11.8	
	E	98	2	10.8	10.4	9.6	13.0	9.8	12.5	14.1	10.6	11.2	18.4	
Brine Salt Control	A	96	4	11.6	14.9	10.2	12.0	11.7	14.5	13.4	12.2	14.2	15.0	
	B	93	7	11.3	14.9	9.4	11.4	11.8	11.0	11.7	13.4	10.5	14.2	
	C	93	7	10.7	10.2	16.5	14.6	10.4	9.3	11.9	10.4	17.9	11.8	
	D	98	2	13.4	13.5	11.3	11.2	15.0	10.2	9.9	12.4	12.6	11.1	
	E	95	5	10.2	8.9	11.0	14.6	11.6	14.3	9.7	17.3	13.0	13.0	
1.41	A	95	5	15.4	13.0	9.3	10.8	13.3	12.8	12.8	15.6	11.4	13.9	
	B	94	6	11.2	12.5	9.9	12.6	9.2	10.2	13.0	12.6	15.5	13.5	
	C	96	4	11.0	14.5	14.4	11.0	13.9	11.4	12.7	13.9	16.3	13.0	
	D	97	3	12.1	13.1	9.5	13.5	13.8	9.1	10.6	13.1	13.0	9.4	
	E	95	5	13.0	13.0	11.4	11.2	12.4	16.7	10.7	14.4	10.1	12.6	
2.81	A	93	7	10.6	13.2	14.2	8.8	9.5	10.4	10.2	10.9	13.5	13.1	
	B	90	10	9.8	11.5	11.0	12.3	9.4	12.1	11.9	9.8	9.4	8.5	
	C	88	12	11.7	12.8	11.4	8.9	11.9	11.6	14.9	12.8	9.9	11.8	
	D	91	9	13.3	14.8	13.4	10.4	10.5	8.4	14.4	10.6	11.2	9.4	
	E	93	7	15.9	8.4	10.2	12.4	9.3	13.9	7.2	7.6	12.1	12.2	
5.62	A	66	34	7.5	9.5	8.5	8.1	7.5	11.9	9.3	8.4	7.9	6.5	
	B	65	35	8.7	6.3	9.0	12.2	7.7	9.7	10.0	15.2	11.1	9.0	
	C	62	38	10.1	11.7	7.3	7.1	7.4	14.9	11.2	9.7	9.8	8.2	
	D	79	21	9.5	10.5	10.1	6.6	10.6	7.0	11.1	7.7	11.1	12.9	
	E	75	25	10.6	7.1	11.0	11.8	8.8	5.8	6.3	9.9	8.9	7.5	↓

Comments: _____

Reviewed by: JGM

Date Reviewed: Aug. 30/19

Giant Kelp (*M. pyrifera*) Toxicity Test Data Sheet - 48-h Germination and Tube Length

Client: AquaMax (Agnico Eagle Mines Limited)
 Work Order #: 191566
 Sample ID: MEL-26

Start Date/Time: August 15, 2019; 1420h
 Termination Date/Time: August 17, 2019; 1420h
 Calibration Factor: 1

Concentration %(v/v)	Rep	Number Germinated	Num. Not Germinated	Tube Length (um)										Initials
				1	2	3	4	5	6	7	8	9	10	
11.25	A	0	100	0	0	0	0	0	0	0	0	0	0	JG
	B	0	100	0	0	0	0	0	0	0	0	0	0	
	C	0	100	0	0	0	0	0	0	0	0	0	0	
	D	0	100	0	0	0	0	0	0	0	0	0	0	
	E	0	100	0	0	0	0	0	0	0	0	0	0	
22.5	A	0	100	0	0	0	0	0	0	0	0	0	0	JG
	B	0	100	0	0	0	0	0	0	0	0	0	0	
	C	0	100	0	0	0	0	0	0	0	0	0	0	
	D	0	100	0	0	0	0	0	0	0	0	0	0	
	E	0	100	0	0	0	0	0	0	0	0	0	0	
45	A	0	100	0	0	0	0	0	0	0	0	0	0	JG
	B	0	100	0	0	0	0	0	0	0	0	0	0	
	C	0	100	0	0	0	0	0	0	0	0	0	0	
	D	0	100	0	0	0	0	0	0	0	0	0	0	
	E	0	100	0	0	0	0	0	0	0	0	0	0	
90	A	0	100	0	0	0	0	0	0	0	0	0	0	JG
	B	0	100	0	0	0	0	0	0	0	0	0	0	
	C	0	100	0	0	0	0	0	0	0	0	0	0	
	D	0	100	0	0	0	0	0	0	0	0	0	0	
	E	0	100	0	0	0	0	0	0	0	0	0	0	
	A													JG
	B													
	C													
	D													
	E													

Comments: _____

Reviewed by: JG

Date Reviewed: Aug. 28/19

Giant Kelp (*M. pyrifera*) Toxicity Test Data Sheet - 48-h Germination and Tube Length

Client: Aquatox Testing and Consulting Inc. (Agnico Eagle Mines Ltd.)
 Work Order #: 191566
 Sample ID: MEL-26

Test Initiation Date/Time: 15 April 2019, 1420h
 Test Termination Date/Time: 17 August 2019, 1420h
 Calibration Factor: 1

Concentration %(v/v)	Rep	Number Germinate	Num. Not Germinate	Tube Length (µm)										Mean	SD
				1	2	3	4	5	6	7	8	9	10		
Control	A	92	8	15.6	10.8	10.0	12.5	11.5	9.5	12.5	9.2	12.5	10.6	11.5	1.9
	B	91	9	11.3	11.6	10.3	10.2	10.7	11.9	14.0	12.0	10.0	9.4	11.1	1.3
	C	95	5	12.3	11.4	11.7	11.0	8.3	9.5	13.1	10.0	11.3	9.1	10.8	1.5
	D	91	9	14	9.4	11.3	11.9	11.2	11.4	12.0	15.8	14.0	11.8	12.3	1.8
	E	98	2	10.8	10.4	9.6	13.0	9.8	12.5	14.1	10.6	11.2	18.4	12.0	2.7
Brine Control	A	96	4	11.6	14.9	10.2	12.0	11.7	14.5	13.4	12.2	14.2	15.0	13.0	1.7
	B	93	7	11.3	14.9	9.4	11.4	11.8	11.0	11.7	13.4	10.5	14.2	12.0	1.7
	C	93	7	10.7	10.2	16.5	14.6	10.4	9.3	11.9	10.4	17.9	11.8	12.4	2.9
	D	98	2	13.4	13.5	11.3	11.2	15.0	10.2	9.9	12.4	12.6	11.1	12.1	1.6
	E	95	5	10.2	8.9	11.0	14.6	11.6	14.3	9.7	17.3	13.0	13.0	12.4	2.6
1.41	A	95	5	15.4	13.0	9.3	10.8	13.3	12.8	12.8	15.6	11.4	13.9	12.8	2.0
	B	94	6	11.2	12.5	9.9	12.6	9.2	10.2	13.0	12.6	15.5	13.5	12.0	1.9
	C	96	4	11.0	14.5	14.4	11.0	13.9	11.4	12.7	13.9	16.3	13.0	13.2	1.7
	D	97	3	12.1	13.1	9.5	13.5	13.8	9.1	10.6	13.1	13.0	9.4	11.7	1.9
	E	95	5	13.0	13.0	11.4	11.2	12.4	16.7	10.7	14.4	10.1	12.6	12.6	1.9
2.81	A	93	7	10.6	13.2	14.2	8.8	9.5	10.4	10.2	10.9	13.5	13.1	11.4	1.9
	B	90	10	9.8	11.5	11.0	12.3	9.4	12.1	11.9	9.8	9.4	8.5	10.6	1.3
	C	88	12	11.7	12.8	11.4	8.9	11.7	11.6	14.9	12.8	9.9	11.8	11.8	1.6
	D	91	9	13.3	14.8	13.4	10.4	10.5	8.4	14.4	10.6	11.2	9.4	11.6	2.2
	E	93	7	15.9	8.4	10.2	12.4	9.3	13.9	7.2	7.6	12.1	12.2	10.9	2.9
5.62	A	66	34	7.5	9.5	8.5	8.1	7.5	11.9	9.3	8.4	7.9	6.5	8.5	1.5
	B	65	35	8.7	6.3	9.0	12.2	7.7	9.7	10.0	15.2	11.1	9.0	9.9	2.5
	C	62	38	10.1	11.7	7.3	7.1	7.4	14.9	11.2	9.7	9.8	8.2	9.7	2.4
	D	79	21	9.5	10.5	10.1	6.6	10.6	7.0	11.1	7.7	11.1	12.9	9.7	2.0
	E	75	25	10.6	7.1	11.0	11.8	8.8	5.8	6.3	9.9	8.9	7.5	8.8	2.1

Comments:

page 1 of 2

Reviewed by:

John

Date Reviewed:

Aug. 30/19

CETIS Summary Report

Report Date: 29 Aug-19 11:20 (p 1 of 3)
Test Code/ID: 191566 / 01-7607-0818

Macrocystis Germination and Germ Tube Growth Test

Nautilus Environmental

Batch ID: 08-5976-3285	Test Type: Growth-Germination	Analyst: Ditty Kakkassery	
Start Date: 15 Aug-19 14:20	Protocol: EPA/600/R-95/136 (1995)	Diluent: Natural seawater	
Ending Date: 17 Aug-19 14:20	Species: Macrocystis pyrifera	Brine: Frozen Seawater	
Test Length: 48h	Taxon: Ochrophyta	Source: Kim Siewers	Age:
Sample ID: 19-2051-6655	Code: 7278C22F	Project: Special Studies	
Sample Date: 12 Aug-19 06:15	Material: Water Sample	Source: Aquatox	
Receipt Date: 15 Aug-19 08:50	CAS (PC):	Station: Agnico Eagle Mines Limited	
Sample Age: 80h (18.8 °C)	Client: aquatox		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
06-7235-3078	Germination Rate	Equal Variance t Two-Sample Test	0.7804	Salt Control passed germination rate	1
20-6831-3505	Mean Length	Equal Variance t Two-Sample Test	0.9796	Salt Control passed mean length	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	%	95% LCL	95% UCL	TU	S
15-1198-8535	Germination Rate	Linear Interpolation (ICPIN)		EC1	1.702	1.478	2.02	58.76	1
				EC5	2.903	2.438	3.145	34.45	
				EC10	3.406	3.116	3.801	29.36	
				EC15	3.974	3.587	4.801	25.17	
			✓	EC20	4.615	4.009	5.941	21.67	
			✓	EC25	5.338	4.466	6.112	18.73	
			✓	EC40	6.397	5.965	6.849	15.63	
			✓	EC50	7.046	6.653	7.454	14.19	
03-2491-0820	Mean Length	Linear Interpolation (ICPIN)	✓	IC5	2.244	1.765	3.264	44.55	1
			✓	IC10	3.127	2.285	3.855	31.98	
			✓	IC15	3.91	3.132	4.929	25.58	
				IC20	4.842	3.965	6.073	20.65	
				IC25	5.695	4.746	6.034	17.56	
				IC40	6.555	6.238	6.86	15.26	
				IC50	7.189	6.902	7.464	13.91	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
06-7235-3078	Germination Rate	Control Resp	0.95	0.7	>>	Yes	Passes Criteria
	Germination Rate	Control Resp	0.934	0.7	>>	Yes	Passes Criteria
15-1198-8535	Germination Rate	Control Resp	0.942	0.7	>>	Yes	Passes Criteria
03-2491-0820	Mean Length	Control Resp	11.94	10	>>	Yes	Passes Criteria
20-6831-3505	Mean Length	Control Resp	12.34	10	>>	Yes	Passes Criteria
	Mean Length	Control Resp	11.54	10	>>	Yes	Passes Criteria

CETIS Summary Report

 Report Date: 29 Aug-19 11:20 (p 2 of 3)
 Test Code/ID: 191566 / 01-7607-0818

Macrocystis Germination and Germ Tube Growth Test

Nautilus Environmental

Germination Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	SC	5	0.9500	0.9237	0.9763	0.9300	0.9800	0.0095	0.0212	2.23%	0.00%
0	N	5	0.9340	0.8961	0.9719	0.9100	0.9800	0.0136	0.0305	3.27%	1.68%
1.41		5	0.9540	0.9398	0.9682	0.9400	0.9700	0.0051	0.0114	1.20%	-0.42%
2.81		5	0.9100	0.8837	0.9363	0.8800	0.9300	0.0095	0.0212	2.33%	4.21%
5.62		5	0.6940	0.6042	0.7838	0.6200	0.7900	0.0323	0.0723	10.42%	26.95%
11.25		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
22.5		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
45		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
90		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Mean Length Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	SC	5	12.34	11.85	12.83	11.96	12.97	0.1762	0.394	3.19%	0.00%
0	N	5	11.54	10.77	12.31	10.77	12.28	0.2789	0.6236	5.40%	6.51%
1.41		5	12.47	11.72	13.21	11.72	13.21	0.2691	0.6018	4.83%	-0.99%
2.81		5	11.26	10.64	11.89	10.57	11.75	0.2246	0.5021	4.46%	8.75%
5.62		5	9.324	8.536	10.11	8.51	9.89	0.2839	0.6348	6.81%	24.47%
11.25		5	0	0	0	0	0	0	0		100.00%
22.5		5	0	0	0	0	0	0	0		100.00%
45		5	0	0	0	0	0	0	0		100.00%
90		5	0	0	0	0	0	0	0		100.00%

Germination Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	SC	0.9600	0.9300	0.9300	0.9800	0.9500
0	N	0.9200	0.9100	0.9500	0.9100	0.9800
1.41		0.9500	0.9400	0.9600	0.9700	0.9500
2.81		0.9300	0.9000	0.8800	0.9100	0.9300
5.62		0.6600	0.6500	0.6200	0.7900	0.7500
11.25		0.0000	0.0000	0.0000	0.0000	0.0000
22.5		0.0000	0.0000	0.0000	0.0000	0.0000
45		0.0000	0.0000	0.0000	0.0000	0.0000
90		0.0000	0.0000	0.0000	0.0000	0.0000

Mean Length Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	SC	12.97	11.96	12.37	12.06	12.36
0	N	11.47	11.14	10.77	12.28	12.04
1.41		12.83	12.02	13.21	11.72	12.55
2.81		11.44	10.57	11.75	11.64	10.92
5.62		8.51	9.89	9.74	9.71	8.77
11.25		0	0	0	0	0
22.5		0	0	0	0	0
45		0	0	0	0	0
90		0	0	0	0	0

SC = Boine Control
 N = Negative Control

CETIS Summary Report

Report Date: 29 Aug-19 11:20 (p 3 of 3)
Test Code/ID: 191566 / 01-7607-0818

Macrocystis Germination and Germ Tube Growth Test

Nautilus Environmental

Germination Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	SC	96/100	93/100	93/100	98/100	95/100
0	N	92/100	91/100	95/100	91/100	98/100
1.41		95/100	94/100	96/100	97/100	95/100
2.81		93/100	90/100	88/100	91/100	93/100
5.62		66/100	65/100	62/100	79/100	75/100
11.25		0/100	0/100	0/100	0/100	0/100
22.5		0/100	0/100	0/100	0/100	0/100
45		0/100	0/100	0/100	0/100	0/100
90		0/100	0/100	0/100	0/100	0/100

CETIS Analytical Report

Report Date: 23 Aug-19 11:57 (p 1 of 2)
Test Code/ID: 191566 / 01-7607-0818

Macrocystis Germination and Germ Tube Growth Test

Nautilus Environmental

Analysis ID: 06-7235-3078	Endpoint: Germination Rate	CETIS Version: CETISv1.9.4
Analyzed: 23 Aug-19 11:52	Analysis: Parametric-Two Sample	Status Level: 1
Batch ID: 08-5976-3285	Test Type: Growth-Germination	Analyst: Ditty Kakkassery
Start Date: 15 Aug-19 14:20	Protocol: EPA/600/R-95/136 (1995)	Diluent: Natural seawater
Ending Date: 17 Aug-19 14:20	Species: Macrocystis pyrifera	Brine: Frozen Seawater
Test Length: 48h	Taxon: Ochrophyta	Source: Kim Siewers
		Age:
Sample ID: 19-2051-6655	Code: 7278C22F	Project: Special Studies
Sample Date: 12 Aug-19 06:15	Material: Water Sample	Source: Aquatox
Receipt Date: 15 Aug-19 08:50	CAS (PC):	Station: Agnico Eagle Mines Limited
Sample Age: 80h (18.8 °C)	Client: aquatox	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	Salt Control passed germination rate	3.88%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		Salt Control	-0.814	1.86	0.073	8	CDF	0.7804	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	0.95	0.7	>>	Yes	Passes Criteria
Control Resp	0.934	0.7	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0025363	0.0025363	1	0.6627	0.4392	Non-Significant Effect
Error	0.0306197	0.0038275	8			
Total	0.033156		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.774	23.15	0.5922	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8538	0.7411	0.0645	Normal Distribution

Germination Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	SC	5	0.9500	0.9237	0.9763	0.9500	0.9300	0.9800	0.0095	2.23%	0.00%
0	N	5	0.9340	0.8961	0.9719	0.9200	0.9100	0.9800	0.0136	3.27%	1.68%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	SC	5	1.35	1.285	1.415	1.345	1.303	1.429	0.02349	3.89%	0.00%
0	N	5	1.318	1.231	1.405	1.284	1.266	1.429	0.03129	5.31%	2.36%

Germination Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	SC	0.9600	0.9300	0.9300	0.9800	0.9500
0	N	0.9200	0.9100	0.9500	0.9100	0.9800

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	SC	1.369	1.303	1.303	1.429	1.345
0	N	1.284	1.266	1.345	1.266	1.429

Germination Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	SC	96/100	93/100	93/100	98/100	95/100
0	N	92/100	91/100	95/100	91/100	98/100

CETIS Analytical Report

Report Date: 23 Aug-19 11:57 (p 2 of 2)
Test Code/ID: 191566 / 01-7607-0818

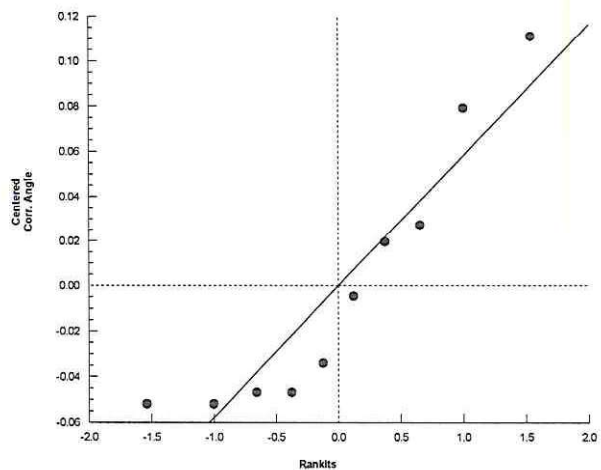
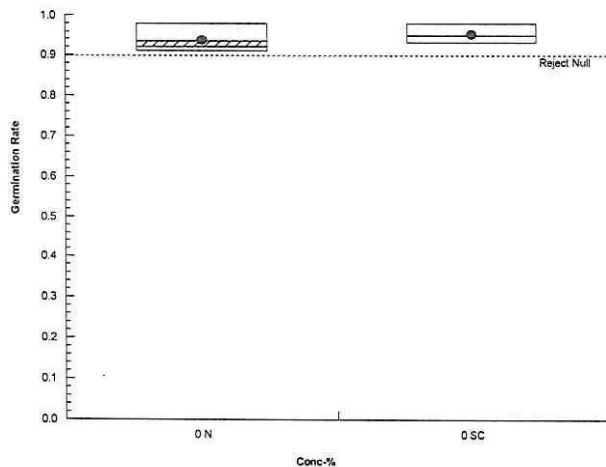
Macrocystis Germination and Germ Tube Growth Test

Nautilus Environmental

Analysis ID: 06-7235-3078 Endpoint: Germination Rate
Analyzed: 23 Aug-19 11:52 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 23 Aug-19 11:57 (p 1 of 2)
Test Code/ID: 191566 / 01-7607-0818

Macrocystis Germination and Germ Tube Growth Test				Nautilus Environmental	
Analysis ID:	15-1198-8535	Endpoint:	Germination Rate	CETIS Version:	CETISv1.9.4
Analyzed:	23 Aug-19 11:54	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	08-5976-3285	Test Type:	Growth-Germination	Analyst:	Ditty Kakkassery
Start Date:	15 Aug-19 14:20	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Natural seawater
Ending Date:	17 Aug-19 14:20	Species:	Macrocystis pyrifera	Brine:	Frozen Seawater
Test Length:	48h	Taxon:	Ochrophyta	Source:	Kim Siewers
Sample ID:	19-2051-6655	Code:	7278C22F	Project:	Special Studies
Sample Date:	12 Aug-19 06:15	Material:	Water Sample	Source:	Aquatox
Receipt Date:	15 Aug-19 08:50	CAS (PC):		Station:	Agnico Eagle Mines Limited
Sample Age:	80h (18.8 °C)	Client:	aquatox		

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	1009235	200	Yes	Two-Point Interpolation

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	0.942	0.7	>>	Yes	Passes Criteria

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC1	1.702	1.478	2.02	58.76	49.52	67.66
EC5	2.903	2.438	3.145	34.45	31.79	41.01
EC10	3.406	3.116	3.801	29.36	26.31	32.09
EC15	3.974	3.587	4.801	25.17	20.83	27.88
EC20	4.615	4.009	5.941	21.67	16.83	24.95
EC25	5.338	4.466	6.112	18.73	16.36	22.39
EC40	6.397	5.965	6.849	15.63	14.6	16.76
EC50	7.046	6.653	7.454	14.19	13.42	15.03

Germination Rate Summary			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	A/B	Mean	%Effect
* 0	@	10	0.9420	0.9100	0.9800	0.0262	2.78%	0.0%	942/1000	0.948	0.0%
1.41		5	0.9540	0.9400	0.9700	0.0114	1.20%	-1.27%	477/500	0.948	0.0%
2.81		5	0.9100	0.8800	0.9300	0.0212	2.33%	3.4%	455/500	0.91	4.01%
5.62		5	0.6940	0.6200	0.7900	0.0723	10.42%	26.33%	347/500	0.694	26.79%
11.25		5	0.0000	0.0000	0.0000	0.0000		100.0%	0/500	0	100.0%
22.5		5	0.0000	0.0000	0.0000	0.0000		100.0%	0/500	0	100.0%
45		5	0.0000	0.0000	0.0000	0.0000		100.0%	0/500	0	100.0%
90		5	0.0000	0.0000	0.0000	0.0000		100.0%	0/500	0	100.0%

Germination Rate Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	@	0.9600	0.9300	0.9300	0.9800	0.9500	0.9200	0.9100	0.9500	0.9100	0.9800
1.41		0.9500	0.9400	0.9600	0.9700	0.9500					
2.81		0.9300	0.9000	0.8800	0.9100	0.9300					
5.62		0.6600	0.6500	0.6200	0.7900	0.7500					
11.25		0.0000	0.0000	0.0000	0.0000	0.0000					
22.5		0.0000	0.0000	0.0000	0.0000	0.0000					
45		0.0000	0.0000	0.0000	0.0000	0.0000					
90		0.0000	0.0000	0.0000	0.0000	0.0000					

* pooled controls

CETIS Analytical Report

Report Date: 23 Aug-19 11:57 (p 2 of 2)
Test Code/ID: 191566 / 01-7607-0818

Macrocystis Germination and Germ Tube Growth Test

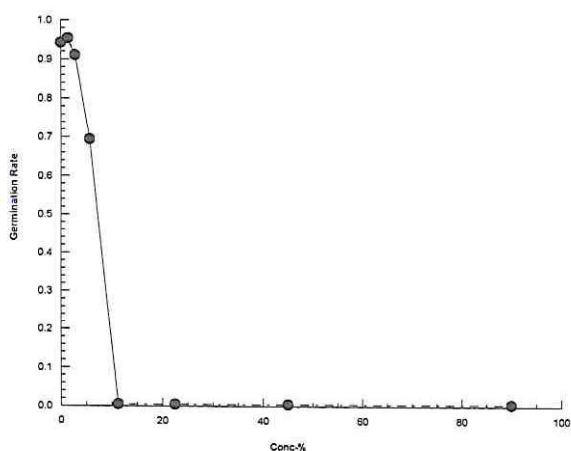
Nautilus Environmental

Analysis ID: 15-1198-8535 Endpoint: Germination Rate CETIS Version: CETISv1.9.4
Analyzed: 23 Aug-19 11:54 Analysis: Linear Interpolation (ICPIN) Status Level: 1

Germination Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
1.41		95/100	94/100	96/100	97/100	95/100
2.81		93/100	90/100	88/100	91/100	93/100
5.62		66/100	65/100	62/100	79/100	75/100
11.25		0/100	0/100	0/100	0/100	0/100
22.5		0/100	0/100	0/100	0/100	0/100
45		0/100	0/100	0/100	0/100	0/100
90		0/100	0/100	0/100	0/100	0/100

Graphics



CETIS Analytical Report

Report Date: 29 Aug-19 11:18 (p 1 of 2)
Test Code/ID: 191566 / 01-7607-0818

Macrocystis Germination and Germ Tube Growth Test Nautilus Environmental

Analysis ID: 20-6831-3505	Endpoint: Mean Length	CETIS Version: CETISv1.9.4
Analyzed: 29 Aug-19 11:17	Analysis: Parametric-Two Sample	Status Level: 1
Batch ID: 08-5976-3285	Test Type: Growth-Germination	Analyst: Ditty Kakkassery
Start Date: 15 Aug-19 14:20	Protocol: EPA/600/R-95/136 (1995)	Diluent: Natural seawater
Ending Date: 17 Aug-19 14:20	Species: Macrocystis pyrifera	Brine: Frozen Seawater
Test Length: 48h	Taxon: Ochrophyta	Source: Kim Siewers Age:
Sample ID: 19-2051-6655	Code: 7278C22F	Project: Special Studies
Sample Date: 12 Aug-19 06:15	Material: Water Sample	Source: Aquatox
Receipt Date: 15 Aug-19 08:50	CAS (PC):	Station: Agnico Eagle Mines Limited
Sample Age: 80h (18.8 °C)	Client: aquatox	

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	Salt Control passed mean length	5.32%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		Salt Control	-2.437	1.86	0.613	8	CDF	0.9796	Non-Significant Effect

Test Acceptability Criteria

TAC Limits

Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	12.34	10	>>	Yes	Passes Criteria
Control Resp	11.54	10	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.61604	1.61604	1	5.94	0.0407	Significant Effect
Error	2.17632	0.27204	8			
Total	3.79236		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	2.505	23.15	0.3955	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.946	0.7411	0.6211	Normal Distribution

Mean Length Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	SC	5	12.34	11.85	12.83	12.36	11.96	12.97	0.1762	3.19%	0.00%
0	N	5	11.54	10.77	12.31	11.47	10.77	12.28	0.2789	5.40%	6.51%

Mean Length Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	SC	12.97	11.96	12.37	12.06	12.36
0	N	11.47	11.14	10.77	12.28	12.04

CETIS Analytical Report

Report Date: 29 Aug-19 11:18 (p 2 of 2)
Test Code/ID: 191566 / 01-7607-0818

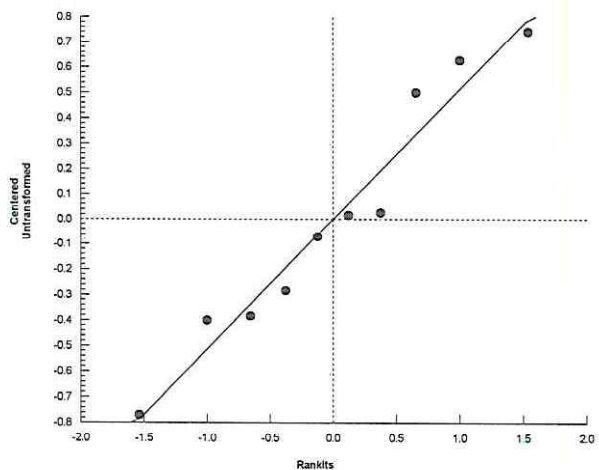
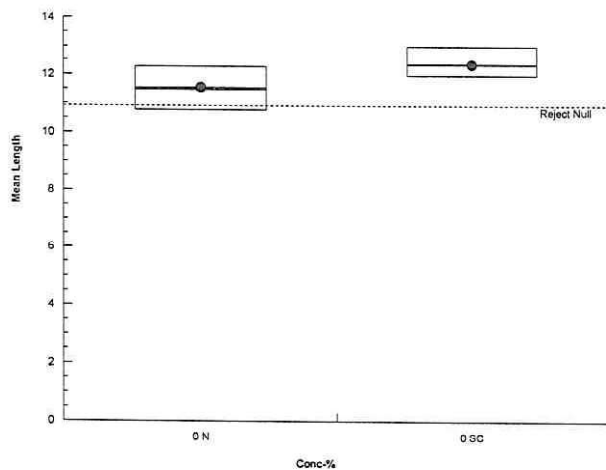
Macrocystis Germination and Germ Tube Growth Test

Nautilus Environmental

Analysis ID: 20-6831-3505 Endpoint: Mean Length
Analyzed: 29 Aug-19 11:17 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 29 Aug-19 11:19 (p 1 of 2)
Test Code/ID: 191566 / 01-7607-0818

Macrocystis Germination and Germ Tube Growth Test				Nautilus Environmental	
Analysis ID:	03-2491-0820	Endpoint:	Mean Length	CETIS Version:	CETISv1.9.4
Analyzed:	29 Aug-19 11:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	08-5976-3285	Test Type:	Growth-Germination	Analyst:	Ditty Kakkassery
Start Date:	15 Aug-19 14:20	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Natural seawater
Ending Date:	17 Aug-19 14:20	Species:	Macrocystis pyrifera	Brine:	Frozen Seawater
Test Length:	48h	Taxon:	Ochrophyta	Source:	Kim Siewers
Sample ID:	19-2051-6655	Code:	7278C22F	Project:	Special Studies
Sample Date:	12 Aug-19 06:15	Material:	Water Sample	Source:	Aquatox
Receipt Date:	15 Aug-19 08:50	CAS (PC):		Station:	Agnico Eagle Mines Limited
Sample Age:	80h (18.8 °C)	Client:	aquatox		

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	760203	200	Yes	Two-Point Interpolation

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	11.94	10	>>	Yes	Passes Criteria

Point Estimates						
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC5	2.244	1.765	3.264	44.55	30.64	56.65
IC10	3.127	2.285	3.855	31.98	25.94	43.76
IC15	3.91	3.132	4.929	25.58	20.29	31.93
IC20	4.842	3.965	6.073	20.65	16.47	25.22
IC25	5.695	4.746	6.034	17.56	16.57	21.07
IC40	6.555	6.238	6.86	15.26	14.58	16.03
IC50	7.189	6.902	7.464	13.91	13.4	14.49

Mean Length Summary			Calculated Variate							Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect		Mean	%Effect
* 0	@	10	11.94	10.77	12.97	0.6491	5.44%	0.0%		12.2	0.0%
1.41		5	12.47	11.72	13.21	0.6018	4.83%	-4.39%		12.2	0.0%
2.81		5	11.26	10.57	11.75	0.5021	4.46%	5.68%		11.26	7.7%
5.62		5	9.324	8.51	9.89	0.6348	6.81%	21.92%		9.324	23.6%
11.25		5	0	0	0	0		100.0%		0	100.0%
22.5		5	0	0	0	0		100.0%		0	100.0%
45		5	0	0	0	0		100.0%		0	100.0%
90		5	0	0	0	0		100.0%		0	100.0%

Mean Length Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	@	12.97	11.96	12.37	12.06	12.36	11.47	11.14	10.77	12.28	12.04
1.41		12.83	12.02	13.21	11.72	12.55					
2.81		11.44	10.57	11.75	11.64	10.92					
5.62		8.51	9.89	9.74	9.71	8.77					
11.25		0	0	0	0	0					
22.5		0	0	0	0	0					
45		0	0	0	0	0					
90		0	0	0	0	0					

* pooled controls

CETIS Analytical Report

Report Date: 29 Aug-19 11:19 (p 2 of 2)
Test Code/ID: 191566 / 01-7607-0818

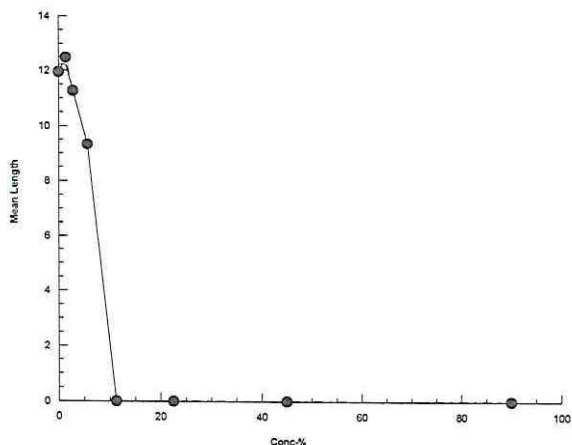
Macrocystis Germination and Germ Tube Growth Test

Nautilus Environmental

Analysis ID: 03-2491-0820 Endpoint: Mean Length
Analyzed: 29 Aug-19 11:18 Analysis: Linear Interpolation (ICPIN)

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



APPENDIX B – Chain-of-Custody Form

③

(c)

Date_____ Page__ of__

[illegible]

Additional costs may be required for sample disposal or storage. Net 30 unless otherwise contracted.

CLIENT INFORMATION	TEST FACILITY INFORMATION
Aquatox/Agnico Eagle Mines - Meliadine Rankin Inlet, Nunavut, Canada Contact: Martina Rendas	Harris Industrial Testing Service Ltd. 1320 Ashdale Rd., South Rawdon Nova Scotia B0N 1Z0 Ph: 902 757-0232 Fax: 902 757-2839 office@harrisindustrial.info

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 19-441 Sample Name/Location: <i>MEL-26 GPS 62°48'01.99" 92°06'00.05"</i> Sampling Method: <i>Grab</i> Sample Homogenized: Yes Sampler Name: <i>S. Arruda/R. Schwandt</i> Date & Time Sampled: <i>Sept. 02 2019 0600 Hrs</i> Date & Time Received: <i>Sept. 05 2019 1255 Hrs</i> Sample Description: Clear, colourless liquid with chlorine-like odour.	Reference Method: EPS 1/RM/10 2 nd Ed. December 2017 Type: LC50 Tox 9B General Test Procedures held on file Test Organism: <i>Gasterosteus aculeatus</i> (Threespine stickleback)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 7.3 D.O. Saturation (%): 92 Pre-test pH: 7.4 pH Adjusted: No Sample Salinity ¹ (‰): 18.8 Seawater Control Salinity ¹ (‰): 31.0 Salinity adjusted Control (‰): 19.0	Filtration of sample: No Adjustment of sample salinity: No Mandatory Pre-aeration: Yes Duration: 30 minutes Rate: 6.5 ± 1 ml/min/L Time: 1415 hrs D.O. (mg/L): 7.9 D.O. saturation (%): 90 Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- Aeration continued throughout test by airstone @ 6.5 + 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Sept. 05 2019 1445 Hrs Date & Time Test Terminated: Sept. 09 2019 1445 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 61 % Mortality over 7 days prior to test: 0	Loading Density (g/L): 0.24 Mean Fork Length (mm): 32 ± 3.8 SD Range (mm): 28 - 39	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500
Test Volume (L): 10 Depth (cm): 17.7 Replicates: No Number of fish per vessel: 10	Mean Wet Weight (g): 0.24 ± 0.09 SD Range (g): 0.15 – 0.40	Static Test, Duration: 96 hours Control/Dilution Water: Natural Seawater

¹When salinity is >40‰, it is measured using refractometry method (Environment Canada, 2017). When salinity is <40‰, the salinity is measured using conductivity method (*ibid.*).

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	SALINITY ‰	TEMP. °C	D.O. mg/L (%)	pH
100	15.0	7.9	7.3	18.8	15.5	8.0	7.4
50	15.0	7.8	7.6	24.8	15.0	7.9	7.9
25	15.0	8.0	7.8	28.1	16.0	8.4	7.6
12.5	15.0	7.9	7.9	29.5	14.0	8.4	7.6
6.25	15.0	7.9	7.9	30.0	15.5	8.3	7.7
Control	15.0	7.8	7.9	31.0	15.5	8.2	7.7
Salinity Adj. Control	15.0	7.9	7.9	19.0	15.0	9.2	7.7

TEST RESULTS								
TOTAL MORTALITY					PERCENT MORTALITY			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	10/10	10/10	10/10	10/10	100	100	100	100
50	10/10	10/10	10/10	10/10	100	100	100	100
25	2/10	4/10	5/10	5/10	20	40	50	50
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Salinity Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0
TOTAL STRESS					PERCENT STRESS			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	8/10	0/10	0/10	0/10	80	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Salinity Adj Control	0/10	0/10	0/10	0/10	0	0	0	0

96 HR LC₅₀ RESULTS

LC₅₀ Value (%): 25.0
Result: Fail
95% Confidence Limits (%): 20.1 – 31.1
Statistical Method: Untrimmed Spearman
 Karber - CETIS

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 61 Test Date: Sept. 06 – 10 2019*

Reference Substance: Phenol

LC₅₀ Value (mg/L): 17.7
 95% Confidence Limits (mg/L): 12.5 – 25.0
 Historical Mean (mg/L): 15.7
 Warning Limits \pm 2 SD (mg/L): 12.1 – 20.4

COMMENTS

Test meets all conditions for test validity (preliminary). An additional Salinity-adjusted control was run at sample salinity. At termination, all fish stressed in 100 and 50% concentrations at 1 hr. 9 fish dead in 100% concentration at 2 hrs.

*Revision: Updated reference toxicant data added.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): G. Harris and A. Huybers

Verified by: C. Harris

Revision Date: Sept. 10 2019

Signed:

**REFERENCES**

Tidepool Scientific Software, 2001 - 2014. Comprehensive Environmental Toxicity Information System – CETIS v1.8.7.20

Environment Canada, 2017. Biological Test Method: Reference Method for Determining Acute Lethality Using Threespine Stickleback.

Environment and Climate Change Canada, Ottawa, Ontario, Report EPS 1/RM/10, 2nd Edition December 2017.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

The test included in this report is within the scope of this accreditation.

Results apply to the sample as received. The results reported apply only to the sample tested. Results are based on nominal concentrations.

CLIENT INFORMATION	TEST FACILITY INFORMATION
Aquatox/Agnico Eagle Mines - Meliadine Rankin Inlet Nunavut, Canada Contact: Martina Rendas	Harris Industrial Testing Service Ltd. 1320 Ashdale Rd., South Rawdon Nova Scotia B0N 1Z0 Ph : 902 757-0232 Fax: 902 757-2839 office@harrisindustrial.info

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 19-449 Sample Name/Location: MEL-26 GPS 62°48'01.99" 92°06'00.05" Sampling Method: Grab Sample Homogenized: Yes Sampler Name: S. Arruda/D. Morin Date & Time Sampled: Sept. 09 2019 0600 Hrs Date & Time Received: Sept. 12 2019 1310 Hrs Sample Description: Clear, colourless liquid with a faint chlorine-like odour.	Reference Method: EPS 1/RM/10 July 1990 2 nd Ed. December 2017 Type: LC50 Tox 9B General Test Procedures held on file Test Organism: <i>Gasterosteus aculeatus</i> (Threespine stickleback)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 16.0 Pre-test D.O. (mg/L): 8.6 D.O. Saturation (%): 97 Pre-test pH: 6.7 pH Adjusted: No Sample Salinity ¹ (‰): 13.9 Seawater Control Salinity ¹ (‰): 30.4 Salinity adjusted Control (‰): 14.4	Filtration of sample: No Adjustment of sample salinity: No Mandatory Pre-aeration: Yes Duration: 30 minutes Rate: 6.5 ± 1 ml/min/L Time: 1430 hrs D.O. (mg/L): 9.0 D.O. saturation (%): 98 Pre-aeration Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- D.O. saturation (%): -- Aeration continued throughout test by airstone @ 6.5 ± 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Sept. 12 2019 1500 Hrs Date & Time Test Terminated: Sept. 16 2019 1500 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 61 % Mortality over 7 days prior to test: 0	Loading Density (g/L): 0.50 Mean Fork Length (mm): 34 ± 5.0 SD Range (mm): 26 - 44	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 – 500
Test Volume (L): 10 Depth (cm): 17.7 Replicates: No Number of fish per vessel: 10	Mean Wet Weight (g): 0.50 ± 0.28 SD Range (g): 0.19 – 1.09	Static Test, Duration: 96 hours Control/Dilution Water: Natural Seawater

¹When salinity is >40‰, it is measured using refractometry method (Environment Canada, 2017). When salinity is <40‰, the salinity is measured using conductivity method (*ibid.*).

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	SALINITY ‰	TEMP. °C	D.O. mg/L	pH
100	16.0	9.0	6.9	13.8	16.0	9.0	6.9
50	16.0	8.5	7.3	21.7	15.0	8.2	7.6
25	16.0	8.1	7.5	26.0	15.0	8.2	7.6
12.5	16.0	8.3	7.6	28.2	15.5	8.6	7.6
6.25	16.0	8.1	7.6	29.5	15.0	8.2	7.6
Control	16.0	8.1	7.6	30.4	15.0	8.1	7.7
Sal. Adj. Control	16.0	8.8	7.6	14.4	15.0	9.3	7.7

TEST RESULTS								
TOTAL MORTALITY					PERCENT MORTALITY			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	10/10	10/10	10/10	10/10	100	100	100	100
50	10/10	10/10	10/10	10/10	100	100	100	100
25	10/10	10/10	10/10	10/10	100	100	100	100
12.5	1/10	1/10	1/10	1/10	10	10	10	10
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

TOTAL STRESS					PERCENT STRESS			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

96 HR LC₅₀ RESULTS

LC₅₀ Value (%): 16.5
Result: Fail
95% Confidence Limits (%): 14.5 – 18.8
Statistical Method: Untrimmed Spearman
 Karber - CETIS

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 61 Test Date: Sept. 06 – 10 2019

Reference Substance: Phenol

LC₅₀ Value (mg/L): 17.7
 95% Confidence Limits (mg/L): 12.5 – 25.0
 Historical Mean (mg/L): 15.7
 Warning Limits \pm 2 SD (mg/L): 12.1 – 20.4

COMMENTS

Test meets all conditions for test validity. An additional Salinity-adjusted control was run at sample salinity.
1 hr. after test initiation: 100% conc. – 100% mortality; 50% conc. – 100% stressed; 25% conc. – 10% stressed. 17 hrs. after test initiation: 50% conc. – 100% mortality; 25% conc. – 100% mortality; 12.5% conc. – 10% mortality.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): K. Marks and A. Huybers

Verified by: C. Harris

Date: Sept. 16 2019

Signed:



REFERENCES

Tidepool Scientific Software, 2001 - 2014. Comprehensive Environmental Toxicity Information System – CETIS v1.8.7.20
Environment Canada, 2017. Biological Test Method: Reference Method for Determining Acute Lethality Using Threespine Stickleback.
Environment and Climate Change Canada, Ottawa, Ontario, Report EPS 1/RM/10, 2nd Edition December 2017.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

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CLIENT INFORMATION	TEST FACILITY INFORMATION
Aquatox/Agnico Eagle Mines - Meliadine Rankin Inlet, Nunavut, Canada Contact: Martina Rendas	Harris Industrial Testing Service Ltd. 1320 Ashdale Rd., South Rawdon Nova Scotia B0N 1Z0 Ph : 902 757-0232 Fax: 902 757-2839 office@harrisindustrial.info

SAMPLE INFORMATION (Client-provided data italicised)	GENERAL TEST INFORMATION
Lab Identification #: 19-507 Sample Name/Location: MEL-26 GPS 62°48'01.99" 92°06'00.05" Sampling Method: Grab Sample Homogenized: Yes Sampler Name: R. Schwandt Date & Time Sampled: Oct. 01 2019 0700 Hrs Date & Time Received: Oct. 04 2019 1130 Hrs Sample Description: Clear, colourless liquid.	Reference Method: EPS 1/RM/10 July 1990 2 nd Ed. December 2017 Type: LC50 Tox 9B General Test Procedures held on file Test Organism: <i>Gasterosteus aculeatus</i> (Threespine stickleback)

PRE-TEST PARAMETERS	SAMPLE PRE-TREATMENT
Pre-test Temp. (°C): 14.5 Pre-test D.O. (mg/L): 9.4 D.O. Saturation (%): 102 Pre-test pH: 6.2 pH Adjusted: No Sample Salinity ¹ (‰): 15.7 Seawater Control Salinity ¹ (‰): 29.8 Salinity adjusted Control (‰): 16.0	Filtration of sample: No Adjustment of sample salinity: No Mandatory Pre-aeration: Yes Duration: 30 minutes Rate: 6.5 ± 1 ml/min/L Time: 1145 hrs D.O. (mg/L): 9.2 D.O. saturation (%): 100 Pre-aeration Continued: No Duration: -- min. @ -- hrs D.O. (mg/L): -- D.O. saturation (%): -- Aeration continued throughout test by airstone @ 6.5 + 1 ml/min/L

TEST CONDITIONS		
Date & Time Test Initiated: Oct. 05 2019 1215 Hrs Date & Time Test Terminated: Oct. 09 2019 1215 Hrs		Deviations from Test Method: No Description: N/A
Fish Batch #: 61 % Mortality over 7 days prior to test: 1.0	Loading Density (g/L): 0.42 Mean Fork Length (mm): 40 ± 2.5 SD Range (mm): 37 - 44 Mean Wet Weight (g): 0.42 ± 0.09 SD Range (g): 0.33 - 0.60	Temperature: 15 ± 1°C Photoperiod: 16L/8D Lux: 100 - 500 Static Test, Duration: 96 hours Control/Dilution Water: Natural Seawater
Test Volume (L): 10 Depth (cm): 17.7 Replicates: No Number of fish per vessel: 10		

¹When salinity is >40‰, it is measured using refractometry method (Environment Canada, 2017). When salinity is <40‰, the salinity is measured using conductivity method (*ibid.*).

TEST PARAMETERS							
INITIAL (0 hrs)					FINAL (96 hrs)		
CONC. %	TEMP. °C	D.O. mg/L	pH	SALINITY ‰	TEMP. °C	D.O. mg/L	pH
100	14.5	9.2	6.3	15.7	16.0	9.0	6.9
50	15.5	8.4	7.1	22.7	16.0	8.3	7.3
25	15.0	8.4	7.4	26.3	16.0	8.0	7.4
12.5	15.5	8.3	7.6	28.0	16.0	8.1	7.6
6.25	15.0	8.2	7.7	28.9	16.0	8.0	7.7
Control	15.5	8.0	7.7	29.8	16.0	8.1	7.7
Sal. Adj. Control	15.0	9.1	7.7	16.0	16.0	8.8	7.6

TEST RESULTS								
TOTAL MORTALITY					PERCENT MORTALITY			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

TOTAL STRESS					PERCENT STRESS			
CONC. %	#				%			
	24 hrs	48 hrs	72 hrs	96 hrs	24 hrs	48 hrs	72 hrs	96 hrs
100	0/10	0/10	0/10	0/10	0	0	0	0
50	0/10	0/10	0/10	0/10	0	0	0	0
25	0/10	0/10	0/10	0/10	0	0	0	0
12.5	0/10	0/10	0/10	0/10	0	0	0	0
6.25	0/10	0/10	0/10	0/10	0	0	0	0
Control	0/10	0/10	0/10	0/10	0	0	0	0
Sal. Adj. Control	0/10	0/10	0/10	0/10	0	0	0	0

96 HR LC₅₀ RESULTS

LC₅₀ Value (%): Non-lethal
Result: Pass
95% Confidence Limits (%): N/A
Statistical Method: N/A

REFERENCE TOXICANT DATA

Performed under laboratory conditions as above, no deviations

Batch: 61 Test Date: Sept. 27 – Oct. 01 2019

Reference Substance: Phenol

LC₅₀ Value (mg/L): 14.3
 95% Confidence Limits (mg/L): 11.4 – 18.0
 Historical Mean (mg/L): 15.6
 Warning Limits \pm 2 SD (mg/L): 12.0 – 20.1

COMMENTS

Test meets all conditions for test validity. Adjusted control run.

TEST AUTHORIZATION AND VERIFICATION

Analyst(s): K. Marks and A. Huybers

Verified by: C. Harris

Date: Oct. 09 2019

Signed:



REFERENCES

Tidepool Scientific Software, 2001 - 2014. Comprehensive Environmental Toxicity Information System – CETIS v1.8.7.20
Environment Canada, 2017. Biological Test Method: Reference Method for Determining Acute Lethality Using Threespine Stickleback.
Environment and Climate Change Canada, Ottawa, Ontario, Report EPS 1/RM/10, 2nd Edition December 2017.

Accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA Inc.).

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Results apply to the sample as received. The results reported apply only to the sample tested. Results are based on nominal concentrations.

Appendix H-2

Calibration Data

EUREKA MANTA II-I-DO,STRD-100		Sample Date	1/6/2019	2/3/2019	3/4/2019	3/31/2019	4/23/2019	5/19/2019	5/20/2019	5/22/2019	5/27/2019	5/29/2019	5/30/2019	6/1/2019	6/2/2019	6/3/2019	6/4/2019
Parameter	Unit	TEST_TYPE															
Dissolved Oxygen, field measured	mg/L	I	99.4	101.3	101.4	97	97	95.7	112.9	102.9	95.4	112.8	102.5	107.7	97.7	98.7	104.4
Dissolved Oxygen, field measured	mg/L	F	100	100.5	100.5	100.2	100	100	100	99.3	100	99	99.9	99.2	100.2	99.9	100

EUREKA MANTA II-I-DO,STRD-100		Sample Date	6/5/2019	6/6/2019	6/7/2019	6/8/2019	6/9/2019	6/10/2019	6/11/2019	6/17/2019	6/24/2019	7/6/2019	7/30/2019	8/1/2019	8/3/2019	9/6/2019	9/10/2019
Parameter	Unit	TEST_TYPE															
Dissolved Oxygen, field measured	mg/L	I	92.3	99.9	100.4	100.3	98.4	101.8	99.9	99.8	95.09	98.8	105.09	102.19	102.8	97.69	100.19
Dissolved Oxygen, field measured	mg/L	F	100	99.9	99.9	99.9	100	99.9	100.8	100	100	99.8	104	99.9	99.8	100	100

EUREKA-F-PH,STRD-4		Sample Date	2/3/2019	3/4/2019	3/31/2019	4/23/2019	5/10/2019	5/19/2019	5/20/2019	5/22/2019	5/27/2019	5/29/2019	5/30/2019	6/1/2019	6/2/2019	6/3/2019	6/4/2019
Parameter	Unit	TEST_TYPE															
pH, field measured	pH units	I	4.05	3.97	3.95	4.19	3.91	4.01	3.88	4.4	3.98	4	3.94	4.09	3.87	4.21	4.11
pH, field measured	pH units	F	4.01	4	4.01	4.02	3.99	4	4	4	4	4	3.78	4.01	4.18	4.14	4.23

EUREKA-F-PH,STRD-4		Sample Date	6/5/2019	6/6/2019	6/7/2019	6/8/2019	6/9/2019	6/10/2019	6/11/2019	6/17/2019	6/24/2019	7/6/2019	7/30/2019	8/1/2019	8/3/2019	9/6/2019	9/10/2019
Parameter	Unit	TEST_TYPE															
pH, field measured	pH units	I	4.23	4.21	4.21	3.9	4.22	4.24	3.96	4.13	3.94	3.86	2.91	3.77	3.99	3.89	3.86
pH, field measured	pH units	F	4	4.02	4.05	4	4.16	3.98	3.99	4	4	3.97	3.56	4.02	4.02	4	4

EUREKA-F-PH,STRD-7		Sample Date	2/3/2019	3/4/2019	4/23/2019	5/10/2019	5/19/2019	5/20/2019	5/27/2019	5/29/2019	5/30/2019	6/1/2019	6/2/2019	6/3/2019	6/4/2019	6/5/2019	6/6/2019
Parameter	Unit	TEST_TYPE															
pH, field measured	pH units	I	6.96	6.98	7.23	6.99	6.92	6.94	7.26	6.96	7.13	6.88	6.77	7.68	7.64	6.98	7.13
pH, field measured	pH units	F	7	7	6.99	7.01	7	7	7	7	7	7	7.09	7.12	7.63	7.03	6.98

EUREKA-F-PH,STRD-7		Sample Date	6/7/2019	6/8/2019	6/9/2019	6/10/2019	6/11/2019	6/17/2019	6/24/2019	7/6/2019	7/30/2019	8/1/2019	8/3/2019	9/6/2019	9/10/2019
Parameter	Unit	TEST_TYPE													
pH, field measured	pH units	I	7.03	7.08	7	7.15	6.97	7.13	6.98	6.77	5.9	6.98	6.96	6.92	7.03
pH, field measured	pH units	F	7.1	7.04	6.99	6.99	6.99	7	7	6.97	7.01	7.03	7.03	7	7

EUREKA-I-PH,STRD-10		Sample Date	2/3/2019	3/31/2019	4/23/2019	5/10/2019	5/19/2019	5/22/2019	5/29/2019	6/2/2019	6/3/2019	6/4/2019	6/5/2019	6/6/2019	6/7/2019	6/8/2019	6/9/2019
Parameter	Unit	TEST_TYPE															
pH, field measured	pH units	I	9.95	9.59	10.17	10.09	10.02	9.43	9.68	9.91	10.2	10.49	10.54	10.02	9.82	10.26	9.82
pH, field measured	pH units	F	10	10	10.03	10.01	10	9.98	10.01	9.94	9.7	10	10	9.99	10	10	9.86

EUREKA-I-PH,STRD-10		Sample Date	6/10/2019	6/11/2019	6/17/2019	7/6/2019	7/30/2019	8/1/2019	8/3/2019	9/6/2019	9/10/2019
Parameter	Unit	TEST_TYPE									
pH, field measured	pH units	I	10.06	10.04	9.96	9.97	9.31	9.77	9.86	9.68	9.85
pH, field measured	pH units	F	9.99	9.99	10	10	10	10	9.99	10	10

EUREKA-I-COND,STRD-1413		Sample Date	5/10/2019	5/20/2019	5/22/2019	5/27/2019	5/29/2019	5/30/2019	6/1/2019	6/2/2019	6/3/2019	6/4/2019	6/5/2019	6/6/2019	6/7/2019	6/8/2019	6/9/2019
Parameter	Unit	TEST_TYPE															
Conductivity, field measured	uS/cm	I	1392	1419	1418	1419	1426	1931	1007	1413	1586	1971	1325	1401	1356	1405	996.2
Conductivity, field measured	uS/cm	F	1413	1413	1414	1413	1415	1413	1413	1413	1410	1412	1413	1413	1413	1413	1413

EUREKA-I-COND,STRD-1413		Sample Date	6/10/2019	6/11/2019	6/17/2019	6/24/2019	7/6/2019	7/30/2019	8/1/2019	8/3/2019	9/6/2019
Parameter	Unit	TEST_TYPE									
Conductivity, field measured	uS/cm	I	1407	1001	1414	1990	1465	3319	815.79	1423	1395
Conductivity, field measured	uS/cm	F	1412	1414	1413	1413	1413	1413	1412	1413	1413

EUREKA-I-COND,STRD-447		Sample Date	1/6/2019
Parameter	Unit	TEST_TYPE	
Conductivity, field measured	uS/cm	I	350
Conductivity, field measured	uS/cm	F	447

MANTA 30+ DO Standard 100		Sample Date	5/20/2019	5/22/2019	5/27/2019	7/30/2019	9/14/2019
Parameter	Unit	TEST_TYPE					
Dissolved Oxygen, field measured	%	I	98.5	97.7	98.19	102.9	105.09
Dissolved Oxygen, field measured	%	F	100	100	100	99.9	100

MANTA 30+ Conductivity Standard 1413		Sample Date	5/20/2019	5/22/2019	5/27/2019	7/30/2019	9/14/2019
Parameter	Unit	TEST_TYPE					
Conductivity, field measured	uS/cm	I	1463	1408	1384	1432	1424
Conductivity, field measured	uS/cm	F	1413	1413	1413	1413	1413

MANTA 30+ pH Standard 7		Sample Date	5/20/2019	5/22/2019	5/27/2019	7/30/2019	9/14/2019
Parameter	Unit	TEST_TYPE					
pH, field measured	pH units	I	7.09	6.91	7.03	7.09	6.96
pH, field measured	pH units	F	7	7	7	6.99	7

MANTA 30+ pH Standard 4		Sample Date	5/20/2019	5/22/2019	5/27/2019	7/30/2019	9/14/2019
Parameter	Unit	TEST_TYPE					
pH, field measured	pH units	I	4.01	3.94	4	4.05	4.01
pH, field measured	pH units	F	4	4	3.98	4.05	4

MANTA 30+ pH Standard 10		Sample Date	7/30/2019	9/14/2019
Parameter	Unit	TEST_TYPE		
pH, field measured	pH units	I	9.96	10.06
pH, field measured	pH units	F	10	10

MANTA 30+ Conductivity 1413		Sample Date	9/14/2019
Parameter	Unit	TEST_TYPE	
Conductivity, field measured	uS/cm	I	1424
Conductivity, field measured	uS/cm	F	1413

MANTA 30+ pH Standard 7		Sample Date	9/14/2019
Parameter	Unit	TEST_TYPE	
pH, field measured	pH units	I	6.96
pH, field measured	pH units	F	7

MANTA 30+ pH Standard 4		Sample Date	9/14/2019
Parameter	Unit	TEST_TYPE	
pH, field measured	pH units	I	4.01
pH, field measured	pH units	F	4

MANTA 30+ pH Standard 10		Sample Date	9/14/2019
Parameter	Unit	TEST_TYPE	
pH, field measured	pH units	I	10.06
pH, field measured	pH units	F	10

MANTA 30+ DO Standard 100		Sample Date	9/14/2019
Parameter	Unit	TEST_TYPE	
Dissolved Oxygen, field measured	%	I	105.09
Dissolved Oxygen, field measured	%	F	100

TDS METER Turbidity Standard 100		Sample Date	6/20/2019	6/21/2019	7/17/2019
Parameter	Unit	TEST_TYPE			
Turbidity, field measured	NTU	I	99.1	87.1	101
Turbidity, field measured	NTU	F	102	96.3	100

TDS METER Turbidity Standard 20		Sample Date	6/20/2019	6/21/2019	7/17/2019
Parameter	Unit	TEST_TYPE			
Turbidity, field measured	NTU	I	14.4	20.6	20.2
Turbidity, field measured	NTU	F	23.1	20.4	20

TDS METER Turbidity Standard 800		Sample Date	6/20/2019	6/21/2019	7/17/2019
Parameter	Unit	TEST_TYPE			
Turbidity, field measured	NTU	I	787	740	794
Turbidity, field measured	NTU	F	812	821	800

YSI 1 Conductivity Standard 1413	Sample Date	Sample Date	6/30/2019	7/1/2019	7/2/2019	7/5/2019	7/7/2019	7/9/2019	7/23/2019	7/27/2019	7/28/2019	7/29/2019	8/4/2019	8/4/2019	8/20/2019	8/21/2019	8/22/2019
Parameter	Unit	TEST_TYPE															
Conductivity, field measured	uS/cm	I	1415	1471	1413	1303	1471	1415	1395	1475	1407	1413	1414	1412	1421	1407	1399
Conductivity, field measured	uS/cm	F	1414	1413	1413	1415	1414	1413	1414	1413	1413	1413	1414	1413	1413	1413	1413

YSI 1 Conductivity Standard 1413	Sample Date	Sample Date	9/1/2019	9/17/2019	9/18/2019	9/23/2019	9/25/2019	9/26/2019	9/27/2019	9/30/2019	9/30/2019	10/3/2019	10/6/2019	10/14/2019	11/4/2019	12/2/2019
Parameter	Unit	TEST_TYPE														
Conductivity, field measured	uS/cm	I	1440	1426	1353	1412	1411	1410	1434	1396	1371	1374	1434	1419	1491	1398
Conductivity, field measured	uS/cm	F	1413	1413	1413	1415	1415	1413	1414	1413	1411	1415	1414	1414	1413	1413

YSI 1 Dissolved Oxygen Standard 100		Sample Date	6/30/2019	7/1/2019	7/2/2019	7/5/2019	7/7/2019	7/9/2019	7/23/2019	7/27/2019	7/28/2019	7/29/2019	8/4/2019	8/4/2019	8/20/2019	8/21/2019	8/22/2019
Parameter	Unit	TEST_TYPE															
Dissolved Oxygen, field measured	%	I	123	101	96.1	97.5	99.9	100.4	96.6	100.9	101.5	98.2	94.7	99.8	90	97.7	99.6
Dissolved Oxygen, field measured	%	F	96.9	97.4	98.3	99.1	98.5	98.4	98.8	100.3	98	98.8	98.3	98.3	100	100.2	99.9

YSI 1 Dissolved Oxygen Standard 100		Sample Date	9/1/2019	9/17/2019	9/18/2019	9/23/2019	9/25/2019	9/26/2019	9/27/2019	9/30/2019	9/30/2019	10/3/2019	10/6/2019	10/14/2019	11/4/2019	12/2/2019
Parameter	Unit	TEST_TYPE														
Dissolved Oxygen, field measured	%	I	99	99.5	99.6	96.1	97	94.3	101	101	97.3	96.1	96	105.5	100.4	95.3
Dissolved Oxygen, field measured	%	F	98.3	98.7	99.7	97	99.9	99.7	96.6	97.8	99.8	99.5	97.6	99.6	99.2	98.6

YSI 1 pH Standard 4		Sample Date	6/30/2019	7/1/2019	7/2/2019	7/5/2019	7/7/2019	7/9/2019	7/23/2019	7/27/2019	7/28/2019	7/29/2019	8/4/2019	8/4/2019	8/20/2019	8/21/2019	8/22/2019
Parameter	Unit	TEST_TYPE															
pH, field measured	pH units	I	3.93	3.99	4	3.99	3.99	4.02	3.97	3.98	4.02	3.98	3.85	4.04	3.91	4.05	4.03
pH, field measured	pH units	F	3.9	4	4	4.1	4	4	4	4.01	4	3.99	4	3.98	4	4	3.95

YSI 1 pH Standard 4		Sample Date	9/1/2019	9/17/2019	9/18/2019	9/23/2019	9/25/2019	9/26/2019	9/27/2019	9/30/2019	9/30/2019	10/3/2019	10/6/2019	10/14/2019	11/4/2019	12/2/2019
Parameter	Unit	TEST_TYPE														
pH, field measured	pH units	I	4	3.99	3.93	3.98	3.97	4.01	4.04	4.05	4.02	4.05	3.91	4.02	4.04	3.96
pH, field measured	pH units	F	4	4	4	4	4.01	3.99	4	3.99	4.01	4	4.03	4	4	4.01

YSI 1 pH Standard 7		Sample Date	6/30/2019	7/1/2019	7/2/2019	7/5/2019	7/7/2019	7/9/2019	7/23/2019	7/27/2019	7/28/2019	7/29/2019	8/4/2019	8/4/2019	8/20/2019	8/21/2019	8/22/2019
Parameter	Unit	TEST_TYPE															
pH, field measured	pH units	I	6.56	7.09	7.1	7.13	7.04	7.16	7.05	7.04	7.05	7.05	7.18	7.02	7.03	7.05	7.02
pH, field measured	pH units	F	7.08	7.1	7.01	7.2	7.1	7.1	7	7.02	7.06	7.02	7	7.04	7	7.02	7.05

YSI 1 pH Standard 7		Sample Date	9/1/2019	9/17/2019	9/18/2019	9/23/2019	9/25/2019	9/26/2019	9/27/2019	9/30/2019	9/30/2019	10/3/2019	10/6/2019	10/14/2019	11/4/2019	12/2/2019
Parameter	Unit	TEST_TYPE														
pH, field measured	pH units	I	7.05	7.05	7.08	7.09	7.07	7.02	7.15	7.12	7.08	7.09	7.1	7.02	7.12	7.1
pH, field measured	pH units	F	7.02	7	7.01	7.01	7	6.98	7.02	7.03	7	7.02	7.05	7	7	7.02

YSI 1 pH Standard 10		Sample Date	6/30/2019	7/1/2019	7/2/2019	7/5/2019	7/7/2019	7/9/2019	7/23/2019	7/27/2019	7/28/2019	7/29/2019	8/4/2019	8/4/2019	8/20/2019	8/21/2019	8/22/2019
Parameter	Unit	TEST_TYPE															
pH, field measured	pH units	I	9.96	10	10	10.24	9.86	10.04	10.08	10.05	10.03	10.04	10.45	10.04	10.08	9.98	10.02
pH, field measured	pH units	F	10	10	10	10.2	10	9.99	10	10.03	10.05	10	10.04	10.02	10	10.03	10.03

YSI 1 pH Standard 10		Sample Date	9/1/2019	9/17/2019	9/18/2019	9/23/2019	9/25/2019	9/26/2019	9/27/2019	9/30/2019	9/30/2019	10/3/2019	10/6/2019	10/14/2019	11/4/2019	12/2/2019
Parameter	Unit	TEST_TYPE														
pH, field measured	pH units	I	10.01	10.02	10.03	9.92	9.95	10.01	10.15	10.12	10.09	10.05	10.22	9.99	10.02	9.88
pH, field measured	pH units	F	10.02	10	9.97	10.05	10.02	10.01	9.99	9.99	9.97	10.02	9.99	10	9.98	9.96

YSI 2 Conductivity Standard 1413		Sample Date	6/30/2019	7/1/2019	7/5/2019	7/7/2019	7/9/2019	7/22/2019	7/24/2019	7/30/2019	7/31/2019	8/2/2019	8/4/2019	8/24/2019	8/26/2019	8/27/2019
Parameter	Unit	TEST_TYPE														
Conductivity, field measured	uS/cm	I	1506	1413	1406	1365	1411	12849	1455	1432	1397	1415	1421	1384	1409	1409
Conductivity, field measured	uS/cm	F	1413	1413	1413	1413	1413	12882	1413	1413	1413	1413	1413	1413	1413	1413

YSI 2 Conductivity Standard 1413		Sample Date	8/28/2019	8/29/2019	9/1/2019	9/3/2019	9/4/2019	9/6/2019	9/7/2019	9/9/2019	9/10/2019	9/12/2019	9/13/2019	9/17/2019	9/30/2019	10/21/2019
Parameter	Unit	TEST_TYPE														
Conductivity, field measured	uS/cm	I	1457	1403	1416	1402	1414	1292	1403	1395	1402	1482	1405	1532	1308	1369
Conductivity, field measured	uS/cm	F	1413	1413	1413	1413	1413	1407	1403	1413	1414	1413	1405	1413	1412	1414

YSI 2 Dissolved Oxygen Standard 100		Sample Date	6/30/2019	7/1/2019	7/5/2019	7/7/2019	7/9/2019	7/22/2019	7/24/2019	7/31/2019	8/2/2019	8/4/2019	8/24/2019	8/26/2019	8/27/2019	8/28/2019
Parameter	Unit	TEST_TYPE														
Dissolved Oxygen, field measured	%	I	90.1	102.1	103.3	96.7	98.2	100.3	105	103.2	99.5	99.5	94.4	98	98.1	102.3
Dissolved Oxygen, field measured	%	F	98.5	97.8	99.6	96.9	98.9	99.9	99.1	98.7	100	100	99.6	99.2	99.6	98.3

YSI 2 Dissolved Oxygen Standard 100		Sample Date	8/29/2019	9/1/2019	9/3/2019	9/4/2019	9/6/2019	9/7/2019	9/9/2019	9/10/2019	9/12/2019	9/13/2019	9/17/2019	9/30/2019	10/21/2019
Parameter	Unit	TEST_TYPE													
Dissolved Oxygen, field measured	%	I	97	97.1	98.3	99.8	100.3	101.7	94.8	84.3	120.3	100.3	95.7	94.3	88.3
Dissolved Oxygen, field measured	%	F	97.2	98.2	98.7	98.8	100	100	100.3	99.5	100	100.1	99.1	99.8	99.6

YSI 2 pH Standard 7		Sample Date	6/30/2019	7/1/2019	7/5/2019	7/7/2019	7/9/2019	7/22/2019	7/24/2019	7/28/2019	7/30/2019	7/31/2019	8/2/2019	8/4/2019	8/24/2019	8/26/2019	8/27/2019
Parameter	Unit	TEST_TYPE															
pH, field measured	pH units	I	7.09	7.08	7.11	7.1	7.08	6.99	7	7.03	7.02	7.05	7.01	7.15	7.04	7.05	7.07
pH, field measured	pH units	F	7.1	7.11	7.1	7.08	7.06	7	7.02	7.05	7.07	7	7.05	7.02	7.03	7.04	7.02

YSI 2 pH Standard 7		Sample Date	8/28/2019	8/29/2019	9/1/2019	9/3/2019	9/4/2019	9/6/2019	9/7/2019	9/9/2019	9/10/2019	9/12/2019	9/13/2019	9/17/2019	9/30/2019	10/21/2019
Parameter	Unit	TEST_TYPE														
pH, field measured	pH units	I	6.99	7.05	7.07	7.03	7.03	7.03	7.06	7.09	7.07	7.08	7.03	7.17	6.78	7.01
pH, field measured	pH units	F	7.02	7.02	7.05	7.03	7.03	7.02	7.02	7.03	7.03	7	7.02	7.1	7.04	7.01

YSI 2 pH Standard 4		Sample Date	6/30/2019	7/1/2019	7/5/2019	7/7/2019	7/9/2019	7/24/2019	7/28/2019	7/30/2019	7/31/2019	8/2/2019	8/4/2019	8/24/2019	8/26/2019	8/27/2019
Parameter	Unit	TEST_TYPE														
pH, field measured	pH units	I	4.02	3.99	3.98	3.96	3.96	3.99	4	4.04	3.99	3.95	4.07	3.99	4.02	4.01
pH, field measured	pH units	F	4.01	3.99	3.96	3.97	4	4	4	4.02	3.95	4	3.95	4.01	4	4

YSI 2 pH Standard 4		Sample Date	8/28/2019	8/29/2019	9/1/2019	9/3/2019	9/4/2019	9/6/2019	9/7/2019	9/9/2019	9/10/2019	9/12/2019	9/13/2019	9/17/2019	9/30/2019	10/21/2019
Parameter	Unit	TEST_TYPE														
pH, field measured	pH units	I	3.94	4.01	4.02	3.95	3.96	3.97	3.88	3.99	3.97	3.94	3.96	4.08	4.38	4.01
pH, field measured	pH units	F	4	4.01	4	4.01	4	4	4	4.01	4.01	4	4	4.05	4.01	4

YSI 2 pH Standard 10		Sample Date	6/30/2019	7/1/2019	7/5/2019	7/7/2019	7/9/2019	7/22/2019	7/24/2019	7/28/2019	7/30/2019	7/31/2019	8/2/2019	8/4/2019	8/24/2019	8/26/2019	8/27/2019
Parameter	Unit	TEST_TYPE															
pH, field measured	pH units	I	9.97	9.99	9.99	10.4	10.01	10.02	9.97	10	10.02	10.01	9.95	10.1	10.03	10	10.05
pH, field measured	pH units	F	10	10	10	10	10	10	10.02	10.03	10	9.98	10.02	9.99	9.99	10.03	10

YSI 2 pH Standard 10		Sample Date	8/28/2019	8/29/2019	9/1/2019	9/3/2019	9/4/2019	9/6/2019	9/7/2019	9/9/2019	9/10/2019	9/12/2019	9/13/2019	9/17/2019	9/30/2019	10/21/2019
Parameter	Unit	TEST_TYPE														
pH, field measured	pH units	I	9.95	10	9.99	9.98	9.98	10.01	10	10	9.97	10.15	9.96	9.98	10.11	9.96
pH, field measured	pH units	F	9.99	9.99	10.02	9.99	9.99	10.04	10.04	9.98	10.01	10	10.04	9.97	10	10.04

OAKTON PCS 2 Conductivity Standard 1413		Sample Date	4/7/2019
Parameter	Unit	TEST_TYPE	
Conductivity, field measured	uS/cm	I	1431
Conductivity, field measured	uS/cm	F	1411

OAKTON PCS 2 pH Standard 7		Sample Date	4/7/2019
Parameter	Unit	TEST_TYPE	
pH, field measured	pH units	I	6.87
pH, field measured	pH units	F	7

OAKTON PCS 2 pH Standard 4		Sample Date	4/7/2019
Parameter	Unit	TEST_TYPE	
pH, field measured	pH units	I	4.25
pH, field measured	pH units	F	4

OAKTON PCS 2 pH Standard 10		Sample Date	4/7/2019
Parameter	Unit	TEST_TYPE	
pH, field measured	pH units	I	10.05
pH, field measured	pH units	F	10.07

OAKTON PCS 3 Conductivity Standard 1413		Sample Date	4/28/2019
Parameter	Unit	TEST_TYPE	
Conductivity, field measured	uS/cm	I	1218
Conductivity, field measured	uS/cm	F	1413

OAKTON PCS 3 pH Standard 7		Sample Date	4/28/2019
Parameter	Unit	TEST_TYPE	
pH, field measured	pH units	I	6.78
pH, field measured	pH units	F	7

OAKTON PCS 3 pH Standard 4		Sample Date	4/28/2019
Parameter	Unit	TEST_TYPE	
pH, field measured	pH units	I	4.45
pH, field measured	pH units	F	3.99

OAKTON PCS 3 pH Standard 10		Sample Date	4/28/2019
Parameter	Unit	TEST_TYPE	
pH, field measured	pH units	I	9.78
pH, field measured	pH units	F	10.06

OAKTON PCS 4 Conductivity Standard 1413		Sample Date	3/2/2019	3/26/2019	4/1/2019	4/28/2019	5/19/2019	6/2/2019	6/3/2019	6/4/2019	6/5/2019	6/6/2019	6/7/2019	6/8/2019	6/9/2019	6/10/2019	6/11/2019	6/12/2019	6/16/2019
Parameter	Unit	TEST_TYPE																	
Conductivity, field measured	uS/cm	I	1450	1403	1330	1533	1439	1277	1459	1527	1290	1411	1349	1405	1415	1418	1501	1459	1471
Conductivity, field measured	uS/cm	F	1421	1413	1425	1413	1414	1413	1413	1413	1413	1413	1414	1415	1413	1414	1414	1413	1445

OAKTON PCS 4 Conductivity Standard 1413		Sample Date	6/19/2019	6/21/2019	6/23/2019	6/25/2019	6/26/2019	6/28/2019	6/30/2019	7/1/2019	7/1/2019	7/5/2019	7/9/2019	7/20/2019	7/23/2019	7/28/2019	11/10/2019	12/8/2019
Parameter	Unit	TEST_TYPE																
Conductivity, field measured	uS/cm	I	1454	1403	1417	1414	1417	1415	1311	1408	1636	1271	1395	1457	1433	1318	1705	1740
Conductivity, field measured	uS/cm	F	1413	1413	1413	1412	1410	1413	1413	1412	1487	1414	1413	1412	1417	1408	1413	1412

OAKTON PCS 4-I-COND,STRD-447		Sample Date	3/10/2019	3/17/2019	3/20/2019
Parameter	Unit	TEST_TYPE			
Conductivity, field measured	uS/cm	I	552	450	306
Conductivity, field measured	uS/cm	F	446	443	447

OAKTON PCS 4 pH Standard 7		Sample Date	2/3/2019	3/2/2019	3/10/2019	3/17/2019	3/20/2019	3/26/2019	4/1/2019	4/28/2019	5/19/2019	6/2/2019	6/3/2019	6/4/2019	6/5/2019	6/6/2019	6/7/2019	6/8/2019	6/9/2019	6/10/2019	6/11/2019
Parameter	Unit	TEST_TYPE																			
pH, field measured	pH units	I	6.95	6.87	7.02	6.97	6.97	7.07	6.49	6.91	7.53	7.05	7	7.02	6.99	7	7.01	7	7.03	7.01	7.01
pH, field measured	pH units	F	7.02	7.03	7.03	7	7.02	7.02	7.02	7.02	7.02	7.01	7.02	7.01	7.02	7.02	7.02	7.02	7.02	7.01	7.02

OAKTON PCS 4 pH Standard 7		Sample Date	6/12/2019	6/16/2019	6/19/2019	6/21/2019	6/23/2019	6/25/2019	6/26/2019	6/28/2019	6/30/2019	7/1/2019	7/1/2019	7/5/2019	7/9/2019	7/20/2019	7/23/2019	7/28/2019	11/10/2019	12/8/2019
Parameter	Unit	TEST_TYPE																		
pH, field measured	pH units	I	7.04	7.06	7.02	7	7.01	7	7	7	7.29	7.3	7.25	7.15	7.31	7.02	7.12	7.11	7.02	7.02
pH, field measured	pH units	F	7	7.04	7.02	7.02	7.02	7.02	7.02	7.02	7.01	7.01	7	7.01	7.02	7.02	7.11	7.09	7.01	7.02

OAKTON PCS 4 pH Standard 4		Sample Date	2/3/2019	3/2/2019	3/10/2019	3/17/2019	3/20/2019	3/26/2019	4/1/2019	4/28/2019	5/19/2019	6/2/2019	6/3/2019	6/4/2019	6/5/2019	6/6/2019	6/7/2019	6/8/2019	6/9/2019	6/10/2019
Parameter	Unit	TEST_TYPE																		
pH, field measured	pH units	I	4.37	3.95	3.96	3.95	4.08	4.05	4	4.53	4	3.98	4.06	4.03	4.02	4.03	4.03	4.05	4	4.19
pH, field measured	pH units	F	4	4.01	3.99	3.99	3.99	4	3.95	3.99	4.58	4.05	4	4	4	4	4	4	4	4

OAKTON PCS 4 pH Standard 4		Sample Date	6/11/2019	6/12/2019	6/16/2019	6/19/2019	6/21/2019	6/23/2019	6/25/2019	6/26/2019	6/28/2019	6/30/2019	7/1/2019	7/5/2019	7/9/2019	7/20/2019	7/23/2019	7/28/2019	11/10/2019	12/8/2019
Parameter	Unit	TEST_TYPE																		
pH, field measured	pH units	I	4.01	3.99	4.04	3.99	4.06	3.99	4.02	4	4.01	3.74	3.75	4.28	3.74	4.03	4.08	4.17	4.99	4.16
pH, field measured	pH units	F	4	4.01	4.02	4	4	4	4	4	4	4	4	4	4	4.02	4.04	4.05	3.99	4

OAKTON PCS 4 pH Standard 10		Sample Date	2/3/2019	3/2/2019	3/10/2019	3/17/2019	3/20/2019	3/26/2019	4/1/2019	4/28/2019	5/19/2019	6/2/2019	6/3/2019	6/4/2019	6/5/2019	6/6/2019	6/7/2019	6/8/2019	6/9/2019	6/10/2019	6/11/2019
Parameter	Unit	TEST_TYPE																			
pH, field measured	pH units	I	10.06	10.19	10.04	10	9.72	9.72	9.96	9.77	10.43	9.93	9.78	9.75	9.94	9.89	9.87	9.87	9.89	9.84	9.83
pH, field measured	pH units	F	10.04	10.07	10.02	10.02	10.05	10.07	10.05	10.06	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.06

OAKTON PCS 4 pH Standard 10		Sample Date	6/12/2019	6/16/2019	6/19/2019	6/21/2019	6/23/2019	6/25/2019	6/26/2019	6/28/2019	6/30/2019	7/1/2019	7/1/2019	7/5/2019	7/9/2019	7/20/2019	7/23/2019	7/28/2019	11/10/2019	12/8/2019
Parameter	Unit	TEST_TYPE																		
pH, field measured	pH units	I	10.18	10.1	9.89	9.91	9.9	9.89	9.88	9.87	10.04	10.05	10.41	10.13	10.03	10.03	10.08	10.03	9.68	10.17
pH, field measured	pH units	F	10.02	10.07	10.06	10.05	10.05	10.05	10.05	10.04	10.05	10.03	10.05	10.05	10.05	10.05	10.06	10.06	10.06	10.07

Appendix H-3

Water Monitoring Stations Results

MEL-7	MEL-7 EFFLUENT QUALITY LIMITS	Sample Date	2016 Average	2017 Average	2018 Average	Annual Average	1/7/2019	1/16/2019	1/21/2019	1/28/2019	2/4/2019
Parameter		FIELD_SDG					8907259	8917141	8919476	8928272	8932370
		Unit									
Field Measured											
pH		pH units	-	8.34	-	7.975	-	-	-	-	-
Conductivity		uS/cm	-	79.6	-	1289.5	-	-	-	-	-
Temperature		°C	-	14.6	-	8.55	-	-	-	-	-
Dissolved oxygen		mg/L	-	-	-	10.25	-	-	-	-	-
Dissolved oxygen		%	-	-	-	87.1	-	-	-	-	-
Conventional Parameters											
pH	6 - 9.5	pH units	7.09	7.23	7.39	7.03	7.29	7.66	7.45	7.49	7.76
Specific conductivity		umhos/cm	-	84.00	-	531.54	-	-	-	-	-
Total alkalinity, as CaCO3		mg/L	-	85.29	101.71	69.89	63	250	260	220	220
Total suspended solids	100	mg/L	6.08	6.22	4.64	5.83	< 10	12	21	12	12
Volatile TSS		mg/L	-	-	-	5.51	< 10	12	20	12	10
Temperature		C	-	-	-	8.27	6	1	6	6.5	5
Nutrients											
Nitrate		mg/L	19.67	22.10	23.22	15.49	< 0.10	< 0.50	0.61	3.29	0.41
Nitrite		mg/L	1.59	2.37	0.48	0.21	0.019	0.838	0.058	0.174	0.049
Nitrate + nitrite		mg/L	21.77	24.44	23.71	15.70	< 0.10	1.19	0.67	3.46	0.46
Total ammonia		mg/L	12.34	25.57	21.66	14.55	0.83	44	48	40	41
Total Kjeldahl nitrogen		mg/L	24.98	27.69	22.57	16.18	2.5	45	51	41	44
Total phosphorus		mg/L	12.38	12.15	9.64	7.43	2.8	8.2	-	8.6	9.3
Biochemical Oxygen Demand, 5 Day	80	mg/L	15.85	24.72	6.93	7.26	7	14	28	19	19
Chemical oxygen demand		mg/L	-	63.38	67.91	63.32	68	120	150	110	110
General Organics											
Total oil and grease	5	mg/L	16.66	1.05	1.07	1.05	< 0.50	2.3	2.3	1.1	1.4
Total Metals											
Aluminum		mg/L	-	-	-	0.031	-	-	-	-	-
Antimony		mg/L	-	-	-	0.001	-	-	-	-	-
Arsenic		mg/L	-	-	-	0.0021	-	-	-	-	-
Barium		mg/L	-	-	-	0.013	-	-	-	-	-
Cadmium		mg/L	-	-	-	0.0002	-	-	-	-	-
Chromium		mg/L	-	-	-	0.005	-	-	-	-	-
Cobalt		mg/L	-	-	-	0.001	-	-	-	-	-
Copper		mg/L	-	-	-	0.013	-	-	-	-	-
Lead		mg/L	-	-	-	0.001	-	-	-	-	-
Manganese		mg/L	-	-	-	0.087	-	-	-	-	-
Molybdenum		mg/L	-	-	-	0.001	-	-	-	-	-
Nickel		mg/L	-	-	-	0.0029	-	-	-	-	-
Selenium		mg/L	-	-	-	0.003	-	-	-	-	-
Silver		mg/L	-	-	-	0.001	-	-	-	-	-
Sodium		mg/L	-	-	-	23	-	-	-	-	-
Zinc		mg/L	-	-	-	0.18	-	-	-	-	-
Toxicity											
Aerobic heterotrophic bacteria		CFU/mL	100173	19475	5536	93423	-	-	-	-	-
Escherichia coli		CFU/100mL	-	-	2451	3347	72	14000	400	20000	35000
Atypical colonies		CFU/100mL	-	-	27253	1437	-	-	-	-	-
Fecal Coliform	1000	CFU/100mL	5	244	424	5426	90	11000	400	20000	38000
Total Coliform		CFU/100mL	19389	10143	6505	3762	4900	-	< 10000	-	-

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-7	MEL-7 EFFLUENT QUALITY LIMITS	Sample Date	2/11/2019	2/18/2019	2/25/2019	3/4/2019	3/11/2019	3/18/2019	3/25/2019	4/1/2019
Parameter		FIELD_SDG	B941600	B944676	B952799	B959589	B967729	B972059		B987707
		Unit								
pH		pH units	-	-	-	-	-	-	-	-
Conductivity		uS/cm	-	-	-	-	-	-	-	-
Temperature		°C	-	-	-	-	-	-	-	-
Dissolved oxygen		mg/L	-	-	-	-	-	-	-	-
Dissolved oxygen		%	-	-	-	-	-	-	-	-
pH	6 - 9.5	pH units	7.56	7.69	7.61	7.28	7.42	7.55	-	7.73
Specific conductivity		umhos/cm	-	-	-	560	680	890	-	690
Total alkalinity, as CaCO3		mg/L	210	270	240	80	170	260	-	160
Total suspended solids	100	mg/L	6	11	8	6	9	7	-	4
Volatile TSS		mg/L	6	11	8	6	9	7	-	4
Temperature		C	8	5	5	4.5	9	6	8	10
Nitrate		mg/L	2.06	1.19	2.25	5.28	3.63	0.74	-	3.42
Nitrite		mg/L	0.079	0.074	0.1	0.124	0.142	0.076	-	0.655
Nitrate + nitrite		mg/L	2.14	1.27	2.35	5.4	3.77	0.81	-	4.07
Total ammonia		mg/L	37	41	38	4.3	28	47	-	27
Total Kjeldahl nitrogen		mg/L	40	44	40	5.8	32	52	-	29
Total phosphorus		mg/L	10	11	9.9	7.6	6.3	9.6	-	8.6
Biochemical Oxygen Demand, 5 Day	80	mg/L	22	15	13	6	15	13	-	32
Chemical oxygen demand		mg/L	92	110	96	73	97	110	-	64
Total oil and grease	5	mg/L	1.2	0.6	< 0.50	0.9	1.9	2.2	-	< 0.50
Aluminum		mg/L	-	-	-	-	-	-	-	-
Antimony		mg/L	-	-	-	-	-	-	-	-
Arsenic		mg/L	-	-	-	-	-	-	-	-
Barium		mg/L	-	-	-	-	-	-	-	-
Cadmium		mg/L	-	-	-	-	-	-	-	-
Chromium		mg/L	-	-	-	-	-	-	-	-
Cobalt		mg/L	-	-	-	-	-	-	-	-
Copper		mg/L	-	-	-	-	-	-	-	-
Lead		mg/L	-	-	-	-	-	-	-	-
Manganese		mg/L	-	-	-	-	-	-	-	-
Molybdenum		mg/L	-	-	-	-	-	-	-	-
Nickel		mg/L	-	-	-	-	-	-	-	-
Selenium		mg/L	-	-	-	-	-	-	-	-
Silver		mg/L	-	-	-	-	-	-	-	-
Sodium		mg/L	-	-	-	-	-	-	-	-
Zinc		mg/L	-	-	-	-	-	-	-	-
Aerobic heterotrophic bacteria		CFU/mL	-	-	-	-	-	-	-	-
Escherichia coli		CFU/100mL	3900	470	-	180	30	>60000	18000	1800
Atypical colonies		CFU/100mL	-	-	-	-	-	-	-	-
Fecal Coliform	1000	CFU/100mL	3900	470	100000	190	40	>60000	19000	1800
Total Coliform		CFU/100mL	90000	< 1000	-	600	300	-	30000	19000

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-7	MEL-7 EFFLUENT QUALITY LIMITS	Sample Date	4/15/2019	4/22/2019	4/29/2019	5/6/2019	5/13/2019	5/14/2019	5/16/2019	5/21/2019
Parameter		FIELD_SDG	B9A2581	B9A9530	B9B5811	B9C4999	B9D2426	B9D4589	B9D4575	B9D9160
		Unit								
pH		pH units	-	-	-	-	-	-	-	-
Conductivity		uS/cm	-	-	-	-	-	-	-	-
Temperature		°C	-	-	-	-	-	-	-	-
Dissolved oxygen		mg/L	-	-	-	-	-	-	-	-
Dissolved oxygen		%	-	-	-	-	-	-	-	-
pH	6 - 9.5	pH units	7.68	7.08	7.23	7.25	7.19	6.99	7.14	7.24
Specific conductivity		umhos/cm	550	390	410	470	450	440	420	420
Total alkalinity, as CaCO3		mg/L	90	22	35	38	32	26	35	34
Total suspended solids	100	mg/L	3	2	2	2	< 1	1	2	< 1
Volatile TSS		mg/L	3	1	2	2	< 1	1	2	< 1
Temperature		C	11.5	7.5	5	7	11.5	-	8.5	8
Nitrate		mg/L	6.15	11.2	13.5	15.1	14.5	15.3	12.4	10.9
Nitrite		mg/L	0.369	0.142	0.197	0.229	0.141	0.193	0.245	0.25
Nitrate + nitrite		mg/L	6.51	11.4	13.7	15.3	14.7	15.5	12.6	11.1
Total ammonia		mg/L	12	0.52	7.2	8.8	5	4	3.6	2.9
Total Kjeldahl nitrogen		mg/L	14	1.6	7.7	9	4.8	4.7	4.2	4.3
Total phosphorus		mg/L	8	4	4.5	6.8	6.1	5.7	7	6
Biochemical Oxygen Demand, 5 Day	80	mg/L	3	3	< 2	< 2	2	3	< 2	< 2
Chemical oxygen demand		mg/L	60	36	40	41	37	39	40	33
Total oil and grease	5	mg/L	0.9	< 0.50	< 0.50	4.8	1.4	< 0.50	< 0.50	1.6
Aluminum		mg/L	-	-	-	-	-	-	-	-
Antimony		mg/L	-	-	-	-	-	-	-	-
Arsenic		mg/L	-	-	-	-	-	-	-	-
Barium		mg/L	-	-	-	-	-	-	-	-
Cadmium		mg/L	-	-	-	-	-	-	-	-
Chromium		mg/L	-	-	-	-	-	-	-	-
Cobalt		mg/L	-	-	-	-	-	-	-	-
Copper		mg/L	-	-	-	-	-	-	-	-
Lead		mg/L	-	-	-	-	-	-	-	-
Manganese		mg/L	-	-	-	-	-	-	-	-
Molybdenum		mg/L	-	-	-	-	-	-	-	-
Nickel		mg/L	-	-	-	-	-	-	-	-
Selenium		mg/L	-	-	-	-	-	-	-	-
Silver		mg/L	-	-	-	-	-	-	-	-
Sodium		mg/L	-	-	-	-	-	-	-	-
Zinc		mg/L	-	-	-	-	-	-	-	-
Aerobic heterotrophic bacteria		CFU/mL	3200	500	6200	2500	700	-	5600	57000
Escherichia coli		CFU/100mL	< 2	< 10	14	< 2	< 2	-	2	< 2
Atypical colonies		CFU/100mL	1130	< 100	6700	4900	3900	-	9400	1020
Fecal Coliform	1000	CFU/100mL	< 2	< 10	56	< 2	< 2	-	4	< 2
Total Coliform		CFU/100mL	30	100	1300	< 100	< 100	-	< 100	< 10

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-7	MEL-7 EFFLUENT QUALITY LIMITS	Sample Date	5/27/2019	6/3/2019	6/10/2019	6/17/2019	6/24/2019	7/1/2019	7/8/2019	7/15/2019
Parameter		FIELD_SDG	B9E5348	B9F1414	B9G2481	B9G8648	B9H6698	B9I2723	B9I8673	B9J1479
		Unit								
pH		pH units	-	-	-	-	-	-	-	-
Conductivity		uS/cm	-	-	-	-	-	-	-	-
Temperature		°C	-	-	-	-	-	-	-	-
Dissolved oxygen		mg/L	-	-	-	-	-	-	-	-
Dissolved oxygen		%	-	-	-	-	-	-	-	-
pH	6 - 9.5	pH units	7.12	7.2	6.99	7.12	7	7.04	6.99	6.29
Specific conductivity		umhos/cm	330	410	400	490	320	390	440	330
Total alkalinity, as CaCO3		mg/L	25	44	26	28	23	27	24	7.5
Total suspended solids	100	mg/L	1	6	< 1	< 10	8	7	< 10	2
Volatile TSS		mg/L	1	6	< 1	< 10	8	7	< 10	5
Temperature		C	3	11	10	10	7.5	16	8	11
Nitrate		mg/L	9.1	8.86	12.2	17.1	10.6	13.4	15.5	15
Nitrite		mg/L	0.172	0.18	0.243	0.46	0.315	0.17	0.217	< 0.20
Nitrate + nitrite		mg/L	9.27	9.04	12.4	17.6	11	13.5	15.7	15
Total ammonia		mg/L	1.1	5.5	4.5	6.5	3.1	9.3	10	2.9
Total Kjeldahl nitrogen		mg/L	1.8	7.1	5.8	9.2	4.7	11	11	5.2
Total phosphorus		mg/L	4.3	5.7	5.6	8.6	6.3	6.2	7	4.7
Biochemical Oxygen Demand, 5 Day	80	mg/L	< 2	5	2	< 2	8	6	5	< 4.0
Chemical oxygen demand		mg/L	21	50	32	48	45	56	54	49
Total oil and grease	5	mg/L	0.8	< 0.50	< 0.50	< 0.50	< 0.50	0.9	1.2	< 3.0
Aluminum		mg/L	-	-	-	-	-	-	-	0.031
Antimony		mg/L	-	-	-	-	-	-	-	< 0.0010
Arsenic		mg/L	-	-	-	-	-	-	-	0.0021
Barium		mg/L	-	-	-	-	-	-	-	0.013
Cadmium		mg/L	-	-	-	-	-	-	-	< 0.00020
Chromium		mg/L	-	-	-	-	-	-	-	< 0.0050
Cobalt		mg/L	-	-	-	-	-	-	-	< 0.0010
Copper		mg/L	-	-	-	-	-	-	-	0.013
Lead		mg/L	-	-	-	-	-	-	-	0.001
Manganese		mg/L	-	-	-	-	-	-	-	0.087
Molybdenum		mg/L	-	-	-	-	-	-	-	< 0.0010
Nickel		mg/L	-	-	-	-	-	-	-	0.0029
Selenium		mg/L	-	-	-	-	-	-	-	< 0.0030
Silver		mg/L	-	-	-	-	-	-	-	< 0.0010
Sodium		mg/L	-	-	-	-	-	-	-	23
Zinc		mg/L	-	-	-	-	-	-	-	0.18
Aerobic heterotrophic bacteria		CFU/mL	200	700	< 100	600	< 100	300	50	30
Escherichia coli		CFU/100mL	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Atypical colonies		CFU/100mL	490	30	90	10	290	42	8	60
Fecal Coliform	1000	CFU/100mL	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Total Coliform		CFU/100mL	< 10	< 10	< 10	< 2	< 10	< 2	< 2	< 10

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-7	MEL-7 EFFLUENT QUALITY LIMITS	Sample Date	7/22/2019	7/28/2019	7/28/2019	7/29/2019	8/5/2019	8/12/2019	8/19/2019	9/9/2019
Parameter		FIELD_SDG	B9K5143			B9L0823	B9L8712	B9M5851	B9N1890	B9P4260
		Unit								
pH		pH units	-	7.86	8.09	-	-	-	-	-
Conductivity		uS/cm	-	1323	1256	-	-	-	-	-
Temperature		°C	-	9	8.1	-	-	-	-	-
Dissolved oxygen		mg/L	-	9.7	10.8	-	-	-	-	-
Dissolved oxygen		%	-	81	93.2	-	-	-	-	-
pH	6 - 9.5	pH units	6.4	-	-	6.96	6.89	7.04	7.26	6.97
Specific conductivity		umhos/cm	290	-	-	460	260	180	290	1200
Total alkalinity, as CaCO3		mg/L	5	-	-	22	14	14	27	25
Total suspended solids	100	mg/L	8	-	-	5	2	6	4	4
Volatile TSS		mg/L	7	-	-	4	2	5	3	4
Temperature		C	11.5	-	-	12	9	11	13	9
Nitrate		mg/L	14.5	-	-	19.1	10.4	4.63	7.69	38.6
Nitrite		mg/L	0.04	-	-	0.16	0.121	0.047	0.09	0.291
Nitrate + nitrite		mg/L	14.5	-	-	19.3	10.6	4.67	7.78	38.9
Total ammonia		mg/L	1.5	-	-	10	2.9	0.42	1.7	15
Total Kjeldahl nitrogen		mg/L	2.6	-	-	11	3.1	0.63	2.7	17
Total phosphorus		mg/L	5	-	-	5.6	3.3	1.5	3.4	8.6
Biochemical Oxygen Demand, 5 Day	80	mg/L	4	-	-	4	< 2	11	< 2	3
Chemical oxygen demand		mg/L	43	-	-	36	25	24	34	59
Total oil and grease	5	mg/L	-	-	-	< 0.50	< 0.50	0.8	0.7	1.7
Aluminum		mg/L	-	-	-	-	-	-	-	-
Antimony		mg/L	-	-	-	-	-	-	-	-
Arsenic		mg/L	-	-	-	-	-	-	-	-
Barium		mg/L	-	-	-	-	-	-	-	-
Cadmium		mg/L	-	-	-	-	-	-	-	-
Chromium		mg/L	-	-	-	-	-	-	-	-
Cobalt		mg/L	-	-	-	-	-	-	-	-
Copper		mg/L	-	-	-	-	-	-	-	-
Lead		mg/L	-	-	-	-	-	-	-	-
Manganese		mg/L	-	-	-	-	-	-	-	-
Molybdenum		mg/L	-	-	-	-	-	-	-	-
Nickel		mg/L	-	-	-	-	-	-	-	-
Selenium		mg/L	-	-	-	-	-	-	-	-
Silver		mg/L	-	-	-	-	-	-	-	-
Sodium		mg/L	-	-	-	-	-	-	-	-
Zinc		mg/L	-	-	-	-	-	-	-	-
Aerobic heterotrophic bacteria		CFU/mL	40	-	-	>3000	24	>3000	>3000	72000
Escherichia coli		CFU/100mL	< 2	-	-	< 2	< 2	0	< 2	< 2
Atypical colonies		CFU/100mL	10	-	-	1300	6	89	92	36
Fecal Coliform	1000	CFU/100mL	< 2	-	-	< 2	< 2	0	< 2	< 2
Total Coliform		CFU/100mL	< 10	-	-	< 100	< 2	0	< 2	< 2

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-7	MEL-7 EFFLUENT QUALITY LIMITS	Sample Date FIELD_SDG	9/16/2019 B9Q2098	9/23/2019 B9Q9407	9/30/2019 B9R5845	10/7/2019 B9S3432	10/14/2019 B9S9627	10/21/2019 B9T9008	11/4/2019 B9V3468	11/11/2019 B9W0761
Parameter		Unit								
pH		pH units	-	-	-	-	-	-	-	-
Conductivity		uS/cm	-	-	-	-	-	-	-	-
Temperature		°C	-	-	-	-	-	-	-	-
Dissolved oxygen		mg/L	-	-	-	-	-	-	-	-
Dissolved oxygen		%	-	-	-	-	-	-	-	-
pH	6 - 9.5	pH units	6.74	6.79	6.33	6.59	6.22	5.98	6.53	6.66
Specific conductivity		umhos/cm	1100	430	620	650	750	680	620	670
Total alkalinity, as CaCO3		mg/L	29	13	7.5	11	6.7	3.8	13	27
Total suspended solids	100	mg/L	5	9	4	4	3	4	9	3
Volatile TSS		mg/L	4	7	4	3	3	3	8	3
Temperature		C	10	8	6	9.5	11	5	5.5	6
Nitrate		mg/L	50.7	19.7	33.7	35.8	35.9	34.6	26.7	27.2
Nitrite		mg/L	0.503	0.216	0.227	0.289	0.246	0.187	0.221	0.221
Nitrate + nitrite		mg/L	51.2	19.9	34	36.1	36.2	34.8	26.9	27.4
Total ammonia		mg/L	23	0.87	8.7	5.5	12	12	12	20
Total Kjeldahl nitrogen		mg/L	24	2	11	7.9	11	16	15	21
Total phosphorus		mg/L	13	6.2	8.7	9.9	11	9.7	9.9	10
Biochemical Oxygen Demand, 5 Day	80	mg/L	5	4	< 2	2	< 2	< 2	5	15
Chemical oxygen demand		mg/L	74	52	67	49	52	50	75	98
Total oil and grease	5	mg/L	0.6	< 0.50	1.1	< 0.50	< 0.50	1.6	1.8	0.8
Aluminum		mg/L	-	-	-	-	-	-	-	-
Antimony		mg/L	-	-	-	-	-	-	-	-
Arsenic		mg/L	-	-	-	-	-	-	-	-
Barium		mg/L	-	-	-	-	-	-	-	-
Cadmium		mg/L	-	-	-	-	-	-	-	-
Chromium		mg/L	-	-	-	-	-	-	-	-
Cobalt		mg/L	-	-	-	-	-	-	-	-
Copper		mg/L	-	-	-	-	-	-	-	-
Lead		mg/L	-	-	-	-	-	-	-	-
Manganese		mg/L	-	-	-	-	-	-	-	-
Molybdenum		mg/L	-	-	-	-	-	-	-	-
Nickel		mg/L	-	-	-	-	-	-	-	-
Selenium		mg/L	-	-	-	-	-	-	-	-
Silver		mg/L	-	-	-	-	-	-	-	-
Sodium		mg/L	-	-	-	-	-	-	-	-
Zinc		mg/L	-	-	-	-	-	-	-	-
Aerobic heterotrophic bacteria		CFU/mL	> 300000	2400	2364	1727	4100	200	1545	1900
Escherichia coli		CFU/100mL	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Atypical colonies		CFU/100mL	18500	106	30	16	6	< 2	42	20
Fecal Coliform	1000	CFU/100mL	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Total Coliform		CFU/100mL	< 100	< 2	< 2	< 2	< 2	< 2	8	10

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-7	MEL-7 EFFLUENT	Sample Date	11/18/2019	11/25/2019	12/2/2019	12/11/2019	12/16/2019
Parameter	QUALITY LIMITS	FIELD_SDG	B9W7213	B9X5940	B9Y1407	B9Z3092	B9Z6169
		Unit					
pH		pH units	-	-	-	-	-
Conductivity		uS/cm	-	-	-	-	-
Temperature		°C	-	-	-	-	-
Dissolved oxygen		mg/L	-	-	-	-	-
Dissolved oxygen		%	-	-	-	-	-
pH	6 - 9.5	pH units	6.65	5.94	5.84	7.21	7.45
Specific conductivity		umhos/cm	690	540	580	560	680
Total alkalinity, as CaCO3		mg/L	15	3.6	3.6	25	100
Total suspended solids	100	mg/L	9	2	3	6	7
Volatile TSS		mg/L	7	2	3	5	6
Temperature		C	7.5	11.5	10	9.5	-
Nitrate		mg/L	39.2	30.8	34.5	23.1	17.1
Nitrite		mg/L	0.253	0.089	0.181	0.155	0.237
Nitrate + nitrite		mg/L	39.4	30.9	34.7	23.2	17.4
Total ammonia		mg/L	17	7.2	13	14	24
Total Kjeldahl nitrogen		mg/L	19	8.2	13	14	29
Total phosphorus		mg/L	13	8.3	9.7	7.3	9.4
Biochemical Oxygen Demand, 5 Day	80	mg/L	3	< 2	< 2	8	7
Chemical oxygen demand		mg/L	59	56	37	95	110
Total oil and grease	5	mg/L	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aluminum		mg/L	-	-	-	-	-
Antimony		mg/L	-	-	-	-	-
Arsenic		mg/L	-	-	-	-	-
Barium		mg/L	-	-	-	-	-
Cadmium		mg/L	-	-	-	-	-
Chromium		mg/L	-	-	-	-	-
Cobalt		mg/L	-	-	-	-	-
Copper		mg/L	-	-	-	-	-
Lead		mg/L	-	-	-	-	-
Manganese		mg/L	-	-	-	-	-
Molybdenum		mg/L	-	-	-	-	-
Nickel		mg/L	-	-	-	-	-
Selenium		mg/L	-	-	-	-	-
Silver		mg/L	-	-	-	-	-
Sodium		mg/L	-	-	-	-	-
Zinc		mg/L	-	-	-	-	-
Aerobic heterotrophic bacteria		CFU/mL	< 100	10	818	1880	-
Escherichia coli		CFU/100mL	< 2	< 2	< 2	4	-
Atypical colonies		CFU/100mL	6	2	2	330	-
Fecal Coliform	1000	CFU/100mL	< 2	< 2	< 2	10	-
Total Coliform		CFU/100mL	2	< 2	< 2	140	-

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-7 QAQC	Sample Date	MDL	11/4/2019		
	FIELD_SDG		B9V3468		
	Sample		Duplicate	Original	RPD (%)
Parameter	Unit				
Conventional Parameters					
pH	pH units	-	6.51	6.53	0.31
Specific conductivity	umhos/cm	1	620	620	0.00
Total alkalinity, as CaCO3	mg/L	1	11	13	16.67
Total suspended solids	mg/L	1	9	9	0.00
Volatile TSS	mg/L	1	8	8	0.00
Nutrients					
Nitrate	mg/L	0.5	27	26.7	1.12
Nitrite	mg/L	0.01	0.211	0.221	4.63
Nitrate + nitrite	mg/L	0.5	27.2	26.9	1.11
Total ammonia	mg/L	0.05	12	12	0.00
Total Kjeldahl nitrogen	mg/L	2	16	15	6.45
Total phosphorus	mg/L	0.1	10	9.9	1.01
Chemical oxygen demand	mg/L	4	76	75	1.32
Biochemical Oxygen Demand, 5 Day	mg/L	2	5	5	0.00
General Organics					
Total oil and grease	mg/L	0.5	1.6	1.8	11.76

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-SR1	MEL-SR MAX GRAB	MEL-SR MAX MEAN	Sample Date	5/20/2019	5/27/2019	6/3/2019	6/11/2019	6/17/2019	7/1/2019	7/7/2019	7/9/2019	7/28/2019	8/4/2019	8/28/2019	9/1/2019	9/24/2019	10/21/2019
Parameter			FIELD_SDG	B9D9001	B9E7433	B9F4310	B9G5389	B9H1965	B9I4327	B9J0269	B9J5765	B9L0871	B9L8798	B9O3989	B9O6819	B9R3238	B9T8771
Unit																	
Field Measured																	
pH			pH units	7.51	7.96	7.66	7.53	7.86	7.88	7.93	8.09	7.87	7.79	-	7.97	8.08	8.32
Conductivity			uS/cm	349.2	398.6	597	785.9	1173	1685	1152	781.5	1487	1412	-	1111	961	530.4
Temperature			°C	0.17	0.3	1.3	9.48	7.01	11.8	8.4	5.9	7.1	7.09	-	3	8.8	0
Dissolved oxygen			mg/L	16.38	14.82	-	-	11.32	7.83	-	11.8	10.34	8.71	-	14.54	-	-
Dissolved oxygen			%	112.7	104.6	13.54	99.4	94.9	73	76.8	94.9	86.1	73.3	-	116.3	96	86.6
Turbidity			NTU	-	-	-	2.62	-	-	-	4.83	-	-	-	-	-	-
Conventional Parameters																	
pH	6.0 - 9.5	6.0 - 9.5	pH units	7.71	7.88	7.9	7.99	8.06	8.05	8.04	8.1	8.07	8.07	7.99	8.2	8.15	8.18
Hardness, as CaCO3 (T)			mg/L	103	116	165	181	261	611	410	320	465	464	411	385	349	312
Total alkalinity, as CaCO3			mg/L	54	63	90	88	110	160	170	140	190	210	140	190	180	160
Total dissolved solids			mg/L	245	230	365	390	545	1150	795	545	1020	960	710	775	705	575
Total suspended solids	100	50	mg/L	34	23	3	< 1	1	< 1	< 1	2	2	3	81	1	6	2
Turbidity			NTU	24	29	2.8	1.5	0.3	0.3	0.2	2.6	0.9	0.5	78	0.4	7.8	0.9
Major Ions																	
Chloride			mg/L	36	40	67	85	130	350	150	100	230	210	170	130	120	110
Cyanide			mg/L	< 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
Fluoride			mg/L	< 0.10	< 0.10	< 0.10	0.11	0.13	< 0.10	0.14	0.1	0.13	0.12	0.12	0.11	0.11	0.11
Sulphate			mg/L	42	51	59	68	98	200	170	140	180	160	180	180	160	120
Nutrients																	
Nitrate			mg/L	0.29	0.21	0.29	0.32	0.49	0.99	0.21	0.2	1.57	0.19	1.4	0.38	0.29	0.28
Nitrite			mg/L	0.013	< 0.010	< 0.010	< 0.010	< 0.010	0.022	< 0.010	< 0.010	0.04	< 0.010	0.02	< 0.010	< 0.010	< 0.010
Nitrate + nitrite			mg/L	0.3	0.21	0.29	0.32	0.49	1.01	0.21	0.2	1.61	0.19	1.42	0.38	0.29	0.28
Total ammonia			mg/L	0.28	< 0.050	0.5	< 0.050	< 0.050	0.3	< 0.050	< 0.050	0.84	< 0.050	0.39	0.16	0.12	< 0.050
Total phosphorus			mg/L	0.064	0.051	0.03	< 0.020	< 0.020	< 0.020	0.033	< 0.020	< 0.020	< 0.020	0.039	< 0.020	< 0.020	< 0.020
Orthophosphate			mg/L	< 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
General Organics																	
Total oil and grease			mg/L	< 0.50	1	< 0.50	0.7	< 0.50	< 0.50	0.9	< 0.50	0.6	0.5	< 0.50	< 0.50	< 0.50	0.9
Total Metals																	
Aluminum			mg/L	0.741	0.72	0.0985	0.0352	0.0104	0.0089	0.0096	0.116	0.0393	0.0294	2.85	0.0227	0.252	0.05
Antimony			mg/L	< 0.00050	< 0.00050	-	0.00063	0.00095	0.00087	-	0.00053	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic			mg/L	0.00206	0.00187	0.00111	0.00119	0.00158	0.00233	0.00215	0.00253	0.00276	0.00294	0.00478	0.0022	0.00301	0.0022
Barium			mg/L	0.0247	0.025	0.0232	0.0229	0.0319	0.069	0.0558	0.0415	0.0602	0.0578	0.0767	0.0452	0.0482	0.0366
Beryllium			mg/L	< 0.00010	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth			mg/L	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron			mg/L	< 0.05	< 0.05	-	< 0.05	< 0.05	0.077	-	0.051	0.095	0.075	0.102	< 0.05	< 0.05	< 0.05
Cadmium			mg/L	0.000027	0.000021	0.000013	< 0.000010	0.000011	0.000029	0.000012	0.000013	0.000016	0.000018	0.000026	< 0.000010	0.000011	0.000015
Calcium			mg/L	32.6	36.8	51.8	55.9	79.3	180	128	101	141	143	122	122	109	97.3
Cesium			mg/L	-	-	-	-	-	-	< 0.00020	-	-	-	-	-	-	-
Chromium			mg/L	0.0049	0.0048	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	< 0.0010	0.0186	< 0.0010	0.0018	< 0.0010
Cobalt			mg/L	0.00148	0.00137	-	0.00024	0.00024	0.00078	-	0.00047	0.0007	0.00049	0.00344	0.00041	0.00087	0.00035
Copper			mg/L	0.00874	0.00613	0.00329	0.00232	0.00262	0.00416	0.00359	0.00405	0.00348	0.00386	0.0101	0.00361	0.00473	0.00331
Iron			mg/L	1.27	1.22	0.196	0.082	0.038	0.119	0.045	0.308	0.141	0.118	4.22	0.079	0.517	0.11
Lead			mg/L	0.00068	0.00066	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	0.00108	< 0.00020	< 0.00020	< 0.00020
Lithium			mg/L	0.0128	0.0071	-	0.0135	0.0228	0.0646	-	0.0101	0.0486	0.0319	0.0438	0.0114	0.0113	0.01
Magnesium			mg/L	5.23	5.79	8.71	9.93	15.3	39.3	22.1	16.6	27.1	26	25.9	19.7	18.5	16.9
Manganese			mg/L	0.116	0.0547	0.0309	0.0115	0.0094	0.0429	0.0113	0.0213	0.0575	0.0247	0.101	0.0211	0.0379	0.0199
Mercury			mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum			mg/L	0.0014	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	0.001	0.0013	0.0015	0.0011	< 0.0010	0.0013	0.001	0.0012
Nickel			mg/L	0.0057	0.0059	0.0049	0.0047	0.0067	0.0153	0.0094	0.0054	0.0109	0.0201	0.0172	0.0091	0.0106	0.0099
Potassium			mg/L	6.33	5.31	5.24	5.36	7.29	16.4	11	9.11	13.3	11.9	11.7	10.9	10.1	8.42
Selenium			mg/L	0.00011	< 0.00010	< 0.00010	< 0.00010	0.00011	0.00018	< 0.00010	0.0001	0.00013	0.00011	0.00012	< 0.00010	< 0.00010	< 0.00010
Silicon			mg/L	1.88	1.86	-	0.535	0.418	1.09	-	1.26	1.7	1.33	5.15	1.28	1.66	1.82
Silver			mg/L	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium			mg/L	17.1	21.4	26.4	34.4	48.2	141	72.3	51.3	93.2	95.6	78.4	62.1	62.1	50.7
Strontium			mg/L	0.222	0.21	-	0.296	0.424	0.997	-	0.461	0.949	0.888	1.02	0.536	0.509	0.456
Sulphur			mg/L	15.9	17.5	19.8	23.9	32	76.4	61.8	51.3	65.4	59.4	60.3	59.5	51.5	42.9
Thallium			mg/L	0.000017	0.000013	< 0.000010	< 0.000010	< 0.000010	0.000012	-	< 0.000010	0.000018	< 0.000010	0.000044	< 0.000010	0.000011	< 0.000010
Tin			mg/L	< 0.0050	< 0.0050	-	< 0.0050	< 0.0050	< 0.0050	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium			mg/L	0.0299	0.0299	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.134	< 0.0050	0.0112	< 0.0050
Uranium			mg/L	0.0006	0.0006	-	0.00124	0.00233	0.00357	-	0.00213	0.0027	0.00255	0.00224	0.00257	0.00251	0.00235
Vanadium			mg/L	< 0.0050	< 0.0050	-	< 0.0050	< 0.0050	< 0.0050	-	< 0.0050	< 0.0050	< 0.0050	0.0074	< 0.0050	< 0.0050	< 0.0050
Zinc			mg/L	0.0143	0.0171	0.0146	0.0122	0.02	0.0433	0.0194	0.0063	0.0184	0.0316	0.0225	0.008	0.0118	0.0104
Zirconium			mg/L	0.0003	0.00035	-	< 0.00010	< 0.00010	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010	0.00069	< 0.00010	0.00018	0.0001

MEL-SR3	MEL-SR MAX GRAB	MEL-SR MAX MEAN	Sample Date	7/1/2019	7/7/2019	7/9/2019	7/28/2019	8/28/2019	9/24/2019	10/21/2019
Parameter			FIELD_SDG	B9I4327	B9J0269	B9J5765	B9L0871	B9O3989	B9R3238	B9T8771
			Unit							
Field Measured										
pH			pH units	7.87	7.94	7.93	7.97	-	8.01	7.94
Conductivity			uS/cm	7269	5248	16552	46163	-	36325	45154
Temperature			°C	9.6	3.8	1.2	4.3	-	7.5	0
Dissolved oxygen			mg/L	9.41	-	13.05	11.4	-	-	-
Dissolved oxygen			%	85.4	88.3	98.6	109	-	2100	75.9
Turbidity			NTU	-	-	7.91	-	-	-	-
Conventional Parameters										
pH	6.0 - 9.5	6.0 - 9.5	pH units	7.5	7.38	7.86	7.88	7.86	7.84	7.87
Hardness, as CaCO3 (T)			mg/L	769	460	1270	4780	5820	5170	5160
Total alkalinity, as CaCO3			mg/L	24	16	86	110	100	98	100
Total dissolved solids			mg/L	4570	2960	7220	30300	29800	29400	28800
Total suspended solids	100	50	mg/L	2	3	24	13	36	16	19
Turbidity			NTU	1.9	1.1	5.5	0.7	0.4	4.9	0.5
Major Ions										
Chloride			mg/L	2400	1500	4100	17000	14000	15000	15000
Cyanide			mg/L	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Fluoride			mg/L	0.17	0.17	0.24	0.51	0.5	0.5	0.52
Sulphate			mg/L	320	210	500	2200	2000	2200	2000
Nutrients										
Nitrate			mg/L	< 0.10	< 0.10	0.12	< 0.50	< 0.10	< 0.10	< 0.10
Nitrite			mg/L	< 0.010	< 0.010	< 0.010	< 0.050	< 0.010	< 0.010	< 0.010
Nitrate + nitrite			mg/L	< 0.10	< 0.10	0.12	< 0.50	< 0.10	< 0.10	< 0.10
Total ammonia			mg/L	< 0.050	< 0.050	< 0.050	0.19	0.19	0.32	0.18
Total phosphorus			mg/L	< 0.020	< 0.020	< 0.020	0.059	0.087	0.076	0.058
Orthophosphate			mg/L	< 0.010	< 0.010	< 0.010	0.015	0.014	0.017	0.017
General Organics										
Total oil and grease			mg/L	< 0.50	< 0.50	0.7	0.7	< 0.50	0.8	< 0.50
Total Metals										
Aluminum			mg/L	0.069	0.0855	0.212	< 0.06	0.251	0.262	0.092
Antimony			mg/L	< 0.0025	-	< 0.0025	< 0.01	< 0.025	< 0.01	< 0.01
Arsenic			mg/L	0.00056	0.00038	0.00244	< 0.0020	< 0.0050	0.0022	0.0024
Barium			mg/L	< 0.0050	0.0043	0.0206	< 0.02	< 0.05	< 0.02	< 0.02
Beryllium			mg/L	< 0.00050	-	< 0.00050	< 0.0020	< 0.0050	< 0.0020	< 0.0020
Bismuth			mg/L	< 0.0050	-	< 0.0050	< 0.02	< 0.05	< 0.02	< 0.02
Boron			mg/L	0.593	-	0.861	3.41	3.74	3.57	3.44
Cadmium			mg/L	< 0.000050	< 0.000020	< 0.000050	< 0.00020	< 0.00050	< 0.00020	< 0.00020
Calcium			mg/L	56.6	36.7	124	347	331	337	342
Cesium			mg/L	-	< 0.00040	-	-	-	-	-
Chromium			mg/L	< 0.0050	-	< 0.0050	< 0.02	< 0.05	< 0.02	< 0.02
Cobalt			mg/L	< 0.0010	-	< 0.0010	< 0.0040	< 0.01	< 0.0040	< 0.0040
Copper			mg/L	< 0.0025	< 0.0010	0.0026	< 0.01	< 0.025	< 0.01	< 0.01
Iron			mg/L	0.127	0.139	0.411	< 0.2	< 0.5	0.384	< 0.2
Lead			mg/L	< 0.0010	< 0.00040	< 0.0010	< 0.0040	< 0.01	< 0.0040	< 0.0040
Lithium			mg/L	0.022	-	0.039	0.139	0.151	0.155	0.146
Magnesium			mg/L	152	89.3	234	951	1210	1050	1050
Manganese			mg/L	< 0.0050	0.0033	0.0157	< 0.02	< 0.05	< 0.02	< 0.02
Mercury			mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum			mg/L	< 0.0050	< 0.0020	< 0.0050	< 0.02	< 0.05	< 0.02	< 0.02
Nickel			mg/L	< 0.0050	< 0.0020	< 0.0050	< 0.02	< 0.05	< 0.02	< 0.02
Potassium			mg/L	52.6	32.9	78.2	297	323	309	323
Selenium			mg/L	< 0.00050	< 0.00020	< 0.00050	< 0.0020	< 0.0050	< 0.0020	< 0.0020
Silicon			mg/L	< 0.5	-	0.871	< 2	< 5	< 2	< 2
Silver			mg/L	< 0.00010	< 0.000040	< 0.00010	< 0.00040	< 0.0010	< 0.00040	< 0.00040
Sodium			mg/L	1320	792	2000	8410	8870	8620	8730
Strontium			mg/L	0.903	-	1.92	6.25	6.99	6.76	7.29
Sulphur			mg/L	134	79	205	736	810	786	807
Thallium			mg/L	< 0.000050	-	< 0.000050	< 0.00020	< 0.00050	< 0.00020	< 0.00020
Tin			mg/L	< 0.025	-	< 0.025	< 0.1	< 0.25	< 0.1	< 0.1
Titanium			mg/L	< 0.025	< 0.01	< 0.025	< 0.1	< 0.25	< 0.1	< 0.1
Uranium			mg/L	< 0.00050	-	0.00155	0.0026	< 0.0050	0.0028	0.0029
Vanadium			mg/L	< 0.025	-	< 0.025	< 0.1	< 0.25	< 0.1	< 0.1
Zinc			mg/L	< 0.025	< 0.01	< 0.025	< 0.1	< 0.25	< 0.1	< 0.1
Zirconium			mg/L	< 0.00050	-	< 0.00050	< 0.0020	< 0.0050	< 0.0020	< 0.0020

MEL-SR7	MEL-SR MAX GRAB	MEL-SR MAX MEAN	Sample Date	5/20/2019	5/27/2019	6/3/2019	6/11/2019	6/17/2019	7/1/2019	7/9/2019	7/28/2019	8/4/2019	8/28/2019	9/1/2019	9/24/2019	10/21/2019
Parameter			FIELD_SDG	B9D9001	B9E7433	B9F4310	B9G5389	B9H1965	B9I4327	B9J5765	B9L0871	B9L8798	B9O3989	B9O6819	B9R3238	B9T8771
			Unit													
Field Measured																
pH			pH units	7.52	7.9	7.79	7.9	7.26	7.84	8.1	-	7.52	-	7.97	8.37	8.1
Conductivity			ms/cm	-	-	-	-	-	-	-	-	-	-	-	962	-
Conductivity			uS/cm	334	421	544	773.5	1161	815	865	-	1375	-	1120	-	540.8
Temperature			°C	0.23	0.12	1.7	6.06	7.82	11.4	6.2	-	9.4	-	3	8.9	2
Dissolved oxygen			mg/L	16.42	14.75	-	-	11.27	8.71	11.32	-	9.71	-	13.2	-	-
Dissolved oxygen			%	113.2	103.5	14.1	99.6	96.5	80	91.8	-	87.6	-	98.7	97.3	87.6
Turbidity			NTU	-	-	-	6.35	-	-	3.73	-	-	-	-	-	-
Conventional Parameters																
pH	6.0 - 9.5	6.0 - 9.5	pH units	7.71	7.91	7.82	7.98	7.73	8.01	8.09	7.94	7.99	7.82	8.12	8.14	8.16
Hardness, as CaCO3 (T)			mg/L	92.5	126	154	170	98.9	257	330	413	428	482	425	370	325
Total alkalinity, as CaCO3			mg/L	52	70	94	93	59	97	150	170	170	200	200	190	170
Total dissolved solids			mg/L	205	260	345	340	225	450	565	940	880	880	745	700	555
Total suspended solids	100	50	mg/L	17	20	5	3	5	< 1	< 1	2	2	5	< 1	5	3
Turbidity			NTU	25	24	4.3	2.4	0.8	0.5	1.9	1.3	0.1	2.5	0.5	4.8	0.7
Major Ions																
Chloride			mg/L	33	42	46	68	60	130	93	220	210	210	130	130	110
Cyanide			mg/L	< 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
Fluoride			mg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.11	< 0.10	< 0.10	< 0.10	0.11	0.11	0.11
Sulphate			mg/L	46	53	57	66	38	80	150	180	190	180	190	170	130
Nutrients																
Nitrate			mg/L	0.33	0.11	0.18	0.14	< 0.10	< 0.10	0.17	3.97	1.68	1.15	0.33	0.25	0.17
Nitrite			mg/L	0.018	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.011	0.14	0.021	< 0.010	< 0.010	< 0.010
Nitrate + nitrite			mg/L	0.35	0.11	0.18	0.14	< 0.10	< 0.10	0.17	3.98	1.82	1.17	0.33	0.25	0.17
Total ammonia			mg/L	0.54	< 0.050	0.82	< 0.050	< 0.050	< 0.050	0.078	2.4	0.7	0.73	0.14	< 0.050	0.12
Total phosphorus			mg/L	0.049	0.042	0.023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.02	0.022	< 0.020	< 0.020
Orthophosphate			mg/L	< 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
General Organics																
Total oil and grease			mg/L	< 0.50	1.4	< 0.50	0.8	< 0.50	< 0.50	< 0.50	< 0.50	0.8	< 0.50	< 0.50	< 0.50	< 0.50
Total Metals																
Aluminum			mg/L	0.375	0.474	0.143	0.0845	0.0418	0.0257	0.0538	0.0368	0.0053	0.107	0.0241	0.114	0.0608
Antimony			mg/L	< 0.00050	< 0.00050	-	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	0.00056	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic			mg/L	0.00136	0.00119	0.00089	0.00067	0.00105	0.00657	0.00196	0.013	0.0105	0.00524	0.00141	0.00184	0.00122
Barium			mg/L	0.0198	0.0263	0.0241	0.0238	0.0159	0.0309	0.0415	0.0499	0.0482	0.0507	0.0485	0.0475	0.0398
Beryllium			mg/L	< 0.00010	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth			mg/L	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron			mg/L	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium			mg/L	0.000025	0.000018	0.000012	< 0.000010	< 0.000010	0.000018	< 0.000010	0.000029	0.000025	0.000014	< 0.000010	0.000014	0.000013
Calcium			mg/L	29.2	41.1	48.9	53.4	31.4	80.5	105	125	131	145	136	126 112	102
Chromium			mg/L	0.0027	0.0038	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt			mg/L	0.00091	0.00081	-	0.00033	0.00038	0.00195	0.00032	0.00285	0.00142	0.00185	0.0005	0.00063	0.00041
Copper			mg/L	0.00751	0.00531	0.00335	0.00211	0.00236	0.00508	0.00308	0.00652	0.00739	0.00421	0.00288	0.0036	0.00237
Iron			mg/L	0.669	0.765	0.303	0.196	0.079	0.108	0.247	0.158	0.05	0.419	0.164	0.248	0.175
Lead			mg/L	0.00047	0.00042	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium			mg/L	0.0054	0.0059	-	0.0057	< 0.0020	0.0036	0.0064	0.009	0.0096	0.0098	0.0076	0.0079	0.0092
Magnesium			mg/L	4.77	5.82	7.73	8.79	5.01	13.6	16.3	24.5	24.4	29.1	20.5	19	17
Manganese			mg/L	0.0733	0.0277	0.0991	0.0433	0.0155	0.0125	0.0207	0.0301	0.0083	0.0839	0.0463	0.042	0.053
Mercury			mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum			mg/L	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	0.0015	< 0.0010	< 0.0010	< 0.0010	0.0012	0.0012	0.0014
Nickel			mg/L	0.0035	0.0041	0.0038	0.0028	0.0024	0.014	0.0039	0.0213	0.0225	0.014	0.004	0.005	0.0033
Potassium			mg/L	5.73	5.69	5.05	5.06	2.77	5.53	9.08	11.4	10.2	11.8	11.5	10.2	8.41
Selenium			mg/L	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	0.00017	0.0002	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon			mg/L	1.15	1.48	-	0.554	0.469	0.516	1.12	1.33	0.572	1.74	1.38	1.46	1.79
Silver			mg/L	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium			mg/L	18.2	21.2	23.9	30.9	22.6	58.4	46.1	104	103	111	60.2	60.2	47.7
Strontium			mg/L	0.145	0.215	-	0.236	0.105	0.269	0.451	0.542	0.578	0.628	0.517	0.487	0.468
Sulphur			mg/L	15.7	18.4	18.6	21.9	12.4	29.7	53.1	65.8	66.2	64.3	67.4	54.1	45.1
Thallium			mg/L	0.000013	< 0.000010	0.00001	< 0.000010	< 0.000010	0.00001	< 0.000010	0.000012	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin			mg/L	< 0.0050	< 0.0050	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium			mg/L	0.0148	0.0178	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium			mg/L	0.0005	0.00064	-	0.00084	0.00029	0.00067	0.00228	0.00179	0.00204	0.00188	0.00273	0.00257	0.0024
Vanadium			mg/L	< 0.0050	< 0.0050	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc			mg/L	0.0106	0.0068	0.0135	0.0086	< 0.0050	< 0.0050	0.0057	< 0.0050	< 0.0050	< 0.0050	0.0052	0.0057	0.0115
Zirconium			mg/L	0.00018	0.00018	-	< 0.00010	< 0.00010	< 0.00010	< 0.00010	0.00011	< 0.00010	0.00015	< 0.00010	< 0.00010	< 0.00010

MEL-SR11	MEL-SR MAX	MEL-SR MAX	Sample Date	5/27/2019	6/3/2019	6/11/2019	6/17/2019
Parameter	GRAB	MEAN	FIELD_SDG	B9E7433	B9F4310	B9G5389	B9H1965
			Unit				
Field Measured							
pH			pH units	7.9	7.68	7.9	7.79
Conductivity			uS/cm	533.9	488	770.6	394.8
Temperature			°C	0.84	5.9	6.33	14.58
Dissolved oxygen			mg/L	13.25	-	-	8.97
Dissolved oxygen			%	95	13.86	99.6	89.6
Turbidity			NTU	-	-	5.13	-
Conventional Parameters							
pH	6.0 - 9.5	6.0 - 9.5	pH units	7.88	7.82	7.9	7.98
Hardness, as CaCO3 (T)			mg/L	88.8	85.6	94.4	62.5
Total alkalinity, as CaCO3			mg/L	80	70	63	66
Total dissolved solids			mg/L	305	280	270	145
Total suspended solids	100	50	mg/L	3	1	3	1
Turbidity			NTU	2.7	1.3	3.1	0.8
Major Ions							
Chloride			mg/L	80	61	46	23
Cyanide			mg/L	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Fluoride			mg/L	0.15	0.11	< 0.10	0.14
Sulphate			mg/L	44	40	43	34
Nutrients							
Nitrate			mg/L	1.67	2.68	7.49	1.14
Nitrite			mg/L	0.015	0.031	0.057	< 0.010
Nitrate + nitrite			mg/L	1.69	2.71	7.55	1.14
Total ammonia			mg/L	0.83	0.26	0.28	< 0.050
Total phosphorus			mg/L	0.075	< 0.020	< 0.020	0.023
Orthophosphate			mg/L	< 0.010	< 0.010	< 0.010	< 0.010
General Organics							
Total oil and grease			mg/L	1.6	< 0.50	0.9	< 0.50
Total Metals							
Aluminum			mg/L	0.25	0.0474	0.124	0.214
Antimony			mg/L	0.00204	-	0.00096	0.00113
Arsenic			mg/L	0.00187	0.00096	0.00095	0.00117
Barium			mg/L	0.0137	0.0113	0.0137	0.0118
Beryllium			mg/L	< 0.00010	-	< 0.00010	< 0.00010
Bismuth			mg/L	< 0.0010	-	< 0.0010	< 0.0010
Boron			mg/L	0.066	-	< 0.05	0.069
Cadmium			mg/L	0.000033	0.000017	0.000012	0.000013
Calcium			mg/L	23.8	22.6	25.9	17.5
Chromium			mg/L	0.0019	< 0.0010	< 0.0010	0.0017
Cobalt			mg/L	0.00126	-	0.00035	0.00042
Copper			mg/L	0.00586	0.00327	0.00263	0.0023
Iron			mg/L	0.415	0.087	0.194	0.371
Lead			mg/L	0.0003	< 0.00020	< 0.00020	< 0.00020
Lithium			mg/L	0.0045	-	0.002	< 0.0020
Magnesium			mg/L	7.13	7.08	7.2	4.59
Manganese			mg/L	0.0828	0.0032	0.0043	0.0085
Mercury			mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum			mg/L	0.0029	0.0027	0.002	0.0023
Nickel			mg/L	0.0041	0.0031	0.0025	0.0023
Potassium			mg/L	5.97	4.18	4.66	4.31
Selenium			mg/L	0.00035	0.00018	0.00027	0.00016
Silicon			mg/L	1.3	-	0.735	0.802
Silver			mg/L	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium			mg/L	51.3	46.1	46.3	28.7
Strontium			mg/L	0.134	-	0.14	0.0657
Sulphur			mg/L	14.2	11.9	15.6	9.44
Thallium			mg/L	0.00002	0.000012	0.00001	0.000017
Tin			mg/L	< 0.0050	-	< 0.0050	< 0.0050
Titanium			mg/L	0.0113	-	0.0058	0.0087
Uranium			mg/L	0.00357	-	0.00059	0.00062
Vanadium			mg/L	< 0.0050	-	< 0.0050	< 0.0050
Zinc			mg/L	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium			mg/L	0.00012	-	< 0.00010	< 0.00010

MEL-SR12	Sample Date	6/3/2019
	FIELD_SDG	B9F4310
Parameter	Unit	
Field Measured		
pH	pH units	7.21
Conductivity	uS/cm	240
Temperature	°C	1.1
Dissolved oxygen	%	13.54
Conventional Parameters		
Hardness, as CaCO3 (T)	mg/L	39.2
Major Ions		
Cyanide	mg/L	< 0.0050
Nutrients		
Nitrate	mg/L	< 0.10
Nitrite	mg/L	< 0.010
Nitrate + nitrite	mg/L	< 0.10
Total ammonia	mg/L	0.062
Total phosphorus	mg/L	0.031
Orthophosphate	mg/L	< 0.010
General Organics		
Total oil and grease	mg/L	< 0.50
Total Metals		
Aluminum	mg/L	0.446
Arsenic	mg/L	0.00121
Barium	mg/L	0.0176
Cadmium	mg/L	< 0.000010
Calcium	mg/L	11.9
Chromium	mg/L	0.0016
Copper	mg/L	0.00538
Iron	mg/L	0.771
Lead	mg/L	0.00056
Magnesium	mg/L	2.3
Manganese	mg/L	0.0201
Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	0.0021
Potassium	mg/L	2.75
Selenium	mg/L	< 0.00010
Silver	mg/L	< 0.000020
Sodium	mg/L	8.73
Sulphur	mg/L	6.2
Thallium	mg/L	0.000014
Zinc	mg/L	< 0.0050

MEL-SR13	MEL-SR MAX	MEL-SR MAX	Sample Date	6/3/2019	6/11/2019
Parameter	GRAB	MEAN	FIELD_SDG	B9F4310	B9G5520
			Unit		
Field Measured					
pH			pH units	-	8.02
Conductivity			uS/cm	-	347
Temperature			°C	-	5.69
Dissolved oxygen			%	-	101.3
Turbidity			NTU	-	4.29
Conventional Parameters					
pH	6.0 - 9.5	6.0 - 9.5	pH units	-	7.9
Hardness, as CaCO3 (T)			mg/L	34.7	60.6
Total alkalinity, as CaCO3			mg/L	-	42
Total dissolved solids			mg/L	-	115
Total suspended solids	100	50	mg/L	-	< 10
Turbidity			NTU	-	0.7
Major Ions					
Chloride			mg/L	-	31
Cyanide			mg/L	< 0.0050	< 0.0050
Fluoride			mg/L	-	< 0.10
Sulphate			mg/L	-	24
Nutrients					
Nitrate			mg/L	0.11	< 0.10
Nitrite			mg/L	< 0.010	< 0.010
Nitrate + nitrite			mg/L	0.11	< 0.10
Total ammonia			mg/L	0.87	< 0.050
Total phosphorus			mg/L	< 0.020	< 0.020
Orthophosphate			mg/L	< 0.010	< 0.010
General Organics					
Total oil and grease			mg/L	< 0.50	1.4
Total Metals					
Aluminum			mg/L	0.155	0.0824
Antimony			mg/L	-	< 0.00050
Arsenic			mg/L	0.00066	0.00031
Barium			mg/L	0.0087	0.0081
Beryllium			mg/L	-	< 0.00010
Bismuth			mg/L	-	< 0.0010
Boron			mg/L	-	< 0.05
Cadmium			mg/L	0.000016	< 0.000010
Calcium			mg/L	11.3	17.4
Chromium			mg/L	0.0014	< 0.0010
Cobalt			mg/L	-	< 0.00020
Copper			mg/L	0.00476	0.00239
Iron			mg/L	0.28	0.147
Lead			mg/L	0.00031	< 0.00020
Lithium			mg/L	-	< 0.0020
Magnesium			mg/L	1.58	4.16
Manganese			mg/L	0.0098	0.0032
Mercury			mg/L	< 0.00001	< 0.00001
Molybdenum			mg/L	< 0.0010	< 0.0010
Nickel			mg/L	0.0021	0.0015
Potassium			mg/L	2.01	2.31
Selenium			mg/L	< 0.00010	< 0.00010
Silicon			mg/L	-	0.457
Silver			mg/L	< 0.000020	< 0.000020
Sodium			mg/L	3.82	18.6
Strontium			mg/L	-	0.0619
Sulphur			mg/L	6.05	7.77
Thallium			mg/L	< 0.000010	< 0.000010
Tin			mg/L	-	< 0.0050
Titanium			mg/L	-	< 0.0050
Uranium			mg/L	-	0.00013
Vanadium			mg/L	-	< 0.0050
Zinc			mg/L	0.0557	0.059
Zirconium			mg/L	-	< 0.00010

MEL-SR14	MEL-SR MAX	MEL-SR MAX	Sample Date	6/3/2019	6/11/2019	6/17/2019
Parameter	GRAB	MEAN	FIELD_SDG	B9F4310	B9G5520	B9H1965
Unit						
Field Measured						
pH			pH units	-	7.99	8.1
Conductivity			uS/cm	-	347.8	535.3
Temperature			°C	-	5.86	6.73
Dissolved oxygen			mg/L	-	-	11.25
Dissolved oxygen			%	-	101.3	102
Turbidity			NTU	-	4.06	-
Conventional Parameters						
pH	6.0 - 9.5	6.0 - 9.5	pH units	7.53	7.77	7.97
Hardness, as CaCO3 (T)			mg/L	51.5	42.9	104
Total alkalinity, as CaCO3			mg/L	42	43	77
Total dissolved solids			mg/L	155	110	230
Total suspended solids	100	50	mg/L	2	5	1
Turbidity			NTU	1.3	1.1	1
Major Ions						
Chloride			mg/L	25	12	38
Cyanide			mg/L	< 0.0050	< 0.0050	< 0.0050
Fluoride			mg/L	< 0.10	< 0.10	< 0.10
Sulphate			mg/L	27	23	47
Nutrients						
Nitrate			mg/L	0.11	< 0.10	0.34
Nitrite			mg/L	< 0.010	< 0.010	< 0.010
Nitrate + nitrite			mg/L	0.11	< 0.10	0.34
Total ammonia			mg/L	3	0.069	0.12
Total phosphorus			mg/L	0.033	0.03	< 0.020
Orthophosphate			mg/L	< 0.010	< 0.010	< 0.010
General Organics						
Total oil and grease			mg/L	< 0.50	0.9	< 0.50
Total Metals						
Aluminum			mg/L	0.0314	0.142	0.047
Antimony			mg/L	-	< 0.00050	< 0.00050
Arsenic			mg/L	0.00042	0.0004	0.00055
Barium			mg/L	0.0092	0.0105	0.0208
Beryllium			mg/L	-	< 0.00010	< 0.00010
Bismuth			mg/L	-	< 0.0010	< 0.0010
Boron			mg/L	-	< 0.05	< 0.05
Cadmium			mg/L	< 0.000010	< 0.000010	< 0.000010
Calcium			mg/L	15.2	12.4	31.2
Chromium			mg/L	< 0.0010	< 0.0010	< 0.0010
Cobalt			mg/L	-	0.00024	< 0.00020
Copper			mg/L	0.00249	0.011	0.00923
Iron			mg/L	0.105	0.223	0.08
Lead			mg/L	< 0.00020	< 0.00020	< 0.00020
Lithium			mg/L	-	< 0.0020	0.003
Magnesium			mg/L	3.29	2.92	6.43
Manganese			mg/L	0.0195	0.0043	0.0018
Mercury			mg/L	< 0.00001	< 0.00001	< 0.00001
Molybdenum			mg/L	< 0.0010	< 0.0010	< 0.0010
Nickel			mg/L	0.0014	0.0032	0.0034
Potassium			mg/L	4.98	2.19	4.01
Selenium			mg/L	< 0.00010	< 0.00010	< 0.00010
Silicon			mg/L	-	0.774	1.11
Silver			mg/L	< 0.000020	< 0.000020	< 0.000020
Sodium			mg/L	14	14.8	30.7
Strontium			mg/L	-	0.0419	0.0975
Sulphur			mg/L	7.91	6.76	14.9
Thallium			mg/L	< 0.000010	0.000013	0.000013
Tin			mg/L	-	< 0.0050	< 0.0050
Titanium			mg/L	-	0.0087	< 0.0050
Uranium			mg/L	-	0.00014	0.0004
Vanadium			mg/L	-	< 0.0050	< 0.0050
Zinc			mg/L	0.006	0.219	0.0617
Zirconium			mg/L	-	< 0.00010	< 0.00010

MEL-11	CCME Aquatic Freshwater	CANADA DRINKING WATER	Sample Date	2017 Average	2018 Average	Annual Average	1/6/2019	2/3/2019	3/3/2019	4/1/2019	5/6/2019	6/2/2019	7/1/2019	8/4/2019	9/1/2019	10/14/2019	11/4/2019	12/2/2019
			FIELD_SDG				B907309	B932271	B959506	B987735	B9C4905	B9F4223	B9I4258	B9L8636	B9O6799	B9T3056	B9V3437	B9Y1283
Parameter			Unit															
Total Metals																		
Titanium			mg/L	0.005	0.012	0.00500	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium		0.02	mg/L	0.00010	0.00011	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium			mg/L	0.005	0.005	0.00500	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	0.03	5	mg/L	0.008	0.005	0.00513	< 0.0050	< 0.0050	0.0066	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium			mg/L	-	0.00010	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Metals																		
Aluminum			mg/L	0.00663	0.00462	0.00330	0.0038	0.0043	0.0031	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	0.0044	< 0.0030	< 0.0030
Antimony			mg/L	0.00050	0.00050	0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	0.005		mg/L	0.00028	0.00035	0.00033	0.00026	0.00027	0.00029	0.00029	0.0003	0.00029	0.00028	0.00027	0.00029	0.00068	0.00034	0.00037
Barium			mg/L	0.00750	0.00837	0.00973	0.0094	0.0101	0.0106	0.0121	0.0123	0.0128	0.0089	0.0078	0.0074	0.0078	0.0083	0.0092
Beryllium			mg/L	0.00010	0.00010	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth			mg/L	-	0.00100	0.00100	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron			mg/L	0.05000	0.05000	0.05000	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	0.00009		mg/L	0.00001	0.00001	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Chromium			mg/L	0.00100	0.00100	0.00100	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt			mg/L	-	0.00020	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	-	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper			mg/L	0.00070	0.00078	0.00071	0.00073	0.00079	0.0007	0.00074	0.00079	0.00075	0.00071	0.00059	0.00067	0.00051	0.00076	0.00082
Iron	0.3		mg/L	0.00773	0.02153	0.01381	0.0262	0.0199	0.0155	0.0114	0.0133	0.0081	0.0166	0.0061	0.008	0.023	0.0081	0.0095
Lead			mg/L	0.00020	0.00020	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium			mg/L	0.00200	0.00200	0.00200	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Manganese			mg/L	0.00100	0.00497	0.00179	0.0048	0.0026	0.0015	0.0013	0.0015	0.0013	0.0028	< 0.0010	< 0.0010	0.0012	< 0.0010	0.0015
Mercury	0.000026		mg/L	0.00001	0.00003	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	0.073		mg/L	0.00100	0.00100	0.00100	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Nickel			mg/L	0.00113	0.00100	0.00100	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Selenium	0.001		mg/L	0.00010	0.00009	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon			mg/L	-	0.14100	0.18927	0.169	0.208	0.226	0.237	0.317	-	0.177	0.142	0.149	0.148	0.136	0.173
Silver	0.0001		mg/L	0.00002	0.00002	0.00002	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Strontium			mg/L	0.03393	0.04430	0.04529	0.0435	0.0465	0.0469	0.0498	0.0529	0.053	0.0393	0.0375	0.0377	0.0428	0.0441	0.0495
Sulphur			mg/L	-	3.00000	3.00000	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Thallium	0.0008		mg/L	0.00001	0.00001	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin			mg/L	0.00500	0.00500	0.00500	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium			mg/L	0.00500	0.00500	0.00500	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium			mg/L	0.00010	0.00010	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium			mg/L	0.00500	0.00500	0.00500	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	0.03		mg/L	0.00500	0.00500	0.00500	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium			mg/L	-	0.00010	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Volatile Organics																		
Benzene	0.37	0.005	mg/L	0.00020	0.00020	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Ethylbenzene	0.09	0.14	mg/L	0.00020	0.00020	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Toluene	0.002	0.06	mg/L	0.00020	0.00034	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Xylenes		0.09	mg/L	0.00040	0.00040	0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040
m,p-Xylenes			mg/L	0.00040	0.00040	0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040	< 0.00040
o-Xylene			mg/L	0.00020	0.00020	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
F1 (C6-C10)-BTEX			mg/L	0.025	0.0250	0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025
F1 (C6-C10)			mg/L	0.025	0.0250	0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025
F2 (C10-C16)			mg/L	0.10	0.10	0.10	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
F3 (C16-C34)			mg/L	0.20	0.20	0.20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
F4 (C34-C50)			mg/L	0.20	0.20	0.20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Reached baseline at C50			mg/L	-	-	-	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Note:
Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-11 QAQC	Sample Date	MDL	1/6/2019			
	Sample		Field Blank	Duplicate	Original	RPD (%)
	FIELD_SDG		B907309			
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	5.87	7.07	7.17	1.40
Specific conductivity	umhos/cm	1	1.5	94	94	0.00
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	26.7	26.4	1.13
Hardness, as CaCO3 (T)	mg/L	0.5	0.52	26.9	26.6	1.12
Total alkalinity, as CaCO3	mg/L	1	1	21	21	0.00
Total dissolved solids	mg/L	10	10	25	35	33.33
Total suspended solids	mg/L	10	10	10	10	0.00
Total organic carbon	mg/L	0.5	0.5	3.2	3.1	3.17
Dissolved organic carbon	mg/L	0.5	0.5	2.6	2.6	0.00
Turbidity	NTU	0.1	0.1	0.3	0.2	40.00
Major Ions						
Bicarbonate, as CaCO3	mg/L	1	1	21	21	0.00
Calcium	mg/L	0.05	0.05	8.39	8.25	1.68
Carbonate, as CaCO3	mg/L	1	1	1	1	0.00
Chloride	mg/L	1	1	12	12	0.00
Cyanide Total	mg/L	0.005	0.005	0.005	0.005	0.00
Cyanide WAD	mg/L	0.001	0.001	0.001	0.001	0.00
Magnesium	mg/L	0.05	0.05	1.4	1.4	0.00
Potassium	mg/L	0.05	0.05	1.07	1.09	1.85
Sodium	mg/L	0.05	0.05	5.67	5.54	2.32
Sulphate	mg/L	1	1	4.5	4.4	2.25
Silica	mg/L	0.05	0.05	0.36	0.34	5.71
Nutrients						
Nitrate	mg/L	0.1	0.1	0.1	0.1	0.00
Nitrite	mg/L	0.01	0.01	0.01	0.01	0.00
Nitrate + nitrite	mg/L	0.1	0.1	0.1	0.1	0.00
Total ammonia	mg/L	0.05	0.05	0.05	0.05	0.00
Total Kjeldahl nitrogen	mg/L	0.1	0.1	0.19	0.22	14.63
Total phosphorus	mg/L	0.02	0.02	0.02	0.02	0.00
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00
Total Metals						
Aluminum	mg/L	0.005	0.0052	0.005	0.0053	5.83
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00028	0.00028	0.00
Barium	mg/L	0.001	0.001	0.01	0.01	0.00
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Calcium	mg/L	0.05	0.051	8.52	8.38	1.66
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0005	0.0005	0.00083	0.00782	161.62
Iron	mg/L	0.01	0.163	0.057	0.071	21.88
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00
Magnesium	mg/L	0.05	0.095	1.36	1.37	0.73
Manganese	mg/L	0.001	0.0115	0.0078	0.0081	3.77
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00
Potassium	mg/L	0.05	0.05	1.08	1.06	1.87
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.19	0.187	1.59
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Sodium	mg/L	0.05	0.05	5.41	5.21	3.77
Strontium	mg/L	0.001	0.001	0.0448	0.0439	2.03
Sulphur	mg/L	3	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.0692	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-11 QAQC	Sample Date		MDL	1/6/2019			
	Sample			Field Blank	Duplicate	Original	RPD(%)
	FIELD_SDG			B907309			
Parameter	Unit						
Dissolved Metals							
Aluminum	mg/L	0.003	0.003	0.003	0.0038	23.53	
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00	
Arsenic	mg/L	0.0001	0.0001	0.00026	0.00026	0.00	
Barium	mg/L	0.001	0.001	0.0096	0.0094	2.11	
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00	
Boron	mg/L	0.05	0.05	0.05	0.05	0.00	
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00	
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	
Copper	mg/L	0.0002	0.0002	0.00075	0.00073	2.70	
Iron	mg/L	0.005	0.005	0.0151	0.0262	53.75	
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00	
Manganese	mg/L	0.001	0.001	0.0037	0.0048	25.88	
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00	
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00	
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	
Silicon	mg/L	0.1	0.1	0.169	0.169	0.00	
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00	
Strontium	mg/L	0.001	0.001	0.043	0.0435	1.16	
Sulphur	mg/L	3	3	3	3	0.00	
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	
Tin	mg/L	0.005	0.005	0.005	0.005	0.00	
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00	
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00	
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00	
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	
Volatile Organics							
Benzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	
Ethylbenzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	
Toluene	mg/L	0.0002	0.00077	0.0002	0.0002	0.00	
Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00	
m,p-Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00	
o-Xylene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	
F1 (C6-C10)-BTEX	mg/L	0.025	0.025	0.025	0.025	0.00	
F1 (C6-C10)	mg/L	0.025	0.025	0.025	0.025	0.00	
F2 (C10-C16)	mg/L	0.1	0.1	0.1	0.1	0.00	
F3 (C16-C34)	mg/L	0.2	0.2	0.2	0.2	0.00	
F4 (C34-C50)	mg/L	0.2	0.2	0.2	0.2	0.00	
Reached baseline at C50	mg/L	-	YES	YES	YES	-	

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-12	Sample Date	2018 Average	Annual Average	6/24/2019	7/9/2019	7/30/2019	8/7/2019	9/3/2019	9/24/2019	10/1/2019
	FIELD_SDG			B9H9570	B9J1423	B9L2255	B9M1834	B9P1635	B9R1326	B9R7371
Parameter	Unit									
Field Measured										
pH	pH units	-	7.95	7.32	8.62	8.07	8.43	8.1	7.45	7.65
Conductivity	uS/cm	-	3256.86	2139	2366	3454	3526	4197	2666	4450
Temperature	°C	-	10.85	14.57	12.6	11.7	15.2	5.7	10.7	5.5
Dissolved oxygen	mg/L	-	9.05	-	6.74	-	7.16	11.63	-	10.67
Dissolved oxygen	%	-	84.41	107.1	63.7	84.6	72.2	94.5	82.7	86.1
Conventional Parameters										
pH	pH units	7.49	7.59	7.36	7.28	7.71	7.8	7.62	7.73	7.63
Specific conductivity	umhos/cm	1875	3442.86	2000	2600	3400	3500	4100	4200	4300
Hardness, as CaCO3 (D)	mg/L	468.5	716.00	428	535	667	687	839	917	939
Hardness, as CaCO3 (T)	mg/L	481	740.43	413	566	671	690	877	936	1030
Total alkalinity, as CaCO3	mg/L		50.83	21	36	58	-	59	65	66
Total dissolved solids	mg/L	1152.5	2131.43	1570	1580	2130	2100	2600	2490	2450
Total suspended solids	mg/L	49	15.57	26	26	6	8	14	17	12
Total organic carbon	mg/L	18	14.40	-	-	12	14	16	15	15
Turbidity	NTU	7.125	6.67	7.5	13	3.7	3.5	4.4	7.8	6.8
Major Ions										
Calcium	mg/L		201.86	121	156	182	195	233	261	265
Chloride	mg/L	480	920.00	540	680	890	930	1100	1100	1200
Cyanide	mg/L	0.005	0.0075	0.0072	< 0.0050	< 0.0050	< 0.0050	0.0081	0.007	0.015
Cyanide (free)	mg/L	0.52575	0.0013	-	-	-	0.0013	-	-	-
Fluoride	mg/L		0.10	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Magnesium	mg/L		51.46	30.4	35.6	51.3	48.5	62.5	64.5	67.4
Potassium	mg/L		24.14	14.7	18.5	25.1	25.2	27.9	28.3	29.3
Sodium	mg/L		343.29	204	253	338	339	431	410	428
Sulphate	mg/L	53	141.00	77	90	120	130	180	190	200
Nutrients										
Nitrate	mg/L	3.99	23.614	15.9	18.3	25.8	25.3	26.6	24.7	28.7
Nitrite	mg/L	0.1825	0.984	0.293	0.598	1.04	1.61	1.42	1	0.926
Nitrate + nitrite	mg/L	4.175	24.600	16.2	18.9	26.8	26.9	28.1	25.7	29.6
Total ammonia	mg/L	1.1575	7.114	5.2	5.3	9.4	7.9	7.3	7.2	7.5
Total phosphorus	mg/L	0.14825	0.097	-	0.19	0.088	0.081	0.076	0.078	0.069
Orthophosphate	mg/L	0.01	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Metals										
Aluminum	mg/L	1.86425	0.4474	1.94	0.354	0.0984	0.0473	0.125	0.283	0.284
Antimony	mg/L	0.0005	0.0008	< 0.00050	0.00053	< 0.0010	0.00063	< 0.0010	0.00068	< 0.0010
Arsenic	mg/L	0.0043	0.0055	0.00613	0.00764	0.00407	0.00366	0.00457	0.00421	0.00807
Barium	mg/L	0.12425	0.1147	0.0682	0.0905	0.111	0.118	0.13	0.139	0.146
Beryllium	mg/L	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00020	< 0.00010	< 0.00020	< 0.00010	< 0.00020
Bismuth	mg/L	-	0.0014	< 0.0010	< 0.0010	< 0.0020	< 0.0010	< 0.0020	< 0.0010	< 0.0020
Boron	mg/L	0.13975	0.3573	0.176	0.246	0.362	0.364	0.446	0.434	0.473
Cadmium	mg/L	0.000027	0.0000	0.000021	0.000048	0.000043	0.000037	0.000047	0.000065	0.000064
Calcium	mg/L	148.25	210.8571	118	167	186	188	245	268	304
Chromium	mg/L	0.001425	0.0015	0.0012	< 0.0010	< 0.0020	< 0.0010	< 0.0020	< 0.0010	< 0.0020
Cobalt	mg/L	-	0.0015	0.00126	0.00182	0.00134	0.0012	0.00149	0.00159	0.00192
Copper	mg/L	0.0033425	0.0029	0.00298	0.00381	0.0025	0.00264	0.003	0.00242	0.0029
Iron	mg/L	1.1665	0.4279	1.44	0.385	0.132	0.199	0.235	0.297	0.307
Lead	mg/L	0.0006325	0.0005	0.0008	0.00064	< 0.00040	0.00027	< 0.00040	0.00052	0.00052
Lithium	mg/L	0.134	0.1113	0.0734	0.0936	0.11	0.0998	0.119	0.132	0.151
Magnesium	mg/L	26.9	51.7143	29.1	36.4	50.1	50.9	64.4	64.9	66.2
Manganese	mg/L	0.44	0.2160	0.203	0.314	0.0913	0.0704	0.17	0.318	0.345
Mercury	mg/L	0.00001	0.0000	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.001875	0.0028	0.0019	0.0026	0.0028	0.0027	0.0025	0.0033	0.0036
Nickel	mg/L	0.004475	0.0072	0.0053	0.0065	0.0067	0.0069	0.0075	0.0087	0.0087
Potassium	mg/L	13.75	24.7286	14.2	19.3	23.5	23.7	30.3	28.9	33.2
Selenium	mg/L	0.0001125	0.0002	0.00011	0.00015	< 0.00020	0.00017	0.00032	0.00025	0.00033
Silicon	mg/L	-	1.0726	0.677	1.16	0.874	0.717	1.06	1.27	1.75
Silver	mg/L	0.00002	0.0000	< 0.000020	< 0.000020	< 0.000040	< 0.000020	< 0.000040	< 0.000020	< 0.000040
Sodium	mg/L	131.25	348.5000	196	237	345	-	432	443	438
Strontium	mg/L	3.4675	4.1271	2.58	3.3	4.23	4.1	4.26	5.25	5.17
Sulphur	mg/L	-	51.0429	25.9	33	44.8	45.5	64.9	65.3	77.9
Thallium	mg/L	0.00003225	0.0001	0.000038	0.000043	0.000058	0.000058	0.000059	0.000059	0.000057
Tin	mg/L	0.005	0.0071	< 0.0050	< 0.0050	< 0.01	< 0.0050	< 0.01	< 0.0050	< 0.01
Titanium	mg/L	0.0123	0.0071	< 0.0050	< 0.0050	< 0.01	< 0.0050	< 0.01	< 0.0050	< 0.01
Uranium	mg/L	0.0008575	0.0013	0.00054	0.00114	0.00113	0.00106	0.00142	0.00171	0.00195
Vanadium	mg/L	0.005	0.0071	< 0.0050	< 0.0050	< 0.01	< 0.0050	< 0.01	< 0.0050	< 0.01
Zinc	mg/L	0.02275	0.0823	0.429	0.013	0.038	0.047	0.016	0.0172	0.016
Zirconium	mg/L	-	0.0002	< 0.00010	0.00012	< 0.00020	< 0.00010	< 0.00020	0.00016	0.00025

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-12	Sample Date	2018 Average	Annual Average	6/24/2019	7/9/2019	7/30/2019	8/7/2019	9/3/2019	9/24/2019	10/1/2019
Parameter	FIELD_SDG			B9H9570	B9J1423	B9L2255	B9M1834	B9P1635	B9R1326	B9R7371
	Unit									
Dissolved Metals										
Aluminum	mg/L	0.30075	0.09329	0.181	0.212	0.0565	0.03	0.0438	0.0733	0.0564
Antimony	mg/L	0.002875	0.00065	< 0.00050	0.00054	< 0.0010	0.00057	0.00057	0.00067	0.00068
Arsenic	mg/L	0.0021425	0.00419	0.00348	0.00644	0.00375	0.00338	0.00383	0.00297	0.00546
Barium	mg/L	0.116175	0.11049	0.07	0.0874	0.107	0.12	0.129	0.13	0.13
Beryllium	mg/L	0.000575	0.00011	< 0.00010	< 0.00010	< 0.00020	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	0.00114	< 0.0010	< 0.0010	< 0.0020	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.34875	0.34871	0.175	0.24	0.372	0.414	0.397	0.419	0.424
Cadmium	mg/L	0.00006075	0.00004	0.000019	0.000038	0.000038	0.000031	0.000036	0.000043	0.000045
Chromium	mg/L	0.00575	0.00114	< 0.0010	< 0.0010	< 0.0020	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	0.00119	0.00114	0.00163	0.00111	0.00106	0.00123	0.00096	0.00117
Copper	mg/L	0.00217	0.00215	0.00195	0.00292	0.00197	0.00208	0.00189	0.00221	0.00204
Iron	mg/L	0.20585	0.06829	0.0275	0.133	0.049	0.069	0.0761	0.0935	0.0299
Lead	mg/L	0.00115	0.00024	< 0.00020	0.00025	< 0.00040	< 0.00020	< 0.00020	0.00024	< 0.00020
Lithium	mg/L	0.133	0.10886	0.0647	0.0953	0.105	0.128	0.12	0.12	0.129
Manganese	mg/L	0.245975	0.07831	0.069	0.19	0.0222	0.0282	0.0886	0.0605	0.0897
Mercury	mg/L	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.00605	0.00281	0.0019	0.0028	0.0027	0.0028	0.0028	0.0032	0.0035
Nickel	mg/L	0.007325	0.00617	0.0047	0.0053	0.0059	0.0063	0.0063	0.0073	0.0074
Selenium	mg/L	0.000575	0.00024	0.00012	0.00015	< 0.00020	0.00018	0.00026	0.00043	0.00033
Silicon	mg/L	-	0.92286	0.489	1.03	1.02	0.751	0.89	1.06	1.22
Silver	mg/L	0.000115	0.00002	< 0.000020	< 0.000020	< 0.000040	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Strontium	mg/L	2.9925	4.21000	2.59	3.28	3.77	4.44	4.99	5.02	5.38
Sulphur	mg/L	-	49.45714	26.4	32.8	45.7	48.3	57.5	64.5	71
Thallium	mg/L	0.00006825	0.00005	0.000033	0.000043	0.000059	0.00006	0.000058	0.000056	0.000075
Tin	mg/L	0.02875	0.00571	< 0.0050	< 0.0050	< 0.01	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.02875	0.00571	< 0.0050	< 0.0050	< 0.01	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.000955	0.00121	0.00011	0.00108	0.0011	0.00107	0.00151	0.00168	0.00189
Vanadium	mg/L	0.02875	0.00571	< 0.0050	< 0.0050	< 0.01	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.035425	0.01367	< 0.0050	0.0076	0.019	0.0239	0.0113	0.0218	0.0071
Zirconium	mg/L	-	0.00012	< 0.00010	< 0.00010	< 0.00020	< 0.00010	< 0.00010	0.00017	0.0001
Toxicity										
Algal growth 72 h inhibition test - IC25	%	-	-	-	-	-	-	-	60.8	88.2
Ceriodaphnia 7 d mortality test - LC25	%	-	-	-	-	-	-	-	24.3	58.8
Ceriodaphnia 7 d mortality test - LC50	%	-	-	-	-	-	-	-	> 100	> 100
Daphnia 48 h static acute test - LC50	%	-	-	-	-	-	-	-	> 100	> 100
Fathead minnow 7 d growth test - IC25	%	-	-	-	-	-	-	-	> 100	> 100
Fathead minnow 7 d mortality test - LC50	%	-	-	-	-	-	-	-	> 100	> 100
Daphnia 48 h Static Acute Test - EC50	%	-	-	-	-	-	-	-	> 100	> 100
LC50 (96h) - Rainbow Trout	%	-	-	-	-	-	-	-	> 100	> 100
Concentration of effluent causing bioassay	%	-	-	-	-	-	-	-	> 97.0	66.2
Concentration of effluent causing frog bioassay	%	-	-	-	-	-	-	-	26.3	29.4
Toxic Unit - Daphnia Magnia	%	-	-	-	-	-	-	-	< 1	-
Toxic Unit - Rainbow Trout	%	-	-	-	-	-	-	-	< 1	-

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-12 QAQC	Sample Date	MDL	6/24/2019			
	FIELD_SDG		B9H9570			
	Sample Name		Field Blank	Duplicate	Original	RPD
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	6.15	7.45	7.36	1.22
Specific conductivity	umhos/cm	1	1.1	2000	2000	0.00
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	424	428	0.94
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	418	413	1.20
Total alkalinity, as CaCO3	mg/L	1	1	23	21	9.09
Total dissolved solids	mg/L	10	10	1580	1570	0.63
Total suspended solids	mg/L	1	1	47	26	57.53
Turbidity	NTU	0.1	0.1	15	7.5	66.67
Major Ions						
Calcium	mg/L	0.05	0.05	119	121	1.67
Chloride	mg/L	1	1	580	540	7.14
Cyanide	mg/L	0.005	0.005	0.0071	0.0072	1.40
Fluoride	mg/L	0.1	0.1	0.1	0.11	9.52
Magnesium	mg/L	0.05	0.05	30.7	30.4	0.98
Potassium	mg/L	0.05	0.05	14.7	14.7	0.00
Sodium	mg/L	0.05	0.05	205	204	0.49
Sulphate	mg/L	1	1	76	77	1.31
Nutrients						
Nitrate	mg/L	0.1	0.1	15.9	15.9	0.00
Nitrite	mg/L	0.01	0.01	0.302	0.293	3.03
Nitrate + nitrite	mg/L	0.1	0.1	16.2	16.2	0.00
Total ammonia	mg/L	0.05	0.05	5.4	5.2	3.77
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00
Total Metals						
Aluminum	mg/L	0.003	0.003	1.95	1.94	0.51
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00623	0.00613	1.62
Barium	mg/L	0.001	0.001	0.0691	0.0682	1.31
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.191	0.176	8.17
Cadmium	mg/L	0.00001	0.00001	0.000032	0.000021	41.51
Calcium	mg/L	0.05	0.05	119	118	0.84
Chromium	mg/L	0.001	0.001	0.001	0.0012	18.18
Cobalt	mg/L	0.0002	0.0002	0.00129	0.00126	2.35
Copper	mg/L	0.0005	0.0005	0.00346	0.00298	14.91
Iron	mg/L	0.01	0.01	1.43	1.44	0.70
Lead	mg/L	0.0002	0.0002	0.00093	0.0008	15.03
Lithium	mg/L	0.002	0.002	0.075	0.0734	2.16
Magnesium	mg/L	0.05	0.05	29.2	29.1	0.34
Manganese	mg/L	0.001	0.001	0.207	0.203	1.95
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.002	0.0019	5.13
Nickel	mg/L	0.001	0.001	0.0053	0.0053	0.00
Potassium	mg/L	0.05	0.05	14.4	14.2	1.40
Selenium	mg/L	0.0001	0.0001	0.00011	0.00011	0.00
Silicon	mg/L	0.1	0.1	0.703	0.677	3.77
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Sodium	mg/L	0.05	0.05	198	196	1.02
Strontium	mg/L	0.001	0.001	2.66	2.58	3.05
Sulphur	mg/L	3	3	25.9	25.9	0.00
Thallium	mg/L	0.00001	0.00001	0.000034	0.000038	11.11
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.00055	0.00054	1.83
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.441	0.429	2.76
Zirconium	mg/L	0.0001	0.0001	0.00013	0.0001	26.09

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-12 QAQC	Sample Date	MDL	6/24/2019			
	FIELD_SDG		B9H9570			
	Sample Name		Field Blank	Duplicate	Original	RPD
Parameter	Unit					
Dissolved Metals						
Aluminum	mg/L	0.003	0.003	0.19	0.181	4.85
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00351	0.00348	0.86
Barium	mg/L	0.001	0.001	0.0698	0.07	0.29
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.177	0.175	1.14
Cadmium	mg/L	0.00001	0.00001	0.000019	0.000019	0.00
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.00112	0.00114	1.77
Copper	mg/L	0.0002	0.0002	0.00435	0.00195	76.19
Iron	mg/L	0.005	0.005	0.0283	0.0275	2.87
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.0653	0.0647	0.92
Manganese	mg/L	0.001	0.001	0.0692	0.069	0.29
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.0019	0.0019	0.00
Nickel	mg/L	0.001	0.001	0.0046	0.0047	2.15
Selenium	mg/L	0.0001	0.0001	0.00011	0.00012	8.70
Silicon	mg/L	0.1	0.1	0.488	0.489	0.20
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Strontium	mg/L	0.001	0.001	2.6	2.59	0.39
Sulphur	mg/L	3	3	26.7	26.4	1.13
Thallium	mg/L	0.00001	0.00001	0.000033	0.000033	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.00011	0.00011	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-03-01	Sample Date	2018 Average	Annual Average	7/14/2019	8/9/2019	8/14/2019	9/14/2019
	FIELD_SDG			B9J9536	B9M7538	B9N0057	B9Q2056
Parameter	Unit						
Field Measured							
pH	pH units	-	7.384	7.49	7.43	7.11	7.46
Conductivity	uS/cm	-	71.62	67.8	72.9	71.4	73.1
Temperature	°C	-	10.736	8	12.14	13.6	7.8
Dissolved oxygen	mg/L	-	10.08	-	10.08	-	-
Dissolved oxygen	%	-	99.92	101.4	94.8	104.6	104
Conventional Parameters							
pH	pH units	7.48	7.5475	7.63	7.47	7.56	7.53
Specific conductivity	umhos/cm	76	72.75	71	73	73	74
Hardness, as CaCO3 (D)	mg/L	21.9	21.225	20.1	21.7	21.4	21.7
Hardness, as CaCO3 (T)	mg/L	21.4	21.125	21.3	21	20.7	21.5
Total alkalinity, as CaCO3	mg/L	18	16.25	16	16	17	16
Total dissolved solids	mg/L	25	50	50	55	50	45
Total suspended solids	mg/L	1	1.25	< 1	2	1	< 1
Total organic carbon	mg/L	2.3	2.375	2.4	2.3	2.3	2.5
Dissolved organic carbon	mg/L	2.4	2.125	2.2	2	2	2.3
Turbidity	NTU	0.2	0.1	0.1	< 0.1	0.1	< 0.1
Dissolved Oxygen	mg/L	10.4	10.3225	9.79	11	10.2	10.3
Major Ions							
Bicarbonate, as CaCO3	mg/L	18	16.25	16	16	17	16
Calcium	mg/L	6.95	6.6925	6.39	6.81	6.75	6.82
Carbonate, as CaCO3	mg/L	1	1	< 1.0	< 1.0	< 1.0	< 1.0
Chloride	mg/L	8.4	8.5	7.6	8.6	8.7	9.1
Cyanide Total	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cyanide Free	mg/L	-	0.00155	< 0.0010	< 0.0010	0.0032	< 0.0010
Cyanide WAD	mg/L	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Magnesium	mg/L	1.11	1.0975	1	1.14	1.12	1.13
Potassium	mg/L	0.874	0.8505	0.804	0.856	0.853	0.889
Sodium	mg/L	4.36	4.295	4	4.4	4.31	4.47
Sulphate	mg/L	3.2	3.05	3.2	2.8	2.8	3.4
Silica	mg/L	0.23	0.1825	0.16	0.22	0.17	0.18
Nutrients							
Nitrate	mg/L	0.1	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Nitrite	mg/L	0.01	0.01	< 0.010	< 0.010	< 0.010	< 0.010
Nitrate + nitrite	mg/L	0.1	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Total ammonia	mg/L	0.05	0.07	< 0.050	0.13	< 0.050	< 0.050
Total Kjeldahl nitrogen	mg/L	0.12	0.1675	0.14	0.19	0.18	0.16
Total phosphorus	mg/L	0.02	0.02	< 0.020	< 0.020	< 0.020	< 0.020
Orthophosphate	mg/L	0.01	0.01	< 0.010	< 0.010	< 0.010	< 0.010
Total Metals							
Aluminum	mg/L	0.007	0.006925	0.0049	0.0125	0.0037	0.0066
Antimony	mg/L	0.0005	0.0005	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	0.0002	0.0001925	0.0002	0.00018	0.00019	0.0002
Barium	mg/L	0.0072	0.00755	0.0074	0.0075	0.0078	0.0075
Beryllium	mg/L	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	0.00001	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Calcium	mg/L	6.79	6.66	6.77	6.63	6.52	6.72
Chromium	mg/L	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.00067	0.00066	0.00062	0.00062	0.0006	0.0008
Iron	mg/L	0.014	0.01325	0.014	0.014	0.011	0.014
Lead	mg/L	0.0002	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	0.002	0.002	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Magnesium	mg/L	1.08	1.0825	1.06	1.07	1.06	1.14
Manganese	mg/L	0.0022	0.002425	0.0026	0.0025	0.0024	0.0022
Mercury	mg/L	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Nickel	mg/L	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Potassium	mg/L	0.885	0.8615	0.858	0.88	0.826	0.882
Selenium	mg/L	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	0.10775	0.106	0.11	0.106	0.109
Silver	mg/L	0.00002	0.00002	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium	mg/L	4.25	4.195	4.21	4.04	4.04	4.49
Strontium	mg/L	0.0333	0.031225	0.032	0.0309	0.0304	0.0316
Sulphur	mg/L	-	3	< 3	< 3	< 3	< 3
Thallium	mg/L	0.00001	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-03-01	Sample Date	2018 Average	Annual Average	7/14/2019	8/9/2019	8/14/2019	9/14/2019
	FIELD_SDG			B9J9536	B9M7538	B9N0057	B9Q2056
Parameter	Unit						
Total Metals							
Tin	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Metals							
Aluminum	mg/L	0.0043	0.00325	< 0.0030	0.0035	< 0.0030	0.0035
Antimony	mg/L	0.0005	0.0005	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	0.00019	0.0002	0.0002	0.00021	0.00018	0.00021
Barium	mg/L	0.0072	0.007275	0.0072	0.0073	0.0073	0.0073
Beryllium	mg/L	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	0.00001	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Chromium	mg/L	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.0006	0.000605	0.00062	0.00058	0.00056	0.00066
Iron	mg/L	0.005	0.005225	0.0059	< 0.0050	< 0.0050	< 0.0050
Lead	mg/L	0.0002	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	0.002	0.002	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Manganese	mg/L	0.001	0.001125	0.0015	< 0.0010	< 0.0010	< 0.0010
Mercury	mg/L	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Nickel	mg/L	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Selenium	mg/L	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	0.10075	< 0.1	0.101	0.102	< 0.1
Silver	mg/L	0.00002	0.00002	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Strontium	mg/L	0.0335	0.03085	0.0295	0.0313	0.0306	0.032
Sulphur	mg/L	-	3	< 3.0	< 3.0	< 3.0	< 3.0
Thallium	mg/L	0.00001	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Volatile Organics							
Benzene	mg/L	0.0002	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Ethylbenzene	mg/L	0.0002	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Toluene	mg/L	0.0002	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Xylenes	mg/L	0.0004	0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040
m,p-Xylenes	mg/L	0.0004	0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040
o-Xylene	mg/L	0.0002	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
F1 (C6-C10)-BTX	mg/L	0.025	0.025	< 0.025	< 0.025	< 0.025	< 0.025
F1 (C6-C10)	mg/L	0.025	0.025	< 0.025	< 0.025	< 0.025	< 0.025
F2 (C10-C16)	mg/L	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
F3 (C16-C34)	mg/L	0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2
F4 (C34-C50)	mg/L	0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Reached baseline at C50	mg/L	-	-	YES	YES	YES	YES
1,2-Dichloroethane-d4	mg/L	-	99.5	102	95	105	96
Ethylbenzene-d10	mg/L	-	99	106	94	97	99
4-Bromofluorobenzene	mg/L	-	97.75	96	97	97	101
1,4-Difluorobenzene	mg/L	-	104.5	103	100	112	103
o-Terphenyl	mg/L	-	100.25	92	106	108	95
Radionuclides							
Radium-226	Bq/l	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-03-01 QAQC	Sample Date	MDL	8/9/2019			8/14/2019			
	FIELD_SDG		B9M7538			B9N0057			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)	Duplicate	Original	RPD (%)
Parameter	Unit								
Conventional Parameters									
pH	pH units	-	6	7.27	7.47	0.68	7.45	7.56	0.37
Specific conductivity	umhos/cm	1	1	75	73	0.68	73	73	0.00
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	21.1	21.7	0.70	21.8	21.4	0.46
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	20.8	21	0.24	21.3	20.7	0.71
Total alkalinity, as CaCO3	mg/L	1	1	16	16	0.00	16	17	1.52
Total dissolved solids	mg/L	10	10	40	55	7.89	35	50	8.82
Total suspended solids	mg/L	1	1	1	2	16.67	1	1	0.00
Total organic carbon	mg/L	0.5	0.5	2.3	2.3	0.00	2.3	2.3	0.00
Dissolved organic carbon	mg/L	0.5	0.5	2	2	0.00	2	2	0.00
Turbidity	NTU	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.00
Dissolved Oxygen	mg/L	-	11.2	10.9	11	0.23	10.3	10.2	0.24
Major Ions									
Bicarbonate, as CaCO3	mg/L	1	1	16	16	0.00	16	17	1.52
Calcium	mg/L	0.05	0.05	6.65	6.81	0.59	6.87	6.75	0.44
Carbonate, as CaCO3	mg/L	1	1	1	1	0.00	1	1	0.00
Chloride	mg/L	1	1	8.6	8.6	0.00	8.6	8.7	0.29
Cyanide Total	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Cyanide Free	mg/L	0.001	0.001	0.001	0.001	0.00	0.0011	0.0032	24.42
Cyanide WAD	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Magnesium	mg/L	0.05	0.05	1.1	1.14	0.89	1.13	1.12	0.22
Potassium	mg/L	0.05	0.05	0.816	0.856	1.20	0.886	0.853	0.95
Sodium	mg/L	0.05	0.05	4.18	4.4	1.28	4.44	4.31	0.74
Sulphate	mg/L	1	1	2.9	2.8	0.88	2.9	2.8	0.88
Silica	mg/L	0.05	0.05	1.4	0.22	36.42	0.19	0.17	2.78
Nutrients									
Nitrate	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.00
Nitrite	mg/L	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00
Nitrate + nitrite	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.00
Total ammonia	mg/L	0.05	0.21	0.05	0.13	22.22	0.05	0.05	0.00
Total Kjeldahl nitrogen	mg/L	0.1	0.1	0.17	0.19	2.78	0.17	0.18	1.43
Total phosphorus	mg/L	0.02	0.02	0.02	0.02	0.00	0.02	0.02	0.00
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00
Total Metals									
Aluminum	mg/L	0.003	0.0036	0.0059	0.0125	17.93	0.0037	0.0037	0.00
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00019	0.00018	1.35	0.00019	0.00019	0.00
Barium	mg/L	0.001	0.001	0.0074	0.0075	0.34	0.0073	0.0078	1.66
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00
Calcium	mg/L	0.05	0.05	6.56	6.63	0.27	6.7	6.52	0.68
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00
Copper	mg/L	0.0005	0.0005	0.00056	0.00062	2.54	0.00061	0.0006	0.41
Iron	mg/L	0.01	0.01	0.013	0.014	1.85	0.011	0.011	0.00
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00	0.002	0.002	0.00
Magnesium	mg/L	0.05	0.05	1.06	1.07	0.23	1.1	1.06	0.93
Manganese	mg/L	0.001	0.001	0.0024	0.0025	1.02	0.0025	0.0024	1.02
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Potassium	mg/L	0.05	0.05	0.853	0.88	0.78	0.862	0.826	1.07
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.111	0.11	0.23	0.108	0.106	0.47
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00	0.00002	0.00002	0.00
Sodium	mg/L	0.05	0.05	3.99	4.04	0.31	4.21	4.04	1.03
Strontium	mg/L	0.001	0.001	0.0307	0.0309	0.16	0.031	0.0304	0.49
Sulphur	mg/L	3	3	3	3	0.00	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-03-01 QAQC	Sample Date	MDL	8/9/2019			8/14/2019			
	FIELD_SDG		B9M7538			B9N0057			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)	Duplicate	Original	RPD (%)
Parameter	Unit								
Dissolved Metals									
Aluminum	mg/L	0.003	0.003	0.003	0.0035	3.85	0.003	0.003	0.00
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00021	0.00021	0.00	0.00019	0.00018	1.35
Barium	mg/L	0.001	0.001	0.007	0.0073	1.05	0.0075	0.0073	0.68
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00
Copper	mg/L	0.0002	0.0002	0.00058	0.00058	0.00	0.00055	0.00056	0.45
Iron	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00	0.002	0.002	0.00
Manganese	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.1	0.101	0.25	0.105	0.102	0.72
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00	0.00002	0.00002	0.00
Strontium	mg/L	0.001	0.001	0.0304	0.0313	0.73	0.0312	0.0306	0.49
Sulphur	mg/L	3	3	3	3	0.00	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00
Volatile Organics									
Benzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00
Ethylbenzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00
Toluene	mg/L	0.0002	0.00059	0.0002	0.0002	0.00	0.0002	0.0002	0.00
Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00	0.0004	0.0004	0.00
m,p-Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00	0.0004	0.0004	0.00
o-Xylene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00
F1 (C6-C10)-BTEX	mg/L	0.025	0.025	0.025	0.025	0.00	0.025	0.025	0.00
F1 (C6-C10)	mg/L	0.025	0.025	0.025	0.025	0.00	0.025	0.025	0.00
F2 (C10-C16)	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.00
F3 (C16-C34)	mg/L	0.2	0.2	0.2	0.2	0.00	0.2	0.2	0.00
F4 (C34-C50)	mg/L	0.2	0.2	0.2	0.2	0.00	0.2	0.2	0.00
Reached baseline at C50	mg/L	YES	YES	YES	YES	-	YES	YES	-
1,2-Dichloroethane-d4	mg/L	-	97	97	95	0.52	109	105	0.93
Ethylbenzene-d10	mg/L	-	98	95	94	0.26	91	97	1.60
4-Bromofluorobenzene	mg/L	-	98	97	97	0.00	99	97	0.51
1,4-Difluorobenzene	mg/L	-	100	100	100	0.00	115	112	0.66
o-Terphenyl	mg/L	-	112	107	106	0.23	103	108	1.18
Radionuclides									
Radium-226	Bq/l	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-13	Sample Date	2018 Average	Annual Average	7/14/2019	8/10/2019	8/18/2019	9/18/2019
	FIELD_SDG			B9J9465	B9M5881	B9N2989	B9Q6869
Parameter	Unit						
Field Measured							
pH	pH units	-	7.59	7.36	7.5	7.62	7.89
Conductivity	uS/cm	-	82.20	76.9	83.4	81.8	86.7
Temperature	°C	-	10.08	7.46	12.54	12.7	7.6
Dissolved oxygen	mg/L	-	11.01	-	11.01	-	-
Dissolved oxygen	%	-	102.68	100.1	104.9	106.1	99.6
Conventional Parameters							
pH	pH units	7.34	7.47	7.45	7.26	7.59	7.56
Specific conductivity	umhos/cm	87.50	84.75	79	84	86	90
Hardness, as CaCO3 (D)	mg/L	24.05	22.85	21.7	23	23	23.7
Hardness, as CaCO3 (T)	mg/L	140.00	23.40	22.4	22.4	23.1	25.7
Total alkalinity, as CaCO3	mg/L	16.00	15.50	14	16	16	16
Total dissolved solids	mg/L	147.50	58.75	65	45	70	55
Total suspended solids	mg/L	1.00	1.00	< 1	1	1	1
Total organic carbon	mg/L	3.00	3.10	3	3	3.2	3.2
Dissolved organic carbon	mg/L	2.90	2.80	2.7	3	2.6	2.9
Turbidity	NTU	0.28	0.20	0.3	< 0.1	0.2	0.2
Dissolved Oxygen	mg/L	10.45	10.35	9.73	11.6	10.3	9.77
Major Ions							
Bicarbonate, as CaCO3	mg/L	16.00	15.50	14	16	16	16
Calcium	mg/L	7.48	7.07	6.72	7.12	7.12	7.3
Carbonate, as CaCO3	mg/L	1.00	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Chloride	mg/L	13.00	12.00	11	12	12	13
Cyanide Total	mg/L	0.01	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cyanide Free	mg/L	-	0.0015	< 0.0010	0.0011	0.0021	0.0016
Cyanide WAD	mg/L	0.00	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Magnesium	mg/L	1.31	1.27	1.2	1.28	1.27	1.34
Potassium	mg/L	0.94	0.93	0.876	0.935	0.93	0.969
Sodium	mg/L	5.41	5.09	4.73	5.07	5.03	5.53
Sulphate	mg/L	4.33	3.63	3.8	3.6	3.3	3.8
Silica	mg/L	0.32	0.45	0.42	0.8	0.31	0.26
Nutrients							
Nitrate	mg/L	0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nitrite	mg/L	0.01	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Nitrate + nitrite	mg/L	0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total ammonia	mg/L	0.09	0.11	< 0.050	0.13	0.22	0.055
Total Kjeldahl nitrogen	mg/L	0.16	0.22	0.15	0.37	0.18	0.16
Total phosphorus	mg/L	0.02	0.021	< 0.020	< 0.020	< 0.020	0.025
Orthophosphate	mg/L	0.01	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Metals							
Aluminum	mg/L	1.6675	0.0070	0.0057	0.0051	0.0055	0.0115
Antimony	mg/L	0.0005	0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	0.0010	0.00036	0.00029	0.00033	0.00039	0.00043
Barium	mg/L	0.0375	0.0076	0.0079	0.0071	0.0074	0.0078
Beryllium	mg/L	0.0001	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.0765	0.050	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	0.0000	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Calcium	mg/L	43.8300	7.23	6.99	6.86	7.15	7.9
Chromium	mg/L	0.0010	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.0013	0.00072	0.00065	0.00066	0.00072	0.00084
Iron	mg/L	0.1193	0.028	0.036	0.023	0.023	0.031
Lead	mg/L	0.0002	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	0.0378	0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Magnesium	mg/L	7.4975	1.30	1.21	1.27	1.28	1.44
Manganese	mg/L	0.0712	0.0077	0.0179	0.0045	0.005	0.0035
Mercury	mg/L	0.00001	0.000010	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.0011	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Nickel	mg/L	0.0016	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Potassium	mg/L	4.2058	0.96	0.893	0.901	0.984	1.05
Selenium	mg/L	0.0001	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	0.19	0.24	0.184	0.2	0.153
Silver	mg/L	0.00002	0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium	mg/L	35.8875	5.24	4.9	5.01	5.17	5.88
Strontium	mg/L	0.9866	0.04	0.0391	0.0376	0.0394	0.0459
Sulphur	mg/L	-	3.00	< 3	< 3	< 3	< 3
Thallium	mg/L	0.00002	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-13	Sample Date	2018 Average	Annual Average	7/14/2019	8/10/2019	8/18/2019	9/18/2019
	FIELD_SDG			B9J9465	B9M5881	B9N2989	B9Q6869
Parameter	Unit						
Total Metals							
Tin	mg/L	0.0050	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.0050	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.0003	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	0.0050	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.0064	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Metals							
Aluminum	mg/L	0.00785	0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030
Antimony	mg/L	0.00050	0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	0.0003625	0.00034	0.00027	0.00034	0.00037	0.00039
Barium	mg/L	0.007625	0.0073	0.0074	0.0073	0.0072	0.0072
Beryllium	mg/L	0.00010	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	0.000010	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Chromium	mg/L	0.0010	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.000715	0.00087	0.00068	0.0014	0.00066	0.00072
Iron	mg/L	0.008325	0.0080	0.0118	0.0065	0.0085	0.0051
Lead	mg/L	0.00020	0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	0.0020	0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Manganese	mg/L	0.00105	0.005	0.0121	< 0.0010	0.0013	< 0.0010
Mercury	mg/L	0.000010	0.000010	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.0010	0.0039	0.0097	< 0.0010	0.002	0.0027
Nickel	mg/L	0.0010	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Selenium	mg/L	0.00010	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	0.18	0.222	0.187	0.183	0.133
Silver	mg/L	0.000020	0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Strontium	mg/L	0.0491	0.040	0.0371	0.0402	0.0397	0.0448
Sulphur	mg/L	-	3.00	< 3.0	< 3.0	< 3.0	< 3.0
Thallium	mg/L	0.000010	0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	0.0050	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.0050	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.0001	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	0.0050	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.0050	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Volatile Organics							
Benzene	mg/L	0.00020	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Ethylbenzene	mg/L	0.00020	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Toluene	mg/L	0.00020	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Xylenes	mg/L	0.00040	0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040
m,p-Xylenes	mg/L	0.00040	0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040
o-Xylene	mg/L	0.00020	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
F1 (C6-C10)-BTEX	mg/L	0.025	0.025	< 0.025	< 0.025	< 0.025	< 0.025
F1 (C6-C10)	mg/L	0.025	0.025	< 0.025	< 0.025	< 0.025	< 0.025
F2 (C10-C16)	mg/L	0.10	0.10	< 0.1	< 0.1	< 0.1	< 0.1
F3 (C16-C34)	mg/L	0.20	0.20	< 0.2	< 0.2	< 0.2	< 0.2
F4 (C34-C50)	mg/L	0.20	0.20	< 0.2	< 0.2	< 0.2	< 0.2
Reached baseline at C50	mg/L	-	-	YES	YES	YES	YES
1,2-Dichloroethane-d4	mg/L	-	95.25	93	97	83	108
Ethylbenzene-d10	mg/L	-	97.50	98	95	83	114
4-Bromofluorobenzene	mg/L	-	97.25	96	98	94	101
1,4-Difluorobenzene	mg/L	-	101.00	102	100	100	102
o-Terphenyl	mg/L	-	97.00	103	99	92	94
Radionuclides							
Radium-226	Bq/l	0.0050	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-13 QAQC	Sample Date	MDL	8/10/2019				8/18/2019			
	FIELD_SDG		B9M5881				B9N2989			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)	Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit									
Conventional Parameters										
pH	pH units	-	5.72	7.14	7.26	1.67	5.93	7.5	7.59	1.19
Specific conductivity	umhos/cm	1	1	83	84	1.20	1	83	86	3.55
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	23.2	23	0.87	0.5	23	23	0.00
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	22.7	22.4	1.33	0.5	23.2	23.1	0.43
Total alkalinity, as CaCO3	mg/L	1	1	15	16	6.45	1	15	16	6.45
Total dissolved solids	mg/L	10	10	45	45	0.00	10	80	70	13.33
Total suspended solids	mg/L	1	1	2	1	66.67	1	2	1	66.67
Total organic carbon	mg/L	0.5	0.5	3	3	0.00	0.5	3.1	3.2	3.17
Dissolved organic carbon	mg/L	0.5	0.5	3	3	0.00	0.5	2.7	2.6	3.77
Turbidity	NTU	0.1	0.1	0.2	0.1	66.67	0.1	0.1	0.2	66.67
Dissolved Oxygen	mg/L	11.2	11.2	11.2	11.6	3.51	10.6	10.4	10.3	0.97
Major Ions										
Bicarbonate, as CaCO3	mg/L	1	1	15	16	6.45	1	15	16	6.45
Calcium	mg/L	0.05	0.05	7.17	7.12	0.70	0.05	7.1	7.12	0.28
Carbonate, as CaCO3	mg/L	1	1	1	1	0.00	1	1	1	0.00
Chloride	mg/L	1	1	12	12	0.00	1	11	12	8.70
Cyanide Total	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Cyanide Free	mg/L	0.001	0.0011	0.0016	0.0011	37.04	0.0021	0.0011	0.0021	62.50
Cyanide WAD	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.0015	0.001	40.00
Magnesium	mg/L	0.05	0.05	1.28	1.28	0.00	0.05	1.27	1.27	0.00
Potassium	mg/L	0.05	0.05	0.946	0.935	1.17	0.05	0.932	0.93	0.21
Sodium	mg/L	0.05	0.05	5.06	5.07	0.20	0.05	5.06	5.03	0.59
Sulphate	mg/L	1	1	3.4	3.6	5.71	1	3.6	3.3	8.70
Silica	mg/L	0.05	0.05	0.36	0.8	75.86	0.05	0.3	0.31	3.28
Nutrients										
Nitrate	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.1	0.00
Nitrite	mg/L	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00
Nitrate + nitrite	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.1	0.00
Total ammonia	mg/L	0.05	0.05	0.066	0.13	65.31	0.05	0.12	0.22	58.82
Total Kjeldahl nitrogen	mg/L	0.1	0.1	0.15	0.37	84.62	0.1	0.11	0.18	48.28
Total phosphorus	mg/L	0.02	0.02	0.02	0.02	0.00	0.02	0.02	0.02	0.00
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00
Total Metals										
Aluminum	mg/L	0.003	0.003	0.0057	0.0051	11.11	0.003	0.0057	0.0055	3.57
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00037	0.00033	11.43	0.0001	0.00038	0.00039	2.60
Barium	mg/L	0.001	0.001	0.0073	0.0071	2.78	0.001	0.0074	0.0074	0.00
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Calcium	mg/L	0.05	0.05	7	6.86	2.02	0.05	7.19	7.15	0.56
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0005	0.0005	0.00073	0.00066	10.07	0.0005	0.0007	0.00072	2.82
Iron	mg/L	0.01	0.01	0.022	0.023	4.44	0.01	0.022	0.023	4.44
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00	0.002	0.002	0.002	0.00
Magnesium	mg/L	0.05	0.05	1.28	1.27	0.78	0.05	1.27	1.28	0.78
Manganese	mg/L	0.001	0.001	0.0051	0.0045	12.50	0.001	0.0049	0.005	2.02
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Potassium	mg/L	0.05	0.05	0.929	0.901	3.06	0.05	0.97	0.984	1.43
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.195	0.184	5.80	0.1	0.201	0.2	0.50
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00	0.00002	0.00002	0.00002	0.00
Sodium	mg/L	0.05	0.05	5.15	5.01	2.76	0.05	5.09	5.17	1.56
Strontium	mg/L	0.001	0.001	0.039	0.0376	3.66	0.001	0.0394	0.0394	0.00
Sulphur	mg/L	3	3	3	3	0.00	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-13 QAQC	Sample Date	MDL	8/10/2019				8/18/2019			
	FIELD_SDG		B9M5881				B9N2989			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)	Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit									
Dissolved Metals										
Aluminum	mg/L	0.003	0.003	0.003	0.003	0.00	0.003	0.003	0.003	0.00
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00035	0.00034	2.90	0.0001	0.00036	0.00037	2.74
Barium	mg/L	0.001	0.001	0.0073	0.0073	0.00	0.001	0.0072	0.0072	0.00
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0002	0.0002	0.00063	0.0014	75.86	0.0002	0.00066	0.00066	0.00
Iron	mg/L	0.005	0.005	0.0063	0.0065	3.12	0.005	0.0075	0.0085	12.50
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00	0.002	0.002	0.002	0.00
Manganese	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.0013	0.0013	0.00
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.186	0.187	0.54	0.1	0.189	0.183	3.23
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00	0.00002	0.00002	0.00002	0.00
Strontium	mg/L	0.001	0.001	0.041	0.0402	1.97	0.001	0.0399	0.0397	0.50
Sulphur	mg/L	3	3	3	3	0.00	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Volatile Organics										
Benzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Ethylbenzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Toluene	mg/L	0.0002	0.00037	0.0002	0.0002	0.00	0.00059	0.0002	0.0002	0.00
Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00	0.0004	0.0004	0.0004	0.00
m,p-Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00	0.0004	0.0004	0.0004	0.00
o-Xylene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
F1 (C6-C10)-BTEX	mg/L	0.025	0.025	0.025	0.025	0.00	0.025	0.025	0.025	0.00
F1 (C6-C10)	mg/L	0.025	0.025	0.025	0.025	0.00	0.025	0.025	0.025	0.00
F2 (C10-C16)	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.1	0.00
F3 (C16-C34)	mg/L	0.2	0.2	0.2	0.2	0.00	0.2	0.2	0.2	0.00
F4 (C34-C50)	mg/L	0.2	0.2	0.2	0.2	0.00	0.2	0.2	0.2	0.00
Reached baseline at C50	mg/L	YES	YES	YES	YES	-	YES	YES	YES	-
1,2-Dichloroethane-d4	%	-	98	98	97	1.03	82	84	83	1.20
Ethylbenzene-d10	%	-	94	95	95	0.00	84	83	83	0.00
4-Bromofluorobenzene	%	-	99	98	98	0.00	95	93	94	1.07
1,4-Difluorobenzene	%	-	100	101	100	1.00	100	101	100	1.00
o-Terphenyl	%	-	100	100	99	1.01	97	94	92	2.15
Radionuclides										
Radium-226	Bq/l	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-14	MDMER MAX GRAB	MDMER MAX MONTHLY MEAN	MEL-14 MAX GRAB	MEL-14 MAX MEAN	Sample Date FIELD_SDG Unit	2018 Average	Annual Average	6/24/2019 B9H6488	7/9/2019 B9J1427	7/15/2019 B9J7572	7/25/2019 B9K9242	7/30/2019 B9L2327	8/6/2019 B9M0110	8/7/2019 B9M1829	8/13/2019 B9M5838	8/20/2019 B9N3261	8/22/2019 B9N6683	8/29/2019 B9O3972	9/3/2019 B9O6583	9/7/2019 B9P4256	9/12/2019 B9P8919	9/13/2019 B9Q2018	9/17/2019 B9Q3637	9/24/2019 B9R1304	10/1/2019 B9R7358	
Parameter																										
Field Measured																										
pH	6.0 - 9.5	6.0 - 9.5			pH units	-	7.22	7.25	6.91	7.4	7.21	7.02	7.14	7.71	7.24	7.36	7.45	7.15	7.13	7.3	7	7.18	7.06	7.08	7.31	
Conductivity					uS/cm	-	1929.44	1780	1768	1864	1809	1652	1534	1716	1728	1862	1882	1944	2171	2243	2240	2225	1994	2147	2171	
Temperature					°C	-	13.12	12.47	13.8	13.2	16	22	14.8	16.7	13.6	11.5	14.8	13.1	7.13	10.3	18.3	12	10.8	12.1	3.5	
Dissolved oxygen					mg/L	-	9.17	11.41	9.61	-	-	-	7.04	7.38	-	-	-	-	-	10.16	7.67	8.12	-	-	12	
Dissolved oxygen					%	-	82.40	110.2	93.4	66.2	94.5	36.8	72.6	76.8	85	79.3	85	74.8	67.5	92.6	76.9	77.4	102	101.2	91	
Conventional Parameters																										
pH	6.0 - 9.5	6.0 - 9.5	6.0 - 9.5	6.0 - 9.5	pH units	7.22	7.46	7.23	7.23	7.38	7.41	7.47	7.26	-	7.36	7.8	-	7.71	7.53	-	7.59	-	7.5	7.67	7.36	
Specific conductivity					umhos/cm	1854.55	1905.56	1700	1900	1800	1700	1600	1500	1700	1700	1800	1900	1900	2100	2200	2300	2200	2100	2100	2100	
Hardness, as CaCO3 (D)					mg/L	428.12	354.86	326	380	292	300	266	234	-	271	388	-	391	450	-	453	-	392	440	385	
Hardness, as CaCO3 (T)					mg/L	421.11	362.00	342	361	297	289	260	232	-	293	388	-	441	460	-	422	-	399	462	422	
Total alkalinity, as CaCO3					mg/L	33.03	29.86	12	13	16	25	22	18	-	22	51	-	46	47	-	51	-	25	46	24	
Total dissolved solids			1400	1400	mg/L	1130.00	1171.39	915	1190	1190	935	1090	1070	965	1130	1310	1160	1170	1300	1360	1400	1430	1290	1320	860	
Total suspended solids	30	15	30	15	mg/L	9.23	3.39	3	4	< 1	2	8	2	-	2	7	-	4	5	-	3	-	2	3	2	
Total organic carbon					mg/L	7.99	6.96	4.8	5.2	5.1	4.4	3.1	3.3	-	3.7	13	-	12	12	-	12	-	4.3	11	3.6	
Dissolved organic carbon					mg/L	6.61	6.24	4.4	4.4	4.7	4	2.8	2.8	-	3.7	11	-	10	10	-	11	-	4	11	3.6	
Biochemical Oxygen Demand, 5 Day					mg/L	-	1.07	< 2	< 2	< 2	< 2	< 2	< 2	-	< 2	2	-	< 2	< 2	-	< 2	-	< 2	< 2	< 2	
Turbidity					NTU	0.81	1.94	0.6	1.7	1	0.4	17	0.3	-	0.2	1.5	-	1.4	1	-	0.4	-	0.9	0.5	0.2	
Dissolved Oxygen					mg/L	10.35	9.91	9.88	10	9.46	8.45	10.4	10.3	-	10.2	10	-	9.6	10.4	-	9.49	-	10	10	10.5	
Temperature					C	-	10.55	11.5	11	13	18.5	-	5.5	-	11	9	-	-	7	-	7	-	12	-	-	
Major Ions																										
Bicarbonate, as CaCO3					mg/L	32.93	29.79	12	13	16	25	22	18	-	22	50	-	46	47	-	51	-	25	46	24	
Calcium					mg/L	132.22	99.53	92.8	109	82.7	82.9	73.4	66.2	-	75.4	108	-	109	125	-	128	-	108	125	108	
Carbonate, as CaCO3					mg/L	0.50	0.50	< 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	
Chloride					mg/L	481.82	473.57	450	500	470	440	410	370	-	410	460	-	470	530	-	550	-	530	510	530	
Cyanide Total	2	1	1	0.5	mg/L	0.00	1121.24	0.013	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	-	< 0.0050	< 0.0050	-	< 0.0050	< 0.0050	-	< 0.0050	-	< 0.0050	< 0.0050	0.0054	
Cyanide Free					mg/L	-	0.0012	0.0019	0.0014	< 0.0010	0.0014	0.0014	0.0011	-	0.0011	0.0018	-	0.0014	0.0021	-	< 0.0010	-	< 0.0010	0.0016	< 0.0010	
Cyanide WAD					mg/L	0.00	0.0007	0.0014	0.0014	< 0.0010	< 0.0010	0.001	< 0.0010	-	< 0.0010	< 0.0010	-	< 0.0010	0.001	-	0.001	-	< 0.0010	< 0.0010	< 0.0010	
Magnesium					mg/L	23.72	25.88	23	26.3	20.9	22.6	20.1	16.7	-	20	28.8	-	28.8	33.5	-	32.7	-	29.8	31.1	28	
Potassium					mg/L	13.90	13.18	12.2	14.3	12.7	12.5	12.5	11.7	-	11	12.9	-	12.9	14.3	-	14.7	-	14.7	14	14.1	
Sodium					mg/L	146.60	189.07	169	192	184	184	179	162	-	162	181	-	177	201	-	205	-	236	201	214	
Sulphate					mg/L	46.11	63.29	52	56	53	55	44	39	-	50	63	-	69	82	-	90	-	75	84	74	
Silica					mg/L	0.53	0.87	0.86	0.99	0.92	0.82	0.42	0.43	-	0.53	0.7	-	0.75	1.2	-	1.2	-	0.81	1.9	0.68	
Nutrients																										
Nitrate					mg/L	5.467	12.67	11.8	13.2	13.8	13.7	11.1	13.6	-	12.9	11.1	-	11.5	12.3	-	13.5	-	13.7	11.6	13.6	
Nitrite					mg/L	0.208	0.495	0.21	0.373	0.347	0.402	0.366	0.573	-	0.753	0.738	-	0.726	0.595	-	0.585	-	0.464	0.434	0.366	
Nitrate + nitrite					mg/L	5.675	13.16	12	13.6	14.1	14.1	11.4	14.2	-	13.7	11.8	-	12.3	12.9	-	14.1	-	14.1	12	14	
Total ammonia			14	14	mg/L	1.569	3.84	4.2	3.7	4.5	4.9	5.6	3.8	-	3.2	2.8	-	2.6	3.4	-	3.5	-	3.6	3.9	4	
Total Kjeldahl nitrogen					mg/L	2.035	4.13	4.2	4.3	5.5	5.1	5.2	4.1	-	3.3	3.6	-	2.9	4.2	-	4.2	-	3.3	3.6	4.3	
Total phosphorus			4	2	mg/L	0.038	0.016	0.021	0.027	0.025	< 0.020	< 0.020	< 0.020	-	< 0.020	0.025	-	0.023	< 0.020	-	< 0.020	-	< 0.020	0.024	< 0.020	
Orthophosphate					mg/L	0.011	0.0060	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.010	-	< 0.010	< 0.010	-	0.019	-	< 0.010	< 0.010	< 0.010	
Total Metals																										
Aluminum			3	2	mg/L	1.20130	0.2385	0.174	0.452	0.18	0.0915	0.0734	0.0674	-	0.0992	0.529	-	0.515	0.543	-	0.254	-	0.0774	0.166	0.117	
Antimony					mg/L	0.00025	0.00024	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	-	< 0.00050	< 0.00050	-	< 0.00050	< 0.0025	-	< 0.00050	-	< 0.00050	< 0.00050	< 0.00050	
Arsenic	1	0.5	0.6	0.3	mg/L	0.00171	0.0017	0.00248	0.00243	0.00179	0.00148	0.00113	0.0009	-	0.00116	0.00206	-	0.00199	0.002	-	0.00207	-	0.00119	0.00193	0.00104	
Barium					mg/L	0.10743	0.0562																			

MEL-14	MDMER MAX GRAB	MDMER MAX MONTHLY MEAN	MEL-14 MAX GRAB	MEL-14 MAX MEAN	Sample Date	2018 Average	Annual Average	6/24/2019	7/9/2019	7/15/2019	7/25/2019	7/30/2019	8/6/2019	8/7/2019	8/13/2019	8/20/2019	8/22/2019	8/29/2019	9/3/2019	9/7/2019	9/12/2019	9/13/2019	9/17/2019	9/24/2019	10/1/2019
Parameter					FIELD_SDG Unit			B9H6488	B9J1427	B9J7572	B9K9242	B9L2327	B9M0110	B9M1829	B9M5838	B9N3261	B9N6683	B9O3972	B9O6583	B9P4256	B9P8919	B9Q2018	B9Q3637	B9R1304	B9R7358
Field Measured																									
Dissolved Metals																									
Aluminum					mg/L	0.0702	0.0428	0.0335	0.0316	0.0527	0.0377	0.0243	0.0272	-	0.0323	0.112	-	0.0641	0.0584	-	0.0427	-	0.028	0.0355	0.0192
Antimony					mg/L	0.0015	0.00025	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	-	< 0.00050	< 0.00050	-	< 0.00050	< 0.00050	-	< 0.00050	-	< 0.00050	< 0.00050	< 0.00050
Arsenic					mg/L	0.0015	0.0016	0.0023	0.00216	0.00163	0.00155	0.00096	0.00087	-	0.00104	0.00188	-	0.00167	0.00176	-	0.0022	-	0.00114	0.00177	0.00084
Barium					mg/L	0.1068	0.0555	0.0516	0.0557	0.0424	0.0483	0.0369	0.0389	-	0.0456	0.0685	-	0.0677	0.0745	-	0.0784	-	0.0506	0.0683	0.0499
Beryllium					mg/L	0.00030	0.000050	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-	< 0.00010	< 0.00010	-	< 0.00010	< 0.00010	-	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Bismuth					mg/L	0.00050	0.00050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	-	< 0.0010	-	< 0.0010	< 0.0010	< 0.0010
Boron					mg/L	0.3338	0.2880	0.231	0.274	0.333	0.349	0.361	0.406	-	0.341	0.181	-	0.181	0.196	-	0.188	-	0.35	0.302	0.339
Cadmium					mg/L	0.000034	0.000015	0.000014	0.00002	0.000013	0.000015	< 0.000010	0.000018	-	< 0.000010	0.000013	-	0.000014	0.000019	-	0.000014	-	0.000019	0.000021	0.000023
Chromium					mg/L	0.00295	0.00050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	-	< 0.0010	-	< 0.0010	< 0.0010	< 0.0010
Cobalt					mg/L	0.00058	0.00050	0.00069	0.00085	0.00065	0.0006	< 0.00020	0.00035	-	0.00037	0.00047	-	0.0004	0.00059	-	0.00056	-	0.00037	0.00049	0.00048
Copper					mg/L	0.00080	0.00085	0.00115	0.00129	0.00095	0.00089	< 0.00020	0.00067	-	0.0006	0.00129	-	0.00107	0.00101	-	0.00087	-	0.00059	0.00069	0.00068
Iron					mg/L	0.03384	0.0694	0.0901	0.173	0.0717	0.0587	0.0098	0.152	-	0.0538	0.036	-	0.0349	0.1	-	0.0698	-	0.0435	0.0339	0.0444
Lead					mg/L	0.00049	0.000119	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	-	< 0.00020	< 0.00020	-	< 0.00020	0.00036	-	< 0.00020	-	< 0.00020	< 0.00020	< 0.00020
Lithium					mg/L	0.1376	0.0634	0.0674	0.0821	0.0735	0.0665	0.0674	0.0571	-	0.054	0.0542	-	0.0581	0.0564	-	0.0541	-	0.0657	0.0615	0.07
Manganese					mg/L	0.1651	0.0260	0.0274	0.0695	0.0193	0.0105	0.0531	0.0105	-	0.0053	0.0105	-	0.0069	0.0335	-	0.0316	-	0.0128	0.0426	0.0309
Mercury					mg/L	0.000008	0.000005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	-	< 0.00001	< 0.00001	-	< 0.00001	< 0.00001	-	< 0.00001	-	< 0.00001	< 0.00001	< 0.00001
Molybdenum					mg/L	0.0035	0.0025	0.0015	0.0015	0.0012	0.0013	< 0.0010	0.0061	-	< 0.0010	0.0098	-	0.0014	0.0054	-	0.0021	-	0.0011	0.0018	0.0012
Nickel					mg/L	0.0024	0.0031	0.0033	0.0034	0.0026	0.0028	0.0014	0.0023	-	0.0024	0.0036	-	0.0032	0.0039	-	0.0039	-	0.0032	0.0039	0.0034
Selenium					mg/L	0.00030	0.000090	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-	< 0.00010	0.00012	-	0.00011	0.00014	-	0.00012	-	0.0001	0.00015	0.00012
Silicon					mg/L	0.5900	0.4738	0.444	0.561	0.433	0.417	0.211	0.256	-	0.247	0.415	-	0.42	0.635	-	0.575	-	0.48	1.01	0.529
Silver					mg/L	0.000059	0.000010	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	-	< 0.000020	< 0.000020	-	< 0.000020	< 0.000020	-	< 0.000020	-	< 0.000020	< 0.000020	< 0.000020
Strontium					mg/L	2.65	1.98	1.92	2.27	1.84	1.89	1.5	1.29	-	1.63	2.01	-	2.18	2.33	-	2.42	-	2.24	2.17	2.07
Sulphur					mg/L	-	23.96	20.3	23.8	18.8	19.2	18.4	15.9	-	17.8	25	-	25	31	-	30	-	30.1	31.7	28.4
Thallium					mg/L	0.000045	0.000025	0.000026	0.000029	0.00003	0.00003	0.000013	0.000024	-	0.000024	0.000032	-	0.000029	0.000027	-	0.000011	-	0.000024	0.000024	0.000022
Tin					mg/L	0.016	0.0025	< 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
Titanium					mg/L	0.016	0.0025	< 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
Uranium					mg/L	0.00031	0.00022	< 0.00010	< 0.00010	0.00019	0.00022	0.00011	0.00017	-	0.00013	0.00044	-	0.00027	0.0003	-	0.00029	-	0.00035	0.00032	0.00025
Vanadium					mg/L	0.016	0.0025	< 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
Zinc					mg/L	0.016	0.0045	< 0.0050	0.0071	< 0.0050	< 0.0050	< 0.0050	0.0075	-	< 0.0050	< 0.0050	-	< 0.0050	0.0107	-	< 0.0050	-	< 0.0050	< 0.0050	0.0132
Zirconium					mg/L	0.000050	0.000054	< 0.00010	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-	< 0.00010	< 0.00010	-	< 0.00010	< 0.00010	-	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Volatile Organics																									
Benzene					mg/L	0.00010	0.00010	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	-	< 0.00020	< 0.00020	-	< 0.00020	< 0.00020	-	< 0.00020	-	< 0.00020	< 0.00020	< 0.00020
Ethylbenzene					mg/L	0.00010	0.00010	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	-	< 0.00020	< 0.00020	-	< 0.00020	< 0.00020	-	< 0.00020	-	< 0.00020	< 0.00020	< 0.00020
Toluene					mg/L	0.00012	0.00010	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	-	< 0.00020	< 0.00020	-	< 0.00020	< 0.00020	-	< 0.00020	-	< 0.00020	< 0.00020	< 0.00020
Xylenes					mg/L	0.00020	0.00020	< 0.00040	< 0.00040	< 0.00040	<														

MEL-14 QAQC	Sample Date	MDL	8/13/2019				9/3/2019			9/12/2019	
	FIELD_SDG		B9M5838				B9O6583			B9P8919	
	Sample Name		Field Blank	Duplicate	Original	RPD (%)	Duplicate	Original	RPD (%)	Field Blank	Original
Parameter	Unit										
Conventional Parameters											
pH	pH units	-	5.78	7.32	7.36	0.54	7.56	7.53	0.40	6.11	7.59
Specific conductivity	umhos/cm	1	1	1700	1700	0.00	2100	2100	0.00	1.2	2300
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	271	271	0.00	443	450	1.57	0.5	453
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	291	293	0.68	489	460	6.11	0.5	422
Total alkalinity, as CaCO3	mg/L	1	1	22	22	0.00	47	47	0.00	1	51
Total dissolved solids	mg/L	10	10	1110	1130	1.79	1290	1300	0.77	10	1400
Total suspended solids	mg/L	1	1	3	2	40.00	5	5	0.00	1	3
Total organic carbon	mg/L	0.5	0.5	3.7	3.7	0.00	12	12	0.00	0.5	12
Dissolved organic carbon	mg/L	0.5	0.5	3.6	3.7	2.74	10	10	0.00	0.5	11
Turbidity	NTU	0.1	0.1	0.3	0.2	40.00	1	1	0.00	0.1	0.4
Biochemical Oxygen Demand, 5 Day	mg/L	2	2	2	2	0.00	2	2	0.00	2	2
Dissolved Oxygen	mg/L	-	10.3	10.4	10.2	1.94	10.7	10.4	2.84	9.34	9.49
Major Ions											
Bicarbonate, as CaCO3	mg/L	1	1	22	22	0.00	47	47	0.00	1	51
Calcium	mg/L	0.05	0.05	75.2	75.4	0.27	124	125	0.80	0.05	128
Carbonate, as CaCO3	mg/L	1	1	1	1	0.00	1	1	0.00	1	1
Chloride	mg/L	1	1	420	410	2.41	520	530	1.90	1	550
Cyanide Total	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00	0.005	0.005
Cyanide Free	mg/L	0.001	0.001	0.0011	0.0011	0.00	0.0019	0.0021	10.00	0.0019	0.001
Cyanide WAD	mg/L	0.001	0.001	0.001	0.001	0.00	0.0016	0.001	46.15	0.001	0.001
Magnesium	mg/L	0.05	0.05	20.2	20	1.00	32.6	33.5	2.72	0.05	32.7
Potassium	mg/L	0.05	0.05	11	11	0.00	14.1	14.3	1.41	0.05	14.7
Sodium	mg/L	0.05	0.05	161	162	0.62	201	201	0.00	0.05	205
Sulphate	mg/L	1	1	50	50	0.00	81	82	1.23	1	90
Silica	mg/L	0.05	0.05	0.52	0.53	1.90	1.2	1.2	0.00	0.05	1.2
Nutrients											
Nitrate	mg/L	0.1	0.1	12.9	12.9	0.00	12.3	12.3	0.00	0.1	13.5
Nitrite	mg/L	0.01	0.01	0.754	0.753	0.13	0.594	0.595	0.17	0.01	0.585
Nitrate + nitrite	mg/L	0.1	0.1	13.7	13.7	0.00	12.9	12.9	0.00	0.1	14.1
Total ammonia	mg/L	0.05	0.091	3.3	3.2	3.08	3.5	3.4	2.90	0.16	3.5
Total Kjeldahl nitrogen	mg/L	0.1	0.1	3	3.3	9.52	4.3	4.2	2.35	0.1	4.2
Total phosphorus	mg/L	0.02	0.02	0.02	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.019
Total Metals											
Aluminum	mg/L	0.003	0.003	0.0989	0.0992	0.30	0.542	0.543	0.18	0.003	0.254
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00	0.0025	0.0025	0.00	0.0005	0.0005
Arsenic	mg/L	0.0001	0.0001	0.00116	0.00116	0.00	0.00194	0.002	3.05	0.0001	0.00207
Barium	mg/L	0.001	0.001	0.0507	0.0519	2.34	0.0739	0.0726	1.77	0.001	0.0727
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0005	0.0005	0.00	0.0001	0.0001
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00	0.005	0.005	0.00	0.001	0.001
Boron	mg/L	0.05	0.05	0.323	0.323	0.00	0.25	0.25	0.00	0.05	0.184
Cadmium	mg/L	0.00001	0.00001	0.000013	0.000012	8.00	0.00005	0.00005	0.00	0.00001	0.000016
Calcium	mg/L	0.05	0.05	81.6	82.2	0.73	139	128	8.24	0.05	120
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00	0.005	0.005	0.00	0.001	0.001
Cobalt	mg/L	0.0002	0.0002	0.00038	0.00037	2.67	0.001	0.001	0.00	0.0002	0.00051
Copper	mg/L	0.0005	0.0005	0.00096	0.00065	38.51	0.0025	0.0025	0.00	0.0005	0.00088
Iron	mg/L	0.01	0.01	0.05	0.049	2.02	0.131	0.122	7.11	0.01	0.106
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.001	0.001	0.00	0.0002	0.0002
Lithium	mg/L	0.002	0.002	0.0522	0.0526	0.76	0.057	0.058	1.74	0.002	0.0541
Magnesium	mg/L	0.05	0.05	21.2	21.4	0.94	34.4	33.9	1.46	0.05	29.8
Manganese	mg/L	0.001	0.001	0.0055	0.0056	1.80	0.0408	0.0394	3.49	0.001	0.0342
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00	0.00001	0.00001
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00	0.005	0.005	0.00	0.001	0.0018
Nickel	mg/L	0.001	0.001	0.0025	0.0025	0.00	0.005	0.005	0.00	0.001	0.0036
Potassium	mg/L	0.05	0.05	12	12	0.00	14.3	13.9	2.84	0.05	15.1
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0005	0.0005	0.00	0.0001	0.00011
Silicon	mg/L	0.1	0.1	0.265	0.266	0.38	0.744	0.677	9.43	0.1	0.606
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00	0.0001	0.0001	0.00	0.00002	0.00002
Sodium	mg/L	0.05	0.05	170	171	0.59	208	201	3.42	0.05	190
Strontium	mg/L	0.001	0.001	1.83	1.85	1.09	2.09	2.04	2.42	0.001	1.96
Sulphur	mg/L	3	3	18.9	18.8	0.53	27.4	28.5	3.94	3	31.3
Thallium	mg/L	0.00001	0.00001	0.000026	0.000026	0.00	0.00005	0.00005	0.00	0.00001	0.00001
Tin	mg/L	0.005	0.005	0.005	0.005	0.00	0.025	0.025	0.00	0.005	0.005
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00	0.025	0.025	0.00	0.005	0.005
Uranium	mg/L	0.0001	0.0001	0.00016	0.00017	6.06	0.0005	0.0005	0.00	0.0001	0.00026
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00	0.025	0.025	0.00	0.005	0.005
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00	0.025	0.025	0.00	0.005	0.005
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0005	0.0005	0.00	0.0001	0.0001

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-14 QAQC	Sample Date	MDL	8/13/2019				9/3/2019			9/12/2019	
	FIELD_SDG		B9M5838				B9O6583			B9P8919	
	Sample Name		Field Blank	Duplicate	Original	RPD (%)	Duplicate	Original	RPD (%)	Field Blank	Original
Parameter	Unit										
Dissolved Metals											
Aluminum	mg/L	0.003	0.003	0.0322	0.0323	0.31	0.0556	0.0584	4.91	0.003	0.0427
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00	0.0005	0.0005	0.00	0.0005	0.0005
Arsenic	mg/L	0.0001	0.0001	0.00105	0.00104	0.96	0.00174	0.00176	1.14	0.0001	0.0022
Barium	mg/L	0.001	0.001	0.046	0.0456	0.87	0.0739	0.0745	0.81	0.001	0.0784
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00	0.0001	0.0001
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00	0.001	0.001
Boron	mg/L	0.05	0.05	0.343	0.341	0.58	0.195	0.196	0.51	0.05	0.188
Cadmium	mg/L	0.00001	0.00001	0.000011	0.00001	9.52	0.000016	0.000019	17.14	0.00001	0.000014
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.00	0.001	0.001
Cobalt	mg/L	0.0002	0.0002	0.00036	0.00037	2.74	0.00058	0.00059	1.71	0.0002	0.00056
Copper	mg/L	0.0002	0.0002	0.0006	0.0006	0.00	0.001	0.00101	1.00	0.0002	0.00087
Iron	mg/L	0.005	0.005	0.055	0.0538	2.21	0.0993	0.1	0.70	0.005	0.0698
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.00036	57.14	0.0002	0.0002
Lithium	mg/L	0.002	0.002	0.0553	0.054	2.38	0.0553	0.0564	1.97	0.002	0.0541
Manganese	mg/L	0.001	0.001	0.0055	0.0053	3.70	0.0327	0.0335	2.42	0.001	0.0316
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00	0.00001	0.00001
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00	0.0067	0.0054	21.49	0.001	0.0021
Nickel	mg/L	0.001	0.001	0.0023	0.0024	4.26	0.0038	0.0039	2.60	0.001	0.0039
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.00013	0.00014	7.41	0.0001	0.00012
Silicon	mg/L	0.1	0.1	0.252	0.247	2.00	0.653	0.635	2.80	0.1	0.575
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00	0.00002	0.00002	0.00	0.00002	0.00002
Strontium	mg/L	0.001	0.001	1.66	1.63	1.82	2.37	2.33	1.70	0.001	2.42
Sulphur	mg/L	3	3	18	17.8	1.12	30.7	31	0.97	3	30
Thallium	mg/L	0.00001	0.00001	0.000026	0.000024	8.00	0.000027	0.000027	0.00	0.00001	0.000011
Tin	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00	0.005	0.005
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00	0.005	0.005
Uranium	mg/L	0.0001	0.0001	0.00014	0.00013	7.41	0.0003	0.0003	0.00	0.0001	0.00029
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.00	0.005	0.005
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00	0.0072	0.0107	39.11	0.005	0.005
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.00	0.0001	0.0001
Volatile Organics											
Benzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00	0.0002	0.0002
Ethylbenzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00	0.0002	0.0002
Toluene	mg/L	0.0002	0.00051	0.0002	0.0002	0.00	0.0002	0.0002	0.00	0.00055	0.0002
Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00	0.0004	0.0004	0.00	0.0004	0.0004
m,p-Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00	0.0004	0.0004	0.00	0.0004	0.0004
o-Xylene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.00	0.0002	0.0002
F1 (C6-C10)-BTEx	mg/L	0.025	0.025	0.025	0.025	0.00	0.025	0.025	0.00	0.025	0.025
F1 (C6-C10)	mg/L	0.025	0.025	0.025	0.025	0.00	0.025	0.025	0.00	0.025	0.025
F2 (C10-C16)	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.00	0.1	0.1
F3 (C16-C34)	mg/L	0.2	0.2	0.2	0.2	0.00	0.2	0.2	0.00	0.2	0.2
F4 (C34-C50)	mg/L	0.2	0.2	0.2	0.2	0.00	0.2	0.2	0.00	0.2	0.2
Reached baseline at C50	mg/L	YES	YES	YES	YES	-	YES	YES	-	YES	YES
Radionuclides											
Radium-226	Bq/l	0.005	0.005	0.053	0.005	165.52	0.005	0.005	0.00	0.005	0.005

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-15	Sample Date	2018 Average	Annual Average	6/17/2019	7/7/2019	8/4/2019	9/4/2019
	FIELD_SDG			B9H1905	B9J0345	B9L8622	B9P1656
Parameter	Unit						
Field Measured							
pH	pH units	-	7.5725	7.91	7.59	7.83	6.96
Conductivity	uS/cm	-	104.425	106.5	95.1	100.2	115.9
Temperature	°C	-	9.215	8.16	12.3	11.9	4.5
Dissolved oxygen	mg/L	-	10.615	11.64	8.68	9.05	13.09
Dissolved oxygen	%	-	92.725	100.3	82.3	84.6	103.7
Conventional Parameters							
pH	pH units	7.44	7.615	7.39	7.75	7.56	7.76
Specific conductivity	umhos/cm	97.5	96.5	77	100	89	120
Hardness, as CaCO3 (D)	mg/L	-	39.15	30.8	38.7	36.4	50.7
Hardness, as CaCO3 (T)	mg/L	-	40.225	29.4	46.7	37.9	46.9
Total alkalinity, as CaCO3	mg/L	34.5	33	27	36	30	39
Total dissolved solids	mg/L	45	66.25	40	65	80	80
Total suspended solids	mg/L	2	1.5	< 1	< 1	< 1	3
Total organic carbon	mg/L	8.15	4.8	4.5	4.4	4.7	5.6
Dissolved organic carbon	mg/L	3.95	4.375	4	4.1	4	5.4
Turbidity	NTU	0.4	0.375	0.3	0.4	0.3	0.5
Major Ions							
Bicarbonate, as CaCO3	mg/L	34	33	27	36	30	39
Calcium	mg/L	-	13.25	10.4	13	12.3	17.3
Carbonate, as CaCO3	mg/L	1	1	< 1.0	< 1.0	< 1.0	< 1.0
Chloride	mg/L	7.2	7.25	5.7	7.7	7	8.6
Cyanide Total	mg/L	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cyanide Free	mg/L	0.001	0.001525	< 0.0010	< 0.0010	0.0018	0.0023
Cyanide WAD	mg/L	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Magnesium	mg/L	-	1.46	1.15	1.51	1.36	1.82
Potassium	mg/L	-	0.9185	0.847	0.915	0.882	1.03
Sodium	mg/L	-	3.37	2.64	3.35	3.28	4.21
Sulphate	mg/L	2.45	2.65	< 1.0	3.6	1.1	4.9
Silica	mg/L	0.7	0.99	0.57	2.1	0.32	0.97
Nutrients							
Nitrate	mg/L	0.1	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Nitrite	mg/L	0.01	0.01	< 0.010	< 0.010	< 0.010	< 0.010
Nitrate + nitrite	mg/L	0.1	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Total ammonia	mg/L	0.05	0.0925	< 0.050	< 0.050	0.12	0.15
Total Kjeldahl nitrogen	mg/L	0.345	0.29	0.28	0.35	0.24	0.29
Total phosphorus	mg/L	0.02	0.0205	0.022	< 0.020	< 0.020	< 0.020
Orthophosphate	mg/L	0.01	0.01	< 0.010	< 0.010	< 0.010	< 0.010
Total Metals							
Aluminum	mg/L	-	0.0061	0.0096	0.0041	0.0039	0.0068
Antimony	mg/L	-	0.0005	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	-	0.000895	0.00099	0.00086	0.00086	0.00087
Barium	mg/L	-	0.01175	0.011	0.0138	0.0106	0.0116
Beryllium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	-	0.00001825	0.000028	< 0.000010	< 0.000010	0.000025
Calcium	mg/L	-	13.72	9.88	16.3	12.8	15.9
Chromium	mg/L	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	-	0.00069	0.00073	0.00058	0.00062	0.00083
Iron	mg/L	-	0.08675	0.077	0.111	0.084	0.075
Lead	mg/L	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	-	0.002	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Magnesium	mg/L	-	1.45	1.14	1.47	1.44	1.75
Manganese	mg/L	-	0.0129	0.0224	0.0139	0.0094	0.0059
Mercury	mg/L	0.00002	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Nickel	mg/L	-	0.00105	< 0.0010	0.001	< 0.0010	0.0012
Potassium	mg/L	-	0.90275	0.795	0.898	0.888	1.03
Selenium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	0.33175	0.298	0.291	0.244	0.494
Silver	mg/L	-	0.00002	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium	mg/L	-	3.42	3.01	3.36	3.37	3.94
Strontium	mg/L	-	0.064425	0.049	0.0713	0.0638	0.0736
Sulphur	mg/L	-	3	< 3	< 3	< 3	< 3
Thallium	mg/L	-	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	-	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-15	Sample Date	2018 Average	Annual Average	6/17/2019	7/7/2019	8/4/2019	9/4/2019
Parameter	FIELD_SDG			B9H1905	B9J0345	B9L8622	B9P1656
	Unit						
Total Metals							
Titanium	mg/L	-	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	-	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	-	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Metals							
Aluminum	mg/L	-	0.00325	0.0036	< 0.0030	< 0.0030	0.0034
Antimony	mg/L	-	0.0005	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	-	0.000775	0.00085	0.00076	0.00074	0.00075
Barium	mg/L	-	0.011475	0.0103	0.0136	0.0103	0.0117
Beryllium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	-	0.00001175	< 0.000010	< 0.000010	< 0.000010	0.000017
Chromium	mg/L	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	-	0.0005675	0.00049	0.00056	0.00049	0.00073
Iron	mg/L	-	0.0521	0.0708	0.0633	0.0387	0.0356
Lead	mg/L	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	-	0.002	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Manganese	mg/L	-	0.0073	0.0212	0.0042	0.0026	0.0012
Mercury	mg/L	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Nickel	mg/L	-	0.001025	< 0.0010	< 0.0010	< 0.0010	0.0011
Selenium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	0.324	0.308	0.211	0.242	0.535
Silver	mg/L	-	0.00002	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Strontium	mg/L	-	0.064275	0.0473	0.0715	0.0634	0.0749
Sulphur	mg/L	-	3	< 3.0	< 3.0	< 3.0	< 3.0
Thallium	mg/L	-	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	-	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	-	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	-	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	-	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-15 QAQC	Sample Date	MDL	8/4/2019			
	FIELD_SDG		B9L8622			
	SAMPLE_TYPE_CO		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	5.9	7.6	7.56	0.53
Specific conductivity	umhos/cm	1	1	92	89	3.31
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	36.4	36.4	0.00
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	37	37.9	2.40
Total alkalinity, as CaCO3	mg/L	1	1	32	30	6.45
Total dissolved solids	mg/L	10	10	60	80	28.57
Total suspended solids	mg/L	1	1	1	1	0.00
Total organic carbon	mg/L	0.5	0.5	4.6	4.7	2.15
Dissolved organic carbon	mg/L	0.5	0.5	3.8	4	5.13
Turbidity	NTU	0.1	0.1	0.3	0.3	0.00
Major Ions						
Bicarbonate, as CaCO3	mg/L	1	1	32	30	6.45
Calcium	mg/L	0.05	0.05	12.3	12.3	0.00
Carbonate, as CaCO3	mg/L	1	1	1	1	0.00
Chloride	mg/L	1	1	7.1	7	1.42
Cyanide Total	mg/L	0.005	0.005	0.005	0.005	0.00
Cyanide Free	mg/L	0.001	0.001	0.001	0.0018	57.14
Cyanide WAD	mg/L	0.001	0.001	0.001	0.001	0.00
Magnesium	mg/L	0.05	0.05	1.36	1.36	0.00
Potassium	mg/L	0.05	0.05	0.884	0.882	0.23
Sodium	mg/L	0.05	0.05	3.3	3.28	0.61
Sulphate	mg/L	1	1	1.2	1.1	8.70
Silica	mg/L	0.05	0.05	0.25	0.32	24.56
Nutrients						
Nitrate	mg/L	0.1	0.1	0.1	0.1	0.00
Nitrite	mg/L	0.01	0.01	0.01	0.01	0.00
Nitrate + nitrite	mg/L	0.1	0.1	0.1	0.1	0.00
Total ammonia	mg/L	0.05	0.12	0.05	0.12	82.35
Total Kjeldahl nitrogen	mg/L	0.1	0.1	0.24	0.24	0.00
Total phosphorus	mg/L	0.02	0.02	0.02	0.02	0.00
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00
Total Metals						
Aluminum	mg/L	0.003	0.003	0.0044	0.0039	12.05
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00085	0.00086	1.17
Barium	mg/L	0.001	0.001	0.0105	0.0106	0.95
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Calcium	mg/L	0.05	0.05	12.4	12.8	3.17
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0005	0.0005	0.0006	0.00062	3.28
Iron	mg/L	0.01	0.01	0.081	0.084	3.64
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00
Magnesium	mg/L	0.05	0.05	1.45	1.44	0.69
Manganese	mg/L	0.001	0.001	0.0093	0.0094	1.07
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.0046	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00
Potassium	mg/L	0.05	0.05	0.881	0.888	0.79
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-15 QAQC	Sample Date	MDL	8/4/2019			
	FIELD_SDG		B9L8622			
	SAMPLE_TYPE_CO		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Total Metals						
Silicon	mg/L	0.1	0.1	0.241	0.244	1.24
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Sodium	mg/L	0.05	1.34	3.35	3.37	0.60
Strontium	mg/L	0.001	0.001	0.0628	0.0638	1.58
Sulphur	mg/L	3	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Dissolved Metals						
Aluminum	mg/L	0.003	0.003	0.003	0.003	0.00
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00076	0.00074	2.67
Barium	mg/L	0.001	0.001	0.0103	0.0103	0.00
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0002	0.0002	0.00048	0.00049	2.06
Iron	mg/L	0.005	0.005	0.0386	0.0387	0.26
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00
Manganese	mg/L	0.001	0.001	0.0026	0.0026	0.00
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.0044	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.246	0.242	1.64
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Strontium	mg/L	0.001	0.001	0.0633	0.0634	0.16
Sulphur	mg/L	3	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-16 (Lake G2)	Sample Date	2016 Average	2017 Average	2018 Average	Annual Average	6/17/2019	7/7/2019	8/4/2019	9/1/2019
	FIELD_SDG					B9H1907	B9J0351	B9L8789	B9O6790
Parameter	Unit								
Field Measured									
pH	pH units	8.655	-	8.46	7.64	7.82	7.75	7.59	7.4
Conductivity	uS/cm	69.25	-	84.7	79.25	70.7	46.7	93.8	105.8
Temperature	°C	8.45	-	16.3	9.6825	10.63	13.2	10.5	4.4
Dissolved oxygen	mg/L	-	-	-	10.0575	11.45	10.34	7.88	10.56
Dissolved oxygen	%	-	-	-	88.875	104.4	99.3	70.3	81.5
Conventional Parameters									
pH	pH units	7.59	7.69	7.32	7.425	7.13	7.62	7.37	7.58
Specific conductivity	umhos/cm	74.5	89	89	82.75	50	78	93	110
Hardness, as CaCO3 (D)	mg/L	30.2	37.3	33.75	31.725	19.2	32.6	35.2	39.9
Hardness, as CaCO3 (T)	mg/L	29.5	32.33	32.65	29.425	17.9	30.1	35.5	34.2
Total alkalinity, as CaCO3	mg/L	29.5	32.25	26	21.25	12	23	25	25
Total dissolved solids	mg/L	49	66	45	63.75	25	60	95	75
Total suspended solids	mg/L	1	1.25	1	2.25	< 1	< 1	2	5
Total organic carbon	mg/L	4.85	4.925	3.95	4.025	3.3	3.3	4.3	5.2
Dissolved organic carbon	mg/L	4.8	4.6	3.75	3.525	2.6	3.1	3.9	4.5
Turbidity	NTU	0.55	0.8	0.45	0.8	0.3	1	0.5	1.4
Major Ions									
Bicarbonate, as CaCO3	mg/L	29.5	31.75	26	21	12	22	25	25
Calcium	mg/L	10.115	11.5375	35.75	10.5025	6.31	10.9	11.7	13.1
Carbonate, as CaCO3	mg/L	1	1	1	1	< 1.0	< 1.0	< 1.0	< 1.0
Chloride	mg/L	3.8	6.725	9.85	10.375	6	9.5	11	15
Cyanide	mg/L	0.005	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cyanide	mg/L	0.005	0.005	0.005	0.0012	< 0.0010	< 0.0010	0.0018	< 0.0010
Cyanide (free)	mg/L	0.001	0.00115	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Magnesium	mg/L	1.21	1.3975	4.24	1.35125	0.825	1.33	1.47	1.78
Potassium	mg/L	1.04	1.06475	2.6895	0.872	0.599	0.846	0.973	1.07
Sodium	mg/L	2.1	2.4375	11.34	2.2825	1.46	2.2	2.45	3.02
Sulphate	mg/L	1.05	1.275	1.25	1.45	< 1.0	1.6	1.6	1.6
Silica	mg/L	0.335	0.28925	0.22	0.1775	0.11	0.1	0.17	0.33
Nutrients									
Nitrate	mg/L	0.1	0.1	0.1	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Nitrite	mg/L	0.1	0.1	0.1	0.01	< 0.010	< 0.010	< 0.010	< 0.010
Nitrate + nitrite	mg/L	0.01	0.01	0.01	0.1	< 0.10	< 0.10	< 0.10	< 0.10
Total ammonia	mg/L	0.01	0.01	0.01	0.12175	0.057	< 0.050	< 0.050	0.33
Total Kjeldahl nitrogen	mg/L	0.3	0.255	0.205	0.195	0.2	0.11	0.18	0.29
Total phosphorus	mg/L	0.0055	0.00725	0.02	0.02	< 0.020	< 0.020	< 0.020	< 0.020
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	< 0.010	< 0.010	< 0.010	< 0.010
Total Metals									
Aluminum	mg/L	0.00795	0.012	0.00665	0.012425	0.0134	0.0092	0.0074	0.0197
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	0.00104	0.001045	0.00058	0.00121	0.0013	0.00109	0.00115	0.0013
Barium	mg/L	0.01405	0.0166	0.0885	0.015975	0.0112	0.017	0.0175	0.0182
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	-	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.05	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	0.00001	0.00001	0.00001	0.0000115	< 0.000010	< 0.000010	0.000016	< 0.000010
Calcium	mg/L	9.95	12.2275	11.25	9.675	5.9	10	11.7	11.1
Chromium	mg/L	0.001	0.001	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	-	0.0002	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.00097	0.0010125	0.00076	0.0007775	0.00054	0.00069	0.00091	0.00097
Iron	mg/L	0.106	0.1545	0.0895	0.12375	0.104	0.112	0.1	0.179
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	0.005	0.005	0.005	0.002	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Magnesium	mg/L	1.12	1.38	1.36	1.2675	0.76	1.23	1.52	1.56
Manganese	mg/L	0.0065	0.011425	0.0083	0.0113	0.0207	0.0063	0.008	0.0102
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.001	0.001	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Nickel	mg/L	0.003	0.0011	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Potassium	mg/L	1.03	1.092	0.9635	0.83075	0.554	0.825	0.959	0.985
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	-	0.15	0.139	< 0.1	< 0.1	0.126	0.23
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium	mg/L	2.07	2.3675	2.34	2.1475	1.29	2.04	2.45	2.81
Strontium	mg/L	0.0495	0.059975	0.061	0.051325	0.0307	0.0529	0.0616	0.0601
Sulphur	mg/L	-	-	-	3	< 3	< 3	< 3	< 3
Thallium	mg/L	0.00005	0.00005	0.00005	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	0.005	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.005	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	0.005	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.005	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	-	0.0001	0.0001625	< 0.00010	0.00035	< 0.00010	< 0.00010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-16 (Lake G2)	Sample Date	2016 Average	2017 Average	2018 Average	Annual Average	6/17/2019	7/7/2019	8/4/2019	9/1/2019
	FIELD_SDG					B9H1907	B9J0351	B9L8789	B9O6790
Parameter	Unit								
Dissolved Metals									
Aluminum	mg/L	0.0072	0.004925	0.00565	0.00635	-	0.0038	-	0.0089
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	-	< 0.00050	-	< 0.00050
Arsenic	mg/L	0.000905	0.00084	0.000985	0.00092	-	0.0009	-	0.00094
Barium	mg/L	0.01315	0.016025	0.016	0.01855	-	0.0169	-	0.0202
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	-	< 0.00010	-	< 0.00010
Bismuth	mg/L	-	-	0.001	0.001	-	< 0.0010	-	< 0.0010
Boron	mg/L	0.05	0.05	0.05	0.05	-	< 0.05	-	< 0.05
Cadmium	mg/L	0.00001	0.00001	0.00001	0.000052	-	< 0.000010	-	0.000094
Chromium	mg/L	0.001	0.001	0.001	0.001	-	< 0.0010	-	< 0.0010
Cobalt	mg/L	-	-	0.0002	0.0002	-	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.000965	0.000805	0.000685	0.000955	-	0.00056	-	0.00135
Iron	mg/L	0.024	0.058625	0.1748	0.0548	-	0.0574	-	0.0522
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	-	< 0.00020	-	< 0.00020
Lithium	mg/L	0.005	0.005	0.0168	0.002	-	< 0.0020	-	< 0.0020
Manganese	mg/L	0.001	0.002325	0.0117	0.0022	-	0.0022	-	0.0022
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.001	0.001	0.001	0.001	-	< 0.0010	-	< 0.0010
Nickel	mg/L	0.001	0.001	0.0014	0.001	-	< 0.0010	-	< 0.0010
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	-	< 0.00010	-	< 0.00010
Silicon	mg/L	-	-	0.6	0.139333333	< 0.1	< 0.1	-	0.218
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	-	< 0.000020	-	< 0.000020
Strontium	mg/L	0.0519	0.05825	0.3705	0.0516	0.0314	0.055	-	0.0684
Sulphur	mg/L	-	-	-	3	< 3.0	< 3.0	< 3.0	< 3.0
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	-	< 0.000010	-	< 0.000010
Tin	mg/L	0.005	0.005	0.005	0.005	-	< 0.0050	-	< 0.0050
Titanium	mg/L	0.005	0.005	0.005	0.005	-	< 0.0050	-	< 0.0050
Uranium	mg/L	0.0001	0.0001	0.000125	0.0001	-	< 0.00010	-	< 0.00010
Vanadium	mg/L	0.005	0.005	0.005	0.005	-	< 0.0050	-	< 0.0050
Zinc	mg/L	0.005	0.005	0.005	0.005	-	< 0.0050	-	< 0.0050
Zirconium	mg/L	-	-	0.0001	0.0001	-	< 0.00010	-	< 0.00010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-16 QAQC	Sample Date	MDL	8/4/2019			
	FIELD_SDG		B9L8789			
	SAMPLE_TYPE_CO		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	5.94	7.44	7.37	0.95
Specific conductivity	umhos/cm	1	1	93	93	0.00
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	35.5	35.2	0.85
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	36	35.5	1.40
Total alkalinity, as CaCO3	mg/L	1	1	24	25	4.08
Total dissolved solids	mg/L	10	10	110	95	14.63
Total suspended solids	mg/L	1	1	2	2	0.00
Total organic carbon	mg/L	0.5	0.5	4.5	4.3	4.55
Dissolved organic carbon	mg/L	0.5	0.5	3.8	3.9	2.60
Turbidity	NTU	0.1	0.1	0.4	0.5	22.22
Major Ions						
Bicarbonate, as CaCO3	mg/L	1	1	24	25	4.08
Calcium	mg/L	0.05	0.05	11.7	11.7	0.00
Carbonate, as CaCO3	mg/L	1	1	1	1	0.00
Chloride	mg/L	1	1	12	11	8.70
Cyanide Total	mg/L	0.005	0.005	0.005	0.005	0.00
Cyanide Free	mg/L	0.001	0.0025	0.001	0.0018	57.14
Cyanide WAD	mg/L	0.001	0.001	0.001	0.001	0.00
Magnesium	mg/L	0.05	0.05	1.52	1.47	3.34
Potassium	mg/L	0.05	0.05	1.01	0.973	3.73
Sodium	mg/L	0.05	0.05	2.49	2.45	1.62
Sulphate	mg/L	1	1	1.6	1.6	0.00
Silica	mg/L	0.05	0.05	0.16	0.17	6.06
Nutrients						
Nitrate	mg/L	0.1	0.1	0.1	0.1	0.00
Nitrite	mg/L	0.01	0.01	0.01	0.01	0.00
Nitrate + nitrite	mg/L	0.1	0.1	0.1	0.1	0.00
Total ammonia	mg/L	0.05	0.12	0.05	0.05	0.00
Total Kjeldahl nitrogen	mg/L	0.1	0.1	0.22	0.18	20.00
Total phosphorus	mg/L	0.02	0.02	0.02	0.02	0.00
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00
Total Metals						
Aluminum	mg/L	0.003	0.003	0.0072	0.0074	2.74
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00114	0.00115	0.87
Barium	mg/L	0.001	0.001	0.0177	0.0175	1.14
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.000016	0.000016	0.00
Calcium	mg/L	0.05	0.05	11.9	11.7	1.69
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0005	0.0005	0.0009	0.00091	1.10
Iron	mg/L	0.01	0.01	0.095	0.1	5.13
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00
Magnesium	mg/L	0.05	0.05	1.53	1.52	0.66
Manganese	mg/L	0.001	0.001	0.008	0.008	0.00
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00
Potassium	mg/L	0.05	0.05	0.969	0.959	1.04

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-16 QAQC	Sample Date	MDL	8/4/2019			
	FIELD_SDG		B9L8789			
	SAMPLE_TYPE_CO		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Total Metals						
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.126	0.126	0.00
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Sodium	mg/L	0.05	0.05	2.46	2.45	0.41
Strontium	mg/L	0.001	0.001	0.063	0.0616	2.25
Sulphur	mg/L	3	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Dissolved Metals						
Aluminum	mg/L	0.003	0.003	0.0042	-	-
Antimony	mg/L	0.0005	0.0005	0.0005	-	-
Arsenic	mg/L	0.0001	0.0001	0.00102	-	-
Barium	mg/L	0.001	0.001	0.0175	-	-
Beryllium	mg/L	0.0001	0.0001	0.0001	-	-
Bismuth	mg/L	0.001	0.001	0.001	-	-
Boron	mg/L	0.05	0.05	0.05	-	-
Cadmium	mg/L	0.00001	0.00001	0.000016	-	-
Chromium	mg/L	0.001	0.001	0.001	-	-
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0002	0.0002	0.00075	-	-
Iron	mg/L	0.005	0.005	0.0485	-	-
Lead	mg/L	0.0002	0.0002	0.0002	-	-
Lithium	mg/L	0.002	0.002	0.002	-	-
Manganese	mg/L	0.001	0.001	0.001	-	-
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	-	-
Nickel	mg/L	0.001	0.001	0.001	-	-
Selenium	mg/L	0.0001	0.0001	0.0001	-	-
Silicon	mg/L	0.1	0.1	0.106	-	-
Silver	mg/L	0.00002	0.00002	0.00002	-	-
Strontium	mg/L	0.001	0.001	0.059	-	-
Sulphur	mg/L	3	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	-	-
Tin	mg/L	0.005	0.005	0.005	-	-
Titanium	mg/L	0.005	0.005	0.005	-	-
Uranium	mg/L	0.0001	0.0001	0.0001	-	-
Vanadium	mg/L	0.005	0.005	0.005	-	-
Zinc	mg/L	0.005	0.005	0.005	-	-
Zirconium	mg/L	0.0001	0.0001	0.0001	-	-

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-17	Sample Date	2015 Average	2016 Average	2017 Average	2018 Average	Annual Average	6/17/2019	7/7/2019	8/4/2019	9/3/2019
	FIELD_SDG						B9H1910	B9J0342	B9L8699	B9P1648
Parameter	Unit									
Field Measured										
pH	pH units	8.21	9.30	8.44	8.57	8.00	7.97	8.18	8	7.84
Conductivity	uS/cm	0.34	2.61	0.74	0.47	256.35	256.6	141.7	326.5	300.6
Temperature	°C	11.00	10.27	12.20	16.20	12.28	15.72	17	9.8	6.6
Dissolved oxygen	mg/L	-	-	-	-	10.13	10.47	9.8	7.42	12.84
Dissolved oxygen	%	-	-	-	-	94.18	107	99.6	65.5	104.6
Conventional Parameters										
pH	pH units	7.69	7.48	7.73	7.50	7.77	7.47	7.88	7.89	7.82
Specific conductivity	umhos/cm	313.00	2151.00	657.50	302.33	257.50	180	250	310	290
Hardness, as CaCO3 (D)	mg/L	-	2130.00	154.67	77.80	86.50	19	109	105	113
Hardness, as CaCO3 (T)	mg/L	133.60	804.00	148.13	78.10	93.35	57.9	91.5	110	114
Total alkalinity, as CaCO3	mg/L	44.40	44.00	44.25	41.00	43.00	25	42	55	50
Total dissolved solids	mg/L	187.00	2241.00	590.50	156.67	231.25	155	230	305	235
Total suspended solids	mg/L	5.25	2.33	3.75	1.67	1.50	1	< 1	3	< 1
Total organic carbon	mg/L	-	11.20	9.95	7.50	8.50	6.1	7.9	10	10
Dissolved organic carbon	mg/L	-	8.90	9.57	7.03	8.25	6.3	7.4	9.7	9.6
Turbidity	NTU	1.48	3.92	0.58	0.53	0.65	0.4	0.9	0.9	0.4
Major Ions										
Bicarbonate, as CaCO3	mg/L	54.18	44.00	44.00	41.00	42.50	25	42	54	49
Calcium	mg/L	39.37	744.00	70.90	25.40	28.94	6.37	37.6	35.1	36.7
Carbonate, as CaCO3	mg/L	0.60	1.67	1.00	1.00	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Chloride	mg/L	-	1700.00	152.50	57.03	43.75	33	48	49	45
Cyanide Total	mg/L	-	0.01	0.01	0.01	0.01	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cyanide Free	mg/L	-	0.05	0.00	0.00	0.00	0.0095	< 0.0010	0.0018	0.0012
Cyanide WAD	mg/L	-	-	-	-	0.00	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Magnesium	mg/L	3.61	65.70	8.49	3.48	3.46	0.748	3.72	4.23	5.16
Potassium	mg/L	2.08	38.00	4.52	1.93	1.85	0.614	2.45	2.27	2.08
Sodium	mg/L	5.38	192.00	24.80	10.80	8.68	1.21	10.3	11.2	12
Sulphate	mg/L	-	77.00	15.50	7.57	7.48	5.6	4.4	7.9	12
Silica	mg/L	-	5.47	1.56	1.20	1.36	0.7	0.68	0.86	3.2
Nutrients										
Nitrate	mg/L	0.64	8.22	0.15	0.14	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nitrite	mg/L	0.01	0.14	0.01	0.01	0.01	< 0.010	< 0.010	< 0.010	< 0.010
Nitrate + nitrite	mg/L	0.66	8.37	0.16	0.14	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total ammonia	mg/L	-	8.76	0.08	0.05	0.05	< 0.050	< 0.050	< 0.050	0.055
Total Kjeldahl nitrogen	mg/L	0.54	9.75	0.51	0.42	0.41	0.33	0.35	0.47	0.47
Total phosphorus	mg/L	0.05	0.01	0.01	0.02	0.02	< 0.020	< 0.020	< 0.020	< 0.020
Orthophosphate	mg/L	-	0.17	0.01	0.01	0.01	< 0.010	< 0.010	< 0.010	0.022
General Organics										
Total oil and grease	mg/L	-	-	-	-	1.175	< 0.50	2.2	0.6	1.4
Total Metals										
Aluminum	mg/L	0.01045	0.005866667	0.0051	0.0059	0.007075	0.0096	0.0039	0.0057	0.0091
Antimony	mg/L	0.0002	0.0001	0.0005	0.0005	0.0005	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	0.00077	0.000703333	0.00073	0.00048	0.0006425	0.00054	0.0006	0.00078	0.00065
Barium	mg/L	0.0384	0.251	0.05645	0.0265	0.028725	0.0223	0.0334	0.0308	0.0284
Beryllium	mg/L	0.0002	0.000366667	0.0001	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	-	-	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.01	0.042	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	0.00001	0.000025	0.00001	0.00001	0.000011	< 0.000010	< 0.000010	< 0.000010	0.000014
Calcium	mg/L	46.76666667	285.6666667	75.9	25.7	31.075	19.1	30.8	36.7	37.7
Chromium	mg/L	0.0001075	0.000766667	0.001	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	-	-	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.00098	0.00097	0.000955	0.00071	0.000985	0.00077	0.00091	0.00108	0.00118
Iron	mg/L	0.2975	0.7	0.1735	0.151	0.25625	0.258	0.275	0.267	0.225
Lead	mg/L	0.00009	0.000266667	0.0002	0.0002	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	0.013325	0.272666667	0.0468	0.0124	0.0091	0.0073	0.0118	0.0106	0.0067
Magnesium	mg/L	14.585	22.17	8.7475	3.42	3.845	2.51	3.56	4.46	4.85
Manganese	mg/L	0.064175	0.132166667	0.024925	0.0511	0.048525	0.0543	0.0742	0.0389	0.0267
Mercury	mg/L	0.00002	0.00007	0.00001	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.000215	0.000666667	0.001	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Nickel	mg/L	0.00158	0.004166667	0.0014	0.0013	0.0015	0.0011	0.0012	0.0015	0.0022
Potassium	mg/L	2.725	12.94	4.5825	2.01	2.1025	1.66	2.41	2.27	2.07
Selenium	mg/L	0.0001	0.0017	0.0001	0.0001	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	-	-	-	0.76375	0.372	0.384	0.489	1.81
Silver	mg/L	0.00001	0.00006	0.00002	0.00002	0.00002	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium	mg/L	5.6575	63.34666667	25.325	10.5	10.0775	7.41	10	11.9	11
Strontium	mg/L	0.3345	4.332333333	0.89825	0.293	0.279	0.202	0.32	0.345	0.249
Sulphur	mg/L	-	-	-	-	3.465	< 3	< 3	< 3	4.86
Thallium	mg/L	0.0001	0.0003	0.00007775	0.00001	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	0.0002	0.002333333	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.0005	0.025	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.0001075	0.000766667	0.000125	0.0001	0.000105	< 0.00010	< 0.00010	< 0.00010	0.00012
Vanadium	mg/L	0.0002	0.003266667	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.00165	0.002333333	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	-	-	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-17	Sample Date						6/17/2019	7/7/2019	8/4/2019	9/3/2019
	FIELD_SDG	2015 Average	2016 Average	2017 Average	2018 Average	Annual Average	B9H1910	B9J0342	B9L8699	B9P1648
Parameter	Unit									
Dissolved Metals										
Aluminum	mg/L	-	0.00595	0.004425	0.0042	0.003733333	-	< 0.0030	0.0032	0.005
Antimony	mg/L	-	0.0003	0.0005	0.0005	0.0005	-	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	-	0.00058	0.0007	0.00046	0.000625	0.00051	0.00061	0.00076	0.00062
Barium	mg/L	-	0.35855	0.0543	0.0265	0.030166667	-	0.0316	0.0305	0.0284
Beryllium	mg/L	-	0.0003	0.0001	0.0001	0.0001	-	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	0.089	0.05	-	0.001	-	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	-	-	-	0.05	0.05	-	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	-	0.000026	0.00001	0.00001	0.000011	-	< 0.000010	< 0.000010	0.000013
Chromium	mg/L	-	0.0008	0.001	0.001	0.001	-	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	-	-	-	0.0002	-	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	-	0.00081	0.0008375	0.0007	0.00099	-	0.00088	0.00094	0.00115
Iron	mg/L	-	0.234	0.09615	0.114	0.152666667	-	0.133	0.152	0.173
Lead	mg/L	-	0.00025	0.0002	0.0002	0.0002	-	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	-	0.417	0.04585	0.0131	0.009466667	-	0.0113	0.0102	0.0069
Manganese	mg/L	-	0.16725	0.0186	0.0446	0.037	-	0.0612	0.0242	0.0256
Mercury	mg/L	-	0.000055	0.00001	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	-	0.00075	0.001	0.001	0.001	-	< 0.0010	< 0.0010	< 0.0010
Nickel	mg/L	-	0.0047	0.0013	0.0013	0.001666667	-	0.0011	0.0015	0.0024
Selenium	mg/L	-	0.00055	0.0001	0.0001	0.0001	-	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	-	-	-	0.879666667	-	0.394	0.495	1.75
Silver	mg/L	-	0.00002	0.00002	0.00002	0.00002	-	< 0.000020	< 0.000020	< 0.000020
Strontium	mg/L	-	5.8075	0.89425	0.279	0.309666667	-	0.317	0.369	0.243
Sulphur	mg/L	-	-	-	-	3.35	< 3.0	< 3.0	< 3.0	4.4
Thallium	mg/L	-	0.00045	0.000055	0.00001	0.00001	-	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	-	0.003	0.005	0.005	0.005	-	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	-	0.0125	0.005	0.005	0.005	-	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	-	0.00064	0.00012	0.0001	0.0001	-	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	-	0.00285	0.005	0.005	0.005	-	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	-	0.003	0.005	0.005	0.005	-	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	-	-	-	0.0001	-	< 0.00010	< 0.00010	< 0.00010
Volatile Organics										
Benzene	mg/L	-	-	-	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Ethylbenzene	mg/L	-	-	-	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Toluene	mg/L	-	-	-	-	0.001	< 0.00020	< 0.00020	< 0.00020	0.0034
Xylenes	mg/L	-	-	-	-	0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040
m,p-Xylenes	mg/L	-	-	-	-	0.0004	< 0.00040	< 0.00040	< 0.00040	< 0.00040
o-Xylene	mg/L	-	-	-	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
F1 (C6-C10)-BTEX	mg/L	-	-	-	-	0.025	< 0.025	< 0.025	< 0.025	< 0.025
F1 (C6-C10)	mg/L	-	-	-	-	0.025	< 0.025	< 0.025	< 0.025	< 0.025
1,2-Dichloroethane-d4	mg/L	-	-	-	-	96	88	95	95	106
Ethylbenzene-d10	mg/L	-	-	-	-	100.5	89	108	89	116
4-Bromofluorobenzene	mg/L	-	-	-	-	100	98	103	96	103
1,4-Difluorobenzene	mg/L	-	-	-	-	102	104	97	104	103

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-17	Sample Date	MDL	8/4/2019			
	FIELD_SDG		B9L8699			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	6.07	7.85	7.89	0.51
Specific conductivity	umhos/cm	1	1	310	310	0.00
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	108	105	2.82
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	111	110	0.90
Total alkalinity, as CaCO3	mg/L	1	1	53	55	3.70
Total dissolved solids	mg/L	10	10	320	305	4.80
Total suspended solids	mg/L	1	1	3	3	0.00
Total organic carbon	mg/L	0.5	0.5	10	10	0.00
Dissolved organic carbon	mg/L	0.5	0.5	10	9.7	3.05
Turbidity	NTU	0.1	0.1	0.9	0.9	0.00
Major Ions						
Bicarbonate, as CaCO3	mg/L	1	1	52	54	3.77
Calcium	mg/L	0.05	0.05	36.3	35.1	3.36
Carbonate, as CaCO3	mg/L	1	1	1	1	0.00
Chloride	mg/L	1	1	48	49	2.06
Cyanide Total	mg/L	0.005	0.005	0.005	0.005	0.00
Cyanide Free	mg/L	0.001	0.0014	0.0011	0.0018	48.28
Cyanide WAD	mg/L	0.001	0.001	0.001	0.001	0.00
Magnesium	mg/L	0.05	0.05	4.33	4.23	2.34
Potassium	mg/L	0.05	0.05	2.29	2.27	0.88
Sodium	mg/L	0.05	0.05	11.5	11.2	2.64
Sulphate	mg/L	1	1	7.8	7.9	1.27
Silica	mg/L	0.05	0.05	0.86	0.86	0.00
Nutrients						
Nitrate	mg/L	0.1	0.1	0.1	0.1	0.00
Nitrite	mg/L	0.01	0.01	0.01	0.01	0.00
Nitrate + nitrite	mg/L	0.1	0.1	0.1	0.1	0.00
Total ammonia	mg/L	0.05	0.12	0.086	0.05	52.94
Total Kjeldahl nitrogen	mg/L	0.1	0.1	0.53	0.47	12.00
Total phosphorus	mg/L	0.02	0.02	0.02	0.02	0.00
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00
General Organics						
Total oil and grease	mg/L	0.5	0.8	0.5	0.6	18.18
Total Metals						
Aluminum	mg/L	0.003	0.003	0.0052	0.0057	9.17
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00081	0.00078	3.77
Barium	mg/L	0.001	0.001	0.0308	0.0308	0.00
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Calcium	mg/L	0.05	0.05	37	36.7	0.81
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0005	0.0005	0.00108	0.00108	0.00
Iron	mg/L	0.01	0.01	0.276	0.267	3.31
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.0106	0.0106	0.00
Magnesium	mg/L	0.05	0.05	4.48	4.46	0.45
Manganese	mg/L	0.001	0.001	0.0398	0.0389	2.29
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.0016	0.0015	6.45
Potassium	mg/L	0.05	0.05	2.29	2.27	0.88
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.489	0.489	0.00
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-17	Sample Date	MDL	8/4/2019			
	FIELD_SDG		B9L8699			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Total Metals						
Sodium	mg/L	0.05	0.05	11.8	11.9	0.84
Strontium	mg/L	0.001	0.001	0.354	0.345	2.58
Sulphur	mg/L	3	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Dissolved Metals						
Aluminum	mg/L	0.003	0.003	0.003	0.0032	6.45
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00076	0.00076	0.00
Barium	mg/L	0.001	0.001	0.0314	0.0305	2.91
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0002	0.0002	0.00093	0.00094	1.07
Iron	mg/L	0.005	0.005	0.155	0.152	1.95
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.0103	0.0102	0.98
Manganese	mg/L	0.001	0.001	0.0242	0.0242	0.00
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.0014	0.0015	6.90
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.485	0.495	2.04
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Strontium	mg/L	0.001	0.001	0.367	0.369	0.54
Sulphur	mg/L	3	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Volatile Organics						
Benzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Ethylbenzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Toluene	mg/L	0.0002	0.0011	0.0002	0.0002	0.00
Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00
m,p-Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00
o-Xylene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
F1 (C6-C10)-BTEX	mg/L	0.025	0.025	0.025	0.025	0.00
F1 (C6-C10)	mg/L	0.025	0.025	0.025	0.025	0.00
1,2-Dichloroethane-d4	%	-	95	95	95	0.00
Ethylbenzene-d10	%	-	90	90	89	1.12
4-Bromofluorobenzene	%	-	97	95	96	1.05
1,4-Difluorobenzene	%	-	106	104	104	0.00

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-18 (Lake B5)	Sample Date	2016 Average	2017 Average	2018 Average	Annual Average	6/17/2019	7/7/2019	8/7/2019	9/3/2019
	FIELD_SDG					B9H1912	B9J0334	B9M1918	B9P1607
Parameter	Unit								
Field Measured									
pH	pH units	8.575	-	8.45	7.78	7.86	7.63	7.86	7.78
Conductivity	uS/cm	145.85	-	105.4	127.83	140.1	79.1	128.7	163.4
Temperature	°C	7.95	-	17.1	9.22	4.88	13.6	12.7	5.7
Dissolved oxygen	mg/L	-	-	-	10.73	11.07	9.46	9.33	13.06
Dissolved oxygen	%	-	-	-	92.73	87.4	91.1	87.8	104.6
Conventional Parameters									
pH	pH units	7.655	7.70	7.345	7.61	7.53	7.69	7.49	7.72
Specific conductivity	umhos/cm	155	143.33	125	123.75	95	110	130	160
Hardness, as CaCO3 (D)	mg/L	62	55.70	-	45.90	35	40	-	62.7
Hardness, as CaCO3 (T)	mg/L	59.05	53.97	-	45.78	33.1	42.2	43	64.8
Total alkalinity, as CaCO3	mg/L	37.5	35.00	28.5	28.75	23	28	30	34
Total dissolved solids	mg/L	153	114.67	60	93.75	75	95	95	110
Total suspended solids	mg/L	1.5	4.33	2	1.25	2	< 1	1	1
Total organic carbon	mg/L	4.1	4.27	3.8	4.13	3.8	3.2	4.4	5.1
Dissolved organic carbon	mg/L	4.1	3.97	3.55	3.85	3.3	3	4	5.1
Turbidity	NTU	1.05	0.40	0.55	0.50	0.5	0.3	0.5	0.7
Major Ions									
Bicarbonate, as CaCO3	mg/L	37.5	34.67	28.5	28.50	23	27	30	34
Calcium	mg/L	19.2	17.97	-	15.27	11.8	13.2	-	20.8
Carbonate, as CaCO3	mg/L	1	1.00	1	1.00	< 1.0	< 1.0	< 1.0	< 1.0
Chloride	mg/L	21.5	19.33	17	17.00	13	15	18	22
Cyanide Total	mg/L	0.005	0.01	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cyanide Free	mg/L	-	-	-	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cyanide WAD	mg/L	0.001	0.00	0.001	0.001	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Magnesium	mg/L	2.61	2.38	-	1.88	1.33	1.69	-	2.61
Potassium	mg/L	1.25	1.14	-	1.00	0.899	0.89	-	1.2
Sodium	mg/L	4.95	4.51	-	3.69	2.38	3.34	-	5.36
Sulphate	mg/L	3.5	4.10	3.95	4.30	2.4	3.4	4	7.4
Silica	mg/L	0.82	0.55	0.21	0.70	0.45	0.31	0.35	1.7
Nutrients									
Nitrate	mg/L	0.01	0.01	0.1	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nitrite	mg/L	0.1	0.10	0.01	0.01	< 0.010	< 0.010	< 0.010	< 0.010
Nitrate + nitrite	mg/L	0.01	0.01	0.1	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total ammonia	mg/L	0.045	0.010	0.05	0.084	0.081	0.13	< 0.050	0.075
Total Kjeldahl nitrogen	mg/L	0.31	0.23	0.215	0.32	0.45	0.22	0.27	0.32
Total phosphorus	mg/L	0.0095	0.0080	0.02	0.02	< 0.020	0.027	< 0.020	< 0.020
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	< 0.010	< 0.010	< 0.010	< 0.010
Total Metals									
Aluminum	mg/L	0.00605	0.00456667	-	0.0086	0.0113	0.0058	0.0055	0.0117
Antimony	mg/L	0.0005	0.0005	-	0.0005	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	0.001645	0.00144667	-	0.0017	0.00193	0.00159	0.00152	0.00176
Barium	mg/L	0.01615	0.0149	-	0.0148	0.0129	0.0148	0.0136	0.0177
Beryllium	mg/L	0.0001	0.0001	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	-	-	-	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.05	0.05	-	0.0500	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	0.00001	0.00001	-	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Calcium	mg/L	20.4	18.2333333	-	15.1750	11	14.2	14.1	21.4
Chromium	mg/L	0.001	0.001	-	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	-	-	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.000605	0.0006	-	0.0007	0.0005	0.00054	0.00068	0.00096
Iron	mg/L	0.074	0.08	-	0.1453	0.195	0.158	0.094	0.134
Lead	mg/L	0.0002	0.0002	-	0.0002	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	0.0052	0.00336667	-	0.0055	0.0042	0.0053	0.0049	0.0077
Magnesium	mg/L	3	2.31	-	1.9200	1.38	1.65	1.88	2.77
Manganese	mg/L	0.0095	0.01273333	-	0.0174	0.0411	0.0084	0.0097	0.0103
Mercury	mg/L	0.000015	0.00001	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.001	0.001	-	0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Nickel	mg/L	0.001	0.001	-	0.0010	< 0.0010	< 0.0010	< 0.0010	0.0011
Potassium	mg/L	1.29	1.088	-	1.0093	0.815	0.94	0.982	1.3
Selenium	mg/L	0.0001	0.0001	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	-	-	-	0.2815	0.268	0.187	0.168	0.503
Silver	mg/L	0.00002	0.00002	-	0.0000	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium	mg/L	5.54	4.44666667	-	3.6800	2.49	3.36	-	5.19
Strontium	mg/L	0.132	0.103	-	0.1029	0.0794	0.0993	0.0958	0.137
Sulphur	mg/L	-	-	-	3.0000	< 3	< 3	< 3	< 3
Thallium	mg/L	0.00005	0.000037	-	0.00001	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	0.005	0.005	-	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.005	0.005	-	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.0001	0.0001	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	0.005	0.005	-	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.005	0.005	-	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	-	-	-	0.0001	< 0.00010	< 0.00010	< 0.00010	< 0.00010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-18 (Lake B5)	Sample Date	2016 Average	2017 Average	2018 Average	Annual Average	6/17/2019	7/7/2019	8/7/2019	9/3/2019
	FIELD_SDG					B9H1912	B9J0334	B9M1918	B9P1607
Parameter	Unit								
Dissolved Metals									
Aluminum	mg/L	0.00455	0.00356667	-	0.0032	< 0.0030	< 0.0030	-	0.0036
Antimony	mg/L	0.0005	0.0005	-	0.0005	< 0.00050	< 0.00050	-	< 0.00050
Arsenic	mg/L	0.00133	0.00124	-	0.0014	0.0015	0.00129	-	0.00127
Barium	mg/L	0.0144	0.01486667	-	0.0148	0.0129	0.0147	-	0.0168
Beryllium	mg/L	0.0001	0.0001	-	0.0001	< 0.00010	< 0.00010	-	< 0.00010
Bismuth	mg/L	-	-	-	0.0010	< 0.0010	< 0.0010	-	< 0.0010
Boron	mg/L	0.05	0.05	-	0.0500	< 0.05	< 0.05	-	< 0.05
Cadmium	mg/L	0.00001	0.00001	-	0.00001	< 0.000010	< 0.000010	-	< 0.000010
Chromium	mg/L	0.001	0.001	-	0.0010	< 0.0010	< 0.0010	-	< 0.0010
Cobalt	mg/L	-	-	-	0.0002	< 0.00020	< 0.00020	-	< 0.00020
Copper	mg/L	0.00062	0.00058	-	0.0006	0.00035	0.00042	-	0.00091
Iron	mg/L	0.0286	0.04233333	-	0.0818	0.113	0.091	-	0.0415
Lead	mg/L	0.0002	0.0002	-	0.0002	< 0.00020	< 0.00020	-	< 0.00020
Lithium	mg/L	0.005	0.00346667	-	0.0059	0.0046	0.0053	-	0.0078
Manganese	mg/L	0.0021	0.0037	-	0.0157	0.0392	0.0041	-	0.0038
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.001	0.001	-	0.0031	< 0.0010	0.0072	-	< 0.0010
Nickel	mg/L	0.001	0.001	-	0.0010	< 0.0010	< 0.0010	-	< 0.0010
Selenium	mg/L	0.0001	0.0001	-	0.0001	< 0.00010	< 0.00010	-	< 0.00010
Silicon	mg/L	-	-	-	0.3047	0.288	0.145	-	0.481
Silver	mg/L	0.00002	0.00002	-	0.0000	< 0.000020	< 0.000020	-	< 0.000020
Strontium	mg/L	0.114	0.10436667	-	0.1009	0.0772	0.0965	-	0.129
Sulphur	mg/L	-	-	-	3.0000	< 3.0	< 3.0	-	< 3.0
Thallium	mg/L	0.00005	0.00001	-	0.00001	< 0.000010	< 0.000010	-	< 0.000010
Tin	mg/L	0.005	0.005	-	0.0050	< 0.0050	< 0.0050	-	< 0.0050
Titanium	mg/L	0.005	0.005	-	0.0050	< 0.0050	< 0.0050	-	< 0.0050
Uranium	mg/L	0.0001	0.0001	-	0.0001	< 0.00010	< 0.00010	-	< 0.00010
Vanadium	mg/L	0.005	0.005	-	0.0050	< 0.0050	< 0.0050	-	< 0.0050
Zinc	mg/L	0.005	0.005	-	0.0050	< 0.0050	< 0.0050	-	< 0.0050
Zirconium	mg/L	-	-	-	0.0001	< 0.00010	< 0.00010	-	< 0.00010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-18	Sample Date	MDL	8/7/2019			
	FIELD_SDG		B9M1918			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	5.95	7.62	7.49	1.72
Specific conductivity	umhos/cm	1	1.1	130	130	0.00
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	-	-	-
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	42.6	43	0.93
Total alkalinity, as CaCO3	mg/L	1	1	29	30	3.39
Total dissolved solids	mg/L	10	10	110	95	14.63
Total suspended solids	mg/L	1	1	2	1	66.67
Total organic carbon	mg/L	0.5	0.5	4.6	4.4	4.44
Dissolved organic carbon	mg/L	0.5	0.5	3.8	4	5.13
Turbidity	NTU	0.1	0.1	0.4	0.5	22.22
Major Ions						
Bicarbonate, as CaCO3	mg/L	1	1	29	30	3.39
Calcium	mg/L	0.05	0.05	-	-	-
Carbonate, as CaCO3	mg/L	1	1	1	1	0.00
Chloride	mg/L	1	1	17	18	5.71
Cyanide Total	mg/L	0.005	0.005	0.005	0.005	0.00
Cyanide Free	mg/L	0.001	0.001	0.0018	0.001	57.14
Cyanide WAD	mg/L	0.001	0.001	0.001	0.001	0.00
Magnesium	mg/L	0.05	0.05	-	-	-
Potassium	mg/L	0.05	0.05	-	-	-
Sodium	mg/L	0.05	0.05	-	-	-
Sulphate	mg/L	1	1	3.9	4	2.53
Silica	mg/L	0.05	0.05	0.34	0.35	2.90
Nutrients						
Nitrate	mg/L	0.1	0.1	0.1	0.1	0.00
Nitrite	mg/L	0.01	0.01	0.01	0.01	0.00
Nitrate + nitrite	mg/L	0.1	0.1	0.1	0.1	0.00
Total ammonia	mg/L	0.05	0.09	0.1	0.05	66.67
Total Kjeldahl nitrogen	mg/L	0.1	0.1	0.23	0.27	16.00
Total phosphorus	mg/L	0.02	0.02	0.02	0.02	0.00
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00
Total Metals						
Aluminum	mg/L	0.003	0.003	0.0052	0.0055	5.61
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00155	0.00152	1.95
Barium	mg/L	0.001	0.001	0.0139	0.0136	2.18
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Calcium	mg/L	0.05	0.05	13.9	14.1	1.43
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0005	0.0005	0.00066	0.00068	2.99
Iron	mg/L	0.01	0.01	0.087	0.094	7.73
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.0051	0.0049	4.00
Magnesium	mg/L	0.05	0.05	1.88	1.88	0.00
Manganese	mg/L	0.001	0.001	0.009	0.0097	7.49
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00
Nickel	mg/L	0.001	0.001	0.001	0.001	0.00
Potassium	mg/L	0.05	0.05	0.982	0.982	0.00
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.163	0.168	3.02
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Strontium	mg/L	0.001	0.001	0.0978	0.0958	2.07
Sulphur	mg/L	3	3	3	3	0.00

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-18	Sample Date	MDL	8/7/2019			
	FIELD_SDG		B9M1918			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Total Metals						
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Dissolved Metals						
Aluminum	mg/L	0.003	0.003	-	-	-
Antimony	mg/L	0.0005	0.0005	-	-	-
Arsenic	mg/L	0.0001	0.0001	-	-	-
Barium	mg/L	0.001	0.001	-	-	-
Beryllium	mg/L	0.0001	0.0001	-	-	-
Bismuth	mg/L	0.001	0.001	-	-	-
Boron	mg/L	0.05	0.05	-	-	-
Cadmium	mg/L	0.00001	0.00001	-	-	-
Chromium	mg/L	0.001	0.001	-	-	-
Cobalt	mg/L	0.0002	0.0002	-	-	-
Copper	mg/L	0.0002	0.0002	-	-	-
Iron	mg/L	0.005	0.005	-	-	-
Lead	mg/L	0.0002	0.0002	-	-	-
Lithium	mg/L	0.002	0.002	-	-	-
Manganese	mg/L	0.001	0.001	-	-	-
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	-	-	-
Nickel	mg/L	0.001	0.001	-	-	-
Selenium	mg/L	0.0001	0.0001	-	-	-
Silicon	mg/L	0.1	0.1	-	-	-
Silver	mg/L	0.00002	0.00002	-	-	-
Strontium	mg/L	0.001	0.001	-	-	-
Sulphur	mg/L	3	3	-	-	-
Thallium	mg/L	0.00001	0.00001	-	-	-
Tin	mg/L	0.005	0.005	-	-	-
Titanium	mg/L	0.005	0.005	-	-	-
Uranium	mg/L	0.0001	0.0001	-	-	-
Vanadium	mg/L	0.005	0.005	-	-	-
Zinc	mg/L	0.005	0.005	-	-	-
Zirconium	mg/L	0.0001	0.0001	-	-	-

Notes:

RPD : Relative Percent Difference
MDL : Mean Detection Limit
25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-20	Sample Date	Annual Average	5/22/2019	5/29/2019	6/4/2019	6/9/2019	6/17/2019	7/1/2019	8/4/2019	9/1/2019
	FIELD_SDG		B9E0939	B9E9595	B9F7660	B9G2468	B9H1976	B9I4287	B9L8678	B9O6796
Parameter	Unit									
Field Measured										
pH	pH units	7.72	8.58	7.7	6.98	7.22	7.86	7.96	7.68	7.76
Conductivity	uS/cm	1607.59	1423	-	706.1	1470	1240	1349	2525	2540
Temperature	°C	6.49	3.5	4.28	4.1	7.44	10.08	7.7	10.9	3.9
Dissolved oxygen	mg/L	9.47	-	-	10.2	-	11	9.57	7.43	9.13
Dissolved oxygen	%	78.88	101.6	79.1	91.6	98.3	99.4	81.7	72.3	7
Conventional Parameters										
pH	pH units	7.73	7.36	7.7	7.69	7.93	7.73	7.89	7.88	7.65
Hardness, as CaCO3 (D)	mg/L	292.67	-	-	142	231	149	296	459	479
Hardness, as CaCO3 (T)	mg/L	259.75	139	142	146	224	172	332	452	471
Total alkalinity, as CaCO3	mg/L	72.88	55	62	66	70	67	83	94	86
Total dissolved solids	mg/L	839.38	420	430	455	700	620	1010	1510	1570
Total suspended solids	mg/L	92.75	100	50	130	16	290	83	33	40
Turbidity	NTU	125.00	190	130	180	27	280	140	13	40
Major Ions										
Calcium	mg/L	74.60	-	-	39.6	69.7	37.7	70.6	110	120
Chloride	mg/L	273.75	140	130	140	190	170	360	550	510
Cyanide	mg/L	0.02	0.0076	0.0074	0.0067	< 0.0050	0.0064	< 0.0050	0.012	0.086
Fluoride	mg/L	0.14	< 0.10	0.12	< 0.10	< 0.10	0.12	0.17	0.22	0.16
Magnesium	mg/L	25.88	-	-	10.6	13.9	13.4	29	45	43.4
Potassium	mg/L	14.52	-	-	8.31	11.8	9.02	15.1	21.2	21.7
Sodium	mg/L	175.80	-	-	77.2	88.6	103	204	290	292
Sulphate	mg/L	140.38	73	70	72	86	82	170	260	310
Nutrients										
Nitrate	mg/L	8.04	6.36	6.53	5.94	1.7	5.14	8.93	15.4	14.3
Nitrite	mg/L	0.19	0.114	0.123	0.116	0.07	0.128	0.296	0.356	0.282
Nitrate + nitrite	mg/L	8.22	6.48	6.65	6.05	1.77	5.27	9.22	15.7	14.6
Total ammonia	mg/L	4.84	4.5	4.7	4.3	1.2	3.3	5.3	7	8.4
Total phosphorus	mg/L	0.22	0.24	0.39	0.15	0.043	0.36	0.19	0.077	0.33
Orthophosphate	mg/L	0.06	0.072	0.067	0.068	< 0.010	0.051	0.017	0.016	0.16
Total Metals										
Aluminum	mg/L	2.00863	2.83	1.1	2.17	0.448	5.95	2.1	0.311	1.16
Antimony	mg/L	0.00229	-	-	0.00084	0.00358	0.0011	0.00163	0.0016	< 0.0050
Arsenic	mg/L	0.09328	0.236	0.119	0.0847	0.0247	0.0785	0.0366	0.0377	0.129
Barium	mg/L	0.05994	0.0497	0.0365	0.055	0.0337	0.0902	0.0722	0.0652	0.077
Beryllium	mg/L	0.00028	-	-	< 0.00010	< 0.00010	< 0.00020	< 0.00010	< 0.00020	< 0.0010
Bismuth	mg/L	0.00283	-	-	< 0.0010	< 0.0010	< 0.0020	< 0.0010	< 0.0020	< 0.01
Boron	mg/L	0.34950	-	-	0.157	0.386	0.294	0.365	0.395	< 0.5
Cadmium	mg/L	0.00005	0.000036	0.000023	0.000027	0.000013	0.000068	0.000055	0.000042	< 0.00010
Calcium	mg/L	66.03750	37.9	39.2	39.8	66.1	41.4	77.9	109	117
Chromium	mg/L	0.00618	0.0071	0.003	0.0052	0.0013	0.015	0.0058	< 0.0020	< 0.01
Cobalt	mg/L	0.00454	-	-	0.0034	0.00152	0.00686	0.00539	0.00426	0.0058
Copper	mg/L	0.01182	0.0153	0.00832	0.00874	0.0064	0.0202	0.0135	0.0101	0.012
Iron	mg/L	3.20175	4.48	2.28	3.14	0.793	9.7	3.27	0.501	1.45
Lead	mg/L	0.00613	0.0156	0.00574	0.00504	0.00102	0.013	0.0039	0.00133	0.0034
Lithium	mg/L	0.01687	-	-	0.0056	0.0417	0.0114	0.0102	0.0123	< 0.02
Magnesium	mg/L	23.08750	10.7	10.7	11.3	14.4	16.8	33.4	44	43.4

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-20	Sample Date	Annual Average	5/22/2019	5/29/2019	6/4/2019	6/9/2019	6/17/2019	7/1/2019	8/4/2019	9/1/2019
Parameter	FIELD_SDG		B9E0939	B9E9595	B9F7660	B9G2468	B9H1976	B9I4287	B9L8678	B9O6796
Parameter	Unit									
Total Metals										
Manganese	mg/L	0.22208	0.197	0.198	0.18	0.0646	0.226	0.219	0.304	0.388
Mercury	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.00670	0.0038	0.004	0.004	0.0121	0.0051	0.0071	0.0075	< 0.01
Nickel	mg/L	0.02458	0.0164	0.0153	0.0153	0.0124	0.0302	0.0417	0.0363	0.029
Potassium	mg/L	13.74125	9.31	8.65	8.77	11.9	11	17.7	20.9	21.7
Selenium	mg/L	0.00040	0.00033	0.00024	0.00024	0.00019	0.00027	0.0004	0.00049	< 0.0010
Silicon	mg/L	5.39500	-	-	4.57	2.46	12.3	5.49	2.7	4.85
Silver	mg/L	0.00006	0.000031	< 0.000020	< 0.000020	0.000022	0.000078	0.000032	< 0.000040	< 0.00020
Sodium	mg/L	150.87500	69.5	76.5	75.1	89.8	99.1	221	285	291
Strontium	mg/L	0.58350	-	-	0.267	0.736	0.248	0.54	0.876	0.834
Sulphur	mg/L	49.22500	29.7	24.4	24.8	28.6	24.5	60.9	89.9	111
Thallium	mg/L	0.00006	-	-	0.000037	0.00002	0.000111	0.000062	0.000033	< 0.00010
Tin	mg/L	0.01417	-	-	< 0.0050	< 0.0050	< 0.01	< 0.0050	< 0.01	< 0.05
Titanium	mg/L	0.11403	0.147	0.0636	0.124	0.0236	0.347	0.133	0.018	0.056
Uranium	mg/L	0.00639	-	-	0.00302	0.00349	0.00505	0.00907	0.0106	0.0071
Vanadium	mg/L	0.01527	-	-	0.0059	< 0.0050	0.015	0.0057	< 0.01	< 0.05
Zinc	mg/L	0.01595	0.0115	0.0061	0.0097	< 0.0050	0.026	0.0093	< 0.01	< 0.05
Zirconium	mg/L	0.00246	-	-	0.00272	0.00067	0.00538	0.00364	0.00104	0.0013
Dissolved Metals										
Aluminum	mg/L	0.01625	-	-	0.0092	0.0157	0.0153	0.0111	0.0162	< 0.03
Antimony	mg/L	0.00233	-	-	0.00093	0.00376	0.00107	0.00166	0.00158	< 0.0050
Arsenic	mg/L	0.04917	-	-	0.067	0.0187	0.0352	0.0235	0.0326	0.118
Barium	mg/L	0.04285	-	-	0.022	0.032	0.0281	0.0505	0.0625	0.062
Beryllium	mg/L	0.00025	-	-	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.0010
Bismuth	mg/L	0.00250	-	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.01
Boron	mg/L	0.34750	-	-	0.156	0.384	0.266	0.381	0.398	< 0.5
Cadmium	mg/L	0.00004	-	-	0.000011	0.000015	0.000012	0.000023	0.000029	0.00012
Chromium	mg/L	0.00317	-	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	0.014
Cobalt	mg/L	0.00256	-	-	0.00148	0.00085	0.00116	0.00254	0.00373	0.0056
Copper	mg/L	0.00641	-	-	0.00385	0.00451	0.00487	0.00677	0.00834	0.0101
Iron	mg/L	0.04107	-	-	0.0365	0.0143	0.0198	0.0115	0.0343	0.13
Lead	mg/L	0.00051	-	-	0.00022	< 0.00020	< 0.00020	< 0.00020	0.00022	< 0.0020
Lithium	mg/L	0.01453	-	-	0.0028	0.0421	0.0034	0.0073	0.0116	< 0.02
Manganese	mg/L	0.17392	-	-	0.136	0.0367	0.0838	0.147	0.262	0.378
Mercury	mg/L	0.00001	-	-	< 0.00001	< 0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.00788	-	-	0.0043	0.0121	0.0054	0.0075	0.008	< 0.01
Nickel	mg/L	0.02272	-	-	0.0094	0.0104	0.0121	0.0314	0.033	0.04
Selenium	mg/L	0.00040	-	-	0.0002	0.00013	0.00023	0.00033	0.00051	0.001
Silicon	mg/L	1.75167	-	-	1.08	1.85	1.26	1.91	2.19	2.22
Silver	mg/L	0.00005	-	-	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.00020
Strontium	mg/L	0.59950	-	-	0.255	0.717	0.252	0.61	0.931	0.832
Sulphur	mg/L	56.70000	-	-	25.8	32	25.7	55.1	91.6	110
Thallium	mg/L	0.00003	-	-	0.000016	0.000013	0.000013	0.000031	0.000028	< 0.00010
Tin	mg/L	0.01250	-	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.05
Titanium	mg/L	0.01250	-	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.05
Uranium	mg/L	0.00644	-	-	0.00286	0.00357	0.00434	0.00864	0.0119	0.0073
Vanadium	mg/L	0.01250	-	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.05
Zinc	mg/L	0.01250	-	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.05
Zirconium	mg/L	0.00057	-	-	0.0003	0.00026	0.00031	0.00057	0.00097	< 0.0010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-20 QAQC	Sample Date	MDL	6/9/2019			
	FIELD_SDG		B9G2468			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	6.24	7.83	7.93	1.27
Hardness, as CaCO ₃ (D)	mg/L	0.5	0.5	232	231	0.43
Hardness, as CaCO ₃ (T)	mg/L	0.5	0.5	215	224	4.10
Total alkalinity, as CaCO ₃	mg/L	1	1	69	70	1.44
Total dissolved solids	mg/L	10	10	695	700	0.72
Total suspended solids	mg/L	1	1	17	16	6.06
Turbidity	NTU	0.1	0.1	27	27	0.00
Major Ions						
Calcium	mg/L	0.05	0.05	69.1	69.7	0.86
Chloride	mg/L	1	1	200	190	5.13
Cyanide	mg/L	0.005	0.005	0.005	0.005	0.00
Fluoride	mg/L	0.1	0.1	0.12	0.1	18.18
Magnesium	mg/L	0.05	0.05	14.4	13.9	3.53
Potassium	mg/L	0.05	0.05	12.3	11.8	4.15
Sodium	mg/L	0.05	0.05	91.7	88.6	3.44
Sulphate	mg/L	1	1	87	86	1.16
Nutrient						
Nitrate	mg/L	0.1	0.1	1.69	1.7	0.59
Nitrite	mg/L	0.01	0.01	0.071	0.07	1.42
Nitrate + nitrite	mg/L	0.1	0.1	1.76	1.77	0.57
Total ammonia	mg/L	0.05	0.05	1.2	1.2	0.00
Total phosphorus	mg/L	0.02	0.02	0.037	0.043	15.00
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00
Total Metals						
Aluminum	mg/L	0.003	0.003	0.48	0.448	6.90
Antimony	mg/L	0.0005	0.0005	0.00351	0.00358	1.97
Arsenic	mg/L	0.0001	0.0001	0.0239	0.0247	3.29
Barium	mg/L	0.001	0.001	0.0328	0.0337	2.71
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.374	0.386	3.16
Cadmium	mg/L	0.00001	0.00001	0.000015	0.000013	14.29
Calcium	mg/L	0.05	0.05	63.3	66.1	4.33
Chromium	mg/L	0.001	0.001	0.0014	0.0013	7.41
Cobalt	mg/L	0.0002	0.0002	0.00151	0.00152	0.66
Copper	mg/L	0.0005	0.0005	0.0063	0.0064	1.57
Iron	mg/L	0.01	0.01	0.945	0.793	17.49
Lead	mg/L	0.0002	0.0002	0.00105	0.00102	2.90
Lithium	mg/L	0.002	0.002	0.0406	0.0417	2.67
Magnesium	mg/L	0.05	0.05	13.9	14.4	3.53
Manganese	mg/L	0.001	0.001	0.0636	0.0646	1.56
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.0118	0.0121	2.51
Nickel	mg/L	0.001	0.001	0.0124	0.0124	0.00
Potassium	mg/L	0.05	0.05	11.4	11.9	4.29
Selenium	mg/L	0.0001	0.0001	0.00019	0.00019	0.00
Silicon	mg/L	0.1	0.1	2.33	2.46	5.43
Silver	mg/L	0.00002	0.00002	0.000023	0.000022	4.44
Sodium	mg/L	0.05	0.05	86.9	89.8	3.28
Strontium	mg/L	0.001	0.001	0.725	0.736	1.51
Sulphur	mg/L	3	3	27.8	28.6	2.84
Thallium	mg/L	0.00001	0.00001	0.000019	0.00002	5.13
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.0229	0.0236	3.01
Uranium	mg/L	0.0001	0.0001	0.00344	0.00349	1.44
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.00068	0.00067	1.48

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-20 QAQC	Sample Date	MDL	6/9/2019			
	FIELD_SDG		B9G2468			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Dissolved Metals						
Aluminum	mg/L	0.003	0.003	0.0156	0.0157	0.64
Antimony	mg/L	0.0005	0.0005	0.00372	0.00376	1.07
Arsenic	mg/L	0.0001	0.0001	0.0188	0.0187	0.53
Barium	mg/L	0.001	0.001	0.0314	0.032	1.89
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.369	0.384	3.98
Cadmium	mg/L	0.00001	0.00001	0.000015	0.000015	0.00
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.00084	0.00085	1.18
Copper	mg/L	0.0002	0.0002	0.00466	0.00451	3.27
Iron	mg/L	0.005	0.005	0.0161	0.0143	11.84
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.0426	0.0421	1.18
Manganese	mg/L	0.001	0.001	0.0379	0.0367	3.22
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.0122	0.0121	0.82
Nickel	mg/L	0.001	0.001	0.0109	0.0104	4.69
Selenium	mg/L	0.0001	0.0001	0.00015	0.00013	14.29
Silicon	mg/L	0.1	0.1	1.83	1.85	1.09
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Strontium	mg/L	0.001	0.001	0.715	0.717	0.28
Sulphur	mg/L	3	3	31.5	32	1.57
Thallium	mg/L	0.00001	0.00001	0.000014	0.000013	7.41
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.00362	0.00357	1.39
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.00024	0.00026	8.00

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-21	Sample Date	Annual Average	5/22/2019	6/4/2019	6/9/2019	6/17/2019	7/1/2019	8/4/2019	9/4/2019
	FIELD_SDG		B9E0939	B9F7660	B9G2251	B9H1974	B9I4297	B9L8675	B9P1604
Parameter	Unit								
Field Measured									
pH	pH units	8.05	8.24	7.22	7.99	7.64	8.1	9.07	8.09
Conductivity	uS/cm	1701.19	1313	884.3	1205	1485	1026	3682	2313
Temperature	°C	7.61	4.49	6.4	3.83	13.12	9.6	10.6	5.2
Dissolved oxygen	mg/L	9.88	-	10.18	-	10.41	9.97	9.45	9.37
Dissolved oxygen	%	91.46	101.9	90.5	98.7	101	87.5	86.3	74.3
Conventional Parameters									
pH	pH units	7.85	7.55	7.7	7.79	7.87	7.97	8.03	8.03
Hardness, as CaCO3 (D)	mg/L	308.67	-	217	149	233	251	508	494
Hardness, as CaCO3 (T)	mg/L	297.00	184	217	146	242	271	522	497
Total alkalinity, as CaCO3	mg/L	83.29	67	69	65	72	80	130	100
Total dissolved solids	mg/L	957.14	515	605	525	685	680	2190	1500
Total suspended solids	mg/L	42.71	71	22	110	6	6	43	41
Turbidity	NTU	58.17	77	37	160	6.8	8.4	35	83
Major Ions									
Calcium	mg/L	79.82	-	64.4	41.5	68.7	72.3	105	127
Chloride	mg/L	334.29	170	180	150	200	250	910	480
Cyanide	mg/L	0.007	< 0.0050	< 0.0050	0.014	0.012	< 0.0050	< 0.0050	< 0.0050
Fluoride	mg/L	0.14	< 0.10	< 0.10	0.12	< 0.10	0.11	0.26	0.18
Magnesium	mg/L	26.55	-	13.7	11	15	17.2	59.4	43
Potassium	mg/L	16.27	-	11.1	8.89	12	14.3	32.2	19.1
Sodium	mg/L	185.67	-	81	84.9	96.1	121	478	253
Sulphate	mg/L	132.14	76	84	75	91	99	270	230
Nutrients									
Nitrate	mg/L	2.71	1.88	1.77	6.38	1.72	1.96	3.34	1.94
Nitrite	mg/L	0.085	0.059	0.056	0.132	0.074	0.111	0.111	0.054
Nitrate + nitrite	mg/L	2.80	1.94	1.82	6.51	1.79	2.07	3.45	1.99
Total ammonia	mg/L	1.99	1.4	1.3	4.3	1.3	1.7	2.5	1.4
Total phosphorus	mg/L	0.09	0.052	< 0.040	0.2	< 0.020	< 0.020	< 0.20	< 0.10
Orthophosphate	mg/L	0.015	< 0.010	< 0.010	0.043	< 0.010	< 0.010	< 0.010	< 0.010
Total Metals									
Aluminum	mg/L	0.86486	1.1	0.639	1.47	0.172	0.204	0.799	1.67
Antimony	mg/L	0.00420	-	0.00339	0.00091	0.00396	0.00517	0.0081	0.00367
Arsenic	mg/L	0.02993	0.0395	0.0296	0.0711	0.0195	0.0172	0.0124	0.0202
Barium	mg/L	0.04710	0.0327	0.0346	0.0445	0.0328	0.037	0.0741	0.074
Beryllium	mg/L	0.00012	-	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00020	< 0.00010
Bismuth	mg/L	0.00117	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.0010
Boron	mg/L	0.52450	-	0.34	0.198	0.376	0.478	1.19	0.565
Cadmium	mg/L	0.00004	0.000028	0.000029	0.000021	0.00002	0.000022	0.000032	0.000127
Calcium	mg/L	77.28571	54	64	38.9	70.9	76.2	109	128
Chromium	mg/L	0.00247	0.003	0.0018	0.0037	< 0.0010	< 0.0010	0.0026	0.0042
Cobalt	mg/L	0.00286	-	0.00196	0.00321	0.00094	0.00124	0.00391	0.00592
Copper	mg/L	0.00744	0.0109	0.00785	0.009	0.00494	0.00564	0.0051	0.00867
Iron	mg/L	1.38200	1.8	1.07	2.43	0.248	0.316	1.35	2.46
Lead	mg/L	0.00195	0.00294	0.00136	0.00438	0.00045	0.00058	0.00164	0.00228
Lithium	mg/L	0.03550	-	0.0379	0.0049	0.0425	0.0435	0.0366	0.0476
Magnesium	mg/L	25.28571	11.9	13.9	11.8	15.7	19.6	60.9	43.2
Manganese	mg/L	0.12273	0.109	0.0881	0.161	0.04	0.041	0.19	0.23

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-21	Sample Date	Annual Average	5/22/2019	6/4/2019	6/9/2019	6/17/2019	7/1/2019	8/4/2019	9/4/2019
	FIELD_SDG		B9E0939	B9F7660	B9G2251	B9H1974	B9I4297	B9L8675	B9P1604
Parameter	Unit								
Total Metals									
Mercury	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.01834	0.008	0.0101	0.0042	0.0126	0.0146	0.0546	0.0243
Nickel	mg/L	0.01971	0.0132	0.0127	0.0164	0.0117	0.0169	0.0381	0.029
Potassium	mg/L	16.10571	11.3	11.4	9.04	12.9	15.9	32.6	19.6
Selenium	mg/L	0.00032	0.00023	0.00022	0.00019	0.00016	0.00025	0.00077	0.00045
Silicon	mg/L	3.57167	-	2.65	3.31	2.18	2.42	4.27	6.6
Silver	mg/L	0.00003	0.000049	0.000029	< 0.000020	< 0.000020	< 0.000020	< 0.000040	0.000027
Sodium	mg/L	172.41429	73.5	80.7	83.4	97.3	141	484	247
Strontium	mg/L	0.73783	-	0.72	0.257	0.736	0.807	1.05	0.857
Sulphur	mg/L	47.08571	26.2	27.9	25.1	33.8	37.7	97.3	81.6
Thallium	mg/L	0.00003	-	0.000025	0.000036	0.000018	0.00002	0.000023	0.000033
Tin	mg/L	0.00583	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.01	< 0.0050
Titanium	mg/L	0.04797	0.0504	0.0314	0.0926	0.0067	0.012	0.061	0.0817
Uranium	mg/L	0.00653	-	0.00329	0.0034	0.00404	0.00505	0.0152	0.00821
Vanadium	mg/L	0.00583	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.01	< 0.0050
Zinc	mg/L	0.00639	0.0054	< 0.0050	0.0074	< 0.0050	< 0.0050	< 0.01	0.0069
Zirconium	mg/L	0.00120	-	0.00088	0.0024	0.00042	0.00057	0.00161	0.00132
Dissolved Metals									
Aluminum	mg/L	0.01347	-	0.0215	0.0083	0.0149	0.0169	0.0094	0.0098
Antimony	mg/L	0.00424	-	0.00347	0.00105	0.00398	0.00503	0.008	0.00392
Arsenic	mg/L	0.02132	-	0.022	0.0569	0.0169	0.0157	0.00775	0.00864
Barium	mg/L	0.04065	-	0.0291	0.0253	0.0311	0.0353	0.0641	0.059
Beryllium	mg/L	0.00012	-	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00020	< 0.00010
Bismuth	mg/L	0.00117	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.0010
Boron	mg/L	0.53350	-	0.335	0.205	0.41	0.504	1.14	0.607
Cadmium	mg/L	0.000019	-	0.000017	0.000013	< 0.000010	0.000016	< 0.000020	0.000038
Chromium	mg/L	0.00117	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.0010
Cobalt	mg/L	0.00178	-	0.00112	0.00143	0.00075	0.00073	0.00268	0.00399
Copper	mg/L	0.00432	-	0.00501	0.00445	0.00463	0.00436	0.003	0.00444
Iron	mg/L	0.01665	-	0.0188	0.0279	0.0116	0.0099	< 0.01	0.0217
Lead	mg/L	0.00023	-	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00040	< 0.00020
Lithium	mg/L	0.03447	-	0.0371	0.0033	0.0426	0.0439	0.0318	0.0481
Manganese	mg/L	0.09307	-	0.0638	0.114	0.0277	0.0129	0.146	0.194
Mercury	mg/L	0.000010	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.02050	-	0.0102	0.0043	0.0131	0.0155	0.0542	0.0257
Nickel	mg/L	0.01718	-	0.0101	0.0106	0.0115	0.015	0.0324	0.0235
Selenium	mg/L	0.00030	-	0.00015	0.00016	0.00014	0.00022	0.00072	0.00041
Silicon	mg/L	2.08	-	1.63	1.27	1.85	2.08	2.69	2.98
Silver	mg/L	0.00002	-	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000040	< 0.000020
Strontium	mg/L	0.75717	-	0.712	0.248	0.777	0.914	1.02	0.872
Sulphur	mg/L	49.32	-	28	28.1	28.8	33.5	94.5	83
Thallium	mg/L	0.000014	-	0.000013	< 0.000010	0.000014	0.000016	< 0.000020	0.000012
Tin	mg/L	0.00583	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.01	< 0.0050
Titanium	mg/L	0.00583	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.01	< 0.0050
Uranium	mg/L	0.00635	-	0.00333	0.00334	0.00389	0.00495	0.0144	0.00817
Vanadium	mg/L	0.00583	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.01	< 0.0050
Zinc	mg/L	0.00583	-	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.01	< 0.0050
Zirconium	mg/L	0.00032	-	0.0003	0.00028	0.00028	0.00028	0.00038	0.00039

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-21 QAQC	Sample Date	MDL	6/9/2019			
	FIELD_SDG		B9G2251			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	6.18	7.83	7.79	0.51
Hardness, as CaCO ₃ (D)	mg/L	0.5	0.5	150	149	0.67
Hardness, as CaCO ₃ (T)	mg/L	0.5	0.5	152	146	4.03
Total alkalinity, as CaCO ₃	mg/L	1	1	65	65	0.00
Total dissolved solids	mg/L	10	10	540	525	2.82
Total suspended solids	mg/L	1	1	100	110	9.52
Turbidity	NTU	0.1	0.1	150	160	6.45
Major Ions						
Calcium	mg/L	0.05	0.05	41.5	41.5	0.00
Chloride	mg/L	1	1	140	150	6.90
Cyanide	mg/L	0.005	0.005	0.014	0.014	0.00
Fluoride	mg/L	0.1	0.1	0.11	0.12	8.70
Magnesium	mg/L	0.05	0.05	11.3	11	2.69
Potassium	mg/L	0.05	0.05	9.06	8.89	1.89
Sodium	mg/L	0.05	0.115	82.8	84.9	2.50
Sulphate	mg/L	1	1	70	75	6.90
Nutrients						
Nitrate	mg/L	0.1	0.1	6.36	6.38	0.31
Nitrite	mg/L	0.01	0.01	0.133	0.132	0.75
Nitrate + nitrite	mg/L	0.1	0.1	6.49	6.51	0.31
Total ammonia	mg/L	0.05	0.05	4.3	4.3	0.00
Total phosphorus	mg/L	0.02	0.02	0.19	0.2	5.13
Orthophosphate	mg/L	0.01	0.01	0.05	0.043	15.05
Total Metals						
Aluminum	mg/L	0.003	0.003	1.47	1.47	0.00
Antimony	mg/L	0.0005	0.0005	0.00093	0.00091	2.17
Arsenic	mg/L	0.0001	0.0001	0.0722	0.0711	1.54
Barium	mg/L	0.001	0.001	0.0455	0.0445	2.22
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.206	0.198	3.96
Cadmium	mg/L	0.00001	0.00001	0.000024	0.000021	13.33
Calcium	mg/L	0.05	0.05	40.9	38.9	5.01
Chromium	mg/L	0.001	0.001	0.0036	0.0037	2.74
Cobalt	mg/L	0.0002	0.0002	0.00321	0.00321	0.00
Copper	mg/L	0.0005	0.0005	0.00914	0.009	1.54
Iron	mg/L	0.01	0.01	2.39	2.43	1.66
Lead	mg/L	0.0002	0.0002	0.00442	0.00438	0.91
Lithium	mg/L	0.002	0.002	0.005	0.0049	2.02
Magnesium	mg/L	0.05	0.05	12.1	11.8	2.51
Manganese	mg/L	0.001	0.001	0.164	0.161	1.85
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.0041	0.0042	2.41
Nickel	mg/L	0.001	0.001	0.0166	0.0164	1.21
Potassium	mg/L	0.05	0.05	9.05	9.04	0.11
Selenium	mg/L	0.0001	0.0001	0.0002	0.00019	5.13
Silicon	mg/L	0.1	0.1	3.45	3.31	4.14
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Sodium	mg/L	0.05	0.05	85.3	83.4	2.25
Strontium	mg/L	0.001	0.001	0.263	0.257	2.31
Sulphur	mg/L	3	3	25.9	25.1	3.14
Thallium	mg/L	0.00001	0.00001	0.000034	0.000036	5.71
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.0917	0.0926	0.98
Uranium	mg/L	0.0001	0.0001	0.00341	0.0034	0.29
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.0073	0.0074	1.36
Zirconium	mg/L	0.0001	0.0001	0.00247	0.0024	2.87

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-21 QAQC	Sample Date	MDL	6/9/2019			
	FIELD_SDG		B9G2251			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Dissolved Metals						
Aluminum	mg/L	0.003	0.003	0.0164	0.0083	65.59
Antimony	mg/L	0.0005	0.0005	0.00106	0.00105	0.95
Arsenic	mg/L	0.0001	0.0001	0.0568	0.0569	0.18
Barium	mg/L	0.001	0.001	0.0259	0.0253	2.34
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.195	0.205	5.00
Cadmium	mg/L	0.00001	0.00001	0.000014	0.000013	7.41
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0015	0.00143	4.78
Copper	mg/L	0.0002	0.0002	0.0048	0.00445	7.57
Iron	mg/L	0.005	0.005	0.055	0.0279	65.38
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.0032	0.0033	3.08
Manganese	mg/L	0.001	0.001	0.118	0.114	3.45
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.0043	0.0043	0.00
Nickel	mg/L	0.001	0.001	0.0108	0.0106	1.87
Selenium	mg/L	0.0001	0.0001	0.00019	0.00016	17.14
Silicon	mg/L	0.1	0.1	1.29	1.27	1.56
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Strontium	mg/L	0.001	0.001	0.255	0.248	2.78
Sulphur	mg/L	3	3	29.5	28.1	4.86
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.00326	0.00334	2.42
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0003	0.00028	6.90

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-22	Sample Date	2018 Average	Annual Average	5/30/2019	6/5/2019	6/9/2019	6/17/2019	7/1/2019	8/4/2019	9/3/2019
	FIELD_SDG			B9F2695	B9F6535	B9G2285	B9H1973	B9I4302	B9L8668	B9P1602
Parameter	Unit									
Field Measured										
pH	pH units	-	7.56	6.31	7.5	7.66	7.71	7.95	7.92	7.86
Conductivity	uS/cm	-	5591.57	2227	3020	6582	7849	5741	6842	6880
Temperature	°C	-	7.13	0.87	8.39	2.86	15.08	7.5	9.8	5.4
Dissolved oxygen	mg/L	-	11.58	-	-	-	12.07	10.84	10.86	12.56
Dissolved oxygen	%	-	102.40	109.2	109	109.1	102.8	93.1	91.6	102
Conventional Parameters										
pH	pH units	7.51	7.65	7.56	7.56	7.58	7.7	7.67	7.8	7.67
Specific conductivity	umhos/cm	7479.23	7500.00	-	-	-	-	9100	6800	6600
Hardness, as CaCO3 (D)	mg/L	2067.40	1257.14	477	683	1010	1220	2320	1440	1650
Hardness, as CaCO3 (T)	mg/L	2172.43	1285.57	462	687	1060	1200	2480	1420	1690
Total alkalinity, as CaCO3	mg/L	65.43	60.00	42	46	53	64	77	68	70
Total dissolved solids	mg/L	5335.36	3468.57	1280	1920	2840	3340	5850	4760	4290
Total suspended solids	mg/L	12.64	6.43	2	4	7	5	6	13	8
Total organic carbon	mg/L	17.15	17.50	-	-	-	-	-	18	17
Turbidity	NTU	4.19	3.83	5	3.2	4.7	1.8	2.9	4.7	4.5
Major Ions										
Calcium	mg/L	613.16	364.43	144	202	301	356	670	404	474
Chloride	mg/L	2895.71	1590.00	520	810	1400	1600	2800	2100	1900
Cyanide	mg/L	0.0063	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Fluoride	mg/L	0.100	0.101	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.11	< 0.10
Magnesium	mg/L	130.24	84.07	28.6	43.7	62.1	79.1	157	105	113
Potassium	mg/L	55.16	33.39	12.3	17.4	26.4	32.6	60.5	42.6	41.9
Sodium	mg/L	791.58	540.29	185	279	413	526	1020	676	683
Sulphate	mg/L	297.43	240.00	130	180	220	240	350	250	310
Nutrients										
Nitrate	mg/L	28.58	15.66	6.5	8.54	11.9	13.5	18.5	28.3	22.4
Nitrite	mg/L	0.40	0.22	0.093	0.09	0.115	0.128	0.255	0.551	0.339
Nitrate + nitrite	mg/L	28.97	15.92	6.59	8.63	12.1	13.7	18.8	28.8	22.8
Total ammonia	mg/L	18.18	10.73	7.2	8.3	9.6	11	16	12	11
Total phosphorus	mg/L	0.035	0.039	0.049	0.031	0.028	< 0.020	0.034	0.07	< 0.040
Orthophosphate	mg/L	0.010	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Metals										
Aluminum	mg/L	0.11	0.081	0.134	0.127	0.077	0.0546	0.021	0.0978	0.055
Antimony	mg/L	0.0036	0.0016	< 0.00050	< 0.0010	< 0.0025	< 0.0010	< 0.0025	< 0.0010	< 0.0025
Arsenic	mg/L	0.0048	0.0041	0.00513	0.00416	0.00401	0.00348	0.00356	0.00426	0.0038
Barium	mg/L	0.20	0.093	0.0491	0.0609	0.0798	0.09	0.14	0.117	0.114
Beryllium	mg/L	0.0007	0.00031	< 0.00010	< 0.00020	< 0.00050	< 0.00020	< 0.00050	< 0.00020	< 0.00050
Bismuth	mg/L	-	0.00314	< 0.0010	< 0.0020	< 0.0050	< 0.0020	< 0.0050	< 0.0020	< 0.0050
Boron	mg/L	0.55	0.28	0.105	0.144	< 0.25	0.259	0.415	0.437	0.367
Cadmium	mg/L	0.00031	0.00014	0.000058	0.000118	0.000139	0.00012	0.000255	0.000137	0.000164
Calcium	mg/L	718.69	371.14	139	202	313	346	717	397	484
Chromium	mg/L	0.0064	0.0031	< 0.0010	< 0.0020	< 0.0050	< 0.0020	< 0.0050	< 0.0020	< 0.0050
Cobalt	mg/L	-	0.0020	0.00117	0.00141	0.0024	0.0014	0.0033	0.00212	0.002
Copper	mg/L	0.0140	0.0041	0.00312	0.0032	0.0036	0.0037	0.0062	0.0042	0.0049
Iron	mg/L	0.31	0.24	0.287	0.245	0.235	0.144	0.144	0.277	0.346
Lead	mg/L	0.0016	0.00079	0.00086	0.00083	< 0.0010	0.00046	< 0.0010	< 0.00040	< 0.0010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-22	Sample Date	2018	Annual	5/30/2019	6/5/2019	6/9/2019	6/17/2019	7/1/2019	8/4/2019	9/3/2019
	FIELD_SDG	Average	Average	B9F2695	B9F6535	B9G2285	B9H1973	B9I4302	B9L8668	B9P1602
Parameter	Unit									
Total Metals										
Lithium	mg/L	0.6416	0.24164	0.0705	0.124	0.229	0.236	0.498	0.289	0.245
Magnesium	mg/L	160.81	86.91	27.6	44.5	68.4	80.9	166	105	116
Manganese	mg/L	0.26	0.16	0.17	0.143	0.204	0.0866	0.276	0.143	0.104
Mercury	mg/L	0.000044	0.000010	< 0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.0072	0.0036	0.0012	< 0.0020	< 0.0050	0.0027	< 0.0050	0.0045	< 0.0050
Nickel	mg/L	0.024	0.019	0.0066	0.0104	0.0174	0.0163	0.0357	0.0215	0.0234
Potassium	mg/L	65.57	34.84	11.8	18.2	28.2	33.2	66.3	43.1	43.1
Selenium	mg/L	0.00072	0.00033	0.00012	< 0.00020	< 0.00050	0.00021	< 0.00050	0.00025	< 0.00050
Silicon	mg/L	-	1.15	1.12	1.13	1.1	0.828	0.645	0.866	2.33
Silver	mg/L	0.00020	0.000066	0.000026	< 0.000040	< 0.00010	0.000055	< 0.00010	< 0.000040	< 0.00010
Sodium	mg/L	990.77	561.71	181	286	465	544	1090	674	692
Strontium	mg/L	18.00	7.22	2.52	4.05	6.42	6.72	13.4	9.7	7.76
Sulphur	mg/L	-	88.24	48	61.1	77.2	90.1	140	82.3	119
Thallium	mg/L	0.00017	0.000070	0.000031	0.000046	0.000052	0.000075	0.000122	0.000096	0.000068
Tin	mg/L	0.034	0.016	< 0.0050	< 0.01	< 0.025	< 0.01	< 0.025	< 0.01	< 0.025
Titanium	mg/L	0.037	0.016	0.0051	< 0.01	< 0.025	< 0.01	< 0.025	< 0.01	< 0.025
Uranium	mg/L	0.005	0.003	0.0008	0.00126	0.00203	0.00258	0.00548	0.00375	0.00338
Vanadium	mg/L	0.036	0.016	< 0.0050	< 0.01	< 0.025	< 0.01	< 0.025	< 0.01	< 0.025
Zinc	mg/L	0.036	0.016	0.0055	< 0.01	< 0.025	< 0.01	< 0.025	< 0.01	< 0.025
Zirconium	mg/L	-	0.00037	0.00014	< 0.00020	< 0.00050	< 0.00020	0.00088	< 0.00020	< 0.00050
Dissolved Metals										
Aluminum	mg/L	0.027	0.016	0.0214	0.0105	0.0123	0.0292	< 0.015	0.0071	< 0.015
Antimony	mg/L	0.0027	0.0014	< 0.00050	< 0.0010	< 0.0010	< 0.0010	< 0.0025	< 0.0010	< 0.0025
Arsenic	mg/L	0.0033	0.0031	0.00373	0.0031	0.00302	0.00284	0.00307	0.00316	0.00256
Barium	mg/L	0.17	0.10	0.0516	0.0599	0.0795	0.0934	0.151	0.118	0.115
Beryllium	mg/L	0.00055	0.00027	< 0.00010	< 0.00020	< 0.00020	< 0.00020	< 0.00050	< 0.00020	< 0.00050
Bismuth	mg/L	-	0.0027	< 0.0010	< 0.0020	< 0.0020	< 0.0020	< 0.0050	< 0.0020	< 0.0050
Boron	mg/L	0.41	0.28	0.111	0.143	0.219	0.265	0.44	0.42	0.395
Cadmium	mg/L	0.00020	0.00013	0.000072	0.000109	0.000131	0.000108	0.000238	0.000098	0.000162
Chromium	mg/L	0.0053	0.0027	< 0.0010	< 0.0020	< 0.0020	< 0.0020	< 0.0050	< 0.0020	< 0.0050
Cobalt	mg/L	-	0.0016	0.00036	0.00125	0.002	0.00135	0.003	0.00183	0.0017
Copper	mg/L	0.0041	0.0034	0.00285	0.00271	0.00315	0.00362	0.0041	0.00348	0.004
Iron	mg/L	0.048	0.048	0.0336	0.026	0.041	0.038	0.042	0.053	0.101
Lead	mg/L	0.0011	0.0005	0.00024	< 0.00040	< 0.00040	< 0.00040	< 0.0010	< 0.00040	< 0.0010
Lithium	mg/L	0.58	0.25	0.0709	0.125	0.201	0.251	0.547	0.267	0.284
Manganese	mg/L	0.15	0.12	0.0736	0.134	0.177	0.0752	0.231	0.0819	0.0916
Mercury	mg/L	0.000010	0.000016	< 0.000050	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.0053	0.0032	0.0013	< 0.0020	0.0021	0.0029	< 0.0050	0.004	< 0.0050
Nickel	mg/L	0.018	0.018	0.0062	0.0097	0.0162	0.0175	0.034	0.0193	0.0226
Selenium	mg/L	0.00053	0.00027	< 0.00010	< 0.00020	< 0.00020	< 0.00020	< 0.00050	0.00022	< 0.00050
Silicon	mg/L	-	0.99	0.951	0.882	1.05	0.713	0.542	0.714	2.1
Silver	mg/L	0.00014	0.000054	< 0.000020	< 0.000040	< 0.000040	< 0.000040	< 0.00010	< 0.000040	< 0.00010
Strontium	mg/L	14.29	7.61	2.57	3.95	5.68	7.6	16	9.75	7.74
Sulphur	mg/L	-	86.00	50	59.7	77.8	81.4	128	84.1	121
Thallium	mg/L	0.00014	0.000069	0.000033	0.00004	0.00005	0.000068	0.000112	0.000092	0.000088
Tin	mg/L	0.027	0.014	< 0.0050	< 0.01	< 0.01	< 0.01	< 0.025	< 0.01	< 0.025
Titanium	mg/L	0.027	0.014	< 0.0050	< 0.01	< 0.01	< 0.01	< 0.025	< 0.01	< 0.025
Uranium	mg/L	0.0043	0.0028	0.00087	0.00124	0.00193	0.0026	0.00574	0.00357	0.00349
Vanadium	mg/L	0.027	0.014	< 0.0050	< 0.01	< 0.01	< 0.01	< 0.025	< 0.01	< 0.025
Zinc	mg/L	0.027	0.014	0.0051	< 0.01	< 0.01	< 0.01	< 0.025	< 0.01	< 0.025
Zirconium	mg/L	-	0.00027	0.00011	< 0.00020	< 0.00020	< 0.00020	< 0.00050	< 0.00020	< 0.00050

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-22 QAQC	Sample Date	MDL	6/5/2019			
	FIELD_SDG		B9F6535			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	6.18	7.55	7.56	0.13
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	683	683	0.00
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	676	687	1.61
Total alkalinity, as CaCO3	mg/L	1	1	44	46	4.44
Total dissolved solids	mg/L	10	10	1850	1920	3.71
Total suspended solids	mg/L	1	1	4	4	0.00
Turbidity	NTU	0.1	0.1	2.6	3.2	20.69
Major Ions						
Calcium	mg/L	0.05	0.05	202	202	0.00
Chloride	mg/L	1	1	860	810	5.99
Cyanide	mg/L	0.005	0.005	0.005	0.005	0.00
Fluoride	mg/L	0.1	0.1	0.1	0.1	0.00
Magnesium	mg/L	0.05	0.05	43.8	43.7	0.23
Potassium	mg/L	0.05	0.05	17.6	17.4	1.14
Sodium	mg/L	0.05	0.05	282	279	1.07
Sulphate	mg/L	1	1	180	180	0.00
Nutrients						
Nitrate	mg/L	0.1	0.1	8.48	8.54	0.71
Nitrite	mg/L	0.01	0.01	0.09	0.09	0.00
Nitrate + nitrite	mg/L	0.1	0.1	8.57	8.63	0.70
Total ammonia	mg/L	0.05	0.063	8.3	8.3	0.00
Total phosphorus	mg/L	0.02	0.02	0.033	0.031	6.25
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00
Total Metals						
Aluminum	mg/L	0.003	0.003	0.0838	0.127	40.99
Antimony	mg/L	0.0005	0.0005	0.001	0.001	0.00
Arsenic	mg/L	0.0001	0.0001	0.00409	0.00416	1.70
Barium	mg/L	0.001	0.001	0.059	0.0609	3.17
Beryllium	mg/L	0.0001	0.0001	0.0002	0.0002	0.00
Bismuth	mg/L	0.001	0.001	0.002	0.002	0.00
Boron	mg/L	0.05	0.05	0.144	0.144	0.00
Cadmium	mg/L	0.00001	0.00001	0.000107	0.000118	9.78
Calcium	mg/L	0.05	0.09	200	202	1.00
Chromium	mg/L	0.001	0.001	0.002	0.002	0.00
Cobalt	mg/L	0.0002	0.0002	0.00129	0.00141	8.89
Copper	mg/L	0.0005	0.0005	0.003	0.0032	6.45
Iron	mg/L	0.01	0.01	0.177	0.245	32.23
Lead	mg/L	0.0002	0.0002	0.0007	0.00083	16.99
Lithium	mg/L	0.002	0.002	0.124	0.124	0.00
Magnesium	mg/L	0.05	0.05	43.3	44.5	2.73
Manganese	mg/L	0.001	0.001	0.136	0.143	5.02
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.002	0.002	0.00
Nickel	mg/L	0.001	0.001	0.0098	0.0104	5.94
Potassium	mg/L	0.05	0.05	17.2	18.2	5.65
Selenium	mg/L	0.0001	0.0001	0.0002	0.0002	0.00
Silicon	mg/L	0.1	0.1	1.02	1.13	10.23

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-22 QAQC	Sample Date	MDL	6/5/2019			
	FIELD_SDG		B9F6535			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Total Metals						
Silver	mg/L	0.00002	0.00002	0.00004	0.00004	0.00
Sodium	mg/L	0.05	0.05	278	286	2.84
Strontium	mg/L	0.001	0.001	4.01	4.05	0.99
Sulphur	mg/L	3	3	59.6	61.1	2.49
Thallium	mg/L	0.00001	0.00001	0.000044	0.000046	4.44
Tin	mg/L	0.005	0.005	0.01	0.01	0.00
Titanium	mg/L	0.005	0.005	0.01	0.01	0.00
Uranium	mg/L	0.0001	0.0001	0.00123	0.00126	2.41
Vanadium	mg/L	0.005	0.005	0.01	0.01	0.00
Zinc	mg/L	0.005	0.0255	0.01	0.01	0.00
Zirconium	mg/L	0.0001	0.0001	0.0002	0.0002	0.00
Dissolved Metals						
Aluminum	mg/L	0.003	0.003	0.008	0.0105	27.03
Antimony	mg/L	0.0005	0.0005	0.001	0.001	0.00
Arsenic	mg/L	0.0001	0.0001	0.00315	0.0031	1.60
Barium	mg/L	0.001	0.001	0.0605	0.0599	1.00
Beryllium	mg/L	0.0001	0.0001	0.0002	0.0002	0.00
Bismuth	mg/L	0.001	0.001	0.002	0.002	0.00
Boron	mg/L	0.05	0.05	0.143	0.143	0.00
Cadmium	mg/L	0.00001	0.00001	0.000097	0.000109	11.65
Chromium	mg/L	0.001	0.001	0.002	0.002	0.00
Cobalt	mg/L	0.0002	0.0002	0.00123	0.00125	1.61
Copper	mg/L	0.0002	0.0002	0.0027	0.00271	0.37
Iron	mg/L	0.005	0.005	0.027	0.026	3.77
Lead	mg/L	0.0002	0.0002	0.0004	0.0004	0.00
Lithium	mg/L	0.002	0.002	0.125	0.125	0.00
Manganese	mg/L	0.001	0.001	0.135	0.134	0.74
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.002	0.002	0.00
Nickel	mg/L	0.001	0.001	0.0097	0.0097	0.00
Selenium	mg/L	0.0001	0.0001	0.0002	0.0002	0.00
Silicon	mg/L	0.1	0.1	0.882	0.882	0.00
Silver	mg/L	0.00002	0.00002	0.00004	0.00004	0.00
Strontium	mg/L	0.001	0.001	4.05	3.95	2.50
Sulphur	mg/L	3	3	60	59.7	0.50
Thallium	mg/L	0.00001	0.00001	0.000039	0.00004	2.53
Tin	mg/L	0.005	0.005	0.01	0.01	0.00
Titanium	mg/L	0.005	0.005	0.01	0.01	0.00
Uranium	mg/L	0.0001	0.0001	0.00123	0.00124	0.81
Vanadium	mg/L	0.005	0.005	0.01	0.01	0.00
Zinc	mg/L	0.005	0.005	0.01	0.01	0.00
Zirconium	mg/L	0.0001	0.0001	0.0002	0.0002	0.00

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-23	Sample Date	Annual Average	7/24/2019	8/4/2019	9/3/2019
	FIELD_SDG		B9K9251	B9L8673	B9P1610
Parameter	Unit				
Field Measured					
pH	pH units	7.69	7.51	7.77	7.8
Conductivity	uS/cm	276.93	248.9	276.1	305.8
Temperature	°C	10.97	16.7	11.4	4.8
Dissolved oxygen	mg/L	9.84	6.64	9.05	13.82
Dissolved oxygen	%	87.00	68.2	85	107.8
Conventional Parameters					
pH	pH units	7.83	7.7	7.89	7.89
Hardness, as CaCO ₃ (D)	mg/L	80.27	70.6	76.6	93.6
Hardness, as CaCO ₃ (T)	mg/L	79.50	72.4	76.6	89.5
Total alkalinity, as CaCO ₃	mg/L	41.33	36	43	45
Total dissolved solids	mg/L	210.00	175	230	225
Total suspended solids	mg/L	1.33	2	1	1
Turbidity	NTU	0.60	0.4	0.4	1
Major Ions					
Calcium	mg/L	22.87	20.1	21.8	26.7
Chloride	mg/L	50.00	45	48	57
Cyanide	mg/L	0.01	< 0.0050	< 0.0050	< 0.0050
Fluoride	mg/L	0.10	< 0.10	< 0.10	< 0.10
Magnesium	mg/L	5.63	4.98	5.39	6.51
Potassium	mg/L	1.92	1.73	1.93	2.09
Sodium	mg/L	19.77	17.5	18.9	22.9
Sulphate	mg/L	5.33	6.5	3.8	5.7
Nutrients					
Nitrate	mg/L	0.1000	< 0.10	< 0.10	< 0.10
Nitrite	mg/L	0.0100	< 0.010	< 0.010	< 0.010
Nitrate + nitrite	mg/L	0.1000	< 0.10	< 0.10	< 0.10
Total ammonia	mg/L	0.0833	< 0.050	0.1	0.1
Total phosphorus	mg/L	0.0203	0.021	< 0.020	< 0.020
Orthophosphate	mg/L	0.0100	< 0.010	< 0.010	< 0.010
Total Metals					
Aluminum	mg/L	0.00963	0.008	0.0068	0.0141
Antimony	mg/L	0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	0.00191	0.00218	0.00184	0.0017
Barium	mg/L	0.02273	0.0219	0.0229	0.0234
Beryllium	mg/L	0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	0.00100	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.05000	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	0.00004	0.000089	< 0.000010	< 0.000010
Calcium	mg/L	22.50000	20.6	21.7	25.2
Chromium	mg/L	0.00100	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.00096	0.00094	0.00095	0.00099
Iron	mg/L	0.19267	0.185	0.17	0.223
Lead	mg/L	0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	0.00343	0.0032	0.0036	0.0035

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-23	Sample Date	Annual Average	7/24/2019	8/4/2019	9/3/2019
	FIELD_SDG		B9K9251	B9L8673	B9P1610
Parameter	Unit				
Total Metals					
Magnesium	mg/L	5.66333	5.08	5.46	6.45
Manganese	mg/L	0.00870	0.0092	0.0112	0.0057
Mercury	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.00143	< 0.0010	< 0.0010	0.0023
Nickel	mg/L	0.00150	0.0012	0.0015	0.0018
Potassium	mg/L	1.99000	1.86	1.95	2.16
Selenium	mg/L	0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	0.19333	0.162	0.14	0.278
Silver	mg/L	0.00002	< 0.000020	< 0.000020	< 0.000020
Sodium	mg/L	19.46667	17.4	19.3	21.7
Strontium	mg/L	0.13267	0.121	0.142	0.135
Sulphur	mg/L	3.17667	< 3	< 3	3.53
Thallium	mg/L	0.00001	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	0.00500	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.00500	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	0.00500	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.00500	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	0.00010	< 0.00010	< 0.00010	< 0.00010
Dissolved Metals					
Aluminum	mg/L	0.00493	0.006	0.0036	0.0052
Antimony	mg/L	0.00050	< 0.00050	< 0.00050	< 0.00050
Arsenic	mg/L	0.00164	0.00178	0.00162	0.00151
Barium	mg/L	0.02277	0.0214	0.0234	0.0235
Beryllium	mg/L	0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth	mg/L	0.00100	< 0.0010	< 0.0010	< 0.0010
Boron	mg/L	0.05000	< 0.05	< 0.05	< 0.05
Cadmium	mg/L	0.00003	0.000065	< 0.000010	< 0.000010
Chromium	mg/L	0.00100	< 0.0010	< 0.0010	< 0.0010
Cobalt	mg/L	0.00020	< 0.00020	< 0.00020	< 0.00020
Copper	mg/L	0.00093	0.00109	0.00083	0.00088
Iron	mg/L	0.12433	0.124	0.104	0.145
Lead	mg/L	0.00020	< 0.00020	< 0.00020	< 0.00020
Lithium	mg/L	0.00343	0.0031	0.0035	0.0037
Manganese	mg/L	0.00573	0.0058	0.0078	0.0036
Mercury	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.00150	< 0.0010	< 0.0010	0.0025
Nickel	mg/L	0.00147	0.0014	0.0013	0.0017
Selenium	mg/L	0.00010	< 0.00010	< 0.00010	< 0.00010
Silicon	mg/L	0.18300	0.142	0.132	0.275
Silver	mg/L	0.00002	< 0.000020	< 0.000020	< 0.000020
Strontium	mg/L	0.13233	0.123	0.139	0.135
Sulphur	mg/L	3.00000	< 3.0	< 3.0	< 3.0
Thallium	mg/L	0.00001	< 0.000010	< 0.000010	< 0.000010
Tin	mg/L	0.00500	< 0.0050	< 0.0050	< 0.0050
Titanium	mg/L	0.00500	< 0.0050	< 0.0050	< 0.0050
Uranium	mg/L	0.00010	< 0.00010	< 0.00010	< 0.00010
Vanadium	mg/L	0.00500	< 0.0050	< 0.0050	< 0.0050
Zinc	mg/L	0.00500	< 0.0050	< 0.0050	< 0.0050
Zirconium	mg/L	0.00010	< 0.00010	< 0.00010	< 0.00010

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-23 QAQC	Sample Date	MDL	7/24/2019				9/3/2019			
	FIELD_SDG		B9K9251				B9P1610			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)	Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit									
Conventional Parameters										
pH	pH units	-	6.19	7.53	7.7	2.23	6.02	7.75	7.89	1.79
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	71.5	70.6	1.27	0.5	89.8	93.6	4.14
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	68.8	72.4	5.10	0.5	90	89.5	0.56
Total alkalinity, as CaCO3	mg/L	1	1	38	36	5.41	1	44	45	2.25
Total dissolved solids	mg/L	10	10	175	175	0.00	10	210	225	6.90
Total suspended solids	mg/L	1	1	1	2	66.67	1	1	1	0.00
Turbidity	NTU	0.1	0.1	0.4	0.4	0.00	0.1	0.6	1	50.00
Major Ions										
Calcium	mg/L	0.05	0.05	20.3	20.1	0.99	0.05	25.5	26.7	4.60
Chloride	mg/L	1	1	45	45	0.00	1	58	57	1.74
Cyanide	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Fluoride	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.1	0.00
Magnesium	mg/L	0.05	0.05	5.01	4.98	0.60	0.05	6.34	6.51	2.65
Potassium	mg/L	0.05	0.05	1.73	1.73	0.00	0.05	2.12	2.09	1.43
Sodium	mg/L	0.05	0.05	17.7	17.5	1.14	0.05	22.8	22.9	0.44
Sulphate	mg/L	1	1	3.3	6.5	65.31	1	5.3	5.7	7.27
Nutrients										
Nitrate	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.1	0.00
Nitrite	mg/L	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00
Nitrate + nitrite	mg/L	0.1	0.1	0.1	0.1	0.00	0.1	0.1	0.1	0.00
Total ammonia	mg/L	0.05	0.05	0.05	0.05	0.00	0.075	0.32	0.1	104.76
Total phosphorus	mg/L	0.02	0.02	0.02	0.021	4.88	0.02	0.02	0.02	0.00
Orthophosphate	mg/L	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00
Total Metals										
Aluminum	mg/L	0.003	0.003	0.0087	0.008	8.38	0.003	0.0112	0.0141	22.92
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00215	0.00218	1.39	0.0001	0.00171	0.0017	0.59
Barium	mg/L	0.001	0.001	0.0217	0.0219	0.92	0.001	0.0232	0.0234	0.86
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.000034	0.000089	89.43	0.00001	0.00001	0.00001	0.00
Calcium	mg/L	0.05	0.05	19.1	20.6	7.56	0.05	25.1	25.2	0.40
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0005	0.0005	0.00084	0.00094	11.24	0.0005	0.001	0.00099	1.01
Iron	mg/L	0.01	0.01	0.171	0.185	7.87	0.01	0.223	0.223	0.00
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.003	0.0032	6.45	0.002	0.0038	0.0035	8.22
Magnesium	mg/L	0.05	0.05	5.12	5.08	0.78	0.05	6.64	6.45	2.90
Manganese	mg/L	0.001	0.001	0.0092	0.0092	0.00	0.001	0.0059	0.0057	3.45
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.0023	78.79
Nickel	mg/L	0.001	0.001	0.0014	0.0012	15.38	0.001	0.0018	0.0018	0.00
Potassium	mg/L	0.05	0.05	1.84	1.86	1.08	0.05	2.17	2.16	0.46
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.158	0.162	2.50	0.1	0.279	0.278	0.36
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00	0.00002	0.00002	0.00002	0.00

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-23 QAQC	Sample Date	MDL	7/24/2019				9/3/2019			
	FIELD_SDG		B9K9251				B9P1610			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)	Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit									
Total Metals										
Sodium	mg/L	0.05	0.05	17.8	17.4	2.27	0.05	22.5	21.7	3.62
Strontium	mg/L	0.001	0.001	0.12	0.121	0.83	0.001	0.135	0.135	0.00
Sulphur	mg/L	3	3	3	3	0.00	3	3	3.53	16.23
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Dissolved Metals										
Aluminum	mg/L	0.003	0.003	0.0057	0.006	5.13	0.003	0.0057	0.0052	9.17
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00177	0.00178	0.56	0.0001	0.0015	0.00151	0.66
Barium	mg/L	0.001	0.001	0.0213	0.0214	0.47	0.001	0.0233	0.0235	0.85
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.05	0.05	0.00	0.05	0.05	0.05	0.00
Cadmium	mg/L	0.00001	0.00001	0.00003	0.000065	73.68	0.00001	0.00001	0.00001	0.00
Chromium	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.001	0.001	0.00
Cobalt	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Copper	mg/L	0.0002	0.0002	0.00088	0.00109	21.32	0.0002	0.00084	0.00088	4.65
Iron	mg/L	0.005	0.005	0.118	0.124	4.96	0.005	0.149	0.145	2.72
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.0031	0.0031	0.00	0.002	0.0037	0.0037	0.00
Manganese	mg/L	0.001	0.001	0.0058	0.0058	0.00	0.001	0.0036	0.0036	0.00
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.00	0.001	0.0025	0.0025	0.00
Nickel	mg/L	0.001	0.001	0.0014	0.0014	0.00	0.001	0.0018	0.0017	5.71
Selenium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Silicon	mg/L	0.1	0.1	0.144	0.142	1.40	0.1	0.266	0.275	3.33
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00	0.00002	0.00002	0.00002	0.00
Strontium	mg/L	0.001	0.001	0.123	0.123	0.00	0.001	0.136	0.135	0.74
Sulphur	mg/L	3	3	3	3	0.00	3	3	3	0.00
Thallium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00001	0.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00	0.0001	0.0001	0.0001	0.00

Notes:

RPD : Relative Percent Difference

MDL : Mean Detection Limit

25 : RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.

25 : RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.

25 : RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-24	Sample Date	2018 Average	Annual Average	7/9/2019
	FIELD_SDG			
Parameter	Unit			B9J4382
Conventional Parameters				
pH	pH units	7.44	7.11	7.11
Hardness, as CaCO3 (T)	mg/L	1460	975	975
Total alkalinity, as CaCO3	mg/L	370	24	24
Total dissolved solids	mg/L	2810	1910	1910
Total suspended solids	mg/L	64	20	20
Turbidity	NTU	23	2.1	2.1
Major Ions				
Chloride	mg/L	810	570	570
Cyanide	mg/L	0.005	0.005	< 0.0050
Fluoride	mg/L	0.1	0.1	< 0.10
Sulphate	mg/L	440	370	370
Nutrients				
Nitrate	mg/L	0.1	1.91	1.91
Nitrite	mg/L	0.01	0.033	0.033
Nitrate + nitrite	mg/L	0.1	1.94	1.94
Total ammonia	mg/L	12	4.5	4.5
Total phosphorus	mg/L	0.22	0.11	0.11
Orthophosphate	mg/L	0.026	0.01	< 0.010
Total Metals				
Aluminum	mg/L	0.169	0.0296	0.0296
Antimony	mg/L	0.0136	0.001	< 0.0010
Arsenic	mg/L	0.137	0.0131	0.0131
Barium	mg/L	0.478	0.146	0.146
Beryllium	mg/L	0.0005	0.0002	< 0.00020
Bismuth	mg/L	-	0.002	< 0.0020
Boron	mg/L	0.54	0.1	< 0.1
Cadmium	mg/L	0.000086	0.000075	0.000075
Calcium	mg/L	515	296	296
Chromium	mg/L	0.0054	0.002	< 0.0020
Cobalt	mg/L	-	0.00092	0.00092
Copper	mg/L	0.0103	0.0018	0.0018
Iron	mg/L	6.29	0.049	0.049
Lead	mg/L	0.001	0.0004	< 0.00040
Lithium	mg/L	0.282	0.138	0.138
Magnesium	mg/L	41.4	57	57
Manganese	mg/L	18	0.0211	0.0211
Mercury	mg/L	0.00001	0.00001	0.00001
Molybdenum	mg/L	0.0118	0.002	< 0.0020
Nickel	mg/L	0.0173	0.0027	0.0027
Potassium	mg/L	101	47.5	47.5
Selenium	mg/L	0.0005	0.0002	< 0.00020
Silicon	mg/L	-	3.01	3.01
Silver	mg/L	0.0001	0.00004	< 0.000040
Sodium	mg/L	208	154	154
Strontium	mg/L	6.57	1.33	1.33
Sulphur	mg/L	-	155	155
Thallium	mg/L	0.00005	0.00002	< 0.000020
Tin	mg/L	0.025	0.01	< 0.01
Titanium	mg/L	0.025	0.01	< 0.01
Uranium	mg/L	0.00459	0.0002	< 0.00020
Vanadium	mg/L	0.025	0.01	< 0.01
Zinc	mg/L	0.025	0.01	< 0.01
Zirconium	mg/L	-	0.0002	< 0.00020

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-25	MEL-25 MAX GRAB	MEL-25 MAX MEAN	Sample Date	2018 Average	Annual Average	6/1/2019	9/27/2019
Parameter			FIELD_SDG			B9F3366	B9R5759
			Unit				
Field Measured							
pH			pH units	-	7.89	7.7	8.08
Conductivity			uS/cm	-	257.95	222.1	293.8
Temperature			°C	-	17.875	33.45	2.3
Dissolved oxygen			mg/L	-	11.15	-	11.15
Dissolved oxygen			%	-	94.3	107.3	81.3
Conventional Parameters							
pH	6 - 9.5	6 - 9.5	pH units	8.13	7.9	7.7	8.1
Hardness, as CaCO3 (T)			mg/L	109.30	63.1	39.5	86.7
Total suspended solids	30	15	mg/L	33.57	2.5	3	2
Nutrients							
Total ammonia			mg/L	7.02	0.12	0.19	< 0.050
General Organics							
Total oil and grease	5	5	mg/L	0.6	0.85	< 0.50	1.2
Total Metals							
Aluminum			mg/L	3.41813	0.0926	-	0.0926
Antimony			mg/L	0.00065	0.0005	-	< 0.00050
Arsenic			mg/L	0.00100	0.000715	0.00064	0.00079
Barium			mg/L	0.02928	0.0156	-	0.0156
Beryllium			mg/L	0.00020	0.0001	-	< 0.00010
Bismuth			mg/L	-	0.001	-	< 0.0010
Boron			mg/L	0.20900	0.078	-	0.078
Cadmium			mg/L	0.00003	0.00001	-	< 0.000010
Calcium			mg/L	20.25000	15.055	9.51	20.6
Chromium			mg/L	0.04440	0.0013	-	0.0013
Cobalt			mg/L	0.01800	0.00026	-	0.00026
Copper			mg/L	0.00969	0.00297	0.00431	0.00163
Iron			mg/L	6.22950	0.133	-	0.133
Lead	0.1	0.1	mg/L	0.00084	0.000225	0.00025	< 0.00020
Lithium			mg/L	0.00220	0.002	-	< 0.0020
Magnesium			mg/L	13.77000	6.175	3.82	8.53
Manganese			mg/L	0.10118	0.0025	-	0.0025
Molybdenum			mg/L	0.00980	0.0032	-	0.0032
Nickel			mg/L	0.01137	0.0039	0.0043	0.0035
Potassium			mg/L	13.77250	6.095	4.08	8.11
Selenium			mg/L	0.00184	0.00035	-	0.00035
Silicon			mg/L	22.00000	2.08	-	2.08
Silver			mg/L	0.00004	0.00002	-	< 0.000020
Sodium			mg/L	128.87500	27.55	29.4	25.7
Strontium			mg/L	0.09155	0.0993	-	0.0993
Sulphur			mg/L	-	13.75	11.1	16.4
Thallium			mg/L	0.00003	0.000013	-	0.000013
Tin			mg/L	0.00400	0.005	-	< 0.0050
Titanium			mg/L	0.15068	0.005	-	< 0.0050
Uranium			mg/L	0.00137	0.00066	-	0.00066
Vanadium			mg/L	0.01350	0.005	-	< 0.0050
Zinc			mg/L	0.01475	0.005	-	< 0.0050
Zirconium			mg/L	-	0.0001	-	< 0.00010
Volatile Organics							
Benzene	0.37	0.37	mg/L	0.0002	0.0002	< 0.00020	< 0.00020
Ethylbenzene	0.09	0.09	mg/L	0.000234	0.0002	< 0.00020	< 0.00020
Toluene	0.002	0.002	mg/L	0.000346	0.0002	< 0.00020	< 0.00020
Xylenes			mg/L	0.000314	0.0004	< 0.00040	< 0.00040
m,p-Xylenes			mg/L	0.000286	0.0004	< 0.00040	< 0.00040
o-Xylene			mg/L	0.000208	0.0002	< 0.00020	< 0.00020
F1 (C6-C10)-BTEX			mg/L	0.025	0.025	< 0.025	< 0.025
F1 (C6-C10)			mg/L	0.025	0.025	< 0.025	< 0.025
F2 (C10-C16)			mg/L	0.1	0.1	< 0.1	< 0.1
F3 (C16-C34)			mg/L	0.2	0.2	< 0.2	< 0.2
F4 (C34-C50)			mg/L	0.2	0.2	< 0.2	< 0.2
Reached baseline at C50			-	-	-	-	YES
1,2-Dichloroethane-d4			%	102.4	98.5	96	101
Ethylbenzene-d10			%	102	97.5	92	103
4-Bromofluorobenzene			%	95.4	96	97	95
1,4-Difluorobenzene			%	104.33	105	103	107
o-Terphenyl			%	101	93.5	95	92

Note:

Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-25 QAQC	Sample Date	MDL	9/27/2019			
	FIELD_SDG		B9R5759			
	Sample Name		Field Blank	Duplicate	Original	RPD (%)
Parameter	Unit					
Conventional Parameters						
pH	pH units	-	6.36	8.09	8.1	0.12
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	91.4	86.7	5.28
Total suspended solids	mg/L	1	1	1	2	66.67
Nutrients						
Total ammonia	mg/L	0.05	0.05	0.071	0.05	34.71
General Organics						
Total oil and grease	mg/L	0.5	1.1	1.2	1.2	0.00
Total Metals						
Aluminum	mg/L	0.003	0.003	0.0912	0.0926	1.52
Antimony	mg/L	0.0005	0.0005	0.0005	0.0005	0.00
Arsenic	mg/L	0.0001	0.0001	0.00073	0.00079	7.89
Barium	mg/L	0.001	0.001	0.0156	0.0156	0.00
Beryllium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Bismuth	mg/L	0.001	0.001	0.001	0.001	0.00
Boron	mg/L	0.05	0.05	0.081	0.078	3.77
Cadmium	mg/L	0.00001	0.00001	0.00001	0.00001	0.00
Calcium	mg/L	0.05	0.05	22.5	20.6	8.82
Chromium	mg/L	0.001	0.001	0.0013	0.0013	0.00
Cobalt	mg/L	0.0002	0.0002	0.00024	0.00026	8.00
Copper	mg/L	0.0005	0.0005	0.00151	0.00163	7.64
Iron	mg/L	0.01	0.01	0.14	0.133	5.13
Lead	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Lithium	mg/L	0.002	0.002	0.002	0.002	0.00
Magnesium	mg/L	0.05	0.05	8.54	8.53	0.12
Manganese	mg/L	0.001	0.001	0.0026	0.0025	3.92
Molybdenum	mg/L	0.001	0.001	0.0033	0.0032	3.08
Nickel	mg/L	0.001	0.001	0.0034	0.0035	2.90
Potassium	mg/L	0.05	0.05	8.47	8.11	4.34
Selenium	mg/L	0.0001	0.0001	0.00038	0.00035	8.22
Silicon	mg/L	0.1	0.1	2.35	2.08	12.19
Silver	mg/L	0.00002	0.00002	0.00002	0.00002	0.00
Sodium	mg/L	0.05	0.05	26.5	25.7	3.07
Strontium	mg/L	0.001	0.001	0.101	0.0993	1.70
Sulphur	mg/L	3	3	15.7	16.4	4.36
Thallium	mg/L	0.00001	0.00001	0.000012	0.000013	8.00
Tin	mg/L	0.005	0.005	0.005	0.005	0.00
Titanium	mg/L	0.005	0.005	0.005	0.005	0.00
Uranium	mg/L	0.0001	0.0001	0.00066	0.00066	0.00
Vanadium	mg/L	0.005	0.005	0.005	0.005	0.00
Zinc	mg/L	0.005	0.005	0.005	0.005	0.00
Zirconium	mg/L	0.0001	0.0001	0.0001	0.0001	0.00
Volatile Organics						
Benzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Ethylbenzene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
Toluene	mg/L	0.0002	0.00069	0.0002	0.0002	0.00
Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00
m,p-Xylenes	mg/L	0.0004	0.0004	0.0004	0.0004	0.00
o-Xylene	mg/L	0.0002	0.0002	0.0002	0.0002	0.00
F1 (C6-C10)-BTEX	mg/L	0.025	0.025	0.025	0.025	0.00
F1 (C6-C10)	mg/L	0.025	0.025	0.025	0.025	0.00
F2 (C10-C16)	mg/L	0.1	0.1	0.1	0.1	0.00
F3 (C16-C34)	mg/L	0.2	0.2	0.2	0.2	0.00
F4 (C34-C50)	mg/L	0.2	0.2	0.2	0.2	0.00
Reached baseline at C50	-	-	YES	YES	YES	-
1,2-Dichloroethane-d4	%	-	103	101	101	0.00
Ethylbenzene-d10	%	-	99	102	103	0.98
4-Bromofluorobenzene	%	-	95	93	95	2.13
1,4-Difluorobenzene	%	-	105	105	107	1.89
o-Terphenyl	%	-	98	99	92	7.33

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-26	MDMER MAX GRAB	MDMER MAX MONTHLY MEAN	Sample Date	Annual Average	7/17/2019	7/22/2019	8/1/2019	8/3/2019	8/5/2019	8/12/2019	8/19/2019	8/26/2019	9/2/2019	9/9/2019	9/26/2019	10/1/2019	10/7/2019
			FIELD_SDG Unit		B9K0978	B9K5086		B9L6967	B9L6974	B9M5773	B9N3354	B9O0837	B9O5316	B9P4257	B9R3149	B9R7258	B9S3427
Parameter																	
Field Measured																	
pH	6 - 9.5	6 - 9.5	pH units	7.20	7.35	7.39	6.21	7.66	7.75	7.88	8.2	7.1	7.21	7.65	6.5	6.21	6.54
Conductivity			uS/cm	29499.88	43440	33700	24573	34280	31236	34292	48357	28207	30998	24380	22573	24573	2889.4
Temperature			°C	9.54	22	19.4	2.7	10.3	9	10.5	10.9	11.8	4.9	9.1	8.6	2.7	2.1
Dissolved oxygen			mg/L	7.19	4.4	7.25	-	8.46	8.46	-	-	7.56	8.29	-	-	-	-
Dissolved oxygen			%	82.82	58.8	89.7	82.7	103.8	76.5	70.6	60.98	79.2	75.6	79.7	85	82.7	131.4
Turbidity			NTU	2.85	-	-	-	5.06	-	-	-	-	-	-	0.63	-	-
Conventional Parameters																	
pH	6 - 9.5	6 - 9.5	pH units	7.50	-	8.35	-	7.82	7.69	7.69	8	7.32	7.14	7.44	7.28	6.46	7.29
Specific conductivity			umhos/cm	30363.64	-	36000	-	34000	30000	33000	46000	27000	30000	23000	21000	26000	28000
Hardness, as CaCO3 (D)			mg/L	5366.36	-	4790	-	5080	4900	6450	8740	4480	5370	4010	4170	5210	5830
Hardness, as CaCO3 (T)			mg/L	5245.45	-	4940	-	4970	4790	6220	8190	4450	5510	3890	3970	5080	5690
Total alkalinity, as CaCO3			mg/L	68.27	-	110	-	82	80	91	130	57	32	64	37	11	57
Total dissolved solids			mg/L	20145.45	-	24400	-	22000	20000	22600	32000	17800	19500	15300	12800	16900	18300
Total suspended solids	30	15	mg/L	19.55	-	17	-	27	19	22	53	14	9	11	12	14	17
Volatile TSS			mg/L	12.00	-	-	-	-	10	-	24	8	6	-	-	-	-
Total organic carbon			mg/L	17.39	-	5.2	-	5	6.1	20	31	17	16	19	22	22	28
Dissolved organic carbon			mg/L	16.83	-	4.5	-	4.3	5.3	20	29	17	16	18	21	23	27
Turbidity			NTU	1.21	-	0.2	-	1.7	0.7	0.2	7.5	0.5	0.4	0.3	0.4	0.4	1
Dissolved Oxygen			mg/L	9.90	-	9.54	-	9.67	9.52	9.93	10.5	9.44	9.48	10.2	9.76	10.9	10
Sodium Adsorption Ratio			-	23.67	-	-	-	-	-	-	-	-	-	-	22	24	25
Chlorine, free			mg/L	4.75	-	-	-	-	-	-	-	-	9	0.5	-	-	-
Major Ions																	
Bicarbonate, as CaCO3			mg/L	68.18	-	110	-	82	79	91	130	57	32	64	37	11	57
Calcium			mg/L	1094.64	-	798	-	846	943	1450	1760	875	967	856	986	1190	1370
Carbonate, as CaCO3			mg/L	1.13	-	2.2	-	< 1.0	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloride			mg/L	10863.64	-	14000	-	12000	11000	12000	17000	9500	10000	8500	7100	9100	9300
Cyanide Total	2	1	mg/L	0.06	-	0.12	-	0.0064	< 0.0050	< 0.0050	0.2	< 0.0050	0.0084	0.0072	0.069	0.057	0.13
Cyanide Free			mg/L	0.0102	-	< 0.0010	-	0.0025	0.0011	< 0.0010	0.011	< 0.0010	< 0.0010	< 0.0010	0.018	0.045	0.03
Cyanide WAD			mg/L	0.0095	-	0.0011	-	0.0014	< 0.0010	0.017	0.035	0.0035	0.0021	0.0022	0.0087	0.015	0.018
Magnesium			mg/L	640.00	-	679	-	720	618	690	1060	557	718	454	415	543	586
Potassium			mg/L	190.55	-	210	-	193	182	215	310	162	188	139	134	174	189
Sodium			mg/L	4966.36	-	5840	-	6010	5240	5420	7960	4550	5150	3530	3150	3810	3970
Sulphate			mg/L	1059.09	-	1200	-	1100	980	1200	1700	870	1000	820	790	990	1000
Silica			mg/L	6.04	-	2.7	-	2.1	2.1	1.7	8.1	4.4	13	8	4.5	8.8	11
Nutrients																	
Nitrate			mg/L	56.94	-	57.9	-	41	46.2	75.7	79.8	43.5	53.3	48.7	48.9	60.2	71.1
Nitrite			mg/L	0.53	-	0.27	-	0.387	0.296	0.087	2.04	< 0.010	< 0.010	< 0.010	0.672	0.994	1.1
Nitrate + nitrite			mg/L	57.47	-	58.2	-	41.4	46.5	75.8	81.8	43.5	53.3	48.7	49.6	61.2	72.2
Total ammonia			mg/L	13.09	-	7.4	-	4.1	3.1	4.6	39	3.8	7	6	18	23	28
Total Kjeldahl nitrogen			mg/L	23.39	-	15	-	13	9.3	11	46	14	18	16	29	42	44
Total phosphorus			mg/L	0.090	-	0.074	-	0.068	0.054	0.078	0.25	0.08	0.076	0.071	0.062	0.098	0.084
Orthophosphate			mg/L	0.013	-	0.014	-	< 0.010	< 0.010	< 0.010	0.024	0.012	0.011	0.017	< 0.010	< 0.010	< 0.010
Total Metals																	
Aluminum			mg/L	0.2439	-	0.13	-	0.102	0.074	0.273	0.268	0.351	0.223	0.31	0.178	0.31	0.464
Antimony			mg/L	0.0142	-	< 0.0050	-	< 0.01	0.0059	< 0.01	< 0.025	< 0.05	< 0.025	< 0.0050	< 0.0050	< 0.01	< 0.0050
Arsenic	1	0.5	mg/L	0.0154	-	0.0063	-	0.015	0.012	0.0131	0.075	0.012	0.0091	0.0107	0.0047	0.0055	0.0065
Barium			mg/L	0.2235	-	0.143	-	0.125	0.176	0.321	0.331	0.181	0.192	0.182	0.223	0.261	0.324
Beryllium			mg/L	0.0028	-	< 0.0010	-	< 0.0020	< 0.0010	< 0.0020	< 0.0050	< 0.01	< 0.0050	< 0.0010	< 0.0010	< 0.0020	< 0.0010
Bismuth			mg/L	0.0282	-	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.1	< 0.05	< 0.01	< 0.01	< 0.02	< 0.01
Boron			mg/L	1.5003	-	0.771	-	< 1	0.827	< 1	< 2.5	< 5	< 2.5	0.584	0.574	< 1	0.747
Cadmium			mg/L	0.0003	-	< 0.00010	-	< 0.00020	< 0.00010	< 0.00020	< 0.00050	< 0.0010	< 0.00050	0.00013	0.00013	< 0.00020	0.00037
Calcium			mg/L	1068.1818	-	836	-	800	922	1440	1670	866	974	832	920	1170	1320
Chromium			mg/L	0.0282	-	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.1	< 0.05	< 0.01	< 0.01	< 0.02	< 0.01
Cobalt			mg/L	0.0072	-	0.0022	-	< 0.0040	0.0021	0.0047	< 0.01	< 0.02	< 0.01	0.004	0.0051	0.0075	0.0092
Copper	0.6	0.3	mg/L	0.0147	-	< 0.0050	-	< 0.01	0.0087	< 0.01	< 0.025	< 0.05	< 0.025	< 0.0050	< 0.0050	< 0.01	0.0081
Iron			mg/L	0.2851	-	0.121	-	< 0.2	< 0.1	0.215	< 0.5	< 1	< 0.5	< 0.1	< 0.1	< 0.2	< 0.1
Lead	0.4	0.2	mg/L	0.0058	-	< 0.0020	-	< 0.0040	< 0.0020	< 0.0040	< 0.01	< 0.02	< 0.01	0.0022	0.0025	< 0.0040	0.0034
Lithium			mg/L	0.5385	-	0.255	-	0.35	0.47	0.78	0.885	0.498	0.555	0.415	0.466	0.544	0.705

Note:
Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-26	MDMER MAX GRAB	MDMER MAX MONTHLY MEAN	Sample Date FIELD_SDG	Annual Average	7/17/2019	7/22/2019	8/1/2019	8/3/2019	8/5/2019	8/12/2019	8/19/2019	8/26/2019	9/2/2019	9/9/2019	9/26/2019	10/1/2019	10/7/2019
Parameter			Unit		B9K0978	B9K5086		B9L6967	B9L6974	B9M5773	B9N3354	B9O0837	B9O5316	B9P4257	B9R3149	B9R7258	B9S3427
Total Metals																	
Magnesium			mg/L	626.3636	-	693	-	723	604	638	976	555	747	441	406	523	584
Manganese			mg/L	0.1604	-	0.126	-	0.108	0.071	0.092	0.284	< 0.1	< 0.05	0.046	0.219	0.28	0.388
Mercury			mg/L	0.0000	-	< 0.00001	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum			mg/L	0.0306	-	0.02	-	< 0.02	0.015	< 0.02	< 0.05	< 0.1	< 0.05	0.014	< 0.01	< 0.02	0.018
Nickel	1	0.5	mg/L	0.0407	-	< 0.01	-	< 0.02	< 0.01	0.037	0.065	< 0.1	< 0.05	0.022	0.031	0.045	0.058
Potassium			mg/L	187.4545	-	215	-	195	175	208	292	170	188	136	130	169	184
Selenium			mg/L	0.0029	-	< 0.0010	-	< 0.0020	0.0011	< 0.0020	< 0.0050	< 0.01	< 0.0050	< 0.0010	0.0011	< 0.0020	0.0018
Silicon			mg/L	3.4391	-	1.37	-	< 2	< 1	< 2	< 5	< 10	< 5	1.32	2.63	2.84	4.67
Silver			mg/L	0.0006	-	< 0.00020	-	< 0.00040	< 0.00020	< 0.00040	< 0.0010	< 0.0020	< 0.0010	< 0.00020	< 0.00020	< 0.00040	< 0.00020
Sodium			mg/L	4826.3636	-	6230	-	5780	4820	4950	7440	4380	5090	3380	3010	3760	4250
Strontium			mg/L	25.1364	-	21.4	-	21.5	23	35	38.9	20.2	23.6	20.1	19.8	24.9	28.1
Sulphur			mg/L	430.7273	-	427	-	437	393	454	672	375	448	308	313	403	508
Thallium			mg/L	0.0003	-	< 0.00010	-	< 0.00020	< 0.00010	< 0.00020	< 0.00050	< 0.0010	< 0.00050	0.0001	0.00011	< 0.00020	0.00016
Tin			mg/L	0.1409	-	< 0.05	-	< 0.1	< 0.05	< 0.1	< 0.25	< 0.5	< 0.25	< 0.05	< 0.05	< 0.1	< 0.05
Titanium			mg/L	0.1409	-	< 0.05	-	< 0.1	< 0.05	< 0.1	< 0.25	< 0.5	< 0.25	< 0.05	< 0.05	< 0.1	< 0.05
Uranium			mg/L	0.0044	-	0.0012	-	< 0.0020	0.001	< 0.0020	0.007	< 0.01	< 0.0050	0.0047	0.0038	0.0041	0.0073
Vanadium			mg/L	0.1409	-	< 0.05	-	< 0.1	< 0.05	< 0.1	< 0.25	< 0.5	< 0.25	< 0.05	< 0.05	< 0.1	< 0.05
Zinc	1	0.5	mg/L	0.1409	-	< 0.05	-	< 0.1	< 0.05	< 0.1	< 0.25	< 0.5	< 0.25	< 0.05	< 0.05	< 0.1	< 0.05
Zirconium			mg/L	0.0028	-	< 0.0010	-	< 0.0020	< 0.0010	< 0.0020	< 0.0050	< 0.01	< 0.0050	< 0.0010	< 0.0010	< 0.0020	< 0.0010
Dissolved Metals																	
Aluminum			mg/L	0.1466	-	< 0.15	-	0.076	0.046	0.188	< 0.15	0.161	< 0.15	0.166	0.111	0.165	0.25
Antimony			mg/L	0.0118	-	< 0.025	-	< 0.0050	< 0.0050	< 0.01	< 0.025	< 0.0050	< 0.025	< 0.0050	< 0.0050	< 0.01	< 0.01
Arsenic			mg/L	0.0152	-	0.0056	-	0.0148	0.0112	0.0124	0.0748	0.0102	0.009	0.0137	0.005	0.0054	0.0051
Barium			mg/L	0.2265	-	0.143	-	0.128	0.18	0.315	0.343	0.181	0.191	0.187	0.226	0.276	0.321
Beryllium			mg/L	0.0024	-	< 0.0050	-	< 0.0010	< 0.0010	< 0.0020	< 0.0050	< 0.0010	< 0.0050	< 0.0010	< 0.0010	< 0.0020	< 0.0020
Bismuth			mg/L	0.0236	-	< 0.05	-	< 0.01	< 0.01	< 0.02	< 0.05	< 0.01	< 0.05	< 0.01	< 0.01	< 0.02	< 0.02
Boron			mg/L	1.2997	-	< 2.5	-	0.864	0.863	< 1	< 2.5	0.628	< 2.5	0.639	0.803	< 1	< 1
Cadmium			mg/L	0.0003	-	< 0.00050	-	< 0.00010	< 0.00010	< 0.00020	< 0.00050	< 0.00010	< 0.00050	0.00013	0.00017	0.00028	0.00029
Chromium			mg/L	0.0236	-	< 0.05	-	< 0.01	< 0.01	< 0.02	< 0.05	< 0.01	< 0.05	< 0.01	< 0.01	< 0.02	< 0.02
Cobalt			mg/L	0.0062	-	< 0.01	-	< 0.0020	< 0.0020	0.0045	< 0.01	0.0036	< 0.01	0.0041	0.0055	0.0079	0.0088
Copper			mg/L	0.0061	-	< 0.01	-	< 0.0020	< 0.0020	< 0.0040	< 0.01	0.005	< 0.01	0.004	0.0049	0.0067	0.0086
Iron			mg/L	0.1182	-	< 0.25	-	< 0.05	< 0.05	< 0.1	< 0.25	< 0.05	< 0.25	< 0.05	< 0.05	< 0.1	< 0.1
Lead			mg/L	0.0048	-	< 0.01	-	< 0.0020	< 0.0020	< 0.0040	< 0.01	< 0.0020	< 0.01	0.0022	0.0027	< 0.0040	< 0.0040
Lithium			mg/L	0.5471	-	0.26	-	0.35	0.499	0.903	0.911	0.432	0.539	0.428	0.477	0.543	0.676
Manganese			mg/L	0.1485	-	0.125	-	0.084	0.062	0.066	0.299	0.015	< 0.05	0.042	0.223	0.303	0.364
Mercury			mg/L	0.0000	-	< 0.00001	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum			mg/L	0.0255	-	< 0.05	-	0.016	0.012	< 0.02	< 0.05	0.013	< 0.05	0.017	0.013	< 0.02	< 0.02
Nickel			mg/L	0.0365	-	< 0.05	-	< 0.01	< 0.01	0.037	0.064	0.019	< 0.05	0.022	0.032	0.048	0.06
Selenium			mg/L	0.0024	-	< 0.0050	-	< 0.0010	< 0.0010	< 0.0020	< 0.0050	< 0.0010	< 0.0050	< 0.0010	0.0013	< 0.0020	< 0.0020
Silicon			mg/L	2.8536	-	< 5	-	< 1	< 1	< 2	< 5	< 1	< 5	1.36	2.6	3.46	3.97
Silver			mg/L	0.0005	-	< 0.0010	-	< 0.00020	< 0.00020	< 0.00040	< 0.0010	< 0.00020	< 0.0010	< 0.00020	< 0.00020	< 0.00040	< 0.00040
Strontium			mg/L	25.6455	-	19.1	-	22.1	24.7	33.8	40.9	20.8	23.5	20.8	19.9	26.4	30.1
Sulphur			mg/L	431.2727	-	412	-	441	379	475	712	368	437	320	332	417	451
Thallium			mg/L	0.0002	-	< 0.00050	-	< 0.00010	< 0.00010	< 0.00020	< 0.00050	< 0.00010	< 0.00050	0.0001	0.00012	< 0.00020	< 0.00020
Tin			mg/L	0.1182	-	< 0.25	-	< 0.05	< 0.05	< 0.1	< 0.25	< 0.05	< 0.25	< 0.05	< 0.05	< 0.1	< 0.1
Titanium			mg/L	0.1182	-	< 0.25	-	< 0.05	< 0.05	< 0.1	< 0.25	< 0.05	< 0.25	< 0.05	< 0.05	< 0.1	< 0.1
Uranium			mg/L	0.0040	-	< 0.0050	-	0.001	< 0.0010	< 0.0020	0.0068	0.0041	< 0.0050	0.0048	0.0042	0.0042	0.006
Vanadium			mg/L	0.1182	-	< 0.25	-	< 0.05	< 0.05	< 0.1	< 0.25	< 0.05	< 0.25	< 0.05	< 0.05	< 0.1	< 0.1
Zinc			mg/L	0.1197	-	< 0.25	-	< 0.05	< 0.05	< 0.1	< 0.25	0.067	< 0.25	< 0.05	< 0.05	< 0.1	< 0.1
Zirconium			mg/L	0.0024	-	< 0.0050	-	< 0.0010	< 0.0010	< 0.0020	< 0.0050	< 0.0010	< 0.0050	< 0.0010	< 0.0010	< 0.0020	< 0.0020
Toxicity																	
IC25 (Fertilization Assay Using Echinoids)			%		-	-	-	-	-	24	-	-	-	-	-	-	-
IC25 (Growth from Biomass) Marine and Estuarine Organisms			%		-	-	-	-	-	36.2	-	-	-	-	-	-	-
LC50 Marine and Estuarine Organisms			%		-	-	-	-	-	44.8	-	-	-	-	-	-	-
LC50 (96h) - Threespine Stickleback			%		-	Non-lethal	Non-lethal	-	Non-lethal	-	-	-	25	16.5	-	Non-lethal	Non-lethal
Radionuclides																	
Radium-226	1.11	0.37	Bq/l	0.1576	0.37	0.2	-	0.12	0.17	0.14	0.3	0.16	0.07	0.13	0.1	0.07	0.061

Note:
Half the value of the detection limit was used in the calculation of the annual average for values below the detection limit.

MEL-26 QAQC	Sample Date	MDL	8/19/2019				9/9/2019		
	FIELD SDG		B9N3354				B9P4257		
	Sample Name		Field Blank	Duplicate	Original	RPD	Duplicate	Original	RPD (%)
Parameter	Unit								
Conventional Parameters									
pH	pH units	-	6.44	8.01	8	0.12	7.44	7.44	0.00
Specific conductivity	umhos/cm	10000	32000	46000	46000	0.00	23000	23000	0.00
Hardness, as CaCO3 (D)	mg/L	0.5	0.5	8580	8740	1.85	4040	4010	0.75
Hardness, as CaCO3 (T)	mg/L	0.5	0.5	8310	8190	1.45	4020	3890	3.29
Total alkalinity, as CaCO3	mg/L	1	1	140	130	7.41	63	64	1.57
Total dissolved solids	mg/L	10	10	31900	32000	0.31	14900	15300	2.65
Total suspended solids	mg/L	1	1	33	53	46.51	11	11	0.00
Volatile TSS	mg/L	1	1	16	24	40.00	-	-	-
Total organic carbon	mg/L	0.5	0.5	31	31	0.00	19	19	0.00
Dissolved organic carbon	mg/L	0.5	0.5	29	29	0.00	18	18	0.00
Turbidity	NTU	0.1	0.1	7.4	7.5	1.34	0.3	0.3	0.00
Dissolved Oxygen	mg/L	-	10.6	10.2	10.5	2.90	9.85	10.2	3.49
Major Ions									
Bicarbonate, as CaCO3	mg/L	1	1	130	130	0.00	63	64	1.57
Calcium	mg/L	0.05	0.05	1730	1760	1.72	866	856	1.16
Carbonate, as CaCO3	mg/L	1	1	1.3	1.2	8.00	1	1	0.00
Chloride	mg/L	1	1	17000	17000	0.00	8000	8500	6.06
Cyanide Total	mg/L	0.005	0.0018	0.13	0.2	42.42	0.0074	0.0072	2.74
Cyanide Free	mg/L	0.001	0.005	0.0097	0.011	12.56	0.001	0.001	0.00
Cyanide WAD	mg/L	0.001	0.002	0.037	0.035	5.56	0.0023	0.0022	4.44
Magnesium	mg/L	0.05	0.05	1030	1060	2.87	457	454	0.66
Potassium	mg/L	0.05	0.05	303	310	2.28	139	139	0.00
Sodium	mg/L	0.05	0.05	7960	7960	0.00	3570	3530	1.13
Sulphate	mg/L	1	1	1700	1700	0.00	820	820	0.00
Silica	mg/L	0.05	0.15	4.1	8.1	65.57	12	8	40.00
Nutrients									
Nitrate	mg/L	0.1	0.1	78.2	79.8	2.03	48.5	48.7	0.41
Nitrite	mg/L	0.01	0.01	2.07	2.04	1.46	0.01	0.01	0.00
Nitrate + nitrite	mg/L	0.1	0.1	80.2	81.8	1.98	48.5	48.7	0.41
Total ammonia	mg/L	0.05	0.05	38	39	2.60	5.7	6	5.13
Total Kjeldahl nitrogen	mg/L	0.1	0.1	46	46	0.00	16	16	0.00
Total phosphorus	mg/L	0.02	0.02	0.26	0.25	3.92	0.082	0.071	14.38
Orthophosphate	mg/L	0.01	0.01	0.023	0.024	4.26	0.018	0.017	5.71
Total Metals									
Aluminum	mg/L	0.003	0.003	0.286	0.268	6.50	0.307	0.31	0.97
Antimony	mg/L	0.0005	0.0005	0.025	0.025	0.00	0.005	0.005	0.00
Arsenic	mg/L	0.0001	0.0001	0.0764	0.075	1.85	0.0108	0.0107	0.93
Barium	mg/L	0.001	0.001	0.325	0.331	1.83	0.192	0.182	5.35
Beryllium	mg/L	0.0001	0.0001	0.005	0.005	0.00	0.001	0.001	0.00
Bismuth	mg/L	0.001	0.001	0.05	0.05	0.00	0.01	0.01	0.00
Boron	mg/L	0.05	0.05	2.5	2.5	0.00	0.607	0.584	3.86
Cadmium	mg/L	0.00001	0.00001	0.0005	0.0005	0.00	0.00013	0.00013	0.00
Calcium	mg/L	0.05	0.05	1680	1670	0.60	856	832	2.84
Chromium	mg/L	0.001	0.001	0.05	0.05	0.00	0.01	0.01	0.00
Cobalt	mg/L	0.0002	0.0002	0.01	0.01	0.00	0.0041	0.004	2.47
Copper	mg/L	0.0005	0.0144	0.025	0.025	0.00	0.005	0.005	0.00
Iron	mg/L	0.01	0.01	0.5	0.5	0.00	0.1	0.1	0.00
Lead	mg/L	0.0002	0.0002	0.01	0.01	0.00	0.0022	0.0022	0.00
Lithium	mg/L	0.002	0.002	0.915	0.885	3.33	0.436	0.415	4.94
Magnesium	mg/L	0.05	0.05	997	976	2.13	457	441	3.56
Manganese	mg/L	0.001	0.001	0.285	0.284	0.35	0.047	0.046	2.15
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.05	0.05	0.00	0.014	0.014	0.00
Nickel	mg/L	0.001	0.001	0.061	0.065	6.35	0.022	0.022	0.00
Potassium	mg/L	0.05	0.05	296	292	1.36	142	136	4.32
Selenium	mg/L	0.0001	0.0001	0.005	0.005	0.00	0.001	0.001	0.00
Silicon	mg/L	0.1	0.1	5	5	0.00	1.41	1.32	6.59
Silver	mg/L	0.00002	0.00002	0.001	0.001	0.00	0.0002	0.0002	0.00
Sodium	mg/L	0.05	0.05	7500	7440	0.80	3530	3380	4.34
Strontium	mg/L	0.001	0.001	38.7	38.9	0.52	21.1	20.1	4.85
Sulphur	mg/L	3	3	681	672	1.33	324	308	5.06
Thallium	mg/L	0.00001	0.00001	0.0005	0.0005	0.00	0.00011	0.0001	9.52
Tin	mg/L	0.005	0.005	0.25	0.25	0.00	0.05	0.05	0.00
Titanium	mg/L	0.005	0.005	0.25	0.25	0.00	0.05	0.05	0.00
Uranium	mg/L	0.0001	0.0001	0.007	0.007	0.00	0.0049	0.0047	4.17

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

MEL-26 QAQC	Sample Date	MDL	8/19/2019				9/9/2019		
	FIELD_SDG		B9N3354				B9P4257		
	Sample Name		Field Blank	Duplicate	Original	RPD	Duplicate	Original	RPD (%)
Parameter	Unit								
Total Metals									
Vanadium	mg/L	0.005	0.005	0.25	0.25	0.00	0.05	0.05	0.00
Zinc	mg/L	0.005	0.005	0.25	0.25	0.00	0.05	0.05	0.00
Zirconium	mg/L	0.0001	0.0001	0.005	0.005	0.00	0.001	0.001	0.00
Dissolved Metals									
Aluminum	mg/L	0.003	0.003	0.15	0.15	0.00	0.168	0.166	1.20
Antimony	mg/L	0.0005	0.0005	0.025	0.025	0.00	0.005	0.005	0.00
Arsenic	mg/L	0.0001	0.0001	0.0722	0.0748	3.54	0.0128	0.0137	6.79
Barium	mg/L	0.001	0.001	0.335	0.343	2.36	0.191	0.187	2.12
Beryllium	mg/L	0.0001	0.0001	0.005	0.005	0.00	0.001	0.001	0.00
Bismuth	mg/L	0.001	0.001	0.05	0.05	0.00	0.01	0.01	0.00
Boron	mg/L	0.05	0.05	2.5	2.5	0.00	0.637	0.639	0.31
Cadmium	mg/L	0.00001	0.00001	0.0005	0.0005	0.00	0.00011	0.00013	16.67
Chromium	mg/L	0.001	0.001	0.05	0.05	0.00	0.01	0.01	0.00
Cobalt	mg/L	0.0002	0.0002	0.01	0.01	0.00	0.0042	0.0041	2.41
Copper	mg/L	0.0002	0.0002	0.018	0.01	57.14	0.004	0.004	0.00
Iron	mg/L	0.005	0.005	0.25	0.25	0.00	0.05	0.05	0.00
Lead	mg/L	0.0002	0.0002	0.01	0.01	0.00	0.0021	0.0022	4.65
Lithium	mg/L	0.002	0.002	0.92	0.911	0.98	0.441	0.428	2.99
Manganese	mg/L	0.001	0.001	0.289	0.299	3.40	0.043	0.042	2.35
Mercury	mg/L	0.00001	0.00001	0.00001	0.00001	0.00	0.00001	0.00001	0.00
Molybdenum	mg/L	0.001	0.001	0.05	0.05	0.00	0.015	0.017	12.50
Nickel	mg/L	0.001	0.001	0.067	0.064	4.58	0.022	0.022	0.00
Selenium	mg/L	0.0001	0.0001	0.005	0.005	0.00	0.001	0.001	0.00
Silicon	mg/L	0.1	0.1	5	5	0.00	1.37	1.36	0.73
Silver	mg/L	0.00002	0.00002	0.001	0.001	0.00	0.0002	0.0002	0.00
Strontium	mg/L	0.001	0.001	39.7	40.9	2.98	20.6	20.8	0.97
Sulphur	mg/L	3	3	684	712	4.01	323	320	0.93
Thallium	mg/L	0.00001	0.00001	0.0005	0.0005	0.00	0.0001	0.0001	0.00
Tin	mg/L	0.005	0.005	0.25	0.25	0.00	0.05	0.05	0.00
Titanium	mg/L	0.005	0.005	0.25	0.25	0.00	0.05	0.05	0.00
Uranium	mg/L	0.0001	0.0001	0.0068	0.0068	0.00	0.0048	0.0048	0.00
Vanadium	mg/L	0.005	0.005	0.25	0.25	0.00	0.05	0.05	0.00
Zinc	mg/L	0.005	0.005	0.25	0.25	0.00	0.05	0.05	0.00
Zirconium	mg/L	0.0001	0.0001	0.005	0.005	0.00	0.001	0.001	0.00
Radionuclides									
Radium-226	Bq/l	0.005	0.005	0.25	0.3	18.18	0.1	0.13	26.09

Notes:

RPD	: Relative Percent Difference
MDL	: Mean Detection Limit
25	: RPD higher than 20% and concentrations of parent and duplicate samples are within 10x the MDL.
25	: RPD higher than 20%, one of the result is within 10X the MDL and the other one exceeds 10x the MDL.
25	: RPD higher than 20% and concentrations of parent and duplicate samples are above 10x the MDL.

Appendix H-4

Blast Monitoring Report

ANNUAL REPORT MEMORANDUM

Agnico Eagle Mines Ltd Meliadine Division Engineering Department

SUBJECT: 2020 Meliadine Blast Monitoring Report for the Protection of Nearby Fish Habitat

1- Introduction and Objectives

In accordance with Condition 11 of Project Certificate No.006 issued by the Nunavut Impact Review Board (NIRB), Agnico Meliadine Division developed a Blast Monitoring Program which complies with *The Guidelines for the Use of Explosives In or Near Canadian Fisheries Water* (Wright and Hopky, 1998) as modified by the DFO for use in the North and adhere to guidance provided in *Monitoring Explosive-Based Winter Seismic Exploration in Waterbodies* (Cott and Hanna, 2005). As a result, Agnico conducts monitoring to evaluate blast related peak particle velocity and overpressure to protect nearby fish bearing waters.

The detonation of explosives in or near water produces compressive shock waves that can cause significant impacts to the swim bladders of fish, rupture other internal organs and/or damage or kill fish eggs and larvae. In addition, the effects of the shock waves can be intensified in the presence of ice. Consequently, the Guidelines for the Use of Explosives In or Near Canadian Fisheries Water guidelines have been developed by DFO to protect fish and fish habitat from works or undertakings that involve explosives in or near fisheries waters. Guidance provided in *Monitoring Explosive-Based Winter Seismic Exploration in Waterbodies* (Cott and Hanna, 2005) was also followed. It includes the following requirements:

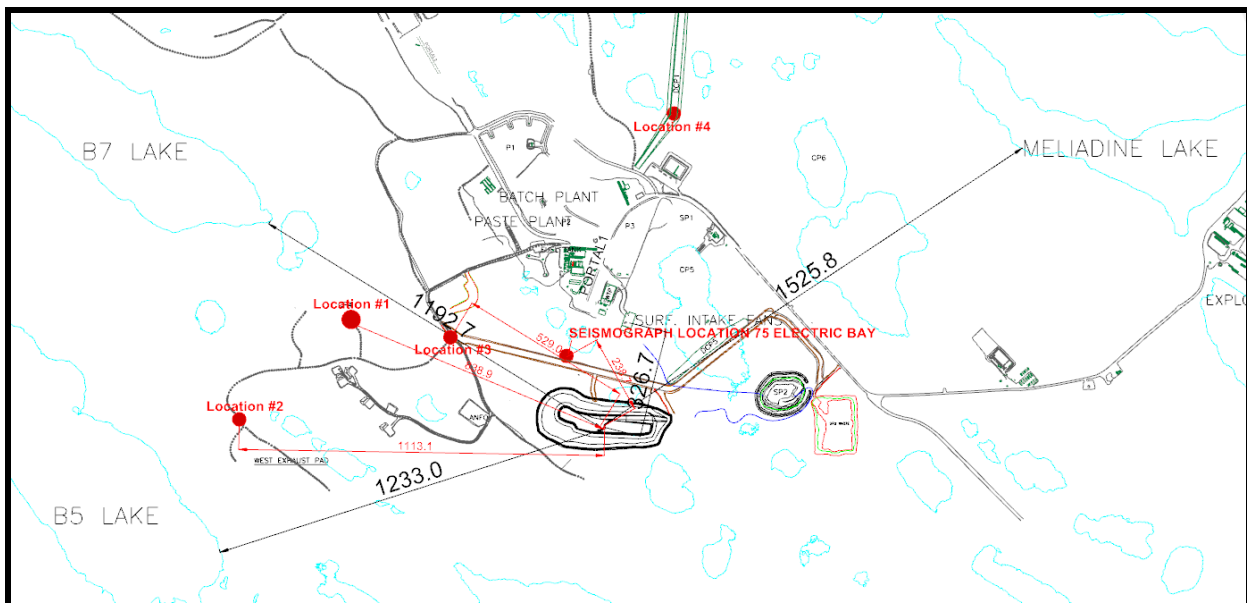
1. No explosive is to be detonated in or near fish habitat that produces an instantaneous pressure change (IPC) greater than 100 kPa in the swim bladder of a fish; representatives from DFO requested that Agnico use a value of 50 kPa instead of 100 kPa; and
2. No explosive is to be detonated that produces a peak particle velocity greater than 13 mm/s in a spawning bed during the period of egg incubation (for lakes near the Meliadine mine, it takes place between August 15 and June 30).

Peak particle velocity (PPV) and overpressure monitoring data were recorded throughout 2019 during blasting activities at Meliadine including Containment Pond 4 (CP4), Saline Pond 2 (SP2) and Saline Pond 4 (SP4). The locations of the blast monitoring stations in 2019 for Meliadine Infrastructure projects are shown in figure 1 below.

Table 1: 2019 blast monitoring stations by blast site

SP2	Easting	Northing
Location 1	540,314	6,988,702
Location 2	540,977	6,988,422
SP4	Easting	Northing
Location 1	539,487	6,988,596
Location 2	539,843	6,988,535
Location 3	538,843	6,988,343

CP4	Easting	Northing
Location 1	539,188	6,988,457
Location 2	539,352	6,988,935

**Figure 1: Surface Monitoring Locations (distances in meters)**

2- Methods

2.1- Blast Monitoring

Blasts were monitored using an Instantel Minimate Blaster which is fully compliant with the international Society of Explosives and Engineers performance specifications for blasting seismographs (Instantel, 2005). The transducer is installed as per the model specifications. For additional details on seismograph instrumentation and monitoring program detail, please refer to the Blast Monitoring Program (2020); all monitoring protocols set forth in this program are followed by Agnico.

This instrument measures transverse, vertical and longitudinal ground vibrations. Transverse ground vibrations agitate particles in a side to side motion. Vertical ground vibrations agitate particles in an up and down motion. Longitudinal ground vibrations agitate particles in a back and forth motion progressing outward from the event site (Instantel, 2005). The Minimate Blaster calculates the PPV for each geophone and calculates the vector sum of the three axes. The final result is the Peak Vector Sum (PVS) and is the resultant particle velocity magnitude of the event:

$$PVS = \sqrt{T^2 + V^2 + L^2}$$

Where:

T = particle velocity along the transverse plane

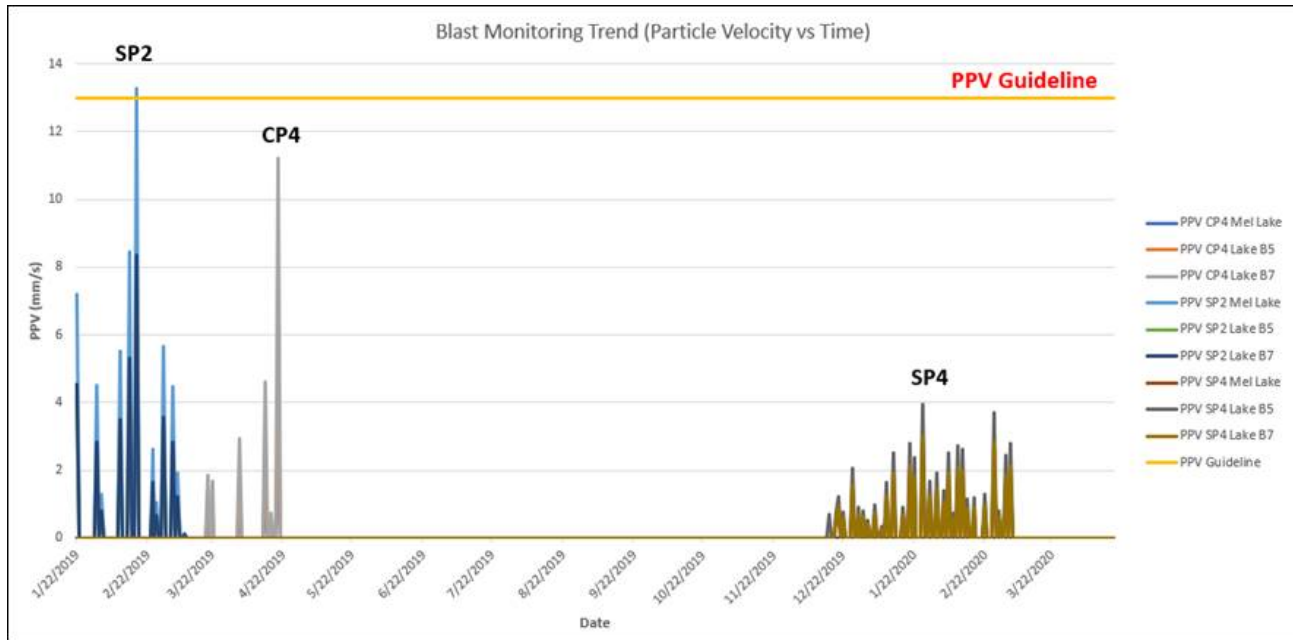
V = particle velocity along the vertical plane

L = particle velocity along the longitudinal plane

2.2- Data Compilation and Analysis

The blast monitoring data is screened to ensure blast PPV and IPC monitoring results corresponded to a single blast event. As open pit operations begin in 2020, Mining Engineers & Technicians will thoroughly document blast patterns, sequencing, and detonation results to track the material accurately, optimize blasts; if required, blasting procedure will be reviewed to ensure that the site remains within threshold limits and in continued compliance with regulations.

The following is a trended summary of the data collected for the three construction projects with respect to Meliadine Lake, Lake B5 and Lake B7. These lakes were selected during the construction phase of the project as the closest and accessible fish bearing lakes of the time. Guidance may change as the footprint of the site evolves over time.



Of the data collected, one data point exceeds the threshold limits. This anomalous data set, which does not have a corresponding overpressure value is most probably attributed to improper placement of the instrument; 'the most common result of an improperly placed transducer is an abnormally high reading' (Nomis Seismographs User Guide, 2018).

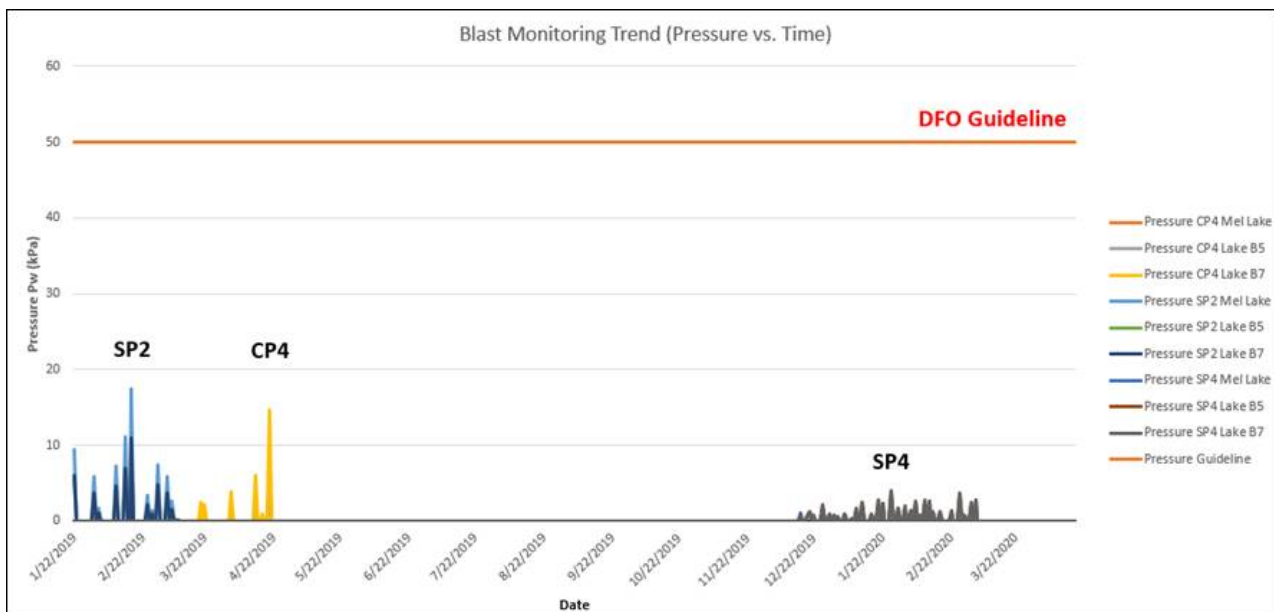


Table 2 - 2019 PPV and IPC Blast Monitoring Results – SP2

DFO Limits: Peak Particle Velocity - PPV = 13, Peak Sound Pressure - kPa = 50

Date	Seismo. Serial #	Location	PPV (mm/s)			Pressure Pw (kPa)		
			Mel Lake	Lake B5	Lake B7	Mel Lake	Lake B5	Lake B7
1/22/2019	20235	Location #1	7.2	4.2	4.5	9.45	5.51	5.95
1/27/2019	20238	Location #2	2.8	1.6	1.7	3.64	2.12	2.29
1/31/2019	20235	Location #1	4.5	2.6	2.8	5.89	3.44	3.71
2/2/2019	20235	Location #1	1.3	0.8	0.8	1.70	0.99	1.07
2/2/2019	20238	Location #2	3.3	1.9	2.1	4.30	2.51	2.70
2/10/2019	20235	Location #1	5.5	3.2	3.5	7.25	4.23	4.56
2/10/2019	20238	Location #2	0.8	0.5	0.5	1.09	0.63	0.69
2/14/2019	20235	Location #1	8.4	4.9	5.3	11.09	6.47	6.98
2/14/2019	20238	Location #2	0.9	0.6	0.6	1.24	0.72	0.78
2/17/2019	20235	Location #1	13.3	7.7	8.4	17.42	10.16	10.96
2/17/2019	20238	Location #2	0.9	0.5	0.5	1.13	0.66	0.71
2/24/2019	20235	Location #1	2.6	1.5	1.7	3.44	2.01	2.17
2/24/2019	20238	Location #2	3.3	1.9	2.1	4.37	2.55	2.75
2/26/2019	20235	Location #1	1.0	0.6	0.7	1.37	0.80	0.86
2/26/2019	20238	Location #2	1.2	0.7	0.8	1.62	0.95	1.02
3/1/2019	20235	Location #1	5.7	3.3	3.6	7.44	4.34	4.69
3/1/2019	20238	Location #2	1.5	0.9	0.9	1.92	1.12	1.21
3/5/2019	20235	Location #1	4.5	2.6	2.8	5.86	3.42	3.69
3/5/2019	20238	Location #2	1.2	0.7	0.8	1.59	0.93	1.00
3/7/2019	20235	Location #1	1.9	1.1	1.2	2.54	1.48	1.60
3/7/2019	20238	Location #2	0.4	0.2	0.3	0.55	0.32	0.35
3/10/2019	20235	Location #1	0.1	0.1	0.1	0.18	0.10	0.11
3/10/2019	20238	Location #2	0.1	0.0	0.0	0.09	0.05	0.05

Table 3 - 2019 PPV and IPC Blast Monitoring Results – SP4

DFO Limits: Peak Particle Velocity - PPV = 13, Peak Sound Pressure - kPa = 50

Date	Seismo Serial #	Location	PPV (mm/s)			Pressure Pw (kPa)		
			Mel Lake	Lake B5	Lake B7	Mel Lake	Lake B5	Lake B7
11/29/2019	20235 (#1)	Location #1	0.0	0.0	0.0	-	-	-
11/29/2019	20238 (#2)	Location #2	6.0	7.4	7.6	7.84	9.70	10.03
12/3/2019	20235 (#1)	Location #1	0.0	0.0	0.0	-	-	-
12/3/2019	20238 (#2)	Location #2	0.0	0.0	0.0	-	-	-
12/5/2019	20238 (#2)	Location #2	2.9	3.6	3.7	3.83	4.74	4.90

12/12/2019	20238 (#2)	Location #3	1.0	1.3	1.3	1.37	1.70	1.75
12/14/2019	20238 (#2)	Location #3	0.7	0.9	0.9	1.09	0.63	0.69
12/16/2019	20238 (#2)	Location #3	0.3	0.4	0.4	1.09	0.63	0.69
12/19/2019	20238 (#2)	Location #3	0.5	0.6	0.6	0.61	0.75	0.78
12/19/2019	MP13824	L75 EB	0.6	0.7	0.8	0.79	0.98	1.01
12/20/2019	20238 (#2)	Location #3	0.7	0.9	0.9	0.95	1.17	1.21
12/20/2019	MP13824	L75 EB	0.6	0.7	0.7	0.74	0.92	0.95
12/22/2019	MP13824	L75 EB	0.5	0.6	0.6	0.60	0.74	0.77
12/26/2019	MP13824	L75 EB	1.2	1.5	1.6	1.62	2.01	2.07
12/29/2019	MP13824	L75 EB	0.5	0.7	0.7	0.71	0.87	0.90
12/31/2019	MP13824	L75 EB	0.5	0.6	0.6	0.62	0.77	0.80
1/2/2020	MP13824	L75 EB	0.3	0.4	0.4	0.41	0.51	0.53
1/5/2020	MP13824	L75 EB	0.6	0.7	0.7	0.75	0.93	0.96
1/8/2020	MP13824	L75 EB	0.2	0.2	0.3	0.26	0.32	0.33
1/8/2020	MP13824	L75 EB	0.6	0.7	0.7	0.72	0.90	0.93
1/10/2020	MP13824	L75 EB	1.0	1.2	1.2	1.28	1.58	1.64
1/13/2020	MP13824	L75 EB	1.5	1.9	1.9	1.97	2.44	2.52
1/13/2020	MP13824	L75 EB	1.5	1.9	1.9	1.97	2.44	2.52
1/17/2020	MP13824	L75 EB	0.5	0.7	0.7	0.70	0.87	0.90
1/17/2020	MP13824	L75 EB	0.5	0.7	0.7	0.70	0.87	0.90
1/20/2020	MP13824	L75 EB	1.7	2.1	2.1	2.19	2.71	2.80
1/22/2020	MP13824	L75 EB	1.4	1.7	1.8	1.85	2.29	2.37
1/22/2020	20238 (#2)	Location #3	1.0	1.2	1.2	1.27	1.57	1.63
1/26/2020	MP13824	L75 EB	2.3	2.9	3.0	3.07	3.80	3.93
1/26/2020	20238 (#2)	Location #3	1.6	2.0	2.0	2.10	2.60	2.69
1/29/2020	20238 (#2)	Location #3	1.0	1.2	1.3	1.29	1.60	1.66
1/29/2020	MP13824	L75 EB	2.0	2.5	2.6	2.66	3.29	3.40
2/1/2020	MP13824	L75 EB	1.1	1.4	1.5	1.49	1.84	1.91
2/1/2020	20238 (#2)	Location #3	0.5	0.7	0.7	0.72	0.89	0.92
2/4/2020	MP13824	L75 EB	0.8	1.0	1.1	1.09	1.35	1.39
2/4/2020	20238 (#2)	Location #3	0.0	0.0	0.0	0.03	0.04	0.04
2/6/2020	MP13824	L75 EB	1.5	1.9	1.9	1.97	2.44	2.52
2/8/2020	MP13824	L75 EB	0.4	0.5	0.5	0.56	0.70	0.72
2/8/2020	20238 (#2)	Location #3	0.0	0.0	0.1	0.05	0.06	0.07
2/10/2020	MP13824	L75 EB	1.6	2.0	2.1	2.14	2.64	2.73
2/10/2020	MP14133	Surface Fans	0.5	0.6	0.6	0.65	0.81	0.83
2/10/2020	20238 (#2)	Location #3	0.0	0.0	0.0	0.04	0.05	0.05
2/12/2020	MP13824	L75 EB	1.6	1.9	2.0	2.04	2.52	2.61
2/14/2020	20238 (#2)	Location #3	0.7	0.8	0.9	0.89	1.10	1.14
2/14/2020	MP13824	L75 EB	1.5	1.8	1.9	1.94	2.40	2.48
2/17/2020	20238 (#2)	Location #3	0.7	0.9	0.9	0.92	1.14	1.18
2/17/2020	MP13824	L75 EB	3.0	3.7	3.8	3.90	4.82	4.98

2/22/2020	20238 (#2)	Location #3	0.8	1.0	1.0	1.02	1.26	1.30
2/22/2020	MP13824	L75 EB	2.0	2.5	2.6	2.63	3.25	3.36
2/26/2020	MP13824	L75 EB	2.2	2.7	2.8	2.88	3.57	3.69
2/28/2020	20238 (#2)	Location #3	0.5	0.6	0.6	0.64	0.79	0.81
2/28/2020	MP13824	L75 EB	2.4	3.0	3.1	3.19	3.95	4.08
3/2/2020	MP13824	L75 EB	1.5	1.8	1.9	1.91	2.36	2.44
3/2/2020	20238 (#2)	Location #3	0.0	0.0	0.0	0.02	0.03	0.03
3/4/2020	MP13824	L75 EB	1.7	2.1	2.1	2.18	2.70	2.79
3/4/2020	20238 (#2)	Location #3	0.0	0.0	0.0	0.02	0.03	0.03

Table 4 - 2019 PPV and IPC Blast Monitoring Results – CP4

DFO Limits: Peak Particle Velocity - PPV = 13, Peak Sound Pressure - kPa = 50

Date	Seismo. Serial #	Location	PPV (mm/s)			Pressure Pw (kPa)		
			Mel Lake	Lake B5	Lake B7	Mel Lake	Lake B5	Lake B7
3/20/2019	20235	Location #1	0.3	0.8	1.9	0.41	1.06	2.43
3/22/2019	20235	Location #1	0.3	0.7	1.7	0.37	0.97	2.21
3/22/2019	20238	Location #2	0.2	0.6	1.5	0.32	0.83	1.91
4/3/2019	20235	Location #2	0.5	1.3	2.9	0.65	1.69	3.87
4/3/2019	20238	Location #1	1.8	4.6	10.6	1.09	0.63	0.69
4/14/2019	20235	Location #1	0.8	2.0	4.6	1.02	2.65	6.06
4/14/2019	20238	Location #1	0.8	2.1	4.7	1.04	2.72	6.22
4/17/2019	20235	Location #1	0.1	0.3	0.7	0.16	0.42	0.95
4/17/2019	20238	Location #2	1.1	3.0	6.8	1.49	3.90	8.92
4/20/2019	20235	Location #1	1.9	4.9	11.2	2.47	6.44	14.71
4/20/2019	20238	Location #2	0.6	1.5	3.3	0.73	1.91	4.36
4/25/2019	20235	Location #1	0.0	0.0	0.0	-	-	-
4/25/2019	20238	Location #2	0.1	0.4	0.9	0.19	0.49	1.13
4/26/2019	20235	Location #1	0.0	0.0	0.0	-	-	-
4/26/2019	20238	Location #2	0.2	0.4	0.9	0.20	0.51	1.18
4/27/2019	20235	Location #1	0.0	0.0	0.0	-	-	-
4/27/2019	20238	Location #2	0.2	0.5	1.1	0.23	0.61	1.39
4/28/2019	20235	Location #1	0.0	0.0	0.0	-	-	-
4/30/2018	20235	Location #2	0.0	0.0	0.0	-	-	-
5/1/2019	20235	Location #2	0.0	0.0	0.0	-	-	-
5/2/2019	20235	Location #2	0.0	0.0	0.0	-	-	-
5/4/2019	20235	Location #1	0.0	0.0	0.0	-	-	-
5/5/2019	20235	Location #1	0.0	0.0	0.0	-	-	-
5/5/2019	20238	Location #2	0.0	0.0	0.0	-	-	-
5/6/2019	20235	Location #1	0.0	0.0	0.0	-	-	-
5/6/2019	20238	Location #2	0.0	0.0	0.0	-	-	-

Note: Zero value occur when the blast levels are too low to trigger the seismograph.

End of document ■

Appendix H-5

Noise Monitoring Report



AGNICO EAGLE

MELIADINE GOLD PROJECT

2019 Noise Monitoring Report

In Accordance with NIRB Project Certificate No. 006

Prepared by:
Agnico Eagle Mines Limited – Meliadine Division

MARCH 2020

EXECUTIVE SUMMARY

In accordance with NIRB Project Certificate No. 006, and as described in the Noise Abatement and Monitoring Plan (Version 3; March, 2020), Agnico Eagle Mines Ltd. (Agnico Eagle) monitors outdoor ambient noise at the Meliadine site. The objective of the noise monitoring program is to measure noise levels at four previously determined monitoring locations over at least two 24 h periods. Results are compared to FEIS predictions for the 24-h L_{eq} , the L_{eq} -nighttime design target, and the site's noise monitoring criteria.

Since high winds in the area tend to significantly reduce the amount of available data, technicians aim to conduct two or more monitoring events for each station, lasting two to four days each. In 2019, two or more monitoring events were conducted for all stations (NPOR005, NPOR006, NPOR008 and NPOR017). According to conditions of the Project Certificate, NPOR014 was not required to be monitored in 2019, since activities related to the Discovery Pit were not occurring. Monitoring was conducted for the first time at NPOR005 (alternate to NPOR006), since previously high occupancy rates at the seasonal cabin adjacent to NPOR006 have impeded data interpretation for that location. However, the cabin at NPOR006 did not appear to be occupied during monitoring in 2019, so results for both stations are presented.

Following processing of the data in accordance with standard methods (Alberta Energy Resource Conservation Board Directive 038), sufficient valid data was available for the calculation of at least two 24-h L_{eq} values for each monitoring station in 2019. Final values are shown in Table 1.

No exceedances of the site's noise monitoring criterion (45 dBA, 24-h L_{eq}) or night-time design target (40 dBA) occurred.

For NPOR005 and NPOR008, no measured values exceeded the FEIS predictions for those locations. For NPOR006, one of two 24-h L_{eq} measurements marginally exceeded the FEIS prediction of 39.8 dBA, at 40.2 dBA. Review of sound recordings indicated this was generally due to an elevated baseline environment (wind noise), mixed with intermittent but frequent backup alarms. For NPOR017, one of three 24-h L_{eq} measurements marginally exceeded the FEIS prediction of 43.4 dBA, at 45.0 dBA. This exceedance was generally caused by traffic noises and aircraft flyovers, occasionally compounded by simultaneous bird calls. For both of these cases, since the exceedance was marginal (<3 dBA), occurred during a single monitoring event, and the noise monitoring criterion was not exceeded, the events were not investigated further.

To date, no noise-related complaints have been received for the Meliadine site.

Table 1. Summary of noise monitoring results in 2019. “NM” indicates not required to be measured. Values exceeding the FEIS prediction are in bold. No values exceeded site noise monitoring criteria.

Location	Monitoring Start	Monitoring End	Noise Monitoring Criterion <i>L_{eq}</i>(24 h) (dBA)	FEIS Prediction <i>L_{eq}</i>(24 h) (dBA)	Measured <i>L_{eq}</i>(24 h) (dBA)	Design Target <i>L_{eq}</i> (nighttime) (dBA)	Measured <i>L_{eq}</i> (nighttime) (dBA)
NPOR005	09/05/2019 3:22 PM	09/07/2019 7:38 AM	45	36.3	35.6	40	34.0
	09/12/2019 9:02 AM	09/15/2019 4:31 PM			35.1		33.0
NPOR006	09/12/2019 8:42 AM	09/15/2019 16:19 PM	45	39.8	40.2	-	-
	09/20/2019 12:56 PM	09/22/2019 13:40 PM			39.6		-
NPOR008	09/08/2019 2:55 PM	09/11/2019 2:17 PM	45	41.7	39.5	40	36.3
	09/22/2019 3:09 PM	09/24/2019 6:59 PM			34.9		38.5
	10/03/2019 11:19 AM	10/06/2019 3:07 PM			36.9		34.6
NPOR014	NM	NM	45	44.7	NM	-	-
NPOR017	09/08/2019 9:03 AM	09/10/2019 4:06 PM	45	43.4	45.0	-	-
	09/22/2019 10:07 AM	09/25/2019 2:16 PM			38.6		-
	10/03/2019 3:51 PM	10/06/2019 2:32 PM			42.5		-

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Appendix A: Field Logs

Appendix B: Weather Data and 1-h L_{eq} Values

1 INTRODUCTION

In February, 2015, Agnico Eagle Mines Ltd. (Agnico Eagle) was issued NIRB Project Certificate No. 006 for the Meliadine Gold Project, near Rankin Inlet, NU. In accordance with this Project Certificate, and as described in the Noise Abatement and Monitoring Plan (Version 3; March, 2020), Agnico Eagle began conducting outdoor noise monitoring at the Meliadine site in 2016. The objective of the Noise Abatement and Monitoring Plan is to validate predictions of noise levels made in the FEIS, confirm the findings of the noise impact assessment (Vol. 5 – Atmospheric Environment and Impact Assessment, April, 2014), and inform the implementation of noise mitigation measures. If noise monitoring confirms excessive Project-associated noise levels exist, the monitoring data will be used to determine where noise abatement requires improvement.

A summary of the noise monitoring program is shown in Table 2, according to the Noise Abatement and Monitoring Plan.

Table 2. Noise monitoring objectives, frequency, duration, and locations.

Project Phase	Project Objectives	Frequency and Duration of Monitoring	Monitoring Locations
Construction and Operations	<p>To verify that the noise emissions used in the FEIS noise assessment were reasonable, yet conservative.</p> <p>To verify that the mitigation measures considered integral to the Project are incorporated as planned, and are effective.</p>	<p>Yearly monitoring programs, twice per year.</p> <p>A duration of 24+ hours per station.</p>	<p>FEIS receptors NPOR06 NPOR08 NPOR14 NPOR17</p> <p>Possibility to add NPOR05</p>

2 METHODS

2.1 MONITORING LOCATIONS

In 2019, noise monitoring was conducted at four locations, as identified in the Noise Abatement and Monitoring Plan. Since activities were not ongoing at the Discovery Pit location, NPOR014 was not monitored in 2019. To determine the feasibility of replacing NPOR006 with NPOR005 (as described in the Plan, and indicated in the 2018 Noise Monitoring Report), monitoring was conducted at NPOR005 for the first time. All of these locations coincide with the identified points of reception (PORs) with the greatest predicted changes in noise levels from existing conditions, as determined through the noise impact assessment (FEIS Vol. 5, Section 5.5). The monitoring locations are identified in Figure 1, and summarized

in Table 3. Photos of the noise monitoring locations are provided in Section 3. These monitoring locations will be reviewed and may be adapted throughout the construction and/or operations phases of the Project, as necessary.

Table 3. Noise monitoring locations and conditions for monitoring.

Location ID	UTM (Zone 15V)	Project Area	Monitoring Conditions	Monitored in 2019
NPOR 006	538286E 6991299N	Mine	Monitor during the entire Construction and Operations Phases, and initial stages of Closure when extensive activities are occurring.	Yes
NPOR 008	543707E 6987276N	Mine	Monitor during the entire Construction and Operations Phases, and initial stages of Closure when extensive activities are occurring.	Yes
NPOR 014	549401E 6982060N	Mine	Monitor only if activities associated with the Discovery Pit are occurring.	No
NPOR 017	544203E 6970537N	AWAR	Monitor during the entire Construction and Operations Phases, and initial stages of Closure when extensive activities are occurring.	Yes
(NPOR 005)	537978 E 6991742 N	Mine	Alternate to NPOR006 if monitoring at that location is not feasible due to high occupancy rates of the adjacent cabin.	Yes

All noise monitoring stations are located in close proximity to seasonally occupied cabins, which were identified as being the most sensitive receptors in the noise impact assessment (FEIS Vol. 5, Section 5.5.4.4). However, the frequent use of some of these cabins (especially NPOR006) impedes efficient collection of valid noise data that is representative of mine activities.

NPOR006 is located approximately 1 km north of the mine site disturbance area, and approximately 200 m outside the FEIS site study area (SSA). The adjacent cabin was in use at the time of the 2017 and 2018 noise surveys, but did not appear to be in use in 2019. The surrounding terrain is a mix of small rock and lichen. The slope is very minimal towards the SW. Meliadine Lake is ~150 m NE and an unnamed small lake is ~120 m SSW.

Alternate location NPOR005 is located approximately 1 km northwest of NPOR006, adjacent to a seasonally occupied cabin (usage rate unknown). It is approximately 1.2 km outside of the SSA, on the southwest side of Meliadine lake.

NPOR008 is located approximately 1.25 km from the SSA, on the east side of the site. The surrounding terrain is on the summit of a small vegetated hill with very little apparent rock. Meliadine Lake is ~ 51 m to the NNE. The mine camp is approximately 2 km to the northwest, and the all weather road is approximately 2.5 km to the southwest.

NPOR014 is located approximately 130 m from the traditionally used ATV trail. This station is at the southern end of Meliadine Lake and is approximately 10 km away from the Meliadine exploration camp and

5 km from the Discovery area. It is located within the SSA. Currently there is no development in this area, so any measurements at NPOR014 at this time are expected to be indicative of background values.

NPOR017 is located at the southern end of the all-weather access road (AWAR). It is approximately 150 m SW of the road. No SSA was assessed for the AWAR.

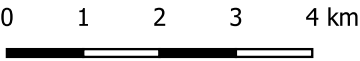


- Haul and Service Road —
- Rankin Inlet Bypass Road - - -
- All-Weather Access Road
- Production Lease Outline [Red dashed box]
- Meliadine Infrastructure [Purple outline]
- Noise Monitoring Location [Green circle]

Noise Abatement and Monitoring Plan

Figure 1

Meliadine Noise Monitoring Locations



Date: 2019-09-13

Created By: BH



2.2 MONITORING DATES

In accordance with the Noise Abatement and Monitoring Plan, two or more 24-h+ noise surveys were conducted for each location. Surveys were planned to last a minimum of 48 h, since a significant portion of data is filtered out due to sub-optimal weather conditions (see Section 2.4). Monitoring dates and times for each survey are provided in Table 3.

After the noise meter began malfunctioning early in the summer season, it was sent for repairs and was returned to site in late August. As a result, all monitoring events occurred between September 5 and October 6. A second Bruel and Kjaer Model 2250 integrating sound level meter was also obtained at that point, which will facilitate future field monitoring programs and reduce any monitoring delays when maintenance is required for one instrument.

Table 4. Noise monitoring dates in 2019.

Location	Monitoring Start	Monitoring End	Duration (h)
NPOR005	09/05/2019 3:22 PM	09/07/2019 7:38 AM	41
	09/12/2019 9:02 AM	09/15/2019 4:31 PM	63
NPOR006	09/12/2019 8:42 AM	09/15/2019 16:19 PM	81
	09/20/2019 12:56 PM	09/22/2019 13:40 PM	50
NPOR008	09/08/2019 2:55 PM	09/11/2019 2:17 PM	73
	09/22/2019 3:09 PM	09/24/2019 6:59 PM	52
	10/03/2019 11:19 AM	10/06/2019 3:07 PM	77
NPOR014	NM	NM	NM
NPOR017	09/08/2019 9:03 AM	09/10/2019 4:06 PM	56
	09/22/2019 10:07 AM	09/25/2019 2:16 PM	77
	10/03/2019 3:51 PM	10/06/2019 2:32 PM	72

2.3 SOUND LEVEL METER

For all stations a Bruel and Kjaer Model 2250 integrating sound level meter with secondary wind screen was used to conduct the noise survey. The noise logging rate was set at one-minute intervals, and according to the Noise Abatement and Monitoring Plan, logged parameters included:

- Integrated equivalent A-weighted sound level (L_{Aeq})
- 1/3 octave band sound levels in decibels (dB)
- Statistical data (L_{10} , L_{90})
- Maximum sound level (L_{max}) in dBA
- Minimum sound level (L_{min}) in dBA

Calibration of the instrument was performed before and after each monitoring event using a Bruel and Kjaer Type 4231 Calibrator, to ensure variance was within 0.5 dB (see field notes, Appendix A). Estimated uncertainty, over a yearly time period for the calibrator is better than 0.05 dB at a 96% confidence level.

2.4 WEATHER DATA

Weather data for the noise monitoring periods was collected using the mine site's permanent weather station. Hourly data for wind, temperature, and relative humidity were available from this station.

In the case of noise monitoring for complaint situations, the Alberta Energy Resource Conservation Board Directive 038 (Directive 038) requires noise data to be collected under appropriate weather conditions, which are represented by an absence of steady precipitation, snow, water, or ice ground cover, as well as restrictions on wind speed. To adhere as much as possible to these conditions, noise data was filtered out from analyses when wind speed exceeded 15 km/hr. Average wind speed values were used, since filtering based on maximum values has historically resulted in exclusion of nearly the entire noise dataset. This approach is considered conservative, since higher winds are likely to result in increased noise levels due to wind effects. Data was not filtered on the basis of recorded precipitation, since hourly precipitation measurements were not available from the onsite weather station in 2019, and filtering of data based on elevated relative humidity (>90 or 100%, as in past years) resulted in significant data elimination. This approach was considered acceptable since no noise-related complaints were under investigation (none have been received to date). Hourly precipitation is planned to be recorded at the onsite weather station beginning in 2020. Weather data (wind speed, wind direction, temperature, and humidity) are provided in Appendix B.

2.5 FIELD NOTES

A pocket weather meter (WeatherHawk® WindMate™, WM-300) was used by field staff to record wind speed, direction, and temperature at the beginning and end of each monitoring period. Other observations included precipitation, cloud cover, and observed noises during instrument set-up and takedown. All field notes are provided in Appendix A.

2.6 DATA ANALYSIS

Data recorded at the four monitoring sites were downloaded for assessment using the Bruel and Kjaer 5503 Measurement Suite software, with some calculations performed using Microsoft Excel. Recorded one-minute L_{Aeq} values were used to calculate hourly equivalent energy noise levels ($L_{eq, 1h}$).

2.6.1 DATA FILTERING

2.6.1.1 Initial Filtering

All datapoints associated with the first hour of measurement (and where necessary, last hour) were filtered out to remove noise from technician activity, and to ensure more than 30 min of data contributed to hourly averages. Data was also filtered on the basis of hourly recorded weather conditions to comply with Directive 038 (see Section 2.4). After this initial data filtering, valid hourly L_{eq} values for each monitoring period were

used to calculate average 24-h equivalent energy noise levels ($L_{eq, 24\text{ h}}$). When a data point ($L_{eq, 1\text{ h}}$) was available from more than one day within a monitoring period, values were energy-averaged across calendar days to ensure time points contributed equally to 24-h L_{eq} values.

2.6.1.2 Review of Sound Recordings

When calculated 24-h L_{eq} values exceeded FEIS predictions or noise criteria (see Section 3.6.2, below), sound recordings were reviewed to identify and if appropriate, remove noise data dominated by background noise sources unrelated to mine activity, and causing recorded 1-min L_{eq} values in excess of FEIS predictions or noise criteria (e.g. wind, ongoing animal disturbance in close proximity to the microphone, human interference). These noise sources were assumed to be minimal in the FEIS process, since a background sound level of 35 dBA was used. After this second data filtering, hourly L_{eq} values with less than 30 min of valid data were excluded from 24-h L_{eq} calculations, in accordance with Directive 038. Similarly, 24-h L_{eq} values were only calculated when more than 180 valid minutes were available from each of the daytime and nighttime periods. In 2019, sufficient valid data was available for all monitoring periods to conform to this guideline, and final L_{eq} values were calculated for each monitoring period, for each site.

2.6.2 NOISE MONITORING CRITERIA

Final L_{eq} values were compared to FEIS predictions and the site's noise monitoring criteria (see Table 4).

As indicated in the Noise Abatement and Monitoring Plan, night-time (11 pm – 7 am) L_{eq} values were also calculated, and are compared with the design target of 40 dBA for sites NPOR005 and NPOR008, for reference only. It should be noted that this target was designed to apply at a distance of 1.5 km from the site study area (SSA) in remote areas. NPOR005 and NPOR008 are located approximately 1.2 km from the SSA, so exceedances of this target value may occur at the monitoring stations without exceeding the design target at the 1.5 km distance. If concerns arise regarding nighttime sound levels around the minesite, one or more stations may be added or moved in future monitoring events to coincide with this design target location to more precisely assess FEIS predictions.

Table 5. FEIS predictions for 24-h equivalent sound levels, FEIS design targets for 1.5 km from the site study area perimeter, and noise monitoring criteria from the Noise Abatement and Monitoring Plan.

Location	FEIS Prediction L_{eq-24h} (dBA)	Design Target (1.5 km from SSA) $L_{eq-nighttime}$ (dBA)	Noise Monitoring Criteria L_{eq-24h} (dBA)
NPOR005	36.3	40	45
NPOR006	39.8	-	45
NPOR008	41.7	40	45
NPOR014	44.7	-	45
NPOR017	43.4	-	45

3 RESULTS

24-h and night-time L_{eq} values are presented and reviewed below, for comparison to criteria in Section 2.6.2. All 1-h L_{eq} values are provided in Appendix B.

3.1 NPOR005

In previous years (2016, 2017, 2018), significant and ongoing activity at the seasonally occupied cabin located adjacent to NPOR006 caused difficulty in noise data interpretation. Since occupancy of the cabin appeared frequent, it was not feasible to conduct monitoring during an unoccupied period. Agnico planned to conduct reconnaissance in 2019 to determine the feasibility of monitoring at NPOR005, as described in the Noise Abatement and Monitoring Plan. This station is in a similar location relative to site development, but may have lower occupancy rates. Two monitoring events were recorded at NPOR005, and are reported here along with those from NPOR006, because activities at the cabin there did not appear to be ongoing in 2019 (see Section 4.2).

L_{eq} values calculated from 1-min measurements over monitoring events 1 and 2 at NPOR005 are shown in Figures 3 and 4. Invalid data points removed from analyses due to assumed technician interference and sub-optimal weather conditions (as described in Section 2.4) are indicated (LA_{eq} -unfiltered). For event 1 at station NPOR005 (Sept. 5 - 7), 41 h of monitoring were conducted, and 39 h of valid data were available after filtering. For event 2 at NPOR005 (Sept. 12 - 15), 80 h of monitoring were conducted, and 43 h of valid data were available after filtering.

After data filtering, the calculated 24-h L_{eq} values were 35.6 dBA and 35.1 dBA for events 1 and 2, respectively. These values did not exceed the FEIS prediction of 36.3 dBA, or the noise monitoring criterion for “non-significant impacts” (45 dBA).

Night-time L_{eq} values for each event were 34.0 dBA and 33.0 dBA, which do not exceed the design target of 40 dBA for 1.5 km from the mine SSA.

Noise sources noted in the field log for this location include possible boat traffic, ATV traffic (nearby cabin), and birds. Sound recordings were not required to be reviewed because recorded L_{eq} values did not exceed FEIS predictions or noise monitoring criteria after the initial data filtering.

To date, no noise-related complaints have been received in this area.

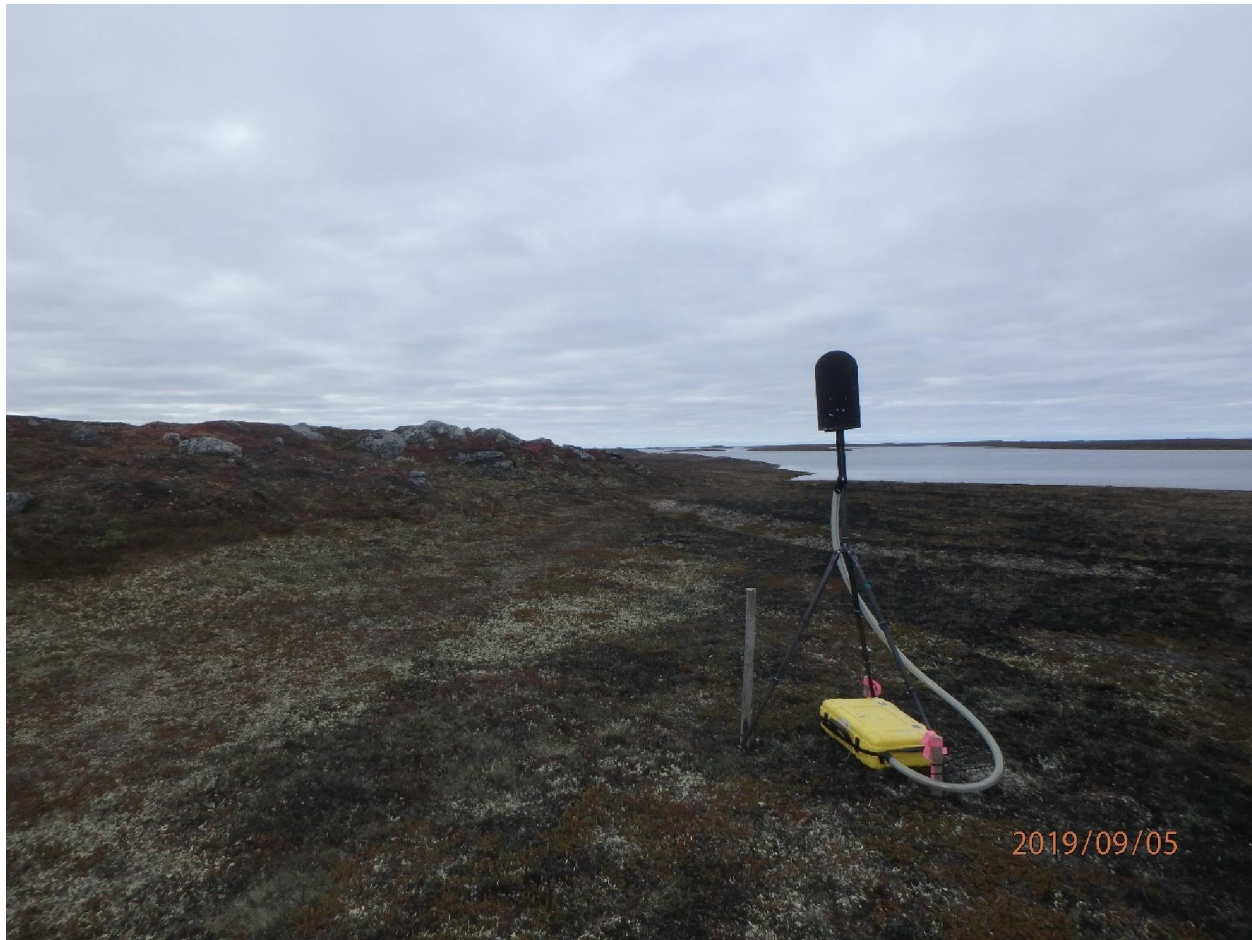


Figure 2. Noise monitoring location NPOR005 (September 5, 2019). Meliadine Lake in the background.

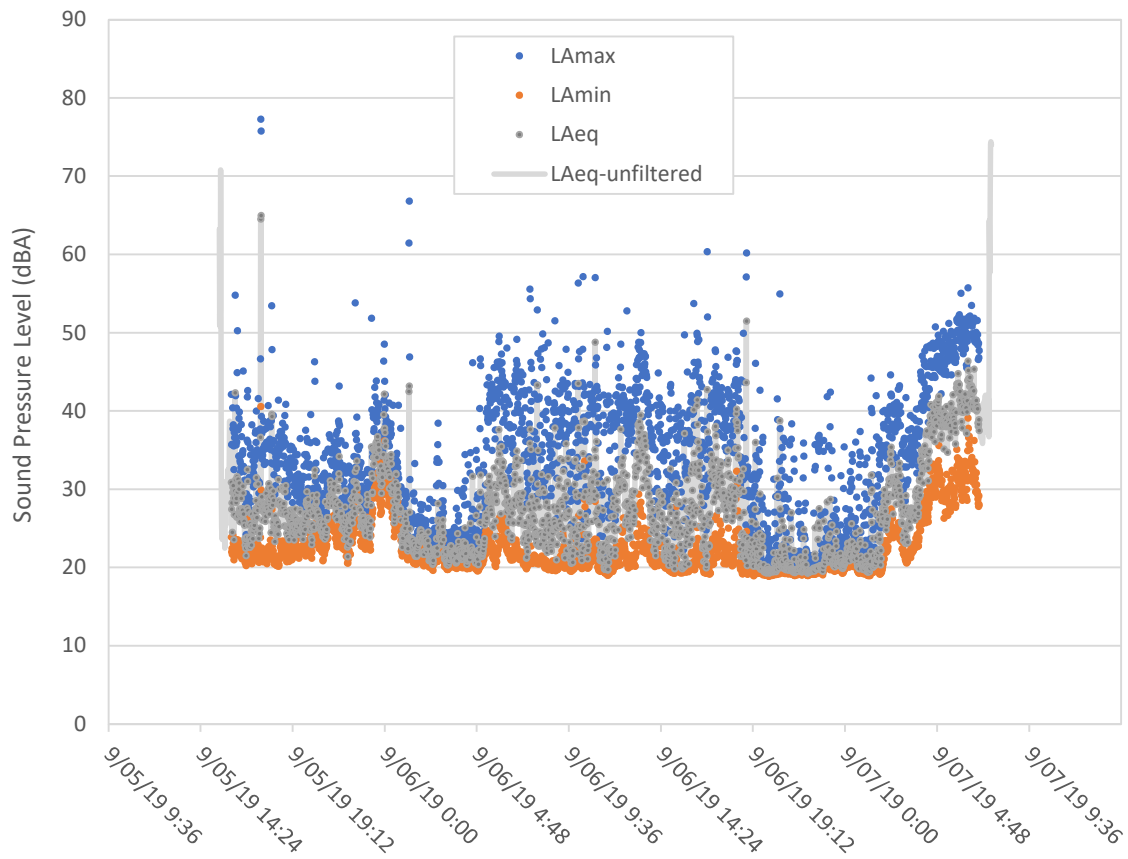


Figure 3. 1-min L_{max} , L_{min} , and L_{eq} values recorded at site NPOR005 during monitoring event 1.

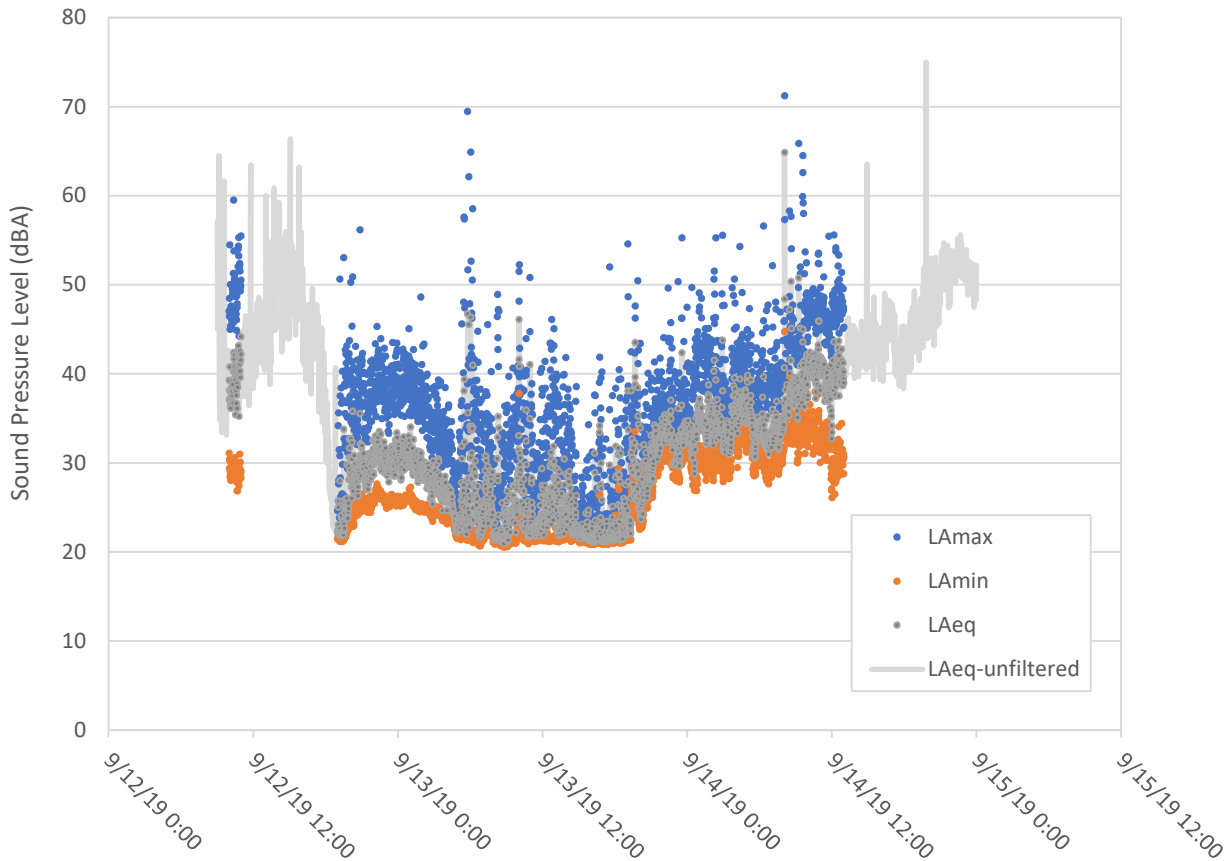


Figure 4. 1-min L_{max} , L_{min} , and L_{eq} values recorded at site NPOR005 during monitoring event 2.

3.2 NPOR006

L_{eq} values calculated from 1-min measurements over monitoring events 1 and 2 at NPOR006 are shown in Figures 6 and 7. Invalid data points removed from analyses due to assumed technician interference and sub-optimal weather conditions (as described in Section 2.4) are indicated (L_{Aeq} -unfiltered). For event 1 at station NPOR006 (Sept. 12 – 15), 81 h of monitoring were conducted, and 42 h of valid data were available after filtering. For event 2 at NPOR006 (Sept. 20 – 22), 50 h of monitoring were conducted, and 18 h of valid data were available after filtering.

Noise sources noted in the field log for this location include possibility for human activities from the nearby cabin, associated ATV traffic, and birds. Audible noises noted on sound recordings included birds, wind, and backup alarms. The field technician noted that general mine traffic was also audible, and nearby site activities ongoing during the noise surveys included:

- Reclamation at the nearby quarry site (approx. 750 m away); and
- Regular operations at the nearby laydown pad (approx. 750 m away); and
- Regular operations at the nearby emulsion plant (approx. 900 m away).

The regular ATV traffic, human activity, small mechanical equipment, and construction works associated with the nearby cabin that were prominent in sound recordings in previous years (2017, 2018) were not observed in 2019.

After data filtering, the calculated 24-h L_{eq} value for event 1 was 40.2 dBA, which marginally exceeded the FEIS prediction of 39.8 dBA, but did not exceed the noise monitoring criterion for “non-significant impacts” (45 dBA). For event 2, the 24-h L_{eq} value was 39.6 dBA, which is below the FEIS prediction and noise monitoring criterion.

The elevated 24-h L_{eq} measured in event 1 in 2019 (as compared to FEIS predictions) occurred for 15 of the 42 valid hours, and appeared generally due to a frequently elevated baseline environment (wind), mixed with intermittent but frequent backup alarms. Since the exceedance was marginal, only occurred during event 1, and the noise monitoring criterion was not exceeded, the event was not investigated further.

To date, no noise-related complaints have been received in this area.

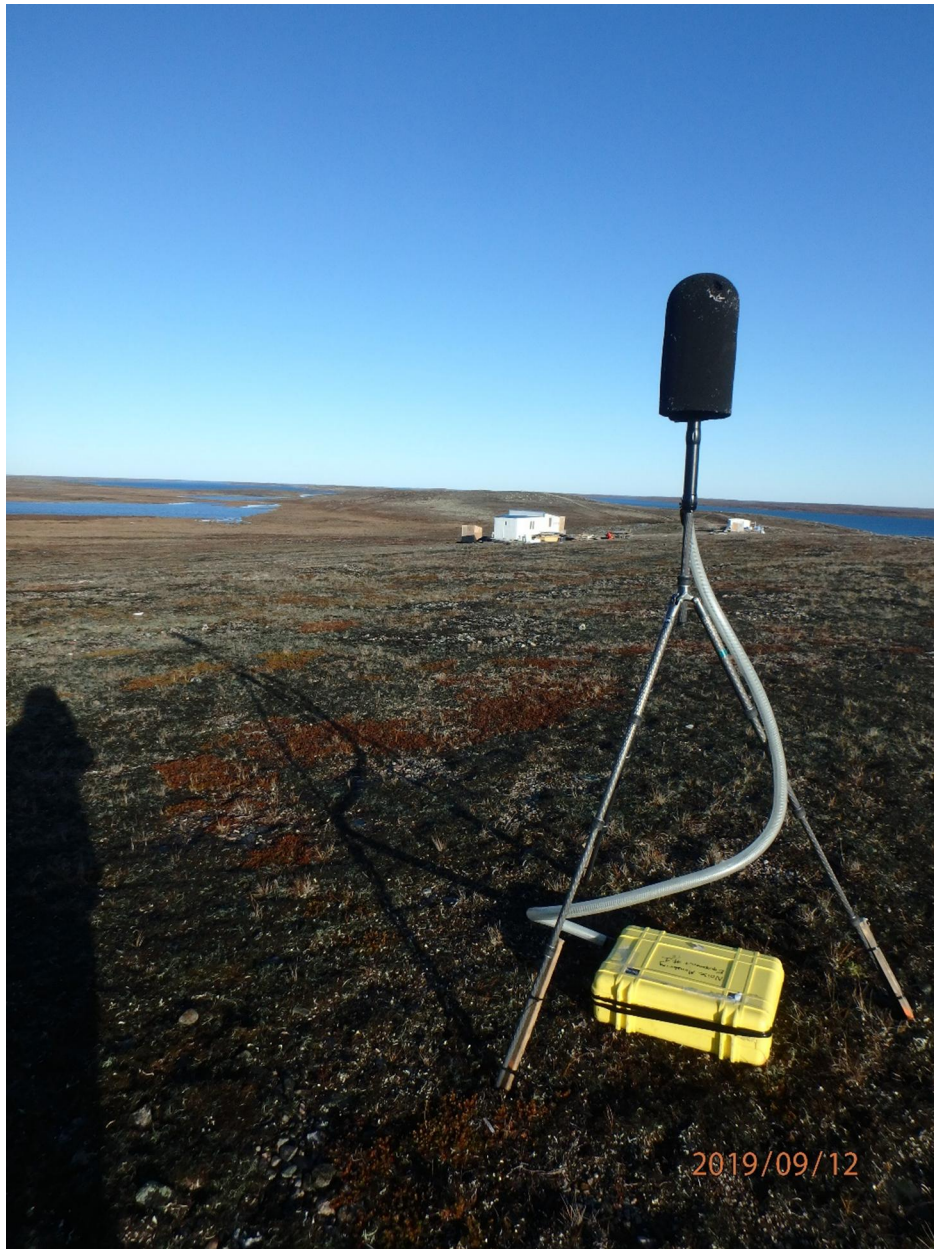


Figure 5. Noise monitoring location NPOR006 (September 12, 2019). Seasonally occupied cabin in the background.

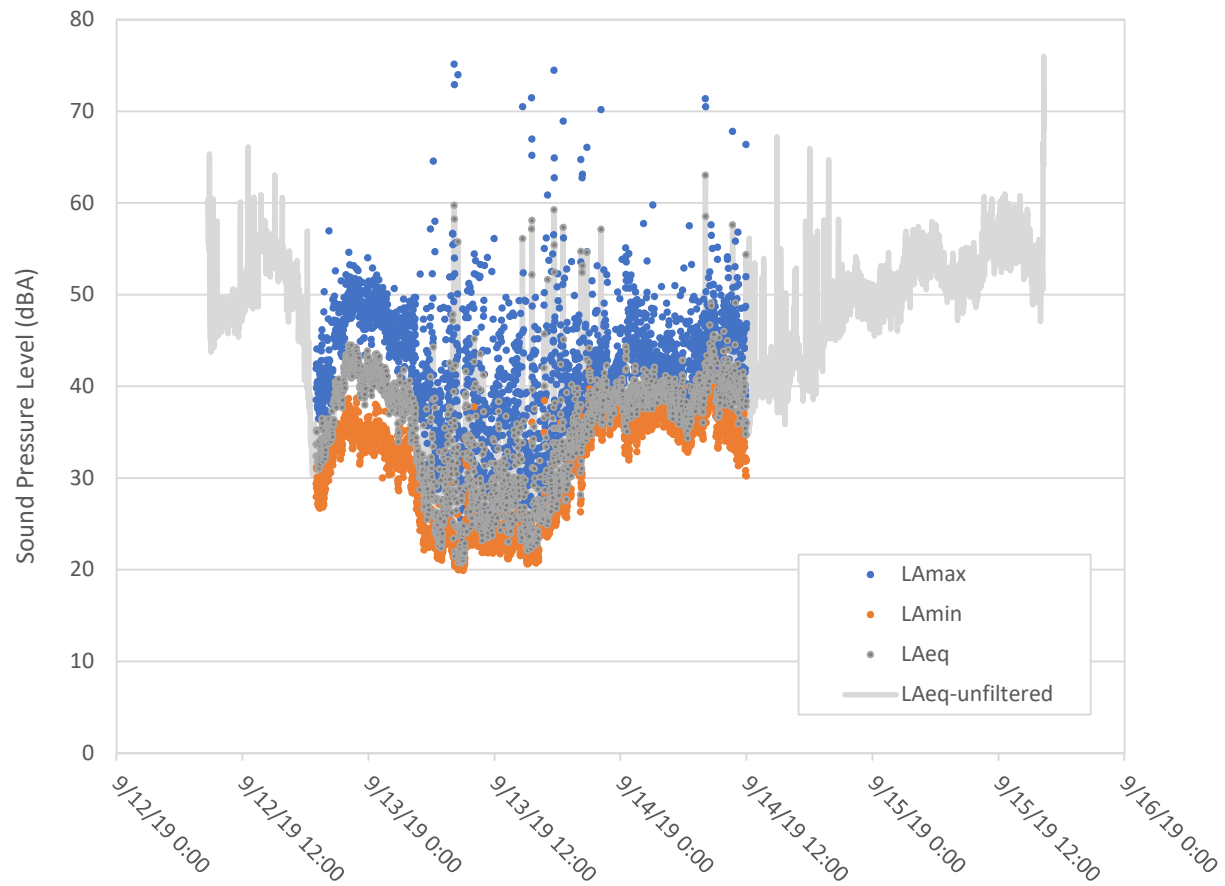


Figure 6. 1-min L_{max} , L_{min} , and L_{eq} values recorded at site NPOR006 during monitoring event 1.

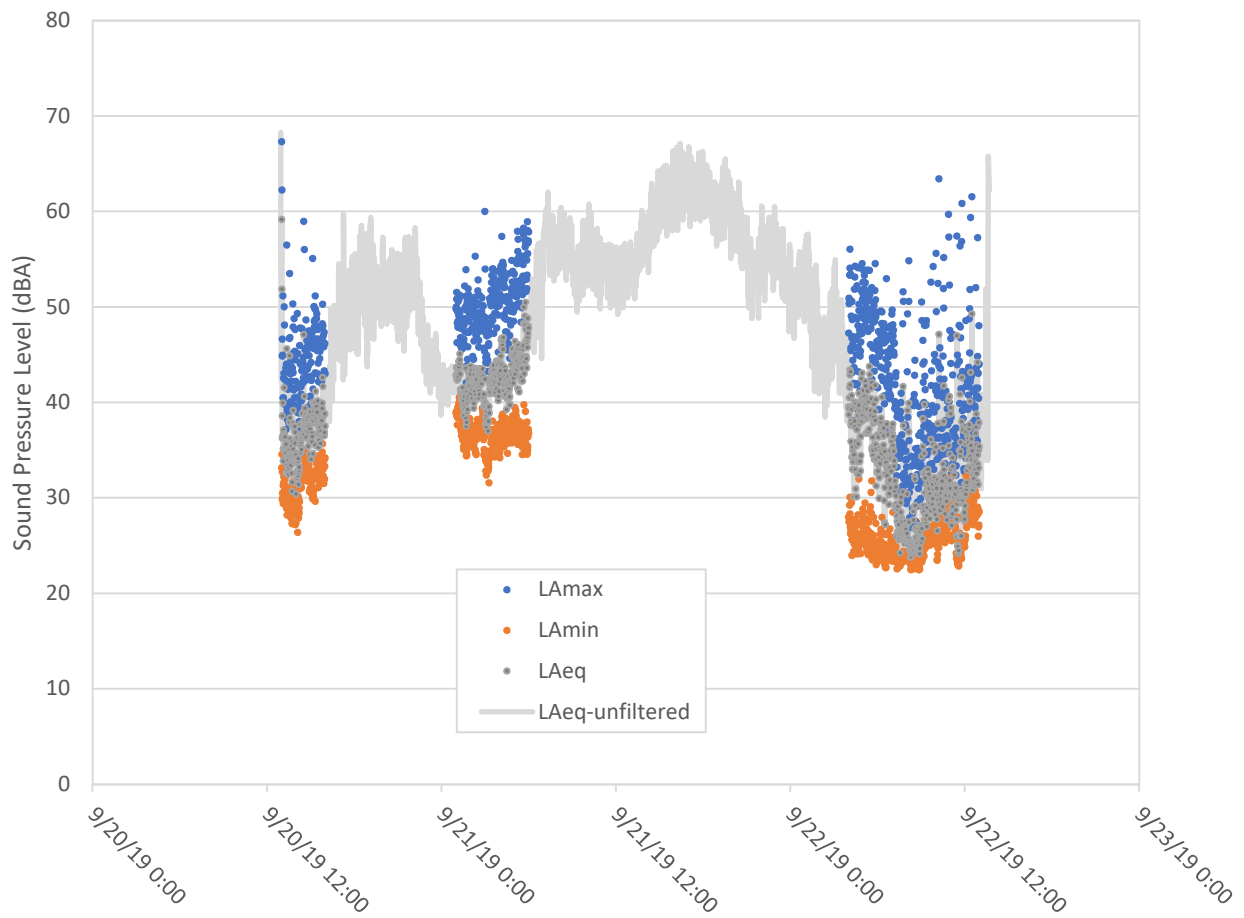


Figure 7. 1-min L_{max} , L_{min} , and L_{eq} values recorded at site NPOR006 during monitoring event 2.

3.3 NPOR008

L_{eq} values calculated from 1-min L_{eq} measurements over monitoring events 1, 2, and 3 at NPOR008 are shown in Figure 9, 10, and 11. Invalid data points removed from the analysis due to technician interference and sub-optimal weather conditions (as described in Section 2.4) are indicated (L_{eq} -unfiltered). For monitoring event 1 at this station (Sept. 8 - 11), 73 h of monitoring were successfully conducted, and 44 h of valid data were available after filtering. For monitoring event 2 (Sept. 22 – 24), 52 h of monitoring were conducted, and 11 h of valid data were available after filtering. For monitoring event 3 (Oct. 3 - 6), 77 h of monitoring were conducted, and 55 h of valid data were available after filtering.

Currently, no mine-related activity is ongoing in this area. Possible noise sources noted in the field log at this location include occasional boats, helicopters, and wildlife (birds). Audible sounds on the recordings included wind and waves. As noted in 2018, this location is adjacent to Meliadine Lake, and the combination of greater wind speeds and the nearby shoreline appears to result in an elevated background sound level which should continue to be considered in data interpretation for this site.

After data filtering, the calculated 24-h L_{eq} values for events 1, 2 and 3 were 39.5 dBA, 34.9 dBA, and 36.9 dBA, respectively. These measured values do not exceed the FEIS prediction of 41.7 dBA, or the noise monitoring criterion for “non-significant impacts” (45 dBA).

Night-time L_{eq} values for each event were 36.3 dBA, 38.5 dBA, and 34.6 dBA, which do not exceed the design target of 40 dBA for 1.5 km from the mine SSA.

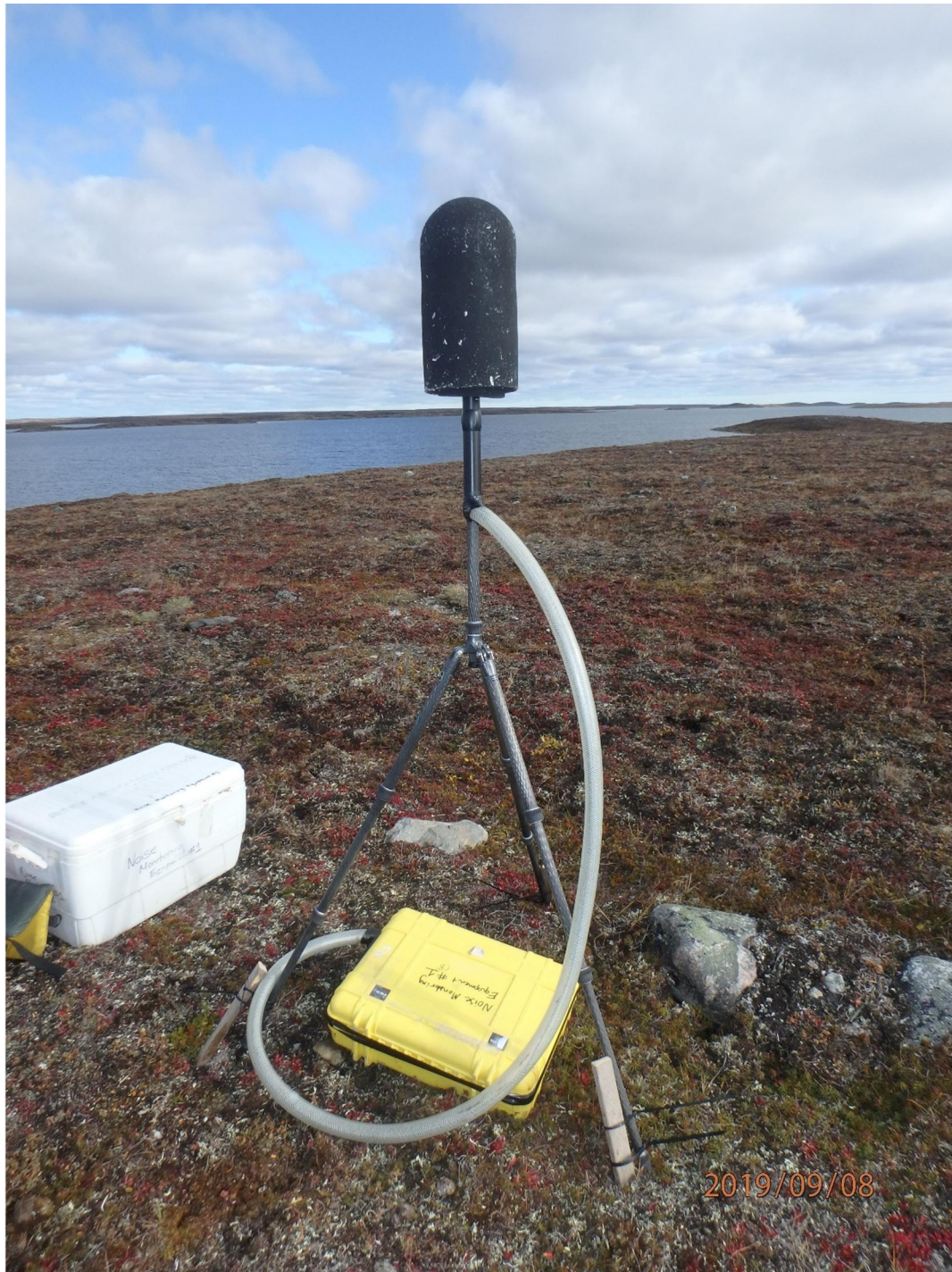


Figure 8. Noise monitoring location NPOR008 (September 8, 2019). Meliadine Lake in the background.

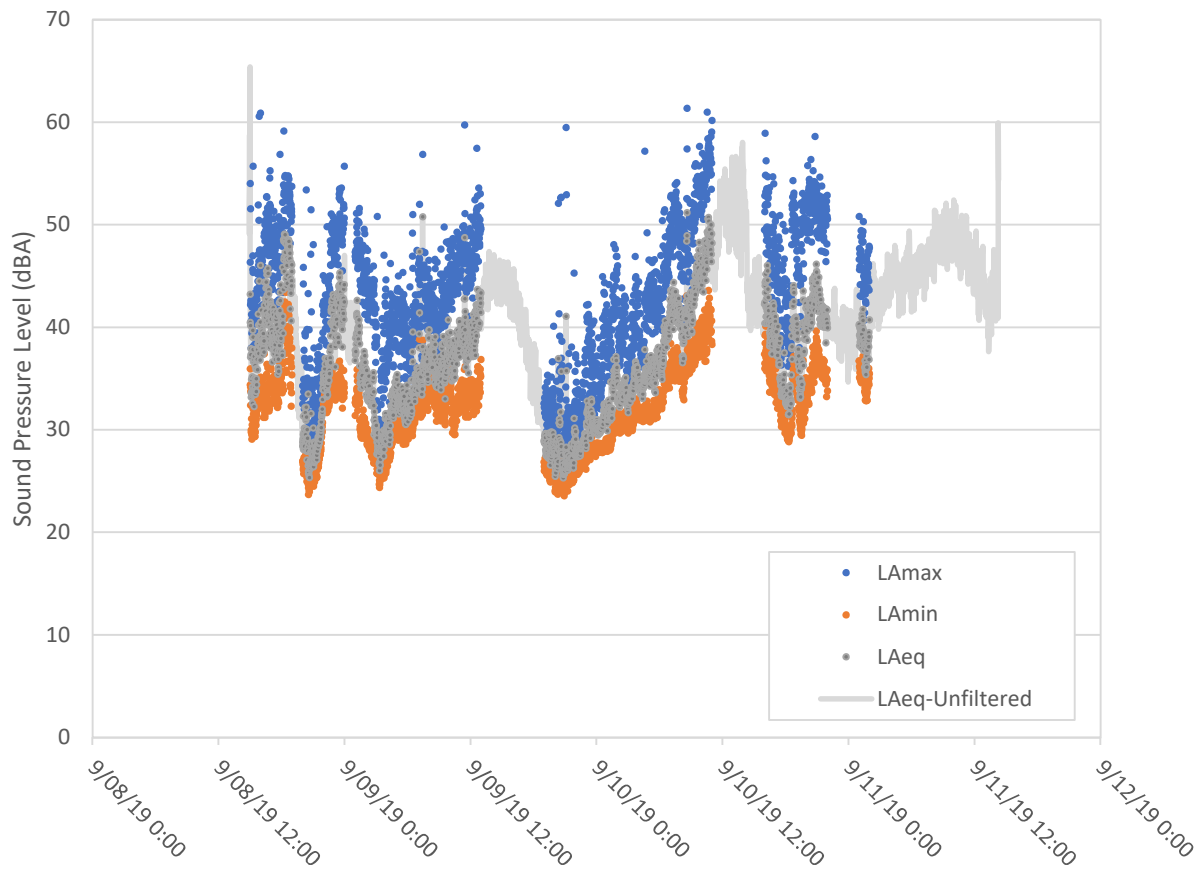


Figure 9. 1-min L_{max} , L_{min} , and L_{eq} values recorded at site NPOR008 during monitoring event 1.

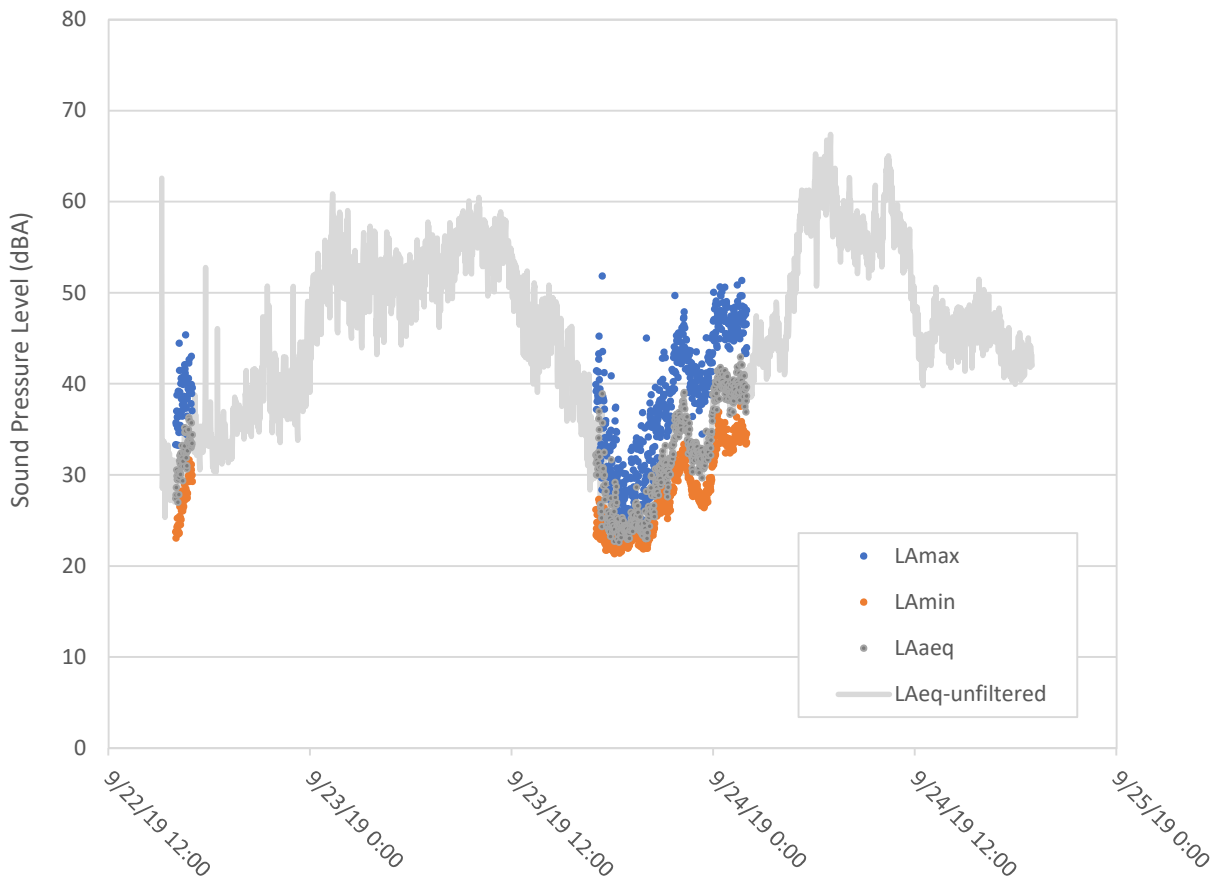


Figure 10. 1-min L_{max} , L_{min} , and L_{eq} values recorded at site NPOR008 during monitoring event 2.

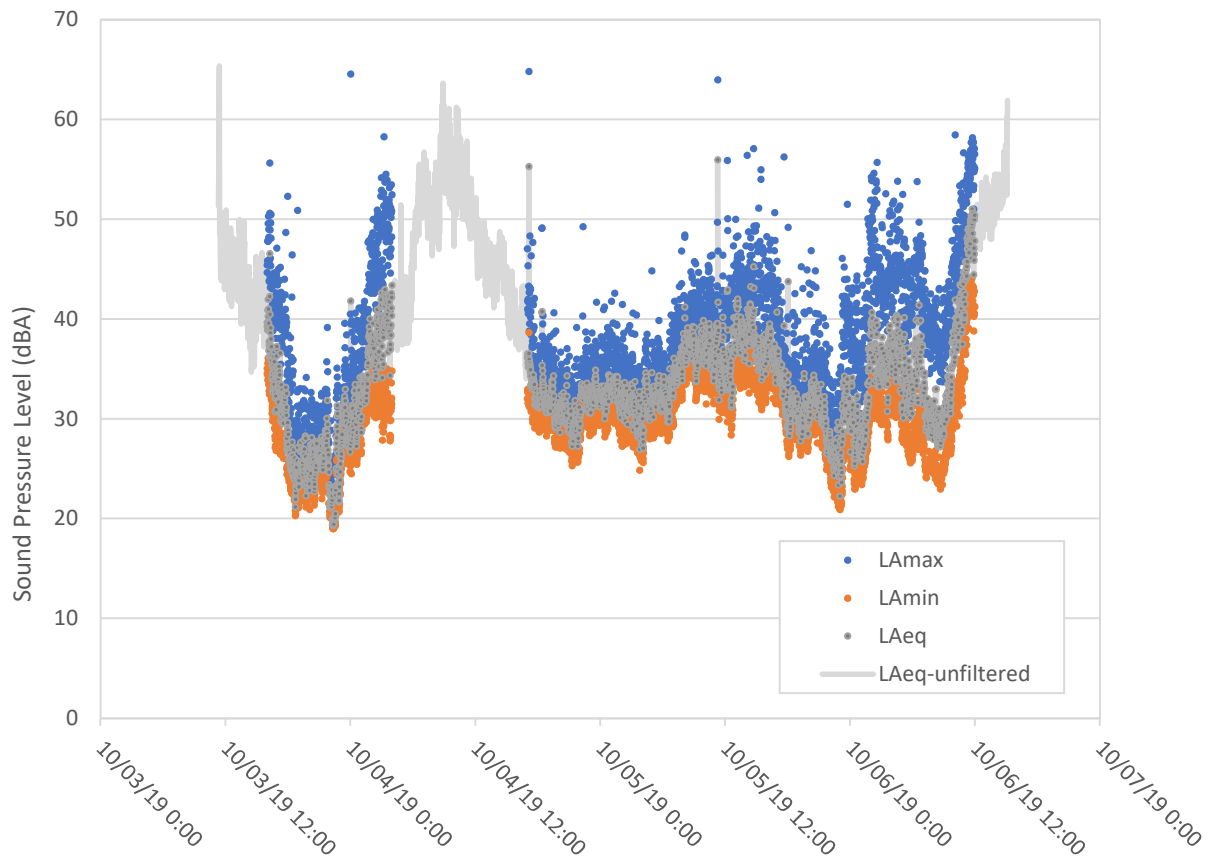


Figure 11. 1-min L_{\max} , L_{\min} , and L_{eq} values recorded at site NPOR008 during monitoring event 3.

3.4 NPOR014

No development activity is currently occurring in the area of NPOR014, so monitoring was not conducted in 2019, in accordance with the Noise Abatement and Monitoring Plan.

3.5 NPOR017

L_{eq} values calculated from 1-min measurements over monitoring events 1, 2, and 3 at NPOR017 are shown in Figures 13, 14, and 15. Invalid data points removed from analyses due to assumed technician interference and sub-optimal weather conditions (as described in Section 2.4) are indicated (L_{Aeq} -unfiltered). For event 1 at station NPOR017 (Sept. 8 - 10), 56 h of monitoring were conducted, and 40 h of valid data were available after filtering. For event 2 at NPOR017 (Sept. 22 - 25), 77 h of monitoring were conducted, and 16 h of valid data were available after filtering. For event 3 at NPOR017 (Oct. 3 - 6), 72 h of monitoring were conducted, and 55 h of valid data were available after filtering.

This station is located 140 m from the all weather road and 200 m from a seasonally occupied cabin. It is also in the vicinity of a community work area (equipment staging, possible gravel excavation ongoing). Noise sources noted in the field log include light vehicles, transport trucks, ATVs, sounds from the nearby hunting cabin/work area, and bird noises. Audible noises noted on sound recordings included traffic, aircraft flyovers, and birds. Human interference (yelling into the microphone) was noted on one occasion and removed.

After data filtering, the calculated 24-h L_{eq} value for events 1, 2, and 3 were 45.0 dBA, 38.6 dBA, and 42.5 dBA, respectively. Only the recorded noise level during event 1 exceeded the FEIS prediction of 43.4 dBA, but none exceeded the noise monitoring criterion for “non-significant impacts” (45 dBA).

The elevated 24-h L_{eq} measured in event 1 (as compared to FEIS predictions) occurred for 18 of the 56 valid hours, and appeared generally due to regular traffic, aircraft flyovers, and nearby community construction activity. Since the exceedance was marginal, only occurred during one monitoring period, and the noise monitoring criterion was not exceeded, the event was not investigated further. If community construction works are persistent in this area moving forward, consideration may be given to moving this station to a location that will allow Awar-related noise to be more easily distinguished from background.

To date, no noise-related complaints have been received in this area.

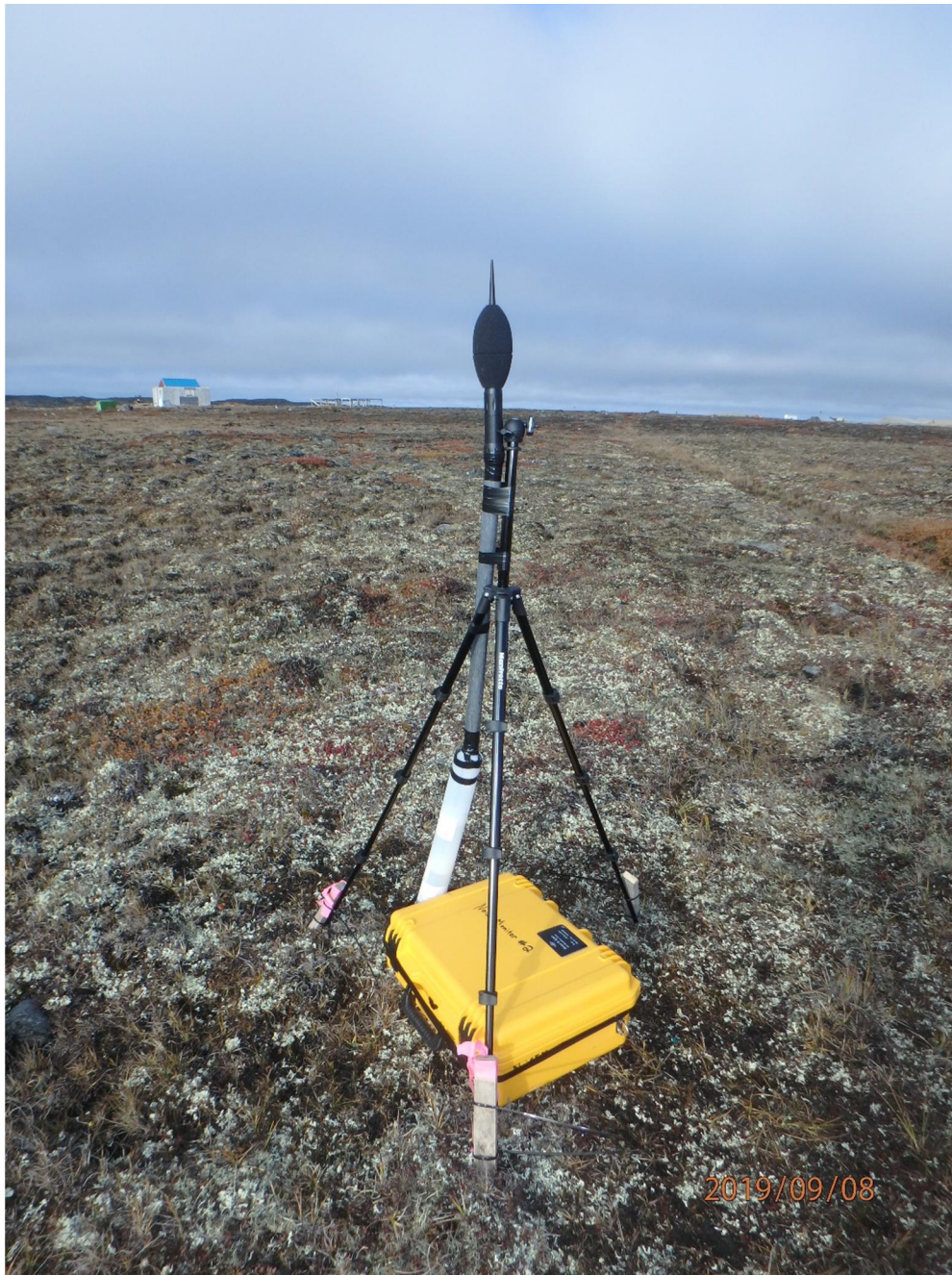


Figure 12. Noise monitoring location NPOR017 (September 8, 2019).

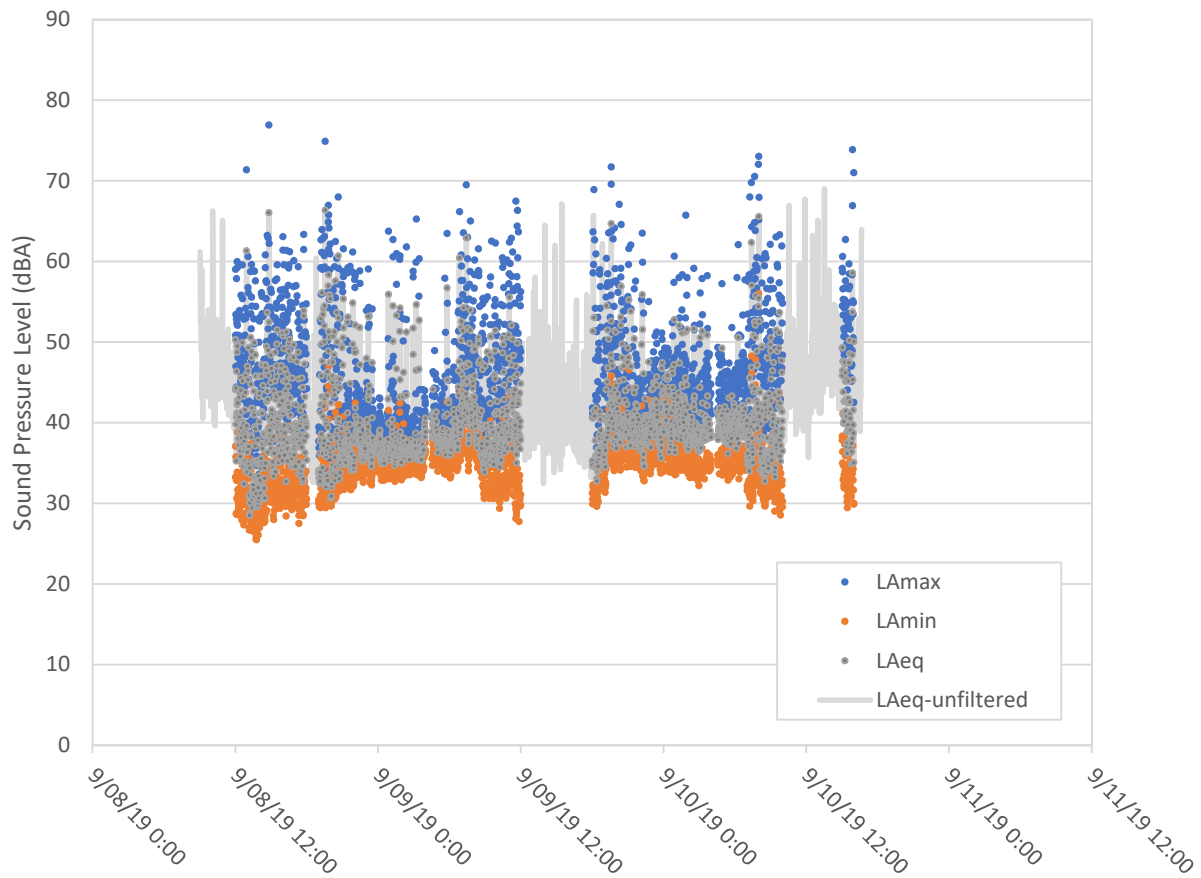


Figure 13. 1-min L_{max} , L_{min} , and L_{eq} values recorded at site NPOR017 during monitoring event 1.

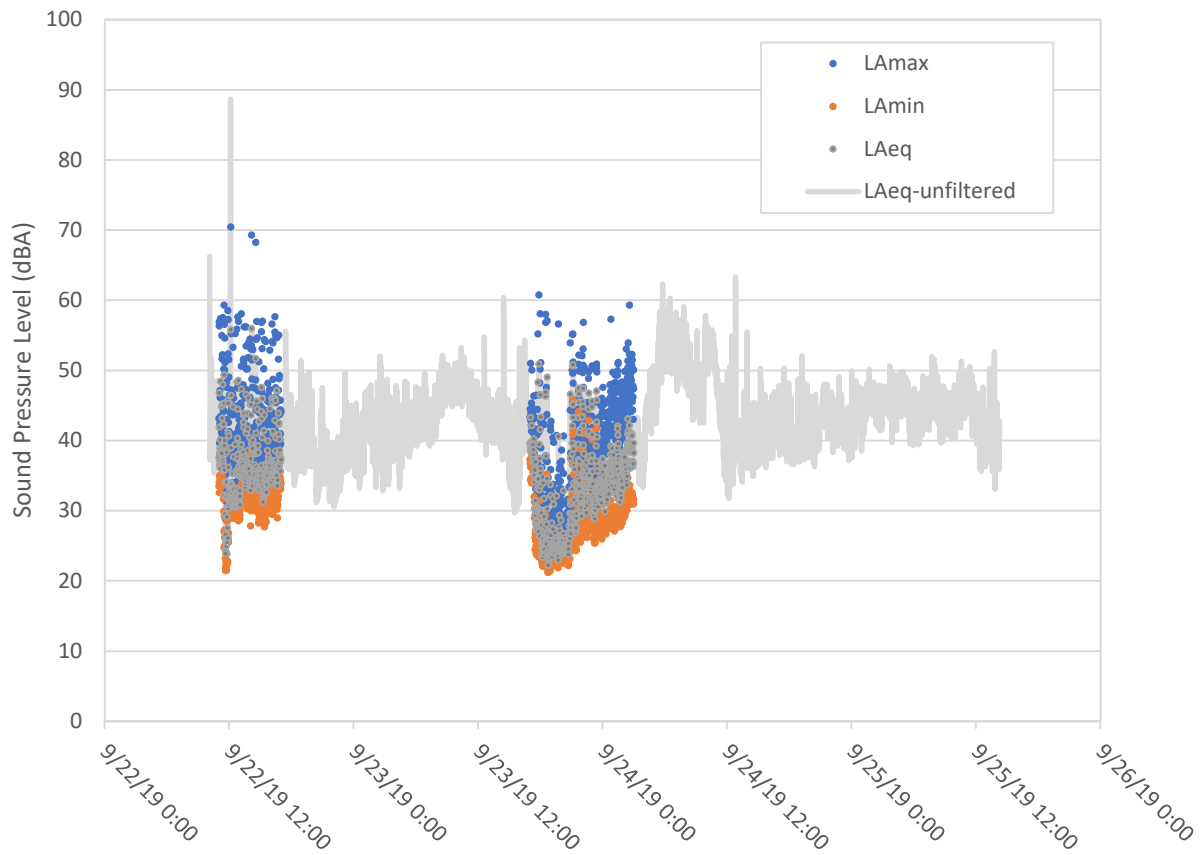


Figure 14. 1-min L_{max}, L_{min}, and L_{eq} values recorded at site NPOR017 during monitoring event 2.

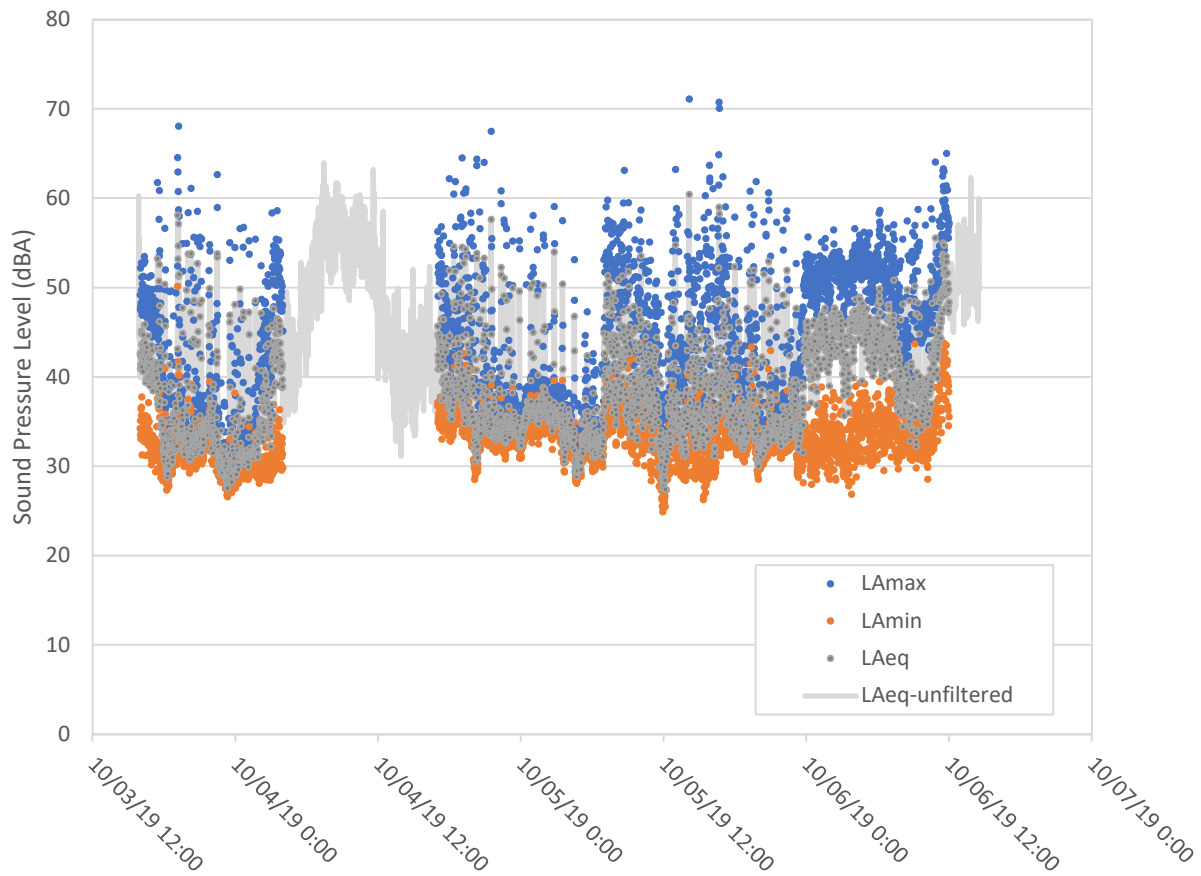


Figure 15. 1-min L_{max} , L_{min} , and L_{eq} values recorded at site NPOR017 during monitoring event 3.

4 HISTORICAL COMPARISON

A historical comparison of all available 24-h L_{eq} values for each monitoring site is provided in Figures 16 - 20.

NPOR005

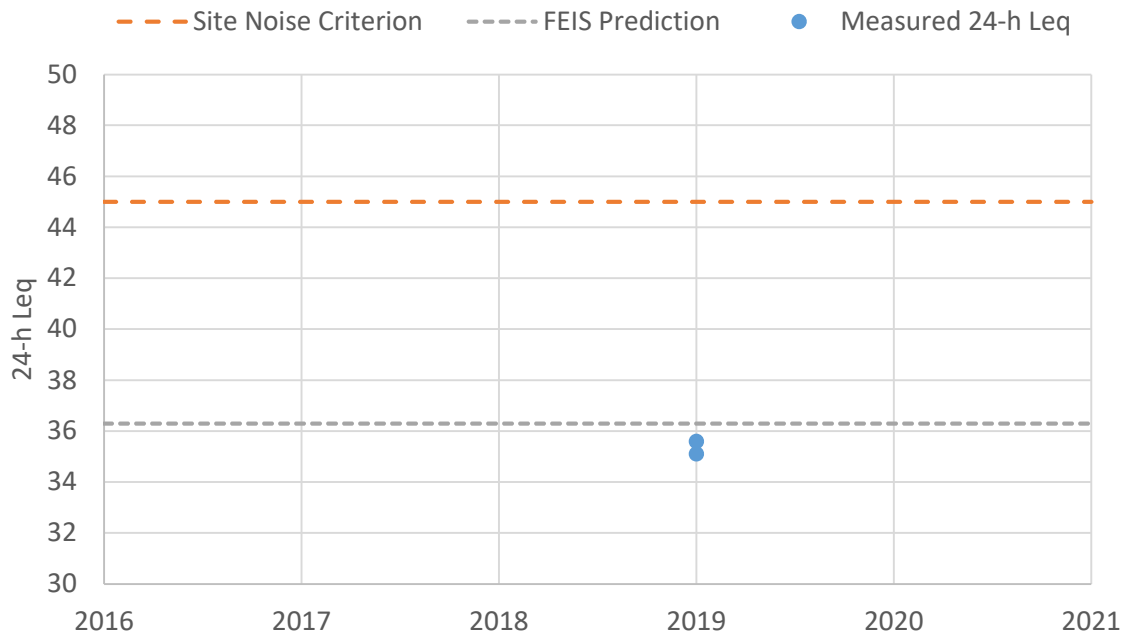


Figure 16. Historical noise monitoring results (24-h L_{eq} values) for site NPOR005. Monitoring at this site began in 2019.

NPOR006

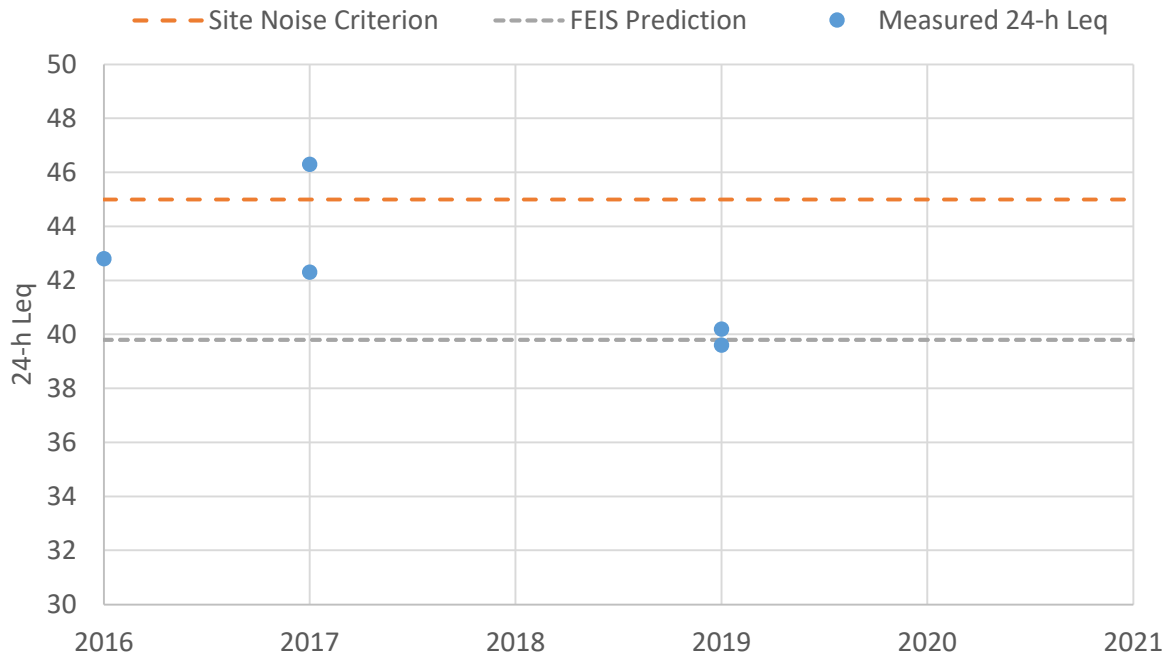


Figure 17. Historical noise monitoring results (24-h Leq values) for site NPOR006. In 2016 and 2017, ongoing works at the adjacent cabin may have contributed to an elevated background acoustic environment. Insufficient valid data was available in 2018 to calculate Leq values.

NPOR008

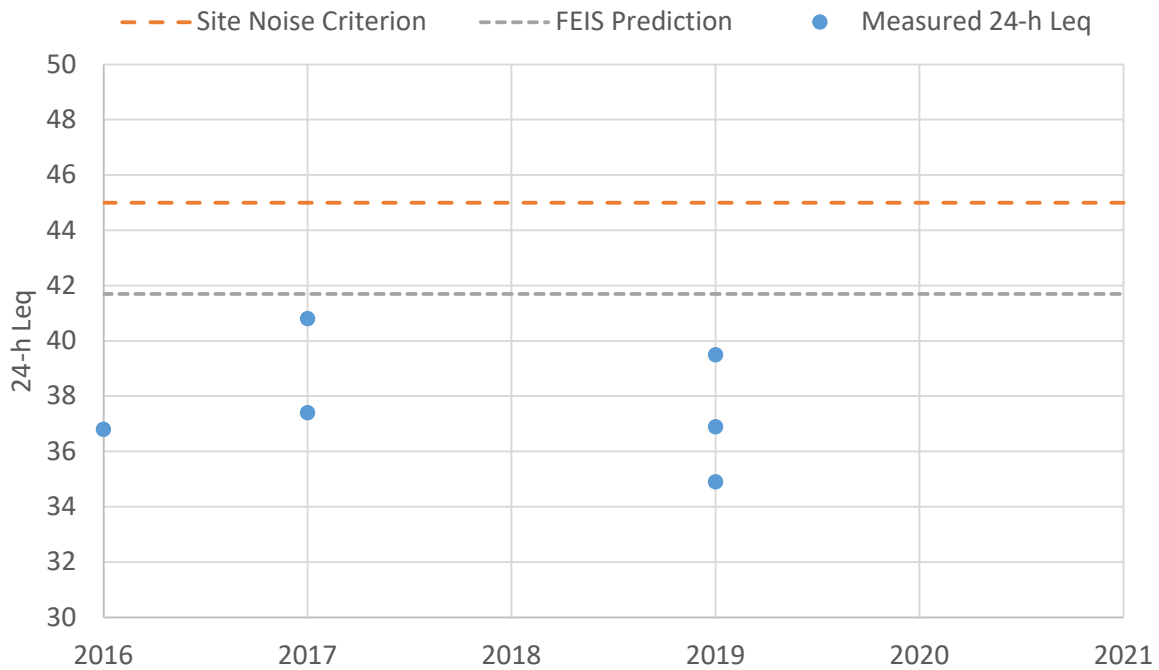


Figure 18. Historical noise monitoring results (24-h Leq values) for site NPOR008. Insufficient valid data was available in 2018 to calculate Leq values.

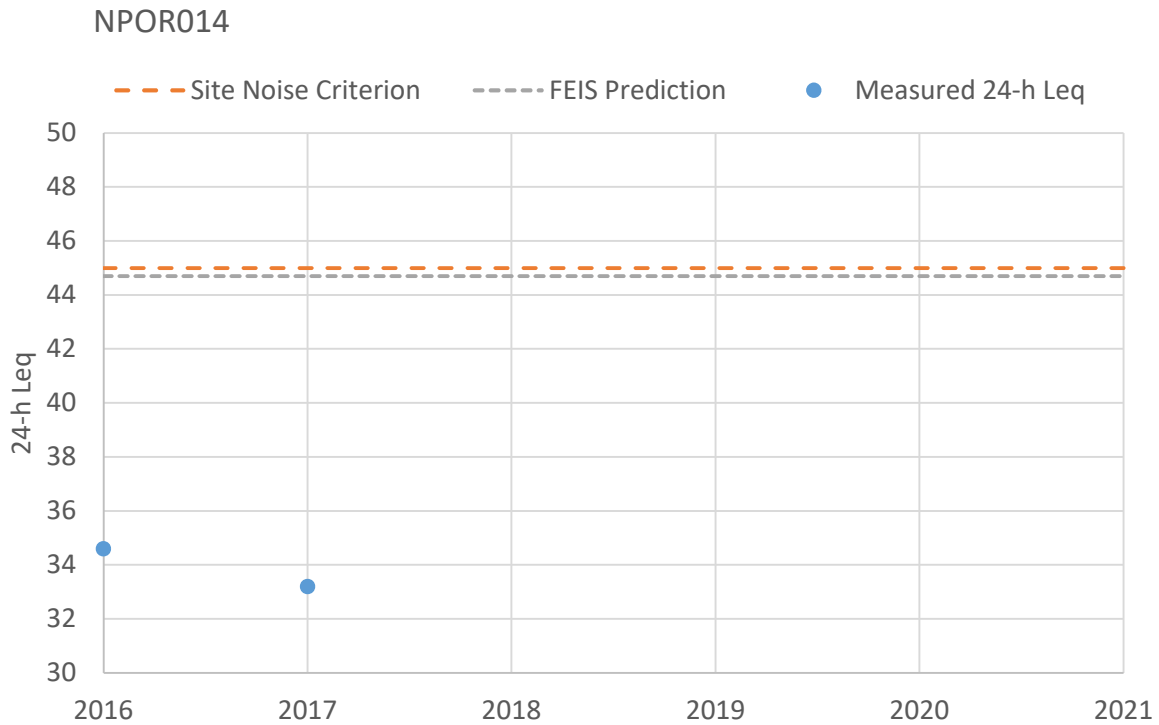


Figure 19. Historical noise monitoring results (24-h Leq values) for site NPOR014. Near-continuous bird calls resulted in a significantly elevated Leq in 2018 (63.5 dBA, not shown). Monitoring was not conducted in 2019. No mining activity has yet occurred in this area.

NPOR017

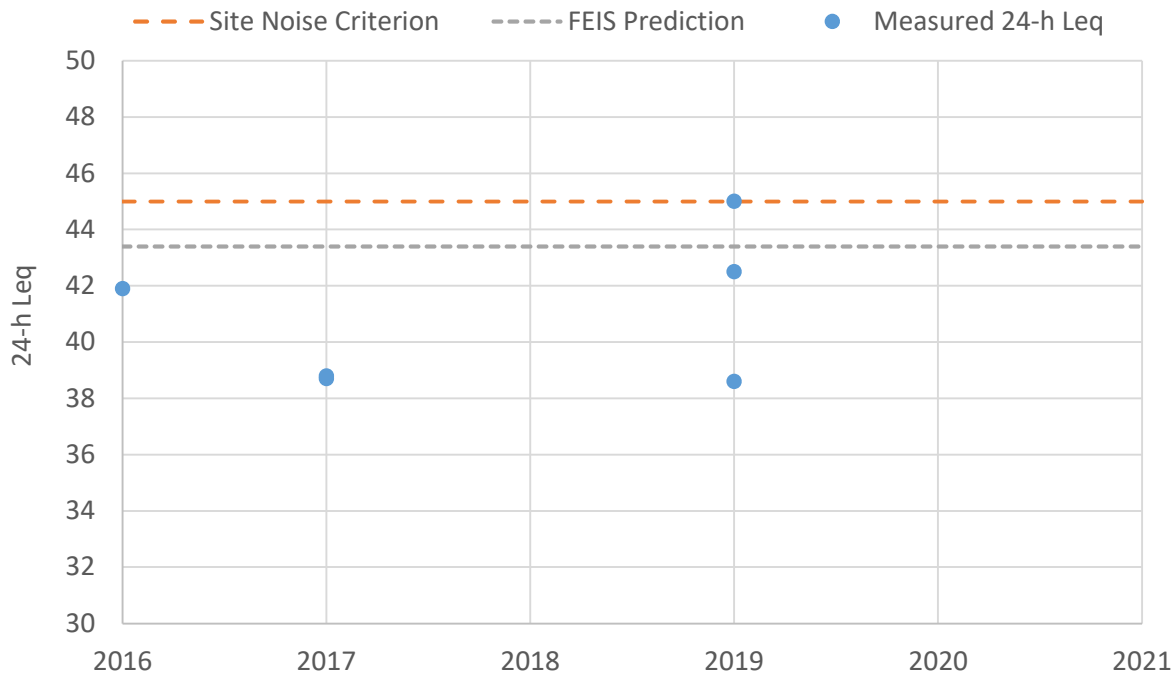


Figure 20. Historical noise monitoring results (24-h Leq values) for site NPOR017. Insufficient valid data was available in 2018 to calculate Leq values.

5 CONCLUSION

The objective of the noise monitoring program at Meliadine is to measure noise levels at four previously determined monitoring locations over at least two 24 h periods. In 2019 Agnico Eagle conducted two or three successful rounds of monitoring for stations NPOR005, NPOR006, NPOR008, and NPOR017. In accordance with the Noise Abatement and Monitoring Plan, monitoring was not conducted at NPOR014, because activities related to the Discovery Pit were not ongoing.

A summary of the noise monitoring results is provided in Table 5.

For all stations, sufficient valid data was available after filtering to calculate 24-h and night-time L_{eq} values.

No exceedances of the site's noise monitoring criterion (45 dBA, 24-h L_{eq}) or night-time design target (40 dBA) occurred.

For NPOR005 and NPOR008, no measured values exceeded the FEIS predictions for those locations.

For NPOR006, one of two 24-h L_{eq} measurements marginally exceeded the FEIS prediction of 39.8 dBA, at 40.2 dBA. Review of sound recordings indicated this was generally due to an elevated baseline

environment (wind noise), mixed with intermittent but frequent backup alarms. For NPOR017, one of three 24-h L_{eq} measurements marginally exceeded the FEIS prediction of 43.4 dBA, at 45.0 dBA. This exceedance was generally caused by traffic noises and aircraft flyovers, occasionally compounded by simultaneous bird calls.

For both of these cases, since the exceedance was marginal (<3 dBA), occurred during a single monitoring event, the noise monitoring criterion was not exceeded, and no noise-related complaints have been received, the events were not investigated further.

Table 6. Summary of noise monitoring results in 2019. Values exceeding FEIS predictions are in bold. “-“ indicates not applicable. “NM” indicates not required to be measured in 2019.

Location	Monitoring Start	Monitoring End	Noise Monitoring Criterion L _{eq} (24 h) (dBA)	FEIS Prediction L _{eq} (24 h) (dBA)	Measured L _{eq} (24 h) (dBA)	Design Target L _{eq} (nighttime) (dBA)	Measured L _{eq} (nighttime) (dBA)
NPOR005	09/05/2019 3:22 PM	09/07/2019 7:38 AM	45	36.3	35.6	40	34.0
	09/12/2019 9:02 AM	09/15/2019 4:31 PM			35.1		33.0
NPOR006	09/12/2019 8:42 AM	09/15/2019 16:19 PM	45	39.8	40.2	-	-
	09/20/2019 12:56 PM	09/22/2019 13:40 PM			39.6		-
NPOR008	09/08/2019 2:55 PM	09/11/2019 2:17 PM	45	41.7	39.5	40	36.3
	09/22/2019 3:09 PM	09/24/2019 6:59 PM			34.9		38.5
	10/03/2019 11:19 AM	10/06/2019 3:07 PM			36.9		34.6
NPOR014	NM	NM	45	44.7	NM	-	-
NPOR017	09/08/2019 9:03 AM	09/10/2019 4:06 PM	45	43.4	45.0	-	-
	09/22/2019 10:07 AM	09/25/2019 2:16 PM			38.6		-
	10/03/2019 3:51 PM	10/06/2019 2:32 PM			42.5		-

6 ACTIONS

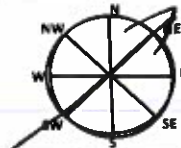
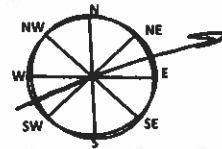
The following actions were planned for 2019 and responses of Agnico are indicated:

- Noise monitoring surveys will be conducted earlier in the ice-free season when wind speeds and animal interference (bird calls) are minimized.
 - Due to delays in receiving repaired equipment in 2019, all surveys were conducted in September and very early October. However, sufficient valid data was obtained to calculate 24-h L_{eq} values for all monitoring periods, and a second noise meter was purchased to reduce the possibility for delays in future years
- Weather data will be reviewed during or immediately following noise monitoring events to estimate the proportion of usable data and the need for supplemental monitoring.
 - Completed
- Reconnaissance and monitoring (if feasible based on occupancy) will be conducted at NPOR005, since high occupancy rates at NPOR006 tend to interfere with assessments of mine-related noise in this location. Monitoring will also be conducted at NPOR006.
 - Completed - monitoring was conducted at NPOR005.
- Monitoring will focus on NPOR005, NPOR006, NPOR008 and NPOR017. Since activities at the Discovery Pit are not ongoing, monitoring is not required at NPOR014. However, data will be collected at this station if time and weather conditions permit.
 - Completed. Monitoring was conducted at all stations except NPOR014.

No specific supplemental actions are planned for 2020. Monitoring will be conducted at stations NPOR005 and/or NPOR006 depending on apparent cabin occupancy. No activities related to the Discovery Pit are planned, so monitoring will be conducted at NPOR014 as feasible.

Appendix A: Field Logs

Used Noise Monitor #1

MONITORING STARTS			
Operator:	BH, SA		
Location:	NPOR05		
Noise Meter Start Time:	Sept 5, 2019		
Date:	Sept 5, 2019		
Calibration complete ?	yes		
Sensitivity	29.93		
Derivation	0.02		
Time of Calibration:	15:10		
Battery Power Check:	Good	Poor	
Photographs of Setup (Y/N)	Y		
Photographs of Surrounding (Y/N)	Y		
Check available disk memory (Y/N)	Y		
Cloud cover:	100%	partly cloudy	sunny
Height of cloud (feet):		10,000-25,000	25,000 +
Air Temperature (C):	9.6°C		
Wind Speed (km/hr):	5.2 km/h		
Wind Direction:	SW		
North wind (wind blows from North)			
Barometric Pressure (kPa):	101.4 kPa		
Relative Humidity (%)	65.3		
Precipitation:	none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
	537978	1991742	
Type of Ground Surface:	low tundra		
Acoustic Environment:	Hunting Cabin 500m away - hill in between survey location and cabin quad trail 30m to the west Medicine Lake 200m to the east - could be boat traffic potential planes overhead		
Traffic			
Human activities			
Animal			
Other noise sources			
MONITORING ENDS			
Operator:	BH/DM		
Record Data File Name:	NPOR005		
Total Monitoring Period	2019-09-05 at 3:10pm → 2019-09-07 @ 7:38am = 39.5 hours		
Noise Meter End Time:	19:38 on analyzer but actually 7:38 am		
Date:			
Calibration complete ?	yes		
Sensitivity	20.09		
Derivation	0.05		
Time of Calibration:	7:41		
Check file size (GB)			
Battery Power Check:	Good	Poor	
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	4.3		
Wind Speed (km/hr):	10.6		
Wind Direction:	W/SW		
North wind (wind blows from North)			
Barometric Pressure (kPa):	101.8		
Relative Humidity (%)	64.2		
Precipitation:	none	drizzle	rain
Departure Time:	7:45		

* Boated by this station at 12:20 am and 3:10 pm on 2019-09-06

* Clock on analyzer was set 12 hours in advance.
 ie. recording was started at 3:10 pm but is logged as 3:10 am and so on.
 * E- ... mean the last segment of data only recorded decibel level and not sound

MONITORING STARTS			
Operator:	BH		
Location:	NPO2005		
Noise Meter Start Time:	4:01		
Date:	2019-09-10		
Calibration complete ?:	Y		
Sensitivity	29.73		
Derviation	0.01		
Time of Calibration:	0:59		
Battery Power Check:	Good		Poor
Photographs of Setup (Y/N)	Y		
Photographs of Surrounding (Y/N)	Y		
Check available disk memory (Y/N)	Y		
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	8.5		
Wind Speed (km/hr):	10.2		
Wind Direction:	224		
North wind (wind blows from North)	SW		
Barometric Pressure (kPa):	109.9		
Relative Humidity (%)	77.7		
Precipitation:	none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
	537978	6991742	
Type of Ground Surface:	fndm		
Acoustic Environment:			
Traffic			
Human activities	500m from Ron Brown Cabin		
Animal			
Other noise sources	quail trail 50m to the west meliadme lake 200m to the East (possible boat traffic)		
MONITORING ENDS			
Operator:	BH/M6		
Record Data File Name:	NPO2005		
Total Monitoring Period	802		
Noise Meter End Time:	4:31		
Date:	2019-09-15		
Calibration complete ?:	Y		
Sensitivity	30.20		
Derviation	0.14		
Time of Calibration:	4:32		
Check file size (GB)			
Battery Power Check:	Good		Poor
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	8.0		
Wind Speed (km/hr):	16.1		
Wind Direction:	182		
North wind (wind blows from North)			
Barometric Pressure (kPa):	100.4		
Relative Humidity (%)	86.3		
Precipitation:	none	drizzle	rain
Depature Time:	4:45		

Used noise monitor #2
Group of 20 seagulls near monitor when we arrived

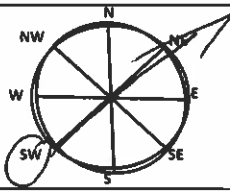
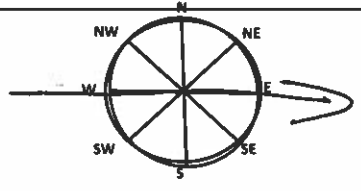
MONITORING STARTS			
Operator:	BH/SK		
Location:	A100R006		
Noise Meter Start Time:	8:42		
Date:	2019-09-12		
Calibration complete ?:	<input checked="" type="checkbox"/>		
Sensitivity	29.75		
Derviation	0.05d		
Time of Calibration:	8:39		
Battery Power Check:	<input checked="" type="checkbox"/> Good		Poor <input type="checkbox"/>
Photographs of Setup (Y/N)	<input checked="" type="checkbox"/>		
Photographs of Surrounding (Y/N)	<input checked="" type="checkbox"/>		
Check available disk memory (Y/N)	<input checked="" type="checkbox"/>		
Cloud cover:	cloudy	partly cloudy	<input checked="" type="radio"/> sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	27.7		
Wind Speed (km/hr):	16.7		
Wind Direction:	SW		
North wind (wind blows from North)	223°		
Barometric Pressure (kPa):	101.9		
Relative Humidity (%)	78.0		
Precipitation:	<input checked="" type="radio"/> none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
	538286	609619	
Type of Ground Surface:	tundra		
Acoustic Environment:			
Traffic	10m from ATV trail		
Human activities	60m from Ron Browns cabin		
Animal			
Other noise sources	group of 30 birds 100m away when we arrived		
MONITORING ENDS			
Operator:	BH/DG		
Record Data File Name:	NPO12006		
Total Monitoring Period	80h		
Noise Meter End Time:	4:21		
Date:	2019-09-12		
Calibration complete ?:	<input checked="" type="checkbox"/>		
Sensitivity	32.49		
Derviation	0.22		
Time of Calibration:	4:23		
Check file size (GB)			
Battery Power Check:	<input checked="" type="checkbox"/> Good		Poor <input type="checkbox"/>
Cloud cover:	cloudy	partly cloudy	<input checked="" type="radio"/> sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	17.8		
Wind Speed (km/hr):	17.8		
Wind Direction:	180		
North wind (wind blows from North)	305		
Barometric Pressure (kPa):	100.4		
Relative Humidity (%)	80.7		
Precipitation:	none	<input checked="" type="radio"/> drizzle	rain
Departure Time:	4:27		

Used noise monitor #1

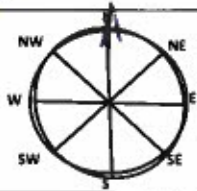
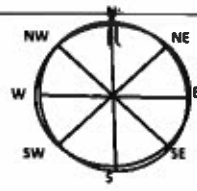
Group of 10 Canada geese near monitor when arrived

MONITORING STARTS			
Operator:	LH/RS		
Location:	NP0606		
Noise Meter Start Time:	12:55pm		
Date:	2019-09-20		
Calibration complete ?			
Sensitivity	29.64		
Derivation	-0.5db		
Time of Calibration:			
Battery Power Check:	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Poor <input type="checkbox"/>		
Photographs of Setup (Y/N)			
Photographs of Surrounding (Y/N)			
Check available disk memory (Y/N)			
Cloud cover:	cloudy	<input checked="" type="checkbox"/> partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	<input checked="" type="checkbox"/> 25,000 +
Air Temperature (C):	8.4°C		
Wind Speed (km/hr):	9.5 km/hr - 11.7 km/hr max		
Wind Direction:			
North wind (wind blows from North)			
Barometric Pressure (kPa):			
Relative Humidity (%)	67.7		
Precipitation:	<input checked="" type="checkbox"/> none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
	538286	6991299	15 U
Type of Ground Surface:	Tundra		
Acoustic Environment:	Hill side		
Traffic	Helicopter		
Human activities	Sea brown, Mine		
Animal	Birds		
Other noise sources			
MONITORING ENDS			
Operator:	LH/RS		
Record Data File Name:			
Total Monitoring Period	13:40:30		
Noise Meter End Time:			
Date:	2019-09-22		
Calibration complete ?	Yes		
Sensitivity	29.64		
Derivation	0.00		
Time of Calibration:	13:40		
Check file size (GB)			
Battery Power Check:	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Poor <input type="checkbox"/>		
Cloud cover:	<input checked="" type="checkbox"/> cloudy	partly cloudy	sunny
Height of cloud (feet):	<input checked="" type="checkbox"/> 0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	7.6°C		
Wind Speed (km/hr):	8.2 km/hr		
Wind Direction:	225 SW		
North wind (wind blows from North)			
Barometric Pressure (kPa):			
Relative Humidity (%)	77.4%		
Precipitation:	<input checked="" type="checkbox"/> none	drizzle	rain
Departure Time:			

Used noise monitor #1

MONITORING STARTS			
Operator:	BSH / D.M.		
Location:	NPOB 008		
Noise Meter Start Time:	2:55 pm		
Date:	2019-09-08		
Calibration complete ?:	Y		
Sensitivity	29.81		
Derviation	-0.01 db		
Time of Calibration:	2:09 pm		
Battery Power Check:	<input checked="" type="radio"/> Good		<input type="radio"/> Poor
Photographs of Setup (Y/N)	Y		
Photographs of Surrounding (Y/N)	Y		
Check available disk memory (Y/N)	Y		
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	40.8.3		
Wind Speed (km/hr):	14.2 km/h		
Wind Direction:			
North wind (wind blows from North)	216°		
Barometric Pressure (kPa):	102.3		
Relative Humidity (%)	63.5		
Precipitation:	none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude E	Longitude N	Altitude
	543707	6987276	
Type of Ground Surface:	tundra tundra		
Acoustic Environment:			
Traffic			
Human activities	100 m from Meliadine lake - possible boat traffic		
Animal	Large group of birds boom away		
Other noise sources			
MONITORING ENDS			
Operator:	BSH / S.K.		
Record Data File Name:	NPOB 008		
Total Monitoring Period			
Noise Meter End Time:	2019-09-11 2:19 pm		
Date:	2019-09-11		
Calibration complete ?:	Y		
Sensitivity	29.92		
Derviation	0.02		
Time of Calibration:			
Check file size (GB)			
Battery Power Check:	<input checked="" type="radio"/> Good		<input type="radio"/> Poor
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	10.2°C		
Wind Speed (km/hr):	20.9		
Wind Direction:	275° W		
North wind (wind blows from North)			
Barometric Pressure (kPa):	102.1		
Relative Humidity (%)	20.4		
Precipitation:	none	drizzle	rain
Depature Time:	2:30		

* Date on noise monitor was set 1 day behind.
i.e. started on 2019-09-08, but logged as 2019-09-07

MONITORING STARTS			
Operator:	RS-LH		
Location:	NPOK08		
Noise Meter Start Time:			
Date:	2019-09-22		
Calibration complete ?:	Yes		
Sensitivity	29.63		
Derviation	0.0		
Time of Calibration:	14:08		
Battery Power Check:	<input checked="" type="radio"/> Good <input type="radio"/> Poor <input type="radio"/>		
Photographs of Setup (VN)	yes		
Photographs of Surrounding (VN)	yes		
Check available disk memory (VN)	yes		
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	5.2°		
Wind Speed (km/hr):	14.7 km/hr		
Wind Direction:			
North wind (wind blows from North)			
Barometric Pressure (kPa):			
Relative Humidity (%):	78.1		
Precipitation:	none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
Type of Ground Surface:	Tundra		
Acoustic Environment:			
Traffic	Helicopters / boat None		
Human activities	Mine - helicopters - boat		
Animal	Geese		
Other noise sources			
MONITORING ENDS			
Operator:	RS		
Record Data File Name:	NPOK-08		
Total Monitoring Period			
Noise Meter End Time:			
Date:	2019-09-29		
Calibration complete ?:	Calibrated at office due to dead battery		
Sensitivity	29.58		
Derviation	-0.01		
Time of Calibration:	15:40		
Check file size (GB)			
Battery Power Check:	<input checked="" type="radio"/> Good <input type="radio"/> Dead <input type="radio"/> Poor <input type="radio"/>		
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	-2		
Wind Speed (km/hr):	6.2 km/hr		
Wind Direction:			
North wind (wind blows from North)	North		
Barometric Pressure (kPa):	101.8		
Relative Humidity (%):	72%		
Precipitation:	none	drizzle	rain
Departure Time:	19:36 am		

last time 2014-09-21 time when battery died
 46:30pm
 50 h run time

The date on the noise monitor was 1 day ahead
 therefore it was started on 2019-09-08 but the
 file is saved with the date 2019-09-09

MONITORING STARTS			
Operator:	BH/DM		
Location:	NP01017		
Noise Meter Start Time:	9:05		
Date:	19-09-08		
Calibration complete ?:	yes		
Sensitivity	124.65		
Derivation	0.05 dB		
Time of Calibration:	9:00 am		
Battery Power Check:	<input checked="" type="radio"/> Good	<input type="radio"/> Poor	
Photographs of Setup (Y/N)	Y		
Photographs of Surrounding (Y/N)	Y		
Check available disk memory (Y/N)	Y		
Cloud cover:	80% cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	3°C		
Wind Speed (km/hr):	19.5		
Wind Direction:	SW		
North wind (wind blows from North)	230°		
Barometric Pressure (kPa):	102.1 kPa		
Relative Humidity (%)	79		
Precipitation:	<input checked="" type="radio"/> none	<input type="radio"/> drizzle	<input type="radio"/> rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude E	Longitude N	Altitude
	594120.3	6970530	
Type of Ground Surface:	tarmac - low		
Acoustic Environment:	100m from Airport		
Traffic	close to airport		
Human activities	100m from cabin, lots of cabins		
Animal	in the area		
Other noise sources	Birds in area ATV, planes, trucks, kinks & will pass by.		
MONITORING ENDS			
Operator:	BH/SK		
Record Data File Name:	NP01017		
Total Monitoring Period	55 hours		
Noise Meter End Time:	4:05 PM		
Date:	2019-09-10		
Calibration complete ?:			
Sensitivity	29.69		
Derivation	0.08		
Time of Calibration:	04:10 PM		
Check file size (GB)			
Battery Power Check:	<input checked="" type="radio"/> Good	<input type="radio"/> Poor	
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	9.4		
Wind Speed (km/hr):	6 km/h		
Wind Direction:	SW		
North wind (wind blows from North)	208°		
Barometric Pressure (kPa):	101.6		
Relative Humidity (%)	77.5		
Precipitation:	none	drizzle	rain
Departure Time:	4:20 PM		

Used monitor #2

6 km/h SW 208° → there was a group of ~100 birds
 with in 20-100m of the noise
 monitor when we got there
 T = 9.4°C
 Humid = 77.5

MONITORING STARTS			
Operator:	Laura H & Ready S		RS/LH
Location:			NPAR17
Noise Meter Start Time:	10:08		
Date:			2018-09-22
Calibration complete ?:	Yes		
Sensitivity	29.80 mV/Pa		
Derviation	-0.20 dB		
Time of Calibration:	10:03		
Battery Power Check:	<input checked="" type="checkbox"/> Good		Poor <input type="checkbox"/>
Photographs of Setup (YN)			
Photographs of Surroundings (YN)			
Check available disk memory (YN)			
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	7.1°C		
Wind Speed (km/hr):	1.9 Km/hr		
Wind Direction:	195° SSW		
North wind (wind blows from North)			
Barometric Pressure (kPa):	98.45		
Relative Humidity (%)	74.4%		
Precipitation:	none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
	544203	6920536	15V
Type of Ground Surface:	Tundra		
Acoustic Environment:			
Traffic	AVALAR- truck, ATVs, Fuel tankers		
Human activities	Hunting, Fishing		
Animal	Birds		
Other noise sources			
MONITORING ENDS			
Operator:	DM RS		
Record Data File Name:			
Total Monitoring Period	14 hours + 16 minutes		
Noise Meter End Time:	18:18		
Date:	2018-09-26		
Calibration complete ?:	Yes		
Sensitivity	29.98		
Derviation	0.05		
Time of Calibration:	10:54		
Check file size (GB)			
Battery Power Check:	<input checked="" type="checkbox"/> Good		Poor <input type="checkbox"/>
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	7		
Wind Speed (km/hr):	18.9		
Wind Direction:	SW		
North wind (wind blows from North)	330°		
Barometric Pressure (kPa):	98.45		
Relative Humidity (%)	81.5%		
Precipitation:	none	drizzle	rain
Depature Time:	2018-09-26		

Total monitoring period
was actually 56 hours

MONITORING STARTS			
Operator:	BH/JPB		
Location:	N Pond 017		
Noise Meter Start Time:	3:45		
Date:	2019-10-03		
Calibration complete ?:	29.07		
Sensitivity	-0.11		
Derviation	2:43		
Time of Calibration:	Good		
Battery Power Check:	Poor		
Photographs of Setup (Y/N)	Y		
Photographs of Surrounding (Y/N)	Y		
Check available disk memory (Y/N)	Y		
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	27°C		
Wind Speed (km/hr):	7.8 km/h		
Wind Direction:	SE		
North wind (wind blows from North)	170°		
Barometric Pressure (kPa):	101.4		
Relative Humidity (%)	63.5		
Precipitation:	none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	544120 3 6920536	Latitude N 54.3207	Longitude E 69.87276
Type of Ground Surface:	tundra		
Acoustic Environment:			
Traffic			
Human activities	cabins 200 m away, road 100 m away		
Animal			
Other noise sources	no wildlife observed close to airport		
MONITORING ENDS			
Operator:	BH/JPB		
Record Data File Name:	N Pond 017		
Total Monitoring Period	71 hours		
Noise Meter End Time:	2:30 pm		
Date:	2019-10-06		
Calibration complete ?:	28.22		
Sensitivity	-0.11		
Derviation	2:33		
Time of Calibration:	yes		
Check file size (GB)			
Battery Power Check:	Good		
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	0.6°C		
Wind Speed (km/hr):	30 km/h		
Wind Direction:	162° SSE		
North wind (wind blows from North)			
Barometric Pressure (kPa):	99.6		
Relative Humidity (%)	81.4%		
Precipitation:	none	drizzle	rain
Departure Time:	2:40 pm		

Appendix B: Weather Data and Hourly L_{eq} values

Appx B - Table 1. Weather data recorded from the Meliadine site permanent weather station for noise monitoring dates. Noise data was excluded from analyses when average wind speeds exceeded 15 km/h, and during the first and last hour of measurement to remove technician interference. L_{eq} values removed from final analyses during data filtering steps are shaded gray.

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/05/19 15:00	8.1	7.16	220	66	56.0			
9/05/19 16:00	8.1	9.29	216	65	29.6			
9/05/19 17:00	8.0	10.05	190	65	50.0			
9/05/19 18:00	7.6	10.85	203	67	29.3			
9/05/19 19:00	7.2	10.31	213	69	26.0			
9/05/19 20:00	6.6	8.09	213	72	26.6			
9/05/19 21:00	6.0	6.18	209	76	28.5			
9/05/19 22:00	5.7	6.53	212	75	27.8			
9/05/19 23:00	5.4	6.13	216	80	33.6			
9/06/19 0:00	4.8	4.03	189	88	31.1			
9/06/19 1:00	4.5	3.65	178	93	29.4			
9/06/19 2:00	4.3	3.09	161	98	23.1			
9/06/19 3:00	4.3	2.71	161	100	22.1			
9/06/19 4:00	4.5	3.03	222	100	23.2			
9/06/19 5:00	5.0	3.63	271	79	29.4			
9/06/19 6:00	4.5	4.94	336	92	30.4			
9/06/19 7:00	3.7	10.57	8	100	30.4			
9/06/19 8:00	3.6	8.38	15	100	26.9			
9/06/19 9:00	4.0	8.10	30	100	28.5			
9/06/19 10:00	4.5	7.90	12	95	34.5			
9/06/19 11:00	4.5	7.27	344	94	26.0			
9/06/19 12:00	4.9	5.79	331	88	29.8			
9/06/19 13:00	6.0	6.76	329	77	34.1			
9/06/19 14:00	5.7	8.93	340	77	25.4			
9/06/19 15:00	6.7	6.61	306	69	26.5			
9/06/19 16:00	6.7	5.97	333	66	32.8			
9/06/19 17:00	6.6	8.23	328	71	32.1			
9/06/19 18:00	6.4	10.41	323	77	36.2			

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/06/19 19:00	6.0	8.60	331	83	23.7			
9/06/19 20:00	5.7	5.89	319	83	24.6			
9/06/19 21:00	5.3	2.09	208	92	20.9			
9/06/19 22:00	5.2	2.66	184	97	21.3			
9/06/19 23:00	5.1	2.50	183	100	22.1			
9/07/19 0:00	4.9	4.39	194	100	21.9			
9/07/19 1:00	4.7	3.41	223	100	23.9			
9/07/19 2:00	4.5	3.99	282	100	30.3			
9/07/19 3:00	4.9	8.72	325	99	28.2			
9/07/19 4:00	4.6	7.29	326	96	37.9			
9/07/19 5:00	4.4	9.60	325	96	40.1			
9/07/19 6:00	4.1	11.12	337	94	41.7			
9/07/19 7:00	3.6	13.28	337	91	63.6			
9/08/19 9:00	1.7	19.48	357	100				51.2
9/08/19 10:00	2.4	19.20	354	100				52.5
9/08/19 11:00	3.7	16.56	8	100				45.6
9/08/19 12:00	5.1	13.79	9	94				46.0
9/08/19 13:00	6.0	14.19	359	88				41.9
9/08/19 14:00	7.0	14.60	356	83			59.8	49.6
9/08/19 15:00	7.5	14.95	352	77			37.8	42.8
9/08/19 16:00	7.9	13.94	356	73			41.6	44.1
9/08/19 17:00	8.0	14.90	352	69			39.7	42.7
9/08/19 18:00	7.9	15.34	355	67			46.3	45.2
9/08/19 19:00	7.4	14.46	352	67			38.8	51.9
9/08/19 20:00	6.6	10.46	350	73			28.9	47.4
9/08/19 21:00	5.8	7.95	333	77			30.0	44.6
9/08/19 22:00	5.0	9.17	325	86			38.4	41.6
9/08/19 23:00	4.8	10.99	337	90			42.1	40.8
9/09/19 0:00	4.8	11.86	346	90			40.4	40.6
9/09/19 1:00	3.8	10.96	353	98			37.9	43.6
9/09/19 2:00	3.3	8.93	354	100			33.4	40.6

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/09/19 3:00	3.2	7.99	343	100			28.9	41.6
9/09/19 4:00	3.2	7.77	343	100			32.3	39.9
9/09/19 5:00	2.6	8.75	329	100			32.7	41.7
9/09/19 6:00	2.3	7.81	334	100			33.9	45.0
9/09/19 7:00	2.6	8.29	328	100			38.4	48.6
9/09/19 8:00	3.0	8.74	335	100			36.9	43.0
9/09/19 9:00	4.0	8.12	343	100			36.8	42.0
9/09/19 10:00	5.1	10.71	333	100			37.6	42.4
9/09/19 11:00	6.1	13.92	319	98			39.6	44.5
9/09/19 12:00	7.1	15.65	322	83			40.8	43.4
9/09/19 13:00	8.2	16.03	321	66			43.8	47.3
9/09/19 14:00	8.9	18.23	321	59			44.5	50.0
9/09/19 15:00	9.4	17.43	320	58			44.3	50.4
9/09/19 16:00	10.0	15.57	324	60			41.8	43.0
9/09/19 17:00	10.4	15.12	323	53			38.2	43.2
9/09/19 18:00	10.6	12.52	322	54			34.0	41.4
9/09/19 19:00	10.1	10.45	320	58			28.4	49.2
9/09/19 20:00	8.2	3.61	293	71			28.5	45.0
9/09/19 21:00	6.9	4.53	303	77			29.2	43.4
9/09/19 22:00	5.5	3.75	292	83			28.4	42.9
9/09/19 23:00	4.9	4.52	292	87			30.9	41.4
9/10/19 0:00	4.6	6.53	255	88			31.0	43.0
9/10/19 1:00	4.3	6.06	252	93			33.9	43.5
9/10/19 2:00	3.7	6.80	243	97			33.6	40.1
9/10/19 3:00	3.3	7.42	239	99			34.5	41.6
9/10/19 4:00	3.1	7.18	235	98			34.9	40.1
9/10/19 5:00	3.0	10.03	242	100			36.2	40.6
9/10/19 6:00	3.0	7.93	251	100			38.6	46.7
9/10/19 7:00	3.2	7.20	264	100			42.0	50.2
9/10/19 8:00	4.0	9.01	253	99			42.0	42.3
9/10/19 9:00	5.1	11.95	235	92			44.6	46.1
9/10/19 10:00	6.1	15.03	233	89			47.6	52.1

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/10/19 11:00	7.9	18.30	237	78			50.0	51.3
9/10/19 12:00	9.9	20.99	230	68			52.9	54.7
9/10/19 13:00	10.3	21.54	235	68			52.8	51.7
9/10/19 14:00	10.8	21.19	255	69			47.1	46.5
9/10/19 15:00	8.5	13.84	251	98			43.3	46.7
9/10/19 16:00	8.5	13.21	240	100			41.6	58.2
9/10/19 17:00	8.8	11.97	228	100			36.8	
9/10/19 18:00	9.9	9.02	241	100			38.2	
9/10/19 19:00	9.9	10.85	301	99			38.6	
9/10/19 20:00	9.3	13.21	319	97			42.8	
9/10/19 21:00	8.7	16.86	320	97			41.7	
9/10/19 22:00	8.1	16.76	321	100			40.6	
9/10/19 23:00	7.9	15.47	318	100			39.1	
9/11/19 0:00	7.6	13.20	318	100			39.7	
9/11/19 1:00	7.3	12.33	331	100			38.8	
9/11/19 2:00	7.3	12.20	324	100			42.8	
9/11/19 3:00	7.2	13.37	328	100			43.9	
9/11/19 4:00	7.1	17.19	317	100			45.3	
9/11/19 5:00	6.9	16.58	324	100			45.4	
9/11/19 6:00	6.7	15.34	327	100			45.7	
9/11/19 7:00	6.5	15.67	330	100			46.3	
9/11/19 8:00	6.5	16.33	331	100			49.4	
9/11/19 9:00	6.6	18.69	338	100			49.4	
9/11/19 10:00	6.8	19.76	336	100			48.6	
9/11/19 11:00	7.2	18.38	336	100			47.6	
9/11/19 12:00	7.5	17.75	337	100			44.9	
9/11/19 13:00	8.2	18.63	325	100			42.9	
9/11/19 14:00	9.3	19.47	322	96			49.4	
9/12/19 8:00	4.9	7.23	208	100		57.1		
9/12/19 9:00	6.9	9.10	229	100	50.9	49.1		
9/12/19 10:00	8.7	12.74	235	96	39.9	48.3		

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/12/19 11:00	10.6	16.14	235	83	47.7	49.4		
9/12/19 12:00	12.9	16.94	236	72	45.0	52.6		
9/12/19 13:00	14.8	18.78	238	61	51.6	54.9		
9/12/19 14:00	16.0	21.76	241	53	52.8	55.2		
9/12/19 15:00	15.9	22.87	259	50	54.1	54.9		
9/12/19 16:00	16.0	21.35	264	49	45.8	51.2		
9/12/19 17:00	15.8	19.48	270	49	43.2	49.1		
9/12/19 18:00	15.3	17.15	261	51	30.6	41.6		
9/12/19 19:00	14.0	9.86	260	58	25.7	33.5		
9/12/19 20:00	11.5	6.48	237	68	29.6	36.7		
9/12/19 21:00	9.6	6.87	225	76	29.6	40.5		
9/12/19 22:00	9.6	8.99	234	80	31.1	42.8		
9/12/19 23:00	9.6	8.74	251	80	30.5	41.3		
9/13/19 0:00	9.4	9.18	242	82	30.8	41.8		
9/13/19 1:00	9.4	9.03	246	81	30.0	40.6		
9/13/19 2:00	9.1	8.89	250	82	28.4	38.7		
9/13/19 3:00	8.4	6.93	248	90	27.7	38.7		
9/13/19 4:00	8.1	7.50	247	96	25.2	35.0		
9/13/19 5:00	7.6	5.32	252	100	33.2	31.3		
9/13/19 6:00	6.5	6.04	243	100	31.5	31.4		
9/13/19 7:00	5.5	4.32	202	100	26.2	32.0		
9/13/19 8:00	5.7	3.85	181	100	25.2	30.5		
9/13/19 9:00	7.4	3.49	208	100	25.2	33.0		
9/13/19 10:00	9.1	7.08	226	100	32.7	34.3		
9/13/19 11:00	10.7	6.98	240	91	23.9	27.5		
9/13/19 12:00	12.0	7.39	237	83	26.3	30.8		
9/13/19 13:00	13.6	9.16	239	75	25.6	28.9		
9/13/19 14:00	15.3	7.67	251	64	24.4	38.9		
9/13/19 15:00	16.1	6.43	276	54	22.1	43.6		
9/13/19 16:00	16.2	7.46	343	54	24.8	32.3		
9/13/19 17:00	15.9	6.89	354	54	22.2	44.2		
9/13/19 18:00	16.1	4.44	14	53	25.3	40.7		

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/13/19 19:00	14.6	2.62	117	59	32.2	35.4		
9/13/19 20:00	11.5	2.65	166	73	28.4	43.0		
9/13/19 21:00	9.1	1.08	168	96	32.3	38.6		
9/13/19 22:00	8.3	0.00	0	100	33.4	42.1		
9/13/19 23:00	7.7	1.81	71	100	33.3	38.6		
9/14/19 0:00	7.7	2.21	70	100	33.4	39.2		
9/14/19 1:00	7.1	4.77	125	100	35.1	39.5		
9/14/19 2:00	6.1	6.32	138	100	35.5	39.4		
9/14/19 3:00	6.1	6.82	136	100	34.4	39.6		
9/14/19 4:00	5.5	4.77	147	100	36.6	39.2		
9/14/19 5:00	6.1	4.49	132	100	34.5	38.8		
9/14/19 6:00	6.1	5.47	127	100	33.6	37.0		
9/14/19 7:00	5.3	5.46	141	100	34.0	39.0		
9/14/19 8:00	5.8	5.79	143	100	47.8	48.1		
9/14/19 9:00	6.8	7.64	137	100	40.2	40.6		
9/14/19 10:00	7.6	11.12	136	100	41.1	43.6		
9/14/19 11:00	8.4	13.36	137	100	39.4	41.1		
9/14/19 12:00	9.7	13.14	149	100	40.3	43.1		
9/14/19 13:00	11.0	15.86	165	100	43.4	43.0		
9/14/19 14:00	11.3	17.31	158	94	47.9	50.4		
9/14/19 15:00	12.0	17.95	165	89	43.6	42.9		
9/14/19 16:00	12.1	17.76	162	89	45.4	44.7		
9/14/19 17:00	11.7	19.49	166	88	43.3	45.1		
9/14/19 18:00	10.7	17.44	158	91	45.0	51.0		
9/14/19 19:00	9.1	17.85	148	95	57.6	50.6		
9/14/19 20:00	7.3	18.15	138	100	49.7	49.3		
9/14/19 21:00	6.5	19.62	136	100	52.2	50.2		
9/14/19 22:00	6.6	19.49	137	100	52.5	51.2		
9/14/19 23:00	6.8	19.14	135	100	51.1	49.4		
9/15/19 0:00	7.0	19.07	136	100	52.4	49.7		
9/15/19 1:00	7.1	22.67	145	100	52.8	51.0		
9/15/19 2:00	7.0	23.43	146	100	53.3	50.9		

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/15/19 3:00	7.2	24.28	150	100	55.2	53.7		
9/15/19 4:00	7.1	25.44	151	100	56.7	54.6		
9/15/19 5:00	7.0	25.57	146	100	58.4	54.7		
9/15/19 6:00	7.2	27.07	147	100	57.4	53.6		
9/15/19 7:00	7.1	25.30	149	100	55.7	51.8		
9/15/19 8:00	7.3	23.32	153	100	56.2	51.7		
9/15/19 9:00	7.4	26.73	154	100	56.4	52.4		
9/15/19 10:00	7.5	25.99	151	100	60.1	55.2		
9/15/19 11:00	8.0	29.87	157	100	61.6	56.2		
9/15/19 12:00	8.0	31.81	155	100	63.6	58.1		
9/15/19 13:00	8.4	34.78	160	100	60.4	57.0		
9/15/19 14:00	7.9	31.64	165	100	58.3	56.5		
9/15/19 15:00	7.7	26.85	151	100	56.6	53.3		
9/15/19 16:00	8.1	25.73	153	100	58.6	64.7		
9/20/19 12:00	4.7	7.07	228	99		62.6		
9/20/19 13:00	5.2	8.27	202	97		43.3		
9/20/19 14:00	6.2	12.38	161	94		37.5		
9/20/19 15:00	7.6	13.29	142	87		38.4		
9/20/19 16:00	7.2	17.21	153	89		46.1		
9/20/19 17:00	6.8	19.57	135	92		51.0		
9/20/19 18:00	6.7	21.96	134	94		53.2		
9/20/19 19:00	6.2	22.72	132	98		53.8		
9/20/19 20:00	5.4	23.16	129	100		52.3		
9/20/19 21:00	5.1	22.27	132	100		53.1		
9/20/19 22:00	5.7	23.25	131	100		51.9		
9/20/19 23:00	5.8	22.10	143	100		44.2		
9/21/19 0:00	6.0	15.89	139	100		42.1		
9/21/19 1:00	6.0	13.31	139	100		42.0		
9/21/19 2:00	6.0	13.69	125	100		42.1		
9/21/19 3:00	6.1	13.29	99	100		41.7		
9/21/19 4:00	6.2	14.65	104	100		43.5		

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/21/19 5:00	6.5	14.34	107	100		45.7		
9/21/19 6:00	6.6	15.61	101	100		52.2		
9/21/19 7:00	6.5	18.97	104	100		57.7		
9/21/19 8:00	6.2	23.98	91	100		56.8		
9/21/19 9:00	6.5	23.57	91	100		54.8		
9/21/19 10:00	6.6	22.71	91	100		56.3		
9/21/19 11:00	6.4	22.73	91	100		54.1		
9/21/19 12:00	6.6	19.56	88	100		53.6		
9/21/19 13:00	6.8	15.63	78	100		55.5		
9/21/19 14:00	6.8	21.24	70	100		59.5		
9/21/19 15:00	6.5	25.28	69	100		62.2		
9/21/19 16:00	6.4	25.94	68	100		63.4		
9/21/19 17:00	6.1	27.92	67	100		63.3		
9/21/19 18:00	5.8	26.85	66	100		61.3		
9/21/19 19:00	5.6	23.74	64	100		61.2		
9/21/19 20:00	5.5	23.13	64	100		58.6		
9/21/19 21:00	5.4	22.20	65	100		54.6		
9/21/19 22:00	5.4	20.05	60	100		56.6		
9/21/19 23:00	5.2	19.67	60	100		54.9		
9/22/19 0:00	5.0	18.90	56	100		52.5		
9/22/19 1:00	4.8	17.35	58	100		52.5		
9/22/19 2:00	4.6	16.29	55	100		46.6		
9/22/19 3:00	4.4	14.51	52	100		47.7		
9/22/19 4:00	4.1	13.69	48	100		38.6		
9/22/19 5:00	3.9	11.54	53	100		39.1		
9/22/19 6:00	3.6	12.74	42	100		35.0		
9/22/19 7:00	3.3	10.49	47	100		31.6		
9/22/19 8:00	3.4	7.23	57	100		29.1		
9/22/19 9:00	3.5	3.77	39	100		31.9		
9/22/19 10:00	3.9	1.78	144	100		34.9		50.2
9/22/19 11:00	4.2	3.39	168	100		34.6		40.7
9/22/19 12:00	4.4	3.43	174	100		36.9		41.1

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/22/19 13:00	4.8	6.02	189	100		51.8		39.2
9/22/19 14:00	5.2	9.10	190	100				41.9
9/22/19 15:00	5.3	12.70	187	100			46.1	38.2
9/22/19 16:00	5.2	13.92	181	100			32.5	39.5
9/22/19 17:00	5.0	15.38	175	100			37.8	43.1
9/22/19 18:00	5.0	15.31	172	100			34.7	40.0
9/22/19 19:00	5.4	15.06	179	100			35.3	39.9
9/22/19 20:00	5.5	16.35	183	100			38.3	38.1
9/22/19 21:00	5.8	17.65	188	100			43.4	37.4
9/22/19 22:00	6.1	17.22	208	100			40.0	36.7
9/22/19 23:00	6.0	18.82	197	100			41.9	41.6
9/23/19 0:00	5.9	18.98	203	100			50.3	39.8
9/23/19 1:00	5.5	22.96	204	100			55.1	44.0
9/23/19 2:00	5.3	25.16	209	100			52.1	45.1
9/23/19 3:00	5.5	23.62	209	100			52.6	42.5
9/23/19 4:00	5.6	24.63	205	100			51.1	42.7
9/23/19 5:00	5.7	24.14	200	100			51.4	43.4
9/23/19 6:00	5.7	23.78	198	100			52.3	44.9
9/23/19 7:00	5.9	25.06	197	100			53.4	43.1
9/23/19 8:00	6.0	26.47	192	100			54.8	48.0
9/23/19 9:00	6.3	26.99	189	100			56.7	48.1
9/23/19 10:00	6.4	26.91	188	100			56.0	49.0
9/23/19 11:00	6.5	25.65	190	100			55.6	46.9
9/23/19 12:00	6.6	26.25	191	100			50.0	44.7
9/23/19 13:00	6.9	24.24	198	100			46.2	42.8
9/23/19 14:00	7.1	21.43	193	100			46.5	45.9
9/23/19 15:00	7.3	22.15	193	100			42.0	39.1
9/23/19 16:00	7.3	18.21	193	100			36.5	42.3
9/23/19 17:00	7.2	14.60	194	100			30.4	39.4
9/23/19 18:00	7.1	10.89	191	100			24.7	36.0
9/23/19 19:00	6.8	7.81	179	100			24.9	27.9
9/23/19 20:00	6.6	6.59	149	100			28.6	31.0

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/23/19 21:00	6.4	7.68	137	100			33.2	40.2
9/23/19 22:00	6.2	10.34	130	100			35.1	39.1
9/23/19 23:00	6.1	10.82	131	100			33.3	36.3
9/24/19 0:00	6.2	9.10	114	100			39.9	35.0
9/24/19 1:00	6.0	14.04	103	100			39.6	36.3
9/24/19 2:00	6.0	14.00	115	100			43.1	38.6
9/24/19 3:00	6.0	15.35	108	100			45.1	39.2
9/24/19 4:00	6.0	15.55	109	100			49.1	45.4
9/24/19 5:00	6.1	16.65	103	100			58.9	54.5
9/24/19 6:00	6.4	23.59	107	100			63.2	55.5
9/24/19 7:00	6.3	28.13	104	100			59.0	53.9
9/24/19 8:00	6.4	25.26	126	100			57.4	50.8
9/24/19 9:00	6.8	22.34	112	100			56.3	50.4
9/24/19 10:00	7.2	19.56	110	100			60.9	53.1
9/24/19 11:00	7.5	27.96	123	100			54.8	44.0
9/24/19 12:00	7.5	25.18	138	100			44.6	48.1
9/24/19 13:00	8.6	20.04	149	100			46.8	41.7
9/24/19 14:00	8.6	22.24	158	100			45.4	39.6
9/24/19 15:00	8.7	22.36	163	100			47.1	41.5
9/24/19 16:00	8.4	24.03	165	100			46.6	41.9
9/24/19 17:00	8.0	23.04	159	100			43.5	41.7
9/24/19 18:00	7.9	18.35	152	100			43.2	41.0
9/24/19 19:00	7.5	15.29	138	100				42.2
9/24/19 20:00	6.9	16.81	129	100				41.5
9/24/19 21:00	6.8	15.95	121	100				44.4
9/24/19 22:00	6.8	17.32	121	100				43.6
9/24/19 23:00	6.8	17.41	121	100				41.4
9/25/19 0:00	6.7	15.80	121	100				43.4
9/25/19 1:00	6.6	15.48	118	100				45.1
9/25/19 2:00	6.6	16.26	120	100				45.4
9/25/19 3:00	6.6	18.23	120	100				46.0
9/25/19 4:00	6.6	18.73	126	100				47.3

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
9/25/19 5:00	6.5	18.70	127	100				45.3
9/25/19 6:00	6.5	20.53	131	100				44.4
9/25/19 7:00	6.4	17.74	122	100				46.8
9/25/19 8:00	6.3	19.28	123	100				45.6
9/25/19 9:00	6.3	18.79	124	100				43.5
9/25/19 10:00	6.3	18.07	123	100				46.2
9/25/19 11:00	6.5	19.59	125	100				46.3
9/25/19 12:00	6.6	16.29	118	100				42.9
9/25/19 13:00	6.5	17.20	129	100				42.0
9/25/19 14:00	6.5	17.23	131	100				41.2
10/03/19 11:00	-0.5	16.79	337	100			54.6	
10/03/19 12:00	-0.5	17.98	341	100			46.6	
10/03/19 13:00	-0.6	18.02	347	99			45.5	
10/03/19 14:00	-0.6	18.06	347	98			40.9	
10/03/19 15:00	-0.7	15.05	349	96			42.2	52.8
10/03/19 16:00	-0.2	14.95	341	92			37.6	42.3
10/03/19 17:00	-0.2	12.98	351	91			32.1	42.6
10/03/19 18:00	-0.6	9.84	345	94			25.5	37.2
10/03/19 19:00	-1.3	5.87	336	99			25.3	45.8
10/03/19 20:00	-1.9	3.35	299	100			25.8	42.5
10/03/19 21:00	-2.5	3.28	283	100			27.1	39.6
10/03/19 22:00	-2.8	3.05	260	100			24.2	40.2
10/03/19 23:00	-3.1	1.96	179	100			29.3	35.8
10/04/19 0:00	-3.4	6.28	204	100			31.5	36.7
10/04/19 1:00	-3.1	8.22	190	100			35.1	36.3
10/04/19 2:00	-2.6	9.31	186	100			38.3	38.1
10/04/19 3:00	-0.9	13.52	197	100			40.2	43.0
10/04/19 4:00	0.0	16.94	205	100			41.5	42.7
10/04/19 5:00	0.6	17.72	203	100			42.5	45.8
10/04/19 6:00	0.9	18.43	192	100			51.2	53.0
10/04/19 7:00	1.4	22.22	191	100			52.4	57.6

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
10/04/19 8:00	1.6	22.24	198	100			55.9	57.3
10/04/19 9:00	1.8	23.04	201	100			55.8	55.2
10/04/19 10:00	2.3	22.98	204	100			56.0	56.9
10/04/19 11:00	2.7	22.68	204	100			51.7	55.1
10/04/19 12:00	3.1	22.35	207	100			47.5	47.2
10/04/19 13:00	3.8	19.32	205	100			45.1	41.3
10/04/19 14:00	4.8	18.22	208	100			46.0	41.3
10/04/19 15:00	7.1	17.98	220	94			41.3	41.2
10/04/19 16:00	6.7	15.33	217	92			39.4	43.5
10/04/19 17:00	5.9	10.24	225	95			39.1	42.9
10/04/19 18:00	4.9	6.93	223	100			32.9	43.5
10/04/19 19:00	4.2	4.16	230	100			31.4	45.0
10/04/19 20:00	3.0	3.57	199	100			30.8	43.2
10/04/19 21:00	2.2	1.93	174	100			29.5	42.1
10/04/19 22:00	2.3	5.40	191	100			32.2	41.2
10/04/19 23:00	2.1	7.12	210	100			32.5	38.5
10/05/19 0:00	1.6	5.01	242	100			32.6	37.4
10/05/19 1:00	1.3	2.67	251	100			32.8	40.3
10/05/19 2:00	1.0	5.41	231	100			31.7	39.9
10/05/19 3:00	-0.3	2.72	177	100			30.6	36.9
10/05/19 4:00	-0.8	2.45	160	100			31.7	34.6
10/05/19 5:00	-0.7	3.09	163	100			32.4	34.0
10/05/19 6:00	0.0	5.06	176	100			32.3	34.2
10/05/19 7:00	0.1	3.58	173	100			34.9	44.6
10/05/19 8:00	0.4	7.22	174	100			37.7	42.9
10/05/19 9:00	0.8	8.60	181	100			36.9	42.6
10/05/19 10:00	1.4	7.83	181	100			36.9	41.7
10/05/19 11:00	2.1	5.08	169	100			40.5	37.5
10/05/19 12:00	3.1	7.25	162	100			36.4	40.8
10/05/19 13:00	3.8	7.75	161	100			38.8	36.6
10/05/19 14:00	4.3	8.42	168	100			39.5	44.7
10/05/19 15:00	4.5	9.00	163	100			36.5	39.5

Date and Time	Average Air Temperature (°C)	Average Wind Speed (km/h)	Average Wind Direction (°)	Average Relative Humidity (%)	1-h Leq (dBA)			
					NPOR0 05	NPOR0 06	NPOR0 08	NPOR0 17
10/05/19 16:00	5.2	9.34	187	100			37.2	45.8
10/05/19 17:00	5.2	2.80	208	100			34.2	41.4
10/05/19 18:00	4.3	1.17	163	100			32.4	36.7
10/05/19 19:00	3.0	5.39	178	100			30.4	42.1
10/05/19 20:00	2.8	4.53	185	100			32.1	41.6
10/05/19 21:00	3.0	4.33	230	100			30.1	37.6
10/05/19 22:00	2.7	4.12	280	100			26.6	39.8
10/05/19 23:00	2.2	6.36	312	100			30.7	39.3
10/06/19 0:00	1.8	8.97	335	100			29.5	43.0
10/06/19 1:00	1.0	9.16	336	100			32.0	44.3
10/06/19 2:00	0.0	10.05	328	100			37.1	45.4
10/06/19 3:00	-0.6	11.52	346	100			35.8	43.4
10/06/19 4:00	-1.1	11.22	340	100			37.0	46.4
10/06/19 5:00	-1.2	12.08	345	100			34.2	44.6
10/06/19 6:00	-1.1	11.30	16	100			36.4	45.0
10/06/19 7:00	-0.9	10.04	27	100			31.0	43.4
10/06/19 8:00	-0.3	9.37	11	100			29.6	39.9
10/06/19 9:00	0.1	9.42	4	100			34.0	40.9
10/06/19 10:00	0.8	10.53	12	100			40.7	43.7
10/06/19 11:00	1.4	13.08	27	100			47.9	49.8
10/06/19 12:00	1.3	15.51	28	100			50.1	50.4
10/06/19 13:00	1.1	17.41	29	100			51.7	52.4
10/06/19 14:00	0.8	15.83	22	100			53.7	52.8
10/06/19 15:00	0.5	18.56	11	100			57.3	

Appendix H-6

Air Quality Monitoring Report



AGNICO EAGLE

MELIADINE GOLD PROJECT

2019 Air Quality Monitoring Report

In Accordance with NIRB Project Certificate No. 006

Prepared by:
Agnico Eagle Mines Limited – Meliadine Division

APRIL 2020

EXECUTIVE SUMMARY

In accordance with NIRB Project Certificate No. 006, and as described in the Air Quality Monitoring Plan (Version 1, November 2015, and Version 2, April 2020), Agnico Eagle Mines Ltd. (Agnico Eagle) continued ambient air quality monitoring at the Meliadine site, near Rankin Inlet in 2019. Through this program, Agnico Eagle aims to measure ambient concentrations of airborne particulates, dustfall, and gaseous compounds (NO_2 and SO_2) using a combination of active and passive sampling methods.

In accordance with the Plan, monitoring in 2019 included analysis of dustfall at seven pre-determined sampling locations, as well as NO_2 and SO_2 at two locations, over one month averaging periods throughout the year. In addition, Agnico began sampling dustfall transects at three locations along the AWAR, and one location along the Rankin Inlet Bypass Road. Partisol units were in place for the year-round analysis of suspended particulates (TSP, $\text{PM}_{2.5}$, and PM_{10}), but sample collection only occurred for a three month period, because all four Partisol samplers had to be sent to the distributor for necessary repairs. At this time repairs are complete, and the units will be re-installed in 2020.

Dustfall results for year-round sampling locations onsite and along the AWAR (DF-1 – DF-7) are compared to Alberta's Ambient Air Quality Guidelines (June, 2016) for recreational and industrial areas, for context. In 2019, two of the 77 samples exceeded the recreational area guideline for total dustfall, and one additional sample exceeded the industrial area guideline. However in all cases, fixed dustfall (which is more representative of mine activity) was below the guideline. Generally, an increase in measured dustfall rates has occurred since mid-2017 when the construction period began, which would be anticipated. Despite increased site activity, exceedances of AB guidelines for recreational areas are still considered very infrequent, occurring in <4% of total dustfall samples in 2019, and 0% of fixed dustfall samples.

For all road transects (summer-only sampling), rates of dustfall declined below the AB regulatory guideline for recreational areas between 25 m and 100 m from the road during both sampling events. These results indicate that for both onsite and AWAR locations, best-management practices in place for dust mitigation are being effectively implemented to minimize emissions.

Concentrations of suspended particulates (TSP, $\text{PM}_{2.5}$, and PM_{10}) were assessed in two locations using Partisol air samplers between January and early April, 2019. All available results were below regulatory guidelines (Government of Nunavut Ambient Air Quality Standards/BC Ambient Air Quality Objectives) and were below maximum concentrations predicted in the FEIS.

Calculated annual average concentrations of NO_2 and SO_2 were well below the Government of Nunavut Ambient Air Quality Standards, and were below FEIS maximum predicted values. This was the third full year of monitoring for gaseous compounds, and no clear spatial or temporal trends were observed.

As described in the Air Quality Monitoring Plan, a permanent weather station was installed at the Meliadine site, and daily averages for wind speed, direction, temperature, solar radiation, and rainfall are provided.

Incinerator stack testing was performed in December, 2019. The measured concentrations of mercury were below the GN standard of 20 µg/Rm³ in all three tests. Measured concentrations of total dioxins and furans were also below the GN standard (80 pg TEQ / Rm³ @ 11 % v/v O₂) in all three tests.

Agnico Eagle is required by Environment Canada's Greenhouse Gas Emissions Reporting Program (GHGRP) to track greenhouse gas emissions. Calculated emissions for the Meliadine site (including Rankin Inlet operations) will be reported to regulators by the June, 2020 deadline.

Since monitoring results in 2019 were within applicable air quality criteria and FEIS predictions, no additional adaptive management measures are planned. Strategies are in place to ensure increased collection of suspended particulate data in 2020.

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Appendix A: Daily Average Weather Data

1 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

In February 2015, Agnico Eagle Mines Ltd. (Agnico Eagle) was issued NIRB Project Certificate No. 006 for the Meliadine Gold Project, near Rankin Inlet, NU. In accordance with Conditions 1, 2, 3 and 27b of the Project Certificate, Agnico Eagle maintains the Meliadine Air Quality Monitoring Plan to describe the program for onsite ambient air quality monitoring.

The Air Quality Monitoring Plan has been recently updated (Version 2, April, 2020) and submitted as a component of the 2019 Annual Report. Some supplemental sampling under the revised plan was completed in 2019, and is reported here. The Plan revisions will be enacted in full, beginning in 2020.

The overall intention of the monitoring program is to confirm the effectiveness of mitigation measures assumed in the Project's environmental assessment by measuring key air quality parameters, and in doing so, determine if alternative mitigation strategies are required to further reduce emissions from the Project and their impacts.

In accordance with the NIRB Project Certificate and the Air Quality Monitoring Plan, air quality monitoring for the Meliadine site includes year-round analysis of suspended particulates, dustfall, NO₂ and SO₂. In addition, as meteorological data are a critical input to air dispersion models and emissions estimation, a real time meteorological station has been installed at the site and recorded meteorological data is reported.

A summary of the air quality monitoring program according to the most recent Air Quality Monitoring Plan (Version 2, April, 2020) is shown in Table 1. Monitoring according to the pre-construction objectives occurred from 2012 - 2016. In 2017, the project entered the construction phase, which continued in 2018. In 2019, the project entered the operations phase.

Table 1. Air quality monitoring objectives according to the Air Quality Monitoring Plan (Version 2; April, 2020). *New in Version 2.

Project Phase	Program Objective	Monitoring Equipment
Pre-construction	<ul style="list-style-type: none"> To obtain baseline data in order to be able to compare with construction and operation phases 	<ul style="list-style-type: none"> Three dustfall jars (passive) onsite Three dustfall jars along AWAR

Project Phase	Program Objective	Monitoring Equipment
Construction	<ul style="list-style-type: none"> To verify compliance with applicable standards To apply mitigation measures if necessary 	<ul style="list-style-type: none"> One continuous TSP/PM₁₀ sampling unit (Partisol model 2025) One passive NO₂ – SO₂ monitor (Maxxam equipment) Four dustfall jars (passive) onsite Three dustfall jars (passive) along AWAR
Operations	<ul style="list-style-type: none"> To verify the predicted concentrations of TSP, PM₁₀, and PM_{2.5} To verify that the mitigation measures considered integral to the Project are being incorporated as planned, and are effective 	<ul style="list-style-type: none"> Two TSP sampling units (Partisol model 2025) (DF-5, DF-7) Two PM_{coarse}/PM_{2.5} sampling units (Partisol Model 2025-D) (DF-5, DF-7) Two passive NO₂–SO₂ monitors (Maxxam equipment) (DF-5, DF-7) Four dustfall jars (passive) onsite (DF-4, DF-5, DF-6, DF-7) <i>*Three dustfall (passive) monitoring transects along AWAR (km 4, 10, 23 – DF-1, DF-2, DF-3) and one along the Rankin Inlet By-Pass Road (DF-WT) – summer season</i> <i>*Background dustfall (passive) monitoring at a reference station – summer season</i>

1.2 2019 MONITORING LOCATIONS AND DATES

Air quality monitoring sites are shown in Figure 1. According to the operations-phase monitoring objectives, air quality monitoring in 2019 included:

- Analysis of suspended particulates (PM_{2.5}, PM₁₀, TSP) at two onsite locations (DF-5, DF-7);
- Year-round dustfall sampling at three individual locations along the AWAR (DF-1, DF-2, DF-3) and four locations onsite (DF-4, DF-5, DF-6, DF-7);
- Summer-only dustfall sampling for complete transects at DF-1, DF-2, and DF-3 (samplers located at 25 m, 100 m, and 300 m on each side of the road);
- Summer-only dustfall sampling for a complete transect at DF-WT (samplers located at 60 m, 120 m, 300 m, and 1000 m on each side of the road); and
- Summer-only supplemental dustfall monitoring a far-field reference station.

Sampling for suspended particulates occurs at stations DF-5 and DF-7, and began at the end of 2018. Sampling at the South unit (DF-5) began on December 3, 2018 (TSP only), and sampling at the North unit (DF-7) began on December 21, 2018 (PM_{2.5}/PM₁₀ only). The additional two units

were not operational when the supplier left site following installation (summer 2018). It was anticipated that both TSP and PM_{2.5}/PM₁₀ units would be active at both locations in 2019. However, successful operation of the Partisol units at the Meliadine site has proven very challenging. Due to a combination of equipment failure and increased wear and tear on equipment due to sub-arctic weather conditions, and limited servicing and repairing possibilities on site, a limited dataset is available for 2019. Active sampling only occurred for total suspended particulates at DF-5 (South unit), from January to April, 2019. Active sampling for PM_{2.5}/PM₁₀ occurred at DF-7 during March and April. To rectify these issues, Agnico has shipped all four Partisol units for servicing by the supplier who will also provide onsite re-installation, spare parts, and maintenance training to the Environment Department technicians as soon as possible (in 2020). Agnico is also investigating alternate sampling methods for suspended particulates that may facilitate data collection under harsh weather conditions. Discussions are ongoing with a number of consultants, suppliers, and other Northern operators to identify better equipment options.

Dustfall monitoring was conducted over approximately 30 day periods for all year-round sampling stations (DF-1 – DF-7) from December 14, 2018 – December 17, 2019. Dustfall was also sampled for new Awar and Bypass Road transects (located at DF-1, DF-2, DF-3, and DF-WT) from July 15 – September 18, 2019. As described in the updated Air Quality Monitoring Plan (Version 2, April, 2020), year-round sampling is proposed for onsite stations DF-4 – DF-7 only, beginning in 2020. Summer-season sampling will take place for new Awar and Bypass Road transects, including the original year-round sites DF-1, DF-2, and DF-3.

Passive samplers for NO₂ and SO₂ were installed at two locations (DF-5 and DF-7). Passive monitoring of NO₂ and SO₂ was conducted over approximately 30 day periods from December 13, 2018 through December 17, 2019.

Details of the monitoring locations in 2019 are summarized in Table 2. As described in the Air Quality Monitoring Plan, sampling locations will be reviewed and may be adapted throughout the construction and/or operations phases of the Project, as necessary.

Table 2. Air quality monitoring locations and parameters monitored in 2019.

Monitoring Station	UTM (15V)	Parameters	General Location	Location Description
DF-WT	542890E 6967093N	Dustfall transect	Rankin Inlet By-Pass Road	1.3 km northwest of Nipissak Lake and ~500m southeast (downwind) of community quarry sites. Samples at 60, 120, and 300 m on each side of the road.
DF-1	544073E 6970759N	Dustfall transect	AWAR	AWAR km 4 South of Iqalugaarjuup Nunanga Park. Samples at 25, 100, and 300 m on each side of the road.
DF-2	546621E 6973334N	Dustfall transect	AWAR	AWAR km 10 East of Iqalugaarjuup Nunanga Park. Samples at 25, 100, and 300 m on each side of the road.
DF-3	544899E 6981387N	Dustfall transect	AWAR	AWAR km 23 North of Iqalugaarjuup Nunanga Park. Samples at 25, 100, and 300 m on each side of the road.
DF-4	540014E 6987836N	Dustfall	Onsite	Adjacent to freshwater pumphouse on Lake A8. Downwind of main mine site.
DF-5	542226E 6988507N	Dustfall NO ₂ , SO ₂ TSP, PM ₁₀ , PM _{2.5}	Onsite	500 m south-east of the mine camp. Downwind of main mine site. Within Air Quality Impact Assessment Site Study Area.
DF-6	537586E 6989096N	Dustfall	Onsite	Adjacent to Lake B5, approx. 600 m southwest of main mine site (direction perpendicular to dominant wind).
DF-7	537143E 6991176N	Dustfall NO ₂ , SO ₂ TSP, PM ₁₀ , PM _{2.5}	Onsite	Adjacent to emulsion plant, approx. 2 km northwest (upwind) of the camp complex. Within Air Quality Impact Assessment Local Study Area (just outside of Site Study Area).
DF-8	525656E 7001656N Or alternative	Dustfall	Reference	North end of Meliadine Lake near AEMP Reference Area 2 (MEL-04). UTM approximate. Reference stations may be rotated to establish a range of background dustfall values, which are expected to vary significantly depending on local site conditions.

2 METHODS

2.1 SAMPLING METHODOLOGY

2.1.1 *Suspended Particulates*

Suspended particulates (TSP, PM₁₀, PM_{2.5}) are planned to be sampled over 24-h periods every six days using a Partisol Plus Model 2025i Sequential Air Sampler (TSP) and a Partisol Plus Model 2025-D Dichotomous Sequential Air Sampler (PM_{2.5} and PM_{coarse}) at DF-5 and DF-7. Partisol samplers draw in a stream of ambient air at a controlled flow rate, and particulates are collected on a pre-weighed filter supplied by an accredited laboratory. The exposed filter is then shipped back to the laboratory and re-weighed to measure the total accumulated particulates.

Analysis of metals of relevance to the Project was also planned, as described in the 2018 Air Quality Monitoring Report. However, significant malfunction of the Partisol instruments and delays in parts availability began at the time that report was produced (March, 2019), and suspended particulates could not be sampled for the remainder of the year. In 2020, analysis of TSP filters for cadmium and iron will occur, as described in the Air Quality Monitoring Plan (Version 2; April, 2020).

2.1.2 *Dustfall*

Dustfall was collected in open vessels containing a purified liquid matrix (de-ionized water and isopropanol), supplied by a commercial analytical laboratory. Particles are deposited and retained in the liquid, which is then analyzed for total and fixed (non-combustible) dustfall by the supplying laboratory. While regulatory guidelines relate to total dustfall, the non-combustible fraction, or fixed dustfall, is considered more representative of mine-related activity because it excludes organic components (e.g. pollen, plants, animal particles). Historically, when results are above the detection limit, fixed dustfall has represented on average 73% of total dustfall.

Vessels were deployed according to laboratory specifications for sequential one-month periods at each location, retrieved, re-sealed, and shipped back to the laboratory. Canisters were placed on an approximate 2 m stand with an open bucket-style holder fitted with wires around the rim to deter birds (see Figure 2). Calculated dustfall rates were normalized to 30 days (mg/cm²/30 days). Dustfall canisters were provided by and analyzed by Maxxam Analytics.



Figure 2. Dustfall sampling stand at the Meliadine site.

2.1.3 NO_2 and SO_2

Concentrations of NO_2 and SO_2 by volume (ppb) were analyzed over one-month periods using a passive sampling device provided by Maxxam Analytics and deployed by Agnico Eagle technicians according to laboratory-identified procedures. Following each sampling period, the sampling device was retrieved and shipped to the commercial laboratory for analysis.

2.2 DATA ANALYSIS

2.2.1 *Suspended Particulates*

2.2.1.1 Data Processing

Laboratory-reported results for mass of particulates were used to calculate associated concentrations of TSP, PM_{10} and $\text{PM}_{2.5}$ ($\mu\text{g}/\text{m}^3$) according to the Partisol operating manual, as follows.

TSP is calculated as:

$$\text{TSP} = M_{\text{TSP}}/V$$

Where: TSP = mass concentration of particulates ($\mu\text{g}/\text{m}^3$)

M_{TSP} = final mass of TSP filter – initial mass of filter ($\mu\text{g}/\text{filter}$)

V = volume of air drawn in during the sampling period ($\sim 24 \text{ m}^3$)

Since the dichotomous unit splits the intake air stream to determine $\text{PM}_{2.5}$ and $\text{PM}_{\text{coarse}}$ ($\text{PM}_{10-2.5}$), the volume of air is different for each filter. Calculations are performed as follows.

$\text{PM}_{2.5}$ is calculated as:

$$\text{PM}_{2.5} = M_{2.5}/V_{2.5}$$

Where: $\text{PM}_{2.5}$ = mass concentration of particulates ($\mu\text{g}/\text{m}^3$)

$M_{2.5}$ = final mass of $\text{PM}_{2.5}$ filter – initial mass of filter ($\mu\text{g}/\text{filter}$)

$V_{2.5}$ = volume of air drawn through the $\text{PM}_{2.5}$ filter during the sampling period ($\sim 21.7 \text{ m}^3$)

And,

$\text{PM}_{\text{coarse}}$ is calculated as:

$$\text{PM}_{\text{coarse}} = M_{\text{coarse}}/V_{\text{total}} - \text{PM}_{2.5}(V_{\text{coarse}}/V_{\text{total}})$$

Where: $\text{PM}_{\text{coarse}}$ = mass concentration of particulates ($\mu\text{g}/\text{m}^3$)

M_{coarse} = final mass of $\text{PM}_{\text{coarse}}$ filter – initial mass of filter ($\mu\text{g}/\text{filter}$)

V_{total} = total volume of air drawn into unit during sampling ($\sim 24 \text{ m}^3$)

V_{coarse} = volume of air drawn through the $\text{PM}_{\text{coarse}}$ filter during the sampling period ($\sim 2.4 \text{ m}^3$)

Concentration of PM_{10} is then calculated as $\text{PM}_{\text{coarse}} + \text{PM}_{2.5}$.

For comparison to Government of Nunavut Ambient Air Quality Guidelines (2011), concentrations of particulates need to be calculated using air volumes normalized to 25°C and 101.3kPa (standard temperature and pressure; STP). Standardized volumes were either recorded by the Partisol unit, or calculated from average temperature and pressure recorded by the Partisol unit during the sampling period, whenever possible. Estimates of suspended particulate concentrations using non-standardized volumes (when records are unavailable) are expected to

be slightly conservative (higher than actual), since air temperatures are almost always colder than 25°C. In addition, the air sampling unit is housed in an insulated container because winter temperatures inhibit operation. This is standard practice in northern climates. Since the unit's ambient temperature sensor is warmer than actual air temperature for much of the year, intake volumes are inflated compared to calculated volumes, resulting in conservative estimates of particulate concentrations.

In 2019, recorded standardized volumes were available for all sampling dates.

2.2.1.1 Regulatory Guidelines and FEIS Predictions

The TSP, PM₁₀, and PM_{2.5} data from the monitoring locations were analyzed for increasing trends or measured concentrations above the FEIS predictions or regulatory guidelines.

Specifically, results of suspended particulate monitoring were compared primarily to available Government of Nunavut (GN) Environmental Guidelines for Ambient Air Quality (October, 2011). Where GN guidelines were not available (i.e. for PM₁₀) results were compared to the BC Air Quality Objective Guidelines (May, 2018). Regulatory guidelines for the measured parameters are provided in Table 3.

Results were additionally compared to FEIS predictions for maximum concentrations of suspended particulates, to ensure estimates were sufficiently conservative, and related impact assessment results continue to be representative (i.e. Air Quality Impact Assessment – FEIS Volume 5). Maximum FEIS air quality predictions for the site study area (SSA) and local study area (LSA) where the monitors DF-5 and DF-7 are located, respectively, are shown in Table 3. However, it should be noted that monitoring results include background contributions, whereas model predictions do not, so comparisons to these FEIS predictions are expected to be conservative. Comparisons to predicted peak concentrations (which include influence of meteorological anomalies) may be conducted if such a situation occurs.

Table 3. Government of Nunavut (GN) Environmental Guidelines for Ambient Air Quality (October, 2011), BC Ambient Air Quality Objectives (May, 2018) and FEIS predictions for suspended particulate matter at Meliadine along with the representative monitoring station (DF-5/DF-7).

Parameter	Averaging Time	Regulatory Guideline		FEIS Prediction* ($\mu\text{g}/\text{m}^3$)	
		Jurisdiction	Guideline ($\mu\text{g}/\text{m}^3$)	SSA (represented by DF-5)	LSA (represented by DF-7)
PM _{2.5}	24-h	GN	30	55.2	19.6
PM ₁₀	24-h	BC	50	104.0	58.2
Total Suspended Particulate (TSP)	24-h	GN	120	213.7	122.3
	Annual	GN	60	16.8	17.0

2.2.2 Dustfall

No standards for dustfall are available for Nunavut or the Northwest Territories. Results of the dustfall analysis are therefore compared to the Alberta Ambient Air Quality Guideline for recreational areas for total dustfall (June, 2016) of $0.53 \text{ mg}/\text{cm}^2/30\text{d}$ and commercial/industrial guideline of $1.58 \text{ mg}/\text{cm}^2/30\text{d}$, to provide context. These guidelines are based on aesthetic or nuisance concerns, and are to be used for airshed planning and management, as a general performance indicator, and to assess local concerns.

Based on measurements for other mine-related roads in Nunavut (Meadowbank site), it is anticipated that guidelines for recreational areas may regularly be exceeded in close proximity to the AWAR or minesite, and that guidelines for industrial areas may occasionally be exceeded. However, exceedance of these guidelines does not necessarily indicate that impacts to ecological endpoints (e.g. vegetation or wildlife) are occurring. Impacts of dust deposition on the aquatic and terrestrial environments are assessed and compared with FEIS predictions through the AEMP (water and sediment quality monitoring) and TEMMP (soil and vegetation sampling through the ecological risk assessment program).

Dustfall rates were additionally analyzed for indications of spatial trends to look at differences between transect locations, upwind and downwind locations, and distance from the road. A temporal analysis will also check for consistently increasing trends in the measured dustfall rates year-over-year.

2.2.3 NO₂ and SO₂

The analysis of the NO₂ and SO₂ sampling results includes a comparison of results with the GN Environmental Guidelines for Ambient Air Quality (October, 2011). Concentrations measured on a monthly basis were averaged, and compared to the annual average guidelines for NO₂ (60 µg/m³ or 32 ppb) and SO₂ (30 µg/m³ or 11 ppb).

In order to determine the accuracy of assumptions and predictions made during the Project assessment phase, a comparison to NO₂ and SO₂ concentrations described in the FEIS (Golder, 2014) is also included. For the Site Study Area (SSA), where the sampling station DF-5 is located, the FEIS predicted a maximum annual average of 43.9 µg/m³ (23.3 ppb @ 25°C) for NO₂, and 0.3 µg/m³ (0.1 ppb @ 25°C) for SO₂. For the Local Study Area (LSA), where the sampling station DF-7 is located, the FEIS predicted a maximum annual average of 22.8 µg/m³ (12.1 ppb @ 25°C) for NO₂, and 0.0 µg/m³ (0.0 ppb @ 25°C) for SO₂. It should be noted that model predictions were for emissions produced by mine site activity, which do not include background values, which are included in monitoring results. The background values assumed in the FEIS (Table 5.2-6) of 0.1 µg/m³ (0.05 ppb) for NO₂ and 0.5 µg/m³ (0.2 ppb) for SO₂, are from the Fortune Minerals NICO project. Therefore, results of the monitoring program at Meliadine are compared to the sum of these assumed background values and the predicted concentrations from site activity, as summarized in Table 4.

Table 4. Summary of GN guidelines and FEIS predictions (plus assumed background concentrations) for annual average concentrations of NO₂ and SO₂.

Compound	GN Guideline (Annual Average)	FEIS Prediction + Background (Annual Average)	
		SSA (DF-5)	LSA (DF-7)
NO ₂	32 ppb	23.3 + 0.05 ppb	12.1 + 0.05 ppb
SO ₂	11 ppb	0.1 + 0.2 ppb	0.0 + 0.2 ppb

The measured ambient NO₂ and SO₂ concentrations were also analyzed for spatial and temporal trends.

2.3 QA/QC

According to the Air Quality Monitoring Plan, QA/QC procedures for the monitoring program included the following:

2.3.1 Suspended Particulates

- A travel blank (laboratory prepared samples that travel with the samples but are not exposed to the atmosphere) was used with one shipment (result = <3 mg, or non-detect);
- Samplers were sent for professional maintenance and calibration;
- An accredited laboratory was used for pre-sample preparation and determining sample weights;

- Samples and data were collected by appropriately trained personnel; and
- Qualified personnel interpreted the flow data and confirmed ambient particulate concentrations based on laboratory results.

2.3.2 *Dustfall*

- A travel blank (laboratory prepared samples that travel with the samples but are not exposed to the atmosphere) was sent with one shipment (result = < 0.001 mg/cm₂/30 d, or non-detect);
- An accredited laboratory was used for sample preparation and analysis; and
- Samples were collected by appropriately trained personnel.

2.3.3 *Passive NO₂-SO₂*

- An accredited laboratory was used for pre-sample preparation and analysis;
- Samples were collected by appropriately trained personnel; and
- Qualified personnel interpreted ambient NO₂-SO₂ concentrations based on laboratory results.

3 MONITORING RESULTS

3.1 SUSPENDED PARTICULATES

In 2019, suspended particulate sampling occurred every six days from January 2 to March 16 at DF-5. Only the TSP Partisol unit was functional at this location. At DF-7, sampling occurred every six days from March 7 to April 6, and only the PM_{2.5}/PM₁₀ unit was functional. Available results are shown in Table 5.

All values are below the regulatory guideline or FEIS prediction for the 24-h averaging time. Since data was only available for a maximum two-month period, annual averages were not calculated.

Monitoring for suspended particulates began in December 2018. Historical reviews will be conducted once two years of data are available.

Table 5. Concentrations of suspended particulates measured in 2019 at the Meliadine site. See Table 3 for full list of regulatory guidelines and FEIS predictions.

Location	Parameter	Regulatory Guideline (µg/m ³)	FEIS Prediction (µg/m ³)	Sample Start Date & Time	Result (µg/m ³)
DF-5	TSP	120	213.7	02-Jan-19	2.3
				08-Jan-19	1.1
				14-Jan-19	1.6
				20-Jan-19	2.5
				26-Jan-19	1.6
				01-Feb-19	2.8
				07-Feb-19	1.3
				13-Feb-19	6.4
				19-Feb-19	4.4
				26-Feb-19	3.7
				04-Mar-19	3.4
				10-Mar-19	5.6
				16-Mar-19	9.8
DF-7	PM _{2.5}	30	19.6	07-Mar-19	2.67
				13-Mar-19	1.12
				19-Mar-19	1.47
				25-Mar-19	1.95
				31-Mar-19	1.31
				06-Apr-19	1.92
	PM ₁₀	50	58.2	07-Mar-19	4.92
				13-Mar-19	2.11
				19-Mar-19	4.88
				25-Mar-19	3.13
				31-Mar-19	3.75
				06-Apr-19	3.67

3.2 DUSTFALL

3.2.1 Year-Round Sampling Locations

Results of the 2019 dustfall sampling program (30-day normalized rates of dustfall) for year-round monitoring stations DF-1 – DF-7 are provided in Figures 3 - 9. Values below the detection limit ($0.001 \text{ mg/cm}^2/30\text{d}$) are plotted as $\frac{1}{2}$ the limit. Samples are plotted by the collection start date. To provide context, the Alberta Ambient Air Quality Guidelines for recreational/residential and industrial/commercial areas of $0.53 \text{ mg/cm}^2/30 \text{ days}$ and $1.58 \text{ mg/cm}^2/30 \text{ days}$ for total dustfall are indicated.

In total, two of the 77 samples collected in 2019 exceeded the recreational area guideline for total dustfall (one sample each at DF-2, DF-5), and one additional sample exceeded the industrial area guideline (DF-6). However, the result for fixed (non-combustible) dustfall in this sample was below the recreational area guideline, indicating that an unusually high proportion of organic material was present in the sample. Since fixed dustfall results are generally considered to be most representative of mine-related activity, and this appears to be an isolated incident, the event was not investigated further.

Historical results for total and fixed dustfall since 2012 are provided in Figures 10 and 11 for assessment of trends over time. Generally, an increase in measured dustfall rates has occurred since mid-2017 when the construction period began and site activity increased (as would be anticipated). However, exceedances of regulatory guidelines for recreational/residential areas are still considered very infrequent, occurring in <4% of total dustfall samples in 2019. While this guideline does not specifically apply to results of fixed dustfall analysis, only one fixed dustfall sample to date for the Meliadine site has exceeded the recreational area guideline. These results indicate that best management practices in place for dust mitigation are being implemented effectively to control emissions.

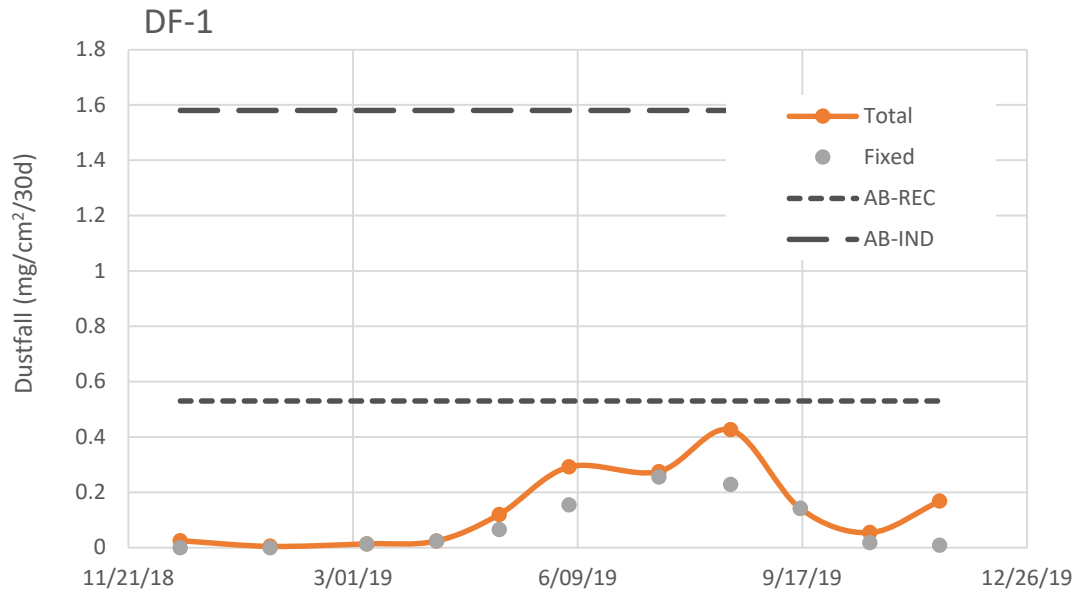


Figure 3. 30-day-normalized rates of total and fixed dustfall at sampling location DF-1 at the Meliadine site in 2019. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

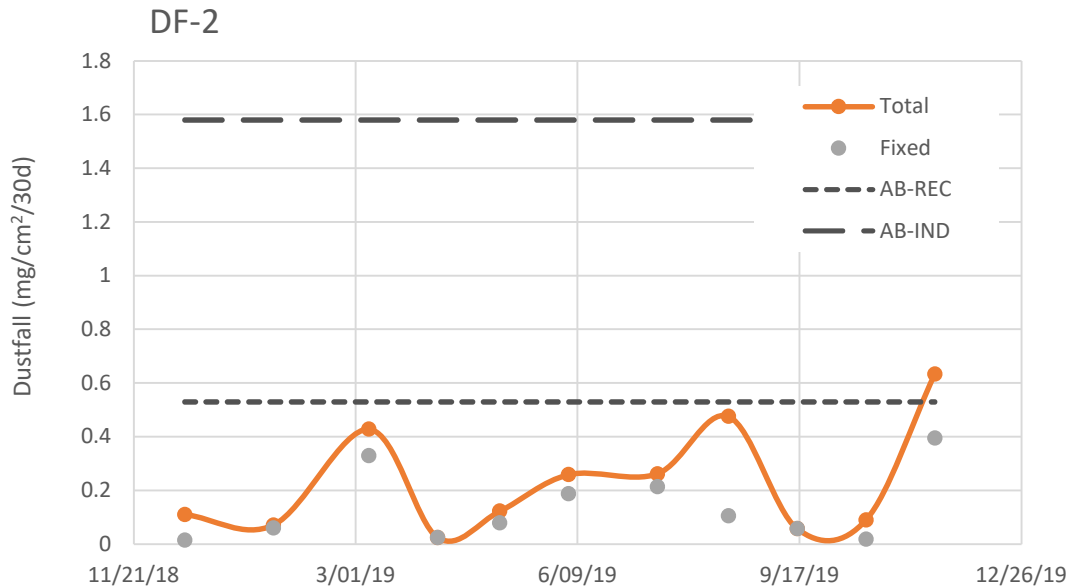


Figure 4. 30-day-normalized rates of total and fixed dustfall at sampling location DF-2 at the Meliadine site in 2019. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

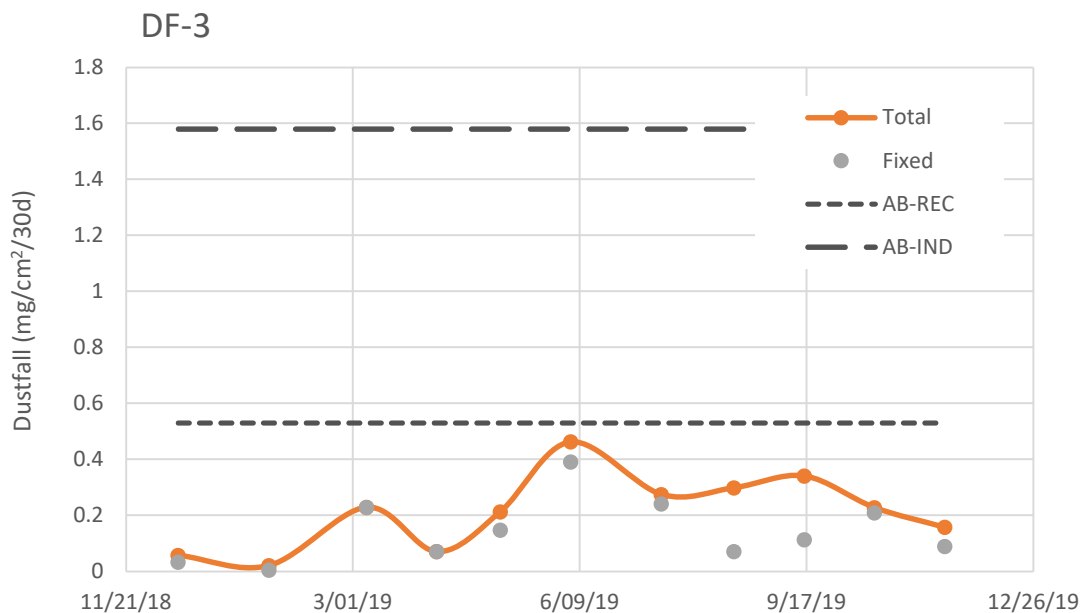


Figure 5. 30-day-normalized rates of total and fixed dustfall at sampling location DF-3 at the Meliadine site in 2019. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

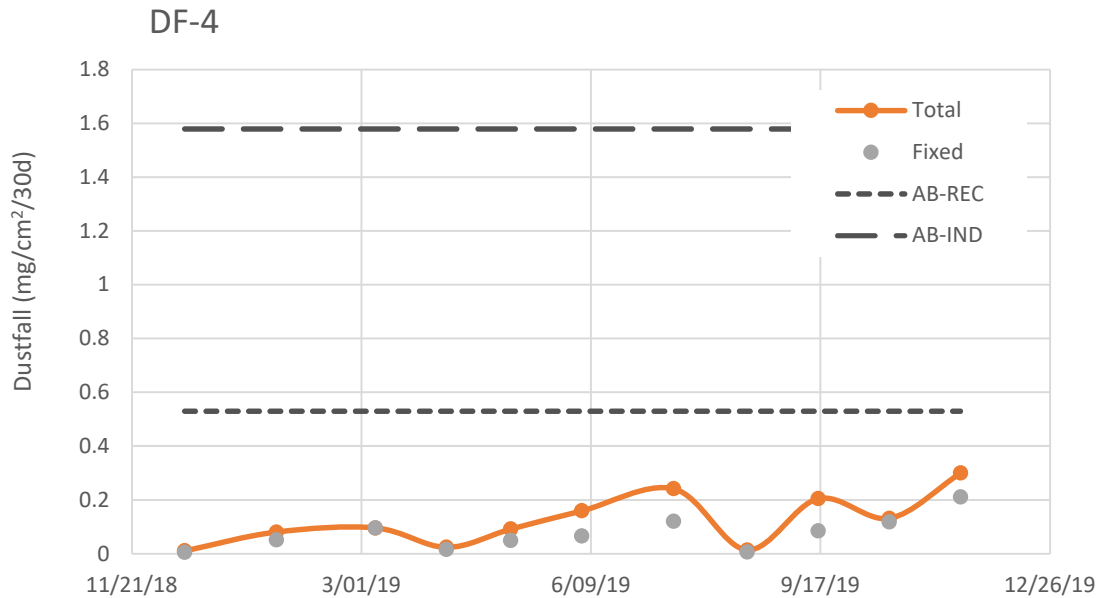


Figure 6. 30-day-normalized rates of total and fixed dustfall at sampling location DF-4 at the Meliadine site in 2019. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

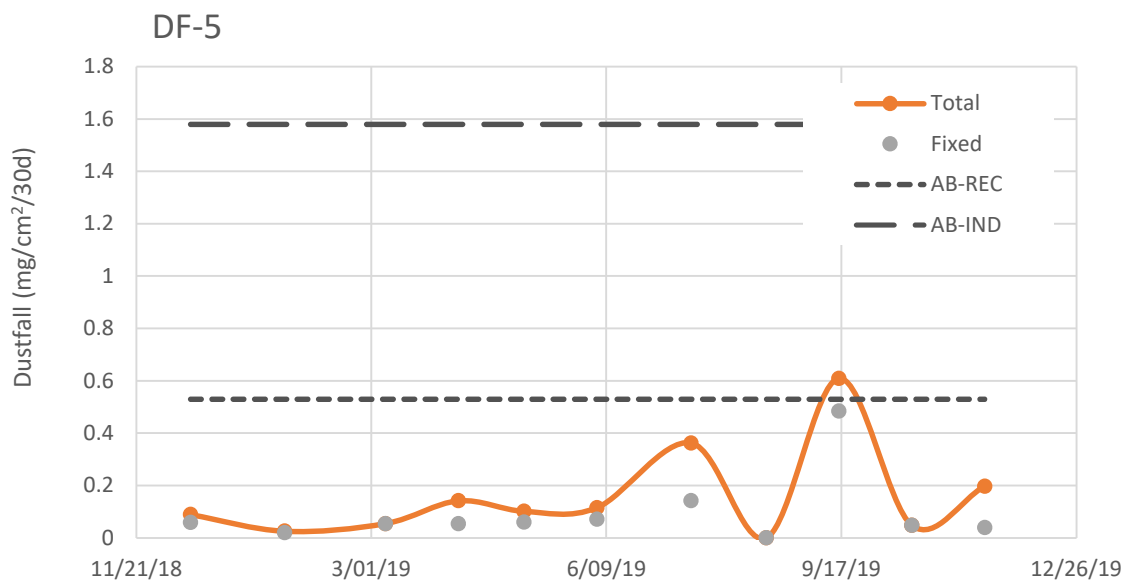


Figure 7. 30-day-normalized rates of total and fixed dustfall at sampling location DF-5 at the Meliadine site in 2019. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

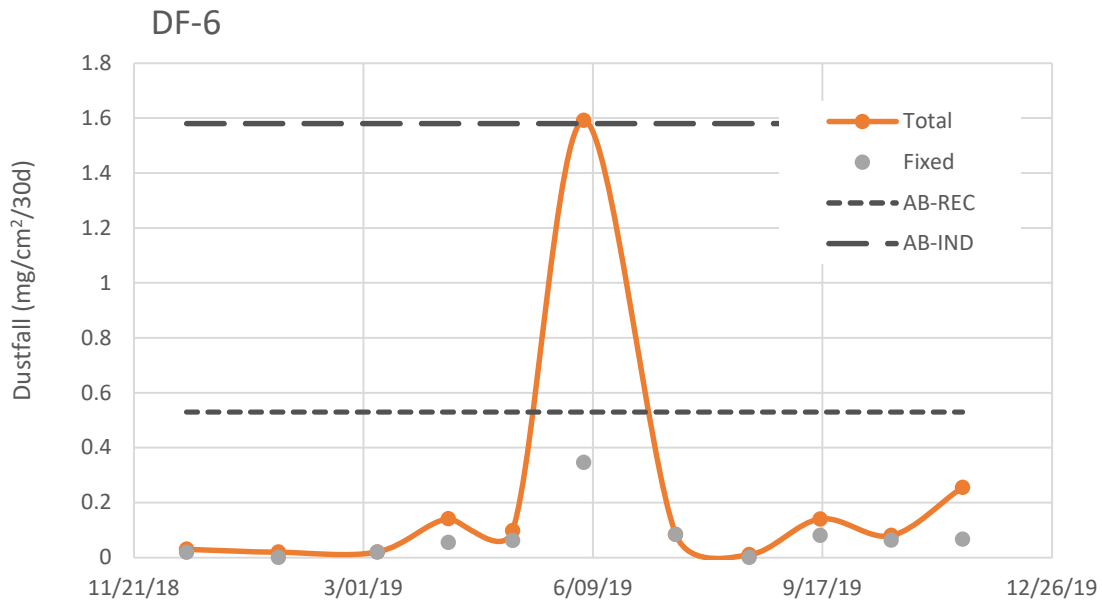


Figure 8. 30-day-normalized rates of total and fixed dustfall at sampling location DF-6 at the Meliadine site in 2019. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

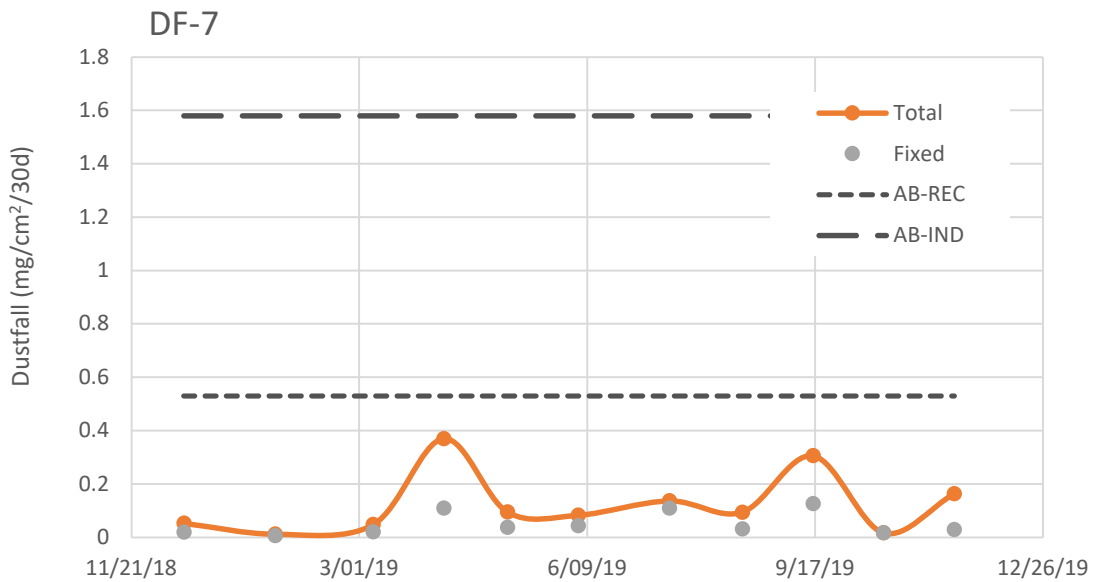


Figure 9. 30-day-normalized rates of total and fixed dustfall at sampling location DF-7 at the Meliadine site in 2019. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

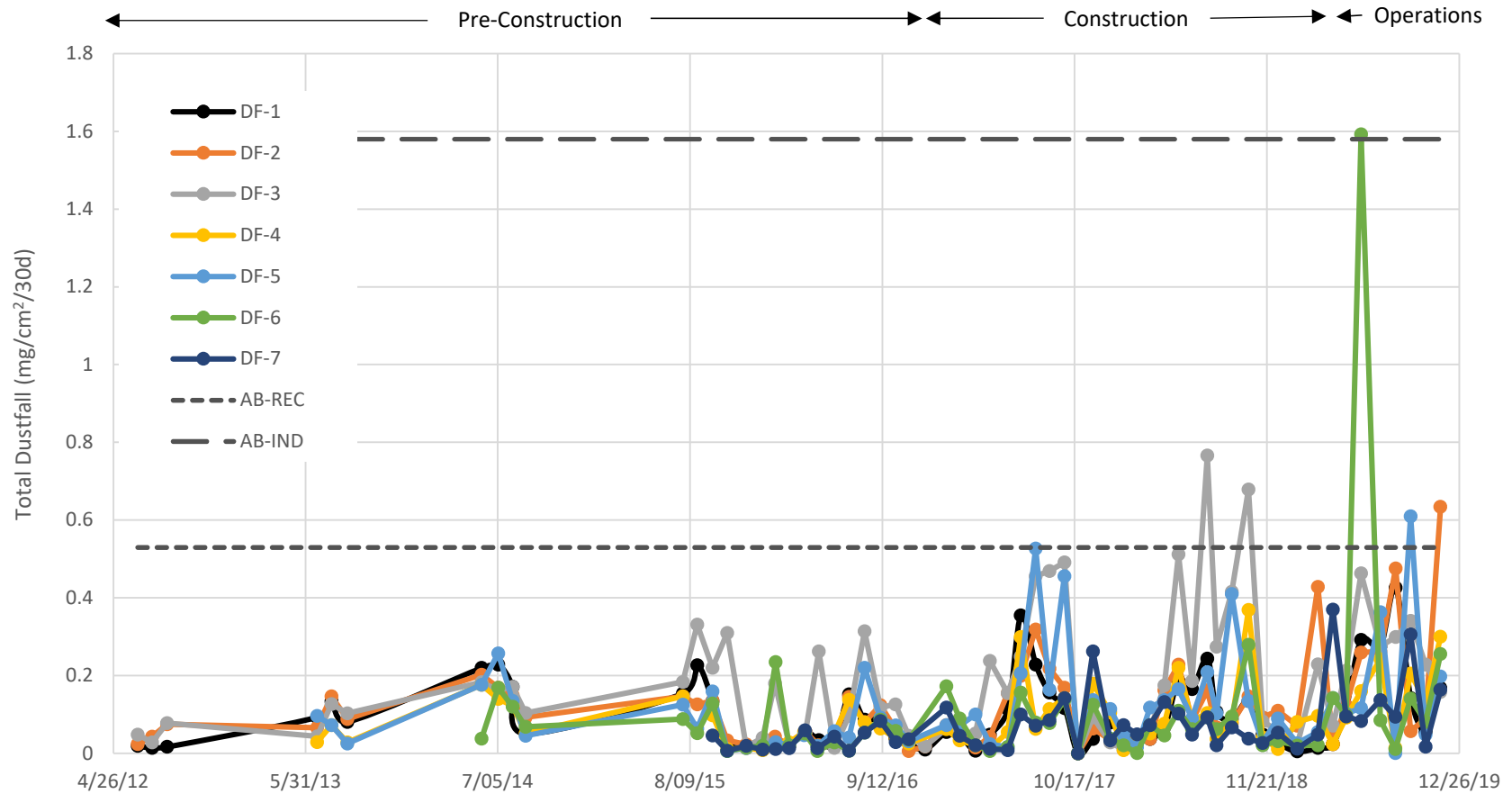


Figure 10. Historical 30-day-normalized rates of total dustfall at the Meliadine site. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

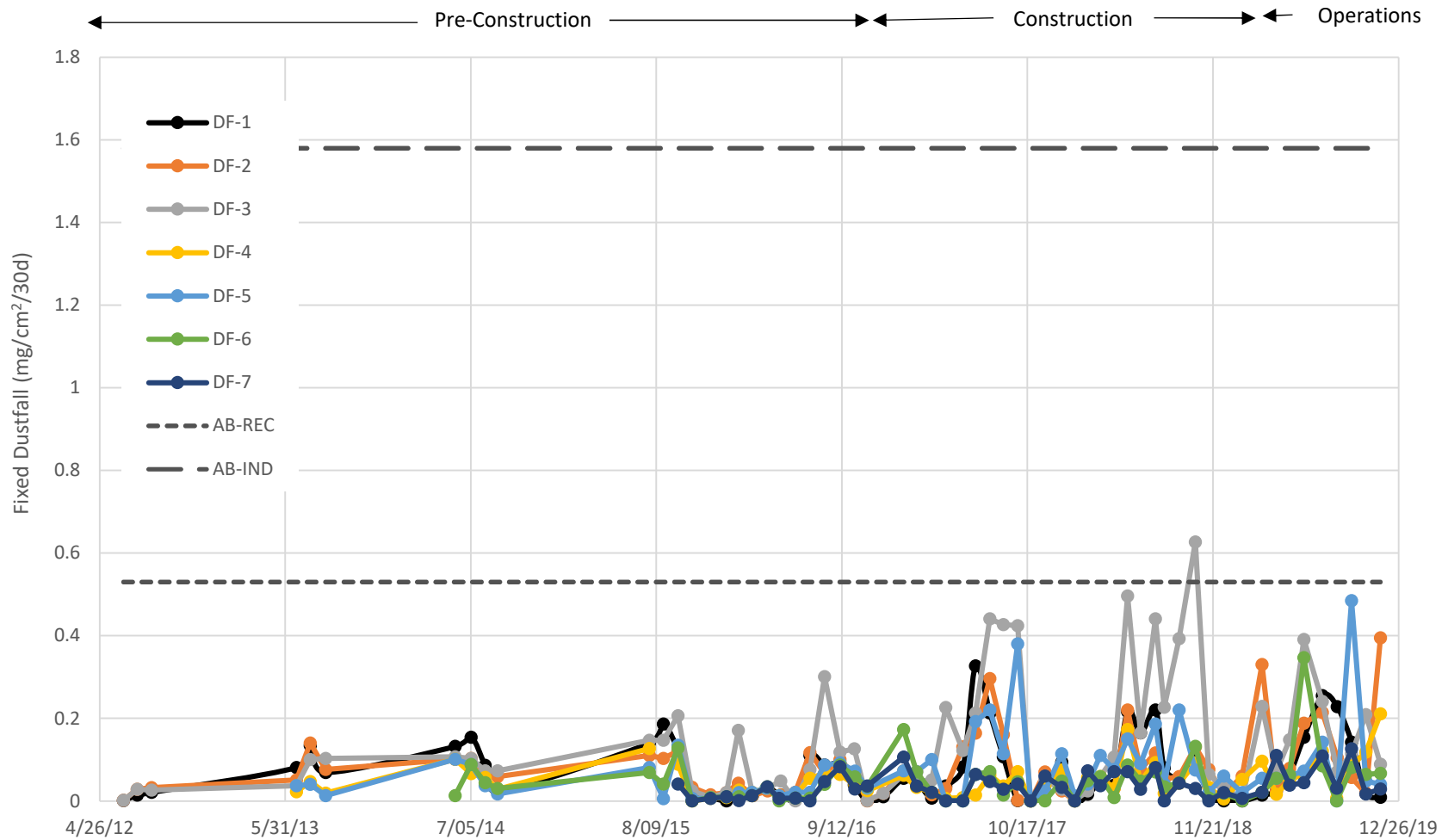


Figure 11. Historical 30-day-normalized rates of fixed dustfall at the Meliadine site. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas for total dustfall, for reference.

3.2.2 Dustfall Transects

Dustfall data collected through new transect sampling locations along the AWAR and Bypass Road at DF-1, DF-2, DF-3, and DF-WT are provided in Figures 12 - 15. These results indicate that in all cases, rates of dustfall decline below regulatory guidelines for recreational areas between 25 m and 100 m from the road. Results are similar to those observed along Agnico's Meadowbank AWAR, in locations where dust suppression is applied.

For DF-WT, background rates of dustfall measured in 2017 and 2018 (prior to construction of the By-Pass Road) were available for stations east of the roadway. There is no clear indication that dustfall rates in 2019 are substantially different from background in this area.

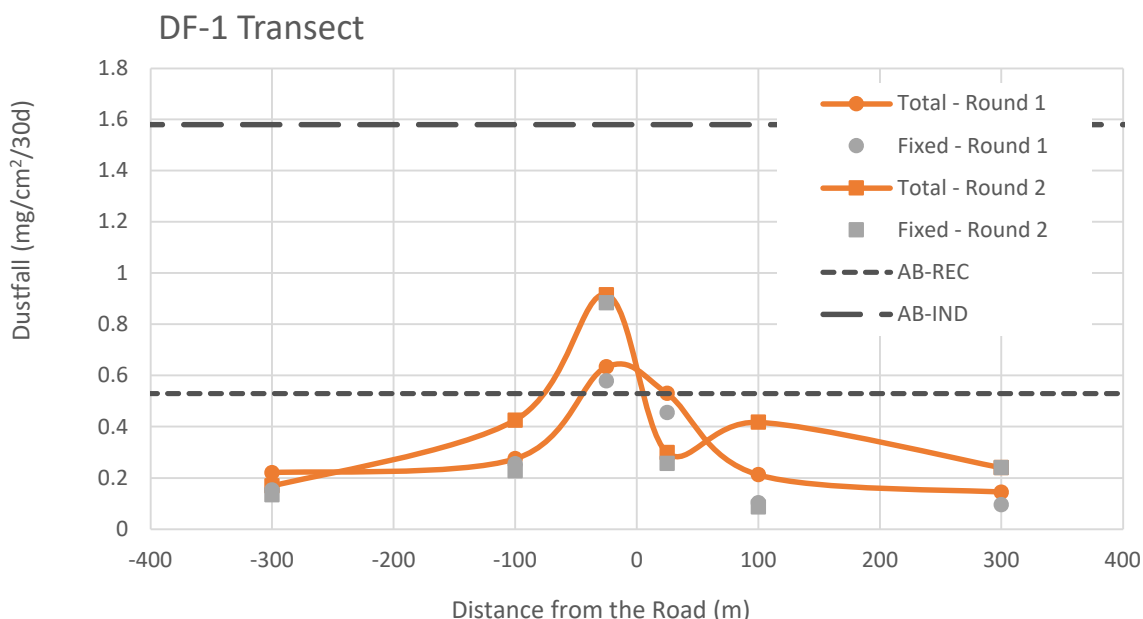


Figure 12. 30-day-normalized rates of total and fixed dustfall for transect DF-1 along the Meliadine AWAR in 2019. Negative values represent the west (upwind) side of the road. Symbols represent start date of sample collection (Round 1 = July 15, Round 2 = August 16). Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

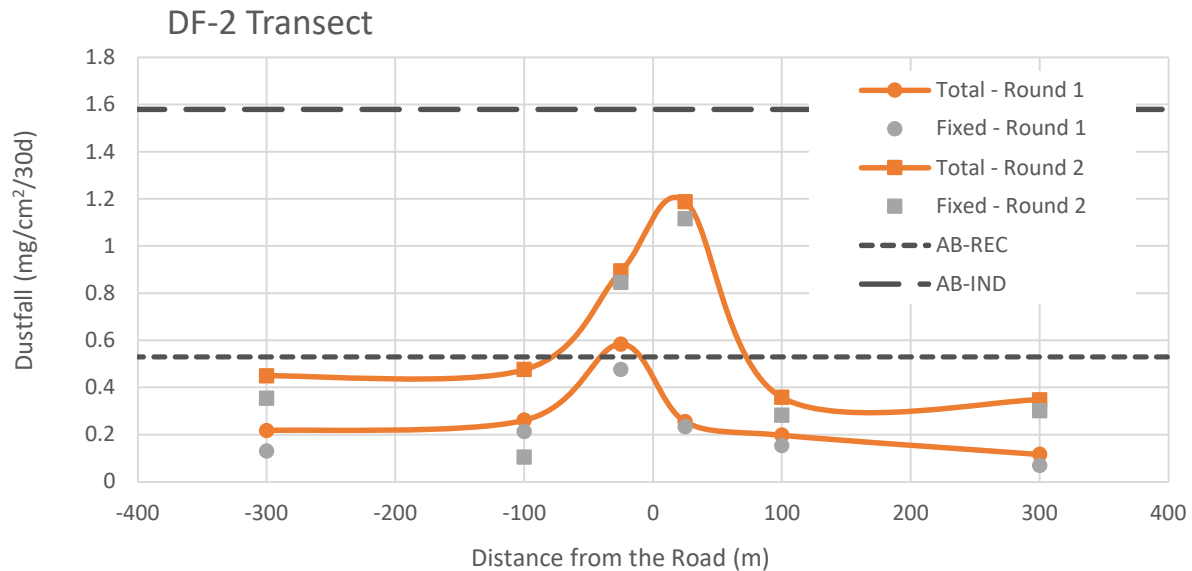


Figure 13. 30-day-normalized rates of total and fixed dustfall for transect DF-2 along the Meliadine AWAR in 2019. Negative values represent the west (upwind) side of the road. Symbols represent start date of sample collection (Round 1 = July 15, Round 2 = August 16). Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

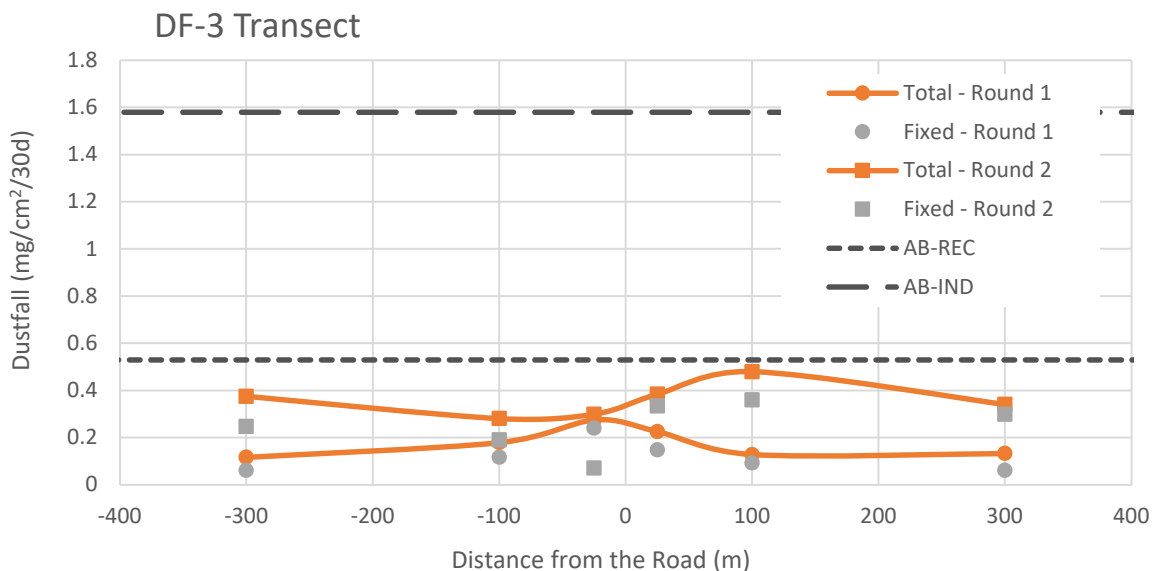


Figure 14. 30-day-normalized rates of total and fixed dustfall for transect DF-3 along the Meliadine AWAR in 2019. Negative values represent the west (upwind) side of the road. Symbols represent start date of sample collection (Round 1 = July 15, Round 2 = August 16). Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

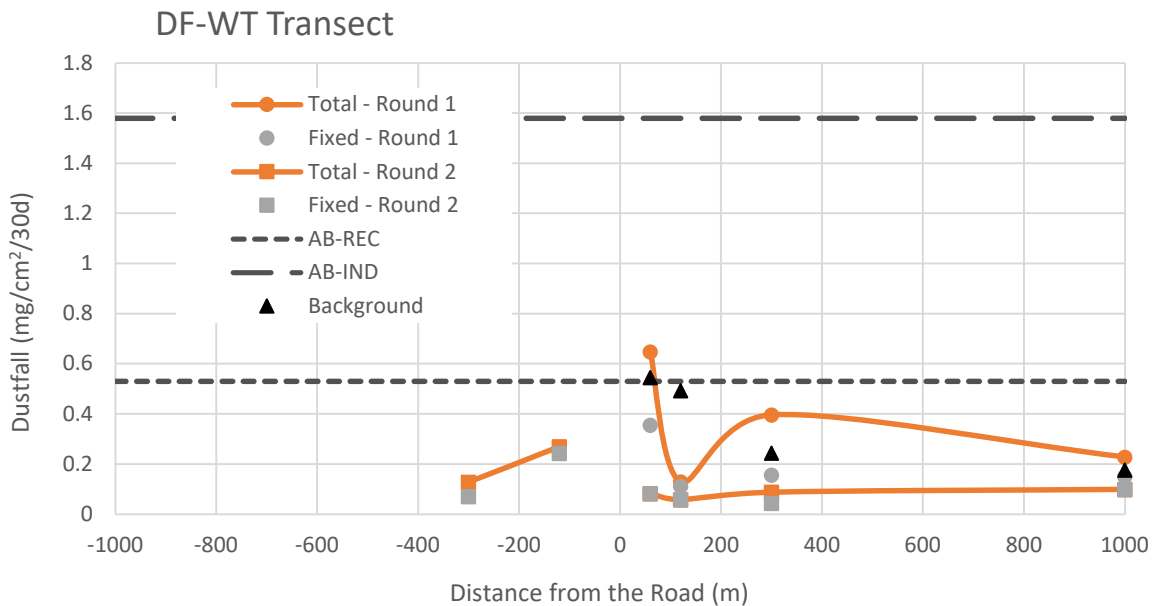


Figure 15. 30-day-normalized rates of total and fixed dustfall for transect DF-WT along the Meliadine By-pass Road in 2019. Negative values represent the west (upwind) side of the road. Symbols represent start date of sample collection (Round 1 = July 15, Round 2 = August 16). Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas. Background values are maximum recorded total dustfall rates observed in July and August, 2017 and 2018, pre-construction.

3.3 NO₂ AND SO₂

Monthly-average NO₂ trends in 2019 are provided in Figure 16. Samples are plotted by the collection start date. Concentrations of NO₂ vary between non-detect (<0.1) and 1.6 ppb.

Annual arithmetic mean concentrations were calculated for each station from the monthly average values. The annual mean concentrations of NO₂ were 0.46 and 0.29 ppb for DF-5 and DF-7, respectively (December 13, 2018 – December 17, 2019). These are both well below the Government of Nunavut Ambient Air Quality Standard of 32 ppb for the annual average. These values are also lower than maximum concentrations predicted in the FEIS, adjusted for assumed background concentrations (23.4 ppb and 12.2 ppb for DF-5 and DF-7, respectively).

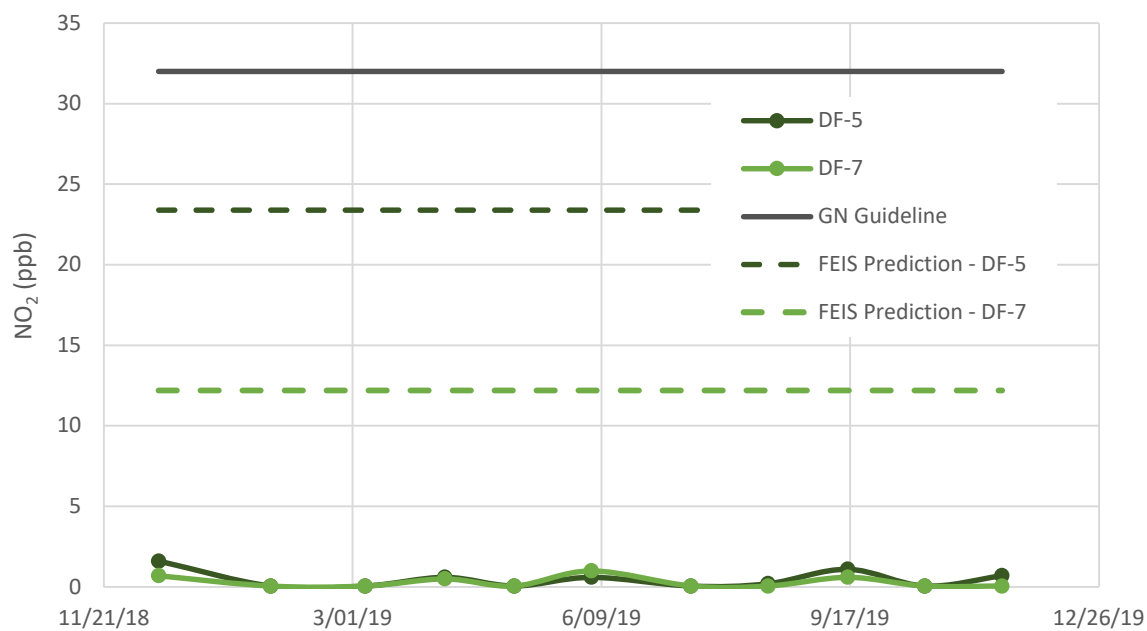


Figure 16. Monthly average concentration of NO₂ at DF-5 and DF-7. Symbols represent the collection start date. Dashed line indicates GN standard for the annual average.

Historical results (collected since 2017) are presented in Figure 17. No clear trends between sampling stations or over time are evident.

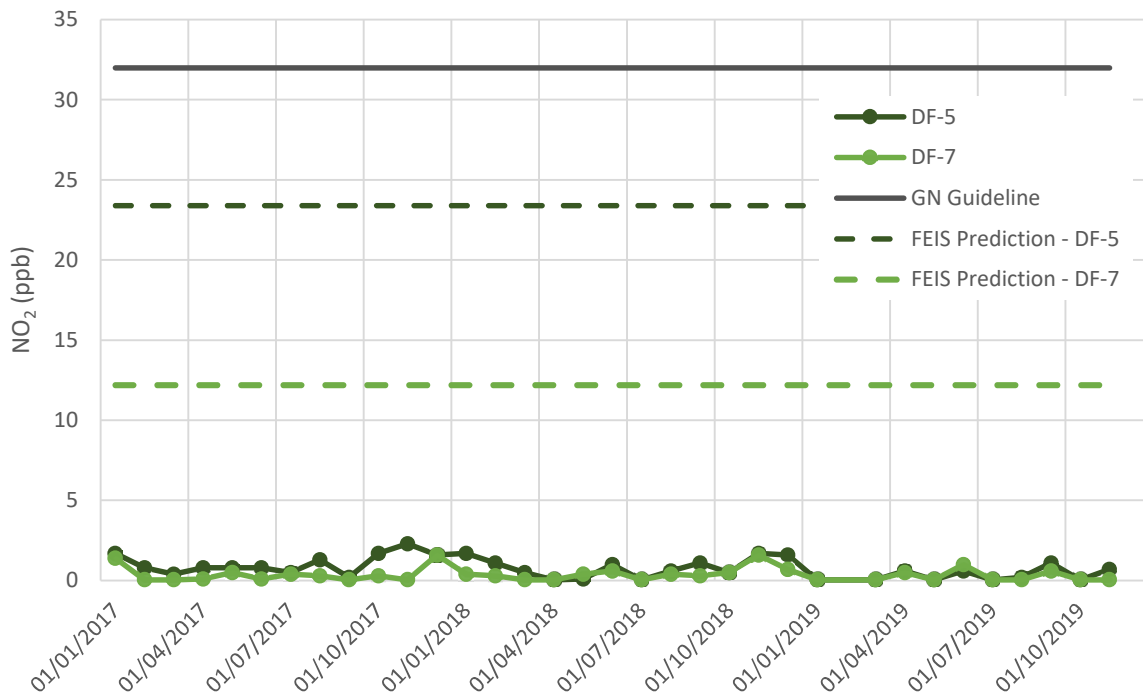


Figure 17. Historical measured monthly average concentration of NO₂ at DF-5 and DF-7. The GN guideline and FEIS predictions for the annual average are indicated, for reference.

Monthly-average SO₂ trends in 2019 are provided in Figure 18. Samples are referred to by the collection start date. Concentrations of SO₂ were non-detect (<0.1 ppb) in the majority of samples (16 of 22), with a maximum measured value of 0.2 ppb.

Annual arithmetic mean concentrations were calculated for each station from the monthly average values. A value of 0.05 ppb was used for samples below the detection limit (0.1 ppb). The annual mean concentrations of SO₂ were 0.09 and 0.07 ppb for DF-5 and DF-7, respectively (December 13, 2018 – December 17, 2019). These are both well below the Government of Nunavut Ambient Air Quality Standard of 11 ppb for the annual average, and FEIS maximum predicted values of 0.3 ppb and 0.2 ppb for DF-5 and DF-7, respectively.

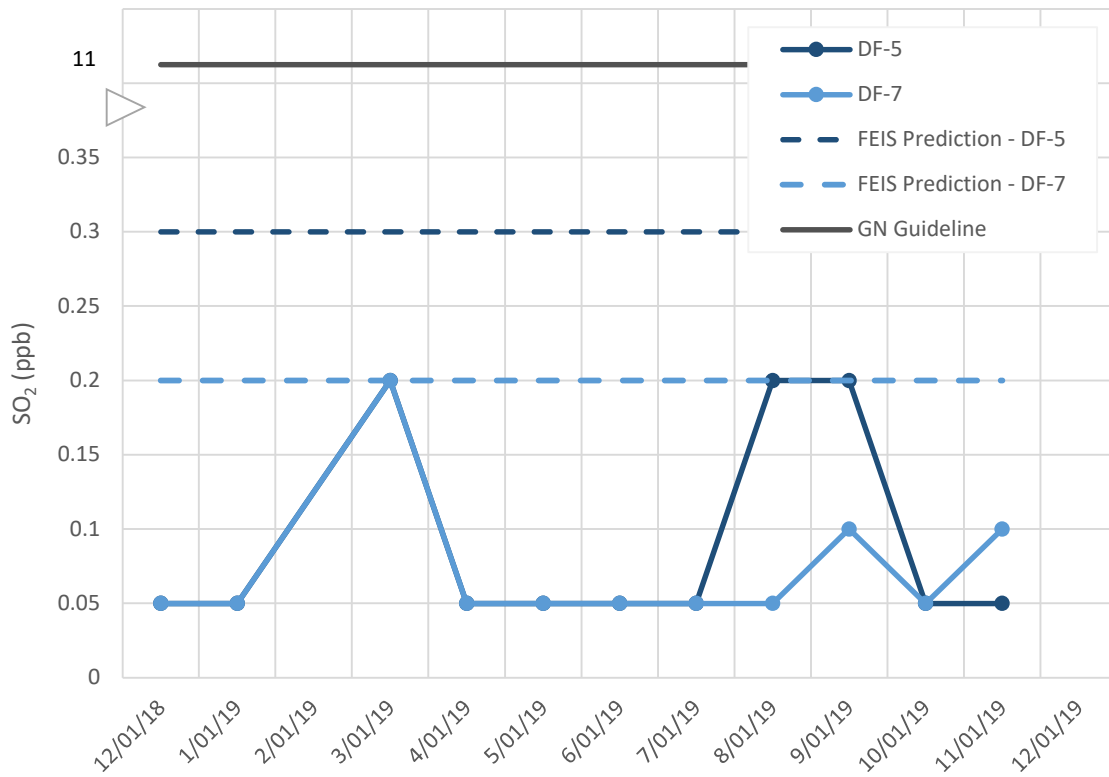


Figure 18. Monthly average concentration of SO₂ at DF-5 and DF-7. Symbols represent the collection start date. The GN guideline and FEIS predictions for the annual average are indicated, for reference.

Historical results (collected since 2017) are presented in Figure 19. No clear trends between sampling stations or over time are evident.

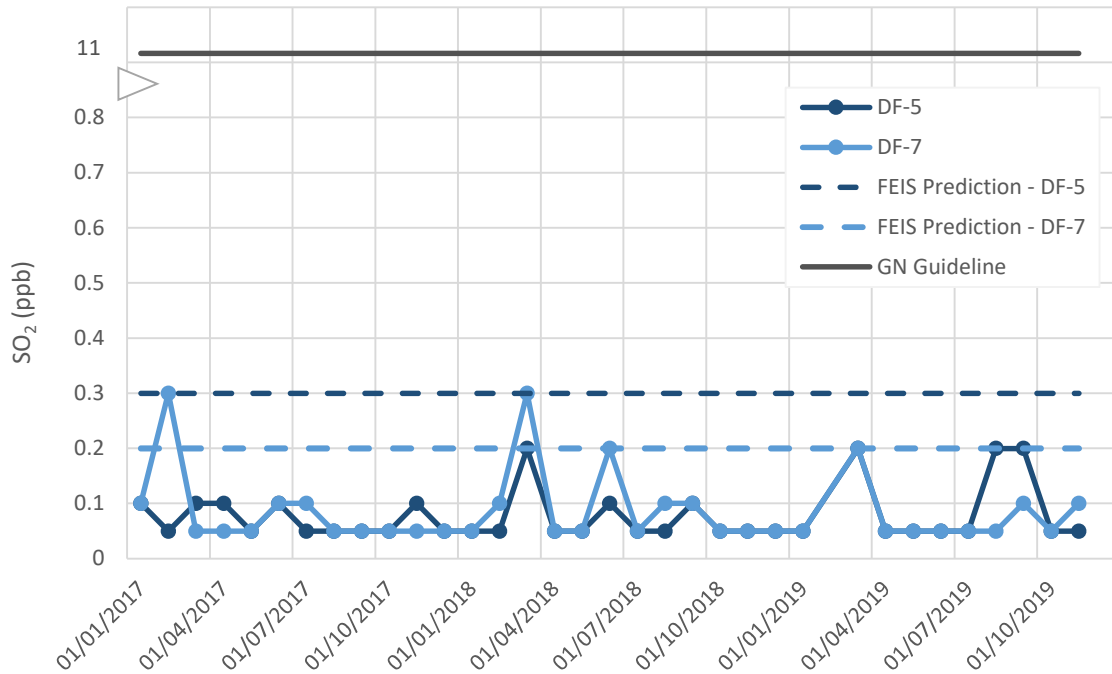


Figure 19. Historical measured monthly average concentration of SO₂ at DF-5 and DF-7. Dashed line indicates GN standard for the annual average, for reference.

4 METEOROLOGICAL MONITORING

As described in the Air Quality Monitoring Plan, a permanent weather station was installed at the Meliadine site, and daily averages for the following parameters in 2019 are provided in Appendix A:

- wind speed;
- wind direction;
- temperature;
- solar radiation;

5 INCINERATOR STACK TESTING

Incinerator stack testing was performed in December, 2019 to ensure standards provided in the GN's Environmental Guideline for the Burning and Incineration of Solid Waste (2012) are not

being exceeded. This report is provided under separate cover, as an appendix of the 2019 Annual Report to the NIRB. The measured concentrations of mercury were below the GN standard of 20 µg/Rm³ in all three tests. Measured concentrations of total dioxins and furans were also below the GN standard (80 pg TEQ / Rm³ @ 11 % v/v O₂) in all three tests.

6 GREENHOUSE GAS EMISSIONS

Agnico Eagle is required by Environment Canada's Greenhouse Gas Emissions Reporting Program (GHGRP) to track greenhouse gas emissions based on annual fuel consumption, composition and the US EPA's AP-42 emission factors.

In the FEIS, total GHG emissions from the mine site were conservatively estimated to be not more than 304,000 tonnes/yr CO₂e. Estimated GHG emissions from the additional marine operations at Rankin Inlet were estimated at approximately 13,000 tonnes/yr CO₂e.

Calculated emissions for the Meliadine site (including Rankin Inlet operations) will be reported to regulators by the June, 2020 deadline.

7 MITIGATIVE AND ADAPTIVE STRATEGIES

7.1 MITIGATION

Fugitive dust abatement measures and pollution prevention strategies were identified in the FEIS for the operations phase as follows and are being implemented. Since monitoring results in 2019 were within applicable air quality criteria and FEIS predictions, no additional mitigative measures are planned.

- Best management practices to control fugitive particulate emissions from haul roads and material handling, and the AWAR (see Road Management Plan for details).
- Sources of particulate emissions at the processing facility are controlled through the use of baghouses.
- Enclosures are used to reduce fugitive emissions at the processing facility.
- Exhaust emissions from non-road vehicles are managed through purchasing equipment that meet Tier 3 emission standards.
 - New purchases are Tier 4
- Exhaust emissions from non-road vehicles are managed through regular and routine maintenance of vehicles.
- SO₂ emissions from non-road vehicles and stationary equipment will be reduced through the use of low sulphur diesel fuel (<15 ppm).
 - Actual fuel in use in ultra-low sulphur fuel (<8 ppm)

7.2 MONITORING

The following items were identified in the 2018 Air Quality Monitoring Report to improve the program, and Agnico's actions in 2019 are indicated.

- Maintenance and replacement parts will be obtained to ensure all Partisol units are operating, and minimal delays occur due to service requirements.
 - Ongoing. All units received professional servicing and calibration at the supplier, who will re-install the units onsite as soon as possible and provide training to Environment Department technicians.
- Procedures will be developed for the collection of sampled filters, and deployment of new filters to reduce the potential for gaps in the data.
 - Complete
- A schedule of annual calibration of each unit, with bi-annual or quarterly system audits will be implemented.
 - The schedule will be implanted once units are re-installed onsite and are operational (beginning 2020).

Planned supplementary actions in 2020 include:

- Continue to investigate alternate sampling equipment for suspended particulates to potentially replace Partisols, due to persistent, ongoing equipment malfunctions.
- Enact revisions to monitoring locations and analyses as described in the updated Air Quality Monitoring Plan (Version 2, April 2020), including:
 - Analysis of certain metals in suspended particulates;
 - Supplemental dustfall monitoring at reference stations;
 - Addition of dustfall transect monitoring locations at DF-1, DF-2, DF-3, and DF-WT (completed already in 2019);
 - Reduction in monitoring frequency for DF-1, DF-2, and DF-3 from year-round to summer-only.
- Target use of one travel blank per shipment, for each sample type.

Outside of these actions monitoring in 2020 will be conducted according to the Operations phase schedule, as described in the Air Quality Monitoring Plan (Version 2, April, 2020).

REFERENCES

Golder (Golder Associates), 2014. Final Environmental Impact Statement – Meliadine Gold Project, Nunavut. Volume 5.0 Atmospheric Environment and Impact Assessment. April, 2014.

APPENDIX A: DAILY AVERAGE WEATHER DATA

Appendix A Table 1: Daily average temperature, wind speed, wind direction, solar radiation, and rainfall as measured by the Meliadine onsite weather station.

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
1/1/2019	-30.6	26.6	320.8	8.7
1/2/2019	-32.7	11.3	338.5	6.5
1/3/2019	-25.4	14.3	127.2	2.3
1/4/2019	-22.6	27.5	117.7	1.5
1/5/2019	-27.8	15.2	345.3	5.4
1/6/2019	-28.5	22.7	309.7	5.6
1/7/2019	-31.0	8.0	239.7	2.8
1/8/2019	-24.6	11.0	103.4	2.2
1/9/2019	-34.8	22.6	332.1	5.9
1/10/2019	-35.5	21.0	327.5	4.0
1/11/2019	-36.8	14.6	330.4	9.4
1/12/2019	-35.7	8.2	322.7	6.4
1/13/2019	-18.0	31.2	151.8	3.4
1/14/2019	-21.4	47.4	316.8	5.3
1/15/2019	-34.7	46.0	324.0	7.3
1/16/2019	-34.5	39.4	322.1	8.1
1/17/2019	-36.7	25.4	317.8	13.6
1/18/2019	-39.7	15.1	331.6	16.2
1/19/2019	-41.7	16.3	323.0	18.3
1/20/2019	-28.9	31.0	307.4	7.9
1/21/2019	-25.8	20.7	279.3	15.7
1/22/2019	-33.6	19.8	320.8	21.2
1/23/2019	-37.3	6.9	290.5	9.7
1/24/2019	-42.4	21.4	325.0	18.9
1/25/2019	-40.6	19.2	318.6	19.4
1/26/2019	-42.5	19.5	327.7	22.1
1/27/2019	-42.0	13.4	324.6	24.2
1/28/2019	-39.2	1.2	350.3	24.1
1/29/2019	-35.5	15.7	351.3	8.5
1/30/2019	-41.5	14.2	330.4	24.4
1/31/2019	-43.0	8.7	321.5	27.2
2/1/2019	-41.5	8.1	309.4	27.1
2/2/2019	-40.5	21.9	327.4	16.6
2/3/2019	-37.5	24.4	326.0	19.5
2/4/2019	-35.9	23.6	327.8	20.9
2/5/2019	-33.4	27.6	324.9	29.8

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
2/6/2019	-31.9	16.4	326.5	41.2
2/7/2019	-32.4	14.8	321.1	39.8
2/8/2019	-32.4	22.6	323.4	46.5
2/9/2019	-32.3	33.0	318.8	36.4
2/10/2019	-32.9	17.0	317.1	46.6
2/11/2019	-26.5	6.2	204.0	22.6
2/12/2019	-21.3	13.5	261.8	30.9
2/13/2019	-34.0	18.2	318.2	60.6
2/14/2019	-32.3	3.8	270.3	53.5
2/15/2019	-24.3	11.1	143.7	33.0
2/16/2019	-24.2	10.9	57.5	30.8
2/17/2019	-33.7	20.6	323.4	65.0
2/18/2019	-36.1	29.7	327.5	55.8
2/19/2019	-36.2	25.7	321.9	66.0
2/20/2019	-36.7	14.1	319.1	71.7
2/21/2019	-35.2	19.0	322.5	71.6
2/22/2019	-33.7	14.8	313.8	73.0
2/23/2019	-32.4	2.4	278.2	53.0
2/24/2019	-30.9	23.8	333.5	58.6
2/25/2019	-37.8	24.6	324.6	77.8
2/26/2019	-38.5	16.1	331.8	81.4
2/27/2019	-36.5	1.0	286.8	83.1
2/28/2019	-30.2	0.0	0.0	81.8
3/1/2019	-32.1	0.0	0.0	99.4
3/2/2019	-30.9	0.0	0.0	64.2
3/3/2019	-26.2	21.6	327.0	68.9
3/4/2019	-22.6	21.7	347.5	72.8
3/5/2019	-26.4	13.6	346.2	73.6
3/6/2019	-28.9	16.1	329.0	86.9
3/7/2019	-25.5	19.4	333.4	87.6
3/8/2019	-27.9	7.1	339.3	115.6
3/9/2019	-33.1	4.1	311.9	118.4
3/10/2019	-33.9	6.7	320.3	119.7
3/11/2019	-31.5	6.5	180.8	119.8
3/12/2019	-20.0	34.1	140.8	62.3
3/13/2019	-17.4	14.4	84.6	110.1
3/14/2019	-21.0	5.3	51.8	117.6
3/15/2019	-20.1	8.6	15.1	81.5
3/16/2019	-26.5	19.3	335.3	119.6

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
3/17/2019	-31.0	14.7	326.7	129.1
3/18/2019	-27.4	5.8	123.7	132.6
3/19/2019	-16.7	8.2	150.7	88.8
3/20/2019	-19.0	12.2	69.6	135.1
3/21/2019	-16.3	20.4	173.0	90.0
3/22/2019	-17.7	30.6	330.4	129.9
3/23/2019	-16.5	27.9	247.9	85.3
3/24/2019	-25.7	59.0	326.4	123.5
3/25/2019	-26.4	53.3	324.2	128.6
3/26/2019	-24.1	28.5	322.2	154.8
3/27/2019	-12.2	21.4	129.1	97.4
3/28/2019	-21.4	44.1	325.8	131.9
3/29/2019	-28.5	45.9	325.7	142.4
3/30/2019	-25.6	41.0	323.2	163.6
3/31/2019	-18.9	12.2	316.3	158.7
4/1/2019	-15.8	21.9	322.5	162.3
4/2/2019	-14.1	6.7	37.9	127.7
4/3/2019	-18.0	10.0	357.8	153.2
4/4/2019	-24.1	22.9	316.2	180.7
4/5/2019	-23.7	9.6	298.4	174.1
4/6/2019	-24.1	9.1	136.9	179.4
4/7/2019	-26.1	17.0	325.5	197.5
4/8/2019	-25.0	9.0	328.6	206.7
4/9/2019	-21.4	7.4	131.2	207.1
4/10/2019	-16.5	12.9	159.5	203.2
4/11/2019	-11.8	19.5	164.7	201.9
4/12/2019	-7.4	15.8	168.0	166.4
4/13/2019	-4.6	14.8	157.7	120.6
4/14/2019	-3.4	6.8	81.7	170.6
4/15/2019	-6.9	12.7	108.1	159.8
4/16/2019	-9.8	17.3	89.9	155.3
4/17/2019	-10.0	25.4	92.2	193.3
4/18/2019	-10.5	13.9	47.6	180.1
4/19/2019	-16.1	17.0	345.9	241.5
4/20/2019	-14.7	4.3	16.9	235.8
4/21/2019	-20.0	19.7	333.6	247.5
4/22/2019	-20.9	13.9	316.0	200.9
4/23/2019	-19.8	9.6	320.0	246.6
4/24/2019	-10.8	28.9	127.6	177.1

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
4/25/2019	-6.3	28.9	77.9	153.5
4/26/2019	-19.0	33.2	326.2	264.5
4/27/2019	-21.3	7.3	330.8	268.3
4/28/2019	-20.2	7.7	156.3	254.7
4/29/2019	-17.8	14.3	308.2	226.3
4/30/2019	-19.2	13.3	297.2	273.0
5/1/2019	-15.4	29.3	127.7	260.8
5/2/2019	-8.5	28.2	130.3	287.1
5/3/2019	-7.8	23.5	129.0	290.4
5/4/2019	-6.2	11.9	75.3	290.3
5/5/2019	-10.7	19.7	347.8	298.0
5/6/2019	-12.9	19.4	350.7	258.0
5/7/2019	-12.5	17.5	334.7	288.4
5/8/2019	-5.0	26.4	341.5	224.7
5/9/2019	-2.3	9.9	346.2	225.8
5/10/2019	-4.2	11.0	154.9	241.5
5/11/2019	-6.0	4.3	336.8	260.0
5/12/2019	-4.1	18.3	353.0	279.9
5/13/2019	-4.3	36.4	304.3	230.4
5/14/2019	-4.8	17.4	181.3	265.1
5/15/2019	-2.6	24.2	74.0	151.7
5/16/2019	-0.5	23.1	59.3	261.5
5/17/2019	-1.2	20.2	52.9	315.4
5/18/2019	0.2	16.6	358.7	189.7
5/19/2019	-2.3	12.1	2.3	325.2
5/20/2019	-2.6	7.4	350.3	318.0
5/21/2019	-3.2	13.7	159.9	269.2
5/22/2019	-2.2	17.0	27.2	238.8
5/23/2019	-4.3	26.0	335.0	282.2
5/24/2019	-2.3	28.5	323.0	265.7
5/25/2019	-1.8	21.1	333.3	305.3
5/26/2019	-5.5	19.8	326.2	287.7
5/27/2019	-4.5	16.7	243.0	291.4
5/28/2019	0.0	9.8	104.0	125.8
5/29/2019	-0.5	18.5	4.5	205.9
5/30/2019	0.7	14.1	38.0	200.3
5/31/2019	0.0	6.7	133.7	57.5
6/1/2019	0.7	12.4	77.7	176.0
6/2/2019	1.8	11.4	67.7	284.8

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
6/3/2019	0.1	12.2	116.9	190.7
6/4/2019	0.4	14.1	140.3	356.3
6/5/2019	-0.2	15.3	137.5	322.3
6/6/2019	2.4	16.0	107.1	321.6
6/7/2019	2.1	11.1	111.4	320.8
6/8/2019	2.3	12.2	131.7	164.5
6/9/2019	1.4	27.0	116.6	73.3
6/10/2019	1.9	24.8	179.4	134.8
6/11/2019	3.0	24.9	236.4	216.8
6/12/2019	2.9	16.5	305.3	186.6
6/13/2019	3.8	15.9	321.5	269.4
6/14/2019	5.7	8.5	335.4	191.0
6/15/2019	6.8	10.2	125.6	320.7
6/16/2019	4.8	11.4	163.9	348.4
6/17/2019	4.9	7.5	215.1	266.6
6/18/2019	8.9	9.9	209.5	339.8
6/19/2019	6.7	17.1	169.1	306.9
6/20/2019	8.6	9.0	115.7	243.6
6/21/2019	7.1	14.6	135.9	232.0
6/22/2019	8.3	13.3	346.6	285.6
6/23/2019	9.1	7.8	292.0	361.2
6/24/2019	7.0	12.8	192.9	324.3
6/25/2019	6.2	13.6	119.5	150.1
6/26/2019	8.1	13.5	101.3	177.7
6/27/2019	11.1	10.5	95.6	185.8
6/28/2019	14.0	9.0	58.5	287.0
6/29/2019	13.1	11.2	93.0	275.0
6/30/2019	11.1	11.2	158.2	234.2
7/1/2019	6.8	21.5	126.8	80.2
7/2/2019	5.1	18.1	126.9	72.3
7/3/2019	4.7	11.6	113.4	87.0
7/4/2019	7.0	18.7	102.3	74.0
7/5/2019	9.3	7.9	120.7	208.4
7/6/2019	12.5	9.6	299.3	286.9
7/7/2019	12.9	9.4	315.0	157.3
7/8/2019	11.0	14.8	162.6	297.2
7/9/2019	7.2	30.5	145.0	143.0
7/10/2019	5.7	13.7	146.6	68.5
7/11/2019	9.4	17.0	236.7	191.0

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
7/12/2019	11.9	13.6	284.5	236.8
7/13/2019	12.9	11.3	214.0	187.7
7/14/2019	11.6	18.1	297.3	248.7
7/15/2019	12.8	9.4	284.2	234.4
7/16/2019	12.3	10.7	205.1	241.1
7/17/2019	13.1	13.6	268.3	254.9
7/18/2019	14.9	14.0	311.0	185.5
7/19/2019	12.0	16.9	329.1	282.7
7/20/2019	12.3	17.1	349.2	244.7
7/21/2019	13.3	16.3	354.6	244.2
7/22/2019	14.0	15.1	356.9	311.8
7/23/2019	15.3	10.6	285.9	236.9
7/24/2019	10.7	19.4	342.5	230.9
7/25/2019	10.6	14.7	329.9	269.7
7/26/2019	10.7	9.1	323.6	269.0
7/27/2019	10.2	9.3	6.4	246.6
7/28/2019	7.0	22.4	135.6	43.6
7/29/2019	6.6	20.9	164.5	72.0
7/30/2019	9.7	10.3	291.3	259.3
7/31/2019	10.6	17.1	161.9	281.9
8/1/2019	9.8	18.9	162.0	185.6
8/2/2019	12.7	8.2	299.1	186.0
8/3/2019	15.1	9.3	16.7	271.8
8/4/2019	9.3	22.5	156.4	125.2
8/5/2019	8.5	31.4	134.1	35.5
8/6/2019	8.7	31.2	124.9	128.8
8/7/2019	11.2	22.2	99.4	98.1
8/8/2019	12.6	20.9	71.2	246.6
8/9/2019	13.6	19.9	55.8	263.1
8/10/2019	11.4	11.6	55.7	125.7
8/11/2019	9.5	9.8	61.3	88.8
8/12/2019	8.9	17.8	29.2	62.3
8/13/2019	9.2	12.3	21.5	71.3
8/14/2019	8.7	4.9	143.4	51.8
8/15/2019	9.9	5.1	19.5	126.9
8/16/2019	10.8	5.2	188.8	94.4
8/17/2019	9.4	5.7	151.3	107.2
8/18/2019	6.7	9.0	158.4	203.4
8/19/2019	11.3	12.7	65.7	195.6

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
8/20/2019	10.2	28.3	80.1	50.7
8/21/2019	10.9	19.7	79.0	239.6
8/22/2019	11.9	7.4	326.6	229.2
8/23/2019	9.2	23.4	182.1	234.3
8/24/2019	10.9	17.5	249.5	130.5
8/25/2019	10.4	12.4	172.0	133.4
8/26/2019	9.7	15.9	50.7	68.0
8/27/2019	9.9	8.5	353.4	101.9
8/28/2019	9.0	11.9	71.8	139.8
8/29/2019	7.9	21.7	55.9	23.2
8/30/2019	7.4	26.2	4.9	53.9
8/31/2019	4.2	39.7	335.0	97.9
9/1/2019	2.9	39.1	319.5	81.5
9/2/2019	2.5	35.6	334.9	56.7
9/3/2019	3.7	29.5	333.9	116.8
9/4/2019	4.5	19.4	329.0	86.2
9/5/2019	5.3	16.2	333.4	146.4
9/6/2019	5.7	8.1	284.5	96.3
9/7/2019	5.1	5.9	319.0	126.7
9/8/2019	4.6	10.4	327.3	125.1
9/9/2019	4.4	14.3	347.2	135.9
9/10/2019	6.0	10.3	322.3	172.5
9/11/2019	6.9	12.7	258.6	74.9
9/12/2019	7.3	14.0	315.5	77.9
9/13/2019	9.7	12.8	229.4	165.6
9/14/2019	10.5	5.4	238.6	153.2
9/15/2019	8.0	12.8	143.8	89.9
9/16/2019	7.6	24.5	154.8	54.1
9/17/2019	7.6	11.1	316.6	82.8
9/18/2019	5.6	15.2	147.8	13.2
9/19/2019	7.4	18.4	297.8	60.1
9/20/2019	4.8	24.4	323.2	78.3
9/21/2019	5.1	14.9	202.4	84.3
9/22/2019	6.1	20.3	83.7	10.5
9/23/2019	4.7	12.2	144.8	32.6
9/24/2019	6.3	19.4	183.8	19.4
9/25/2019	7.1	19.8	127.1	42.8
9/26/2019	6.2	13.8	109.3	27.0
9/27/2019	4.6	21.6	357.4	46.7

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
9/28/2019	0.7	36.9	339.2	29.0
9/29/2019	-0.7	34.9	335.0	35.2
9/30/2019	-2.6	37.2	329.3	67.2
10/1/2019	-3.7	17.9	336.0	102.7
10/2/2019	0.4	7.8	239.2	92.4
10/3/2019	0.2	7.3	259.8	47.8
10/4/2019	-0.8	12.5	330.7	73.8
10/5/2019	2.3	13.9	205.3	47.8
10/6/2019	2.1	5.5	189.0	41.4
10/7/2019	-0.2	16.4	3.5	12.8
10/8/2019	-3.0	12.9	356.4	76.9
10/9/2019	2.3	30.2	144.0	16.0
10/10/2019	-0.4	31.1	216.9	61.9
10/11/2019	-1.8	33.9	295.1	45.7
10/12/2019	-1.5	14.0	293.9	33.6
10/13/2019	-1.6	8.1	220.8	78.2
10/14/2019	0.2	15.1	190.0	31.0
10/15/2019	-0.9	9.6	25.1	27.6
10/16/2019	-3.8	19.8	16.9	51.3
10/17/2019	-6.2	10.6	24.3	69.3
10/18/2019	-2.6	20.0	140.1	20.4
10/19/2019	0.4	39.6	160.3	22.3
10/20/2019	1.0	31.9	153.1	12.3
10/21/2019	0.5	11.2	179.2	13.0
10/22/2019	-1.9	17.0	247.1	35.5
10/23/2019	-7.2	8.2	321.2	40.0
10/24/2019	-8.0	23.0	350.5	47.9
10/25/2019	-8.7	17.7	322.7	28.1
10/26/2019	-4.6	10.1	152.7	20.7
10/27/2019	-4.8	11.7	49.4	24.8
10/28/2019	-3.8	20.5	38.4	11.4
10/29/2019	-1.5	35.5	52.6	20.3
10/30/2019	-1.6	18.5	47.4	21.4
10/31/2019	-6.4	5.1	199.0	29.2
11/1/2019	-6.4	10.8	239.7	16.2
11/2/2019	-8.0	8.6	292.7	16.0
11/3/2019	-13.7	4.4	346.9	14.9
11/4/2019	-9.4	8.0	90.5	13.1
11/5/2019	-16.1	16.8	354.4	12.1

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
11/6/2019	-19.8	21.5	343.4	12.0
11/7/2019	-20.1	27.4	338.8	9.8
11/8/2019	-20.7	19.8	324.3	9.6
11/9/2019	-18.6	13.6	305.9	7.5
11/10/2019	-15.6	9.6	13.7	8.6
11/11/2019	-18.0	24.7	355.3	7.7
11/12/2019	-25.9	13.6	257.8	8.9
11/13/2019	-14.9	9.4	202.3	7.6
11/14/2019	-16.8	18.4	323.1	7.5
11/15/2019	-21.7	27.0	321.9	5.9
11/16/2019	-16.9	14.8	316.1	6.2
11/17/2019	-14.0	11.5	341.4	7.0
11/18/2019	-20.8	21.0	331.5	4.7
11/19/2019	-21.9	12.2	344.9	5.1
11/20/2019	-16.4	12.7	43.6	5.7
11/21/2019	-16.6	28.5	15.7	7.8
11/22/2019	-19.0	21.3	353.0	7.8
11/23/2019	-10.2	12.1	68.9	6.6
11/24/2019	-19.9	11.8	14.7	11.2
11/25/2019	-13.5	5.4	68.7	6.8
11/26/2019	-12.8	4.3	53.9	5.5
11/27/2019	-22.4	8.9	350.3	6.5
11/28/2019	-20.7	12.3	320.4	3.9
11/29/2019	-16.7	15.3	237.0	6.5
11/30/2019	-11.4	24.5	233.3	5.4
12/1/2019	-11.8	19.7	323.0	10.1
12/2/2019	-16.5	9.9	19.2	7.3
12/3/2019	-27.8	10.9	350.8	6.3
12/4/2019	-31.5	5.4	338.3	8.2
12/5/2019	-28.9	6.8	315.8	6.5
12/6/2019	-31.9	4.0	301.9	5.7
12/7/2019	-34.3	3.0	284.6	3.1
12/8/2019	-35.4	4.7	341.6	2.7
12/9/2019	-34.6	10.1	338.8	3.9
12/10/2019	-28.0	30.6	338.5	5.1
12/11/2019	-19.3	32.1	353.6	3.4
12/12/2019	-29.0	21.2	343.2	6.6
12/13/2019	-29.2	14.9	321.2	7.2
12/14/2019	-28.6	16.5	318.0	8.3

Date	Temperature (°C)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Radiation (watts/m ²)
12/15/2019	-25.6	9.4	259.5	7.0
12/16/2019	-31.3	9.5	357.1	7.3
12/17/2019	-33.5	12.2	359.3	7.1
12/18/2019	-33.6	9.7	352.1	6.8
12/19/2019	-27.3	6.6	182.4	2.4
12/20/2019	-34.7	9.4	348.6	9.5
12/21/2019	-20.4	28.1	162.2	3.0
12/22/2019	-17.9	12.1	343.6	5.2
12/23/2019	-18.2	6.4	155.8	2.7
12/24/2019	-20.7	11.4	314.3	3.5
12/25/2019	-23.4	9.1	153.9	2.9
12/26/2019	-10.4	6.0	209.4	1.9
12/27/2019	-11.3	15.7	109.8	1.7
12/28/2019	-9.6	17.2	120.5	2.5
12/29/2019	-14.4	11.7	158.1	5.0
12/30/2019	-13.1	21.8	220.5	1.8
12/31/2019	-26.3	17.2	15.3	7.6

Appendix H-7

TEMMP Report



NUQSANA GOLDER
ENGINEERING AND ENVIRONMENTAL INC.

REPORT

Agnico Eagle Mines Limited - Meliadine Division

2019 Terrestrial Effects Monitoring and Mitigation Program Annual Report

Submitted to:

Agnico Eagle Mines Limited

Attention: Sara Savoie / Terry Ternes / Jessica Huza

Submitted by:

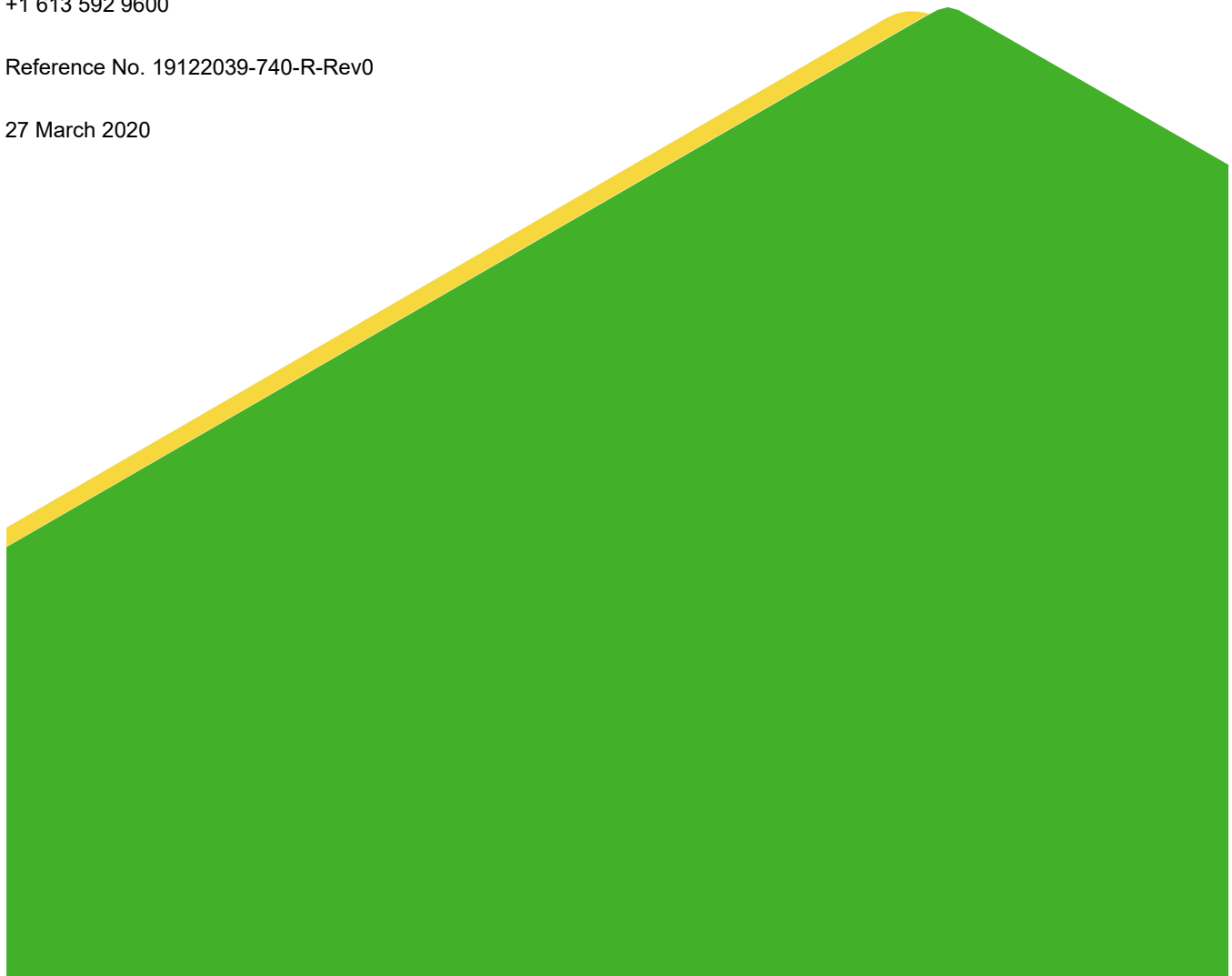
Nuqsana Golder Engineering and Environmental Inc.

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Reference No. 19122039-740-R-Rev0

27 March 2020



Distribution List

Electronic Copy - Agnico Eagle Mines Limited

Electronic Copy - Nuqsana Golder

Study Limitations

On behalf of Agnico Eagle Mines Limited (Agnico Eagle), Nuqsana Golder Engineering and Environmental Consulting Inc. (Nuqsana Golder) has prepared this Terrestrial Environment Management and Monitoring Annual Report for the 2019 Monitoring Period for the Meliadine Gold Mine in Rankin Inlet, Nunavut.

This report was prepared, based in part, on information obtained from Agnico Eagle, Arctic Raptors Inc. and other external information sources. In preparing the report, Nuqsana Golder has relied in good faith on the information provided. We accept no responsibility for any deficiency or inaccuracy contained in this report because of our reliance on the aforementioned information.

The findings and conclusions documented in this report have been prepared for the specific application to this Project and have been developed in a manner consistent with that level of care normally exercised by environmental professionals currently practicing under similar conditions in the jurisdiction.

With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time and should be reviewed regularly.

If new information is discovered during future work, the conclusions of this report should be re-evaluated, and the report amended, as required, prior to any reliance upon the information presented herein.

Executive Summary

The Agnico Eagle Mines Limited (Agnico Eagle) Meliadine Gold Mine (the Project), received a Project Certificate (No. 006) from the Nunavut Impact Review Board (NIRB) in February 2015, and amended (Amendment No. 001) in February 2019. A Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Project was prepared for submission with the Project Final Environmental Impact Statement (FEIS; 2015) and forms a component of the documentation series produced in accordance with the Project. This report addresses requirements of the Terms and Conditions of the NIRB Project Certificate (No. 006), as relevant to the TEMMP.

The objectives of the Annual TEMMP Report are to summarize annual data collected from wildlife and vegetation monitoring programs, and to describe natural variation and potential Project-related impacts to wildlife populations within and adjacent to the Project. The data was collected according to procedures and sampling or monitoring intervals outlined in the Project's Standard Operating Procedures and the TEMMP. The 2019 annual report describes monitoring objectives and methodology, 2019 annual results, mitigation activities, and management recommendations based on 2019 monitoring results. The following summary documents results collected for the 2019 TEMMP for the Meliadine Project located in the Kivalliq Region of Nunavut.

Incorporation of Inuit Qaujimajatuqangit

- When possible, field programs in 2019 were guided by Inuit Qaujimajatuqangit (IQ), including the assistance of local field assistants. Annual contributions from Inuit to the monitoring programs are presented in Section 3.0.

Direct Habitat Loss

- Direct habitat loss is assessed every three years and was not assessed in 2019 as the Project footprint is unchanged from that assessed in 2018 (next assessment in 2021).

Indirect Habitat Loss

- Indirect habitat loss for caribou and wildlife habitat (soils and vegetation) is assessed every three years and was not assessed in 2019 (next assessment in 2022, tied to the Vegetation Health Program).

Wildlife Observations

- Between 1 January and 7 December 2019, there were 244 incidental wildlife observations among 17 different species.

Wildlife Track Surveys

- On-site wildlife track surveys were conducted on various days between 6 January and 28 December 2019. A total of 322 individual tracks were recorded, including a cluster of 50 tracks of an unidentified species.
- Observations were largely limited to goose (Canada goose, Snow goose and unidentified goose tracks – 33.5%), Arctic hare (23%) and Arctic fox (31%) tracks. Three individual caribou tracks were recorded within the Meliadine Mine site (1%).

Bird Nests

- A total of 9 bird nests were observed in the Project footprint during the 2019 nesting season in July.
- No nests or eggs were disturbed, and none needed to be relocated.

Incidents and Mortalities

- A total of 17 wildlife mortalities were recorded in 2019 – a decline of 41% compared to 2018 mortalities.
- Only 29% of the total wildlife mortalities were Project-related and 71% of the total wildlife mortalities were Arctic foxes trapped by the Government of Nunavut (GN) Department of Environment (DoE) (i.e., not Project-related).

Wildlife Deterrents

- A bird deterrent canon was initially deployed in Saline Pond 2 (SP2) in accordance with Agnico Eagle's Project Certificate No.006 Term and Condition 74 on 6 June 2019, but was not used.
- Deterrent bird kites were deployed at several Collection Ponds at the Mine site and a snowy owl effigy was placed atop the fuel tanks to dissuade birds from nesting in these areas. No use of chemical deterrents against predatory mammals (i.e., bear sprays) were reported for 2019.

Barren-ground Caribou

Caribou Behavior

- Caribou behavior observations were completed by Agnico Eagle staff from 26 to 28 June and 1, 3 and 4 of July 2019 on 12 groups of caribou. Observations showed no obvious behavioral response to mine activity, including consideration of observations made between 2017 and 2019.
- An underground blast was undertaken on 3 July 2019. The on-site Agnico Eagle staff monitored a group of caribou approximately 3-4 km from the blast center-point to assess their behaviour. Though the monitors could hear and feel the rumble of the blast, the caribou showed no obvious behavioural response and did not flee the area.
- From 1993 to 2019, Qamanirjuaq collared caribou have been present in the Regional Study Area (RSA) in 13 of 27 years and alternate between periods of presence and absence through time. Collared caribou have typically entered the RSA in mid to late April, with exits varying from late April to October. When present, collared caribou spend about one to three weeks in the RSA and over all years are present for an average of 6 days.
- For the Local Study Area (LSA) over the same period, Qamanirjuaq collared caribou have been present in 10 of 27 years. Collared caribou from this herd typically enter the LSA in mid-July and leave within a couple of days. Over all years, collared caribou spend less than half a day inside the LSA.

Caribou Advisory

- Mass migration through the Mine site and All-weather Access Road (AWAR) took place between 26 June and 6 July 2019.
- In total there was a complete work stoppage for 240 hours (~10 days) for the AWAR, and restricted duties for both the Mine site and AWAR for 222 hours (~9.25 days).

Hunter Harvest

- A Memorandum of Understanding (MOU) was signed, in principal, by Agnico Eagle and the Kivalliq Hunters and Trappers Organization (KHTO) in March 2019.
- Agnico Eagle is currently in working on a calendar for the Hunter Harvest Survey with the KHTO for data collection from the local community.

Birds

Shoreline Surveys

- All waterbodies within 200 m of mining related infrastructure (excluding the AWAR) were surveyed on foot by trained biologists to locate and identify nesting waterbirds from 10 to 20 June 2019.
- A total of nine different species were observed, including a Peregrine falcon nest (*Falco peregrinus anatum/tundrius*; listed as Special Concern under Schedule 1 of the Species at Risk Act). Due to the timing of surveys, no nestlings or fledglings were observed – nests were in the nest-building stage or with eggs. A total of 26 nests were recorded – eggs were confirmed for 77% of the nests which were observable (72 eggs in total).
- Fewer nests were observed compared to 2018, but significantly more eggs were observed per nest in 2019. The differences are likely attributable to timing of the survey between years and observer nest-finding ability.

Point Counts

- In 2019, a total of 6 transects were completed for a total of 72 point count surveys between 10 and 20 June 2019.
- In total, seven passerine (i.e., songbird) species were recorded. The most abundant species was horned lark (*Eremophila alpestris*) and the least abundant species was American robin (*Turdus migratorius*).
- Density of each species varied between 2018-2019 in nearly all habitat types, but was largely comparable on average. Mean density of passerine birds was significantly different among habitat types. Species richness and diversity were not significantly different among habitat types.
- Modelling results for differences between years, habitat type and distance indicate that bird density may increase with increasing distance from the AWAR, but there was no change in overall bird density between 2018 and 2019.

PRISM

- Agnico Eagle contributed to the Environment and Climate Change Canada (ECCC) PRISM surveys in 2018 and 2019 and will continue to do so every five years. Ten 12 ha plots were surveyed from 19 to 21 June 2018, and 16 plots from 14 to 18 June 2019.
- A total of 14 breeding bird species were observed in both years combined. The most common bird species observed in the plots were Lapland longspur (*Calcarius lapponicus*), and Savannah sparrow (*Passerculus sandwichensis*).
- A total of 243 non-breeding bird species were observed in both years combined.
- One species-at-risk was observed – a single short-eared owl (*Asio flammeus*); but sex was undetermined, and this species is listed as Special Concern under Schedule 1 of the Species at Risk Act. Breeding evidence of two species of shorebirds was found during the surveys - Dunlin (*Calidris alpina*) in 2018, and Semipalmated plover (*Charadrius semipalmatus*) in both 2018 and 2019.

Raptors

- The 2019 annual report of the Arctic Raptors Research Program is included in Appendix B.
- For the period of 2013 to 2019, two nesting sites are confirmed within the footprint of the mine infrastructure, three are within 600 m of the AWAR and another four are within 1.5 km of the AWAR. Mean distance from known occupied nesting sites to the Meliadine Lease footprint was 12.48 km (range of 0 – 29 km).
- Nest occupancy rates for Peregrine falcons (*Falco peregrinus tundrius*) have been stable between 2013 and 2019, while Rough-legged hawk (*Buteo lagopus*) nest occupancy rates have been more variable over the same period. Gyrfalcons (*Falco rusticolus*) have not been recorded.

Soil and Vegetation Monitoring

- A field program was carried out by a vegetation ecologist from 19 to 24 July 2019. No dustfall was visually observed at the treatment and reference locations. However, dustfall on vegetation was observed at some of the locations along the AWAR. Agnico Eagle will continue inspecting vegetation visually to assess possible impacts of dustfall on vegetation.
- Overall there was no significant difference between the soil and vegetation metal concentration results from 2017 (Golder 2018) and 2019. Despite some elevated soil parameter concentrations for arsenic and high variability in soil pH observed, these are comparable to baseline measurements (Golder 2014a) and the vegetation analysis supports that there is no stress to vegetation.

Non-native Plants

- Non-native plant surveys were completed along the AWAR and Project footprint on 20-21 July 2019.
- A non-native plant species, Common dandelion (*Taraxacum officinale*), listed under the Non-Native and Invasive Species in Nunavut (CESCC 2010; Appendix G), was identified at two monitoring locations along the AWAR. These were manually pulled and removed for appropriate disposal by Agnico Eagle staff.

Environmental Variables

- The maximum annual temperature of 21.8°C was recorded on 23 July, 2019 and the minimum annual temperature -45.4°C was recorded on 26 January, 2019. Snowmelt began 6 June, 2019 when the average daily air temperature exceeded 0°C.
- Environmental variables will continue to be monitored on an on-going basis.

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1.0 INTRODUCTION

1.1 Background

The Agnico Eagle Mines Limited (Agnico Eagle) Meliadine Gold Mine (the Project), located in the Kivalliq Region of Nunavut (Figure 1), received a Project Certificate (No. 006) from the Nunavut Impact Review Board (NIRB) in February 2015 (with Amendment 001 in February 2019). The subsequent Water Licence and leases, allowed for the construction of a gold mine and ancillary facilities including an All-weather Access Road (AWAR), barge unloading facilities, lay-down area, and a fuel tank farm in Rankin Inlet. A conceptual Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Project was prepared for submission with the Project Final Environmental Impact Statement (FEIS) and forms a component of the documentation series produced in accordance with the Project. The TEMMP will be reviewed and updated on an as-needed basis as the Project proceeds from detailed design and construction through operations, closure and post-closure.

This report addresses requirements of Project Certificate No. 006, which were included in the 2017 Annual TEMMP Report (Golder 2018). The 2019 annual report (this document) is the third of a series of annual TEMMP summary reports for the Project. The purpose of this report is to summarize the 2019 data collected from wildlife and vegetation monitoring programs, and to describe natural variation and potential Project-related changes in wildlife populations within and adjacent to the Project. The 2019 annual report describes monitoring objectives and methodology, 2019 annual results, mitigation activities, and management recommendations based on 2019 monitoring results. It should be noted that 2019 is the first year of operations for the Project, and is anticipated to be operational and in production through to 2027, with closure and post-closure activities continuing until 2037.

1.2 Project Description

The Project is located approximately 25 kilometers (km) north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. Situated on the western shore of Hudson Bay, the Project site is located on a peninsula between the east, south, and west basins of Meliadine Lake (63°1'23.8" N, 92°13'6.42"W), on Inuit Owned Lands (IOL).

The scope of the TEMMP annual report is to report on terrestrial monitoring activities for the Project throughout its various phases of development. This report includes data collected in 2019, reflecting the end of construction activities and the start of operations. Project site facilities include a plant site and accommodation buildings, a water management system that includes collection ponds, water diversion channels, retention dikes/berms, and water treatment plants. Project components include two ore stockpiles, a temporary overburden stockpile, a tailings storage facility, three waste rock storage facilities, a landfarm, incinerator, and landfill.

Environmental baseline studies were completed in the Project area prior to Project approval and integrated into the current project design according to the 2015 TEMMP (Golder 2015). Vegetation and wildlife Valued Ecosystem Components (VECs) were identified in consultation with regulatory agencies, the Kivalliq Inuit Association (KivIA) and the Rankin Inlet Hunters and Trappers Organization (HTO). Vegetation VECs include plant populations and communities, listed (rare) plant species, and traditional use plant species. Wildlife VECs include ungulates (caribou and muskox), carnivores (grey wolf and polar bear), raptors, waterbirds, and upland birds (including migratory birds). Further details on VEC selection can be found in the FEIS (Golder 2014a) and the TEMMP (Golder 2015).

1.2.1 Concordance with Terms of Reference

The NIRB Project Certificate (No. 006) for the Meliadine Gold Mine was issued on 26 February 2015, and Amendment 001 was issued 26 February 2019. This third iteration of the TEMMP annual report addresses the Terms and Conditions of Project Certificate No.006 as they relate to the TEMMP. Concordance as reflected in Table 1.

NIRB recommends the following related to standardization of data for monitoring programs:

“all monitoring plans should be designed so that results from these programs can be coordinated with ongoing regional initiatives or programs with relevant government organizations, or regional authorities.” NIRB guidelines, Section 9.3, page 78-79.

“When designing data collection or baseline studies, it is recommended that the Proponent coordinate with ongoing programs with relevant developments, government organizations, regional authorities, and researchers. This recommendation applies to data collected for the Nunavut General Monitoring Program (NGMP), as per Article 12 of the NLCA, the Proponent’s project-specific monitoring programs, as well as any regional monitoring initiatives in which the Proponent will participate. The Proponent is expected to coordinate on any initiatives undertaken by government organizations in respect to the NGMP and to liaise with the NGMP Secretariat whenever possible.” NIRB guidelines, Section 7.7.1, page 40-41.

Agnico Eagle will comply with these principles and has already established several programs that involve collaborations with regional initiatives and contribute to monitoring cumulative effects. These include:

- **Caribou Collar Program:** Supporting the Government of Nunavut's (GN) caribou satellite-collaring program for the Qamanirjuaq herd (and other herds in the Kivalliq Region), facilitating monitoring of cumulative effects at the herd level (Golder 2015; Section 3.4, page 12).
- **Regional Muskoxen Surveys:** Agnico Eagle has provided the GN Department of Environment (DoE) with in-kind contributions and support for previous muskoxen surveys and will continue to do so when requested.
- **Hunter Harvest Program:** Agnico Eagle has signed a memorandum of Understanding (MOU) with the Kivalliq Hunters and Trappers Organization (KHTO) in March 2019 to develop and implement a methodology to document caribou harvesting around the Meliadine Mine, and to participate in Mine site studies and monitoring (Golder 2015; Section 3.5, page 13). This will contribute to an understanding of cumulative effects by increasing understanding of the regional distribution and seasonality of hunting.
- **Raptor Monitoring Program:** Agnico Eagle, in collaboration with the Arctic Raptor Project, has developed and implemented the raptor monitoring program (Golder 2015; Section 3.6, page 14). This will directly align monitoring efforts at Meliadine with this long-term regional research program which already involves government, non-government, Indigenous communities, and academic partnerships.
- **Waterfowl and Shorebird Monitoring:** Agnico Eagle, in collaboration with Environment and Climate Change Canada (ECCC), have agreed to implement the Program for Regional and International Shorebird Monitoring (PRISM) (Golder 2015; Section 4.11, page 39). This will directly align monitoring efforts at Meliadine with other Agnico Eagle properties for waterfowl and shorebirds.
- **Wildlife Surveys:** Agnico Eagle, in collaboration with the KHTO, will conduct wildlife surveys along the All-Weather Access Road (AWAR) and with environment technicians around the Mine site. This will contribute to an understanding of cumulative effects by collecting routine wildlife survey data (including caribou) and assist in anticipating large herd migrations, communicating with the KHTO and managing mine activities during migration events.

Table 1: Concordance Table with NIRB Project Certificate No. 006 Terms and Conditions

Term	Condition	Section
37	The Proponent shall incorporate protocols for monitoring for the potential introduction of invasive vegetation species (e.g. surveys of plant populations in previously disturbed areas) into its Terrestrial Environment and Monitoring Plan. Any introductions of non-indigenous plant species must be promptly reported to the Government of Nunavut Department of Environment.	12.1
38	The Proponent shall conduct sampling to determine baseline levels for metals in soils found in areas with berry-producing plants near the Project area and shall update relevant vegetation sections within the Terrestrial Management and Monitoring Plan to incorporate ongoing monitoring of these parameters prior to commencing operations.	11.0, 12.0
39	The Proponent shall develop and establish an on-going monitoring program to determine the distribution, abundance, and health of vegetation species used as caribou forage (such as lichens) near Project areas, prior to commencing operations.	11.0, 12.0
40	The Proponent shall review, on an annual basis, all monitoring information and the vegetation mitigation and management plans developed under its Environmental Management Plan and Terrestrial Environment and Monitoring Plan (TEMMP) and adjust such plans as may be required to effectively prevent or reduce the potential for significant adverse project effects on vegetation abundance, diversity and health, taking into account lessons learned at other northern mining developments where appropriate.	11.0, 12.0
45	The Proponent shall demonstrate consideration for cooperating with existing and planned regional and/or community-based monitoring initiatives associated with terrestrial wildlife and wildlife habitat that produce information pertinent to mitigating project-induced impacts. The Proponent shall give special consideration for supporting regional studies of population health and harvest programs for Qamanirjuaq caribou which help address areas of uncertainty for Project impact predictions.	1.2.1 and 8.0
46	The Proponent shall update its Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Project to include a detailed harvest study prepared in consultation with the Government of Nunavut (GN) and other affected parties. The design of the harvest study should demonstrate consideration for the following: a. Hiring of a dedicated local survey coordinator through local Hunters and Trappers Organizations (HTOs) and provision of adequate resources for the HTOs to run the program; b. The potential effects on caribou populations and on caribou behaviour resulting from increased human access caused by the all-weather access road and associated roads and trails; and, c. Increasing local knowledge of the project development areas, including establishing baseline harvesting levels prior to unrestricted public access on the all-weather access road.	9.0
47	The Proponent shall share information with the Government of Nunavut (GN) relating to the migration of caribou and include the GN as a party respecting caribou monitoring and movement through Project development areas, including the all-weather access road and associated roads and trails.	6.1, 8.1.1, 8.2.1 and 8.2.2
52	The Proponent shall undertake periodic surveys and a habitat assessment for muskoxen in the regional study area by partnering with, or complementing, the existing regional muskox monitoring programs.	6.0
55	In consultation with the Government of Nunavut (GN) and other affected parties, the Proponent shall set thresholds for direct mortality of wolf, grizzly bear, polar bear, wolverine, and fox to ensure monitoring and mitigation for the Project is responsive to undesirable rates of mortality. The Proponent shall reach an agreement with the appropriate Designated Inuit Organization regarding compensation or any direct mortality of wildlife resulting from the Project.	6.5
56	The Proponent shall report annually to the NIRB regarding its terrestrial environment monitoring efforts, with inclusion of the following information: a. Description of all updates to terrestrial ecosystem baseline data; b. A description of the involvement of Inuit in its monitoring programs; c. A detailed presentation and analysis of the distribution relative to Project infrastructure and activities for caribou and other terrestrial mammals observed during surveys and incidental sightings; d. Results of the annual monitoring program, including field methodologies and statistical approaches used to support conclusions drawn; and, e. An assessment and presentation of annual environmental conditions including timing of snowmelt, green-up, as well as standard weather summaries.	4.1.2 and 5.0
57	Within its annual report to the NIRB, the Proponent shall incorporate a review section which includes: a. An examination for trends in the measured natural variability of Valued Ecosystem Components in the region relative to the baseline reporting; b. A detailed analysis of wildlife responses to operations with emphasis on wildlife behaviour, mortalities and displacements (if any), and responses to operations of the all-weather access road and associated access roads/trails; c. A demonstration and description of how the monitoring results, including the all-weather access road and associated access roads/trails contribute to cumulative effects of the project; and, d. Any proposed changes to the monitoring survey methodologies, statistical approaches or proposed adaptive management stemming from the results of the monitoring program.	6.3
59	If Species at Risk or their nests and eggs are encountered during Project activities or monitoring programs, the primary mitigation measure must be avoidance. The Proponent shall establish clear zones of avoidance based on the species-specific nest setback distances outlined in the Terrestrial Environment Management and Monitoring Plan.	6.2
61	Prior to bird breeding season, the Proponent shall either conduct clearing activities or identify and install nesting deterrents (e.g., flagging) to discourage birds from nesting in areas likely to be disturbed by construction/clearing activities. If clearing is to take place during the nesting season, a nest survey should take place to identify nests and any identified nests must remain undisturbed until the young have fledged or left the nest. Any nests identified shall be included as part of the annual reporting for the Terrestrial Environmental Mitigation and Monitoring Plan (TEMMP).	6.2, 10.1.2 and 10.3.2
62	The Proponent shall protect any nests found (or indicated nests) with a buffer zone determined by the setback distances outlined in its Terrestrial Environment Mitigation and Monitoring Plan (TEMMP), until the young have fledged. If it is determined that observance of these setbacks is not feasible, the Proponent will develop nest-specific guidelines and procedures to ensure bird's nests and their young are protected.	6.2, 10.1.2 and 10.3.2
71	The Proponent shall develop detailed and robust mitigation and monitoring plans for migratory birds, reflecting input from relevant agencies, the Kivalliq Inuit Association and communities.	10.0
72	The Proponent shall continue to develop and update relevant monitoring and management plans for migratory birds under the Proponent's Environmental Protection Plan and Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) prior to construction. The key indicators for follow up monitoring under this plan will include upland birds (including migratory birds), waterbirds, raptors, and seabirds including migration and wintering.	10.0
73	The Proponent's monitoring program shall assess and report, on annual basis, the extent of terrestrial habitat loss due to the Project to verify impact predictions and provide updated estimates of the total Project footprint.	4.1, 11.0
105	The Proponent is strongly encouraged to consider incorporating information obtained from local outfitting and guiding businesses into its Hunter Harvest Survey where possible, and to include these organizations as potential respondents to surveys undertaken.	9.0
118	The Proponent shall include in an updated Terrestrial Wildlife Management and Monitoring Plan (TEMMP), plans for increased caribou monitoring efforts including weekly winter track surveying and summer and fall surveys undertaken on foot twice per month. These results shall be reported to the NIRB with the Proponent's annual reporting requirements.	6.1, 8.1, 8.2 and 8.3
119	The Proponent shall include within its updated Terrestrial Wildlife Management and Monitoring Plan, a commitment to establishing deterrents along the AWAR at any areas where it is observed that caribou are attracted to the AWAR and their presence may present a risk of collisions with traffic along the AWAR (such as areas where caribou are utilizing the AWAR to facilitate movement, areas where caribou may be licking minerals/road salt from the road, areas where caribou are gathering to avoid insects, etc.).	TEMMP (Golder 2015) Appendix 3 – Wildlife Protection and Response Plan

1.3 Study Area Boundaries

The Local Study Area (LSA) includes a 500 meter (m) radius buffer centered on the Project footprint and includes 1,000 m buffer on the AWAR, Discovery Access Road and the Rankin Inlet Bypass Road. The total area of the LSA is 10,598 hectares (ha) (Figure 2).

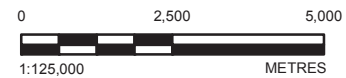
The Regional Study Area (RSA) encompasses an area that includes a 28 km radius area centered around the Project, including Rankin Inlet for a total area of 246,300 ha (Figure 3).

Further details on the justification for study area sizes can be found in the FEIS (Golder 2014a) and the TEMMP (Golder 2015).



LEGEND

- MINE FOOTPRINT
- MINE INFRASTRUCTURE
- APPROVED PROPOSED TERRESTRIAL LOCAL STUDY AREA (LSA)
- ALL-WEATHER ACCESS ROAD (AWAR)
- RANKIN INLET
- WATERCOURSE
- WATERBODY
- TERRITORIAL PARK



REFERENCE(S)
1. BASE DATA OBTAINED FROM AGNICO EAGLE LIMITED.
2. DATUM: NAD83 PROJECTION: UTM ZONE 15

CLIENT

 **AGNICO EAGLE MINES LIMITED**

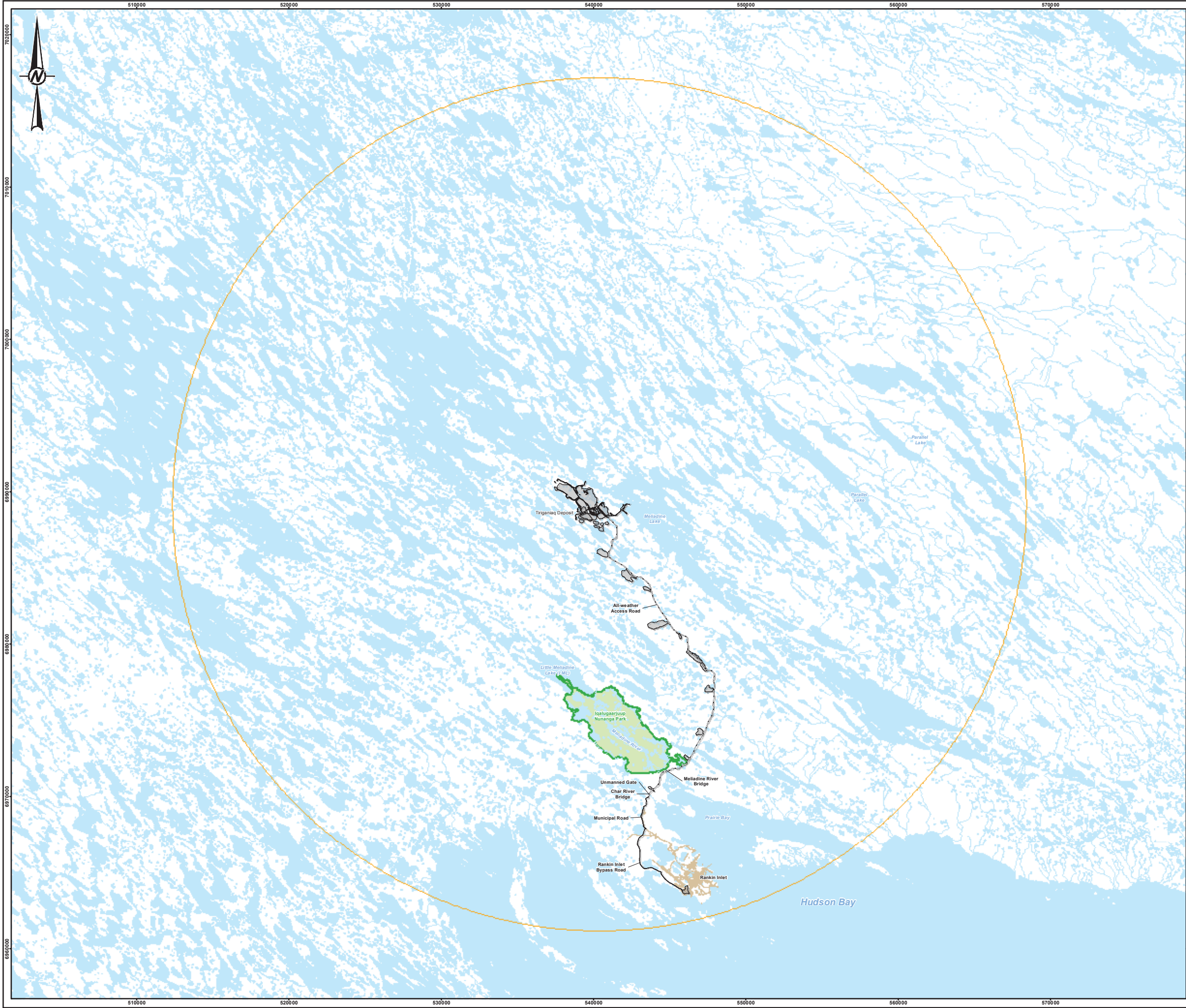
PROJECT
MELIADINE GOLD PROJECT
NUNAVUT

TITLE
PROJECT LOCAL STUDY AREA

 GOLDER	CONSULTANT	YYYY-MM-DD	2020-01-21
	DESIGNED	KB/CLT	
	PREPARED	CDB	
	REVIEWED	CLT/CD	
	APPROVED	CLT	

PROJECT NO.	CONTROL	REV.	FIGURE
19122039	3000	0	2

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LEGEND

- MINE FOOTPRINT
- MINE INFRASTRUCTURE
- REGIONAL STUDY AREA (RSA)
- ALL-WEATHER ACCESS ROAD (AWAR)
- RANKIN INLET
- WATERCOURSE
- WATERBODY
- TERRITORIAL PARK

0 5 10
1:250,000 KILOMETRES

REFERENCE(S)

1. BASE DATA OBTAINED FROM AGNICO EAGLE LIMITED.
2. DATUM: NAD83 PROJECTION: UTM ZONE 15

CLIENT

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT
**MELIADINE GOLD PROJECT
NUNAVUT**

TITLE
PROJECT REGIONAL STUDY AREA

	CONSULTANT	YYYY-MM-DD	2020-01-21
		DESIGNED	KB/CLT
		PREPARED	CDB
		REVIEWED	CLT/CD
		APPROVED	CLT

PROJECT NO.	CONTROL	REV.	FIGURE
19122039	3000	0	3

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1.4 Monitoring Approach

Wildlife monitoring is an essential tool in protecting and maintaining wildlife in the vicinity of the Project. A comprehensive monitoring strategy has been implemented and, as required, is adapted to meet the objectives of the management strategy and methods set out in the TEMMP (Golder 2015). Monitoring programs evaluate the effectiveness of mitigation measures and assess Project-related impact predictions. For all wildlife monitoring programs there is a certain level of uncertainty or unpredictability; therefore, residual effects identified during monitoring may require implementation of adaptive management strategies.

To effectively evaluate the accuracy of impact predictions, a series of quantitative monitoring indicators, which are within the broad categories of habitat distribution, wildlife distribution, wildlife richness, wildlife diversity, wildlife abundance, and environmental health, have been developed. 2019 is the third year of overall monitoring per the TEMMP, and also the first year under operations for the Project. Previous monitoring was conducted during the construction phase for the Project. Consequently, some of the objectives below may not be answered at this time or will be addressed qualitatively.

1.5 Objectives

The primary objectives of the 2019 Annual Report include:

- Collect information that will assist Agnico Eagle to determine if there are effects on wildlife and if these effects were accurately predicted in the FEIS.
- Reporting the results of the 2019 wildlife monitoring programs.
- Summarizing the monitoring strategy implemented over the course of the year.
- Evaluating the function and validity of implemented monitoring strategies.
- Summarizing adaptive management strategies.
- Providing management recommendations for 2019.
- Allowing regulators to contribute advice for improving wildlife management.

1.6 Report Organization

Within each section of this report, data is presented that will be tracked over the life of the Project. Recommendations for enhancement to the TEMMP is presented at the end of each section for consideration and may be incorporated into the TEMMP for subsequent years. The TEMMP is an evolving program that will reflect recommendations during previous years, as well as advances in Project development. Changes will be captured in future revisions of the TEMMP as needed.

2.0 REVIEW OF IMPACT PREDICTIONS

A summary of the impact predictions proposed in the TEMMP (Golder 2015) is provided in Table 2. Adaptive management will be implemented if the Project impacts exceed the predictions. The corresponding sections of this annual report, where monitoring indicators are discussed, are also listed.

Table 2: Summary of Predicted Effects, and Accuracy of Impact Predictions

Monitoring Indicator	Proposed thresholds	Surveyed in 2019?	Exceeded in 2019?	Monitoring Methods	Frequency of Data Collection	Section Reference
Vegetation (Wildlife Habitat)						
Habitat Loss	Terrestrial – 2,951 ha Aquatic – 515 ha	Yes	No	Ground Surveys, Mapping, GIS Analysis	Annually	4.0 & 11.4
Habitat Degradation by Contamination	No effects to plant health from dust deposition SLRA – TBD	Yes	No	Vegetation and Soil Samples	Every 3 Years	11.4
Habitat Reclamation following Mine Closure	NA	No	-	Ground Surveys, Vegetation Plots, Mapping	Once pre-construction baseline (2017) and 3 times Post-Closure	11.4
Habitat Degradation by Contamination	No non-native plant species established	Yes	Yes	Invasive Plant Survey of AWAR and Project site	Annually	12.4
Ungulates						
Habitat Loss and Degradation	No greater than 2,951 ha of terrestrial habitat loss	Yes	No	Ground Surveys, Mapping, GIS Analysis	Annually	11.4
Sensory Disturbance	<10% caribou deflections from AWAR	Yes	No	Ground Surveys	Daily/Weekly	8.1
Vehicle Collisions	1 individual	Yes	No	Ground Surveys	Daily	6.3
Hunting by Rankin Inlet Residents	After 3 years of data collection, in collaboration with GN, establish a threshold level	No	-	Hunter Harvest Study	Collected throughout the year and reported annually	9.0
Other Project-related Mortality	1 Individual	Yes	No	Ground Surveys	Daily	6.3
Exposure to Contaminated Water or Vegetation	SLRA - TBD	No	-	Vegetation and Soil Samples	Every 3 Years	11.4
Predatory Mammals						
Project-related Mortality	1 Arctic Fox	Yes	Yes	Ground Surveys, Cameras in attractant areas	Daily	6.3
Raptors						
Disturbance of Nesting Raptors	To be determined in consultation with GN and Alastair Franke, related to occupancy and productivity.	Yes (Appendix B)	No	Active Nest Monitoring	Nests within 200 m – Daily Nests from 200-1000 m – Weekly	10.4
Project-related Mortality	To be determined in consultation with GN and Alastair Franke	Yes (Appendix B)	No	Ground Surveys, Collision Reporting System	Mine Site-Daily AWAR – 2x/Week	10.4
Waterbirds						
Habitat Loss and Degradation	515 ha of Aquatic Habitat	Yes	No	Ground Surveys, Mapping, GIS Analysis	Annually	11.4
Disturbance of Nesting Waterfowl	TBD once NRV is established through consultation with ECCC and GN	Yes	No	Shoreline Surveys	Annually	10.5
Exposure to Contaminated Water or Vegetation	SLRA - TBD	No	-	Vegetation and Soil Samples	Every 3 Years	11.4
Project-related Mortality	1 Individual	Yes	No	Ground Surveys, Collision Reporting System	Mine Site-Daily AWAR - 2x/Week	6.3
Other Breeding Birds						
Habitat Loss and Degradation	No greater than 2,951 ha of terrestrial habitat loss	Yes	No	Ground Surveys, Mapping, GIS Analysis	Annually	11.4
Exposure to Contaminated Water or Vegetation	SLRA - TBD	No	-	Vegetation and Soil Samples	Every 3 Years	11.4
Changes in Breeding Bird Populations	TBD once NRV is established through consultation with ECCC	Yes	No	Breeding Bird Plots and Transects, PRISM	Every 3 Years PRISM – Plots surveyed over 2 years every 5 Years	10.5

Notes: AWAR = All-Weather Access Road; ECCC = Environment and Climate Change Canada; GN = Government of Nunavut Department of Environment; NRV = Natural Range of Variability; PRISM – Program for Regional and International Shorebird Monitoring; SLRA = Screening Level Risk Assessment; TEMMP = Terrestrial Environment Management and Monitoring Plan (Golder 2015).
NA = Not Applicable; TBD = To Be Determined.

3.0 INCORPORATION OF INUIT QAUJIMAJATUQANGIT

Field programs were guided by Inuit Qaujimajatuqangit (IQ), including the assistance of local field assistants. Annual contributions from Inuit to the monitoring programs are presented below (Table 3).

Table 3: IQ Field Contributions from Inuit to Monitoring Programs

Name	Date(s) Worked on Site	Total Days	Programs Contributed To
Octave John Papak	■ June 9-19 2019	10	<ul style="list-style-type: none"> ■ Breeding bird surveys ■ PRISM surveys ■ Shoreline surveys
Tommy Tugak	■ June 9-19 2019	10	<ul style="list-style-type: none"> ■ Breeding bird surveys ■ PRISM surveys ■ Shoreline surveys
Leo Kaludjak	■ July 16-21 2019	6	<ul style="list-style-type: none"> ■ Melvin Bay water/sediment quality sampling and benthic sampling
Simeon Dion	■ July 16-21 2019	6	<ul style="list-style-type: none"> ■ Melvin Bay water/sediment quality sampling and benthic sampling
Aarib Angidlik	■ June 27 2019	1	<ul style="list-style-type: none"> ■ Water/sediment quality sampling ■ Caribou monitoring
Margo Simiky	■ June 27 2019	1	<ul style="list-style-type: none"> ■ Water/sediment quality sampling ■ Caribou monitoring
Clayton Tartak	<ul style="list-style-type: none"> ■ June 27-July 7 2019 ■ July 16 2019 ■ July 24 2019 ■ July 27 2019 ■ August 13 2019 ■ September 25 2019 	16	<ul style="list-style-type: none"> ■ Water/sediment quality sampling ■ Melvin Bay water/sediment quality sampling and benthic sampling ■ Caribou monitoring/ATV trail identification

PRISM – Program for Regional and International Shorebird Monitoring

4.0 DIRECT HABITAT LOSS

The vegetation component of the TEMMP (Golder 2015) outlines the means by which Agnico Eagle plans to reduce Project-related effects to vegetation populations and communities, and consequently wildlife habitat. The monitoring plan includes both environmental and follow-up monitoring. The objective of this component of the annual report is to determine if direct vegetation/habitat loss due to the Project footprint stays within impact predictions of 2,950 ha (Golder 2014a).

The Project footprint was analyzed and reported in the 2018 TEMMP Annual Report (Agnico Eagle 2019), which included all developments being completed as part of the construction phase into early 2019.

Although the Project footprint is currently 29% of the total predicted Project footprint, follow up monitoring should continue at 3 year intervals (i.e., next assessment against the Project footprint in 2021), as monitoring studies are used to provide feedback to Project operations to determine if the goals and objectives are being met.

5.0 INDIRECT HABITAT LOSS

Indirect effects to wildlife are associated with changes in habitat that can alter the movement and behavior of individuals in the vicinity of the Project as a result of sensory disturbance. Indirect effects are addressed through several of the monitoring programs per the TEMMP.

Caribou behaviour monitoring and analysis of collared caribou data (presence/absence) are presented in Section 8.0 of this report. For nesting birds, site-specific nest management plans may be required if birds are within the Project footprint or adjacent to Project components. For the 2019 monitoring period, indirect Project effects on nesting birds are addressed in Section 10. Indirect Project effects such as dust deposition on vegetation communities and presence of heavy metals on vegetation tissue and soils are presented in Section 11.0.

Indirect Project effects are assessed every three years, to align sampling years with the first year of construction in 2017 (i.e., next assessment in 2022).

6.0 WILDLIFE OBSERVATIONS

Environmental technicians conduct site surveillance monitoring and road surveillance monitoring regularly of the AWAR and the Project. In addition to planned surveys, all supervisors ask their employees to report wildlife sightings; Wildlife logs are posted throughout the Project and easily accessible to employees to facilitate wildlife reporting before, during, and after work shifts.

In 2019, there were 226 recorded incidental wildlife observations around the Mine site (including the camp area) and the AWAR (Table 4), representing observations of 17 species. Incidental wildlife observations were recorded between 1 January and 7 December 2019, and do not include mortalities.

Table 4: Incidental Wildlife Observations, 1 January to 7 December 2019

Species	Observations	Individuals
Arctic hare	23	34
Arctic fox	60	67
Bald Eagle	0	0
Canada Goose	21	145
Caribou	37	86
Common Raven	3	5
Duck sp.	5	17
Rough-legged Hawk	9	9
Muskox	0	0
Peregrine Falcon	3	4
Polar bear	2	2
Ptarmigan sp.	3	8
Sandhill Crane	22	68
Seagull sp.	8	18
Sik sik (Arctic ground squirrel)	8	10
Snow Goose	20	340
Snowy Owl	0	0
Tundra Swan	9	21
Greater White-fronted Goose	9	44
Wolf	2	2
Wolverine	0	0

Notes:

Specific GPS locations were not recorded for incidental wildlife observations in 2019.

Wildlife mortality counts are not included.

Incidental wildlife observation in 2019 were largely comparable to 2017 and 2018 observations in number of species, incidental observations and individuals observed. Notable differences included:

- Fewer caribou incidentally observed in 2019 compared to previous years. This is attributed to inclusion of observations made during the migratory periods during both 2017 and 2018, whereas 2019 excluded observations of caribou during migration to avoid duplication with Section 8.0 of this report.
- Increase in incidental observations and number of individuals by more than 100% of various breeding bird species, including Canada goose, Sandhill, Snow goose, Greater White-fronted goose, Tundra swan, Common raven and seagull species.
- Decrease in terrestrial predator observations and individuals observed in 2019, particularly for Arctic fox where the number of individuals incidentally observed decreased by approximately 27% and 36% compared to 2017 and 2018, respectively.
- Decrease in previous raptor species but with new raptors incidentally observed in greater numbers: No Bald eagle or Snowy owls were incidentally observed in 2019. Rough-legged hawks and Peregrine falcons were incidentally observed and in greater numbers compared to Bald eagles and Snowy owls in 2017-2018.

The following figure (Figure 5) illustrates differences in reported individuals incidentally observed per species from 2017 to 2019.

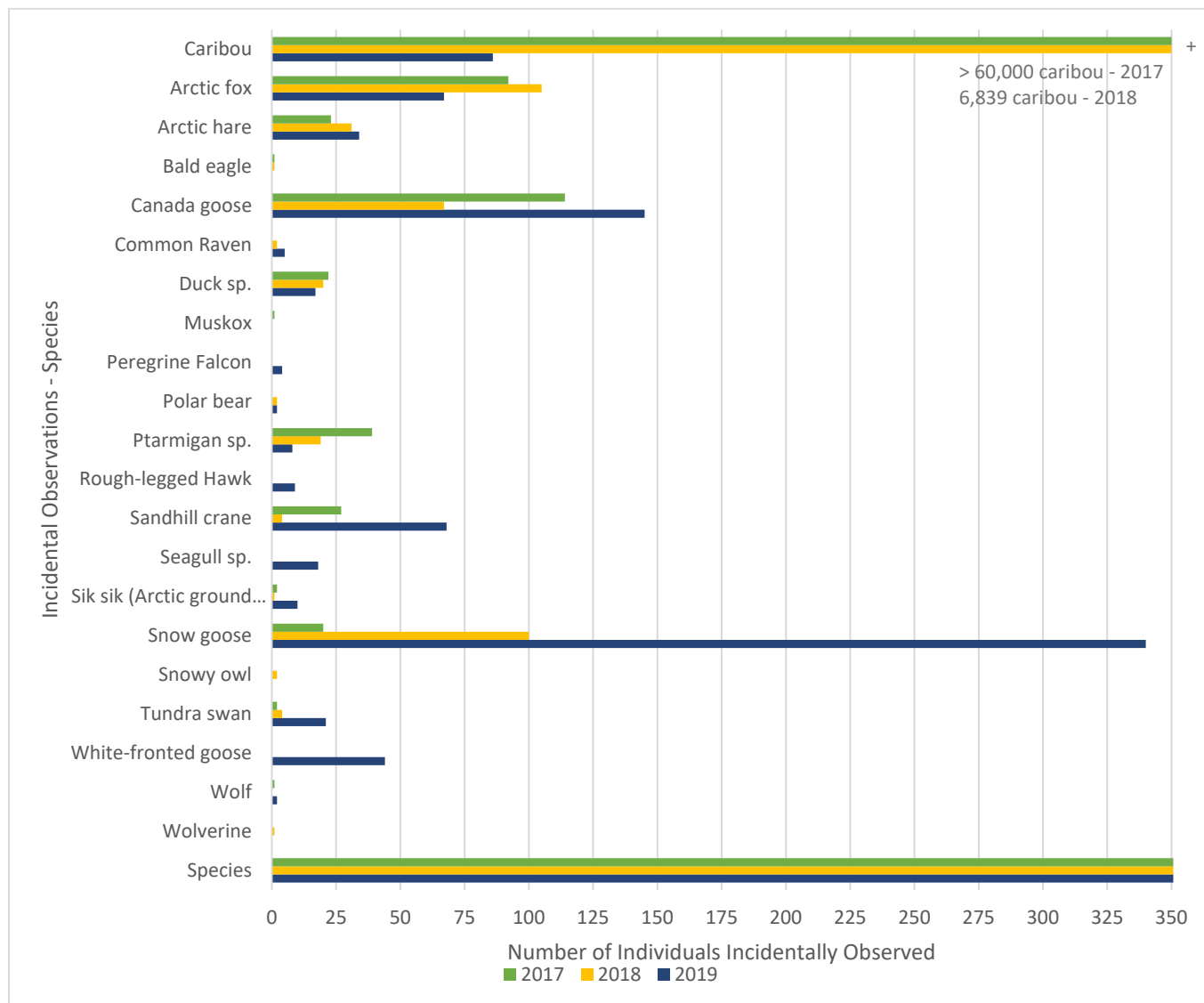


Figure 4: Incidental Wildlife Observations – Individuals Observed per Species from 2017 to 2019

Some of the differences in incidental observations recorded may be attributed to seasonal variation, as well as identification skills and/or reporting effort by on-site staff and wildlife monitors. However, differences may also be attributable to mitigation and protection measures in place to protect wildlife and/or on-site personnel, per the TEMMP, some of which may be favouring certain species (e.g., by affording them protection from predators near the Mine site). The objective of recording incidental observations is to examine the increasing presence or decreasing presence of species over time, and to record observations of species at risk.

6.1 Wildlife Track Surveys

On-site wildlife track surveys were conducted on 6 and 19 January, 6, 11 and 28 February, 8 and 26 March, 5, 13 and 21 April, 26 May, 17 July, 24 August, 12 and 16 September, 4, 12, 17 and 31 October, 13, 22 and 29 November, and 6 and 28 December 2019. A total of 322 individual tracks were recorded, including a cluster of 50 tracks of an unidentified species (excluded from percentage estimates).

Observations were largely limited to geese, Arctic hare and fox tracks, though tracks for other species were recorded when observed. Tracks for goose comprised 33.5%, Arctic hare 23% and Arctic fox 31% of all identified tracks observed in 2019. Other tracks observed included other avian species (11%), caribou (1% - 3 individual tracks) and sik (Arctic ground squirrel – 1 individual track, 0.5%). These track numbers are largely comparable to 2018 in locations and number of tracks observed (track data was not collected in 2017).

6.2 Bird Nests

Several incidental bird nests were observed in the Project footprint during the nesting season in 2019. The observed nests are presented in Table 6, and additional information is described below.

Table 5: Incidental Bird Nests 2019

Date Nest First Observed	Bird Species	Location	Approximate GPS Coordinates - Nests		Notes
			Northing	Easting	
6 June	Peregrine Falcon	Saline Pond 2 (SP2, south of CP1)	-	-	100 m buffer in effect
6 June	Rough-Legged Hawk	SP2	-	-	100 m buffer in effect
14 June	Herring Gull	Collection Pond 1 (CP1)	539906	6989619	Vacated nest due to water levels, 2019-06-21
15 June	Canada Goose	H15 Hummock (adjacent to the Tailings Storage Facility)	538876	6990059	-
18 June	Canada Goose	Near Channel 1	539874	6989569	-
22 June	Raven	Effluent Water Treatment Plant (EWTP)	539638	6989914	-
23 June	Unknown - Small brown bird	Tundra	541540	6988418	5 brown speckled eggs in nest
23 June	Sandhill Crane	Tundra	541639	6988301	-
12 July	Snow Bunting	Sea can – Itivia Fuel Storage Facility	546139	6963947	3 fledglings in nest; buffer in effect

A herring gull was observed to be nesting in Collection Pond 1 (CP1) at the Mine site in June 2019. This was observed after freshet inflows. Consultation with Environment and Climate Change Canada (ECCC) was initiated as discharge from CP1 was scheduled to commence in early July. The herring gull left the nest on June 19, 2019 and was not observed over the next few days; as such, no further action or mitigation was required.

Other incidental nests observed in June 2019 within the Project footprint, as listed in Table 6. As these nests were away from active work areas, they did not require any specific mitigation measures beyond recommendations in the TEMMP and per Project Certificate No.006 Terms and Conditions.

A pair of Peregrine falcons were showing nest interest in the rock walls of Saline Pond 2 (SP2, south of CP1) on June 2, 2019 – the pond had been constructed earlier in the year during winter per the approved Mine plan. The first observation of the potential nest was on June 6 - the GN DoE was immediately informed, including proposed management measures should the nest become established, in line with the TEMMP and applicable Project Certificate No.006 Terms and Conditions. A deterrent kite had been installed at SP2 on June 3 and a propane cannon was installed on June 6 but were consequently removed when the Peregrine falcon nest was confirmed. A pair of Rough-legged hawks were also observed on the opposite rock wall during this time and a nest was confirmed on June 12, 2019. The nests were approximately 46 m apart and a 100 m buffer around each was put in effect. Planned works in and around SP2 were put on hold or moved to other areas where practicable. As the nests were on the SP2 rock walls and due to safety considerations, it was not possible to confirm the presence of eggs or fledglings but no fledglings were observed at any time. By August 3, 2019, the raptors had not been seen for a few days and were no longer observed in the area thereafter.

An active Snow bunting nest was observed on July 12, 2019 on one of the sea cans located at the Itivia Fuel Storage Facility in Rankin Inlet. The nest was observed to have 3 fledglings in the nest and a buffer was placed around the area and disturbance avoided – ECCC was informed, and no additional measures were recommended. The nest was passively monitored and observed to be empty on July 20, 2019. The birds (adults or fledglings) were not seen in the area in the days that followed, and the sea cans were then moved from the area.

6.3 Incidents and Mortalities

Mortalities can occur as wildlife become habituated to mining activities resulting from efforts to locate food or shelter (DDMI 1998). Diligent waste management, employee and environmental awareness, and immediate reporting of wildlife sightings in and around Project infrastructure can limit the mortality of wildlife.

6.3.1 Methods

Project-related incidents and mortalities are reported to the Environment Department for documentation in a detailed incident investigation for immediate follow-up. All incidental wildlife mortalities are reported immediately to the Government of Nunavut Department of Environment (GN DoE), and the GN DoE is consulted for follow-up mitigation and disposal procedures. In addition, the KivIA will also immediately be notified of wildlife mortalities and the events and circumstances around that mortality. If wildlife had to be deterred to reduce the risk of a wildlife-human incident, then all efforts are made by the environmental technicians to start with the least intrusive method available, and all deterrent actions are recorded.

6.3.2 Results

The following wildlife incidents listed in Table 6 were reported at the Project in 2019. Project related mortalities are defined as those caused as a direct result of Project activities and exclude those resulting from trapping conducted by regulatory organizations.

Table 6: Wildlife Mortality Incidents Recorded at Meliadine (Including AWAR) in 2019

Date	Species	Number	Location	Comments
10 January	Arctic fox	1	Landfill	Trapped and put down by the GN, disposed of by the GN
11 January	Arctic fox	1	Landfill	Trapped and put down by the GN, disposed of in the on-site incinerator
25 January	Arctic fox	1	Under main kitchen	
29 January	Arctic fox	2	Under main kitchen	
31 January	Arctic fox	1	Under main kitchen	Trapped and put down by the GN, disposed of by the GN
8 June	Small bird	1	Dustfall jar	Unidentifiable – likely landed inside the dustfall jar, died and dissolved. Reported and disposed of in the on-site incinerator
9 June	Snow goose	1	Portal 2	Deceased when found (broken neck and wing) – may have been struck by a vehicle. Reported and disposed of in the on-site incinerator
13 June	Arctic fox	1	Under main camp	Deceased when found – possibly a fox detected earlier in the season displaying signs of rabies. Reported and disposed of in the on-site incinerator
27 August	Arctic fox	1	AWAR KM 12	Fox ran at loaded truck and was crushed. Reported and disposed of in the on-site incinerator
20 September	Arctic fox	1	Mine site	Trapped on site
25 September	Arctic fox	1	AWAR KM 12	Deceased when found, possibly due to collision during night-shift. Reported and disposed of in the on-site incinerator
11 October	Arctic fox	1	Main Camp	Trapped and put down by the GN, disposed of by the GN
16 October	Arctic fox	1	Dome 1	Trapped and put down by the GN, disposed of by the GN
17 October	Arctic fox	1	Main Camp – kitchen door	Trapped and put down by the GN, disposed of at Rankin Dump
31 October	Arctic fox	1	Under main kitchen	Trapped and put down by the GN, disposed of at Rankin Dump
1 November	Arctic fox	1	Under main kitchen	Trapped and put down by the GN, disposed of at Rankin Dump

Notes: All trapping and associated disposals were completed by the Government of Nunavut Department of Environment (GN DoE), unless otherwise stated.

Following initial guidance from the GN DoE in response to incidents and observations of Arctic foxes in and around the Mine site in 2017, traps for Arctic foxes were placed around the Project starting 19 September 2017. These mortalities (not Project-related) were reported to the GN DoE, and they collected several deceased animals for disposal. Some animals were disposed of in the on-site incinerator, as indicated in the table above.

The number of wildlife mortalities declined in 2019 (17 total wildlife mortalities) compared to 2018 (29 mortalities) by 41%. Only 29% of the total wildlife mortalities were Project-related and 71% of the total wildlife mortalities were Arctic foxes trapped by the GN DoE (i.e., not Project-related). Of the 2018 wildlife mortalities, 96% were Arctic foxes and several were trapped by the GN DoE or found deceased on the Project footprint; this results in a decline of total Arctic fox mortalities of 25% between 2018 and 2019.

Declines in mortalities in 2019 since 2018 may be attributable to the implementation of management and prevention measures to deter wildlife from the Project footprint during and at the end of construction, particularly the camp area (e.g., skirting under buildings), and waste management measures (e.g., careful disposal of food wastes to avoid attracting wildlife).

6.4 Recommendations

Employees of the Environment Department continue to hold toolbox meetings with various departments and contractors, stressing that any disrespect of wildlife or of Meliadine's wildlife policy is unacceptable and against company rules. Management and mitigation measures, including reporting of incidents, will be continued.

An internal awareness memo was issued to the Mine crew following the Snow goose mortality reported at Portal 2. Several of the underground equipment and vehicles operating around Portal 2 have many blind spots and may require more vigilance or spotting upon entering or exiting the portal to avoid potential incidents with wildlife.

The declines in mortalities reported in 2019 suggest that mitigation and management measures in place are being effective, and Agnico Eagle will continue to consider improvements as possible and practicable, including establishment of an Environmental Working Group on site (in early 2020) with an aim to improve waste management protocols at Meliadine.

6.5 Accuracy of Impact Predictions

A summary of the impact predictions proposed in the TEMMP (Golder 2015) is provided in Table 2. Through systematically recording the presence of all wildlife within and around the Project footprint, Environmental staff will remain apprised of current and emerging issues and will be able to manage issues as they arise. To use a common example, surveillance monitoring may detect that wildlife has gained access and is taking shelter beneath a building.

The thresholds presented in Table 7 have been employed for the Project to date for consideration of any adaptive management for the TEMMP (Golder 2015), continued on from the 2017 TEMMP Annual Report (Golder 2018). Refinement of these thresholds may be considered, in collaboration with the GN, as appropriate, as more data is collected and analysed over time.

Table 7: Accuracy of Impact Predictions – Wildlife Incidents 2019

Monitoring Indicator	Preliminary Threshold	Exceeded in 2019?	Adaptive Management	Monitoring Method	TEMMP ^(a) Section
Vehicle Collisions	No more than 1 ungulate/year	No	Not currently identified	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance	4.4.2
Project Related Mortality ^(b)	No more than 1 ungulate/year	No	Not currently identified	Wildlife Sightings Log, Site Surveillance Monitoring	4.4.2
Project Related Mortality	No more than 1 Arctic fox/year	Yes	On-going waste management and, regular toolbox meetings reiterating that any disrespect of wildlife or of Meliadine's wildlife policy is unacceptable and against company rules	Wildlife Sightings Log, Site Surveillance Monitoring, with particular emphasis around waste management areas	4.4.2
Project Related Mortality	No more than 1 raptor/year	No	Not currently identified	Wildlife Sightings Log, Site Surveillance Monitoring	4.9
Project Related Mortality	No more than 1 waterbird/year	No	On-going and regular toolbox meetings on awareness of blind-spots, particularly for large vehicles and equipment	Wildlife Sightings Log, Site Surveillance Monitoring	4.10

Notes:

(a) TEMMP = Terrestrial Environment Management and Monitoring Plan (Golder 2015) – section relevant to respective monitoring indicator.

(b) Project related Mortality = A death that can be directly linked to the mine or mining activity.

7.0 WILDLIFE DETERRENTS

A bird deterrent cannon was initially setup in Saline Pond 2 (SP2) in accordance with Agnico Eagle licence requirements - Project Certificate No.006 Term and Condition 74 on 6 June 2019, which states that “the Proponent's Terrestrial Management and Monitoring Plan (TEMMP) shall include mitigation measures implemented to prevent the use of water attenuation ponds by waterfowl and waterbirds and monitoring that assesses whether the mitigation measures are working or revised or further deterrent measures are required”. Inuit workers have previously raised concerns (verbally) about the potential impact of cannons on caribou and other wildlife (as reported in the 2018 TEMMP Annual Report; Agnico Eagle 2019). However, the cannon was not deployed due to the confirmed Peregrine falcon nest (refer to Section 6.2 of this report).

A deterrent bird kite was deployed at a collection pond at the Mine site and Snowy owl decoys were installed at other site facilities. No use of chemical deterrents against predatory mammals (i.e., bear sprays) were reported for 2019.

8.0 BARREN-GROUND CARIBOU

Barren-ground caribou (including Lorillard and Qamanirjuaq herds) currently have a federal status of ‘Threatened’ (COSEWIC 2018), but are not listed under the *Species at Risk Act* (SARA 2018) and are considered ‘Apparently Secure’ in Nunavut by the Canadian Endangered Species Conservation Council (CESCC 2016). Annual home ranges mapped by GN DoE show that the Project is within the annual home range of the Qamanirjuaq (Kaminuriak) Caribou Herd (Campbell et al. 2014; Campbell et al. 2012). The Lorillard caribou are migratory (Campbell et al. 2014) and generally distributed north of Chesterfield Inlet, based on radio-telemetry data collected by the GN DoE and the location of their historical calving grounds (Campbell et al. 2012). The likelihood of animals from the Lorillard Herd occurring in the Regional Study Area (RSA) for the Project, as defined in the FEIS (Golder 2014a), is very low. Baseline survey data documenting the distribution of barren-ground caribou

during early winter, spring migration and calving, and post-calving through fall migration and rut periods suggest that the RSA is within the seasonal range of the Qamanirjuaq barren-ground caribou herd (Jalkotzy 1999, 2000a, 2000b). Data provided by the GN in 2018 indicates that the core of the Qamanirjuaq herds calving range is approximately 57 km from the nearest point of the Project footprint. The annual range of the Qamanirjuaq herd occupies an area from northern Manitoba and Saskatchewan in the south, to southwestern NU and southeastern NT (BQCMB 1999; Campbell et al. 2012). Barren-ground caribou are migratory, and movements and range use varies annually (Wakelyn 1999). The annual distribution and life history of this population has been previously documented (Banfield 1954; Kelsall 1968; Thomas 1969; Parker 1972; Heard 1983). The Qamanirjuaq herd calves approximately 57 km to the west-northwest of the Project and after calving the herd aggregates into a post-calving movement, generally moving east towards the coast and then back to the west and southwest of the Project where their summer movement and distribution patterns commence. During the post-calving movements to the coast, thousands of caribou can come through the Meliadine Project site and reside within and around the Project area for approximately 5 to 10 days. For additional discussion on the Qamanirjuaq herd please refer to the FEIS (Golder 2014a).

8.1 Caribou Behavior Monitoring

The TEMMP indicates that once 50 caribou are observed within 5 km of the Project footprint boundary (visual detection or based on collar data provided by the GN), a stop work procedure commences on site. Understanding how caribou interact with the Project infrastructure including roads (i.e., crossing, deflection, walking parallel) and other Project infrastructure, documenting behaviour through activity budgets may better inform appropriate adaptive management and distance triggers and thresholds in the future. Over time, a long-term dataset will be used to evaluate obvious response or lack of obvious response of caribou to mining based on behaviour.

Activity budgets (i.e., time spent feeding, resting, walking, running) of caribou exposed to disturbances from the Project and AWAR will be used to provide inputs for assessing the impact to the energy balance of caribou (Section 4.5.2 of the TEMMP (Golder 2015) for additional discussion). The immediate effect of specific stressors (e.g., aircraft, vehicles, other wildlife) on caribou behavior will also provide general insight into the relative effect of natural versus road stressors on caribou behavior. Essentially this data will contribute to a larger data set from information collected at other mine sites to help determine a weight of evidence of caribou behavioral response to stressors on the Project site and from the AWAR. Consequently, opportunistic surveys should be completed when appropriate to do so during the caribou post-calving migration, without causing additional stress to caribou (based on surveyor opinion).

The objectives of this component of the monitoring program are to:

- determine the effect of the Project AWAR on caribou activity budgets
- determine the effect of other mining activities (e.g., blasting, human presence, light truck traffic) that may elicit a response in caribou
- determine which stressors associated with the Project have the greatest influence on caribou behavior, and the variation in caribou behavior from these stressors

8.1.1 Methods

Ground-based behavioral observations, or scan sampling, are conducted to provide data on changes in caribou behavior as a function of distance from the Project. Two different, but complementary approaches have been used to record the activity budget of caribou around the Project and AWAR. See the TEMMP (Golder 2015) for additional details on the behavior scan method.

In addition, an inventory of Qamanirjuaq collared caribou data, from 1993 to 2019 as provided by the GN DoE, was undertaken to understand alternating periods of presence and absence of caribou in and near the Project area.

8.1.2 Results

8.1.2.1 Caribou Behaviour Observations

Caribou behavior observations were completed by Agnico Eagle staff from 26 to 28 June and 1, 3 and 4 of July 2019 on 12 groups of caribou. A summary of caribou behavior observation and number of animals seen in 2019 is presented in Table 8.

Table 8: Caribou Behavior Observations (2019)

Date of Observation	Location	Approximate Number of Caribou	Behavior(s) Observed
26 June 2019	AWAR KM 19	3	Feeding, Standing, Walking
27 June 2019	AWAR KM 19	27	Feeding, Standing/Resting, Walking
	AWAR KM 22	9	Feeding, Standing, Walking
	AWAR KM 23	27	Feeding, Standing/Resting, Walking, later Running
	AWAR KM 24	13	Feeding, Standing/Resting, Walking
28 June 2019	AWAR KM 26	3,500 (in groups of 50, 200 and ~1,000)	Feeding, Standing/Resting, Walking Several on, adjacent to or crossing the road
	AWAR KM 27	1,353 (in groups of <10, 50, 200 and ~1,000)	Feeding, Standing/Resting, Walking Several on, adjacent to or crossing the road
	AWAR KM 28	20	Feeding, Standing/Resting, Walking
29 June 2019	AWAR KM 25	Unknown (group)	Walking, crossing the road
1 July 2019	AWAR KM 16	5	Feeding, Standing, Walking
	AWAR KM 22	6	Feeding, Standing, Walking
2 July 2019	AWAR KM 16	Unknown (group)	Walking
3 July 2019	AWAR KM 27	8	Feeding, Standing, Walking
4 July 2019	AWAR KM 19	2	Feeding, Standing, Walking

Caribou behaviour surveys in mid-July 2017 were at the end of the migration period and cannot be compared, though group numbers observed in 2017 (three groups of 15, 50 and 150 animals) are comparable to those observed on 28 June 2019. Similar group sizes were reported in 2018 during mid to late July. Observations showed no obvious behavioral response to mine activity over the three years of monitoring.

An underground blast was undertaken on 3 July 2019, after confirming that a group of caribou (small group, number of individuals not recorded) was located at approximately 3.8-4 km from the underground blast centerpoint. The caribou were observed by Agnico Eagle staff prior to, during, and after the blast to observe if any behavioural changes occurred. The staff reported that though they could hear and feel the rumble of the blast, the caribou showed no obvious behavioural response – prior to the blast they were grazing, walking and resting, and continued to do so through and after the blast.

8.1.2.2 Collared Caribou Inventory

From 1993 to 2019, Qamanirjuaq collared caribou have been present in the RSA (including baseline) in 13 of 27 years and alternate between periods of presence and absence through time (Table 10). Alternating periods of presence and absence of caribou in the RSA has been noted by IQ (Golder 2014a). Collared caribou have typically entered the RSA in mid to late April. Annual exits from the RSA have been more variable ranging from late April to October (Table 10). Evidence from collared caribou support that a portion of the Qamanirjuaq herd may pass through the RSA in summer but on occasion may in some years linger from late October through March (Hubert and Associates 2007; Table 10). When present, collared caribou spend about one to three weeks in the RSA and over all years are present for an average of 6 days.

For the Local Study Area (LSA; Golder 2014a), Qamanirjuaq collared caribou have been present in 10 of 27 years (Table 10). Collared caribou from this herd typically enter the LSA in early to mid-July and leave within a couple of days. Over all years, collared caribou spend less than half a day inside the LSA.

In consideration of these results, impacts to the Qamanirjuaq herd due to the Project have the potential for limited transboundary effects. The collar data also support that caribou are spending very little time in the areas immediately adjacent to the Project.

Table 9: Annual Timing of Qamanirjuaq Collared Caribou Presence and Duration in the Regional Study Area and Local Study Area, 1993 to 2019

Year	Total Number of Collared Caribou	Mean Date of RSA Entry	Mean Date of RSA Exit	Mean Number of Days in RSA	Number of Collared Caribou in RSA	Mean Date of LSA Entry	Mean Date of LSA Exit	Mean Number of Days in LSA	Number of Collared Caribou in LSA
1993	5	-	-	0	0	-	-	0	0
1994	4	-	-	0	0	-	-	0	0
1995	4	-	-	0	0	-	-	0	0
1996	7	-	-	0	0	-	-	0	0
1997	2	-	-	0	0	-	-	0	0
1998	7	-	-	0	0	-	-	0	0
1999	6	-	-	0	0	-	-	0	0
2000	3	Apr-11	Apr-21	10.0	1	Dec-29	Dec-30	1.0	1
2001	8	-	-	0	0	-	-	0	0
2002	4	-	-	0	0	-	-	0	0
2003	4	-	-	0	0	-	-	0	0
2004	15	-	-	0	0	-	-	0	0
2005	8	-	-	0	0	-	-	0	0
2006	24	Apr-12	Oct-06	19.0	2	-	-	0	0
2007	16	Apr-13	May-28	42.5	2	Feb-15	Feb-15	0.0	1
2008	32	Apr-14	Jul-14	0.0	1	-	-	0	0
2009	13	-	-	0	0	-	-	0	0
2010	10	-	-	0	0	-	-	0	0
2011	32	Apr-15	Aug-02	0.0	2	-	-	0	0
2012	14	Apr-16	Jul-19	3.6	5	Jul-17	Jul-17	0.0	1
2013	42	Apr-17	Jul-14	3.8	12	Jul-13	Jul-13	0.0	2
2014	27	Apr-18	Aug-01	22.7	7	Jul-08	Jul-09	1.0	3
2015	38	Apr-19	Jul-28	14.3	36	Jul-16	Jul-16	0.6	24
2016	46	Apr-20	Jul-15	17.8	37	Jul-12	Jul-13	1.7	23
2017	75	Apr-21	Jul-11	5.0	69	Jul-09	Jul-09	0.6	33
2018	53	Apr-22	Jul-17	13.4	50	Jul-12	Jul-14	1.9	35
2019	44	Apr-23	Jun-29	7.8	38	Jun-27	Jun-28	1.1	11

Notes: RSA = Regional Study Area; LSA = Local Study Area (per the FEIS, Golder 2014a).

8.2 Caribou Advisory

The objective of the Caribou Advisory Monitoring program is ensuring workers are aware of the approximate numbers of caribou on, and in close proximity to, the Project, which is related to the potential for interactions between caribou and mining activities. This raises general awareness so that employees are alert to the likelihood that mitigation could be triggered, and what mitigation entails. The number of animals near the Project and in specific areas dictates the type of mitigation practices that will be undertaken (e.g., haul road closure, closing specific areas on the Project site, speed reduction).

8.2.1 Methods

Agnico Eagle, in collaboration with the GN and KivIA and including participation of the Rankin Inlet HTO, undertake the implementation of a caribou monitoring and work suspension protocol during caribou migration to minimize sensory disturbance at the Project site and along the AWAR. HTO and KivIA members assist Agnico Eagle staff conducting surveys during caribou migration. KivIA and HTO members, assisted by the GN staff worked with Agnico Eagle staff to monitor caribou from 21 June to 11 July 2019 during the caribou migration period. Communication protocols built into the work suspensions are designed to be broadcast swiftly and broadly among all departments in real time. The environmental department monitored caribou presence as per the caribou migration protocol (TEMMP Appendix IV; Golder 2015) including the use of collar data and regular surveys, and issued caribou advisories. Regular surveys for caribou, were completed by on site environmental technicians, and consisted of ground surveys at multiple locations, at regular intervals throughout the day (i.e., 06:00, 12:00, 18:00) during caribou migration. The results of the surveys were communicated to all Project Departments, including the KivIA and HTO, indicating if any work stoppages or restrictions are required and the affected work areas.

8.2.2 Results

Large numbers of caribou migrated through the Project and AWAR between 26 June and 6 July 2019. In 2017 caribou migration through the Project and AWAR occurred between 7 and 19 July, and in 2018 between 5 and 22 July. The times of caribou migration varied between these years, however, the duration of caribou interacting with the Project RSA and LSA between 2017 and 2019 was comparable (Table 10). At the Project, the caribou work suspension protocol (complete work stoppage) was in effect for periods of 27 June to 4 and 6 July, and closure and restrictions on AWAR took place on 26 June to 5 and 6 July (Table 10 and 11). In total there was a complete work stoppage for 240 hours (~10 days) for the AWAR, and restricted duties for both the Project and AWAR for 222 hours (~9.25 days).

Table 10: Caribou Advisories Meliadine - Mine Site 2019

Date	Hours	Mitigation
21 June	6	Site operational
22 June	24	Site operational
23 June	24	Site operational
24 June	24	Site operational
25 June	24	Site operational
26 June	24	Site operational
27 June	24	Site operational, full stoppage at exploration camp
28 June	24	Site operational, full stoppage at UG portal 1 and exploration camp
29 June	24	Site operational
30 June	24	Site operational
1 July	12	Site operational, full stoppage at UG portal 1 and exploration camp
1 July	12	Site operational, full stoppage exploration camp
2 July	6	Site operational, full stoppage exploration camp
2 July	18	Site operational, full stoppage at industrial site, UG portal 1 and exploration camp
3 July	24	Site operational, full stoppage at industrial site, UG portal 1 and exploration camp
4 July	24	Site operational, full stoppage at industrial site, UG portal 1 and exploration camp
5 July	24	Site operational
6 July	24	Site operational, full stoppage at industrial site, UG portal 1 and exploration camp
7 July	24	Site operational
8 July	24	Site operational
9 July	24	Site operational
10 July	24	Site operational
11 July	24	Site operational

Notes: (a) Mine includes Site vehicle traffic, UG operations, UG Portals, Exploration Camp and Industrial Pad.

Table 11: Caribou Advisories Meliadine - AWAR, 2019

Date	Hours	Mitigation
21 June	6	Road open
22 June	24	Road open
23 June	24	Road open
24 June	24	Road open
25 June	24	Road open
26 June	24	Closed - complete work stoppage
27 June	24	Closed - complete work stoppage
28 June	24	Closed - complete work stoppage
29 June	24	Closed - complete work stoppage
30 June	24	Closed - complete work stoppage
1 July	24	Closed - complete work stoppage
2 July	24	Closed - complete work stoppage
3 July	24	Closed - complete work stoppage
4 July	24	Closed - complete work stoppage
5 July	24	Speed limit restricted to 30 km/hr
6 July	24	Closed - complete work stoppage
7 July	24	Speed limit restricted to 30 km/hr
8 July	6	Speed limit restricted to 30 km/hr
8 July	18	Road Open
9 July	24	Road open
10 July	24	Road open
11 July	24	Road open

8.3 Accuracy of Impact Predictions

A summary of the impact predictions proposed in the TEMMP (Golder 2015) is provided in Table 2. Though not fully developed, the following thresholds are suggested as a starting point for adaptive management and TEMMP (Golder 2015) refinement and is tested against the results of the 2019 observational data (Table 12).

Table 12: Accuracy of Impact Predictions - Caribou

Monitoring Indicator	Preliminary Threshold	Exceeded in 2019?	Adaptive Management	Monitoring Method	TEMMP* Section
Hunting by Rankin Inlet Residents	After 3 years of data collection in collaboration with GN, establish a threshold level	Not assessed in 2019	Not Currently Identified	Hunter Harvest Survey, Collected throughout the year and reported annually	4.8
Sensory Disturbance	<10% caribou deflections from AWAR	No	Not Currently Identified	Ground Surveys	4.7
Vehicle Collisions	No more than 1 ungulate/year	No	Not Currently Identified	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance	4.4.2
Project Related Mortality	No more than 1 ungulate/year	No	Not Currently Identified	Wildlife Sightings Log, Site Surveillance Monitoring	4.4.2

Notes:

AWAR = All-Weather Access Road

GN = Government of Nunavut Department of Environment

*TEMMP = Terrestrial Environment Management and Monitoring Plan (Golder 2015)

8.4 Recommendations

Agnico Eagle will continue to focus monitoring on caribou activity near the Project and AWAR while continuing to support GN DoE-led caribou monitoring and/or research where possible. Discussions on determining effects from mining development on caribou and the data collection requirements is ongoing.

9.0 HUNTER HARVEST INFORMATION

Agnico Eagle signed a Memorandum of Understanding (MOU), in principal, with the Kivalliq Hunters and Trappers Organization (KHTO) in March 2019, in line with the Project Certificate No.006 Term and Condition 46 and 48, for the development and execution of a Hunter Harvest Survey (HHS).

Agnico Eagle is collaborating together with the KHTO, developing a calendar for the HHS with a focus on data collection by the KHTO from hunters and outfitters in the local community. Once the information is collected, Agnico Eagle and the KHTO will review the success of the program and consider any relevant changes to optimize the HHS.

10.0 BIRDS

Three survey methods were employed in 2019 for monitoring waterfowl, waterbirds, upland birds and shorebirds, including: shoreline surveys, point counts, and Program for Regional and International Shorebird Monitoring (PRISM) surveys. These surveys are designed to measure mining-related effects on upland bird (i.e., songbirds, raptors, and gamebirds), waterfowl, and shorebird species richness, diversity, and relative abundance. Specifically, the intent is to measure these parameters in response to mining development and increased traffic along the AWAR.

Shoreline surveys are designed to determine nesting distribution along shorelines within 200 m of the Project footprint, which is considered to be the approximate zone of influence from sensory disturbance in the FEIS, of mining and Project-related infrastructure (e.g., AWAR). The program will attempt to determine mated pair distribution and nesting success in ponds, wetlands, and lake shorelines within 200 m of Project infrastructure.

Point counts are a method for detecting birds in habitat space (i.e., defined area of 100 m radius plot), primarily songbirds during the breeding season. Point count data is used worldwide to estimate spatial distributions, habitat relationships, and population trends of birds. PRISM surveys are a globally standardized survey method for monitoring breeding population size, describing the distribution, abundance, and habitat relationships of Arctic-nesting shorebirds (Bart et al. 2005). PRISM surveys document all birds encountered and can be applied for monitoring upland birds. The PRISM survey methods (CWS 2008) and point count methods utilized are standardized with those used across North America so data can be compared against baseline and monitoring programs across the continent.

10.1 Shoreline Surveys

The shoreline survey program is designed to determine the nesting distribution of waterfowl and waterbirds on waterbodies within 200 m of mining related infrastructure including the AWAR. The shorelines of all waterbodies within this search area were surveyed on foot by trained biologists to locate and identify nesting waterbirds. If a waterbody partially intersected the 200 m buffer, only the extent of shoreline that occurred within the buffer was surveyed.

10.1.1 Methods

All waterbody shorelines within 200 m of the Project, excluding the AWAR, were surveyed between 10 to 21 June 2019 (Figure 5). Surveys involved two observers walking the edge of the waterbody with the intent of flushing any breeding waterfowl or waterbirds nesting on the shore. One observer walked 5 m from the water's edge, while the second observer walked approximately 15 m from the water's edge. If a nest was found, the biologist approached the nest to determine nest stage (i.e. egg laying, incubating, nestlings) and nest productivity (i.e. number of offspring). If there was a bird on nest that showed signs of distress, the biologist did not approach to prevent nest abandonment. Survey methods are described in more detail in the TEMMP (Golder 2015). A deviation from the prescribed survey protocol under the TEMMP was required for the 2017 survey period, and no nests were recorded (Golder 2018). As such, only 2018 and 2019 data were analyzed for this report.

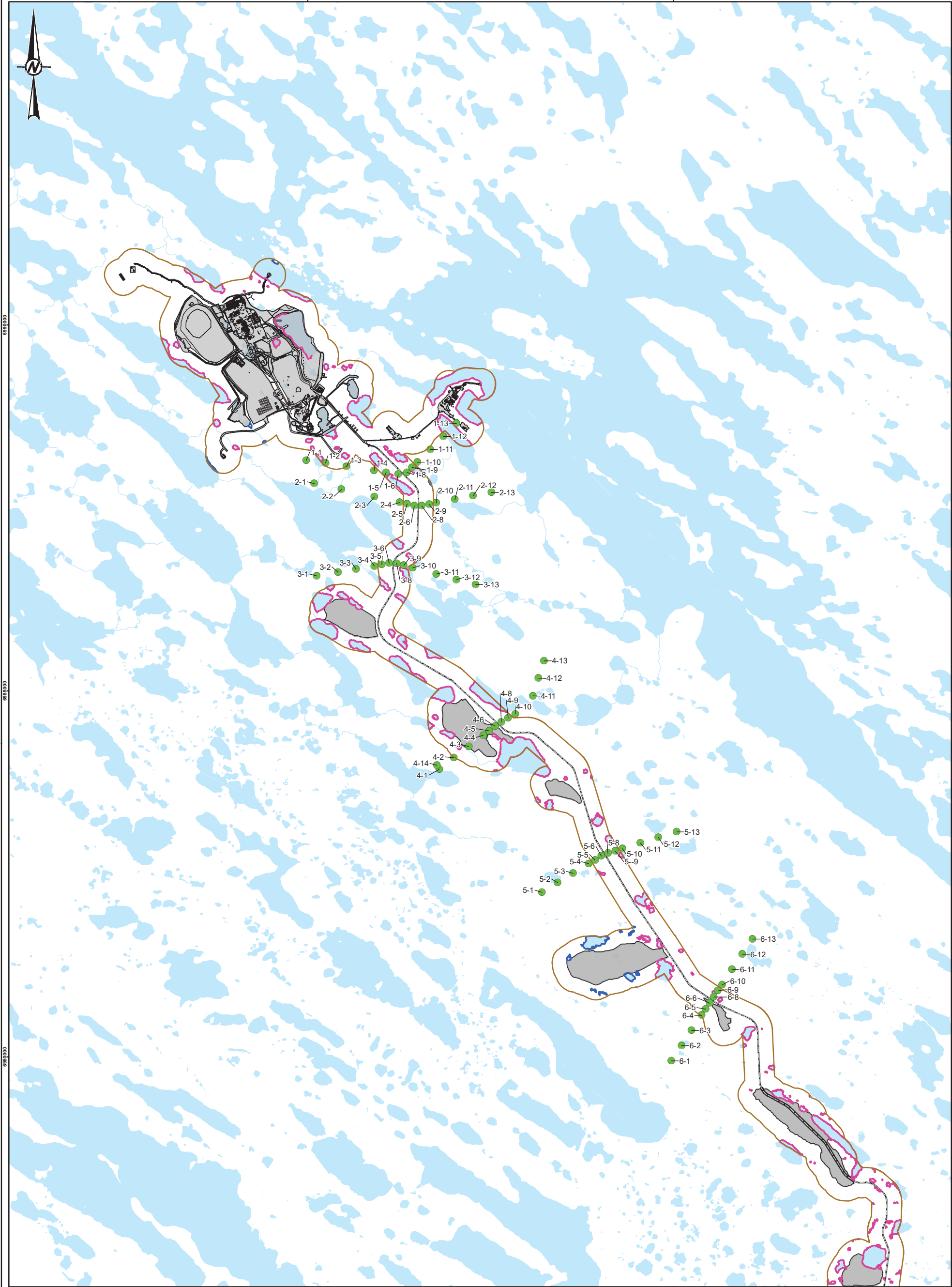
10.1.2 Results

A total of nine species were observed while conducting shoreline surveys in 2019 (Table 13). One species, the Peregrine falcon (*Falco peregrinus anatum/tundrius*) is federally listed as Special Concern under Schedule 1 of the *Species at Risk Act*; no other species identified are federally listed. Due to the timing of surveys, no nestlings or fledglings were observed; all nests were either still in the nest-building stage or with eggs. A total of 26 nests were discovered, of which the number of eggs was determined for 20 (77%), and 72 eggs in total were counted (3.6 eggs per nest on average). Egg counts could not be confirmed for 6 nests due to access limitations (i.e. floating island) or apparent risk to nesting birds. Canada goose (*Branta canadensis*) was the most commonly observed species with 14 nests recorded and a total of 39 eggs.

Compared with 2018 surveys, fewer nests overall were discovered in 2019 despite a greater overall area being surveyed. This difference could be due to differences in observer nest-finding ability as well as time of year effects; however, significantly more eggs were found per nest in 2019 (3.6 eggs per nest in 2019 compared to 1.7 eggs per nest in 2018), suggesting on average surveys occurred later in the breeding season in 2019 and therefore more nests should have been active. Furthermore, most declines in nests found in 2019 were from willow ptarmigan, shorebirds, and songbirds which have nests that are more difficult to detect; whereas Canada and cackling goose nests, which are relatively conspicuous and easy to locate, did not decrease. This result supports the hypothesis that declines in 2019 were likely due to observer nest-finding ability. Statistical analyses in the future can be used to differentiate observer effects from actual annual changes in nest abundance within the 200 meter buffer.

540000

545000



LEGEND

- BREEDING BIRD SURVEY
- MINE FOOTPRINT
- MINE INFRASTRUCTURE
- 200 m BUFFER OF MINE FOOTPRINT
- 2019 SHORELINE SURVEYED
- SHORELINE WITHIN 200 m OF INFRASTRUCTURE
- ALL-WEATHER ACCESS ROAD (AWAR)
- WATERBODY
- WATERCOURSE

NOTE(S)

1. TSF, WRSF1, WRSF2, CP1 ARE THE MAXIMUM EXTENT UNDER THE APPROVED MINE PLAN AND DO NOT REPRESENT SIZE IN 2018.
2. BORROW PIT B1A IS EXCLUDED AND IS NOT ILLUSTRATED IN THE CURRENT FOOTPRINT.
- 3.. THE PROPOSED MINE PLAN INCLUDES TIRIGANIAQ PIT 1, TIRIGANIAQ PIT 2, AND WASTE ROCK STORAGE FACILITY 3 (WRSF3) AND ASSOCIATED INFRASTRUCTURE; THESE ITEMS HAVE NOT BEEN CONSTRUCTED YET (AS OF THE END OF 2018) AND THEREFORE WERE NOT INCLUDED ON THIS MAP.

CLIENT

AGNICO EAGLE MINES LIMITED

CONSULTANT

YYYY-MM-DD	2019-12-04
DESIGNED	KB
PREPARED	MH/CDB
REVIEWED	CLT
APPROVED	CLT



REFERENCE(S)

1. BASE DATA OBTAINED FROM AGNICO EAGLE MINES LIMITED AND NATURAL RESOURCES CANADA.
- DATUM: NAD 83 PROJECTION: UTM ZONE 15

PROJECT

MELIADINE GOLD PROJECT
NUNAVUT

TITLE

2019 SURVEYED SHORELINES AND BREEDING BIRD SURVEY
LOCATIONS

PROJECT NO.	CONTROL	REV.	FIGURE
19122039	3000/3750	0	5

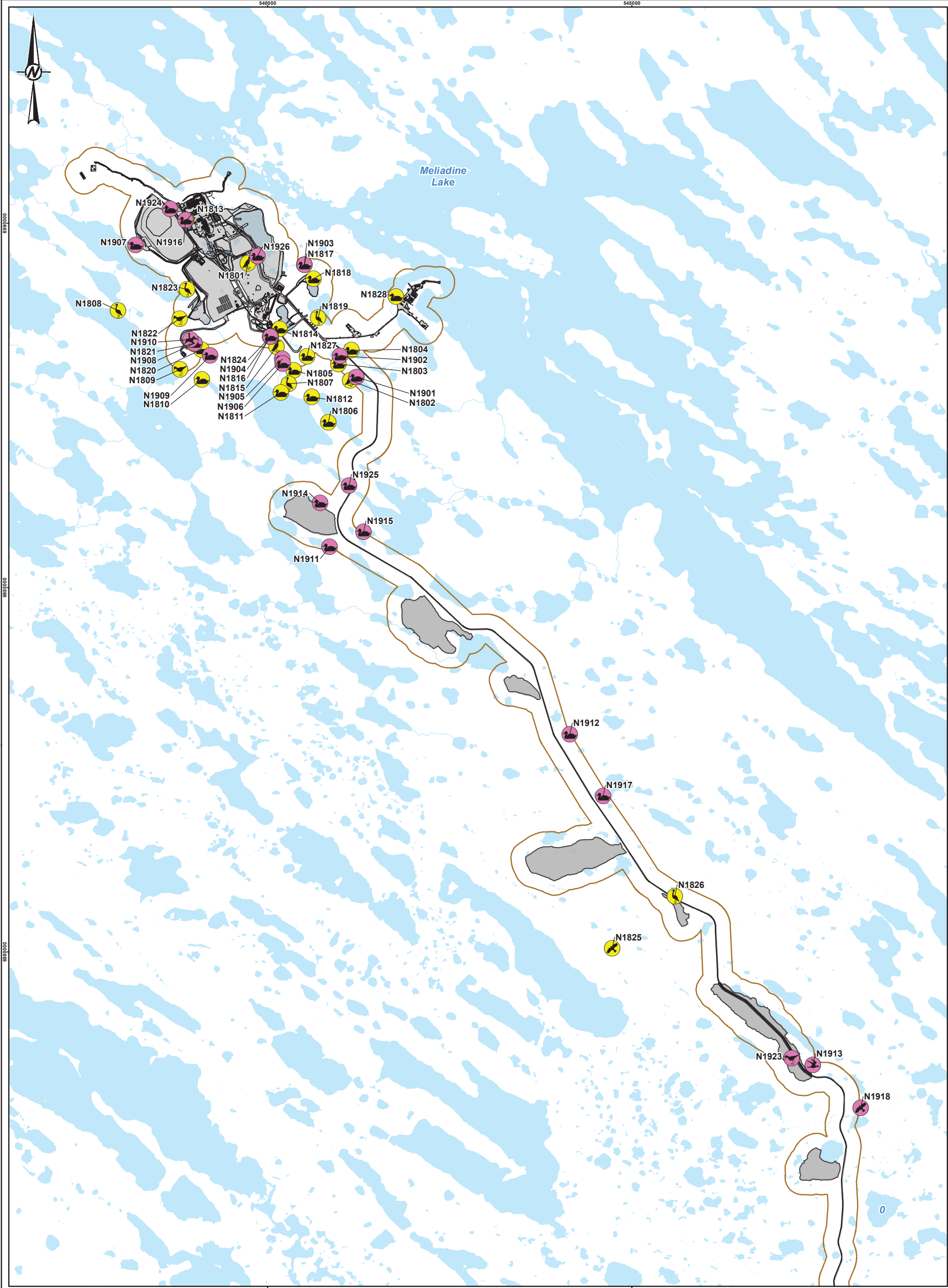
Table 13: Summary of Nests and Eggs Observed during Shoreline Surveys, 2018-2019

Common Name	Scientific Name	2018		2019	
		Number of Eggs ^(a)	Number of Nests	Number of Eggs ^(a)	Number of Nests
Cackling Goose	<i>Branta hutchinsii</i>	4	3	18	4
Canada Goose	<i>Branta canadensis</i>	18	16	39	14
Greater White-fronted Goose	<i>Anser albifrons</i>	0	0	3	1
Herring Gull	<i>Larus argentatus</i>	0	0	0	1
Horned Lark	<i>Eremophila alpestris</i>	4	1	0	0
Lapland Longspur	<i>Calcarius lapponicus</i>	2	4	5	1
Least Sandpiper	<i>Calidris minutilla</i>	0	2	0	0
Peregrine Falcon	<i>Falco peregrinus</i>	0	2	0	1
Sandhill Crane	<i>Grus canadensis</i>	0	0	2	2
Semipalmated Plover	<i>Charadrius semipalmatus</i>	0	0	4	1
Tundra Swan	<i>Cygnus columbianus</i>	2	1	0	0
Willow Ptarmigan	<i>Lagopus</i>	0	5	1	1
Total		30	34 (20)*	72	26 (20)*

Notes:

(a) Eggs were counted to observers' best ability while minimizing disturbance to nests

* = number in parentheses refers to the number of nests for which an egg count could be determined



LEGEND

BIRD GROUP

- GAMEBIRD
- GULL
- PASSERINE
- RAPTOR
- SHOREBIRD
- WATERBIRD
- WATERFOWL

YEAR

- 2019
- 2018

- MINE FOOTPRINT
- MINE INFRASTRUCTURE
- 200 m BUFFER OF MINE FOOTPRINT
- WATERBODY
- WATERCOURSE

NOTE(S)

1. TSF, WRSF1, WRSF2, CP1 ARE THE MAXIMUM EXTENT UNDER THE APPROVED MINE PLAN AND DO NOT REPRESENT SIZE IN 2018.
2. BORROW PIT B1A IS EXCLUDED AND IS NOT ILLUSTRATED IN THE CURRENT FOOTPRINT.
- 3.. THE PROPOSED MINE PLAN INCLUDES TIRIGANIAQ PIT 1, TIRIGANIAQ PIT 2, AND WASTE ROCK STORAGE FACILITY 3 (WRSF3) AND ASSOCIATED INFRASTRUCTURE; THESE ITEMS HAVE NOT BEEN CONSTRUCTED YET (AS OF THE END OF 2018) AND THEREFORE WERE NOT INCLUDED ON THIS MAP.

CLIENT

AGNICO EAGLE MINES LIMITED

CONSULTANT



YYYY-MM-DD	2019-12-05
DESIGNED	KB
PREPARED	MH/CDB
REVIEWED	CLT
APPROVED	CLT

REFERENCE(S)

1. BASE DATA OBTAINED FROM AGNICO EAGLE MINES LIMITED AND NATURAL RESOURCES CANADA.

DATUM: NAD 83 PROJECTION: UTM ZONE 15

PROJECT

MELIADINE GOLD PROJECT
NUNAVUT

TITLE

2018 AND 2019 BIRD NEST LOCATIONS

PROJECT NO.
19122039

CONTROL
3000/3750

REV.
0

FIGURE
6

10.2 Point Counts

Upland bird plots, or point counts, were distributed along transects on either side of the AWAR. The objective of the point count surveys was to estimate the effects of increased traffic along the AWAR on the density, species richness, and distribution of upland breeding birds along the AWAR and how these effects might diminish with increasing distance from the road (TEMMP 2015). In future years, trend analysis can be conducted to measure how these responses change with increasing activity at the mine.

No upland breeding bird surveys were completed in 2017 as the fieldwork did not commence until July and there were confirmed sightings of fledglings. As such, the field crew decided that territorial singing displays had likely ceased and little data would have been collected using point count survey methods. However, surveys were completed in 2018 and 2019.

10.2.1 Methods

A total of 72 point count plots across 8 habitat types were surveyed in both 2018 and 2019 (between 10 and 21 June 2019) (shown on Figure 6 and presented in Table 14). Surveys did not target specific habitats and occurred in eight habitat types assessed in the field and in the office using site photos.

Point count plots were located within 1 kilometre (km) on either side of the AWAR (2 km in total) with the first point count occurring at 50 metres (m) from the road edge and each subsequent plot spaced 100 m from the center of the preceding plot. Six transects consisting of 12 plots each were surveyed both years for a total of 72 point count surveys. Point counts were 5 minutes in duration and all species detected by sight or sound within 50 m and between 50-100 m of the observer were recorded; observations beyond 100 m were recorded at the observer's discretion as incidentals. The survey method is described in more detail in the TEMMP (Golder 2015).

10.2.2 Analysis

Data from point counts completed by Golder biologists in 2018 and 2019 were pooled for analysis. Trend effects were not assessed as two years of data is insufficient to begin testing for mine-related changes in breeding bird abundance and distribution. These data are pooled to establish habitat associations with density and richness estimates along the AWAR as these surveys were not conducted in 2017. All passerines (i.e., Family Passeriformes) detected within 100 metres (m) of the observer were included in analysis. We omitted non-passerines from this analysis because our surveys did not adequately sample non-passerine upland birds (approximately 8.8% of observations). One explanation for this deficiency is that approximately 70% of all detections during point counts are auditory (Simons et al. 2007), therefore these surveys are most appropriate to apply to songbirds (i.e., passerines) which are vocally conspicuous. Non-passerines or birds observed outside of 100 m were reported as incidental observations.

10.2.2.1 Individual Species Analysis

A species-level analysis calculated the mean density of individual passerine species among each habitat type. Density was calculated as the number of individuals of each species per hectare detected at each point count, averaged across point counts within each habitat type. Changes in the average density of each species within habitat types from 2018 to 2019 were calculated to illustrate measured differences between the two years (Table 14).

10.2.2.2 Community Analysis

A community-level analysis examined the total density, species richness and an index of species diversity of all passerine species combined among each habitat type. Density was calculated as the number of individuals per hectare (summed across species) detected at each point count, averaged across point counts within each habitat type. Species richness was calculated as alpha richness, or a count of the number of species detected at a point count. Diversity was calculated as the Shannon's H index using the 'vegan' package in R (Oksanen et al. 2019).

A one-way analysis of variance (ANOVA) was calculated in R (version 3.5.2; R Project for Statistical Computing 2018) to determine if density, species richness, or species diversity at the point count level differed across habitat types.

10.2.2.3 Generalized Linear Models

Generalized linear models (GLMs) assuming a Gaussian distribution were estimated for the effects of year ('Year'), habitat type ('Habitat'), and the distance of the point count from the AWAR ('Distance') on the density of passerines detected at each point count. Akaike's Information Criterion (AIC) was used to assess the best fit among all candidate models, and all models within ΔAIC of 2.0 of the top model were considered equally viable models. A scaled variable for distance fit between 0 and 1 was used to generate coefficient estimates rather than using raw meters.

10.2.3 Results

10.2.3.1 Individual Species Results

Seven passerine breeding bird species were observed within 100 m of observers during point count surveys in 2018 and 2019 (Table 14). An additional 20 bird species were incidentally recorded during the breeding bird point count surveys, including upland breeding birds outside of 100 m from observers, shorebirds, waterbirds, and raptors (Appendix A).

No upland breeding bird species at risk (SARA 2019) were recorded during the upland breeding bird surveys in 2018 and 2019. The highest density of American pipits (*Anthus rubescens*) was recorded in heath/boulders habitat, while Savannah sparrow (*Passerculus sandwichensis*) density was highest in heath tundra habitat. Horned lark (*Eremophila alpestris*) and Lapland longspur (*Calcarius lapponicus*) densities were highest in heath tundra habitat. Common redpolls (*Acanthis flammea*) were only recorded at one plot in tussock-hummock habitat. Overall, density of each species varied between years in nearly all habitat types, but was highly conserved on average. Three species had no measurable change in overall average density from 2018 to 2019: American pipit, American robin, and Common redpoll. Lapland longspur, Savannah sparrow, and White-crowned sparrow all showed small declines in density in 2019, while Horned lark increased in density.

Table 14: Mean (± 1SD) Density (individuals per hectare) of Passerine Breeding Bird Species among Habitats along the AWAR, 2018 and 2019 combined with annual rate of change in density ([2019 density] – [2018 density]).

Common Name	Scientific Name	Habitat Type								Average Rate of Change in Density
		Esker Complex (N = 2)	Gravel (N = 4)	Heath/ Bedrock (N = 12)	Heath/Boulders (N = 33)	Heath Tundra (N = 50)	Low Shrub (N = 6)	Sedge Wetland (N = 6)	Tussock-Hummock (N = 30)	
American Pipit	<i>Anthus rubescens</i>	0	0.08 ± 0.16 (-0.16)	0.11 ± 0.22 (-0.11)	0.12 ± 0.23 (+0.07)	0.1 ± 0.20 (+0.08)	0	0.21 ± 0.26 (+0.21)	0.12 ± 0.22 (-0.06)	0
American Robin	<i>Turdus migratorius</i>	0	0	0	0	0.01 ± 0.05 (-0.01)	0	0	0	0
Common Redpoll	<i>Acanthis flammea</i>	0	0	0	0.02 ± 0.11 (+0.04)	0.01 ± 0.05 (-0.01)	0	0	0.03 ± 0.18 (-0.06)	0
Horned Lark	<i>Eremophila alpestris</i>	0	0.56 ± 0.48 (+0.80)	0.21 ± 0.25 (0)	0.41 ± 0.33 (-0.24)	0.29 ± 0.29 (+0.08)	0.27 ± 0.24 (-0.32)	0.32 ± 0.49 (0.42)	0.24 ± 0.35 (0.02)	0.1
Lapland Longspur	<i>Calcarius lapponicus</i>	0.48 ± 0.23 (-0.32)	0	0.11 ± 0.22 (0)	0.31 ± 0.33 (+0.21)	0.25 ± 0.28 (-0.01)	0.64 ± 0.40 (+0.42)	0.32 ± 0.28 (-0.42)	0.18 ± 0.22 (0.06)	-0.01
Savannah Sparrow	<i>Passerculus sandwichensis</i>	0.32 ± 0.45 (-0.64)	0	0.11 ± 0.16 (-0.11)	0.09 ± 0.19 (-0.14)	0.04 ± 0.11 (-0.06)	0.32 ± 0.64 (+0.42)	0.11 ± (0.16)	0.14 ± 0.22 (0.06)	-0.06
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	0	0	0.03 ± 0.10 (-0.05)	0	0.01 ± 0.05 (-0.01)	0	0	0	-0.01

10.2.3.2 Community Results

Heath/boulders, low shrub, and sedge wetland habitat had the highest mean density of birds, while gravel and heath/bedrock habitats had the lowest mean relative abundance of birds (Table 15; Figure 7). The highest density of individuals in a point count was recorded in low shrub habitat. A one-way ANOVA test found that the mean density of passerine birds was significantly different among habitat types ($F_{7,135} = 2.188$, $P = 0.04$).

Species richness at the point count level varied from 0 to 3 species detected. Point counts with zero passerine species detected occurred in half the habitat types, while a maximum of three species were recorded in all but two habitats (Figure 8). A one-way ANOVA test found that species richness was not significantly different among habitat types ($F_{7,135} = 0.95$, $P = 0.47$).

Species diversity at the point count level varied from 0 to 1.10, and the mean diversity was highest for the sedge wetland habitat (0.56 ± 0.19), although differences in species diversity were not significant ($F_{7,135} = 0.95$, $p = 0.47$; Figure 9).

Table 15: Mean Density and Observed Species Richness of Upland Breeding Birds for Habitats in the Local Study Area, 2018 and 2019

Habitat	Number of Survey Plots	Density (birds/ha) ^(a)		Species Richness		Diversity Index ^(b)	
		Mean \pm SED	Min – Max	Mean \pm SE	Min – Max	Mean \pm SE	Min - Max
Esker Complex	2	0.80 ± 0.48	0.32 – 1.27	1.50 ± 0.50	1 – 2	0.35 ± 0.35	0 – 0.69
Gravel	4	0.64 ± 0.18	0.32 – 0.96	1.00 ± 0.00	1 – 1	0.00 ± 0.00	0 – 0
Heath/Bedrock	12	0.56 ± 0.10	0 – 0.96	1.42 ± 0.26	0 – 3	0.37 ± 0.12	0 – 1.10
Heath/Boulders	33	0.95 ± 0.08	0 – 1.91	1.82 ± 0.14	0 – 3	0.49 ± 0.07	0 – 1.04
Heath Tundra	50	0.71 ± 0.07	0 – 1.91	1.66 ± 0.12	0 – 3	0.42 ± 0.06	0 – 1.10
Low Shrub	6	1.22 ± 0.31	0.32 – 2.55	1.83 ± 0.31	1 – 3	0.47 ± 0.17	0 – 1.04
Sedge Wetland	6	0.96 ± 0.27	0.32 – 2.23	2.00 ± 0.37	1 – 3	0.56 ± 0.19	0 – 1.10
Tussock-Hummock	30	0.71 ± 0.07	0 – 1.59	1.60 ± 0.13	0 – 3	0.41 ± 0.07	0 – 1.10
Total	143	0.82 ± 0.52	0 – 2.55	1.60 ± 0.23	0 – 3	0.43 ± 0.03	0 – 1.10

Notes:

ha = hectares; SE = standard error; Min = minimum; Max = maximum.

(a) mean density of passerines only, not total density of birds detected at plots within each habitat type.

(b) Shannon diversity index.

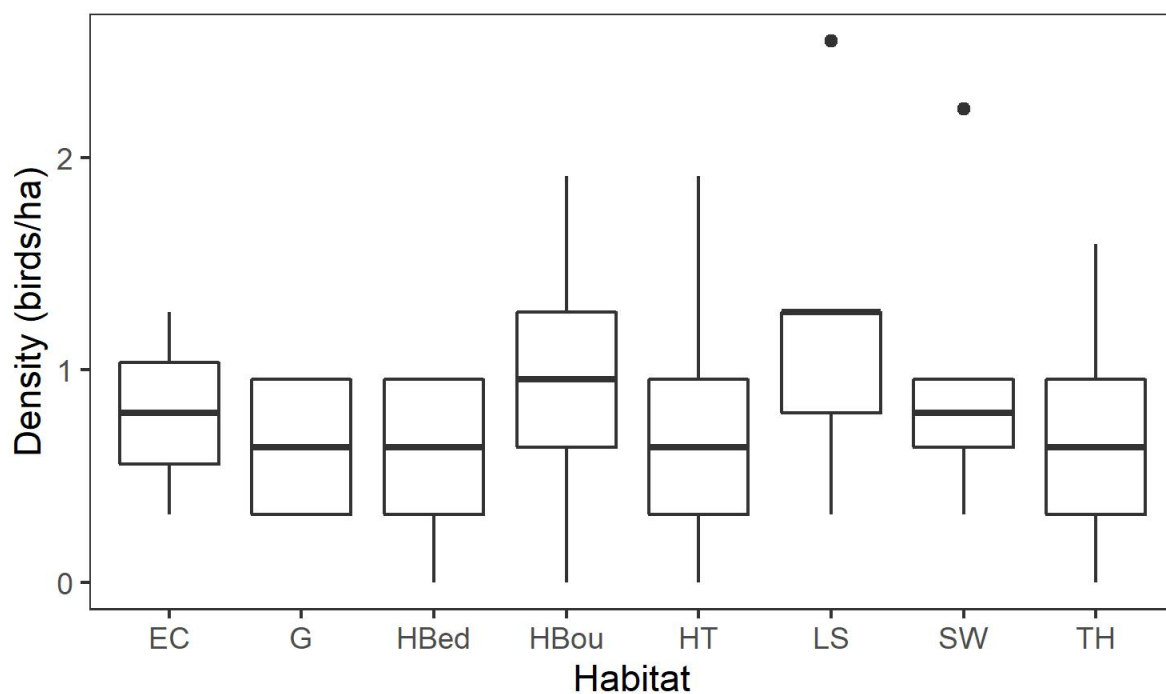


Figure 7: Boxplot of Avian Density Across Habitat Types. EC = Esker Complex, G = Gravel, HBed = Heath/Bedrock, HBou = Heath/Boulders, HT = Heath Tundra, LS = Low Shrub, SW = Sedge Wetland, TH = Tussock-Hummock

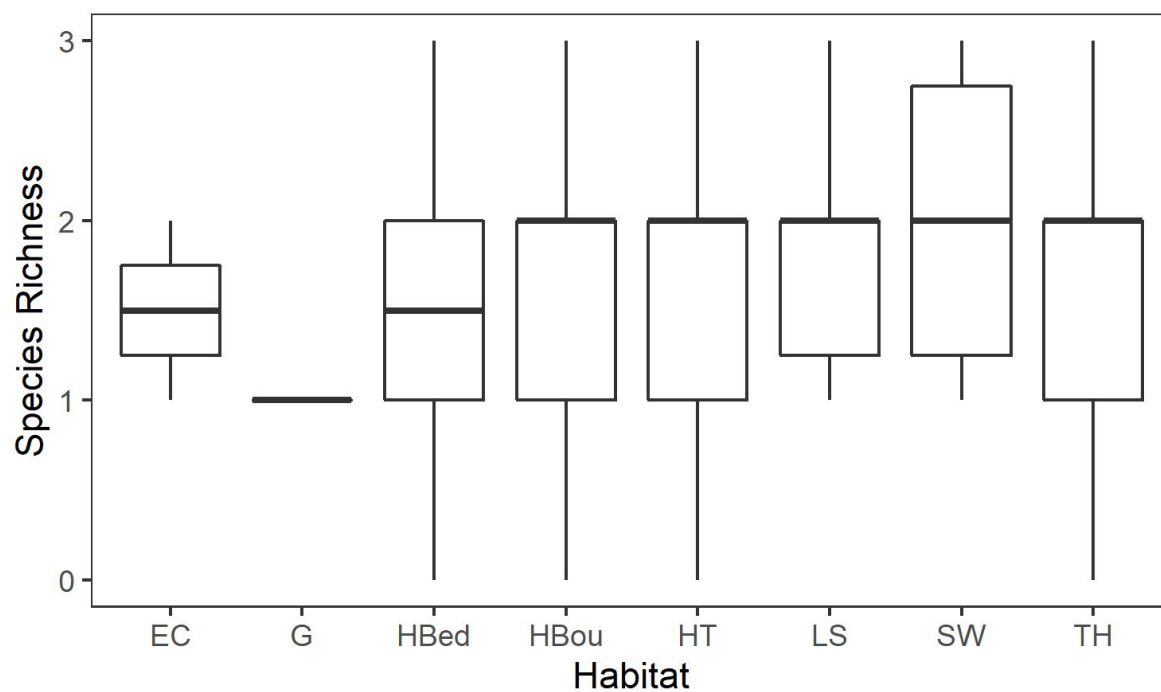


Figure 8: Boxplot of Species Richness Across Habitat Types. EC = Esker Complex, G = Gravel, HBed = Heath/Bedrock, HBou = Heath/Boulders, HT = Heath Tundra, LS = Low Shrub, SW = Sedge Wetland, TH = Tussock-Hummock

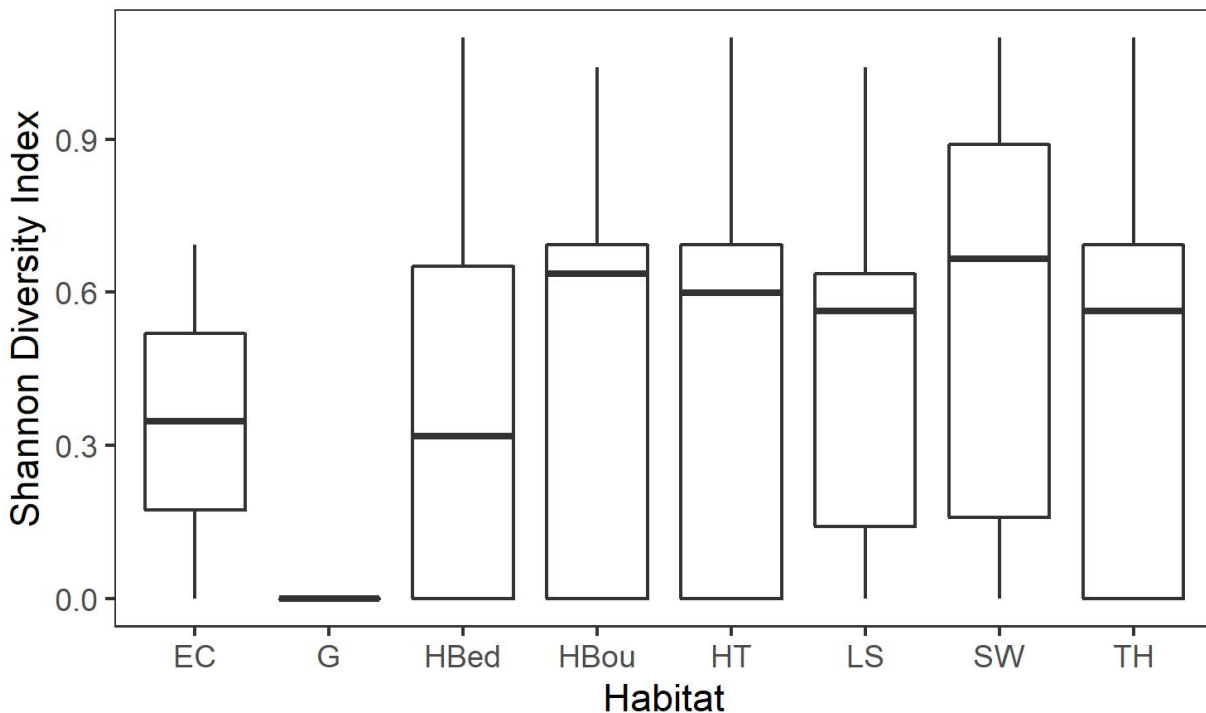


Figure 9: Boxplot of Shannon Diversity Index Across Habitat Types. EC = Esker Complex, G = Gravel, HBed = Heath/Bedrock, HBou = Heath/Boulders, HT = Heath Tundra, LS = Low Shrub, SW = Sedge Wetland, TH = Tussock-Hummock

10.2.3.3 Generalized Linear Model Results

Three models were equally well supported using $\Delta AIC < 2.0$; the Habitat only model, the null model, and the Distance + Habitat model (Table 16). The intercept in all models ranged between 0.70 and 0.80, indicating that the expected density of a point count is approximately 0.70 – 0.80 birds per hectare. The null model was supported as a top model which indicates none of the variables tested significantly affected bird density along the AWAR. However, Habitat and Distance were both included in top models, and may show a stronger effect with more data. Distance had a slight positive effect, indicating bird density may increase with increasing distance from the AWAR. Previous research has supported the negative relationship between distance to roads and the density of breeding birds (e.g., Summers et al. 2011), and that this relationship is driven primarily by traffic noise (McClure et al. 2013). Year effects were absent in the top three models, which indicates there was no change in bird density between 2018 and 2019.

Table 16: Coefficients and Akaike's Information Criterion Ranking for Candidate Generalized Linear Models for Passerine Density, 2018 and 2019

Model	Coefficients										Model Selection	
	<i>Intercept</i>	<i>Distance from Road^(e)</i>	<i>Year^(a)</i>	<i>Gravel Habitat^(b)</i>	<i>Heath/Bedrock Habitat^(b)</i>	<i>Heath/Boulders Habitat^(b)</i>	<i>Heath Tundra Habitat^(b)</i>	<i>Low Shrub/Riparian Tall Shrub Habitat^(b)</i>	<i>Sedge Wetland Habitat^(b)</i>	<i>Tussock-Hummock Habitat^(b)</i>	<i>AIC^(c)</i>	<i>ΔAIC^(d)</i>
Habitat	0.80	-	-	-0.16	-0.24	0.15	-0.09	0.42	0.16	-0.08	197.9	0
Null	0.78	-	-	-	-	-	-	-	-	-	199.3	1.4
Distance + Habitat	0.71	0.08	-	-0.10	-0.21	0.19	-0.05	0.49	0.19	-0.04	199.4	1.5
Year + Habitat	0.79	-	0.02	-0.16	-0.24	0.15	-0.09	0.42	0.16	-0.08	199.9	2.0
Year	0.77	-	0.02	-	-	-	-	-	-	-	201.2	3.3
Distance	0.77	0.02	-	-	-	-	-	-	-	-	201.3	3.3
Year + Habitat + Distance	0.70	0.08	0.02	-0.10	-0.21	0.19	-0.05	0.49	0.19	-0.04	201.3	3.4
Year + Distance	0.76	0.02	0.02	-	-	-	-	-	-	-	203.2	5.3

Notes:

- (a) Year is a categorical variable that includes two levels. The coefficient compares 2019 density to the reference year 2018.
- (b) Habitat is a categorical variable that includes eight levels. The coefficient is comparing habitat to the reference condition 'esker complex' habitat.
- (c) Akaike's Information Criterion.
- (d) Change in AIC between the given model and the top model. Top model sets are determined using a threshold of $\Delta AIC < 2$. Models included in the top model set are denoted in green.
- (e) Distance between the point count and the AWAR, with positive values representing a larger distance. Variable is scaled between 0 and 1.

10.3 PRISM

The Program for Regional and International Shorebird Monitoring (PRISM) is a standardized method for monitoring shorebirds. PRISM surveys are designed to document population numbers of Arctic breeding shorebirds, describe the distribution and habitat associations of shorebirds, and monitor trends in population size (Bart et al. 2005). The PRISM surveys conducted as part of this monitoring program will contribute to regional knowledge in an effort to set population targets and assist with management and conservation of these species (EC 2012). All PRISM data will be submitted to ECCC for inclusion in their regional database.

PRISM surveys were not conducted in 2017 because plot locations were not generated in time for the field season (Golder 2018). Following three years of survey data, a full analysis will be conducted to determine the effectiveness of the monitoring program and the frequency of monitoring thereafter (Golder 2015).

10.3.1 Methods

PRISM survey methods adhered to standard techniques for surveying shorebirds (CWS 2008). For each PRISM survey, plot locations were randomly chosen *a priori* by ECCC within 50 km of the Project footprint. Ground-based rapid assessment surveys (i.e., Tier 1 PRISM surveys) of sixteen 12 ha plots were completed from 14 to 18 June 2019, and ten plots were surveyed in 2018 from 19 to 21 June 2018 (Figure 10). Each PRISM survey was conducted by one Golder biologist field lead and one field technician from the local community. PRISM plots generally took 2 – 3 hours to complete, and observers recorded all species encountered, estimated their breeding status, and recorded habitat conditions for each plot. When a suspected breeding bird was encountered, the biologist attempted to determine the approximate location of the nest based on behavioural cues, but a search for the physical nest was not conducted due to time constraints.

10.3.2 Results

A total of ten species with evidence of breeding were detected in 2018 and nine were detected in 2019 (Table 17). Breeding birds were considered with verified nests, probable nests according to behavioural cues, and paired birds suspected of being on territory. A total of fourteen breeding bird species were observed in both years combined. The most common breeding bird species observed in the plots was Lapland longspur (*Calcarius lapponicus*).

Table 17: Breeding Pairs Detected during 2018-2019 PRISM Surveys

Common Name	Scientific Name	2018			2019		
		Nests	Probable Nests	Pairs	Nests	Probable Nests	Pairs
American Pipit	<i>Anthus rubescens</i>	0	0	0	0	0	2
American Tree Sparrow	<i>Spizella arborea</i>	0	0	1	0	0	0
Common Goldeneye	<i>Bucephala clangula</i>	0	0	0	0	0	1
Common Redpoll	<i>Acanthis flammea</i>	0	0	1	0	0	0
Dunlin	<i>Calidris alpina</i>	0	1	0	0	0	0
Greater White-fronted Goose	<i>Anser albifrons</i>	0	1	0	1	0	0
Horned Lark	<i>Eremophila alpestris</i>	0	3	2	0	0	5
Lapland Longspur	<i>Calcarius lapponicus</i>	6	2	4	1	1	17
Long-tailed Duck	<i>Clangula hyemalis</i>	0	0	2	0	0	0
Rock Ptarmigan	<i>Lagopus muta</i>	0	0	0	0	0	1
Sandhill Crane	<i>Grus canadensis</i>	1	0	0	1	0	0
Savannah Sparrow	<i>Passerculus sandwichensis</i>	0	5	4	0	0	0
Semipalmated Plover	<i>Charadrius semipalmatus</i>	0	1	0	0	0	2
Willow Ptarmigan	<i>Lagopus</i>	0	0	0	1	0	0
Totals		7	13	14	4	1	28

A total of eighteen non-breeding species were detected in 2018, and sixteen species were detected in 2019, for a cumulative total of twenty-three non-breeding species (Table 18). Non-breeders were defined as individual males or females showing no behavioural evidence of breeding, flocks of birds, and flyover incidentals. The timing of these surveys may have contributed to the high proportion of non-breeding birds detected, as surveys were conducted in early-mid June during spring breakup conditions.

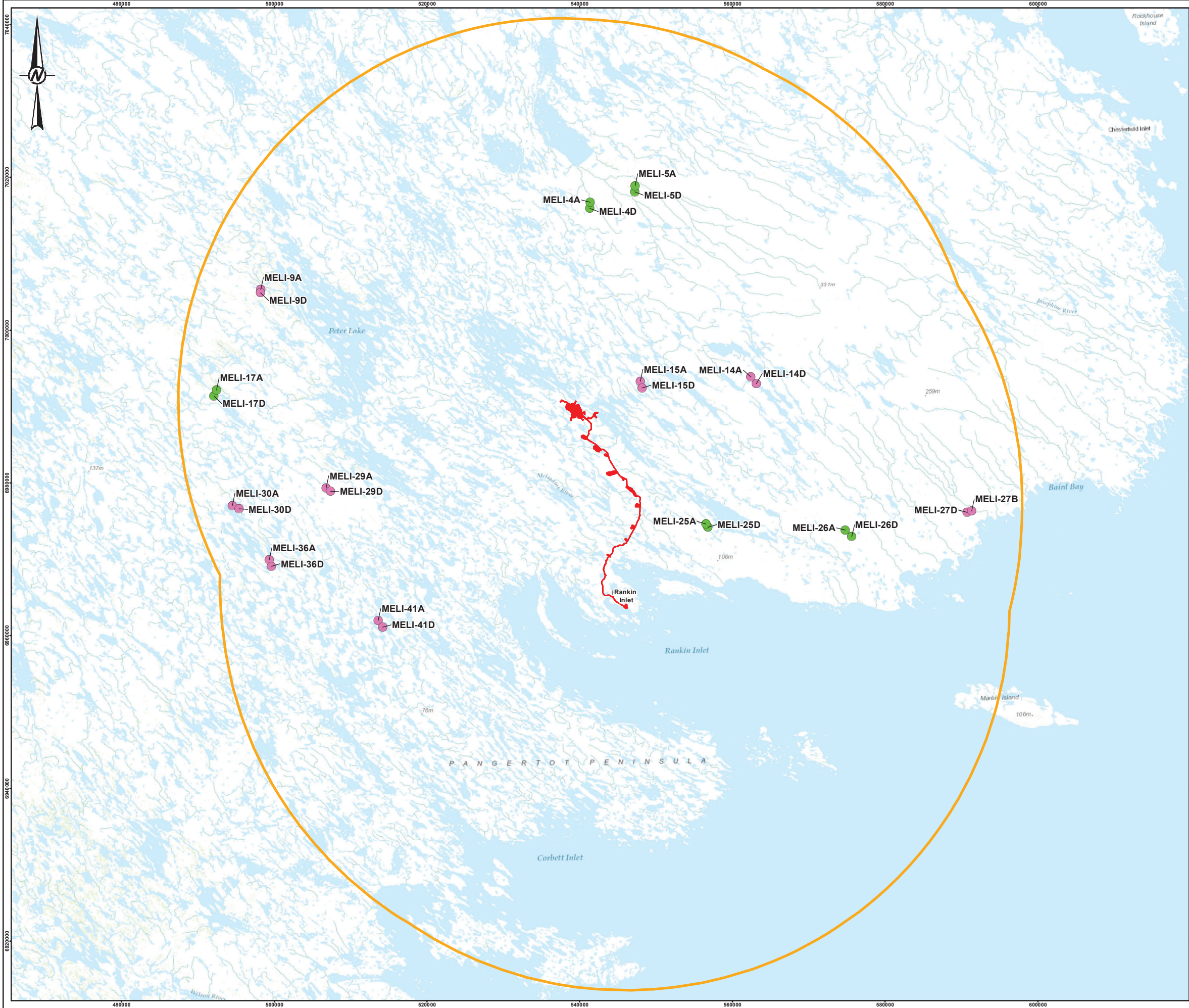
One species-at-risk was observed on survey plots – a single Short-eared owl of unknown sex was observed at plot 30D. The Short-eared owl (*Asio flammeus*) is federally listed as a species of Special Concern under Schedule 1 of the *Species at Risk Act* (Government of Canada 2019). Breeding evidence for two species of shorebirds was found during the surveys: Dunlin (*Calidris alpina*) in 2018, and Semipalmated plover (*Charadrius semipalmatus*) in both 2018 and 2019.

Table 18: Non-breeding Birds Detected during 2018-2019 PRISM Surveys

Common Name	Scientific Name	Non-breeding birds detected (2018)	Non-breeding birds detected (2019)
American Pipit	<i>Anthus rubescens</i>	0	5
American Tree Sparrow	<i>Spizella arborea</i>	1	0
Cackling Goose	<i>Branta hutchinsii</i>	18	2
Canada Goose	<i>Branta canadensis</i>	211	105
Common Goldeneye	<i>Bucephala clangula</i>	0	2
Common Raven	<i>Corvus corax</i>	0	1
Common Redpoll	<i>Acanthis flammea</i>	10	8
Dunlin	<i>Calidris alpina</i>	0	1
Greater White-fronted Goose	<i>Anser albifrons</i>	25	13
Herring Gull	<i>Larus argentatus</i>	9	1
Horned Lark	<i>Eremophila alpestris</i>	2	23
Lapland Longspur	<i>Calcarius lapponicus</i>	26	91
Least Sandpiper	<i>Calidris minutilla</i>	1	0
Long-tailed Duck	<i>Clangula hyemalis</i>	2	6
Northern Pintail	<i>Anas acuta</i>	0	1
Northern Wheatear	<i>Oenanthe</i>	1	0
Red-throated Loon	<i>Gavia stellata</i>	0	2
Rock Ptarmigan	<i>Lagopus muta</i>	0	5
Rough-legged Hawk	<i>Buteo lagopus</i>	1	0
Sandhill Crane	<i>Grus canadensis</i>	13	22
Savannah Sparrow	<i>Passerculus sandwichensis</i>	24	18
Semipalmated Plover	<i>Charadrius semipalmatus</i>	0	5
Short-eared Owl	<i>Asio flammeus</i>	0	1
Snow Goose	<i>Chen caerulescens</i>	122	47
Tundra Swan	<i>Cygnus columbianus</i>	3	0
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	1	5
Willow Ptarmigan	<i>Lagopus</i>	4	3
Totals		474	367

Notes: Bold species are federally listed under the *Species at Risk Act*.

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LEGEND
PRISM PLOT
YEAR
● 2018
● 2019
MINE INFRASTRUCTURE
MINE INFRASTRUCTURE BUFFER 50km

REFERENCE(S)
1. BASE DATA OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. TOPOGRAPHIC MAP © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
DATUM: NAD 83 PROJECTION: UTM ZONE 15

CLIENT
 **AGNICO EAGLE MINES LIMITED**

PROJECT
MELIADINE GOLD PROJECT
NUNAVUT

TITLE
PRISM PLOTS SURVEYED IN 2018 AND 2019

CONSULTANT	YYYY-MM-DD	2019-12-05
	DESIGNED	CC
	PREPARED	MH
	REVIEWED	CLT
	APPROVED	CLT

PROJECT NO.	CONTROL	REV.	FIGURE
19122039	3000/3750	0	10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

10.4 Raptor Monitoring

Agnico Eagle has engaged the Arctic Raptors Research Program (www.arcticraptors.ca) to develop and implement the raptor monitoring program (Franke 2012). The 2019 annual report of the Arctic Raptors Research Program is included in Appendix B. A summary of the report is presented here.

Monitoring for breeding raptors has occurred each year for the area associated with the Meliadine Mine since 2013, per the methods outlined in the arctic raptor's annual report (refer to Appendix B).

A total of 43 unique raptor nesting sites have been confirmed through surveys conducted between 2013 and 2019 in the general area associated with the Meliadine Mine, with documented nests for Peregrine falcons and Rough-legged hawks over the years. Gyrfalcons have not been documented in the area over the same period. Two nesting sites are within the Project footprint (candidates for site-specific management plans, as reported in Appendix B), three nesting sites are within 600 m of the AWAR and another four nesting sites are within 1.5 km of the AWAR. Mean distance from known occupied nesting sites to the Meliadine Lease footprint was 12.48 km (range of 0 – 29 km).

Analysis of the data indicates that nest occupancy rates for Peregrine falcons has been stable between 2013 and 2019 (mean of 0.61), while Rough-legged hawk nest occupancy rates have been more variable (mean of 0.34, with peaks of 0.57 and 0.52 in 2013 and 2016, respectively). This variation is well-known for small mammal specialists in response to microtine rodent cycles.

10.5 Accuracy of Impact Predictions

A summary of the impact predictions proposed in the TEMMP (Golder 2015) is provided in Table 2. The primary objective of the waterfowl and waterbird monitoring program is to determine the effects, if any, of sensory disturbance from mining activities, including access along the AWAR on breeding success or changes in the distribution of mated pairs (Table 19).

Threshold triggers for additional mitigation or evaluation of mitigation will be determined through discussions with appropriate ECCC and GN personnel. These thresholds are difficult to initially establish due to low bird densities and high variability. However, thresholds will likely be based on habitat loss (i.e., 515 ha of aquatic habitat) with no additional habitat loss than FEIS predictions. After initial data collection (first 3 years of operations) and a range of natural variability is determined, breeding and productivity thresholds will be determined.

Table 19: Accuracy of Impact Predictions – Waterfowl, Waterbirds, Upland Birds and Shorebirds

Monitoring Indicator	Threshold	Exceeded in 2019?	Adaptive Management	Monitoring Method	TEMMP* Section
Habitat Loss and Degradation	515 ha of Aquatic Habitat	To be assessed after first 3 years of operations	Not Currently Identified	Shoreline Surveys, PRISM	4.10.2
Disturbance of Nesting Waterfowl	TBD once NRV is established through consultation with ECCC and GN	No	Not Currently Identified	Shoreline Surveys	4.10
Project-related Mortality	1 Individual Waterbird	No	Not Currently Identified	Wildlife Sightings Log, Site Surveillance Monitoring, AWAR Road Surveillance, Road Surveillance	4.10
Changes in Breeding Bird Populations	TBD once NRV is established through consultation with ECCC	No	Not Currently Identified	Point counts and transects	4.11

Notes:

- NRV = Natural Range of Variability
 ECCC = Environment and Climate Change Canada
 GN = Government of Nunavut Department of Environment
 PRISM = Program for Regional and International Shorebird Monitoring
 *TEMMP = Terrestrial Environment Management and Monitoring Plan (Golder 2015)

10.6 Recommendations

It is recommended that Agnico Eagle continue to monitor birds through shoreline surveys, breeding bird point counts and PRISM. The timing of the field programs in 2019 were similar to those in 2018 to capture breeding activity and avoid overlap with the Qamanirjuaq herd migration through the area. Consultation with our field crews supported the timing of the survey window in reference to the caribou herd migration, as the caribou were reported to be approaching site during the final day of the field program. Nesting and breeding bird evidence continues to be low, likely due to the surveys being conducted when birds were just arriving on site and prior to establishing nests.

11.0 SOIL AND VEGETATION MONITORING

The scope of the landscape component of the TEMMP Annual Report is to report on baseline levels of metals in berry producing plants, sedges, lichen, and soil chemistry potentially affected by the Mine. To evaluate the potential for adverse health effects to terrestrial life associated with changes in environmental quality due to chemical releases from the Project, the existing (or baseline) conditions of the environment must first be understood. Vegetation and soil Annual monitoring was conducted in 2017 to inform the baseline conditions. Monitoring programs will be completed at three-year intervals starting in 2019 (first year of operations). This section provides the results for soil and vegetation monitoring completed in 2019.

Local vegetation cover is predominantly characterized by heath tundra, and lichen-heath communities. Low-lying areas between the drumlins and eskers are dominated by sedge wetlands, shallow ponds, and various shallow and deep-water lakes. The main change from the Mine on the landscape is direct disturbance, which will be a long-term effect as the recovery of vegetation is slow in arctic environments (Burt 1997).

The objectives of this component of the TEMMP Annual Report is to:

- To monitor levels of metals in soils collected at the Mine site area, AWAR, and Reference Areas (10 to 15 km from the site infrastructure).
- To monitor level of metals in lichen tissue and vascular plants within the Mine site area, AWAR, and Reference Areas (10 to 15 km from the site infrastructure).

Lichens were chosen because they are estimated to account for 87 to 90% of the diet for caribou (Thomas 1998). Lichens can also effectively and preferentially bioaccumulate airborne contaminants because of their lack of roots, large surface area, long life span, and high ion exchange capacity (Naeth and Wilkinson 2006). This allows lichens to provide “worst-case” exposure concentrations for assessment of risks to caribou.

Berry-producing plants were included in the assessment because human consumption of berries in the Project infrastructure and AWAR was raised as a concern by local communities.

11.1 Methods

11.1.1 Sampling Locations

A field program was carried out by a Golder Vegetation Ecologist from 19 to 24 July 2019 to monitor the existing conditions of soil and vegetation quality. All sampling locations selected in 2017 as part of the TEMMP were revisited in 2019 (Figure 8). Due to disturbance of some sites in 2018 due to advancing Mine development, some sites were not able to be re-sampled. New sites were created to replace these locations (Table 20). The program included the collection of soil and vegetation samples, and analysis of the samples for concentrations of metals. These concentrations in soil and vegetation will be used to provide context to the predicted changes to environmental quality as a result of the Project.

The soil and vegetation sampling program were designed to include the collection of vegetation samples of interest (i.e., berries, sedges, and lichens) and co-located soil samples, while taking spatial distribution into account. Vegetation types selected for sampling were identified based on their importance as food for human consumption (e.g., berries) and primary forage type for wildlife considered in the assessment of human and ecological health risk (e.g., lichens). Soil and vegetation were sampled at following locations in the Mine site (Treatment Sites) outside of the Mine site (Reference Area):

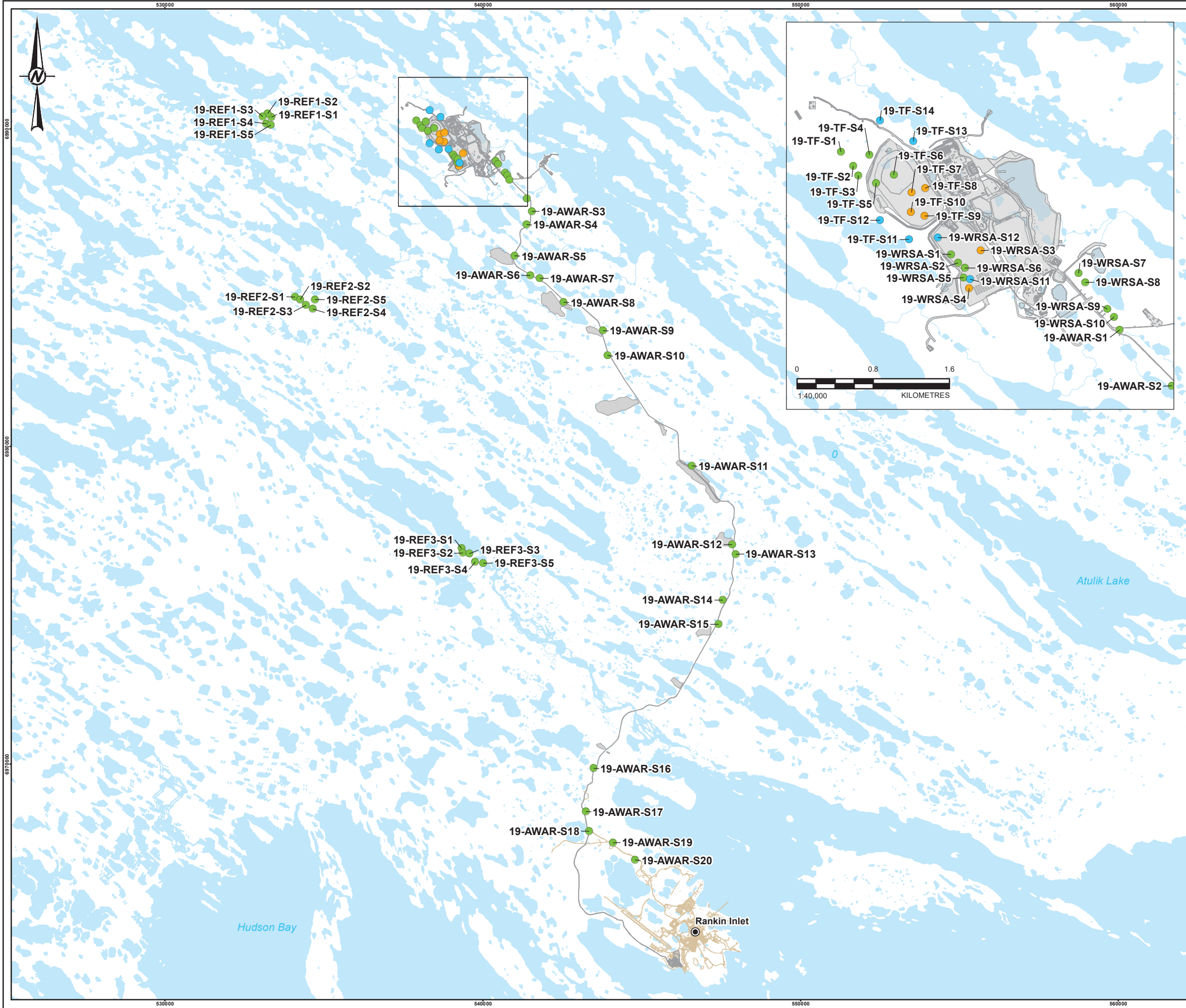
- AWAR – 20 samples (20 sample sites, 10 at each side of the road)
- Waste Rock Storage Area – 10 samples
- Tailings Facility – 10 samples
- Reference Area – 15 samples (3 sample sites, 5 samples at each site)

Three external reference areas and three treatment areas were sampled (Figure 11). Reference areas were selected southwest and west of the Project area, upwind from mine related activities (Ref 1 to Ref 3). Treatment areas, Waste Rock Storage Area, Tailings Facility, and AWAR were selected to represent wind distribution of contaminants from mining related activities. Ten sample sites were selected in the Waste Rock facilities, ten in the tailings facility and 20 along the AWAR at least 150 apart, when possible. Within each reference area, five sample sites (S1 to S5) were selected within a 200 to 300 m radius, at least 150 m apart from one another. In each

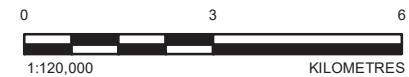
sample site, composite tissue and soil samples are collected within a 10 to 30 m radius, depending on tissue (particularly berry) availability.

Permanent reference sample locations were established west of site and along the AWAR. Reference locations were determined in the field and were located 10-15 km from Site infrastructure, the AWAR and Rankin Inlet. Specific sampling locations established during 2017 field surveys and revisited in 2019 are shown in Table 20 and Figure 11. Dominant plant species and any incidental observations of non-native and listed plant species were recorded at each sampling location.

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- LEGEND**
- SAMPLING LOCATION**
- SITE
 - REPLACEMENT SITE
 - SITE NO LONGER EXISTS
 - ▭ MINE INFRASTRUCTURE
 - ▭ MINE FOOTPRINT
 - ALL-WEATHER ACCESS ROAD (AWAR)
 - RANKIN INLET
 - WATERCOURSE
 - WATERBODY



- NOTES(S)**
1. TSF, WRSF1, WRSF2, CP1 ARE THE MAXIMUM EXTENT UNDER THE APPROVED MINE PLAN AND DO NOT REPRESENT SIZE IN 2018.
 2. BORROW PIT B1A IS EXCLUDED AND IS NOT ILLUSTRATED IN THE CURRENT FOOTPRINT.
 3. THE PROPOSED MINE PLAN INCLUDES TIRIGANIAQ PIT 1, TIRIGANIAQ PIT 2, AND WASTE ROCK STORAGE FACILITY 3 (WRSF3) AND ASSOCIATED INFRASTRUCTURE; THESE ITEMS HAVE NOT BEEN CONSTRUCTED YET (AS OF THE END OF 2018) AND THEREFORE WERE NOT INCLUDED ON THIS MAP.

- REFERENCE(S)**
1. BASE DATA OBTAINED FROM AGNICO EAGLE MINES LIMITED.
 2. DATUM: NAD83 PROJECTION UTM ZONE 15

CLIENT
 **AGNICO EAGLE MINES LIMITED**

AGNICO EAGLE
PROJECT
MELIADINE GOLD PROJECT
NUNAVUT

TITLE
2019 VEGETATION AND SOIL MONITORING

CONSULTANT	YYYY-MM-DD	2019-11-21
	DESIGNED	AZ
	PREPARED	CDB
	REVIEWED	CLT
	APPROVED	CLT



PROJECT NO.	CONTROL	REV.	FIGURE
19122039	3000/3550	0	11

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Table 20: Soils and Vegetation Tissue Sampling Locations

Sampling Area	Site #	Sampling Location Name	Easting	Northing
Tailings facility	Site 1	19-TF-S1	537910	6990267
	Site 2	19-TF-S2	538039	6990117
	Site 3	19-TF-S3	538095	6990018
	Site 4	19-TF-S4	538208	6990235
	Site 5	19-TF-S5	538279	6989936
	Site 6	19-TF-S6	538465	6990025
	Site 7	19-TF-S7 *	538653	6989839
	Site 8	19-TF-S8 *	538796	6989882
	Site 9	19-TF-S9 *	538787	6989592
	Site 10	19-TF-S10 *	538644	6989631
	Site 11	19-TF-S11 **	538625	6989349
	Site 12	19-TF-S12 **	538322	6989547
	Site 13	19-TF-S13 **	538670	6990378
	Site 14	19-TF-S14 **	538322	6990593
Waste Rock Storage Area	Site 1	19-WRSA-S1	539064	6989189
	Site 2	19-WRSA-S2	539140	6989102
	Site 3	19-WRSA-S3 *	539378	6989231
	Site 4	19-WRSA-S4 *	539254	6988834
	Site 5	19-WRSA-S5	539196	6988944
	Site 6	19-WRSA-S6	539212	6989047
	Site 7	19-WRSA-S7	540404	6988993
	Site 8	19-WRSA-S8	540475	6988895
	Site 9	19-WRSA-S9	540705	6988617
	Site 10	19-WRSA-S10	540777	6988533
	Site 11	19-WRSA-S11 **	539266	6988927
	Site 12	19-WRSA-S12 **	538927	6989364
AWAR	Site 1	19-AWAR-S1	540835	6988397
	Site 2	19-AWAR-S2	541381	6987810
	Site 3	19-AWAR-S3	541546	6987401
	Site 4	19-AWAR-S4	541370	6986990
	Site 5	19-AWAR-S5	541002	6986008
	Site 6	19-AWAR-S6	541494	6985390
	Site 7	19-AWAR-S7	541787	6985299
	Site 8	19-AWAR-S8	542546	6984543
	Site 9	19-AWAR-S9	543777	6983654
	Site 10	19-AWAR-S10	543923	6982864
	Site 11	19-AWAR-S11	546575	6979391
	Site 12	19-AWAR-S12	547841	6976918
	Site 13	19-AWAR-S13	547955	6976614
	Site 14	19-AWAR-S14	547547	6975167

Table 20: Soils and Vegetation Tissue Sampling Locations

Sampling Area	Site #	Sampling Location Name	Easting	Northing
	Site 15	19-AWAR-S15	547420	6974405
	Site 16	19-AWAR-S16	543485	6969872
	Site 17	19-AWAR-S17	543242	6968514
	Site 18	19-AWAR-S18	543343	6967889
	Site 19	19-AWAR-S19	544097	6967527
	Site 20	19-AWAR-S20	544783	6966983
Reference 1	Site 1	19-REF1-S1	533352	6990369
	Site 2	19-REF1-S2	533221	6990483
	Site 3	19-REF1-S3	533071	6990384
	Site 4	19-REF1-S4	533183	6990165
	Site 5	19-REF1-S5	533325	6990118
Reference 2	Site 1	19-REF2-S1	534088	6984708
	Site 2	19-REF2-S2	534255	6984626
	Site 3	19-REF2-S3	534431	6984456
	Site 4	19-REF2-S4	534648	6984332
	Site 5	19-REF2-S5	534723	6984630
Reference 3	Site 1	19-REF3-S1	539333	6976792
	Site 2	19-REF3-S2	539377	6976651
	Site 3	19-REF3-S3	539579	6976630
	Site 4	19-REF3-S4	539756	6976362
	Site 5	19-REF3-S5	540010	6976323

Notes:
* Sites not revisited due to existing disturbance.
** Sites established in 2019 to replace disturbed sites.

Upon arriving at a suitable sampling site, Universal Transverse Mercator (UTM) coordinates were marked with a Garmin GPSMAP62s Global Positioning System device. Several photographs were taken at each sampling location to document the physical characteristics and habitat present. Close-up photographs were taken of each sample showing the corresponding sample ID and sample condition. Representative photos of each sampling location are presented in Appendix C.

11.1.1.1 Lichen and Vascular Plant Sampling

Lichens and vascular plants (vegetation tissue samples) were collected for chemical analysis at the locations listed in Table 20. Due to the cold winter/spring berries were not ready at this time of year in all sampling locations, for those locations where berries were not available, vegetation samples were collected from other plants such as Labrador tea, lichen species, birch and sedge were collected. Clean sampling protocols were implemented so that samples were not contaminated by external sources. The species of plant was identified and general notes regarding the plant's health and vigour were recorded. Unhealthy plants were only collected when there was insufficient healthy plant material available. Plant material that was dropped during collection was not included in the sample. Vegetation was inspected visually at each sample location to assess possible impacts of dustfall on vegetation. When berries were available for sampling they were hand-picked and care was taken to avoid removing dust from their surface. They were collected from a minimum of three plants. Effort was made to pick ripe berries that someone would consider edible. Graminoids (sedge) were collected by cutting the base of the aboveground growth with clean, titanium blade, non-stick coated scissors and folding the stems gently.

Powderless nitrile gloves were used for all contact with lichens and vascular plants. Titanium scissors were used to snip the upper leafy portion from several plants within the same location at each sample site to create a composite sample. Samples were collected in Ziploc bags and kept cool until they could be frozen and transported to the laboratory for analysis. All tools used in sampling were cleaned between sites by washing with detergent and rinsing with distilled water. New nitrile gloves were used at each sample plot. The samples collected at each plot were recorded, and each plot was photographed. A selection of photographs taken during the vegetation sample program is presented in Appendix D.

At least 10 g of each vegetation type was collected and placed in a plastic sample bag. Once the sample was collected, the air was squeezed out of the bag and the bag was sealed closed. Sample bags were labelled with the date, location, time, and sample identification, and then placed inside a second plastic bag. The second bag was labelled with the same information as the first bag and sealed closed.

11.1.1.2 Soil Sampling

Soil samples were collected at each location where berries, graminoids [sedge], or lichen samples were collected. Before collecting the samples, leaves and debris were cleared from the ground or water surface. Soils samples were collected using a composite sampling method at each site. Representative grab samples were collected from five separate test pits (no greater than 5.0 m²) per sample site using a stainless steel trowel. The organic layer (which ranges from 0 to 5 cm below surface) was removed and discarded. Mineral soil was collected from the upper soil horizons to a maximum depth of 15 to 20 cm and placed it in a Ziploc bag and homogenized. Soil was collected in pre-labelled Ziploc bags and kept cool until it could be transported to the laboratory for analysis. All samples were recorded on an electronic chain-of-custody form, which was submitted to the analytical laboratory through the laboratory portal.

11.1.1.3 Soils and Vegetation Tissue Analysis

Laboratory analyses on vegetation and soil samples were performed by Bureau Veritas Laboratories in Nepean, Ontario. Total extractable metals in soil and vegetation were analyzed using inductively coupled plasma mass spectrometry and inductively coupled plasma triple quad tandem mass spectrometry. The laboratory certificates of analyses are provided in Appendix E and results are presented in Appendix F. Samples were analyzed for the following suite of parameters:

- moisture content (soils and plant tissue)
- pH (soil only)
- total metals (plant tissue and soil unless otherwise indicated) included: aluminium (plant tissue only), antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, silver, sodium (plant tissue only), tin (soil samples only), and zinc.

Concentrations of metals on lichen, vascular plants, and soil samples were screened against the CCME Canadian Soil Quality Guidelines for the Protection of Environment and Human Health (CCME 2012) for residential land use.

11.1.1.4 Quality Assurance and Quality Control

Sample duplicates were randomly selected at the laboratory for Quality Assurance and Quality Control (QA/QC) purposes. Duplicates provide an indication of natural sample variation and the reproducibility of the laboratory test methods.

The results of the duplicate pair were expressed as a Relative Percent Difference (RPD). The RPD is an indicator of laboratory precision and sample heterogeneity. Lower RPD numbers indicate better precision in laboratory analysis and sample homogeneity. The formula for computing the RPD is given in the equation below:

$$RPD = \frac{|Sample - Duplicate|}{Mean} \times 100$$

Where:

- RPD = relative percent difference (%)
- Sample = concentration in original sample (µg/g)
- Duplicate = concentration in duplicate sample (µg/g)
- Mean = average of the original sample and the duplicate sample (µg/g)

Relative percent differences were not calculated if concentrations were not detected in one or both of the duplicate samples. The calculated relative percent difference (RPDs) were compared to the CCME Canadian Soil Quality Guidelines for the Protection of Environment and Human Health (CCME 2012) for residential land use.

11.2 Soil and Vegetation Results

The results of the soil sampling program are presented in Appendix F (Tables 1 and 2). Non-native plants are discussed in Section 12.0 of this report. No dustfall was visually observed at the treatment and reference locations. However, dustfall on vegetation was observed at some of the locations, between 0 to 30 m approximately, along the AWAR,. Dust generation from Project vehicles along the AWAR and mine roads is expected, but loads to overall dust accumulation in the area was considered negligible (Golder 2014a). Agnico Eagle will continue inspecting vegetation visually within 3 years when the next surveys are scheduled to assess possible impacts of dustfall on vegetation.

Soil samples collected around vegetation had concentrations of antimony, barium, beryllium, cobalt, lead, mercury, molybdenum, silver, thallium, uranium, vanadium and zinc less than residential limits (Appendix F, Table 1). Arsenic, copper, nickel and selenium exceed the residential limits in more than one sample and chromium in one sample, similar to the baseline condition results reported from 2014 for the FEIS (Volume 5, Section 5.2) where copper and selenium exceed the agricultural limits in two and one sampling locations from 2008, respectively. Arsenic exceeded the residential limits in 25 samples; of those, 12 samples were double the residential limit. In both 2018 and 2019 concentrations of silver were less than detection limits in all samples collected. This is comparable to baseline conditions per results reported in the 2017 TEMMP Annual Report (Golder 2018). Results from 2014 for the FEIS (Volume 5 and 6, Sections 5.2 and 6.4 respectively; Golder 2014a) indicate there are areas where naturally occurring arsenic concentrations are high and above the CCME Soil Quality Guidelines (2012) within the Project footprint, including the AWAR.

The CCME (2012) does not include residential, commercial and industrial limits for boron, however, this metal exceeded the agricultural limits in 10 samples by more than double the limits. Baseline values for boron are not available, however, boron values would be tested and assessed as part of the upcoming monitoring surveys in 2021. The minimum and maximum concentrations for most metals in all samples are within an order of magnitude of each other, indicating that there was little variability overall in the metal concentrations between soils samples. Both the soil pH and moisture content varied widely, ranging from 2.95 to 7.71 and from 5.8 to 84%, respectively (Appendix F - Table 2). This variability in pH is comparable to results reported in 2017 (Golder 2018).

The results of the vegetation tissue sampling program are presented in Appendix F (Tables 4 to 6). Vegetation samples had concentrations of most metals sampled, except for levels of antimony, beryllium, bismuth, selenium, silver and tin which were below laboratory detection limits in all samples collected (Appendix F - Table 4). Concentrations of sodium, cadmium, chromium, mercury, molybdenum, thallium and uranium were below the detection limit in most of the samples (Appendix F - Table 4). Two sites within the waste rock storage area had arsenic concentrations above the CCME guidelines (2012). Moisture content for vascular plants and lichen tissue varied widely, ranging from 9.0% to 80.0% (Appendix F - Table 5). The pH for vascular plants and lichen tissue ranged from 3 to 7 (Appendix F - Table 5). The difference between the minimum and maximum concentrations vegetation tissue samples were more than one order of magnitude for all metals except antimony, beryllium, bismuth, cadmium, molybdenum, phosphorous, potassium, selenium, silver, sodium and tin.

Overall there was no significant difference between the soil and vegetation metal concentration results from 2017 (Golder 2018) and 2019. Despite some elevated soil parameter concentrations for arsenic and high variability in soil pH observed, these are comparable to baseline measurements and the vegetation analysis supports that there is no stress to vegetation. Respective mitigation and management measures employed at site to minimize effects of dustfall on soils and vegetation continue to be employed per the Project Dust Management and Road Management Plans.

11.3 Quality Assurance and Quality Control

The RPDs for duplicates for metal concentrations in soil are presented in Appendix F (Table 3). The RPDs for the soil duplicates were within the 30% criterion for all metals analyzed.

The RPDs for the vegetation tissue sample duplicates are presented in Appendix F (Table 6) and all are within the 30% criterion for all metal parameters except for selenium which is above in the lichen duplicate.

Duplicate samples which have larger variation indicate high sample variability, which can be attributed to laboratory analysis, sampling technique or natural sample heterogeneity. The results of the laboratory QA/QC analyses performed by Bureau Veritas on both soil and vegetation fell within acceptable control limits for most samples, suggesting laboratory analyses would not be a large source of variability for either of these media.

For soils, the majority of the variability observed is likely attributed to the natural heterogeneity of soils. Almost all natural soils are highly variable and rarely homogeneous. Soil heterogeneity can be classified into two main categories. The first is lithological heterogeneity, which can be manifested in the form of different lithology within a more uniform soil mass. The second source of heterogeneity can be attributed to inherent spatial soil variability, which is the variation of soil properties from one point to another in space due to different deposition conditions.

11.4 Accuracy of Impact Predictions

A summary of the impact predictions proposed in the TEMMP (Golder 2015) is provided in Table 2. Specific thresholds for vegetation and wildlife habitat monitoring are outlined in Table 21.

Table 21: Accuracy of impact Predictions - Vegetation

Monitoring Indicators	Threshold	Exceeded in 2019?	Adaptive Management	Monitoring Method	TEMMP Section
Wildlife Habitat Loss	Terrestrial – 2,951 ha Aquatic – 515 ha	No	Not Currently Identified	Ground Surveys, Mapping, GIS Analysis	4.0
Habitat Degradation by Contamination	No effects to plant health from dust deposition	No	Not Currently Identified	Vegetation and Soil Samples	13.0
Habitat Reclamation following Mine Closure	Not applicable	No	Not Currently Identified	Ground Surveys, Vegetation Plots, Mapping	4.0

The 2017 TEMMP Annual Report (Golder 2018) presented the baseline levels of metals in berry producing plants, sedges, lichen, and soil chemistry potentially affected by the Project. To evaluate the potential for adverse health effects to terrestrial life associated with changes in environmental quality due to chemical releases from the Project, the existing (or baseline) conditions of the environment must first be understood. Vegetation (i.e., berries, sedges, and lichens) and soil sampling occurred in 2019, when Mine operations commenced. Soil characteristics per monitoring at three-year intervals (starting in 2019) will be compared to baseline conditions from 2017 to determine whether there is an accumulation of metals or change in nutrient composition. If there are indications of vegetation stress, poor vigour, or plant die-back, soil sampling will be implemented (as required), to determine whether changes in the growth media is influencing plant health and/or establishment.

11.5 Recommendations

Soil sampling will be conducted in future assessments and soil characteristics will be compared to baseline conditions to determine whether there is an accumulation of metals or change in nutrient composition. A comparison of the assessed metals will be presented in 3 years when the next surveys are scheduled to be completed (in 2022). If there are indications of vegetation stress, poor vigour, or plant die-back during non-native plant species surveys, which are completed annually, soil sampling will be implemented prior to the 3-year sampling period, as required, to determine whether changes in the growth media is influencing plant health and/or establishment.

12.0 NON-NATIVE PLANT SURVEYS

The spread of non-native species across the landscape is a concern for the Inuit. Construction equipment and operation activities can result in the introduction of, or spread of, non-native vegetation species. Thus, Project Certificate No. 006 includes Term and Condition 36 and 37 to prevent and minimize the introduction of non-native plants during pre-construction, construction, operations, temporary closure and maintenance, closure and post closure. Pre-construction surveys were completed during the baseline studies completed during 1998, 2008 and 2009 surveys (Volume 6, SD 6-2; Golder 2014a).

This section includes the methods, results and mitigation measures to minimize the spread of non-native invasive plant species as a result of Project construction. The Government of Nunavut (GN) and Environment and Climate Change Canada (ECCC) define a non-native species as 'an organism that is not normally found in a region' (CESCC 2010). Any introductions of non-native plant species must be promptly reported to the GN Department of Environment. Non-native plant monitoring surveys occurred in 2018 prior to Project operations initiation and in 2019, when Project operations commenced. Subsequent surveys will be completed annually as per the TEMMP (Golder 2015).

12.1 Methods

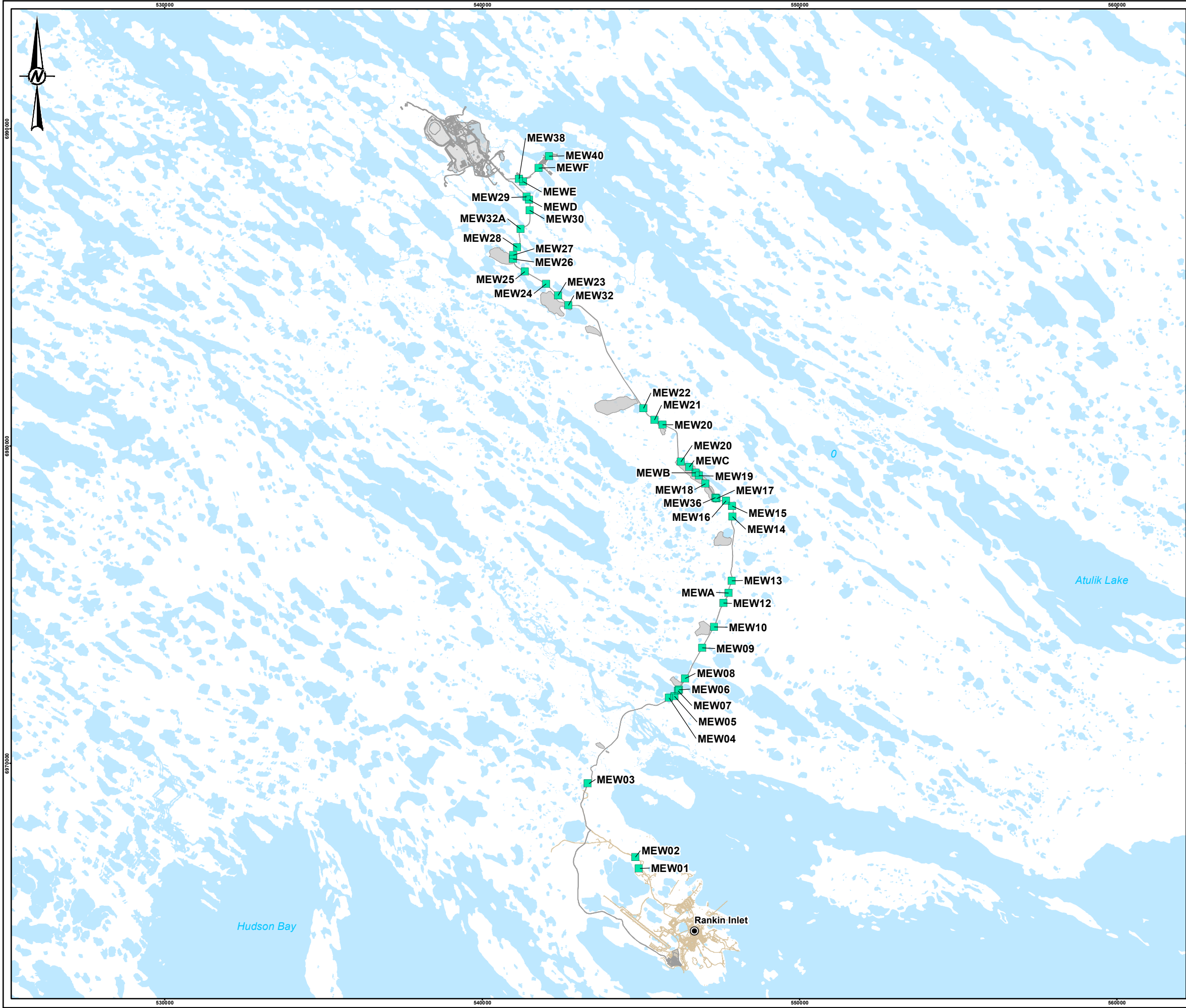
A desktop search for non-native plants in Nunavut was completed prior to 2019 field surveys. A list of potential non-native plants was obtained from the Canadian Endangered Species Conservation Council List (CESCC 2010; Appendix G). Non-native plant surveys were completed on 20-21 July 2019 by a Golder Terrestrial Ecologist. Surveys targeted areas with a high potential of occurrence such as along the AWAR, Project footprint, and Bypass Road (Figure 12). In addition, the accommodations area within the Project footprint and the Agnico Eagle ship loading area in Rankin Inlet were surveyed. Where invasive plant species were observed, a GPS point and photograph was taken and the size of occurrence was recorded.

12.2 Results

A non-native plant species was identified during the surveys; Common dandelion (*Taraxacum officinale*), listed under the Non-Native and Invasive Species in Nunavut (CESCC 2010; Appendix G). Two occurrences of Common dandelion were recorded along the AWAR in 2019 (Figure 13). Common dandelion was not observed along the Bypass Road, Project footprint or Agnico Eagle ship loading area in Rankin Inlet.

Negligible changes in abundance and distribution of non-native plant species relative to baseline conditions is expected due to the advancement of the Project but controlled through the implementation of mitigation and environmental design features (Volume 6, Section 6.5; Golder 2014a). The 2019 results show that non-native plant species are currently limited to disturbed areas, but prevention and control measures as outlined in the TEMMP (Golder 2015) need to continue to be implemented.

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LEGEND

- NON-NATIVE PLANT MONITORING LOCATIONS
- MINE INFRASTRUCTURE
- MINE FOOTPRINT
- ALL-WEATHER ACCESS ROAD (AWAR)
- RANKIN INLET
- WATERCOURSE
- WATERBODY

0 3 6
1:120,000 KILOMETRES

NOTES(S)

1. TSF, WRSF1, WRSF2, CP1 ARE THE MAXIMUM EXTENT UNDER THE APPROVED MINE PLAN AND DO NOT REPRESENT SIZE IN 2018.
2. BORROW PIT B1A IS EXCLUDED AND IS NOT ILLUSTRATED IN THE CURRENT FOOTPRINT.
3. THE PROPOSED MINE PLAN INCLUDES TIRIGANIAQ PIT 1, TIRIGANIAQ PIT 2, AND WASTE ROCK STORAGE FACILITY 3 (WRSF3) AND ASSOCIATED INFRASTRUCTURE; THESE ITEMS HAVE NOT BEEN CONSTRUCTED YET (AS OF THE END OF 2018) AND THEREFORE WERE NOT INCLUDED ON THIS MAP.

REFERENCE(S)

1. BASE DATA OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. DATUM: NAD83 PROJECTION UTM ZONE 15

CLIENT

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT

MELIADINE GOLD PROJECT

NUNAVUT

TITLE

2019 NON-NATIVE PLANT MONITORING LOCATIONS

CONSULTANT	YYYY-MM-DD	2020-01-21
	DESIGNED	AZ
	PREPARED	CDB
	REVIEWED	CLT
	APPROVED	CLT

PROJECT NO.	CONTROL	REV.	FIGURE
19122039	3000/3550	0	12

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LEGEND
WEED SPECIES NAME

- COMMON DANDELION (TARAXACUM OFFICINALE)
- MINE INFRASTRUCTURE
- MINE FOOTPRINT
- ALL-WEATHER ACCESS ROAD (AWAR)
- RANKIN INLET
- WATERCOURSE
- WATERBODY

0 3 6
1:120,000 KILOMETRES

NOTES(S)

1. TSF, WRSF1, WRSF2, CP1 ARE THE MAXIMUM EXTENT UNDER THE APPROVED MINE PLAN AND DO NOT REPRESENT SIZE IN 2018.
2. BORROW PIT B1A IS EXCLUDED AND IS NOT ILLUSTRATED IN THE CURRENT FOOTPRINT.
3. THE PROPOSED MINE PLAN INCLUDES TIRIGANIAQ PIT 1, TIRIGANIAQ PIT 2, AND WASTE ROCK STORAGE FACILITY 3 (WRSF3) AND ASSOCIATED INFRASTRUCTURE; THESE ITEMS HAVE NOT BEEN CONSTRUCTED YET (AS OF THE END OF 2018) AND THEREFORE WERE NOT INCLUDED ON THIS MAP.

REFERENCE(S)

1. BASE DATA OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. DATUM: NAD83 PROJECTION UTM ZONE 15

AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

2019 NON-NATIVE PLANT SPECIES - DANDELION

CONSULTANT	YYYY-MM-DD	2019-11-21
	DESIGNED	AZ
	PREPARED	CDB
	REVIEWED	CLT
	APPROVED	CLT

PROJECT NO.

19122039

CONTROL

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FIGURE

13

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12.3 Mitigation

The early detection of non-native plant species is important, as preventing these species from becoming established is the most effective mitigation that can be employed. Invasive plants identified as a concern by the GN DoE will be reported to the GN, including location of the species (i.e., GPS coordinated and map), species identification and photographs of the species in question.

In addition, to the early detection of non-native invasive species the following mitigation measures have been implemented by Agnico Eagle during Project operation, per the TEMMP (Golder 2015):

- Where possible, utilize existing access trails and roads.
- Limit the width of access roads and the size of workspaces.
- Inspect and clean new equipment arriving to site from the ship loading area prior to entering the Project Area.
- Complete non-native invasive plant monitoring surveys every year during operations to identify problem areas. Surveys should be targeted for areas with a high potential of occurrence such as along the AWAR, Project footprint, and ship loading areas.

12.4 Accuracy of Impact Predictions

Non-Native plant species were observed in disturbed areas (i.e., along AWAR and around operations camp area). A summary of the impact predictions proposed in the TEMMP (Golder 2015) is provided in Table 2. Specific thresholds for vegetation and wildlife habitat monitoring are outlined in Table 22.

Table 22: Accuracy of impact Predictions - Vegetation

Monitoring Indicators	Threshold	Exceeded in 2019?	Adaptive Management	Monitoring Method	TEMMP* Section
Habitat Degradation by Contamination	No non-native plant species established	Yes	See Section 12.3	Non-native Plant Survey of AWAR, Bypass Road, and Project site	13.0
Habitat Reclamation following Project Closure	NA	No	Not Currently Identified	Ground Surveys, Vegetation Plots, Mapping	4.0

Notes: *TEMMP = Terrestrial Environment Management and Monitoring Plan (Golder 2015)

12.5 Recommendations

For the dandelion occurrences found during 2019 surveys, mechanical control such as mowing or hand pulling is recommended, as practicable for the terrain on site.

- If hand pulling with a shovel, the plant material should be collected in bags and disposed of at an offsite location.
- Mowing is a viable option if the following conditions are met: there is access for a mowing unit or hand held trimmer, the terrain is not too steep or hazardous, or if the phenology of the plant stage is not at risk for greater seed dispersal (consult with a vegetation ecologist prior to mowing or trimming).

The CESCC (2010; Appendix G) has developed posters that show Non-Native species and invasive species in Nunavut. These can easily be displayed at the Project site and incorporated into on-boarding materials. Chemical herbicide treatments are not recommended to be used at this point as the native vegetation/habits in the tundra are very sensitive to impacts.

13.0 ENVIRONMENTAL VARIABLES

A summary of climate conditions collected on site in 2019 are presented in Table 23. Data was collected from 1 January to 31 December 2019 through the on-site meteorological station and rain gauges.

Table 23: Climate Conditions Recorded in the Project Area - 2019

ENVIRONMENTAL VARIABLE	YEAR ^(a)
	2019
TEMPERATURE (°C)	
Mean Annual Temperature	-10.2
Max. Annual Temperature	21.8
Min. Annual Temperature	-45.4
PRECIPITATION	
Total Annual Rainfall (mm)	104.9
Total Annual Snowfall (mm)	239.7

Notes: All values reported were collected via on-site meteorological station, with the exception of snowfall which was collected by AE staff

The maximum annual temperature of 21.8°C was recorded on 23 July, 2019 and the minimum annual temperature -45.4°C was recorded on 26 January, 2019. Snowmelt began 6 June, 2019 when the average daily air temperature exceeded 0°C. Environmental variables will continue to be monitored on an on-going basis.

14.0 CLOSURE

We trust the above meets your present requirements. If you have any questions or require additional information, please contact the undersigned.

Nuqsana Golder

Original signed

Carolina Leseigneur Torres, M.Sc.
Project Manager, ESIA Specialist and Biologist

Original signed

Corey De la Mare, P.Biol
Principal, Senior Wildlife Biologist

CC/LD/AO/DC/CLT/CDLM/lc/sg

[https://golderassociates.sharepoint.com/sites/111100/project files/5 technical work/3550-3750_2019 temp annual report/3600 _annual report/rev 0 _final/19122039-740-r-mel-2019tempannual_27mar20 _rev0.docx](https://golderassociates.sharepoint.com/sites/111100/project%20files/5%20technical%20work/3550-3750_2019%20temp%20annual%20report/3600_annual%20report/rev%200_final/19122039-740-r-mel-2019tempannual_27mar20_rev0.docx)

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APPENDIX A

Supplemental Bird Data Analysis

Table A1: List of Species Observed Incidentally during Point Count Surveys

Common Name	Scientific Name	Common Name	Scientific Name
American pipit	<i>Anthus rubescens</i>	Pacific loon	<i>Gavia pacifica</i>
American robin	<i>Turdus migratorius</i>	peregrine falcon	<i>Falco peregrinus</i>
cackling goose	<i>Branta hutchinsii</i>	red-breasted merganser	<i>Mergus serrator</i>
Canada goose	<i>Branta canadensis</i>	red-throated loon	<i>Gavia stellata</i>
common loon	<i>Gavia immer</i>	Ross's goose	<i>Chen rossii</i>
common redpoll	<i>Acanthis flammea</i>	rough-legged hawk	<i>Buteo lagopus</i>
greater white-fronted goose	<i>Anser albifrons</i>	sandhill crane	<i>Grus canadensis</i>
green-winged teal	<i>Anas crecca</i>	savannah sparrow	<i>Passerculus sandwichensis</i>
herring gull	<i>Larus argentatus</i>	semi-palmated plover	<i>Charadrius semipalmatus</i>
horned lark	<i>Eremophila alpestris</i>	snow goose	<i>Chen caerulescens</i>
Lapland longspur	<i>Calcarius lapponicus</i>	white-crowned sparrow	<i>Zonotrichia leucophrys</i>
least sandpiper	<i>Calidris minutilla</i>	willow ptarmigan	<i>Lagopus lagopus</i>
long-tailed duck	<i>Clangula hyemalis</i>		
northern pintail	<i>Anas acuta</i>		
northern shoveler	<i>Anas clypeata</i>		

Table A2: List of All Nests Identified in the Vicinity of Mine Infrastructure. Reference table to Figure 7

Nest ID	Year Identified	Nest Species	Nest Stage	Nest Productivity
N1801	2018	Willow ptarmigan	Nest Building	None
N1802	2018	Willow ptarmigan	Nest building	None
N1803	2018	Canada goose	Laying	>1
N1804	2018	Canada goose	Laying	1
N1805	2018	Canada goose	Laying	2
N1806	2018	Tundra swan	Laying	2
N1807	2018	Lapland longspur	Nest building	0
N1808	2018	Horned lark	Nest building	0
N1809	2018	Least sandpiper	Laying	0
N1810	2018	Canada goose	Laying	2
N1811	2018	Canada goose	Laying	3
N1812	2018	Canada goose	Laying	3
N1813	2018	Canada goose	Female on nest	Unknown
N1814	2018	Canada goose	Female on nest	Unknown
N1815	2018	Willow ptarmigan	Female on nest	Unknown
N1816	2018	Cackling goose	Laying	2
N1817	2018	Canada goose	Laying	3
N1818	2018	Cackling goose	Laying	2
N1819	2018	Lapland longspur	Laying	2
N1820	2018	Canada goose	Laying	1
N1821	2018	Canada goose	Female on nest	Unknown

Table A2: List of All Nests Identified in the Vicinity of Mine Infrastructure. Reference table to Figure 7

Nest ID	Year Identified	Nest Species	Nest Stage	Nest Productivity
N1822	2018	Least sandpiper	Unknown	Unknown
N1823	2018	Lapland longspur	Nest building	Unknown
N1824	2018	Canada goose	Female on nest	0
N1825	2018	Peregrine falcon	Nest building	0
N1826	2018	Horned lark	Eggs	4
N1827	2018	Canada goose	Female on nest	Unknown
N1828	2018	Canada goose	Laying	3
N1901	2019	Canada goose	Eggs	5
N1902	2019	Canada goose	Eggs	5
N1903	2019	Canada goose	Eggs	4
N1904	2019	Canada goose	Eggs	4
N1905	2019	Canada goose	Eggs	4
N1906	2019	Canada goose	Eggs	4
N1907	2019	Canada goose	Eggs	2
N1908	2019	Canada goose	Nest building	0
N1909	2019	Canada goose	Nest building	0
N1910	2019	Sandhill crane	Eggs	1
N1911	2019	Canada goose	Laying	3
N1912	2019	Cackling goose	Eggs	4
N1913	2019	Herring gull	Unknown	Unknown
N1914	2019	Canada goose	Unknown	Unknown

Table A2: List of All Nests Identified in the Vicinity of Mine Infrastructure. Reference table to Figure 7

Nest ID	Year Identified	Nest Species	Nest Stage	Nest Productivity
N1915	2019	Canada goose	Eggs	>2
N1916	2019	Canada goose	Eggs	Unknown
N1917	2019	Canada goose	Eggs	6
N1918	2019	Peregrine falcon	Unknown	Unknown
N1919	2019	Greater white-fronted goose	Eggs	3
N1920	2019	Lapland longspur	Eggs	5
N1921	2019	Sandhill crane	Eggs	1
N1922	2019	Willow ptarmigan	Laying	1
N1923	2019	Semi-palmated plover	Eggs	4
N1924	2019	Cackling goose	Eggs	4
N1925	2019	Cackling goose	Eggs	5
N1926	2019	Cackling goose	Eggs	5

APPENDIX B

Arctic Raptor Research Program, 2019



ARCTIC RAPTORS

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Background

Terms and conditions related to management and mitigation for birds and bird habitat (including raptorial species) are outlined in Nunavut Impact Review Board Project Certificate for the Meliadine Gold Mine Project Certificate (NIRB 2019), as follows:

- *Term and Condition 59; Species at Risk — If Species at Risk or their nests and eggs are encountered during Project activities or monitoring programs, the primary mitigation measure must be avoidance. The Proponent shall establish clear zones of avoidance based on the species-specific nest setback distances outlined in the Terrestrial Environment Management and Monitoring Plan.*
- *Term and Condition 60; Species at Risk — The Proponent shall ensure that the mitigation and monitoring strategies developed for Species at Risk are updated as necessary to maintain consistency with any applicable status reports, recovery strategies, action plans and management plans that may become available during the duration of the Project.*
- *Term and Condition 61; Construction/clearing activities — Prior to bird breeding season, the Proponent shall either conduct clearing activities or identify and install nesting deterrents (e.g., flagging) to discourage birds from nesting in areas likely to be disturbed by construction/clearing activities. If clearing is to take place during the nesting season, a nest survey should take place to identify nests and any identified nests must remain undisturbed until the young have fledged or left the nest. Any nests identified shall be included as part of the annual reporting for the Terrestrial Environmental Mitigation and Monitoring Plan (TEMMP).*
- *Term and Condition 62; Construction/clearing activities — The Proponent shall protect any nests found (or indicated nests) with a buffer zone determined by the setback distances outlined in its Terrestrial Environment Mitigation and Monitoring Plan (TEMMP), until the young have fledged. If it is determined that observance of these setbacks is not feasible, the Proponent will develop nest-specific guidelines and procedures to ensure bird's nests and their young are protected.*
- *Term and Condition 71; Monitoring — The Proponent shall develop detailed and robust mitigation and monitoring plans for migratory birds, reflecting input from relevant agencies, the Kivalliq Inuit Association and communities.*
- *Term and Condition 72; Monitoring — The Proponent shall continue to develop and update relevant monitoring and management plans for migratory birds under the Proponent's Environmental Protection Plan and Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) prior to construction. The key indicators for follow up monitoring under this plan will include upland birds (including migratory birds), waterbirds, raptors, and seabirds including migration and wintering.*

Monitoring indicators for nesting raptors are outlined in the Agnico Eagle Meliadine Division Terrestrial Environment Mitigation and Management Plan (see Appendix H6), as follows:

- *Monitoring Indicator 1; Disturbance of nesting raptors — To be determined in consultation with GN and Alastair Franke, related to occupancy and productivity.*
- *Monitoring Indicator 2; Projected-related mortality — To be determined in consultation with GN and Arctic Raptors Inc.*

Species Descriptions

Peregrine Falcon (*Falco peregrinus tundrius*)

The Arctic peregrine falcon (PEFA; Figure 1) is medium- to large-sized falcon. It has a dark hood and face with distinct dark malar stripe, cream to white throat, slate-grey back; barred belly, legs, and tail. Long pointed wings, stocky body. Plumage of immature birds brown rather than grey, and the breast is streaked rather than barred. In adults, the cere and orbital ring are yellow, and bluish in immature birds. Compared with gyrfalcons, the peregrine is smaller and less stocky. In flight, the wings of peregrines appear narrower and more pointed. In peregrine falcons, wing tips extend to bottom of the tail when perched, while in gyrfalcons, wing tips extend two-thirds down the length of tail.

F. p. tundrius breeds mainly north of the treeline from Alaska east throughout northern Canada to Greenland. It breeds throughout the taiga and tundra wherever suitable nesting habitat and sufficient prey are present. In Nunavut, peregrines appear to have their highest densities in the Kivalliq and Kitikmeot regions. Highest breeding density on record is on the western shores of Hudson Bay in the Kivalliq Region.

F. p. tundrius is a long-distance migrant, wintering mainly throughout South and Central America, but also in southern United States and Mexico. Northern-breeding American and Arctic peregrines are highly migratory (Yates et al. 1988, Schmutz et al. 1991, Fuller et al. 1998), and although fall migration occurs over a broad geographic range (Fuller et al. 1998), Yates et al. (1988) indicated that “separate and distinct autumn migratory populations pass through the east and Gulf coasts” of the United States.

Peregrine falcons usually nests on cliffs and rocky outcrops, but also nest on hilltops, river canyons, rock scree, and on occasion directly on the ground (Court et al. 1988, Ratcliffe 1993). They prefer nesting in locations close to water in south-facing, rugged terrain. Hunting habitat includes rugged coastline areas and rolling tundra that consists of raised beaches, dry tundra, sedge meadows, wetlands, and lakes that are inhabited by a diversity of breeding songbirds and shorebirds.

Peregrine Falcons do not build a nest but make a depression (called a scrape) in the substrate on a cliff ledge. Scrapes are usually approximately 20 cm in diameter and 4 cm deep. Females usually do the majority of incubation, and brooding of small young. Males provision incubating females and provide most of the prey when nestlings are small. Thereafter, females do most of the feeding, beginning to hunt after young are large enough to thermoregulate on their own. Clutch size is typically 3 or 4 eggs in Nunavut. In Rankin Inlet and Igloolik, the median incubation period of the first egg was 36 days, and decreased 1 day for each additional egg. The incubation period of the 4th egg (33 days) was similar to what has been reported elsewhere (Burnham 1983).

The Arctic peregrine falcon is a generalist predator with a diverse diet that includes passerines, shorebirds, ducks, gulls, terns, jaegers, black guillemots, and, when available, collared lemmings, brown lemmings, and Arctic ground squirrels. Bradley and Oliphant (1991) indicated that, around Rankin Inlet, small birds (64% of prey items) represented the greatest portion of prey items, followed by microtine rodents (25%), large birds (8%), and Arctic ground squirrels (4%). The most important prey measured by percent biomass were large birds (43%), followed by small birds (25%), microtine rodents (18%), and Arctic ground squirrels (15%).

In Nunavut, the earliest documented arrival for Peregrine Falcons is 10 May at a known breeding site near Rankin Inlet. Although arrival timing varies with spring conditions, the majority of sites are

occupied during the 3rd week of May. Median laying date in Rankin Inlet (9 June) is typically earlier than Igloolik (15 June) and northern Baffin Island (16 June). Median date of hatching ranges from 14 July at Rankin Inlet to 18 July on northern Baffin Island and 20 July at Igloolik (Jaffre et al. 2015). Birds depart the breeding grounds from mid-September through early October, arriving on the wintering grounds throughout Central and South America in November.



Figure 1. Adult male peregrine falcon. Note the dark hood and face with distinct dark malar stripe, white throat, slate-grey back, and barred belly, legs, and tail. Wing are long and pointed. Note the yellow legs, cere and eye ring.

Gyr Falcon (*Falco rusticolus*)

The gyrfalcon (GYRF; Figure 2) is large with pointed wings, but more rounded and broader than the wings of other falcon species. The tail is relatively long. When perched, wings extend 2/3 down the tail. The body is thick and powerful, particularly in females. Adults have yellow ceres, eye-rings and legs. As in all falcons, the eyes appear black. Three main color morphs occur: black, grey and white. White adults have almost pure white breasts and bellies, with dark wingtips (dipped-in-ink appearance). Grey adults have slate-colored back, with white underparts mottled with gray arrowhead-shaped markings. Dark adults are dark-grey overall above and dark-streaked breasts and belly. There is extreme reverse sex dimorphism, with males being approximately 2/3 the size of females (Ferguson-Lees et al. 2001).

Gyrfalcons distribution extends throughout the circumpolar Arctic. Most of the breeding range occurs north of 60°N, but breeding pairs are known to exist as far south as 55°N, mainly along sea coasts in eastern Canada. Many adults remain within the breeding range throughout the year, but some disperse southwards in winter, small numbers reaching the northern United States (Cade 1982, Poole 1987). Immature birds are much more likely to winter south of breeding range, and females are thought to disperse more widely, with many males remaining relatively close to breeding territories throughout the year.

Ptarmigan are often cited as the most important prey species by biomass, but Arctic ground squirrel and Arctic hare are also important, as well as small mammals (mice and voles) and other birds (ducks, sparrows, buntings). In central Nunavut, Poole and Boag (1988) identified eleven species of birds and five species of mammals among the prey. Birds accounted for three quarters of the diet, and adult rock ptarmigan were the most common. Arctic ground squirrel and arctic hare, made up the bulk of mammalian prey.

Males occupy and defend nesting territories as early as the end of January, with females arriving in mid-March. In Nunavut, laying typically begin in the first week of May with most pairs laying by the end of the second week in May. Nestlings typically hatch in mid-June but hatching can occur throughout June. Nestlings fledge in late July or early August after 7 weeks in the nest. In Nunavut, gyrfalcon usually nest on cliff ledges, ideally beneath sheltering overhang; sometimes nests in trees or on man-made structures. Nests are generally on rock ledges or abandoned rough-legged hawk or common raven nests. Use of alternate nest sites is not uncommon. Pairs do not necessarily attempt breeding every year, depending on food supply. Typical clutch size is 3-4 eggs (Booms et al. 2008) that are incubated for 34-36 days mostly by the female (ca. 80%). The North American population including Nunavut is considered to be stable (Clum and Cade 1994, Kirk and Hyslop 1998). Although low spring temperatures are associated with later arrival at nesting territories in Nunavut (Poole and Bromley 1988), there was no effect on laying dates. However, (Poole and Bromley 1988) indicated that increased spring precipitation (snow) reduced reproductive success.



Figure 2. Adult female gyrfalcon. Wings are more rounded and broader than the peregrine falcon. The tail is relatively long. When perched, wings extend 2/3 down the tail. The body is thick and powerful, particularly in females. Adults have yellow ceres

Rough-legged Hawk (*Buteo lagopus*)

The rough-legged hawk (RLHA; Figure 3) is a medium-large bird of prey, with a fairly small beak, predominantly brown in colour and often mottled. Plumage is highly variable with recognized light and dark morphs. Extensive field experience is required to distinguish between males and females, and between adults and juveniles based on plumage alone. A broad chest band is evident in most plumage variations, and in flight, a dark carpal patch is characteristic in light morph individuals. One or more dark terminal bands appear on the tail. The wing tips are long enough to reach or extend past the tail when the animal is perched. Legs are feathered to feet (Ferguson-Lees et al. 2005).

Widespread throughout North America, breeding from the Aleutian Islands, the interior of Alaska, Yukon, northern Mackenzie, and across Nunavut to northern Labrador and Newfoundland and south to Manitoba and southeastern Quebec. In Nunavut, rough-legged hawks are present over most of the territory except for islands without lemmings (Bechard and Swem 2002).

Regularly hovers, or “kites” while facing into the wind scanning for prey. Soars with wings raised in a slight dihedral (V-shape). It is a diurnal raptor that still-hunts from prominent perching structure on both breeding and wintering grounds. Prey is captured on the ground. Courtship involves soaring and calling, with the male engaged in a flight display of repeated undulating stoops rising upward to mid-air stall. It is gregarious on migration, often travelling in large flocks, but small groups or individuals are not uncommon.

During the summer, breeding pairs prefer rugged terrain areas with steeper slopes in areas associated with primary production (i.e., vegetation), and were most likely to nest in large, productive valleys surrounded by high-elevation plateaus (Galipeau et al. 2016). It is widely distributed in winter, usually found in open habitat resembling the tundra such as prairies, plains, coastal marshes, agricultural fields, and airports (Johnsgard and Johnsgard 1990). More common in wintering areas typified by short growing seasons and low precipitation, with highest densities in the northern United States, Great Basin area, and the western shortgrass prairies (Bock and Lepthien 1976, Bock et al. 1977).

The rough-legged hawk is a small mammal specialist; thus, its breeding activity is generally associated with local abundance of ground squirrels, voles, or lemmings (Hanski 1991, Potapov 1997). It will prey on birds when small mammals are scarce, particularly juvenile passerines and shorebirds, and will resort to consuming carrion opportunistically (Watson 1986). Usually reproductively mature at 2 years of age. Stick-nests are built soon after arrival on territory, typically on cliffs, on bluffs, or on the ground. Clutch sizes are variable (1-7 eggs), depending on food availability, but 3-5 eggs are usual and laid in May. Incubation is 31-33 days, provided almost entirely by the female. Nestling period is 35-40 days, and fledglings remain dependent on adults for another 2 weeks. The male provisions the young and the female, which feeds the young. Pairs show nest site fidelity, and in locations where ground squirrels are entirely absent, they may forgo breeding or have small broods when lemmings are low, in contrast to Snowy Owls, which are truly nomadic (Bechard and Swem 2002). Bechard and Swem (2002) indicated that egg-laying date was associated with spring temperatures and snow-free ledges, but Potapov (1997) reported no effect of snow melting date or spring/summer temperatures on number of nesting pairs.



Figure 3. Adult male rough-legged hawk. Note predominantly brown in colour and mottled. A broad chest band is evident, and dark carpal patches (not evident here) are characteristic in light morph individuals. One or more dark terminal bands appear on the tail. Wing tips are long enough to reach or extend past the tail when perched. Note that legs are feathered to feet.

Methods

Terminology

The terminology used throughout this report follows (Franke et al. 2017). The following terms are highlighted in an effort to clarify terminology used in this report, and/or to distinguish terms used from similar terms that have distinct meaning:

nest — The structure made or the place used by birds for laying their eggs and sheltering their young (Steenhof and Newton 2007) regardless of whether eggs are laid in the nest in a given year or in any year (Millsap et al. 2015, Steenhof et al. 2017), see Scrape for Gyrfalcons.

nesting site — The substrate which supports the nest or the specific location of the nest on the landscape (Ritchie and Curatolo 1982, Millsap et al. 2015, Steenhof et al. 2017).

alternative nesting site — One of potentially several nests within a nesting territory that is not a used nest in the current year (Millsap et al. 2015).

nesting territory — An area that contains, or historically contained, one or more nests within the home range of a mated pair: a confined locality where nests are found, usually in successive years, and where no more than one pair is known to have bred at one time (Newton and Marquiss 1984, Steenhof and Newton 2007). Note that a nesting territory may or may not be defended (Postupalsky 1974), and

probably does not include all of a pair's foraging habitat (Newton and Marquiss 1984, Steenhoff and Newton 2007).

occupancy — The quotient of the count of occupied nesting territories and the count of known nesting territories that were fully surveyed in a given breeding season (Franke et al. 2017).

brood size — The actual number of young hatched from a single nesting attempt by a pair of birds. For studies in which mortality that occurs between hatching and the first observation of the brood is unknown, it is appropriate to report brood size (i.e., number hatched) only for broods equal to, or less than 10 days of age. For broods older than 10 days of age, see Brood Size ≥ 10 days. Report mean and standard error, or standard deviation.

brood size ≥ 10 days — The number of young hatched from a single nesting attempt by a pair of birds. For studies in which mortality that occurs between hatching and the first observation of the brood is unknown, and nestlings are equal to, or greater than 10 days of age, but less than Minimum Acceptable Age for Assessing Success. Report mean and standard error, or standard deviation.

minimum acceptable age for assessing success — A standard nestling age at which a nest can be considered successful. An age when young are well grown but not old enough to fly and after which mortality is minimal until actual fledging. Typically 80% of the age that young of a species normally leave the nest of their own volition for many species, but lower (65–75%) for species in which age at fledging varies considerably or for species that are more likely to leave the nest prematurely when checked (Steenhof and Newton 2007).

nest survival — The probability that a nesting attempt survives over the complete nesting period. When Daily Survival Rate (DSR; Dinsmore et al. 2002) is assumed to be constant over time and E is the nesting period (usually expressed in days), nest survival is DSR^E ; otherwise nest survival is the product of each estimated DSR. For raptors, nest survival is the equivalent of nesting success for egg-laying pairs (Steenhof et al. 2017).

productivity — The number of young that reach the minimum acceptable age for assessing success; usually reported as the number of young produced per territorial pair or per occupied territory in a particular year (Steenhoff and Newton 2007, Steenhof et al. 2017).

total production — The total number of young detected.

Field Surveys

Structured surveys were conducted from 2013 – 2019. The focus of these surveys was to search known nesting sites for the presence of cliff-nesting raptors (Figure 4). In addition to the structured surveys, favourable habitat was searched opportunistically when ferrying between known sites, camps or other mine infrastructure and when raptors or signs of site use (e.g., whitewash, orange-colored lichen, and unused nests) were observed. Sites were considered occupied if one or more adults displayed territorial or reproductive behavior (e.g., vocalization and/or flight behavior associated with defense of breeding territory or presence of nest building, nest, or eggs). Locations with partially built or unused nests without detection of breeding aged adults were noted as such (e.g., old stick nest; no birds detected). Raptor monitoring in 2019 involved weekly nest monitoring of accessible territories, one boat survey on Meliadine Lake (July 19), and one helicopter survey (August 7).

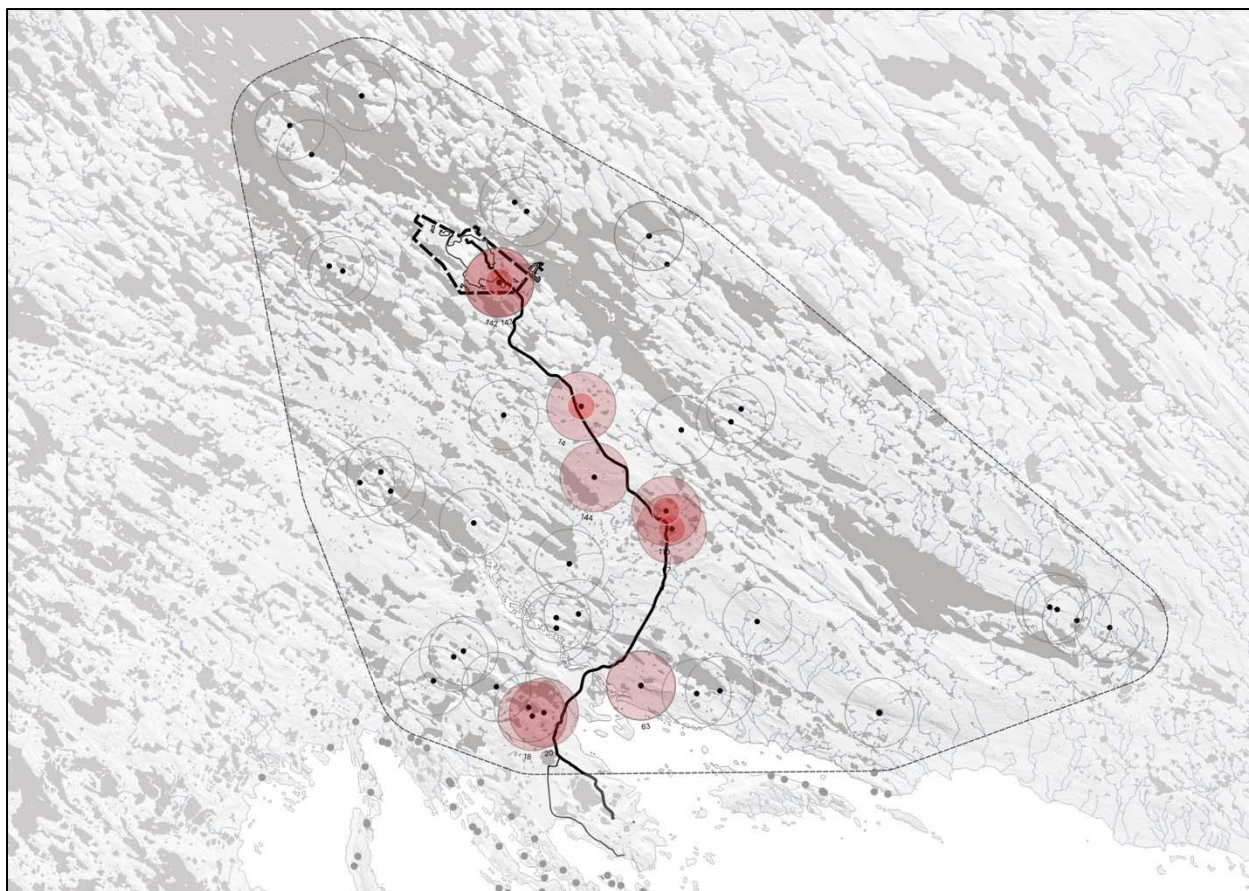


Figure 4. Location of raptor territories within an area surrounding the Meliadine Project. Buffers of 1.5 km and 600 m are drawn around each territory. Territories that are located within 1.5 km of Meliadine infrastructure are coloured with light red, and territories that are located within 600 m of Meliadine infrastructure are coloured with dark red.

Data Exploration

Nearest Neighbour Distances

Nearest neighbour distances (NND) were calculated in R (R Development Core Team 2017) using the *sp*, *rgeos*, and *geosphere* packages to transform nesting site locations into spatial objects, calculate pairwise distances, and identify the shortest distance between known neighbouring nesting site locations.

Distance to disturbance

Spatial objects (lines and polygons) describing the project footprint were acquired from Agnico Eagle. Euclidean distances from nesting sites to the nearest spatial object were calculated in R (R Development Core Team 2017) using the *sp*, *rgeos*, and *geosphere* packages. Summary data were generated using the *hist*, *boxplot* and *summary* functions in R. The Government of Nunavut currently refers to species-specific disturbance guidelines outlined in Government of British Columbia (2013), and this report follows those recommendations.

Assigning Nesting Sites to Nesting Territories

In the absence of marked individuals, it can be challenging to definitively identify alternative nesting sites. Failure to account for alternative nesting sites can lead to underestimating demographic parameters such as annual productivity. To address this problem, a rule-based approach was used to estimate the number of alternative nesting sites within the study area (Figure 5):

- If two species-specific nesting sites were separated by a distance of ≤ 1 km they were considered alternative nesting sites in a single nesting territory.
- If two nesting sites within 1 km of each other were occupied by the same species in a given year, they were considered separate territories.
- If multiple species-specific nesting sites were within 1 km of one another, discrete geographic landforms or discontinuities in cliff structure were used to separate or combine sites into territories.

Temporal patterns of multi-species occupancy were used to assess the plausibility of decisions based on the application of the three rules listed above. For example, if two nesting sites were located within 1 km of each other and were occupied by two different species in alternating years, these nesting sites were identified as distinct alternative nesting sites for each species.

Assigning Identification Numbers (ID) to Nesting Territories was conducted according to the following rule set:

- Nesting Territory IDs were assigned within species only (e.g., Nesting Territory IDs for PEFA and RLHA were never shared).
- Nesting Territory IDs were assigned using the Identification Number of one of the Nesting Sites in the cluster according to the following rule set, in order of priority:
 - i. Length of tenure (i.e., nesting sites with the longest tenure)
 - ii. First tenure (i.e., nesting sites with the first tenure in the event length of tenure was equal).

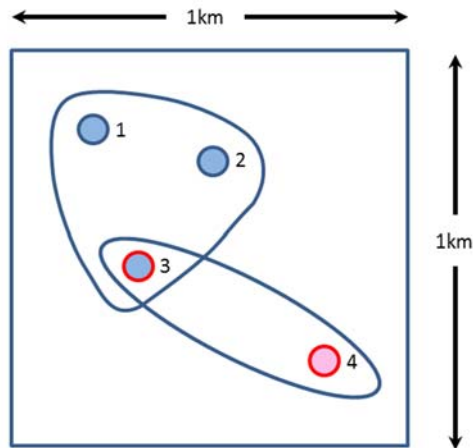
Occupancy

For each species separately, we first tallied the total count of known nesting sites across all surveys combined. We then adjusted the year-specific count of known nesting sites to account for nesting sites that were not known in that year (i.e., had not been found). Using the methods to assign nesting sites to nesting territories described in the previous section, we tallied the number year-specific nesting territories. We then calculated the year-specific proportion of known nesting territories that were occupied as a proportion of the known nesting territories that were surveyed. For visualization purposes only (i.e., no statistical assessment of trend was attempted), we then used Loess Regression to smoothen the available time series.

Results

Data Exploration

A total of 43 confirmed unique raptor nesting sites have resulted from surveys conducted near the Meliadine Project between 2013 and 2019 (see Table 1). Peregrine falcons have been documented at 29 nesting sites, rough-legged hawks at 25 nesting sites, and gyrfalcons have not yet been documented in the area. Among occupied nesting sites, the mean distance to the nearest territory was 1.44 km. The mean nearest neighbour distance (i.e., occupied sites only) was 1.15 km (range = 0.27– 6.6 km). Mean distance from known occupied nesting sites to the haul road was 4.70 km (range = 0.2 – 19.5 km). A



NS ID	PEFA NT ID	RLHA NT ID	2011	2012	2103	2014	2015	2016	2017
1	1	-	PEFA	PEFA	NBD	NBD	NBD	PEFA	PEFA
2	1	-	NBD	NBD	PEFA	NBD	PEFA	NBD	NBD
3	1	4	NBD	NBD	NBD	PEFA	RLHA	RLHA	NBD
4	-	4	RLHA	RLHA	NBD	RLHA	NBD	NBD	RLHA

Figure 5. Rule-based approach used to assign nesting sites to nesting territories. A cluster of four nesting sites within 1 km of one another that exhibit a site occupancy history among seven years for two species (PEFA and RLHA). Nesting Sites 1 and 2 (blue circles with blue borders) have been occupied solely by PEFA. Nesting Site 4 (red circle with red border) has been occupied solely by RLHA. Nesting Site 3 (blue circle with red border) has been occupied by both PEFA and RLHA. In this example, Nesting Sites 1, 2 and 3 are grouped into a single PEFA Nesting Territory and assigned Nesting Territory ID 1 based on PEFA-specific tenure length (Nesting Site 1 has the longest tenure) and first tenure. Nesting Sites 3 and 4 are grouped into a single RLHA Territory and assigned Nesting Territory ID 4 based on RLHA-specific tenure length (Nesting Site 4 has the longest tenure) and first tenure. Unique nesting locations are ultimately defined by a Nesting Territory ID and a Nesting Site ID (E.g., NT ID 1, NS ID 2). NBD = no birds detected.

total of three sites fall within 600m (see Government of British Columbia 2013) of the haul road, and four nesting sites within 1.5 km of the Haul Road (see management plans below. Mean distance from known occupied sites to the Meliadine Lease footprint was 12.48 km (range 0 – 29 km). Two nesting sites are located within the Meliadine footprint, and are considered candidates for development of a site-specific management plan (see Management Plans section of this document). However, neither are within the 600m limit identified.

After applying the rule-based approach to assign nesting sites to nesting territories, we assessed one cluster of sites that have been occupied by both rough-legged hawks and peregrine falcons. Sites 18, 20, and 37 are all within 1000m of each other, however they have been simultaneously occupied within years and we therefore regard them as distinct territories. In summary, surveys conducted from 2013 to 2019 have identified a total of 29 unique peregrine falcon and 25 unique rough-legged hawk territories in the study area.

Point estimates for occupancy indicate that peregrine falcons (mean = 0.61) have been stable (Table 2, Figure 6). For rough-legged hawks, mean occupancy was equal to 0.34, however, data indicate that a peak occurred in 2013 (0.57), and 2016 (0.52). Such high variation in occupancy is a well-known for small-mammal specialists which respond to microtine rodent cycles (Gilg et al. 2006).

Table 1. Geographic coordinates (decimal degrees), distance to nearest neighbour (D2NN), distance to road (D2RD), and distance to footprint (D2FP) for 43 occupied nesting sites surveyed between 2013 and 2019. Territories that are within 600 m of Meliadine infrastructure (road, or footprint) are highlighted in dark yellow, while territories that are within 1.5 km of infrastructure are highlighted in light yellow. All remaining territories are located outside of the buffer zone suggested by the TEMMP, and therefore require no management plan.

site	latitude	longitude	D2NN (km)	D2RD (km)	D2FP (km)	Mgt. Plan
1	62.86836	-92.25605	1.4	5.73	16.9	no
14	62.97506	-92.12968	3.1	0.23	5.8	yes
18	62.85464	-92.17156	0.4	1.17	18.6	yes
20	62.85597	-92.16164	0.5	0.78	18.5	yes
37	62.85801	-92.17464	0.4	1.46	18.2	yes
46	63.07264	-92.36035	1.6	7.66	6.1	no
61	62.91391	-92.13992	2.2	4.07	12.3	no
63	62.86641	-92.07864	2.4	1.37	18.1	yes
67	62.92745	-92.05219	0.8	0.26	12.2	yes
77	62.86449	-92.01107	1.0	4.31	19.5	no
79	62.87997	-92.23043	0.5	5.05	15.6	no
81	62.86605	-92.20228	1.7	3.12	17.2	no
84	63.02948	-92.28385	2.5	3.05	2	no
85	62.85595	-91.87472	6.6	10.86	23.9	no
88	62.88890	-92.15097	0.4	2.34	14.9	no
89	62.92978	-92.22168	3.9	6.40	10	no
95	62.96907	-92.00168	0.7	4.99	10.4	no
96	62.94216	-92.29262	0.9	8.18	9.3	no
98	62.94964	-92.30101	0.9	7.86	8.7	no
103	63.08382	-92.37894	1.6	9.10	7.5	no
107	62.86341	-92.03104	1.0	3.49	19.2	no
109	63.02752	-92.33361	2.5	5.52	4.2	no
110	62.93445	-92.05718	0.8	0.41	11.4	yes
112	62.87769	-92.23878	0.5	5.33	15.8	no
113	62.89293	-92.15108	0.4	2.73	14.5	no
114	62.97403	-91.99301	0.7	5.62	10.4	no
115	62.97170	-92.19602	3.4	2.61	5.5	no
116	62.94549	-92.31899	1.0	8.84	9.5	no
117	63.05057	-92.17638	0.7	2.57	2	no
121	62.89437	-92.13210	1.0	2.51	14.5	no
127	62.89143	-91.97929	3.4	4.39	17.6	no
129	63.04116	-92.07213	1.5	6.11	5	no
131	62.89614	-91.72274	0.3	17.10	26.7	no
134	63.09531	-92.31744	3.3	7.70	6.4	no
135	63.05417	-92.18661	0.7	2.51	2.1	no
136	63.03012	-92.05630	1.5	6.46	5.6	no
138	62.96590	-92.04414	2.2	2.92	9	no
139	62.89179	-91.70596	1.0	18.00	27.6	no
140	62.89705	-91.72914	0.3	16.77	26.3	no
141	62.88911	-91.67776	1.5	19.46	29	no
142	63.02298	-92.19985	0.0	0.23	0	yes
143	63.02323	-92.19994	0.0	0.23	0	yes
144	62.94755	-92.11851	3.1	1.04	8.9	yes

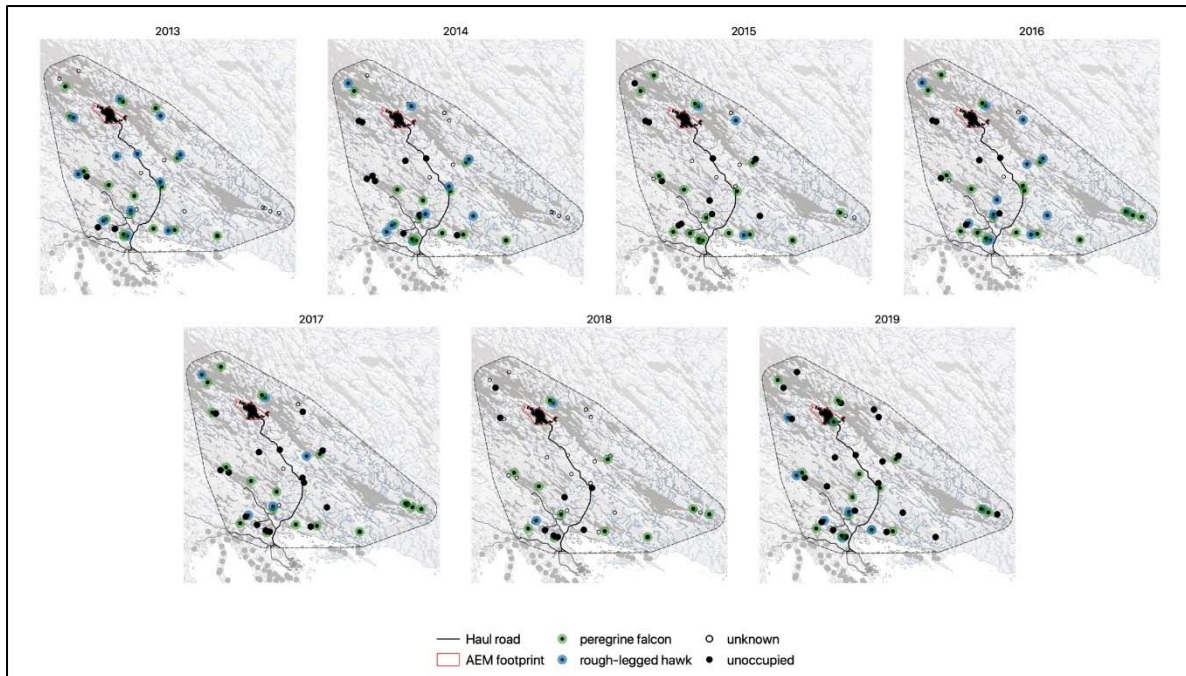


Figure 6. Distribution (2013 – 2019) of peregrine falcon and rough-legged hawk nesting sites. Black circles indicate nesting sites that were checked within the given year, and determined to be unoccupied. Open circles indicate nesting sites that were unknown or unchecked in the given year, and coloured circles represent respective species occupying a given territory (green = peregrine falcon, and blue = rough-legged hawk). The Haul Road (black line), Meliadine footprint (black polygon), and regional study area (black line) are shown relative to the distribution of nesting sites.

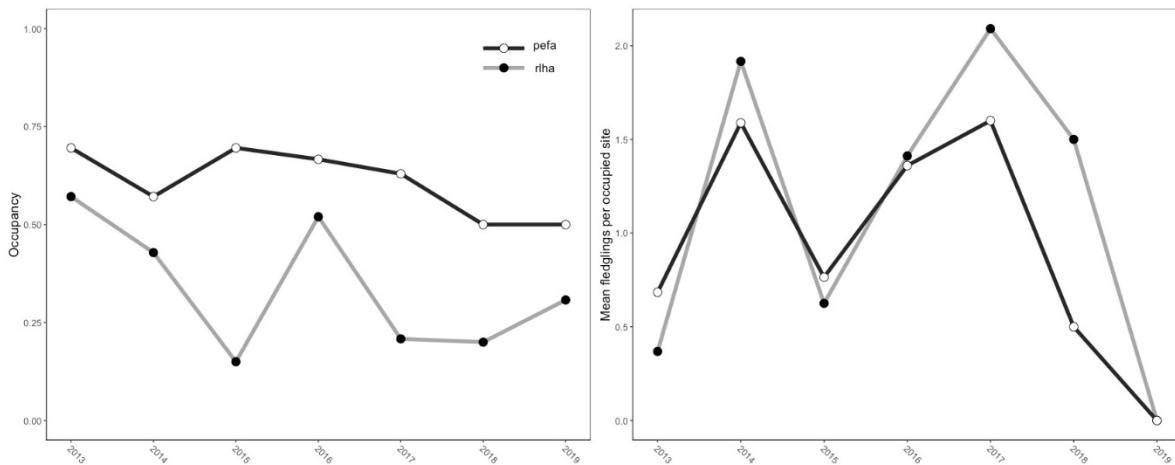


Figure 7. Trend (visualizations purposes only) in occupancy and productivity for peregrine falcons (black line), and rough-legged hawks (grey line), from 2013 – 2019. Annual occupancy point estimates for each survey year are also presented (see Table 1 for details).

Discussion

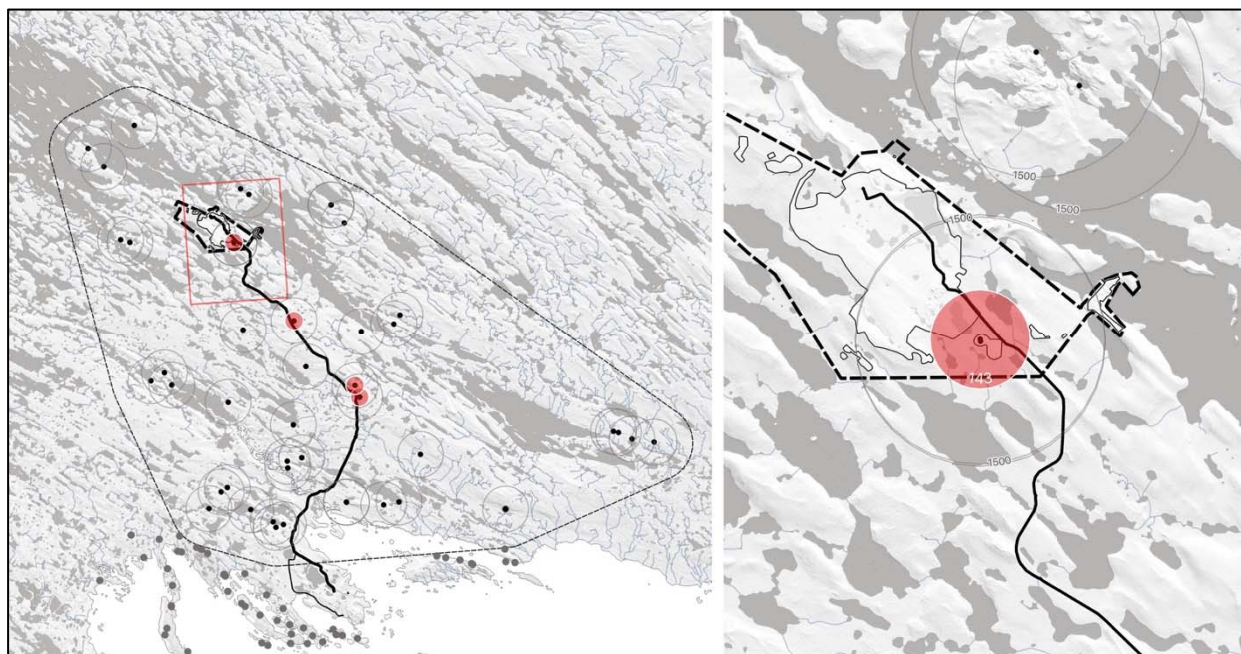
Monitoring for breeding raptors has occurred consistently in the area associated with Meliadine Project infrastructure since 2013, and surveys have focused on searching for, documenting, and mapping nesting sites for three raptor species (peregrine falcons, rough-legged hawks, and gyrfalcons). Study design has included at least two surveys – one to assess the location of occupied territories during the

pre-incubation and incubation periods, and one to assess site productivity during the late brood rearing period.

Mitigation and management outlined in the TEMMP requires the protection of species at risk during the breeding season (Term and Condition 59), and requires that disturbance to birds is minimized through consistent monitoring (Term and Condition 59), including nest-specific mitigation where necessary (Terms and Conditions 61, 62, and 75). It should be noted that peregrine falcons were assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in November of 2017, and were ranked “Not at Risk”. However, the responsible Minister has not yet rendered a decision on the recommendation made by COSEWIC, and peregrine falcons are currently listed on Schedule 1 of the Species at Risk Act (SARA 2002, as amended), and are considered to be “Special Concern”. This report meets the Terms and Conditions outlined by NIRB by documenting and mapping raptor nesting sites, and presenting site-specific management plans for nests within 1.5km of the project infrastructure, including minimum “no disturbance” buffers, including requirements for SARA-listed species.

Management Plans (Terms and Conditions 61)

Nesting Sites 142 and 143 - <200 m to disturbance

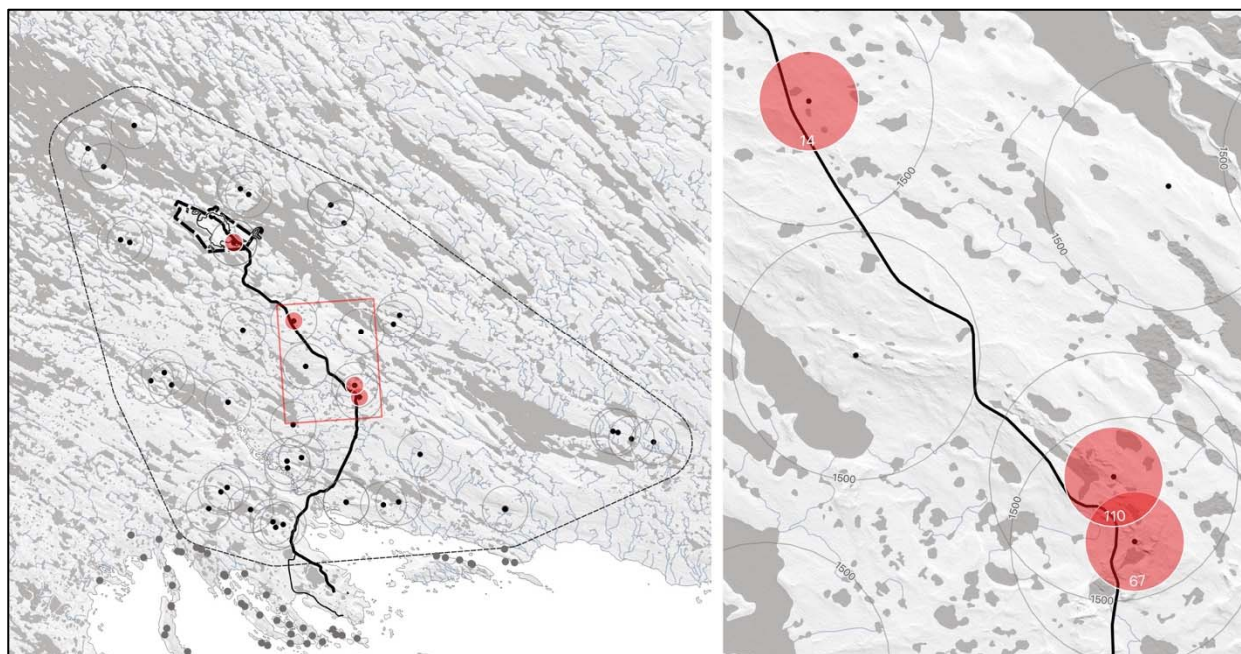


Site	Dist.	2013	2014	2015	2016	2017	2018	2019
142	(0m)	unoccupied	unoccupied	unoccupied	unoccupied	unoccupied	unoccupied	PEFA
143	(0m)	unoccupied	unoccupied	unoccupied	unoccupied	unoccupied	unoccupied	RLHA

On June 6, 2019, M. Theriault (Agnico Eagle) contacted A. Franke (Arctic Raptors Inc.) to discuss the presence of pair of rough-legged hawks and a pair of peregrine falcons that had each established a nest on the side wall of a saline pond located within the Meliadine lease area. Given the high likelihood that both pairs had already initiated egg-laying, A. Franke advised against the use of deterrents. A buffer of 100m was established for all foot-traffic, on-going work (installation of a pump within the pond and construction of a crusher pad) was postponed, and a drone was deployed to pinpoint the exact locations of the nests on the side wall. Once the nests were located, site engineers indicated that both nests were

not within line-of-site due the height of the safety berm surrounding the pond and the distance of both nests below grade. A. Franke advised Agnico Eagle Environmental staff to avoid pump installation until the 3rd week of June to ensure that birds had completed egg-laying, and to avoid the hatching period between July 5 – 15, and to conduct work only on good weather days. Work on the crusher pad was not performed. A water pipe was positioned at grade as far as possible away from the nests, but the pump was not installed. Agnico Eagle Environmental staff conducted routine water-level monitoring within the pond on July 7, and simultaneously surveyed the nest location for activity of adult birds. Adults birds were observed flying, and were also observed landing on the side-walls of the pond once the water-level monitoring had been completed. Subsequent monitoring by Agnico Eagle Environment staff indicated that both nests failed in the second week of July. Although not directly observed, the cause of failure was likely precipitation and cold weather as multiple failures associated with inclement weather are known to have occurred among the majority of raptor nests throughout the region at this time. The Government of Nunavut was notified of actions recommended by A. Franke. Although these nest failures were almost certainly associated with natural factors, it is recommended that deterrents are installed in the spring of 2020 prior to the arrival of raptors (prior to 01 May), to reduce the likelihood of occupancy. However, both sites will be monitored regularly in the spring to assess territory status. If deterrents are successful, no further mitigation will be necessary. In the event that deterrents are not successful, nest-specific mitigation measures will be taken on the basis of circumstances (e.g., species, location of nest, proposed activity) encountered at the time, as recommended by Arctic Raptors Inc.

Nesting Sites 14, 110, and 67 – 200 to 600 m to disturbance

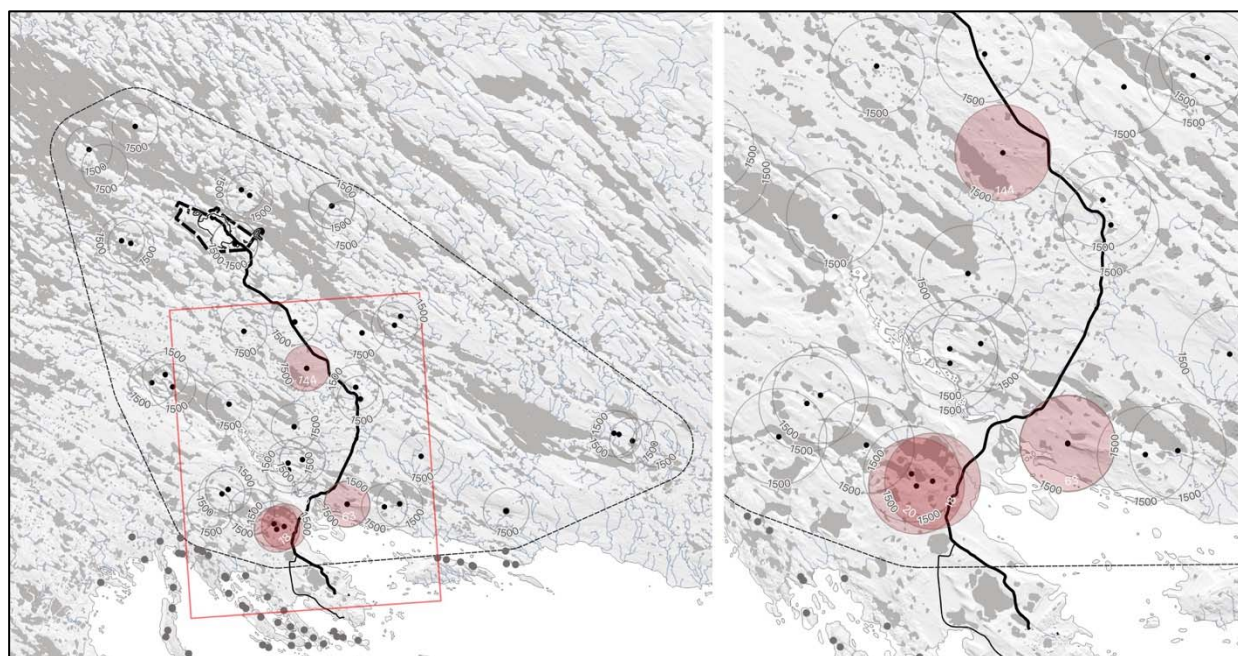


site	Dist.	2013	2014	2015	2016	2017	2018	2019
14	(230m)	RLHA	unoccupied	unoccupied	unoccupied	unoccupied	unoccupied	unoccupied
110	(410m)	RLHA	unoccupied	unoccupied	unoccupied	unoccupied	unoccupied	unoccupied
67	(260m)	PEFA	PEFA	PEFA	PEFA	unoccupied	unoccupied	PEFA

A total of three raptor territories are within 600 meters of the all-weather road between the Meliadine mine and the community of Rankin Inlet. Sites 14 and 110 were occupied by rough-legged hawks in

2013, and site 67 has been occupied five out of the seven years by peregrine falcons. Sites 14 and 110 will continue to be checked for occupancy each spring, but due to the lack of occupancy in the last 5 years, a management plan is not needed. During the years in which site 67 was occupied, a mean of 1.4 nestlings were fledged per year (2013 = 3, 2014 = 3, 2015 = 1, 2016 = 0, 2019 = 0) – an average that is 0.52 nestlings greater than all peregrines within the study area during the same time period. Given the consistent occupancy and relative success of site 67, a management plan beyond consistent monitoring is not necessary.

Nesting Sites 18, 20, 63, and 144 – within 1.5 km to disturbance



site	Dist.	2013	2014	2015	2016	2017	2018	2019
18	(1170m)	PEFA	RLHA	unoccupied	RLHA	PEFA	PEFA	RLHA
20	(780m)	RLHA	PEFA	PEFA	RLHA	unoccupied	unoccupied	unoccupied
63	(1370m)	PEFA	PEFA	PEFA	PEFA	unoccupied	unoccupied	PEFA/RLHA
144	(1040m)	unknown	unknown	unknown	unknown	unknown	unknown	PEFA

A total of four territories are located within 1.5 km of the all-weather road. Site 144 was discovered documented by Golder staff in 2019. One adult bird was observed, and although Golder staff documented the presence of a nest, no eggs were documented, and there is no known history of raptors occupying this location. This location will be monitored for the presence of breeding raptors in future years.

Sites 18, 20, and 63 have all been occupied by both peregrine falcons and rough-legged hawks, 6, 4, and 5 out of the 7 years respectively. All sites are located beyond the 600m recommended buffer (Government of British Columbia 2013). Furthermore, there is no line of sight between the road and any of the nest sites, and disturbance from traffic is therefore minimal. All sites will be monitored annually, but a management plan is not considered necessary.

Table 2. Occupancy for peregrine falcons, rough-legged hawks and gyrfalcon breeding near the Meliadine Project, Nunavut from 2013 – 2019.

Occupancy metrics

Year	2013			2014			2015			2016			2017			2018			2019		
	occupied	known	occupancy	occupied	known	occupancy	occupied	known	occupancy	occupied	known	occupancy	occupied	known	occupancy	occupied	known	occupancy	occupied	known	occupancy
PEFA	16	23	0.70	12	21	0.57	16	23	0.70	18	27	0.67	17	27	0.63	11	22	0.5	15	30	0.5
RLHA	12	21	0.57	9	21	0.43	3	20	0.15	13	25	0.52	5	24	0.21	2	10	0.2	8	26	0.31

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APPENDIX C

**Vegetation and Soil Sampling
Location Photographs**



Photo 1: 19-TF-S1, Sampling Site Overview (15V Easting: 0537910, Northing:6990271)



Photo 2: 19-TF-S1, Soil Pit (15V Easting: 0537910, Northing:6990271)



Photo 3: 19-TF-S1, Soil sampling and *Rubus chamaemorus* berries



Photo 4: 19-AWAR-S15, Sampling Site Overview (15 V Easting: 0547419, Northing: 6974403)



Photo 5: 19-AWAR-S15 , Soil Pit (15 V Easting: 0547419, Northing: 6974403)



Photo 5: 19-AWAR-S15 , Sedge (left) and soil (right) samples



Photo 6: 19-REF1-S4, Sampling site (15V Easting 053185, Northing: 69901690)



Photo 7: 19-REF1-S4, Soil Pit



Photo 8: 19-REF1-S4, Soil sample and Birch Leaves



Photo 9: 19-REF2- S1, Sampling site (15V Easting: 0534088, Northing: 6984707)



Photo 10: 19-REF2- S1, Soil Pit



Photo 11: 19-REF2- S1, Soil sample and Rhododendron groenlandicum leaves



Photo 12: 19-REF3-S3, Sampling site (15V Easting:0539583, Northing: 6976634)



Photo 13: 19-REF3-S3, Soil pit



Photo 14: 19-REF3-S3, lichen (left) and soil (right) samples

APPENDIX D

**Photographs of Non-Native
Plant Occurrences**



Photo 1: Common Dandelion at MEW003



Photo 2: Common Dandelion Infestation at MEW001

APPENDIX E

**Vegetation and Soil
Laboratory Results Certificates**



Your Project #: Veg and Soil Health Assessment
Your C.O.C. #: 96931

Attention: Andrea Ortega

Golder Associates
102, 2535 - 3rd Avenue S.E.
Calgary, AB
Canada T2A 7W5

Report Date: 2019/09/03

Report #: R5864380

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K9920

Received: 2019/07/29, 12:00

Sample Matrix: Soil
Samples Received: 51

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Mercury in Vegetation by CVAA (1)	1	2019/08/06	2019/08/13	CAM SOP-00453	Health Canada Method
Strong Acid Leachable Metals by ICPMS (1)	1	2019/08/01	2019/08/01	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS (1)	12	2019/08/01	2019/08/02	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS (1)	34	2019/08/01	2019/08/08	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS (1)	2	2019/08/01	2019/08/09	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS (1)	1	2019/08/13	2019/08/14	CAM SOP-00447	EPA 6020B m
Metals in Vegetation by ICPMS (1)	1	N/A	2019/08/29	CAM SOP-00447	EPA 6020/200.3 m
Moisture (1)	16	N/A	2019/07/31	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture (1)	34	N/A	2019/08/01	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture (1)	1	N/A	2019/08/02	CAM SOP-00445	Carter 2nd ed 51.2 m
pH CaCl2 EXTRACT (1)	19	2019/08/01	2019/08/01	CAM SOP-00413	EPA 9045 D m
pH CaCl2 EXTRACT (1)	18	2019/08/02	2019/08/02	CAM SOP-00413	EPA 9045 D m
pH CaCl2 EXTRACT (1)	13	2019/08/17	2019/08/19	CAM SOP-00413	EPA 9045 D m
PH (1)	1	2019/08/16	2019/08/19	CAM SOP-00413	EPA 9045D

Sample Matrix: Solid
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Strong Acid Leachable Metals by ICPMS (1)	1	2019/08/01	2019/08/02	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS (1)	3	2019/08/01	2019/08/08	CAM SOP-00447	EPA 6020B m
Moisture (1)	1	N/A	2019/07/31	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture (1)	3	N/A	2019/08/01	CAM SOP-00445	Carter 2nd ed 51.2 m
pH CaCl2 EXTRACT (1)	1	2019/08/01	2019/08/01	CAM SOP-00413	EPA 9045 D m
pH CaCl2 EXTRACT (1)	2	2019/08/02	2019/08/02	CAM SOP-00413	EPA 9045 D m
pH CaCl2 EXTRACT (1)	1	2019/08/17	2019/08/19	CAM SOP-00413	EPA 9045 D m

Sample Matrix: Tissue
Samples Received: 55

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Mercury in Vegetation by CVAA (1)	34	2019/08/06	2019/08/13	CAM SOP-00453	Health Canada Method
Mercury in Vegetation by CVAA (1)	20	2019/08/07	2019/08/13	CAM SOP-00453	Health Canada Method
Strong Acid Leachable Metals by ICPMS (1)	1	2019/08/01	2019/08/02	CAM SOP-00447	EPA 6020B m



Your Project #: Veg and Soil Health Assessment
Your C.O.C. #: 96931

Attention: Andrea Ortega

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102, 2535 - 3rd Avenue S.E.
Calgary, AB
Canada T2A 7W5

Report Date: 2019/09/03

Report #: R5864380

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K9920

Received: 2019/07/29, 12:00

Sample Matrix: Tissue
Samples Received: 55

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Metals in Vegetation by ICPMS (1)	39	N/A	2019/08/29	CAM SOP-00447	EPA 6020/200.3 m
Metals in Vegetation by ICPMS (1)	15	N/A	2019/08/30	CAM SOP-00447	EPA 6020/200.3 m
Moisture (1)	1	N/A	2019/08/01	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture (1)	40	N/A	2019/08/02	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture (1)	12	N/A	2019/08/06	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture (1)	2	N/A	2019/08/07	CAM SOP-00445	Carter 2nd ed 51.2 m
pH CaCl ₂ EXTRACT (1)	1	2019/08/17	2019/08/19	CAM SOP-00413	EPA 9045 D m
PH (1)	20	2019/08/08	2019/08/08	CAM SOP-00413	EPA 9045D
PH (1)	2	2019/08/09	2019/08/19	CAM SOP-00413	EPA 9045D
PH (1)	32	2019/08/16	2019/08/19	CAM SOP-00413	EPA 9045D

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Laboratories Mississauga



Your Project #: Veg and Soil Health Assessment
Your C.O.C. #: 96931

Attention: Andrea Ortega

Golder Associates
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Calgary, AB
Canada T2A 7W5

Report Date: 2019/09/03
Report #: R5864380
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9K9920

Received: 2019/07/29, 12:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Alisha Williamson, Project Manager

Email: Alisha.Williamson@bvlabs.com

Phone# (613)274-0573

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJX957		KJX959		KJX961		
Sampling Date		2019/07/20 17:30		2019/07/20 16:55		2019/07/20 16:35		
COC Number		96931		96931		96931		
	UNITS	19-AWAR-S1-s	QC Batch	19-AWAR-S2-S	QC Batch	19-AWAR-S3-S	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	6259117	<0.20	6259179	<0.20	0.20	6259117
Acid Extractable Arsenic (As)	ug/g	19	6259117	10	6259179	28	1.0	6259117
Acid Extractable Barium (Ba)	ug/g	43	6259117	83	6259179	31	0.50	6259117
Acid Extractable Beryllium (Be)	ug/g	<0.20	6259117	<0.20	6259179	<0.20	0.20	6259117
Acid Extractable Boron (B)	ug/g	<5.0	6259117	6.9	6259179	<5.0	5.0	6259117
Acid Extractable Cadmium (Cd)	ug/g	0.24	6259117	0.11	6259179	<0.10	0.10	6259117
Acid Extractable Chromium (Cr)	ug/g	6.7	6259117	7.4	6259179	22	1.0	6259117
Acid Extractable Cobalt (Co)	ug/g	4.3	6259117	2.3	6259179	9.8	0.10	6259117
Acid Extractable Copper (Cu)	ug/g	43	6259117	34	6259179	23	0.50	6259117
Acid Extractable Lead (Pb)	ug/g	3.0	6259117	2.2	6259179	6.9	1.0	6259117
Acid Extractable Molybdenum (Mo)	ug/g	0.95	6259117	0.64	6259179	<0.50	0.50	6259117
Acid Extractable Nickel (Ni)	ug/g	20	6259117	13	6259179	24	0.50	6259117
Acid Extractable Selenium (Se)	ug/g	<0.50	6259117	<0.50	6259179	<0.50	0.50	6259117
Acid Extractable Silver (Ag)	ug/g	<0.20	6259117	<0.20	6259179	<0.20	0.20	6259117
Acid Extractable Thallium (Tl)	ug/g	<0.050	6259117	0.072	6259179	0.063	0.050	6259117
Acid Extractable Uranium (U)	ug/g	2.8	6259117	0.72	6259179	0.64	0.050	6259117
Acid Extractable Vanadium (V)	ug/g	6.1	6259117	7.7	6259179	18	5.0	6259117
Acid Extractable Zinc (Zn)	ug/g	19	6259117	13	6259179	26	5.0	6259117
Acid Extractable Mercury (Hg)	ug/g	0.084	6259117	0.058	6259179	<0.050	0.050	6259117
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJX963		KJX965	KJX967	KJX969		
Sampling Date		2019/07/20 16:00		2019/07/20 15:40	2019/07/20 15:05	2019/07/20 14:40		
COC Number		96931		96931	96931	96931		
	UNITS	19-AWAR-S4-S	QC Batch	19-AWAR-S5-S	19-AWAR-S6-S	19-AWAR-S7-S	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	0.24	6259106	<0.20	<0.20	0.38	0.20	6259179
Acid Extractable Arsenic (As)	ug/g	16	6259106	25	13	55	1.0	6259179
Acid Extractable Barium (Ba)	ug/g	72	6259106	25	89	260	0.50	6259179
Acid Extractable Beryllium (Be)	ug/g	<0.20	6259106	<0.20	<0.20	<0.20	0.20	6259179
Acid Extractable Boron (B)	ug/g	7.9	6259106	<5.0	6.3	8.8	5.0	6259179
Acid Extractable Cadmium (Cd)	ug/g	0.18	6259106	<0.10	0.11	0.49	0.10	6259179
Acid Extractable Chromium (Cr)	ug/g	8.5	6259106	27	6.0	7.0	1.0	6259179
Acid Extractable Cobalt (Co)	ug/g	5.1	6259106	8.2	2.0	18	0.10	6259179
Acid Extractable Copper (Cu)	ug/g	160	6259106	30	79	90	0.50	6259179
Acid Extractable Lead (Pb)	ug/g	2.6	6259106	4.0	1.3	2.3	1.0	6259179
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	6259106	<0.50	<0.50	6.8	0.50	6259179
Acid Extractable Nickel (Ni)	ug/g	36	6259106	22	17	53	0.50	6259179
Acid Extractable Selenium (Se)	ug/g	1.0	6259106	<0.50	0.97	1.8	0.50	6259179
Acid Extractable Silver (Ag)	ug/g	<0.20	6259106	<0.20	<0.20	<0.20	0.20	6259179
Acid Extractable Thallium (Tl)	ug/g	0.067	6259106	0.062	0.056	0.24	0.050	6259179
Acid Extractable Uranium (U)	ug/g	5.1	6259106	0.45	0.95	6.8	0.050	6259179
Acid Extractable Vanadium (V)	ug/g	14	6259106	23	<5.0	13	5.0	6259179
Acid Extractable Zinc (Zn)	ug/g	24	6259106	24	8.3	18	5.0	6259179
Acid Extractable Mercury (Hg)	ug/g	0.083	6259106	<0.050	0.12	0.11	0.050	6259179
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJX971		KJX975		KJX977	KJX979		
Sampling Date		2019/07/20 14:00		2019/07/20 00:50		2019/07/20 00:01	2019/07/20 11:30		
COC Number		96931		96931		96931	96931		
	UNITS	19-AWAR-S8-S	QC Batch	19-AWAR-S10-S	QC Batch	19-AWAR-S11-S	19-AWAR-S12-S	RDL	QC Batch

Metals

Acid Extractable Antimony (Sb)	ug/g	<0.20	6259117	<0.20	6259106	<0.20	<0.20	0.20	6259179
Acid Extractable Arsenic (As)	ug/g	34	6259117	2.0	6259106	<1.0	1.2	1.0	6259179
Acid Extractable Barium (Ba)	ug/g	42	6259117	140	6259106	150	38	0.50	6259179
Acid Extractable Beryllium (Be)	ug/g	<0.20	6259117	<0.20	6259106	<0.20	<0.20	0.20	6259179
Acid Extractable Boron (B)	ug/g	<5.0	6259117	<5.0	6259106	5.2	<5.0	5.0	6259179
Acid Extractable Cadmium (Cd)	ug/g	<0.10	6259117	0.12	6259106	0.69	1.4	0.10	6259179
Acid Extractable Chromium (Cr)	ug/g	30	6259117	10	6259106	7.7	2.1	1.0	6259179
Acid Extractable Cobalt (Co)	ug/g	9.6	6259117	8.1	6259106	3.0	1.9	0.10	6259179
Acid Extractable Copper (Cu)	ug/g	33	6259117	69	6259106	16	4.6	0.50	6259179
Acid Extractable Lead (Pb)	ug/g	4.8	6259117	1.9	6259106	2.4	<1.0	1.0	6259179
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	6259117	0.65	6259106	<0.50	0.58	0.50	6259179
Acid Extractable Nickel (Ni)	ug/g	25	6259117	16	6259106	8.9	6.1	0.50	6259179
Acid Extractable Selenium (Se)	ug/g	<0.50	6259117	0.60	6259106	0.73	<0.50	0.50	6259179
Acid Extractable Silver (Ag)	ug/g	<0.20	6259117	<0.20	6259106	<0.20	<0.20	0.20	6259179
Acid Extractable Thallium (Tl)	ug/g	0.089	6259117	0.23	6259106	<0.050	<0.050	0.050	6259179
Acid Extractable Uranium (U)	ug/g	0.61	6259117	0.91	6259106	0.60	0.31	0.050	6259179
Acid Extractable Vanadium (V)	ug/g	25	6259117	21	6259106	6.3	<5.0	5.0	6259179
Acid Extractable Zinc (Zn)	ug/g	28	6259117	18	6259106	22	17	5.0	6259179
Acid Extractable Mercury (Hg)	ug/g	<0.050	6259117	0.086	6259106	0.15	0.14	0.050	6259179

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJX981	KJX983		KJX985		
Sampling Date		2019/07/19 16:15	2019/07/19 15:30		2019/07/19 15:05		
COC Number		96931	96931		96931		
	UNITS	19-AWAR-S13-S	19-AWAR-S14-S	QC Batch	19-AWAR-S15-S	RDL	QC Batch
Metals							
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	6259117	<0.20	0.20	6259106
Acid Extractable Arsenic (As)	ug/g	<1.0	1.1	6259117	<1.0	1.0	6259106
Acid Extractable Barium (Ba)	ug/g	140	82	6259117	7.1	0.50	6259106
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	6259117	<0.20	0.20	6259106
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	6259117	<5.0	5.0	6259106
Acid Extractable Cadmium (Cd)	ug/g	0.22	0.14	6259117	<0.10	0.10	6259106
Acid Extractable Chromium (Cr)	ug/g	5.6	20	6259117	4.4	1.0	6259106
Acid Extractable Cobalt (Co)	ug/g	1.9	7.3	6259117	0.84	0.10	6259106
Acid Extractable Copper (Cu)	ug/g	24	26	6259117	<0.50	0.50	6259106
Acid Extractable Lead (Pb)	ug/g	2.3	3.7	6259117	1.1	1.0	6259106
Acid Extractable Molybdenum (Mo)	ug/g	0.60	0.99	6259117	<0.50	0.50	6259106
Acid Extractable Nickel (Ni)	ug/g	6.4	12	6259117	2.3	0.50	6259106
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	6259117	<0.50	0.50	6259106
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	6259117	<0.20	0.20	6259106
Acid Extractable Thallium (Tl)	ug/g	0.065	0.16	6259117	<0.050	0.050	6259106
Acid Extractable Uranium (U)	ug/g	1.1	1.4	6259117	0.24	0.050	6259106
Acid Extractable Vanadium (V)	ug/g	5.3	27	6259117	5.2	5.0	6259106
Acid Extractable Zinc (Zn)	ug/g	18	16	6259117	6.7	5.0	6259106
Acid Extractable Mercury (Hg)	ug/g	0.15	<0.050	6259117	<0.050	0.050	6259106
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJX987		KJX989	KJX991		
Sampling Date		2019/07/19 14:05		2019/07/19 00:10	2019/07/19 11:40		
COC Number		96931		96931	96931		
	UNITS	19-AWAR-S16-S	QC Batch	19-AWAR-S17-S	19-AWAR-S18-S	RDL	QC Batch
Metals							
Acid Extractable Antimony (Sb)	ug/g	<0.20	6259179	0.40	<0.20	0.20	6259106
Acid Extractable Arsenic (As)	ug/g	1.4	6259179	5.2	1.7	1.0	6259106
Acid Extractable Barium (Ba)	ug/g	24	6259179	73	13	0.50	6259106
Acid Extractable Beryllium (Be)	ug/g	<0.20	6259179	<0.20	<0.20	0.20	6259106
Acid Extractable Boron (B)	ug/g	<5.0	6259179	6.8	<5.0	5.0	6259106
Acid Extractable Cadmium (Cd)	ug/g	<0.10	6259179	0.22	<0.10	0.10	6259106
Acid Extractable Chromium (Cr)	ug/g	15	6259179	14	27	1.0	6259106
Acid Extractable Cobalt (Co)	ug/g	2.8	6259179	6.5	4.3	0.10	6259106
Acid Extractable Copper (Cu)	ug/g	2.7	6259179	77	2.2	0.50	6259106
Acid Extractable Lead (Pb)	ug/g	2.1	6259179	2.3	2.8	1.0	6259106
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	6259179	0.65	<0.50	0.50	6259106
Acid Extractable Nickel (Ni)	ug/g	6.7	6259179	17	8.1	0.50	6259106
Acid Extractable Selenium (Se)	ug/g	<0.50	6259179	0.68	<0.50	0.50	6259106
Acid Extractable Silver (Ag)	ug/g	<0.20	6259179	<0.20	<0.20	0.20	6259106
Acid Extractable Thallium (Tl)	ug/g	<0.050	6259179	0.082	<0.050	0.050	6259106
Acid Extractable Uranium (U)	ug/g	0.45	6259179	1.4	0.40	0.050	6259106
Acid Extractable Vanadium (V)	ug/g	17	6259179	8.9	23	5.0	6259106
Acid Extractable Zinc (Zn)	ug/g	14	6259179	30	11	5.0	6259106
Acid Extractable Mercury (Hg)	ug/g	<0.050	6259179	0.083	<0.050	0.050	6259106
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



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VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJX993	KJX995		KJX997		KJX999		
Sampling Date		2019/07/19 13:40	2019/07/19 13:15		2019/07/21 08:10		2019/07/21 20:40		
COC Number		96931	96931		96931		96931		
	UNITS	19-AWAR-S19-S	19-AWAR-S20-S	QC Batch	19-REF1-S1-S	QC Batch	19-REF1-S2-S	RDL	QC Batch

Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	6259117	<0.20	6259106	<0.20	0.20	6259117
Acid Extractable Arsenic (As)	ug/g	6.0	1.5	6259117	9.0	6259106	32	1.0	6259117
Acid Extractable Barium (Ba)	ug/g	110	120	6259117	34	6259106	63	0.50	6259117
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	6259117	<0.20	6259106	<0.20	0.20	6259117
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	6259117	<5.0	6259106	<5.0	5.0	6259117
Acid Extractable Cadmium (Cd)	ug/g	0.17	<0.10	6259117	<0.10	6259106	<0.10	0.10	6259117
Acid Extractable Chromium (Cr)	ug/g	56	68	6259117	26	6259106	30	1.0	6259117
Acid Extractable Cobalt (Co)	ug/g	15	7.6	6259117	6.5	6259106	16	0.10	6259117
Acid Extractable Copper (Cu)	ug/g	31	60	6259117	21	6259106	54	0.50	6259117
Acid Extractable Lead (Pb)	ug/g	5.1	1.5	6259117	3.0	6259106	6.8	1.0	6259117
Acid Extractable Molybdenum (Mo)	ug/g	0.51	0.79	6259117	<0.50	6259106	1.3	0.50	6259117
Acid Extractable Nickel (Ni)	ug/g	30	27	6259117	19	6259106	35	0.50	6259117
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	6259117	<0.50	6259106	<0.50	0.50	6259117
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	6259117	<0.20	6259106	<0.20	0.20	6259117
Acid Extractable Thallium (Tl)	ug/g	0.21	0.089	6259117	0.10	6259106	0.082	0.050	6259117
Acid Extractable Uranium (U)	ug/g	1.2	1.3	6259117	0.97	6259106	1.4	0.050	6259117
Acid Extractable Vanadium (V)	ug/g	41	35	6259117	23	6259106	41	5.0	6259117
Acid Extractable Zinc (Zn)	ug/g	49	41	6259117	24	6259106	48	5.0	6259117
Acid Extractable Mercury (Hg)	ug/g	0.086	0.063	6259117	<0.050	6259106	<0.050	0.050	6259117

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJY001		KJY003	KJY005		KJY009		
Sampling Date		2019/07/21 09:25		2019/07/21 10:15	2019/07/21 22:45		2019/07/21 00:35		
COC Number		96931		96931	96931		96931		
	UNITS	19-REF1-S3-S	QC Batch	19-REF1-S4-S	19-REF1-S5-S	QC Batch	19-REF2-S2-S	RDL	QC Batch
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	6259117	<0.20	<0.20	6259106	<0.20	0.20	6259475
Acid Extractable Arsenic (As)	ug/g	1.1	6259117	7.4	20	6259106	4.5	1.0	6259475
Acid Extractable Barium (Ba)	ug/g	37	6259117	51	45	6259106	99	0.50	6259475
Acid Extractable Beryllium (Be)	ug/g	<0.20	6259117	<0.20	<0.20	6259106	<0.20	0.20	6259475
Acid Extractable Boron (B)	ug/g	<5.0	6259117	<5.0	<5.0	6259106	<5.0	5.0	6259475
Acid Extractable Cadmium (Cd)	ug/g	0.11	6259117	<0.10	<0.10	6259106	0.50	0.10	6259475
Acid Extractable Chromium (Cr)	ug/g	3.3	6259117	19	25	6259106	19	1.0	6259475
Acid Extractable Cobalt (Co)	ug/g	1.9	6259117	6.7	8.9	6259106	5.8	0.10	6259475
Acid Extractable Copper (Cu)	ug/g	10	6259117	16	24	6259106	67	0.50	6259475
Acid Extractable Lead (Pb)	ug/g	<1.0	6259117	3.3	4.8	6259106	3.3	1.0	6259475
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	6259117	0.60	0.69	6259106	2.3	0.50	6259475
Acid Extractable Nickel (Ni)	ug/g	6.8	6259117	15	20	6259106	32	0.50	6259475
Acid Extractable Selenium (Se)	ug/g	<0.50	6259117	<0.50	<0.50	6259106	0.94	0.50	6259475
Acid Extractable Silver (Ag)	ug/g	<0.20	6259117	<0.20	<0.20	6259106	<0.20	0.20	6259475
Acid Extractable Thallium (Tl)	ug/g	<0.050	6259117	0.075	0.096	6259106	0.14	0.050	6259475
Acid Extractable Uranium (U)	ug/g	0.21	6259117	0.46	0.64	6259106	3.0	0.050	6259475
Acid Extractable Vanadium (V)	ug/g	<5.0	6259117	18	29	6259106	19	5.0	6259475
Acid Extractable Zinc (Zn)	ug/g	8.6	6259117	22	29	6259106	18	5.0	6259475
Acid Extractable Mercury (Hg)	ug/g	0.083	6259117	<0.050	<0.050	6259106	<0.050	0.050	6259475
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
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O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJY011	KJY011		KJY013		KJY015		
Sampling Date		2019/07/21 13:20	2019/07/21 13:20		2019/07/21 13:40		2019/07/21 14:00		
COC Number		96931	96931		96931		96931		
	UNITS	19-REF2-S3-S	19-REF2-S3-S Lab-Dup	QC Batch	19-REF2-S4-S	QC Batch	19-REF2-S5-S	RDL	QC Batch
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	6259179	<0.20	6259117	<0.20	0.20	6259106
Acid Extractable Arsenic (As)	ug/g	3.9	4.1	6259179	3.0	6259117	16	1.0	6259106
Acid Extractable Barium (Ba)	ug/g	31	32	6259179	40	6259117	52	0.50	6259106
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	6259179	<0.20	6259117	<0.20	0.20	6259106
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	6259179	<5.0	6259117	<5.0	5.0	6259106
Acid Extractable Cadmium (Cd)	ug/g	<0.10	<0.10	6259179	<0.10	6259117	<0.10	0.10	6259106
Acid Extractable Chromium (Cr)	ug/g	20	20	6259179	24	6259117	36	1.0	6259106
Acid Extractable Cobalt (Co)	ug/g	5.4	5.5	6259179	4.8	6259117	14	0.10	6259106
Acid Extractable Copper (Cu)	ug/g	16	16	6259179	13	6259117	41	0.50	6259106
Acid Extractable Lead (Pb)	ug/g	2.7	2.8	6259179	2.8	6259117	3.7	1.0	6259106
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	6259179	<0.50	6259117	<0.50	0.50	6259106
Acid Extractable Nickel (Ni)	ug/g	14	14	6259179	12	6259117	36	0.50	6259106
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	6259179	<0.50	6259117	<0.50	0.50	6259106
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	6259179	<0.20	6259117	<0.20	0.20	6259106
Acid Extractable Thallium (Tl)	ug/g	0.072	0.070	6259179	0.086	6259117	0.11	0.050	6259106
Acid Extractable Uranium (U)	ug/g	0.56	0.58	6259179	0.67	6259117	0.73	0.050	6259106
Acid Extractable Vanadium (V)	ug/g	18	18	6259179	21	6259117	31	5.0	6259106
Acid Extractable Zinc (Zn)	ug/g	16	17	6259179	19	6259117	31	5.0	6259106
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	6259179	<0.050	6259117	<0.050	0.050	6259106
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Lab-Dup = Laboratory Initiated Duplicate									



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BV Labs Job #: B9K9920
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Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJY017	KJY017		KJY019	KJY021		
Sampling Date		2019/07/21 16:30	2019/07/21 16:30		2019/07/21 16:50	2019/07/21 16:00		
COC Number		96931	96931		96931	96931		
	UNITS	19-REF3-S1-S	19-REF3-S1-S Lab-Dup	QC Batch	19-REF3-S2-S	19-REF3-S3-S	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	6259117	<0.20	<0.20	0.20	6259106
Acid Extractable Arsenic (As)	ug/g	8.3	8.9	6259117	<1.0	2.3	1.0	6259106
Acid Extractable Barium (Ba)	ug/g	50	54	6259117	260	69	0.50	6259106
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	6259117	0.20	0.22	0.20	6259106
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	6259117	<5.0	6.7	5.0	6259106
Acid Extractable Cadmium (Cd)	ug/g	<0.10	<0.10	6259117	0.20	<0.10	0.10	6259106
Acid Extractable Chromium (Cr)	ug/g	24	25	6259117	27	32	1.0	6259106
Acid Extractable Cobalt (Co)	ug/g	5.5	5.8	6259117	5.6	6.0	0.10	6259106
Acid Extractable Copper (Cu)	ug/g	15	17	6259117	30	14	0.50	6259106
Acid Extractable Lead (Pb)	ug/g	2.9	3.2	6259117	3.8	4.0	1.0	6259106
Acid Extractable Molybdenum (Mo)	ug/g	0.69	0.71	6259117	<0.50	0.56	0.50	6259106
Acid Extractable Nickel (Ni)	ug/g	14	15	6259117	22	16	0.50	6259106
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	6259117	<0.50	<0.50	0.50	6259106
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	6259117	<0.20	<0.20	0.20	6259106
Acid Extractable Thallium (Tl)	ug/g	0.13	0.13	6259117	0.18	0.16	0.050	6259106
Acid Extractable Uranium (U)	ug/g	0.66	0.74	6259117	1.3	0.94	0.050	6259106
Acid Extractable Vanadium (V)	ug/g	27	28	6259117	23	34	5.0	6259106
Acid Extractable Zinc (Zn)	ug/g	21	22	6259117	42	32	5.0	6259106
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	6259117	0.17	<0.050	0.050	6259106
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								



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BV Labs Job #: B9K9920
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O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJY023	KJY025	KJY029	KJY031		KJY035		
Sampling Date		2019/07/21 15:14	2019/07/21 15:35	2019/07/22 13:15	2019/07/22 11:40		2019/07/22 11:10		
COC Number		96931	96931	96931	96931		96931		
	UNITS	19-REF3-S4-S	19-REF3-S5-S	19-TF-S2-S	19-TF-S3-S	QC Batch	19-TF-S5-S	RDL	QC Batch
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	6259117	<0.20	0.20	6259179
Acid Extractable Arsenic (As)	ug/g	3.0	5.2	15	9.9	6259117	23	1.0	6259179
Acid Extractable Barium (Ba)	ug/g	60	170	33	27	6259117	38	0.50	6259179
Acid Extractable Beryllium (Be)	ug/g	0.25	<0.20	<0.20	<0.20	6259117	<0.20	0.20	6259179
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	<5.0	<5.0	6259117	<5.0	5.0	6259179
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.16	<0.10	<0.10	6259117	<0.10	0.10	6259179
Acid Extractable Chromium (Cr)	ug/g	32	52	23	16	6259117	22	1.0	6259179
Acid Extractable Cobalt (Co)	ug/g	5.4	17	6.5	5.3	6259117	8.2	0.10	6259179
Acid Extractable Copper (Cu)	ug/g	44	34	18	9.5	6259117	27	0.50	6259179
Acid Extractable Lead (Pb)	ug/g	6.5	4.4	3.8	2.8	6259117	5.0	1.0	6259179
Acid Extractable Molybdenum (Mo)	ug/g	0.93	1.7	<0.50	1.8	6259117	<0.50	0.50	6259179
Acid Extractable Nickel (Ni)	ug/g	15	47	16	12	6259117	21	0.50	6259179
Acid Extractable Selenium (Se)	ug/g	<0.50	0.72	<0.50	<0.50	6259117	<0.50	0.50	6259179
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	6259117	<0.20	0.20	6259179
Acid Extractable Thallium (Tl)	ug/g	0.12	0.35	0.10	0.12	6259117	0.12	0.050	6259179
Acid Extractable Uranium (U)	ug/g	1.5	2.4	0.53	1.0	6259117	0.61	0.050	6259179
Acid Extractable Vanadium (V)	ug/g	35	45	20	19	6259117	23	5.0	6259179
Acid Extractable Zinc (Zn)	ug/g	24	34	25	19	6259117	29	5.0	6259179
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.13	<0.050	<0.050	6259117	<0.050	0.050	6259179
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



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BV Labs Job #: B9K9920
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Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJY037		KJY039	KJY041		KJY045		
Sampling Date		2019/07/22 10:36		2019/07/22 08:25	2019/07/22 09:35		2019/07/23 00:30		
COC Number		96931		96931	96931		96931		
	UNITS	19-TF-S6-S	QC Batch	19-TF-S11-S	19-TF-S12-S	QC Batch	19-WRSA-S1-S	RDL	QC Batch
Metals									
Acid Extractable Antimony (Sb)	ug/g	0.27	6259106	0.29	<0.20	6259179	<0.20	0.20	6259117
Acid Extractable Arsenic (As)	ug/g	31	6259106	21	9.3	6259179	83	1.0	6259117
Acid Extractable Barium (Ba)	ug/g	87	6259106	140	30	6259179	50	0.50	6259117
Acid Extractable Beryllium (Be)	ug/g	<0.20	6259106	<0.20	<0.20	6259179	<0.20	0.20	6259117
Acid Extractable Boron (B)	ug/g	7.6	6259106	8.3	<5.0	6259179	<5.0	5.0	6259117
Acid Extractable Cadmium (Cd)	ug/g	0.27	6259106	0.27	<0.10	6259179	<0.10	0.10	6259117
Acid Extractable Chromium (Cr)	ug/g	7.7	6259106	10	28	6259179	19	1.0	6259117
Acid Extractable Cobalt (Co)	ug/g	3.0	6259106	5.7	7.6	6259179	12	0.10	6259117
Acid Extractable Copper (Cu)	ug/g	50	6259106	120	15	6259179	37	0.50	6259117
Acid Extractable Lead (Pb)	ug/g	2.8	6259106	4.8	4.8	6259179	5.7	1.0	6259117
Acid Extractable Molybdenum (Mo)	ug/g	4.0	6259106	1.1	0.52	6259179	0.56	0.50	6259117
Acid Extractable Nickel (Ni)	ug/g	42	6259106	44	18	6259179	29	0.50	6259117
Acid Extractable Selenium (Se)	ug/g	0.87	6259106	1.7	<0.50	6259179	<0.50	0.50	6259117
Acid Extractable Silver (Ag)	ug/g	<0.20	6259106	0.21	<0.20	6259179	<0.20	0.20	6259117
Acid Extractable Thallium (Tl)	ug/g	0.069	6259106	0.11	0.084	6259179	0.073	0.050	6259117
Acid Extractable Uranium (U)	ug/g	1.1	6259106	8.1	0.64	6259179	0.82	0.050	6259117
Acid Extractable Vanadium (V)	ug/g	10	6259106	7.2	24	6259179	16	5.0	6259117
Acid Extractable Zinc (Zn)	ug/g	13	6259106	7.9	26	6259179	28	5.0	6259117
Acid Extractable Mercury (Hg)	ug/g	0.079	6259106	0.13	<0.050	6259179	0.055	0.050	6259117
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



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O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJY047		KJY049		KJY051	KJY053		
Sampling Date		2019/07/23 10:30		2019/07/23 09:30		2019/07/23 09:55	2019/07/23 08:20		
COC Number		96931		96931		96931	96931		
	UNITS	19-WRSA-S2-S	QC Batch	19-WRSA-S5-S	QC Batch	19-WRSA-S6-S	19-WRSA-S7-S	RDL	QC Batch

Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	6259106	<0.20	6259117	<0.20	<0.20	0.20	6259106
Acid Extractable Arsenic (As)	ug/g	82	6259106	55	6259117	40	19	1.0	6259106
Acid Extractable Barium (Ba)	ug/g	37	6259106	35	6259117	30	24	0.50	6259106
Acid Extractable Beryllium (Be)	ug/g	<0.20	6259106	<0.20	6259117	<0.20	<0.20	0.20	6259106
Acid Extractable Boron (B)	ug/g	<5.0	6259106	<5.0	6259117	<5.0	<5.0	5.0	6259106
Acid Extractable Cadmium (Cd)	ug/g	<0.10	6259106	<0.10	6259117	<0.10	<0.10	0.10	6259106
Acid Extractable Chromium (Cr)	ug/g	23	6259106	23	6259117	18	26	1.0	6259106
Acid Extractable Cobalt (Co)	ug/g	11	6259106	8.9	6259117	8.3	5.8	0.10	6259106
Acid Extractable Copper (Cu)	ug/g	27	6259106	22	6259117	21	11	0.50	6259106
Acid Extractable Lead (Pb)	ug/g	6.7	6259106	6.9	6259117	4.6	2.6	1.0	6259106
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	6259106	<0.50	6259117	<0.50	2.3	0.50	6259106
Acid Extractable Nickel (Ni)	ug/g	28	6259106	23	6259117	20	18	0.50	6259106
Acid Extractable Selenium (Se)	ug/g	<0.50	6259106	<0.50	6259117	<0.50	<0.50	0.50	6259106
Acid Extractable Silver (Ag)	ug/g	<0.20	6259106	<0.20	6259117	<0.20	<0.20	0.20	6259106
Acid Extractable Thallium (Tl)	ug/g	0.078	6259106	0.077	6259117	0.051	0.087	0.050	6259106
Acid Extractable Uranium (U)	ug/g	0.88	6259106	0.63	6259117	0.66	0.70	0.050	6259106
Acid Extractable Vanadium (V)	ug/g	22	6259106	21	6259117	18	30	5.0	6259106
Acid Extractable Zinc (Zn)	ug/g	28	6259106	29	6259117	21	24	5.0	6259106
Acid Extractable Mercury (Hg)	ug/g	<0.050	6259106	<0.050	6259117	<0.050	<0.050	0.050	6259106

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

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Sampler Initials: AO**O.REG 153 ICPMS METALS & MERCURY (SOIL)**

BV Labs ID		KJY053	KJY055		KJY057	KJY059		
Sampling Date		2019/07/23 08:20	2019/07/24 08:05		2019/07/23 14:55	2019/07/23 14:05		
COC Number		96931	96931		96931	96931		
	UNITS	19-WRSA-S7-S Lab-Dup	19-WRSA-S8-S	QC Batch	19-WRSA-S9-S	19-WRSA-S10-S	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	6259106	<0.20	<0.20	0.20	6259117
Acid Extractable Arsenic (As)	ug/g	17	6.8	6259106	23	16	1.0	6259117
Acid Extractable Barium (Ba)	ug/g	20	22	6259106	36	31	0.50	6259117
Acid Extractable Beryllium (Be)	ug/g	<0.20	<0.20	6259106	<0.20	<0.20	0.20	6259117
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	6259106	<5.0	<5.0	5.0	6259117
Acid Extractable Cadmium (Cd)	ug/g	<0.10	<0.10	6259106	<0.10	<0.10	0.10	6259117
Acid Extractable Chromium (Cr)	ug/g	23	15	6259106	21	20	1.0	6259117
Acid Extractable Cobalt (Co)	ug/g	5.1	3.1	6259106	11	7.5	0.10	6259117
Acid Extractable Copper (Cu)	ug/g	9.6	13	6259106	15	20	0.50	6259117
Acid Extractable Lead (Pb)	ug/g	2.3	3.1	6259106	5.8	4.4	1.0	6259117
Acid Extractable Molybdenum (Mo)	ug/g	2.1	0.52	6259106	<0.50	<0.50	0.50	6259117
Acid Extractable Nickel (Ni)	ug/g	15	9.7	6259106	21	19	0.50	6259117
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	6259106	<0.50	<0.50	0.50	6259117
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	6259106	<0.20	<0.20	0.20	6259117
Acid Extractable Thallium (Tl)	ug/g	0.072	0.068	6259106	0.080	0.067	0.050	6259117
Acid Extractable Uranium (U)	ug/g	0.70	0.60	6259106	0.60	0.70	0.050	6259117
Acid Extractable Vanadium (V)	ug/g	26	22	6259106	21	20	5.0	6259117
Acid Extractable Zinc (Zn)	ug/g	22	15	6259106	26	22	5.0	6259117
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	6259106	<0.050	<0.050	0.050	6259117
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								



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VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICNMS METALS & MERCURY (SOIL)

BV Labs ID		KJY061		KJY063		KJY065		
Sampling Date		2019/07/23 08:50		2019/07/23 13:20		2019/07/23 08:00		
COC Number		96931		96931		96931		
	UNITS	19-WRSA-S11-S	QC Batch	19-WRSA-S12-S	QC Batch	19-TF-S14-S	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	6259106	<0.20	6259179	<0.20	0.20	6276635
Acid Extractable Arsenic (As)	ug/g	70	6259106	89	6259179	1.2	1.0	6276635
Acid Extractable Barium (Ba)	ug/g	37	6259106	28	6259179	67	0.50	6276635
Acid Extractable Beryllium (Be)	ug/g	<0.20	6259106	<0.20	6259179	<0.20	0.20	6276635
Acid Extractable Boron (B)	ug/g	<5.0	6259106	<5.0	6259179	<5.0	5.0	6276635
Acid Extractable Cadmium (Cd)	ug/g	<0.10	6259106	<0.10	6259179	0.17	0.10	6276635
Acid Extractable Chromium (Cr)	ug/g	26	6259106	18	6259179	18	1.0	6276635
Acid Extractable Cobalt (Co)	ug/g	12	6259106	8.8	6259179	2.5	0.10	6276635
Acid Extractable Copper (Cu)	ug/g	27	6259106	14	6259179	94	0.50	6276635
Acid Extractable Lead (Pb)	ug/g	6.9	6259106	6.1	6259179	1.7	1.0	6276635
Acid Extractable Molybdenum (Mo)	ug/g	0.55	6259106	<0.50	6259179	0.57	0.50	6276635
Acid Extractable Nickel (Ni)	ug/g	27	6259106	19	6259179	21	0.50	6276635
Acid Extractable Selenium (Se)	ug/g	<0.50	6259106	<0.50	6259179	0.58	0.50	6276635
Acid Extractable Silver (Ag)	ug/g	<0.20	6259106	<0.20	6259179	<0.20	0.20	6276635
Acid Extractable Thallium (Tl)	ug/g	0.069	6259106	0.064	6259179	0.17	0.050	6276635
Acid Extractable Uranium (U)	ug/g	0.78	6259106	0.58	6259179	2.3	0.050	6276635
Acid Extractable Vanadium (V)	ug/g	22	6259106	17	6259179	11	5.0	6276635
Acid Extractable Zinc (Zn)	ug/g	33	6259106	25	6259179	23	5.0	6276635
Acid Extractable Mercury (Hg)	ug/g	<0.050	6259106	<0.050	6259179	<0.050	0.050	6276635
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJX973		KJY007	KJY027		KJY033		
Sampling Date		2019/07/20 13:30		2019/07/21 11:55	2019/07/22 13:50		2019/07/22 15:00		
COC Number		96931		96931	96931		96931		
	UNITS	19-AWAR-S9-S	QC Batch	19-REF2-S1-S	19-TF-S1-S	QC Batch	19-TF-S4-S	RDL	QC Batch
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	6259179	<0.20	0.46	6259106	<0.20	0.20	6259117
Acid Extractable Arsenic (As)	ug/g	3.8	6259179	3.1	29	6259106	9.1	1.0	6259117
Acid Extractable Barium (Ba)	ug/g	8.2	6259179	27	130	6259106	110	0.50	6259117
Acid Extractable Beryllium (Be)	ug/g	<0.20	6259179	<0.20	0.21	6259106	<0.20	0.20	6259117
Acid Extractable Boron (B)	ug/g	<5.0	6259179	<5.0	11	6259106	<5.0	5.0	6259117
Acid Extractable Cadmium (Cd)	ug/g	<0.10	6259179	<0.10	0.36	6259106	0.21	0.10	6259117
Acid Extractable Chromium (Cr)	ug/g	13	6259179	16	7.7	6259106	9.2	1.0	6259117
Acid Extractable Cobalt (Co)	ug/g	2.6	6259179	4.1	4.6	6259106	5.5	0.10	6259117
Acid Extractable Copper (Cu)	ug/g	1.2	6259179	8.4	160	6259106	55	0.50	6259117
Acid Extractable Lead (Pb)	ug/g	2.6	6259179	2.3	3.7	6259106	1.7	1.0	6259117
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	6259179	<0.50	1.4	6259106	1.7	0.50	6259117
Acid Extractable Nickel (Ni)	ug/g	5.4	6259179	8.5	56	6259106	26	0.50	6259117
Acid Extractable Selenium (Se)	ug/g	<0.50	6259179	<0.50	1.7	6259106	0.80	0.50	6259117
Acid Extractable Silver (Ag)	ug/g	<0.20	6259179	<0.20	<0.20	6259106	<0.20	0.20	6259117
Acid Extractable Thallium (Tl)	ug/g	<0.050	6259179	<0.050	0.083	6259106	0.15	0.050	6259117
Acid Extractable Uranium (U)	ug/g	0.26	6259179	0.44	11	6259106	4.4	0.050	6259117
Acid Extractable Vanadium (V)	ug/g	16	6259179	17	5.8	6259106	8.4	5.0	6259117
Acid Extractable Zinc (Zn)	ug/g	11	6259179	15	35	6259106	5.9	5.0	6259117
Acid Extractable Mercury (Hg)	ug/g	<0.050	6259179	<0.050	0.14	6259106	0.057	0.050	6259117
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

O.REG 153 ICPMS METALS & MERCURY (SOIL)

BV Labs ID		KJY043		
Sampling Date		2019/07/22 15:46		
COC Number		96931		
	UNITS	19-TF-S13-S	RDL	QC Batch
Metals				
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	6259179
Acid Extractable Arsenic (As)	ug/g	31	1.0	6259179
Acid Extractable Barium (Ba)	ug/g	31	0.50	6259179
Acid Extractable Beryllium (Be)	ug/g	<0.20	0.20	6259179
Acid Extractable Boron (B)	ug/g	<5.0	5.0	6259179
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	6259179
Acid Extractable Chromium (Cr)	ug/g	22	1.0	6259179
Acid Extractable Cobalt (Co)	ug/g	10	0.10	6259179
Acid Extractable Copper (Cu)	ug/g	14	0.50	6259179
Acid Extractable Lead (Pb)	ug/g	6.4	1.0	6259179
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	6259179
Acid Extractable Nickel (Ni)	ug/g	19	0.50	6259179
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	6259179
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	6259179
Acid Extractable Thallium (Tl)	ug/g	0.070	0.050	6259179
Acid Extractable Uranium (U)	ug/g	0.48	0.050	6259179
Acid Extractable Vanadium (V)	ug/g	19	5.0	6259179
Acid Extractable Zinc (Zn)	ug/g	26	5.0	6259179
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	6259179
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

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Report Date: 2019/09/03Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

RESULTS OF ANALYSES OF SOIL

BV Labs ID		KJX957		KJX959		KJX961	KJX963		
Sampling Date		2019/07/20 17:30		2019/07/20 16:55		2019/07/20 16:35	2019/07/20 16:00		
COC Number		96931		96931		96931	96931		
	UNITS	19-AWAR-S1-s	QC Batch	19-AWAR-S2-S	QC Batch	19-AWAR-S3-S	19-AWAR-S4-S	RDL	QC Batch
Inorganics									
Moisture	%	77	6259182	72	6259045	13	63	1.0	6259182
Available (CaCl ₂) pH	pH	3.87	6259531	6.21	6259531	4.50	6.29		6259531
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

BV Labs ID		KJX965		KJX965		KJX967		KJX969		
Sampling Date		2019/07/20 15:40		2019/07/20 15:40		2019/07/20 15:05		2019/07/20 14:40		
COC Number		96931		96931		96931		96931		
	UNITS	19-AWAR-S5-S	QC Batch	19-AWAR-S5-S Lab-Dup	QC Batch	19-AWAR-S6-S	QC Batch	19-AWAR-S7-S	RDL	QC Batch
Inorganics										
Moisture	%	17	6259045	17	6259045	77	6259182	80	1.0	6259045
Available (CaCl ₂) pH	pH	5.07	6259531			5.82	6259531	5.57		6259531
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										
Lab-Dup = Laboratory Initiated Duplicate										

BV Labs ID		KJX971	KJX975		KJX977	KJX979		
Sampling Date		2019/07/20 14:00	2019/07/20 00:50		2019/07/20 00:01	2019/07/20 11:30		
COC Number		96931	96931		96931	96931		
	UNITS	19-AWAR-S8-S	19-AWAR-S10-S	QC Batch	19-AWAR-S11-S	19-AWAR-S12-S	RDL	QC Batch
Inorganics								
Moisture	%	12	57	6259182	78	84	1.0	6259045
Available (CaCl ₂) pH	pH	5.45	5.44	6259531	3.98	2.95		6259531
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

BV Labs ID		KJX981		KJX983		KJX985		
Sampling Date		2019/07/19 16:15		2019/07/19 15:30		2019/07/19 15:05		
COC Number		96931		96931		96931		
	UNITS	19-AWAR-S13-S	QC Batch	19-AWAR-S14-S	QC Batch	19-AWAR-S15-S	RDL	QC Batch
Inorganics								
Moisture	%	73	6259182	34	6259182	27	1.0	6259045
Available (CaCl ₂) pH	pH	4.01	6259531	5.11	6261442	3.86		6259531
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



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BV Labs Job #: B9K9920
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RESULTS OF ANALYSES OF SOIL

BV Labs ID		KJX987			KJX987		KJX989	KJX991		
Sampling Date		2019/07/19 14:05			2019/07/19 14:05		2019/07/19 00:10	2019/07/19 11:40		
COC Number		96931			96931		96931	96931		
	UNITS	19-AWAR-S16-S	RDL	QC Batch	19-AWAR-S16-S Lab-Dup	QC Batch	19-AWAR-S17-S	19-AWAR-S18-S	RDL	QC Batch

Inorganics										
Moisture	%	5.8	1.0	6259182			70	5.9	1.0	6259182
Available (CaCl ₂) pH	pH	4.33		6285945	4.29	6285945	5.77	3.97		6259531
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										
Lab-Dup = Laboratory Initiated Duplicate										

BV Labs ID		KJX993		KJX995		KJX995		KJX997		
Sampling Date		2019/07/19 13:40		2019/07/19 13:15		2019/07/19 13:15		2019/07/21 08:10		
COC Number		96931		96931		96931		96931		
	UNITS	19-AWAR-S19-S	QC Batch	19-AWAR-S20-S	QC Batch	19-AWAR-S20-S Lab-Dup	QC Batch	19-REF1-S1-S	RDL	QC Batch

Inorganics										
Moisture	%	9.5	6259182	67	6258329	72	6258329	17	1.0	6259182
Available (CaCl ₂) pH	pH	5.41	6261442	5.94	6261442			6.46		6259531
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										
Lab-Dup = Laboratory Initiated Duplicate										

BV Labs ID		KJY999	KJY001		KJY003	KJY005		KJY009		
Sampling Date		2019/07/21 20:40	2019/07/21 09:25		2019/07/21 10:15	2019/07/21 22:45		2019/07/21 00:35		
COC Number		96931	96931		96931	96931		96931		
	UNITS	19-REF1-S2-S	19-REF1-S3-S	QC Batch	19-REF1-S4-S	19-REF1-S5-S	QC Batch	19-REF2-S2-S	RDL	QC Batch

Inorganics										
Moisture	%	39	72	6258329	30	29	6259045	72	1.0	6258329
Available (CaCl ₂) pH	pH	5.98	4.33	6261442	5.78	5.80	6259531	4.69		6261442
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										

BV Labs ID		KJY011		KJY013		KJY015		KJY017		
Sampling Date		2019/07/21 13:20		2019/07/21 13:40		2019/07/21 14:00		2019/07/21 16:30		
COC Number		96931		96931		96931		96931		
	UNITS	19-REF2-S3-S	QC Batch	19-REF2-S4-S	QC Batch	19-REF2-S5-S	QC Batch	19-REF3-S1-S	RDL	QC Batch

Inorganics										
Moisture	%	12	6259045	18	6258329	13	6259045	17	1.0	6259182
Available (CaCl ₂) pH	pH	4.55	6285945	4.95	6261442	7.71	6285945	4.67		6259531
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										

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RESULTS OF ANALYSES OF SOIL

BV Labs ID		KJY019	KJY021		KJY023	KJY025	KJY029	KJY031		
Sampling Date		2019/07/21 16:50	2019/07/21 16:00		2019/07/21 15:14	2019/07/21 15:35	2019/07/22 13:15	2019/07/22 11:40		
COC Number		96931	96931		96931	96931	96931	96931		
	UNITS	19-REF3-S2-S	19-REF3-S3-S	QC Batch	19-REF3-S4-S	19-REF3-S5-S	19-TF-S2-S	19-TF-S3-S	RDL	QC Batch

Inorganics

Moisture	%	69	17	6259045	25	62	17	18	1.0	6258329
Available (CaCl ₂) pH	pH	3.92	7.26	6285945	4.92	5.16	5.96	6.43		6261442

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

BV Labs ID		KJY031		KJY035		KJY037	KJY039		KJY041		
Sampling Date		2019/07/22 11:40		2019/07/22 11:10		2019/07/22 10:36	2019/07/22 08:25		2019/07/22 09:35		
COC Number		96931		96931		96931	96931		96931		
	UNITS	19-TF-S3-S Lab-Dup	QC Batch	19-TF-S5-S	QC Batch	19-TF-S6-S	19-TF-S11-S	QC Batch	19-TF-S12-S	RDL	QC Batch

Inorganics

Moisture	%			11	6259045	74	76	6259182	18	1.0	6259045
Available (CaCl ₂) pH	pH	6.45	6261442	5.18	6285945	5.82	5.88	6285945	6.38		6285945

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		KJY044		KJY045		KJY047		KJY049		
Sampling Date		2019/07/22 15:50		2019/07/23 00:30		2019/07/23 10:30		2019/07/23 09:30		
COC Number		96931		96931		96931		96931		
	UNITS	19-TF-S13-Cr	QC Batch	19-WRSA-S1-S	QC Batch	19-WRSA-S2-S	QC Batch	19-WRSA-S5-S	RDL	QC Batch

Inorganics

Moisture	%	79	6265634	31	6258329	11	6259045	13	1.0	6258329
pH	pH	4.92	6284449							
Available (CaCl ₂) pH	pH			5.65	6261442	5.88	6285945	4.57		6261442

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
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RESULTS OF ANALYSES OF SOIL

BV Labs ID		KJY051		KJY053	KJY055		KJY057		
Sampling Date		2019/07/23 09:55		2019/07/23 08:20	2019/07/24 08:05		2019/07/23 14:55		
COC Number		96931		96931	96931		96931		
	UNITS	19-WRSA-S6-S	QC Batch	19-WRSA-S7-S	19-WRSA-S8-S	QC Batch	19-WRSA-S9-S	RDL	QC Batch

Inorganics									
Moisture	%	9.8	6258329	14	19	6259045	9.7	1.0	6258329
Available (CaCl ₂) pH	pH	5.47	6261442	6.95	5.51	6285945	5.52		6261442
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

BV Labs ID		KJY059	KJY061		KJY063		KJY065		
Sampling Date		2019/07/23 14:05	2019/07/23 08:50		2019/07/23 13:20		2019/07/23 08:00		
COC Number		96931	96931		96931		96931		
	UNITS	19-WRSA-S10-S	19-WRSA-S11-S	QC Batch	19-WRSA-S12-S	QC Batch	19-TF-S14-S	RDL	QC Batch

Inorganics									
Moisture	%	12	9.4	6258329	10	6259182	66	1.0	6258329
Available (CaCl ₂) pH	pH	5.66	4.61	6261442	5.70	6285945	4.83		6261442
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



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VERITAS

BV Labs Job #: B9K9920

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ELEMENTS BY ICP/MS (SOIL)

BV Labs ID		KJY044		
Sampling Date		2019/07/22 15:50		
COC Number		96931		
	UNITS	19-TF-S13-Cr	RDL	QC Batch
Metals				
Antimony (Sb)	ug/g	<0.05	0.05	6266648
Arsenic (As)	ug/g	0.6	0.1	6266648
Barium (Ba)	ug/g	1.2	0.3	6266648
Beryllium (Be)	ug/g	<0.05	0.05	6266648
Bismuth (Bi)	ug/g	<0.05	0.05	6266648
Boron (B)	ug/g	2.2	0.5	6266648
Cadmium (Cd)	ug/g	<0.01	0.01	6266648
Calcium (Ca)	ug/g	268	50	6266648
Chromium (Cr)	ug/g	<0.3	0.3	6266648
Cobalt (Co)	ug/g	0.016	0.005	6266648
Copper (Cu)	ug/g	1.9	0.5	6266648
Iron (Fe)	ug/g	23	3	6266648
Lead (Pb)	ug/g	<0.03	0.03	6266648
Magnesium (Mg)	ug/g	147	100	6266648
Manganese (Mn)	ug/g	11.0	0.3	6266648
Molybdenum (Mo)	ug/g	<0.05	0.05	6266648
Nickel (Ni)	ug/g	0.26	0.05	6266648
Phosphorus (P)	ug/g	330	50	6266648
Potassium (K)	ug/g	1860	100	6266648
Selenium (Se)	ug/g	<0.1	0.1	6266648
Silver (Ag)	ug/g	<0.05	0.05	6266648
Sodium (Na)	ug/g	<50	50	6266648
Strontium (Sr)	ug/g	<0.5	0.5	6266648
Thallium (Tl)	ug/g	<0.003	0.003	6266648
Tin (Sn)	ug/g	<0.3	0.3	6266648
Titanium (Ti)	ug/g	0.7	0.5	6266648
Uranium (U)	ug/g	<0.005	0.005	6266648
Vanadium (V)	ug/g	<0.05	0.05	6266648
Zinc (Zn)	ug/g	3	2	6266648
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

BV Labs Job #: B9K9920
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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

BV Labs ID		KJY044		
Sampling Date		2019/07/22 15:50		
COC Number		96931		
	UNITS	19-TF-S13-Cr	RDL	QC Batch
Metals				
Mercury (Hg)	ug/g	<0.01	0.01	6265319
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



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VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

RESULTS OF ANALYSES OF SOLID

BV Labs ID		KJX973			KJX973		KJY007		KJY027		
Sampling Date		2019/07/20 13:30			2019/07/20 13:30		2019/07/21 11:55		2019/07/22 13:50		
COC Number		96931			96931		96931		96931		
	UNITS	19-AWAR-S9-S	RDL	QC Batch	19-AWAR-S9-S Lab-Dup	QC Batch	19-REF2-S1-S	QC Batch	19-TF-S1-S	RDL	QC Batch

Inorganics											
Moisture	%	11	1.0	6259045			19	6259182	72	1.0	6259045
Available (CaCl ₂) pH	pH	3.91		6259531	3.88	6259531	4.62	6261442	6.30		6285945

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		KJY033		
Sampling Date		2019/07/22 15:00		
COC Number		96931		
	UNITS	19-TF-S4-S	RDL	QC Batch

Inorganics				
Moisture	%	76	1.0	6258204
Available (CaCl ₂) pH	pH	5.19		6261442

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



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BV Labs Job #: B9K9920
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Sampler Initials: AO

RESULTS OF ANALYSES OF TISSUE

BV Labs ID		KJX958		KJX960		KJX962		
Sampling Date		2019/07/20 17:25		2019/07/20 17:00		2019/07/20 16:30		
COC Number		96931		96931		96931		
	UNITS	19-AWAR-S1-Sd	QC Batch	19-AWAR-S2-Li	QC Batch	19-AWAR-S3-Li	RDL	QC Batch
Inorganics								
Moisture	%	62	6265147	15	6265147	16	1.0	6265141
pH	pH	4.76	6284449	4.20	6284295	4.24		6284449
RDL = Reportable Detection Limit QC Batch = Quality Control Batch								

BV Labs ID		KJX964		KJX966		KJX968	KJX970		
Sampling Date		2019/07/20 16:05		2019/07/20 15:45		2019/07/20 15:10	2019/07/20 14:45		
COC Number		96931		96931		96931	96931		
	UNITS	19-AWAR-S4-Br	QC Batch	19-AWAR-S5-Sd	QC Batch	19-AWAR-S6-Li	19-AWAR-S7-Sd	RDL	QC Batch
Inorganics									
Moisture	%	60	6265147	47	6265147	16	49	1.0	6265141
pH	pH	3.29	6284295	6.57	6284449	4.91	5.57		6269503
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

BV Labs ID		KJX972	KJX974		KJX976		KJX978		
Sampling Date		2019/07/20 14:05	2019/07/20 13:35		2019/07/20 00:55		2019/07/20 00:10		
COC Number		96931	96931		96931		96931		
	UNITS	19-AWAR-S8-Br	19-AWAR-S9-Lt	QC Batch	19-AWAR-S10-Li	QC Batch	19-AWAR-S11-Li	RDL	QC Batch
Inorganics									
Moisture	%	61	62	6265147	14	6265634	15	1.0	6265147
pH	pH	4.07	4.70	6284295	4.12	6269503	4.42		6284295
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

BV Labs ID		KJX980		KJX982		KJX984		
Sampling Date		2019/07/20 23:35		2019/07/19 16:15		2019/07/19 15:35		
COC Number		96931		96931		96931		
	UNITS	19-AWAR-S12-Lt	QC Batch	19-AWAR-S13-Li	QC Batch	19-AWAR-S14-Sd	RDL	QC Batch
Inorganics								
Moisture	%	54	6265634	11	6265141	62	1.0	6265147
pH	pH	4.81	6269503	4.31	6269503	4.62		6284295
RDL = Reportable Detection Limit QC Batch = Quality Control Batch								

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RESULTS OF ANALYSES OF TISSUE

BV Labs ID		KJX986		KJX988		KJX990	KJX992		
Sampling Date		2019/07/19 15:10		2019/07/19 14:10		2019/07/19 00:15	2019/07/19 11:45		
COC Number		96931		96931		96931	96931		
	UNITS	19-AWAR-S15-Sd	QC Batch	19-AWAR-S16-Cr	QC Batch	19-AWAR-S17-Li	19-AWAR-S18-Li	RDL	QC Batch

Inorganics

Moisture	%	44	6265141	79	6265634	13	12	1.0	6265141
pH	pH	5.08	6269503	3.50	6284295	4.64	4.75		6269503

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

BV Labs ID		KJX994		KJX996		KJX998		KJY000		
Sampling Date		2019/07/19 13:45		2019/07/19 13:20		2019/07/21 08:05		2019/07/21 20:35		
COC Number		96931		96931		96931		96931		
	UNITS	19-AWAR-S19-Li	QC Batch	19-AWAR-S20-Li	QC Batch	19-REF1-S1-Sd	QC Batch	19-REF1-S2-Li	RDL	QC Batch

Inorganics

Moisture	%	17	6265141	19	6265634	46	6265147	18	1.0	6265147
pH	pH	4.91	6269503	4.64	6269503	5.34	6284449	3.84		6284295

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

BV Labs ID		KJY002		KJY004		KJY006	KJY008		
Sampling Date		2019/07/21 09:20		2019/07/21 10:10		2019/07/21 22:40	2019/07/21 11:50		
COC Number		96931		96931		96931	96931		
	UNITS	19-REF1-S3-LT	QC Batch	19-REF1-S4-Br	QC Batch	19-REF1-S5-Sd	19-REF2-S1-LT	RDL	QC Batch

Inorganics

Moisture	%	55	6265147	61	6265141	58	57	1.0	6265147
pH	pH	4.60	6284449	4.35	6269503	5.56	4.63		6284449

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

BV Labs ID		KJY008		KJY010		KJY012		KJY014		
Sampling Date		2019/07/21 11:50		2019/07/21 00:30		2019/07/21 13:15		2019/07/21 13:35		
COC Number		96931		96931		96931		96931		
	UNITS	19-REF2-S1-LT Lab-Dup	QC Batch	19-REF2-S2-Br	QC Batch	19-REF2-S3-Li	QC Batch	19-REF2-S4-Sd	RDL	QC Batch

Inorganics

Moisture	%			61	6265141	10	6265634	50	1.0	6265634
pH	pH	4.62	6284449	4.65	6269503	3.96	6269503	6.20		6284449

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



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BV Labs Job #: B9K9920
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RESULTS OF ANALYSES OF TISSUE

BV Labs ID		KJY016	KJY018		KJY020		KJY022		
Sampling Date		2019/07/21 14:05	2019/07/21 16:35		2019/07/21 16:45		2019/07/21 16:05		
COC Number		96931	96931		96931		96931		
	UNITS	19-REF2-S5-Br	19-REF3-S1-Li	QC Batch	19-REF3-S2-Li	QC Batch	19-REF3-S3-Li	RDL	QC Batch
Inorganics									
Moisture	%	60	12	6265141	13	6265147	11	1.0	6265634
pH	pH	4.70	4.00	6269503	4.12	6284295	3.93		6284295
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

BV Labs ID		KJY024		KJY026		KJY028	KJY030		
Sampling Date		2019/07/21 15:30		2019/07/21 15:40		2019/07/22 13:55	2019/07/22 13:20		
COC Number		96931		96931		96931	96931		
	UNITS	19-REF3-S4-Li	QC Batch	19-REF3-S5-Sd	QC Batch	19-TF-S1-Cr	19-TF-S2-Li	RDL	QC Batch
Inorganics									
Moisture	%	9.3	6265141	60	6265634	79	10	1.0	6265634
pH	pH	4.15	6284295	6.13	6284449	3.66	4.16		6284295
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

BV Labs ID		KJY032		KJY034			KJY034		KJY036		
Sampling Date		2019/07/22 23:45		2019/07/22 15:05			2019/07/22 15:05		2019/07/22 11:15		
COC Number		96931		96931			96931		96931		
	UNITS	19-TF-S3-Sd	QC Batch	19-TF-S4-LT	RDL	QC Batch	19-TF-S4-LT Lab-Dup	QC Batch	19-TF-S5-Li	RDL	QC Batch
Inorganics											
Moisture	%	59	6265147	53	1.0	6265141			9.7	1.0	6265634
pH	pH	6.47	6284449	4.66		6269503	4.66	6269503	4.34		6284295
RDL = Reportable Detection Limit											
QC Batch = Quality Control Batch											
Lab-Dup = Laboratory Initiated Duplicate											

BV Labs ID		KJY038			KJY038		KJY040		KJY042		
Sampling Date		2019/07/22 10:30			2019/07/22 10:30		2019/07/22 08:30		2019/07/22 09:40		
COC Number		96931			96931		96931		96931		
	UNITS	19-TF-S6-LT	RDL	QC Batch	19-TF-S6-LT Lab-Dup	QC Batch	19-TF-S11-Br	QC Batch	19-TF-S12-Sd	RDL	QC Batch
Inorganics											
Moisture	%	54	1.0	6265634			61	6265141	45	1.0	6265141
pH	pH	4.64		6284295	4.64	6284295	4.62	6269503	6.52		6284449
RDL = Reportable Detection Limit											
QC Batch = Quality Control Batch											
Lab-Dup = Laboratory Initiated Duplicate											

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RESULTS OF ANALYSES OF TISSUE

BV Labs ID		KJY043		KJY046		KJY048		KJY050		
Sampling Date		2019/07/22 15:46		2019/07/23 00:25		2019/07/23 10:35		2019/07/23 09:30		
COC Number		96931		96931		96931		96931		
	UNITS	19-TF-S13-S	QC Batch	19-WRSA-S1-LT	QC Batch	19-WRSA-S2-Sd	QC Batch	19-WRSA-S5-Li	RDL	QC Batch
Inorganics										
Moisture	%	11	6259045	54	6265147	60	6265147	17	1.0	6265141
pH	pH			4.63	6284295	6.82	6284449	4.43		6269503
Available (CaCl ₂) pH	pH	4.67	6285945							
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										

BV Labs ID		KJY052	KJY054		KJY056	KJY058	KJY060			
Sampling Date		2019/07/23 10:00	2019/07/23 08:25		2019/07/24 08:00	2019/07/23 14:50	2019/07/23 14:00			
COC Number		96931	96931		96931	96931	96931			
	UNITS	19-WRSA-S6-Br	19-WRSA-S7-Li	QC Batch	19-WRSA-S8-Br	19-WRSA-S9-Cr	19-WRSA-S10-Cr	RDL	QC Batch	
Inorganics										
Moisture	%	62	20	6265147	64	79	80	1.0	6265634	
pH	pH	3.69	4.33	6284449	4.54	6.23	3.44		6284295	
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										

BV Labs ID		KJY062	KJY064		KJY066			
Sampling Date		2019/07/23 08:55	2019/07/23 13:15		2019/07/23 07:55			
COC Number		96931	96931		96931			
	UNITS	19-WRSA-S11-Br	19-WRSA-S12-Li	QC Batch	19-TF-S14-Li	RDL	QC Batch	
Inorganics								
Moisture	%	63	11	6265141	22	1.0	6265634	
pH	pH	4.58	4.36	6269503	4.24		6284295	
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJX958			KJX960		KJX962		
Sampling Date		2019/07/20 17:25			2019/07/20 17:00		2019/07/20 16:30		
COC Number		96931			96931		96931		
	UNITS	19-AWAR-S1-Sd	RDL	QC Batch	19-AWAR-S2-Li	QC Batch	19-AWAR-S3-Li	RDL	QC Batch
Metals									
Antimony (Sb)	ug/g	<0.05	0.05	6266652	<0.05	6267071	<0.05	0.05	6266652
Arsenic (As)	ug/g	1.5	0.1	6266652	5.5	6267071	5.1	0.1	6266652
Barium (Ba)	ug/g	11.4	0.3	6266652	21.7	6267071	23.2	0.3	6266652
Beryllium (Be)	ug/g	<0.05	0.05	6266652	<0.05	6267071	<0.05	0.05	6266652
Bismuth (Bi)	ug/g	<0.05	0.05	6266652	<0.05	6267071	<0.05	0.05	6266652
Boron (B)	ug/g	2.7	0.5	6266652	1.2	6267071	1.8	0.5	6266652
Cadmium (Cd)	ug/g	0.01	0.01	6266652	0.08	6267071	0.09	0.01	6266652
Calcium (Ca)	ug/g	2550	50	6266652	8600	6267071	8400	50	6266652
Chromium (Cr)	ug/g	2.7	0.3	6266652	7.0	6267071	6.6	0.3	6266652
Cobalt (Co)	ug/g	0.647	0.005	6266652	1.79	6267071	1.71	0.005	6266652
Copper (Cu)	ug/g	3.7	0.5	6266652	6.5	6267071	7.0	0.5	6266652
Iron (Fe)	ug/g	657	3	6266652	3130	6267071	2930	3	6266652
Lead (Pb)	ug/g	0.27	0.03	6266652	2.26	6267071	2.05	0.03	6266652
Magnesium (Mg)	ug/g	590	100	6266652	1470	6267071	1300	100	6266652
Manganese (Mn)	ug/g	190	0.3	6266652	124	6267071	125	0.3	6266652
Molybdenum (Mo)	ug/g	0.41	0.05	6266652	0.28	6267071	0.24	0.05	6266652
Nickel (Ni)	ug/g	1.57	0.05	6266652	4.36	6267071	4.16	0.05	6266652
Phosphorus (P)	ug/g	589	50	6266652	403	6267071	372	50	6266652
Potassium (K)	ug/g	5550	100	6266652	1590	6267071	1260	100	6266652
Selenium (Se)	ug/g	<0.1	0.1	6266652	0.1	6267071	0.2	0.1	6266652
Silver (Ag)	ug/g	<0.05	0.05	6266652	<0.05	6267071	<0.05	0.05	6266652
Sodium (Na)	ug/g	117	50	6266652	150	6267071	72	50	6266652
Strontium (Sr)	ug/g	16.7	0.5	6266652	34.2	6267071	35.6	0.5	6266652
Thallium (Tl)	ug/g	0.005	0.003	6266652	0.018	6267071	0.015	0.003	6266652
Tin (Sn)	ug/g	<0.3	0.3	6266652	<0.3	6267071	<0.3	0.3	6266652
Titanium (Ti)	ug/g	17.7	0.5	6266652	58	6267071	60	3	6266652
Uranium (U)	ug/g	0.071	0.005	6266652	0.088	6267071	0.097	0.005	6266652
Vanadium (V)	ug/g	1.00	0.05	6266652	4.64	6267071	4.07	0.05	6266652
Zinc (Zn)	ug/g	16	2	6266652	26	6267071	21	2	6266652
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

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BV Labs ID		KJX964	KJX966			KJX968		
Sampling Date		2019/07/20 16:05	2019/07/20 15:45			2019/07/20 15:10		
COC Number		96931	96931			96931		
	UNITS	19-AWAR-S4-Br	19-AWAR-S5-Sd	RDL	QC Batch	19-AWAR-S6-Li	RDL	QC Batch
Metals								
Antimony (Sb)	ug/g	<0.05	<0.05	0.05	6266652	<0.05	0.05	6267071
Arsenic (As)	ug/g	0.4	3.6	0.1	6266652	13.8	0.1	6267071
Barium (Ba)	ug/g	6.4	17.7	0.3	6266652	22.9	0.3	6267071
Beryllium (Be)	ug/g	<0.05	<0.05	0.05	6266652	<0.05	0.05	6267071
Bismuth (Bi)	ug/g	<0.05	<0.05	0.05	6266652	<0.05	0.05	6267071
Boron (B)	ug/g	7.2	3.0	0.5	6266652	2.5	0.5	6267071
Cadmium (Cd)	ug/g	0.01	0.02	0.01	6266652	0.11	0.01	6267071
Calcium (Ca)	ug/g	2780	3760	50	6266652	15000	50	6267071
Chromium (Cr)	ug/g	<0.3	1.8	0.3	6266652	11.6	0.3	6267071
Cobalt (Co)	ug/g	0.163	0.411	0.005	6266652	2.24	0.005	6267071
Copper (Cu)	ug/g	2.8	4.8	0.5	6266652	8.9	0.5	6267071
Iron (Fe)	ug/g	103	631	3	6266652	4250	3	6267071
Lead (Pb)	ug/g	0.05	0.42	0.03	6266652	3.51	0.03	6267071
Magnesium (Mg)	ug/g	704	619	100	6266652	1780	100	6267071
Manganese (Mn)	ug/g	71.2	67.0	0.3	6266652	107	0.3	6267071
Molybdenum (Mo)	ug/g	0.18	0.32	0.05	6266652	0.51	0.05	6267071
Nickel (Ni)	ug/g	1.09	2.28	0.05	6266652	6.00	0.05	6267071
Phosphorus (P)	ug/g	661	402	50	6266652	325	50	6267071
Potassium (K)	ug/g	3290	4490	100	6266652	998	100	6267071
Selenium (Se)	ug/g	<0.1	<0.1	0.1	6266652	<0.1	0.1	6267071
Silver (Ag)	ug/g	<0.05	<0.05	0.05	6266652	<0.05	0.05	6267071
Sodium (Na)	ug/g	<50	85	50	6266652	101	50	6267071
Strontium (Sr)	ug/g	8.3	18.5	0.5	6266652	42.6	0.5	6267071
Thallium (Tl)	ug/g	<0.003	<0.003	0.003	6266652	0.018	0.003	6267071
Tin (Sn)	ug/g	<0.3	<0.3	0.3	6266652	<0.3	0.3	6267071
Titanium (Ti)	ug/g	2.4	11.3	0.5	6266652	83	3	6267071
Uranium (U)	ug/g	<0.005	0.028	0.005	6266652	0.140	0.005	6267071
Vanadium (V)	ug/g	0.14	1.01	0.05	6266652	5.86	0.05	6267071
Zinc (Zn)	ug/g	106	12	2	6266652	23	2	6267071
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



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ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJX970	KJX972		KJX974			KJX976		
Sampling Date		2019/07/20 14:45	2019/07/20 14:05		2019/07/20 13:35			2019/07/20 00:55		
COC Number		96931	96931		96931			96931		
	UNITS	19-AWAR-S7-Sd	19-AWAR-S8-Br	QC Batch	19-AWAR-S9-Lt	RDL	QC Batch	19-AWAR-S10-Li	RDL	QC Batch
Metals										
Antimony (Sb)	ug/g	<0.05	<0.05	6266652	<0.05	0.05	6266648	<0.05	0.05	6266652
Arsenic (As)	ug/g	4.3	0.1	6266652	0.2	0.1	6266648	0.8	0.1	6266652
Barium (Ba)	ug/g	12.8	11.2	6266652	24.2	0.3	6266648	20.1	0.3	6266652
Beryllium (Be)	ug/g	<0.05	<0.05	6266652	<0.05	0.05	6266648	<0.05	0.05	6266652
Bismuth (Bi)	ug/g	<0.05	<0.05	6266652	<0.05	0.05	6266648	<0.05	0.05	6266652
Boron (B)	ug/g	2.4	6.2	6266652	8.1	0.5	6266648	1.0	0.5	6266652
Cadmium (Cd)	ug/g	0.02	0.03	6266652	<0.01	0.01	6266648	0.11	0.01	6266652
Calcium (Ca)	ug/g	3550	2370	6266652	1880	50	6266648	2100	50	6266652
Chromium (Cr)	ug/g	2.2	<0.3	6266652	0.8	0.3	6266648	23.5	0.3	6266652
Cobalt (Co)	ug/g	0.590	0.215	6266652	0.132	0.005	6266648	1.02	0.005	6266652
Copper (Cu)	ug/g	4.2	2.8	6266652	2.4	0.5	6266648	3.7	0.5	6266652
Iron (Fe)	ug/g	778	82	6266652	217	3	6266648	1060	3	6266652
Lead (Pb)	ug/g	0.83	<0.03	6266652	0.09	0.03	6266648	1.56	0.03	6266652
Magnesium (Mg)	ug/g	662	871	6266652	576	100	6266648	584	100	6266652
Manganese (Mn)	ug/g	214	136	6266652	369	0.3	6266648	52.6	0.3	6266652
Molybdenum (Mo)	ug/g	0.31	<0.05	6266652	<0.05	0.05	6266648	2.69	0.05	6266652
Nickel (Ni)	ug/g	1.76	1.70	6266652	0.55	0.05	6266648	15.4	0.05	6266652
Phosphorus (P)	ug/g	545	680	6266652	438	50	6266648	276	50	6266652
Potassium (K)	ug/g	5140	2970	6266652	2370	100	6266648	1240	100	6266652
Selenium (Se)	ug/g	<0.1	<0.1	6266652	<0.1	0.1	6266648	0.2	0.1	6266652
Silver (Ag)	ug/g	<0.05	<0.05	6266652	<0.05	0.05	6266648	<0.05	0.05	6266652
Sodium (Na)	ug/g	89	<50	6266652	<50	50	6266648	<50	50	6266652
Strontium (Sr)	ug/g	18.3	5.0	6266652	6.1	0.5	6266648	12.5	0.5	6266652
Thallium (Tl)	ug/g	0.004	<0.003	6266652	0.056	0.003	6266648	0.010	0.003	6266652
Tin (Sn)	ug/g	<0.3	<0.3	6266652	<0.3	0.3	6266648	<0.3	0.3	6266652
Titanium (Ti)	ug/g	18.4	2.8	6266652	9.0	0.5	6266648	36	3	6266652
Uranium (U)	ug/g	0.075	<0.005	6266652	0.010	0.005	6266648	0.056	0.005	6266652
Vanadium (V)	ug/g	1.15	0.11	6266652	0.36	0.05	6266648	1.50	0.05	6266652
Zinc (Zn)	ug/g	26	82	6266652	14	2	6266648	17	2	6266652
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										

BUREAU
VERITASBV Labs Job #: B9K9920
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Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJX976		KJX978			KJX980		
Sampling Date		2019/07/20 00:55		2019/07/20 00:10			2019/07/20 23:35		
COC Number		96931		96931			96931		
	UNITS	19-AWAR-S10-Li Lab-Dup	QC Batch	19-AWAR-S11-Li	RDL	QC Batch	19-AWAR-S12-Li	RDL	QC Batch

Metals									
Antimony (Sb)	ug/g	<0.05	6266652	<0.05	0.05	6267071	<0.05	0.05	6266652
Arsenic (As)	ug/g	0.8	6266652	1.2	0.1	6267071	0.2	0.1	6266652
Barium (Ba)	ug/g	20.6	6266652	25.9	0.3	6267071	26.0	0.3	6266652
Beryllium (Be)	ug/g	<0.05	6266652	<0.05	0.05	6267071	<0.05	0.05	6266652
Bismuth (Bi)	ug/g	<0.05	6266652	<0.05	0.05	6267071	<0.05	0.05	6266652
Boron (B)	ug/g	1.0	6266652	0.9	0.5	6267071	9.6	0.5	6266652
Cadmium (Cd)	ug/g	0.11	6266652	0.06	0.01	6267071	<0.01	0.01	6266652
Calcium (Ca)	ug/g	2110	6266652	2100	50	6267071	2430	50	6266652
Chromium (Cr)	ug/g	23.0	6266652	4.8	0.3	6267071	1.1	0.3	6266652
Cobalt (Co)	ug/g	1.00	6266652	1.01	0.005	6267071	0.143	0.005	6266652
Copper (Cu)	ug/g	3.6	6266652	4.4	0.5	6267071	2.5	0.5	6266652
Iron (Fe)	ug/g	1010	6266652	1940	3	6267071	274	3	6266652
Lead (Pb)	ug/g	1.54	6266652	1.05	0.03	6267071	0.09	0.03	6266652
Magnesium (Mg)	ug/g	562	6266652	998	100	6267071	829	100	6266652
Manganese (Mn)	ug/g	56.7	6266652	73.5	0.3	6267071	273	0.3	6266652
Molybdenum (Mo)	ug/g	2.71	6266652	0.19	0.05	6267071	0.07	0.05	6266652
Nickel (Ni)	ug/g	15.0	6266652	2.72	0.05	6267071	0.55	0.05	6266652
Phosphorus (P)	ug/g	264	6266652	444	50	6267071	520	50	6266652
Potassium (K)	ug/g	1190	6266652	2230	100	6267071	2640	100	6266652
Selenium (Se)	ug/g	0.1	6266652	0.1	0.1	6267071	<0.1	0.1	6266652
Silver (Ag)	ug/g	<0.05	6266652	<0.05	0.05	6267071	<0.05	0.05	6266652
Sodium (Na)	ug/g	<50	6266652	111	50	6267071	<50	50	6266652
Strontium (Sr)	ug/g	12.5	6266652	26.8	0.5	6267071	9.2	0.5	6266652
Thallium (Tl)	ug/g	0.010	6266652	0.023	0.003	6267071	0.031	0.003	6266652
Tin (Sn)	ug/g	<0.3	6266652	<0.3	0.3	6267071	<0.3	0.3	6266652
Titanium (Ti)	ug/g	34	6266652	68	3	6267071	10.8	0.5	6266652
Uranium (U)	ug/g	0.055	6266652	0.102	0.005	6267071	0.016	0.005	6266652
Vanadium (V)	ug/g	1.39	6266652	2.94	0.05	6267071	0.45	0.05	6266652
Zinc (Zn)	ug/g	17	6266652	22	2	6267071	13	2	6266652

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

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ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJX982			KJX984		KJX986		
Sampling Date		2019/07/19 16:15			2019/07/19 15:35		2019/07/19 15:10		
COC Number		96931			96931		96931		
	UNITS	19-AWAR-S13-Li	RDL	QC Batch	19-AWAR-S14-Sd	QC Batch	19-AWAR-S15-Sd	RDL	QC Batch
Metals									
Antimony (Sb)	ug/g	<0.05	0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Arsenic (As)	ug/g	0.7	0.1	6267071	0.1	6266652	0.8	0.1	6266648
Barium (Ba)	ug/g	32.8	0.3	6267071	12.0	6266652	20.4	0.3	6266648
Beryllium (Be)	ug/g	<0.05	0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Bismuth (Bi)	ug/g	<0.05	0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Boron (B)	ug/g	0.9	0.5	6267071	1.8	6266652	3.3	0.5	6266648
Cadmium (Cd)	ug/g	0.13	0.01	6267071	0.09	6266652	0.04	0.01	6266648
Calcium (Ca)	ug/g	1980	50	6267071	1420	6266652	2350	50	6266648
Chromium (Cr)	ug/g	4.9	0.3	6267071	0.6	6266652	1.5	0.3	6266648
Cobalt (Co)	ug/g	1.07	0.005	6267071	0.107	6266652	0.589	0.005	6266648
Copper (Cu)	ug/g	4.7	0.5	6267071	3.4	6266652	4.7	0.5	6266648
Iron (Fe)	ug/g	1910	3	6267071	190	6266652	809	3	6266648
Lead (Pb)	ug/g	3.32	0.03	6267071	0.08	6266652	0.40	0.03	6266648
Magnesium (Mg)	ug/g	878	100	6267071	321	6266652	593	100	6266648
Manganese (Mn)	ug/g	41.0	0.3	6267071	112	6266652	46.0	0.3	6266648
Molybdenum (Mo)	ug/g	0.20	0.05	6267071	0.17	6266652	0.45	0.05	6266648
Nickel (Ni)	ug/g	2.95	0.05	6267071	1.64	6266652	1.49	0.05	6266648
Phosphorus (P)	ug/g	283	50	6267071	336	6266652	378	50	6266648
Potassium (K)	ug/g	1330	100	6267071	3140	6266652	3310	100	6266648
Selenium (Se)	ug/g	0.2	0.1	6267071	<0.1	6266652	<0.1	0.1	6266648
Silver (Ag)	ug/g	<0.05	0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Sodium (Na)	ug/g	<50	50	6267071	<50	6266652	<50	50	6266648
Strontium (Sr)	ug/g	19.4	0.5	6267071	5.1	6266652	17.4	0.5	6266648
Thallium (Tl)	ug/g	0.019	0.003	6267071	<0.003	6266652	0.006	0.003	6266648
Tin (Sn)	ug/g	<0.3	0.3	6267071	<0.3	6266652	<0.3	0.3	6266648
Titanium (Ti)	ug/g	65	3	6267071	7.1	6266652	20.6	0.5	6266648
Uranium (U)	ug/g	0.099	0.005	6267071	0.019	6266652	0.048	0.005	6266648
Vanadium (V)	ug/g	2.85	0.05	6267071	0.28	6266652	1.04	0.05	6266648
Zinc (Zn)	ug/g	20	2	6267071	13	6266652	24	2	6266648
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

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ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJX988			KJX990		KJX992		
Sampling Date		2019/07/19 14:10			2019/07/19 00:15		2019/07/19 11:45		
COC Number		96931			96931		96931		
	UNITS	19-AWAR-S16-Cr	RDL	QC Batch	19-AWAR-S17-Li	QC Batch	19-AWAR-S18-Li	RDL	QC Batch
Metals									
Antimony (Sb)	ug/g	<0.05	0.05	6266648	<0.05	6266652	<0.05	0.05	6266648
Arsenic (As)	ug/g	<0.1	0.1	6266648	0.9	6266652	0.7	0.1	6266648
Barium (Ba)	ug/g	2.2	0.3	6266648	24.0	6266652	28.9	0.3	6266648
Beryllium (Be)	ug/g	<0.05	0.05	6266648	<0.05	6266652	<0.05	0.05	6266648
Bismuth (Bi)	ug/g	<0.05	0.05	6266648	0.06	6266652	0.08	0.05	6266648
Boron (B)	ug/g	2.0	0.5	6266648	1.1	6266652	0.7	0.5	6266648
Cadmium (Cd)	ug/g	<0.01	0.01	6266648	0.08	6266652	0.06	0.01	6266648
Calcium (Ca)	ug/g	299	50	6266648	5170	6266652	4440	50	6266648
Chromium (Cr)	ug/g	<0.3	0.3	6266648	6.0	6266652	12.4	0.3	6266648
Cobalt (Co)	ug/g	0.039	0.005	6266648	1.09	6266652	1.18	0.005	6266648
Copper (Cu)	ug/g	1.3	0.5	6266648	5.3	6266652	5.7	0.5	6266648
Iron (Fe)	ug/g	77	3	6266648	1880	6266652	1620	3	6266648
Lead (Pb)	ug/g	<0.03	0.03	6266648	1.26	6266652	1.87	0.03	6266648
Magnesium (Mg)	ug/g	156	100	6266648	966	6266652	770	100	6266648
Manganese (Mn)	ug/g	7.7	0.3	6266648	35.6	6266652	41.1	0.3	6266648
Molybdenum (Mo)	ug/g	<0.05	0.05	6266648	0.10	6266652	1.03	0.05	6266648
Nickel (Ni)	ug/g	0.30	0.05	6266648	2.55	6266652	7.17	0.05	6266648
Phosphorus (P)	ug/g	269	50	6266648	341	6266652	440	50	6266648
Potassium (K)	ug/g	1610	100	6266648	1300	6266652	1470	100	6266648
Selenium (Se)	ug/g	<0.1	0.1	6266648	0.2	6266652	0.2	0.1	6266648
Silver (Ag)	ug/g	<0.05	0.05	6266648	<0.05	6266652	<0.05	0.05	6266648
Sodium (Na)	ug/g	<50	50	6266648	<50	6266652	52	50	6266648
Strontium (Sr)	ug/g	0.9	0.5	6266648	27.2	6266652	26.4	0.5	6266648
Thallium (Tl)	ug/g	<0.003	0.003	6266648	0.024	6266652	0.022	0.003	6266648
Tin (Sn)	ug/g	<0.3	0.3	6266648	<0.3	6266652	<0.3	0.3	6266648
Titanium (Ti)	ug/g	3.0	0.5	6266648	74	6266652	71	3	6266648
Uranium (U)	ug/g	<0.005	0.005	6266648	0.129	6266652	0.125	0.005	6266648
Vanadium (V)	ug/g	0.13	0.05	6266648	2.83	6266652	2.33	0.05	6266648
Zinc (Zn)	ug/g	2	2	6266648	18	6266652	13	2	6266648
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



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BV Labs Job #: B9K9920
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Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJX994			KJX996			KJX998		
Sampling Date		2019/07/19 13:45			2019/07/19 13:20			2019/07/21 08:05		
COC Number		96931			96931			96931		
	UNITS	19-AWAR-S19-Li	RDL	QC Batch	19-AWAR-S20-Li	RDL	QC Batch	19-REF1-S1-Sd	RDL	QC Batch
Metals										
Antimony (Sb)	ug/g	<0.05	0.05	6267071	<0.05	0.05	6266648	<0.05	0.05	6267071
Arsenic (As)	ug/g	2.4	0.1	6267071	1.3	0.1	6266648	0.3	0.1	6267071
Barium (Ba)	ug/g	52.1	0.3	6267071	25.0	0.3	6266648	6.1	0.3	6267071
Beryllium (Be)	ug/g	0.06	0.05	6267071	<0.05	0.05	6266648	<0.05	0.05	6267071
Bismuth (Bi)	ug/g	0.07	0.05	6267071	<0.05	0.05	6266648	<0.05	0.05	6267071
Boron (B)	ug/g	1.8	0.5	6267071	1.0	0.5	6266648	1.9	0.5	6267071
Cadmium (Cd)	ug/g	0.10	0.01	6267071	0.06	0.01	6266648	0.01	0.01	6267071
Calcium (Ca)	ug/g	8090	50	6267071	15600	50	6266648	2810	50	6267071
Chromium (Cr)	ug/g	31.4	0.3	6267071	60	3	6266648	<0.3	0.3	6267071
Cobalt (Co)	ug/g	4.56	0.005	6267071	2.54	0.005	6266648	0.077	0.005	6267071
Copper (Cu)	ug/g	16.4	0.5	6267071	8.4	0.5	6266648	2.0	0.5	6267071
Iron (Fe)	ug/g	8060	30	6267071	3620	3	6266648	60	3	6267071
Lead (Pb)	ug/g	2.53	0.03	6267071	1.52	0.03	6266648	0.07	0.03	6267071
Magnesium (Mg)	ug/g	3660	100	6267071	1890	100	6266648	263	100	6267071
Manganese (Mn)	ug/g	131	0.3	6267071	62.5	0.3	6266648	107	0.3	6267071
Molybdenum (Mo)	ug/g	0.21	0.05	6267071	5.69	0.05	6266648	0.17	0.05	6267071
Nickel (Ni)	ug/g	12.2	0.05	6267071	33.7	0.05	6266648	0.51	0.05	6267071
Phosphorus (P)	ug/g	415	50	6267071	448	50	6266648	510	50	6267071
Potassium (K)	ug/g	1400	100	6267071	2120	100	6266648	4350	100	6267071
Selenium (Se)	ug/g	0.2	0.1	6267071	<0.1	0.1	6266648	<0.1	0.1	6267071
Silver (Ag)	ug/g	<0.05	0.05	6267071	<0.05	0.05	6266648	<0.05	0.05	6267071
Sodium (Na)	ug/g	65	50	6267071	141	50	6266648	<50	50	6267071
Strontium (Sr)	ug/g	29.3	0.5	6267071	34.3	0.5	6266648	12.4	0.5	6267071
Thallium (Tl)	ug/g	0.056	0.003	6267071	0.029	0.003	6266648	<0.003	0.003	6267071
Tin (Sn)	ug/g	<0.3	0.3	6267071	<0.3	0.3	6266648	<0.3	0.3	6267071
Titanium (Ti)	ug/g	342	30	6267071	154	5	6266648	1.2	0.5	6267071
Uranium (U)	ug/g	0.255	0.005	6267071	0.143	0.005	6266648	0.014	0.005	6267071
Vanadium (V)	ug/g	13.1	0.05	6267071	6.19	0.05	6266648	<0.05	0.05	6267071
Zinc (Zn)	ug/g	25	2	6267071	20	2	6266648	16	2	6267071

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJY000	KJY002	KJY004	KJY006			KJY008		
Sampling Date		2019/07/21 20:35	2019/07/21 09:20	2019/07/21 10:10	2019/07/21 22:40			2019/07/21 11:50		
COC Number		96931	96931	96931	96931			96931		
	UNITS	19-REF1-S2-Li	19-REF1-S3-LT	19-REF1-S4-Br	19-REF1-S5-Sd	RDL	QC Batch	19-REF2-S1-LT	RDL	QC Batch

Metals										
Antimony (Sb)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	6266652	<0.05	0.05	6267071
Arsenic (As)	ug/g	0.4	<0.1	<0.1	0.4	0.1	6266652	<0.1	0.1	6267071
Barium (Ba)	ug/g	9.2	30.8	5.8	6.6	0.3	6266652	31.0	0.3	6267071
Beryllium (Be)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	6266652	<0.05	0.05	6267071
Bismuth (Bi)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	6266652	<0.05	0.05	6267071
Boron (B)	ug/g	0.7	7.1	7.8	1.4	0.5	6266652	7.5	0.5	6267071
Cadmium (Cd)	ug/g	0.07	<0.01	0.01	<0.01	0.01	6266652	<0.01	0.01	6267071
Calcium (Ca)	ug/g	2100	2170	1990	2030	50	6266652	2140	50	6267071
Chromium (Cr)	ug/g	<0.3	<0.3	<0.3	0.6	0.3	6266652	<0.3	0.3	6267071
Cobalt (Co)	ug/g	0.374	0.057	0.076	0.110	0.005	6266652	0.021	0.005	6267071
Copper (Cu)	ug/g	1.3	1.9	2.6	2.3	0.5	6266652	2.2	0.5	6267071
Iron (Fe)	ug/g	129	15	14	106	3	6266652	17	3	6267071
Lead (Pb)	ug/g	1.54	<0.03	<0.03	0.05	0.03	6266652	<0.03	0.03	6267071
Magnesium (Mg)	ug/g	406	576	824	327	100	6266652	523	100	6267071
Manganese (Mn)	ug/g	86.1	448	54.8	115	0.3	6266652	524	2	6267071
Molybdenum (Mo)	ug/g	<0.05	<0.05	<0.05	0.26	0.05	6266652	<0.05	0.05	6267071
Nickel (Ni)	ug/g	0.56	0.42	1.38	0.77	0.05	6266652	0.37	0.05	6267071
Phosphorus (P)	ug/g	254	519	676	582	50	6266652	534	50	6267071
Potassium (K)	ug/g	1040	2440	3100	5410	100	6266652	2490	100	6267071
Selenium (Se)	ug/g	0.1	<0.1	<0.1	<0.1	0.1	6266652	<0.1	0.1	6267071
Silver (Ag)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	6266652	<0.05	0.05	6267071
Sodium (Na)	ug/g	<50	<50	<50	<50	50	6266652	<50	50	6267071
Strontium (Sr)	ug/g	7.5	2.4	6.2	8.8	0.5	6266652	2.8	0.5	6267071
Thallium (Tl)	ug/g	<0.003	0.087	<0.003	<0.003	0.003	6266652	0.128	0.003	6267071
Tin (Sn)	ug/g	<0.3	<0.3	<0.3	<0.3	0.3	6266652	<0.3	0.3	6267071
Titanium (Ti)	ug/g	3.4	0.8	0.9	0.9	0.5	6266652	1.0	0.5	6267071
Uranium (U)	ug/g	0.748	<0.005	<0.005	0.005	0.005	6266652	<0.005	0.005	6267071
Vanadium (V)	ug/g	0.15	<0.05	<0.05	<0.05	0.05	6266652	<0.05	0.05	6267071
Zinc (Zn)	ug/g	14	13	91	12	2	6266652	15	2	6267071

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJY008			KJY010		KJY012		
Sampling Date		2019/07/21 11:50			2019/07/21 00:30		2019/07/21 13:15		
COC Number		96931			96931		96931		
	UNITS	19-REF2-S1-LT Lab-Dup	RDL	QC Batch	19-REF2-S2-Br	QC Batch	19-REF2-S3-Li	RDL	QC Batch
Metals									
Antimony (Sb)	ug/g	<0.05	0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Arsenic (As)	ug/g	<0.1	0.1	6267071	<0.1	6266652	0.2	0.1	6266648
Barium (Ba)	ug/g	30.6	0.3	6267071	15.0	6266652	8.8	0.3	6266648
Beryllium (Be)	ug/g	<0.05	0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Bismuth (Bi)	ug/g	<0.05	0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Boron (B)	ug/g	7.7	0.5	6267071	3.7	6266652	1.0	0.5	6266648
Cadmium (Cd)	ug/g	<0.01	0.01	6267071	0.06	6266652	0.07	0.01	6266648
Calcium (Ca)	ug/g	2180	50	6267071	1470	6266652	1210	50	6266648
Chromium (Cr)	ug/g	<0.3	0.3	6267071	<0.3	6266652	<0.3	0.3	6266648
Cobalt (Co)	ug/g	0.022	0.005	6267071	0.337	6266652	0.234	0.005	6266648
Copper (Cu)	ug/g	2.2	0.5	6267071	2.8	6266652	1.7	0.5	6266648
Iron (Fe)	ug/g	17	3	6267071	21	6266652	88	3	6266648
Lead (Pb)	ug/g	<0.03	0.03	6267071	<0.03	6266652	0.34	0.03	6266648
Magnesium (Mg)	ug/g	525	100	6267071	847	6266652	402	100	6266648
Manganese (Mn)	ug/g	553	2	6267071	445	6266652	222	0.3	6266648
Molybdenum (Mo)	ug/g	<0.05	0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Nickel (Ni)	ug/g	0.37	0.05	6267071	2.04	6266652	0.72	0.05	6266648
Phosphorus (P)	ug/g	543	50	6267071	663	6266652	338	50	6266648
Potassium (K)	ug/g	2550	100	6267071	2440	6266652	1290	100	6266648
Selenium (Se)	ug/g	<0.1	0.1	6267071	<0.1	6266652	0.1	0.1	6266648
Silver (Ag)	ug/g	<0.05	0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Sodium (Na)	ug/g	<50	50	6267071	<50	6266652	<50	50	6266648
Strontium (Sr)	ug/g	2.8	0.5	6267071	4.4	6266652	3.9	0.5	6266648
Thallium (Tl)	ug/g	0.130	0.003	6267071	<0.003	6266652	<0.003	0.003	6266648
Tin (Sn)	ug/g	<0.3	0.3	6267071	<0.3	6266652	<0.3	0.3	6266648
Titanium (Ti)	ug/g	0.9	0.5	6267071	0.8	6266652	2.8	0.5	6266648
Uranium (U)	ug/g	<0.005	0.005	6267071	<0.005	6266652	0.007	0.005	6266648
Vanadium (V)	ug/g	<0.05	0.05	6267071	<0.05	6266652	0.13	0.05	6266648
Zinc (Zn)	ug/g	15	2	6267071	63	6266652	24	2	6266648
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Lab-Dup = Laboratory Initiated Duplicate									

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VERITASBV Labs Job #: B9K9920
Report Date: 2019/09/03Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJY014	KJY016		KJY018		KJY020		
Sampling Date		2019/07/21 13:35	2019/07/21 14:05		2019/07/21 16:35		2019/07/21 16:45		
COC Number		96931	96931		96931		96931		
	UNITS	19-REF2-S4-Sd	19-REF2-S5-Br	QC Batch	19-REF3-S1-Li	QC Batch	19-REF3-S2-Li	RDL	QC Batch
Metals									
Antimony (Sb)	ug/g	<0.05	<0.05	6267071	<0.05	6266648	<0.05	0.05	6267071
Arsenic (As)	ug/g	<0.1	<0.1	6267071	0.1	6266648	0.1	0.1	6267071
Barium (Ba)	ug/g	16.0	17.5	6267071	3.6	6266648	7.5	0.3	6267071
Beryllium (Be)	ug/g	<0.05	<0.05	6267071	<0.05	6266648	<0.05	0.05	6267071
Bismuth (Bi)	ug/g	<0.05	<0.05	6267071	<0.05	6266648	<0.05	0.05	6267071
Boron (B)	ug/g	2.5	3.5	6267071	<0.5	6266648	<0.5	0.5	6267071
Cadmium (Cd)	ug/g	0.02	0.05	6267071	0.11	6266648	0.08	0.01	6267071
Calcium (Ca)	ug/g	2650	1510	6267071	641	6266648	711	50	6267071
Chromium (Cr)	ug/g	0.6	<0.3	6267071	1.2	6266648	1.8	0.3	6267071
Cobalt (Co)	ug/g	0.158	0.402	6267071	0.076	6266648	0.170	0.005	6267071
Copper (Cu)	ug/g	4.6	2.7	6267071	1.1	6266648	1.1	0.5	6267071
Iron (Fe)	ug/g	91	25	6267071	98	6266648	183	3	6267071
Lead (Pb)	ug/g	0.03	<0.03	6267071	0.46	6266648	0.70	0.03	6267071
Magnesium (Mg)	ug/g	429	885	6267071	312	6266648	365	100	6267071
Manganese (Mn)	ug/g	57.0	466	6267071	40.2	6266648	54.3	0.3	6267071
Molybdenum (Mo)	ug/g	0.51	<0.05	6267071	0.13	6266648	0.18	0.05	6267071
Nickel (Ni)	ug/g	1.74	2.92	6267071	0.84	6266648	1.36	0.05	6267071
Phosphorus (P)	ug/g	397	841	6267071	352	6266648	291	50	6267071
Potassium (K)	ug/g	3860	2880	6267071	1180	6266648	1220	100	6267071
Selenium (Se)	ug/g	<0.1	<0.1	6267071	0.1	6266648	0.2	0.1	6267071
Silver (Ag)	ug/g	<0.05	<0.05	6267071	<0.05	6266648	<0.05	0.05	6267071
Sodium (Na)	ug/g	<50	<50	6267071	82	6266648	<50	50	6267071
Strontium (Sr)	ug/g	9.1	3.9	6267071	3.0	6266648	3.6	0.5	6267071
Thallium (Tl)	ug/g	<0.003	<0.003	6267071	0.005	6266648	0.008	0.003	6267071
Tin (Sn)	ug/g	<0.3	<0.3	6267071	<0.3	6266648	<0.3	0.3	6267071
Titanium (Ti)	ug/g	1.1	1.0	6267071	3.3	6266648	5.9	0.5	6267071
Uranium (U)	ug/g	<0.005	<0.005	6267071	0.008	6266648	0.013	0.005	6267071
Vanadium (V)	ug/g	0.06	<0.05	6267071	0.15	6266648	0.26	0.05	6267071
Zinc (Zn)	ug/g	13	21	6267071	8	6266648	12	2	6267071
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJY022		KJY024		KJY026		KJY028		
Sampling Date		2019/07/21 16:05		2019/07/21 15:30		2019/07/21 15:40		2019/07/22 13:55		
COC Number		96931		96931		96931		96931		
	UNITS	19-REF3-S3-Li	QC Batch	19-REF3-S4-Li	QC Batch	19-REF3-S5-Sd	QC Batch	19-TF-S1-Cr	RDL	QC Batch
Metals										
Antimony (Sb)	ug/g	<0.05	6266648	<0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Arsenic (As)	ug/g	0.1	6266648	0.7	6267071	<0.1	6266652	0.4	0.1	6266648
Barium (Ba)	ug/g	7.3	6266648	15.1	6267071	7.3	6266652	1.5	0.3	6266648
Beryllium (Be)	ug/g	<0.05	6266648	<0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Bismuth (Bi)	ug/g	<0.05	6266648	<0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Boron (B)	ug/g	<0.5	6266648	1.1	6267071	3.0	6266652	2.3	0.5	6266648
Cadmium (Cd)	ug/g	0.06	6266648	0.12	6267071	0.03	6266652	<0.01	0.01	6266648
Calcium (Ca)	ug/g	1950	6266648	2320	6267071	2070	6266652	291	50	6266648
Chromium (Cr)	ug/g	0.6	6266648	3.4	6267071	0.5	6266652	<0.3	0.3	6266648
Cobalt (Co)	ug/g	0.096	6266648	0.268	6267071	0.203	6266652	0.006	0.005	6266648
Copper (Cu)	ug/g	1.0	6266648	2.0	6267071	4.9	6266652	2.1	0.5	6266648
Iron (Fe)	ug/g	149	6266648	516	6267071	54	6266652	10	3	6266648
Lead (Pb)	ug/g	0.77	6266648	1.07	6267071	0.03	6266652	<0.03	0.03	6266648
Magnesium (Mg)	ug/g	436	6266648	588	6267071	369	6266652	133	100	6266648
Manganese (Mn)	ug/g	37.9	6266648	42.8	6267071	87.7	6266652	7.2	0.3	6266648
Molybdenum (Mo)	ug/g	<0.05	6266648	0.33	6267071	0.59	6266652	<0.05	0.05	6266648
Nickel (Ni)	ug/g	0.30	6266648	2.14	6267071	2.54	6266652	0.10	0.05	6266648
Phosphorus (P)	ug/g	326	6266648	657	6267071	480	6266652	236	50	6266648
Potassium (K)	ug/g	1250	6266648	2030	6267071	5650	6266652	1930	100	6266648
Selenium (Se)	ug/g	0.1	6266648	0.1	6267071	<0.1	6266652	<0.1	0.1	6266648
Silver (Ag)	ug/g	<0.05	6266648	<0.05	6267071	<0.05	6266652	<0.05	0.05	6266648
Sodium (Na)	ug/g	168	6266648	129	6267071	121	6266652	<50	50	6266648
Strontium (Sr)	ug/g	7.1	6266648	8.1	6267071	8.5	6266652	<0.5	0.5	6266648
Thallium (Tl)	ug/g	0.007	6266648	0.010	6267071	<0.003	6266652	<0.003	0.003	6266648
Tin (Sn)	ug/g	<0.3	6266648	<0.3	6267071	<0.3	6266652	<0.3	0.3	6266648
Titanium (Ti)	ug/g	5.3	6266648	19.7	6267071	1.2	6266652	<0.5	0.5	6266648
Uranium (U)	ug/g	0.010	6266648	0.060	6267071	0.038	6266652	<0.005	0.005	6266648
Vanadium (V)	ug/g	0.24	6266648	0.75	6267071	0.05	6266652	<0.05	0.05	6266648
Zinc (Zn)	ug/g	14	6266648	29	6267071	17	6266652	3	2	6266648
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										

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VERITASBV Labs Job #: B9K9920
Report Date: 2019/09/03Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJY030		KJY032			KJY034		
Sampling Date		2019/07/22 13:20		2019/07/22 23:45			2019/07/22 15:05		
COC Number		96931		96931			96931		
	UNITS	19-TF-S2-Li	QC Batch	19-TF-S3-Sd	RDL	QC Batch	19-TF-S4-LT	RDL	QC Batch
Metals									
Antimony (Sb)	ug/g	<0.05	6266648	<0.05	0.05	6267071	<0.05	0.05	6266652
Arsenic (As)	ug/g	15.6	6266648	12.0	0.1	6267071	4.2	0.1	6266652
Barium (Ba)	ug/g	24.1	6266648	13.4	0.3	6267071	41.3	0.3	6266652
Beryllium (Be)	ug/g	<0.05	6266648	<0.05	0.05	6267071	<0.05	0.05	6266652
Bismuth (Bi)	ug/g	<0.05	6266648	<0.05	0.05	6267071	<0.05	0.05	6266652
Boron (B)	ug/g	1.8	6266648	2.5	0.5	6267071	9.0	0.5	6266652
Cadmium (Cd)	ug/g	0.13	6266648	0.01	0.01	6267071	<0.01	0.01	6266652
Calcium (Ca)	ug/g	11900	6266648	3130	50	6267071	2910	50	6266652
Chromium (Cr)	ug/g	1.1	6266648	1.3	0.3	6267071	0.4	0.3	6266652
Cobalt (Co)	ug/g	0.379	6266648	0.073	0.005	6267071	0.058	0.005	6266652
Copper (Cu)	ug/g	2.5	6266648	3.9	0.5	6267071	2.2	0.5	6266652
Iron (Fe)	ug/g	599	6266648	176	3	6267071	111	3	6266652
Lead (Pb)	ug/g	2.66	6266648	0.90	0.03	6267071	0.35	0.03	6266652
Magnesium (Mg)	ug/g	736	6266648	351	100	6267071	601	100	6266652
Manganese (Mn)	ug/g	67.7	6266648	55.4	0.3	6267071	776	2	6266652
Molybdenum (Mo)	ug/g	0.14	6266648	0.52	0.05	6267071	0.06	0.05	6266652
Nickel (Ni)	ug/g	1.18	6266648	1.13	0.05	6267071	0.43	0.05	6266652
Phosphorus (P)	ug/g	270	6266648	388	50	6267071	471	50	6266652
Potassium (K)	ug/g	989	6266648	5560	100	6267071	2250	100	6266652
Selenium (Se)	ug/g	0.1	6266648	<0.1	0.1	6267071	<0.1	0.1	6266652
Silver (Ag)	ug/g	<0.05	6266648	<0.05	0.05	6267071	<0.05	0.05	6266652
Sodium (Na)	ug/g	105	6266648	<50	50	6267071	<50	50	6266652
Strontium (Sr)	ug/g	36.2	6266648	15.2	0.5	6267071	6.2	0.5	6266652
Thallium (Tl)	ug/g	0.006	6266648	<0.003	0.003	6267071	0.155	0.003	6266652
Tin (Sn)	ug/g	<0.3	6266648	<0.3	0.3	6267071	<0.3	0.3	6266652
Titanium (Ti)	ug/g	12.3	6266648	2.0	0.5	6267071	2.0	0.5	6266652
Uranium (U)	ug/g	0.039	6266648	0.014	0.005	6267071	<0.005	0.005	6266652
Vanadium (V)	ug/g	0.66	6266648	0.10	0.05	6267071	0.09	0.05	6266652
Zinc (Zn)	ug/g	31	6266648	12	2	6267071	19	2	6266652
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

BUREAU
VERITASBV Labs Job #: B9K9920
Report Date: 2019/09/03Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJY036	KJY038	KJY040	KJY040	KJY042	KJY046		
Sampling Date		2019/07/22 11:15	2019/07/22 10:30	2019/07/22 08:30	2019/07/22 08:30	2019/07/22 09:40	2019/07/23 00:25		
COC Number		96931	96931	96931	96931	96931	96931		
	UNITS	19-TF-S5-Li	19-TF-S6-LT	19-TF-S11-Br	19-TF-S11-Br Lab-Dup	19-TF-S12-Sd	19-WRSA-S1-LT	RDL	QC Batch

Metals									
Antimony (Sb)	ug/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6266648
Arsenic (As)	ug/g	24.4	11.8	7.1	7.3	4.8	14.1	0.1	6266648
Barium (Ba)	ug/g	12.4	25.6	8.4	8.5	16.7	27.5	0.3	6266648
Beryllium (Be)	ug/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6266648
Bismuth (Bi)	ug/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6266648
Boron (B)	ug/g	1.6	10.4	5.8	5.6	2.4	8.7	0.5	6266648
Cadmium (Cd)	ug/g	0.10	<0.01	0.02	0.02	0.01	<0.01	0.01	6266648
Calcium (Ca)	ug/g	2550	2380	1630	1600	2740	2890	50	6266648
Chromium (Cr)	ug/g	1.1	0.4	<0.3	<0.3	0.4	0.8	0.3	6266648
Cobalt (Co)	ug/g	0.331	0.070	0.085	0.085	0.116	0.104	0.005	6266648
Copper (Cu)	ug/g	3.6	2.7	3.1	3.1	3.3	2.3	0.5	6266648
Iron (Fe)	ug/g	670	161	108	108	185	266	3	6266648
Lead (Pb)	ug/g	3.89	0.83	0.34	0.38	0.62	0.97	0.03	6266648
Magnesium (Mg)	ug/g	573	578	939	940	260	711	100	6266648
Manganese (Mn)	ug/g	116	247	73.9	71.6	81.7	356	0.3	6266648
Molybdenum (Mo)	ug/g	0.13	0.05	<0.05	<0.05	0.43	0.10	0.05	6266648
Nickel (Ni)	ug/g	1.23	0.47	1.50	1.50	0.67	0.46	0.05	6266648
Phosphorus (P)	ug/g	575	431	583	541	400	465	50	6266648
Potassium (K)	ug/g	1500	2690	2540	2500	5480	2620	100	6266648
Selenium (Se)	ug/g	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	6266648
Silver (Ag)	ug/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6266648
Sodium (Na)	ug/g	164	<50	<50	<50	<50	<50	50	6266648
Strontium (Sr)	ug/g	10.4	3.7	6.4	6.3	25.2	5.9	0.5	6266648
Thallium (Tl)	ug/g	0.004	0.120	<0.003	<0.003	<0.003	0.025	0.003	6266648
Tin (Sn)	ug/g	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	6266648
Titanium (Ti)	ug/g	7.8	1.8	1.6	1.8	2.8	2.9	0.5	6266648
Uranium (U)	ug/g	0.026	<0.005	<0.005	<0.005	0.011	<0.005	0.005	6266648
Vanadium (V)	ug/g	0.52	0.10	0.08	0.08	0.15	0.22	0.05	6266648
Zinc (Zn)	ug/g	20	15	54	54	17	15	2	6266648

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

BUREAU
VERITASBV Labs Job #: B9K9920
Report Date: 2019/09/03Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJY048			KJY050			KJY052		
Sampling Date		2019/07/23 10:35			2019/07/23 09:30			2019/07/23 10:00		
COC Number		96931			96931			96931		
	UNITS	19-WRSA-S2-Sd	RDL	QC Batch	19-WRSA-S5-Li	RDL	QC Batch	19-WRSA-S6-Br	RDL	QC Batch

Metals

Antimony (Sb)	ug/g	<0.05	0.05	6267071	0.06	0.05	6266652	<0.05	0.05	6266648
Arsenic (As)	ug/g	12.9	0.1	6267071	99.0	0.5	6266652	4.3	0.1	6266648
Barium (Ba)	ug/g	13.6	0.3	6267071	13.6	0.3	6266652	9.7	0.3	6266648
Beryllium (Be)	ug/g	<0.05	0.05	6267071	<0.05	0.05	6266652	<0.05	0.05	6266648
Bismuth (Bi)	ug/g	<0.05	0.05	6267071	<0.05	0.05	6266652	<0.05	0.05	6266648
Boron (B)	ug/g	2.7	0.5	6267071	1.7	0.5	6266652	4.0	0.5	6266648
Cadmium (Cd)	ug/g	<0.01	0.01	6267071	0.11	0.01	6266652	0.03	0.01	6266648
Calcium (Ca)	ug/g	3310	50	6267071	7440	50	6266652	1720	50	6266648
Chromium (Cr)	ug/g	0.5	0.3	6267071	3.7	0.3	6266652	<0.3	0.3	6266648
Cobalt (Co)	ug/g	0.182	0.005	6267071	1.08	0.005	6266652	0.439	0.005	6266648
Copper (Cu)	ug/g	3.6	0.5	6267071	6.5	0.5	6266652	2.7	0.5	6266648
Iron (Fe)	ug/g	275	3	6267071	2360	3	6266652	141	3	6266648
Lead (Pb)	ug/g	1.10	0.03	6267071	6.35	0.03	6266652	0.30	0.03	6266648
Magnesium (Mg)	ug/g	419	100	6267071	993	100	6266652	956	100	6266648
Manganese (Mn)	ug/g	33.5	0.3	6267071	68.1	0.3	6266652	170	0.3	6266648
Molybdenum (Mo)	ug/g	0.35	0.05	6267071	0.35	0.05	6266652	<0.05	0.05	6266648
Nickel (Ni)	ug/g	1.58	0.05	6267071	3.37	0.05	6266652	1.85	0.05	6266648
Phosphorus (P)	ug/g	374	50	6267071	392	50	6266652	818	50	6266648
Potassium (K)	ug/g	5580	100	6267071	1090	100	6266652	3070	100	6266648
Selenium (Se)	ug/g	<0.1	0.1	6267071	0.1	0.1	6266652	<0.1	0.1	6266648
Silver (Ag)	ug/g	<0.05	0.05	6267071	<0.05	0.05	6266652	<0.05	0.05	6266648
Sodium (Na)	ug/g	<50	50	6267071	77	50	6266652	<50	50	6266648
Strontium (Sr)	ug/g	16.7	0.5	6267071	29.0	0.5	6266652	5.7	0.5	6266648
Thallium (Tl)	ug/g	<0.003	0.003	6267071	0.010	0.003	6266652	<0.003	0.003	6266648
Tin (Sn)	ug/g	<0.3	0.3	6267071	<0.3	0.3	6266652	<0.3	0.3	6266648
Titanium (Ti)	ug/g	3.7	0.5	6267071	38	3	6266652	2.4	0.5	6266648
Uranium (U)	ug/g	0.010	0.005	6267071	0.083	0.005	6266652	<0.005	0.005	6266648
Vanadium (V)	ug/g	0.26	0.05	6267071	2.23	0.05	6266652	0.13	0.05	6266648
Zinc (Zn)	ug/g	10	2	6267071	26	2	6266652	67	2	6266648

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJY054			KJY056		KJY058	KJY060		
Sampling Date		2019/07/23 08:25			2019/07/24 08:00		2019/07/23 14:50	2019/07/23 14:00		
COC Number		96931			96931		96931	96931		
	UNITS	19-WRSA-S7-Li	RDL	QC Batch	19-WRSA-S8-Br	QC Batch	19-WRSA-S9-Cr	19-WRSA-S10-Cr	RDL	QC Batch

Metals

Antimony (Sb)	ug/g	<0.05	0.05	6266648	<0.05	6266652	<0.05	<0.05	0.05	6266648
Arsenic (As)	ug/g	8.1	0.1	6266648	0.3	6266652	<0.1	<0.1	0.1	6266648
Barium (Ba)	ug/g	20.4	0.3	6266648	10.7	6266652	1.2	1.2	0.3	6266648
Beryllium (Be)	ug/g	<0.05	0.05	6266648	<0.05	6266652	<0.05	<0.05	0.05	6266648
Bismuth (Bi)	ug/g	0.07	0.05	6266648	<0.05	6266652	<0.05	<0.05	0.05	6266648
Boron (B)	ug/g	2.0	0.5	6266648	4.8	6266652	1.4	1.2	0.5	6266648
Cadmium (Cd)	ug/g	0.09	0.01	6266648	0.02	6266652	<0.01	<0.01	0.01	6266648
Calcium (Ca)	ug/g	9220	50	6266648	1820	6266652	223	242	50	6266648
Chromium (Cr)	ug/g	7.8	0.3	6266648	<0.3	6266652	<0.3	<0.3	0.3	6266648
Cobalt (Co)	ug/g	1.37	0.005	6266648	0.170	6266652	0.034	0.017	0.005	6266648
Copper (Cu)	ug/g	5.6	0.5	6266648	2.6	6266652	1.4	1.5	0.5	6266648
Iron (Fe)	ug/g	2960	3	6266648	97	6266652	18	23	3	6266648
Lead (Pb)	ug/g	2.62	0.03	6266648	0.07	6266652	<0.03	<0.03	0.03	6266648
Magnesium (Mg)	ug/g	1490	100	6266648	895	6266652	128	129	100	6266648
Manganese (Mn)	ug/g	91.5	0.3	6266648	55.7	6266652	11.8	9.4	0.3	6266648
Molybdenum (Mo)	ug/g	0.40	0.05	6266648	<0.05	6266652	<0.05	<0.05	0.05	6266648
Nickel (Ni)	ug/g	4.29	0.05	6266648	1.67	6266652	0.35	0.19	0.05	6266648
Phosphorus (P)	ug/g	324	50	6266648	646	6266652	259	247	50	6266648
Potassium (K)	ug/g	1040	100	6266648	2730	6266652	1760	1770	100	6266648
Selenium (Se)	ug/g	0.1	0.1	6266648	<0.1	6266652	<0.1	<0.1	0.1	6266648
Silver (Ag)	ug/g	<0.05	0.05	6266648	<0.05	6266652	<0.05	<0.05	0.05	6266648
Sodium (Na)	ug/g	341	50	6266648	192	6266652	<50	<50	50	6266648
Strontium (Sr)	ug/g	52.3	0.5	6266648	9.5	6266652	0.6	0.6	0.5	6266648
Thallium (Tl)	ug/g	0.013	0.003	6266648	<0.003	6266652	<0.003	<0.003	0.003	6266648
Tin (Sn)	ug/g	<0.3	0.3	6266648	<0.3	6266652	<0.3	<0.3	0.3	6266648
Titanium (Ti)	ug/g	52	3	6266648	2.2	6266652	0.7	0.8	0.5	6266648
Uranium (U)	ug/g	0.076	0.005	6266648	<0.005	6266652	<0.005	<0.005	0.005	6266648
Vanadium (V)	ug/g	3.95	0.05	6266648	0.12	6266652	<0.05	<0.05	0.05	6266648
Zinc (Zn)	ug/g	28	2	6266648	47	6266652	2	2	2	6266648

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



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VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ICP/MS (TISSUE)

BV Labs ID		KJY062		KJY064			KJY066		
Sampling Date		2019/07/23 08:55		2019/07/23 13:15			2019/07/23 07:55		
COC Number		96931		96931			96931		
	UNITS	19-WRSA-S11-Br	RDL	19-WRSA-S12-Li	RDL	QC Batch	19-TF-S14-Li	RDL	QC Batch
Metals									
Antimony (Sb)	ug/g	<0.05	0.05	<0.05	0.05	6267071	<0.05	0.05	6266652
Arsenic (As)	ug/g	6.0	0.1	92.8	0.5	6267071	1.6	0.1	6266652
Barium (Ba)	ug/g	11.6	0.3	12.4	0.3	6267071	8.1	0.3	6266652
Beryllium (Be)	ug/g	<0.05	0.05	<0.05	0.05	6267071	<0.05	0.05	6266652
Bismuth (Bi)	ug/g	<0.05	0.05	<0.05	0.05	6267071	<0.05	0.05	6266652
Boron (B)	ug/g	8.1	0.5	1.1	0.5	6267071	<0.5	0.5	6266652
Cadmium (Cd)	ug/g	0.02	0.01	0.08	0.01	6267071	0.05	0.01	6266652
Calcium (Ca)	ug/g	2220	50	3970	50	6267071	2060	50	6266652
Chromium (Cr)	ug/g	0.6	0.3	5.1	0.3	6267071	14.2	0.3	6266652
Cobalt (Co)	ug/g	0.225	0.005	0.604	0.005	6267071	0.496	0.005	6266652
Copper (Cu)	ug/g	3.0	0.5	5.4	0.5	6267071	2.0	0.5	6266652
Iron (Fe)	ug/g	230	3	1560	3	6267071	465	3	6266652
Lead (Pb)	ug/g	0.31	0.03	15.6	0.03	6267071	0.70	0.03	6266652
Magnesium (Mg)	ug/g	950	100	623	100	6267071	412	100	6266652
Manganese (Mn)	ug/g	91.4	0.3	69.8	0.3	6267071	102	0.3	6266652
Molybdenum (Mo)	ug/g	0.05	0.05	0.25	0.05	6267071	1.76	0.05	6266652
Nickel (Ni)	ug/g	2.92	0.05	3.32	0.05	6267071	9.64	0.05	6266652
Phosphorus (P)	ug/g	641	50	291	50	6267071	290	50	6266652
Potassium (K)	ug/g	2850	100	1140	100	6267071	1120	100	6266652
Selenium (Se)	ug/g	<0.1	0.1	0.1	0.1	6267071	<0.1	0.1	6266652
Silver (Ag)	ug/g	<0.05	0.05	<0.05	0.05	6267071	<0.05	0.05	6266652
Sodium (Na)	ug/g	<50	50	72	50	6267071	<50	50	6266652
Strontium (Sr)	ug/g	7.8	0.5	15.9	0.5	6267071	6.1	0.5	6266652
Thallium (Tl)	ug/g	<0.003	0.003	0.007	0.003	6267071	0.003	0.003	6266652
Tin (Sn)	ug/g	<0.3	0.3	<0.3	0.3	6267071	<0.3	0.3	6266652
Titanium (Ti)	ug/g	4.1	0.5	15.0	0.5	6267071	8.6	0.5	6266652
Uranium (U)	ug/g	0.006	0.005	0.042	0.005	6267071	0.021	0.005	6266652
Vanadium (V)	ug/g	0.22	0.05	0.89	0.05	6267071	0.51	0.05	6266652
Zinc (Zn)	ug/g	79	2	21	2	6267071	14	2	6266652
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

BUREAU
VERITASBV Labs Job #: B9K9920
Report Date: 2019/09/03Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ATOMIC SPECTROSCOPY (TISSUE)

BV Labs ID		KJX958	KJX960		KJX962	KJX964		
Sampling Date		2019/07/20 17:25	2019/07/20 17:00		2019/07/20 16:30	2019/07/20 16:05		
COC Number		96931	96931		96931	96931		
	UNITS	19-AWAR-S1-Sd	19-AWAR-S2-Li	QC Batch	19-AWAR-S3-Li	19-AWAR-S4-Br	RDL	QC Batch
Metals								
Mercury (Hg)	ug/g	<0.01	0.06	6267575	0.14	<0.01	0.01	6265404
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

BV Labs ID		KJX966	KJX968	KJX970	KJX972		KJX974		
Sampling Date		2019/07/20 15:45	2019/07/20 15:10	2019/07/20 14:45	2019/07/20 14:05		2019/07/20 13:35		
COC Number		96931	96931	96931	96931		96931		
	UNITS	19-AWAR-S5-Sd	19-AWAR-S6-Li	19-AWAR-S7-Sd	19-AWAR-S8-Br	QC Batch	19-AWAR-S9-Lt	RDL	QC Batch
Metals									
Mercury (Hg)	ug/g	<0.01	0.05	0.01	<0.01	6267575	<0.01	0.01	6265319
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

BV Labs ID		KJX976	KJX976		KJX978		KJX980		
Sampling Date		2019/07/20 00:55	2019/07/20 00:55		2019/07/20 00:10		2019/07/20 23:35		
COC Number		96931	96931		96931		96931		
	UNITS	19-AWAR-S10-Li	19-AWAR-S10-Li Lab-Dup	QC Batch	19-AWAR-S11-Li	QC Batch	19-AWAR-S12-Lt	RDL	QC Batch
Metals									
Mercury (Hg)	ug/g	0.18	0.18	6265319	0.06	6267575	<0.01	0.01	6265404
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Lab-Dup = Laboratory Initiated Duplicate									

BV Labs ID		KJX982		KJX984		KJX986	KJX988		
Sampling Date		2019/07/19 16:15		2019/07/19 15:35		2019/07/19 15:10	2019/07/19 14:10		
COC Number		96931		96931		96931	96931		
	UNITS	19-AWAR-S13-Li	QC Batch	19-AWAR-S14-Sd	QC Batch	19-AWAR-S15-Sd	19-AWAR-S16-Cr	RDL	QC Batch
Metals									
Mercury (Hg)	ug/g	0.25	6267575	<0.01	6265404	0.02	<0.01	0.01	6265319
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

BUREAU
VERITASBV Labs Job #: B9K9920
Report Date: 2019/09/03Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO**ELEMENTS BY ATOMIC SPECTROSCOPY (TISSUE)**

BV Labs ID		KJX990		KJX992		KJX994		
Sampling Date		2019/07/19 00:15		2019/07/19 11:45		2019/07/19 13:45		
COC Number		96931		96931		96931		
	UNITS	19-AWAR-S17-Li	QC Batch	19-AWAR-S18-Li	QC Batch	19-AWAR-S19-Li	RDL	QC Batch
Metals								
Mercury (Hg)	ug/g	0.16	6265404	0.11	6265319	0.15	0.01	6267575
RDL = Reportable Detection Limit QC Batch = Quality Control Batch								

BV Labs ID		KJX996		KJX998		KJY000	KJY002		
Sampling Date		2019/07/19 13:20		2019/07/21 08:05		2019/07/21 20:35	2019/07/21 09:20		
COC Number		96931		96931		96931	96931		
	UNITS	19-AWAR-S20-Li	QC Batch	19-REF1-S1-Sd	QC Batch	19-REF1-S2-Li	19-REF1-S3-LT	RDL	QC Batch
Metals									
Mercury (Hg)	ug/g	0.03	6265319	<0.01	6267575	0.17	<0.01	0.01	6265404
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

BV Labs ID		KJY004		KJY006	KJY008	KJY008		
Sampling Date		2019/07/21 10:10		2019/07/21 22:40	2019/07/21 11:50	2019/07/21 11:50		
COC Number		96931		96931	96931	96931		
	UNITS	19-REF1-S4-Br	QC Batch	19-REF1-S5-Sd	19-REF2-S1-LT	19-REF2-S1-LT Lab-Dup	RDL	QC Batch
Metals								
Mercury (Hg)	ug/g	<0.01	6265404	<0.01	<0.01	0.01	0.01	6267575
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate								

BV Labs ID		KJY010		KJY012		KJY014	KJY016		
Sampling Date		2019/07/21 00:30		2019/07/21 13:15		2019/07/21 13:35	2019/07/21 14:05		
COC Number		96931		96931		96931	96931		
	UNITS	19-REF2-S2-Br	QC Batch	19-REF2-S3-Li	QC Batch	19-REF2-S4-Sd	19-REF2-S5-Br	RDL	QC Batch
Metals									
Mercury (Hg)	ug/g	<0.01	6265404	0.11	6265319	<0.01	<0.01	0.01	6267575
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									



ELEMENTS BY ATOMIC SPECTROSCOPY (TISSUE)

BV Labs ID		KJY018		KJY020		KJY022		KJY024		
Sampling Date		2019/07/21 16:35		2019/07/21 16:45		2019/07/21 16:05		2019/07/21 15:30		
COC Number		96931		96931		96931		96931		
	UNITS	19-REF3-S1-Li	QC Batch	19-REF3-S2-Li	QC Batch	19-REF3-S3-Li	QC Batch	19-REF3-S4-Li	RDL	QC Batch

Metals

Mercury (Hg)	ug/g	0.11	6265319	0.12	6267575	0.10	6265319	0.07	0.01	6267575
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

BV Labs ID		KJY026		KJY028	KJY030		KJY032		
Sampling Date		2019/07/21 15:40		2019/07/22 13:55	2019/07/22 13:20		2019/07/22 23:45		
COC Number		96931		96931	96931		96931		
	UNITS	19-REF3-S5-Sd	QC Batch	19-TF-S1-Cr	19-TF-S2-Li	QC Batch	19-TF-S3-Sd	RDL	QC Batch

Metals

Mercury (Hg)	ug/g	<0.01	6265404	<0.01	0.11	6265319	<0.01	0.01	6267575
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

BV Labs ID		KJY034	KJY034			KJY036		KJY038		
Sampling Date		2019/07/22 15:05	2019/07/22 15:05			2019/07/22 11:15		2019/07/22 10:30		
COC Number		96931	96931			96931		96931		
	UNITS	19-TF-S4-LT	19-TF-S4-LT Lab-Dup	RDL	QC Batch	19-TF-S5-Li	RDL	19-TF-S6-LT	RDL	QC Batch

Metals

Mercury (Hg)	ug/g	<0.01	0.01	0.01	6265404	0.29	0.05	<0.01	0.01	6265319
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		KJY040		KJY042	KJY046		KJY048		
Sampling Date		2019/07/22 08:30		2019/07/22 09:40	2019/07/23 00:25		2019/07/23 10:35		
COC Number		96931		96931	96931		96931		
	UNITS	19-TF-S11-Br	QC Batch	19-TF-S12-Sd	19-WRSA-S1-LT	QC Batch	19-WRSA-S2-Sd	RDL	QC Batch

Metals

Mercury (Hg)	ug/g	<0.01	6265404	0.01	<0.01	6265319	<0.01	0.01	6267575
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

ELEMENTS BY ATOMIC SPECTROSCOPY (TISSUE)

BV Labs ID		KJY050		KJY052	KJY054		KJY056		
Sampling Date		2019/07/23 09:30		2019/07/23 10:00	2019/07/23 08:25		2019/07/24 08:00		
COC Number		96931		96931	96931		96931		
	UNITS	19-WRSA-S5-Li	QC Batch	19-WRSA-S6-Br	19-WRSA-S7-Li	QC Batch	19-WRSA-S8-Br	RDL	QC Batch

Metals

Mercury (Hg)	ug/g	0.09	6265404	<0.01	0.12	6265319	<0.01	0.01	6265404
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

BV Labs ID		KJY058	KJY060		KJY062	KJY064		
Sampling Date		2019/07/23 14:50	2019/07/23 14:00		2019/07/23 08:55	2019/07/23 13:15		
COC Number		96931	96931		96931	96931		
	UNITS	19-WRSA-S9-Cr	19-WRSA-S10-Cr	QC Batch	19-WRSA-S11-Br	19-WRSA-S12-Li	RDL	QC Batch

Metals

Mercury (Hg)	ug/g	<0.01	<0.01	6265319	<0.01	0.08	0.01	6267575
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

BV Labs ID		KJY066		
Sampling Date		2019/07/23 07:55		
COC Number		96931		
	UNITS	19-TF-S14-Li	RDL	QC Batch

Metals

Mercury (Hg)	ug/g	0.07	0.01	6265404
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJX957
Sample ID: 19-AWAR-S1-s
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/09	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX958
Sample ID: 19-AWAR-S1-Sd
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/07	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJX959
Sample ID: 19-AWAR-S2-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX960
Sample ID: 19-AWAR-S2-Li
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJX961
Sample ID: 19-AWAR-S3-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/09	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva



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BV Labs Job #: B9K9920
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Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJX962
Sample ID: 19-AWAR-S3-Li
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJX963
Sample ID: 19-AWAR-S4-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX964
Sample ID: 19-AWAR-S4-Br
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJX965
Sample ID: 19-AWAR-S5-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX965 Dup
Sample ID: 19-AWAR-S5-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur

BV Labs ID: KJX966
Sample ID: 19-AWAR-S5-Sd
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti



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Client Project #: Veg and Soil Health Assessment
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TEST SUMMARY

BV Labs ID: KJX966
Sample ID: 19-AWAR-S5-Sd
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6265147	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJX967
Sample ID: 19-AWAR-S6-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX968
Sample ID: 19-AWAR-S6-Li
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX969
Sample ID: 19-AWAR-S7-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX970
Sample ID: 19-AWAR-S7-Sd
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX971
Sample ID: 19-AWAR-S8-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu



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BV Labs Job #: B9K9920
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Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJX971
Sample ID: 19-AWAR-S8-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX972
Sample ID: 19-AWAR-S8-Br
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJX973
Sample ID: 19-AWAR-S9-S
Matrix: Solid

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX973 Dup
Sample ID: 19-AWAR-S9-S
Matrix: Solid

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX974
Sample ID: 19-AWAR-S9-Lt
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJX975
Sample ID: 19-AWAR-S10-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva



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BV Labs Job #: B9K9920
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Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJX976
Sample ID: 19-AWAR-S10-Li
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/07	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX976 Dup
Sample ID: 19-AWAR-S10-Li
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti

BV Labs ID: KJX977
Sample ID: 19-AWAR-S11-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX978
Sample ID: 19-AWAR-S11-Li
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJX979
Sample ID: 19-AWAR-S12-S
Matrix: Soil

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX980
Sample ID: 19-AWAR-S12-Lt
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison



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TEST SUMMARY

BV Labs ID: KJX980
Sample ID: 19-AWAR-S12-Lt
Matrix: Tissue

Collected: 2019/07/20
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX981
Sample ID: 19-AWAR-S13-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX982
Sample ID: 19-AWAR-S13-Li
Matrix: Tissue

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX983
Sample ID: 19-AWAR-S14-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJX984
Sample ID: 19-AWAR-S14-Sd
Matrix: Tissue

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake



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BV Labs Job #: B9K9920
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Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJX985
Sample ID: 19-AWAR-S15-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX986
Sample ID: 19-AWAR-S15-Sd
Matrix: Tissue

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX987
Sample ID: 19-AWAR-S16-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJX987 Dup
Sample ID: 19-AWAR-S16-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJX988
Sample ID: 19-AWAR-S16-Cr
Matrix: Tissue

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJX989
Sample ID: 19-AWAR-S17-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur



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TEST SUMMARY

BV Labs ID: KJX989
Sample ID: 19-AWAR-S17-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX990
Sample ID: 19-AWAR-S17-Li
Matrix: Tissue

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX991
Sample ID: 19-AWAR-S18-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX992
Sample ID: 19-AWAR-S18-Li
Matrix: Tissue

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX993
Sample ID: 19-AWAR-S19-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJX994
Sample ID: 19-AWAR-S19-Li
Matrix: Tissue

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti



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BV Labs ID: KJX994
Sample ID: 19-AWAR-S19-Li
Matrix: Tissue

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX995
Sample ID: 19-AWAR-S20-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJX995 Dup
Sample ID: 19-AWAR-S20-S
Matrix: Soil

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal

BV Labs ID: KJX996
Sample ID: 19-AWAR-S20-Li
Matrix: Tissue

Collected: 2019/07/19
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJX997
Sample ID: 19-REF1-S1-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJX998
Sample ID: 19-REF1-S1-Sd
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake



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VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJX999
Sample ID: 19-REF1-S2-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY000
Sample ID: 19-REF1-S2-Li
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY001
Sample ID: 19-REF1-S3-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY002
Sample ID: 19-REF1-S3-LT
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY003
Sample ID: 19-REF1-S4-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY004
Sample ID: 19-REF1-S4-Br
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheeapan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY005
Sample ID: 19-REF1-S5-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJY006
Sample ID: 19-REF1-S5-Sd
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/02	Mithunaa Sasitheeapan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY007
Sample ID: 19-REF2-S1-S
Matrix: Solid

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY008
Sample ID: 19-REF2-S1-LT
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheeapan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake



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VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY008 Dup
Sample ID: 19-REF2-S1-LT
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY009
Sample ID: 19-REF2-S2-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259475	2019/08/01	2019/08/01	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY010
Sample ID: 19-REF2-S2-Br
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY011
Sample ID: 19-REF2-S3-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY011 Dup
Sample ID: 19-REF2-S3-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu

BV Labs ID: KJY012
Sample ID: 19-REF2-S3-Li
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY012
Sample ID: 19-REF2-S3-Li
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY013
Sample ID: 19-REF2-S4-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prnya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY014
Sample ID: 19-REF2-S4-Sd
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY015
Sample ID: 19-REF2-S5-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY016
Sample ID: 19-REF2-S5-Br
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY017
Sample ID: 19-REF3-S1-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur



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BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY017
Sample ID: 19-REF3-S1-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	6259531	2019/08/01	2019/08/01	Kazzandra Adeva

BV Labs ID: KJY017 Dup
Sample ID: 19-REF3-S1-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu

BV Labs ID: KJY018
Sample ID: 19-REF3-S1-Li
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY019
Sample ID: 19-REF3-S2-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY020
Sample ID: 19-REF3-S2-Li
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY021
Sample ID: 19-REF3-S3-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai



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VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY022
Sample ID: 19-REF3-S3-Li
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/09	2019/08/19	Neil Dassanayake

BV Labs ID: KJY023
Sample ID: 19-REF3-S4-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY024
Sample ID: 19-REF3-S4-Li
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY025
Sample ID: 19-REF3-S5-S
Matrix: Soil

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY026
Sample ID: 19-REF3-S5-Sd
Matrix: Tissue

Collected: 2019/07/21
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake



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VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY027
Sample ID: 19-TF-S1-S
Matrix: Solid

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY028
Sample ID: 19-TF-S1-Cr
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/09	2019/08/19	Neil Dassanayake

BV Labs ID: KJY029
Sample ID: 19-TF-S2-S
Matrix: Soil

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY030
Sample ID: 19-TF-S2-Li
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY031
Sample ID: 19-TF-S3-S
Matrix: Soil

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva



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VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY031 Dup
Sample ID: 19-TF-S3-S
Matrix: Soil

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY032
Sample ID: 19-TF-S3-Sd
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY033
Sample ID: 19-TF-S4-S
Matrix: Solid

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258204	N/A	2019/07/31	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY034
Sample ID: 19-TF-S4-LT
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY034 Dup
Sample ID: 19-TF-S4-LT
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY035
Sample ID: 19-TF-S5-S
Matrix: Soil

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY036
Sample ID: 19-TF-S5-Li
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY037
Sample ID: 19-TF-S6-S
Matrix: Soil

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY038
Sample ID: 19-TF-S6-LT
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY038 Dup
Sample ID: 19-TF-S6-LT
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY039
Sample ID: 19-TF-S11-S
Matrix: Soil

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY040
Sample ID: 19-TF-S11-Br
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY040
Sample ID: 19-TF-S11-Br
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY040 Dup
Sample ID: 19-TF-S11-Br
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti

BV Labs ID: KJY041
Sample ID: 19-TF-S12-S
Matrix: Soil

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY042
Sample ID: 19-TF-S12-Sd
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY043
Sample ID: 19-TF-S13-S
Matrix: Tissue

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY044
Sample ID: 19-TF-S13-Cr
Matrix: Soil

Collected: 2019/07/22
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY045
Sample ID: 19-WRSA-S1-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY046
Sample ID: 19-WRSA-S1-LT
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY047
Sample ID: 19-WRSA-S2-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY048
Sample ID: 19-WRSA-S2-Sd
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY049
Sample ID: 19-WRSA-S5-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY050
Sample ID: 19-WRSA-S5-Li
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY051
Sample ID: 19-WRSA-S6-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prnya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY052
Sample ID: 19-WRSA-S6-Br
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY053
Sample ID: 19-WRSA-S7-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY053 Dup
Sample ID: 19-WRSA-S7-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu

BV Labs ID: KJY054
Sample ID: 19-WRSA-S7-Li
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY054
Sample ID: 19-WRSA-S7-Li
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6265147	N/A	2019/08/06	Mithunaa Sasitheepan
PH	AT	6284449	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY055
Sample ID: 19-WRSA-S8-S
Matrix: Soil

Collected: 2019/07/24
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6259045	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY056
Sample ID: 19-WRSA-S8-Br
Matrix: Tissue

Collected: 2019/07/24
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY057
Sample ID: 19-WRSA-S9-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY058
Sample ID: 19-WRSA-S9-Cr
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY059
Sample ID: 19-WRSA-S10-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259117	2019/08/01	2019/08/08	Daniel Teclu



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY059
Sample ID: 19-WRSA-S10-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY060
Sample ID: 19-WRSA-S10-Cr
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265319	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266648	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake

BV Labs ID: KJY061
Sample ID: 19-WRSA-S11-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259106	2019/08/01	2019/08/08	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY062
Sample ID: 19-WRSA-S11-Br
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheepan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY063
Sample ID: 19-WRSA-S12-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6259179	2019/08/01	2019/08/02	Daniel Teclu
Moisture	BAL	6259182	N/A	2019/08/01	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6285945	2019/08/17	2019/08/19	Surinder Rai

BV Labs ID: KJY064
Sample ID: 19-WRSA-S12-Li
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6267575	2019/08/07	2019/08/13	Ron Morrison



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

TEST SUMMARY

BV Labs ID: KJY064
Sample ID: 19-WRSA-S12-Li
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Vegetation by ICPMS	ICP1/MS	6267071	N/A	2019/08/30	Prempal Bhatti
Moisture	BAL	6265141	N/A	2019/08/02	Mithunaa Sasitheeapan
PH	AT	6269503	2019/08/08	2019/08/08	Kazzandra Adeva

BV Labs ID: KJY065
Sample ID: 19-TF-S14-S
Matrix: Soil

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6276635	2019/08/13	2019/08/14	Daniel Teclu
Moisture	BAL	6258329	N/A	2019/07/31	Prgya Panchal
pH CaCl2 EXTRACT	AT	6261442	2019/08/02	2019/08/02	Kazzandra Adeva

BV Labs ID: KJY066
Sample ID: 19-TF-S14-Li
Matrix: Tissue

Collected: 2019/07/23
Shipped:
Received: 2019/07/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Vegetation by CVAA	CV/AA	6265404	2019/08/06	2019/08/13	Ron Morrison
Metals in Vegetation by ICPMS	ICP1/MS	6266652	N/A	2019/08/29	Prempal Bhatti
Moisture	BAL	6265634	N/A	2019/08/02	Mithunaa Sasitheeapan
PH	AT	6284295	2019/08/16	2019/08/19	Neil Dassanayake



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	25.0°C
Package 2	24.3°C
Package 3	30.3°C
Package 4	25.7°C
Package 5	25.0°C

All the Samples entirely absorbed the extraction fluid when 1:2 ratio was used. Due to the absorbent nature of the samples, RODI ratio was changed to 1:6. Please view results with discretion.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B9K9920

Report Date: 2019/09/03

QUALITY ASSURANCE REPORT

Golder Associates

Client Project #: Veg and Soil Health Assessment

Sampler Initials: AO

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6258204	Moisture	2019/07/31							4.4	20		
6258329	Moisture	2019/07/31							7.2	20		
6259045	Moisture	2019/08/01							3.5	20		
6259106	Acid Extractable Antimony (Sb)	2019/08/08	101	75 - 125	105	80 - 120	<0.20	ug/g	NC	30		
6259106	Acid Extractable Arsenic (As)	2019/08/08	106	75 - 125	101	80 - 120	<1.0	ug/g	11	30		
6259106	Acid Extractable Barium (Ba)	2019/08/08	103	75 - 125	103	80 - 120	<0.50	ug/g	16	30		
6259106	Acid Extractable Beryllium (Be)	2019/08/08	103	75 - 125	100	80 - 120	<0.20	ug/g	NC	30		
6259106	Acid Extractable Boron (B)	2019/08/08	102	75 - 125	102	80 - 120	<5.0	ug/g	NC	30		
6259106	Acid Extractable Cadmium (Cd)	2019/08/08	104	75 - 125	102	80 - 120	<0.10	ug/g	NC	30		
6259106	Acid Extractable Chromium (Cr)	2019/08/08	NC	75 - 125	100	80 - 120	<1.0	ug/g	13	30		
6259106	Acid Extractable Cobalt (Co)	2019/08/08	102	75 - 125	100	80 - 120	<0.10	ug/g	14	30		
6259106	Acid Extractable Copper (Cu)	2019/08/08	102	75 - 125	101	80 - 120	<0.50	ug/g	11	30		
6259106	Acid Extractable Lead (Pb)	2019/08/08	109	75 - 125	105	80 - 120	<1.0	ug/g	11	30		
6259106	Acid Extractable Mercury (Hg)	2019/08/08	100	75 - 125	96	80 - 120	<0.050	ug/g	NC	30		
6259106	Acid Extractable Molybdenum (Mo)	2019/08/08	103	75 - 125	100	80 - 120	<0.50	ug/g	10	30		
6259106	Acid Extractable Nickel (Ni)	2019/08/08	103	75 - 125	101	80 - 120	<0.50	ug/g	17	30		
6259106	Acid Extractable Selenium (Se)	2019/08/08	110	75 - 125	108	80 - 120	<0.50	ug/g	NC	30		
6259106	Acid Extractable Silver (Ag)	2019/08/08	106	75 - 125	104	80 - 120	<0.20	ug/g	NC	30		
6259106	Acid Extractable Thallium (Tl)	2019/08/08	108	75 - 125	104	80 - 120	<0.050	ug/g	19	30		
6259106	Acid Extractable Uranium (U)	2019/08/08	107	75 - 125	103	80 - 120	<0.050	ug/g	0.16	30		
6259106	Acid Extractable Vanadium (V)	2019/08/08	NC	75 - 125	101	80 - 120	<5.0	ug/g	14	30		
6259106	Acid Extractable Zinc (Zn)	2019/08/08	106	75 - 125	102	80 - 120	<5.0	ug/g	8.7	30		
6259117	Acid Extractable Antimony (Sb)	2019/08/08	99	75 - 125	107	80 - 120	<0.20	ug/g	NC	30		
6259117	Acid Extractable Arsenic (As)	2019/08/08	113	75 - 125	104	80 - 120	<1.0	ug/g	7.4	30		
6259117	Acid Extractable Barium (Ba)	2019/08/08	NC	75 - 125	99	80 - 120	<0.50	ug/g	6.2	30		
6259117	Acid Extractable Beryllium (Be)	2019/08/08	102	75 - 125	99	80 - 120	<0.20	ug/g	NC	30		
6259117	Acid Extractable Boron (B)	2019/08/08	104	75 - 125	100	80 - 120	<5.0	ug/g	NC	30		
6259117	Acid Extractable Cadmium (Cd)	2019/08/08	103	75 - 125	103	80 - 120	<0.10	ug/g	NC	30		
6259117	Acid Extractable Chromium (Cr)	2019/08/08	118	75 - 125	99	80 - 120	<1.0	ug/g	2.9	30		
6259117	Acid Extractable Cobalt (Co)	2019/08/08	107	75 - 125	101	80 - 120	<0.10	ug/g	4.1	30		
6259117	Acid Extractable Copper (Cu)	2019/08/08	110	75 - 125	98	80 - 120	<0.50	ug/g	7.4	30		
6259117	Acid Extractable Lead (Pb)	2019/08/08	108	75 - 125	106	80 - 120	<1.0	ug/g	8.5	30		

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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6259117	Acid Extractable Mercury (Hg)	2019/08/08	94	75 - 125	94	80 - 120	<0.050	ug/g	NC	30		
6259117	Acid Extractable Molybdenum (Mo)	2019/08/08	104	75 - 125	101	80 - 120	<0.50	ug/g	2.4	30		
6259117	Acid Extractable Nickel (Ni)	2019/08/08	116	75 - 125	104	80 - 120	<0.50	ug/g	5.9	30		
6259117	Acid Extractable Selenium (Se)	2019/08/08	108	75 - 125	108	80 - 120	<0.50	ug/g	NC	30		
6259117	Acid Extractable Silver (Ag)	2019/08/08	103	75 - 125	103	80 - 120	<0.20	ug/g	NC	30		
6259117	Acid Extractable Thallium (Tl)	2019/08/08	106	75 - 125	105	80 - 120	<0.050	ug/g	3.1	30		
6259117	Acid Extractable Uranium (U)	2019/08/08	107	75 - 125	104	80 - 120	<0.050	ug/g	11	30		
6259117	Acid Extractable Vanadium (V)	2019/08/08	NC	75 - 125	100	80 - 120	<5.0	ug/g	3.0	30		
6259117	Acid Extractable Zinc (Zn)	2019/08/08	117	75 - 125	104	80 - 120	<5.0	ug/g	4.5	30		
6259179	Acid Extractable Antimony (Sb)	2019/08/02	94	75 - 125	103	80 - 120	<0.20	ug/g	NC	30		
6259179	Acid Extractable Arsenic (As)	2019/08/02	98	75 - 125	102	80 - 120	<1.0	ug/g	5.0	30		
6259179	Acid Extractable Barium (Ba)	2019/08/02	NC	75 - 125	98	80 - 120	<0.50	ug/g	2.4	30		
6259179	Acid Extractable Beryllium (Be)	2019/08/02	97	75 - 125	101	80 - 120	<0.20	ug/g	NC	30		
6259179	Acid Extractable Boron (B)	2019/08/02	96	75 - 125	101	80 - 120	<5.0	ug/g	NC	30		
6259179	Acid Extractable Cadmium (Cd)	2019/08/02	97	75 - 125	102	80 - 120	<0.10	ug/g	NC	30		
6259179	Acid Extractable Chromium (Cr)	2019/08/02	101	75 - 125	102	80 - 120	<1.0	ug/g	4.1	30		
6259179	Acid Extractable Cobalt (Co)	2019/08/02	98	75 - 125	101	80 - 120	<0.10	ug/g	2.7	30		
6259179	Acid Extractable Copper (Cu)	2019/08/02	94	75 - 125	100	80 - 120	<0.50	ug/g	0.27	30		
6259179	Acid Extractable Lead (Pb)	2019/08/02	97	75 - 125	103	80 - 120	<1.0	ug/g	3.1	30		
6259179	Acid Extractable Mercury (Hg)	2019/08/02	89	75 - 125	99	80 - 120	<0.050	ug/g	NC	30		
6259179	Acid Extractable Molybdenum (Mo)	2019/08/02	96	75 - 125	99	80 - 120	<0.50	ug/g	NC	30		
6259179	Acid Extractable Nickel (Ni)	2019/08/02	99	75 - 125	102	80 - 120	<0.50	ug/g	3.2	30		
6259179	Acid Extractable Selenium (Se)	2019/08/02	98	75 - 125	106	80 - 120	<0.50	ug/g	NC	30		
6259179	Acid Extractable Silver (Ag)	2019/08/02	99	75 - 125	105	80 - 120	<0.20	ug/g	NC	30		
6259179	Acid Extractable Thallium (Tl)	2019/08/02	97	75 - 125	102	80 - 120	<0.050	ug/g	3.5	30		
6259179	Acid Extractable Uranium (U)	2019/08/02	99	75 - 125	103	80 - 120	<0.050	ug/g	2.8	30		
6259179	Acid Extractable Vanadium (V)	2019/08/02	98	75 - 125	100	80 - 120	<5.0	ug/g	2.7	30		
6259179	Acid Extractable Zinc (Zn)	2019/08/02	100	75 - 125	102	80 - 120	<5.0	ug/g	4.5	30		
6259182	Moisture	2019/08/01							0	20		
6259475	Acid Extractable Antimony (Sb)	2019/08/01	107	75 - 125	103	80 - 120	<0.20	ug/g	5.2	30		
6259475	Acid Extractable Arsenic (As)	2019/08/01	102	75 - 125	101	80 - 120	<1.0	ug/g	7.9	30		
6259475	Acid Extractable Barium (Ba)	2019/08/01	115	75 - 125	103	80 - 120	<0.50	ug/g	2.9	30		

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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6259475	Acid Extractable Beryllium (Be)	2019/08/01	105	75 - 125	101	80 - 120	<0.20	ug/g	4.1	30		
6259475	Acid Extractable Boron (B)	2019/08/01	108	75 - 125	103	80 - 120	<5.0	ug/g	12	30		
6259475	Acid Extractable Cadmium (Cd)	2019/08/01	105	75 - 125	101	80 - 120	<0.10	ug/g	8.3	30		
6259475	Acid Extractable Chromium (Cr)	2019/08/01	103	75 - 125	99	80 - 120	<1.0	ug/g	0.70	30		
6259475	Acid Extractable Cobalt (Co)	2019/08/01	100	75 - 125	100	80 - 120	<0.10	ug/g	0.68	30		
6259475	Acid Extractable Copper (Cu)	2019/08/01	101	75 - 125	100	80 - 120	<0.50	ug/g	1.8	30		
6259475	Acid Extractable Lead (Pb)	2019/08/01	99	75 - 125	99	80 - 120	<1.0	ug/g	0.39	30		
6259475	Acid Extractable Mercury (Hg)	2019/08/01	91	75 - 125	91	80 - 120	<0.050	ug/g	NC	30		
6259475	Acid Extractable Molybdenum (Mo)	2019/08/01	108	75 - 125	101	80 - 120	<0.50	ug/g	13	30		
6259475	Acid Extractable Nickel (Ni)	2019/08/01	99	75 - 125	99	80 - 120	<0.50	ug/g	2.3	30		
6259475	Acid Extractable Selenium (Se)	2019/08/01	107	75 - 125	100	80 - 120	<0.50	ug/g	NC	30		
6259475	Acid Extractable Silver (Ag)	2019/08/01	104	75 - 125	101	80 - 120	<0.20	ug/g	NC	30		
6259475	Acid Extractable Thallium (Tl)	2019/08/01	101	75 - 125	101	80 - 120	<0.050	ug/g	13	30		
6259475	Acid Extractable Uranium (U)	2019/08/01	104	75 - 125	101	80 - 120	<0.050	ug/g	0.061	30		
6259475	Acid Extractable Vanadium (V)	2019/08/01	103	75 - 125	100	80 - 120	<5.0	ug/g	6.3	30		
6259475	Acid Extractable Zinc (Zn)	2019/08/01	NC	75 - 125	104	80 - 120	<5.0	ug/g	1.7	30		
6259531	Available (CaCl2) pH	2019/08/01			100	97 - 103			0.87	N/A		
6261442	Available (CaCl2) pH	2019/08/02			100	97 - 103			0.30	N/A		
6265141	Moisture	2019/08/02							1.5	20		
6265147	Moisture	2019/08/06							4.3	20		
6265319	Mercury (Hg)	2019/08/13	NC	75 - 125			<0.01	ug/g	0.51	35	82	70 - 130
6265404	Mercury (Hg)	2019/08/13	79	75 - 125			<0.01	ug/g	28	35	84	70 - 130
6265634	Moisture	2019/08/02							8.0	20		
6266648	Antimony (Sb)	2019/08/29	94	75 - 125	99	80 - 120	<0.05	ug/g	NC	20		
6266648	Arsenic (As)	2019/08/29	104	75 - 125	99	80 - 120	<0.1	ug/g	3.0	20	92	70 - 130
6266648	Barium (Ba)	2019/08/29	94	75 - 125	98	80 - 120	<0.3	ug/g	0.95	20		
6266648	Beryllium (Be)	2019/08/29	90	75 - 125	99	80 - 120	<0.05	ug/g	NC	20		
6266648	Bismuth (Bi)	2019/08/29	100	75 - 125	102	80 - 120	<0.05	ug/g	NC	20		
6266648	Boron (B)	2019/08/29	84	75 - 125	98	80 - 120	<0.5	ug/g	2.9	20	89	70 - 130
6266648	Cadmium (Cd)	2019/08/29	96	75 - 125	99	80 - 120	<0.01	ug/g	0.91	20	92	70 - 130
6266648	Calcium (Ca)	2019/08/29	97	75 - 125	101	80 - 120	<50	ug/g	2.0	20	99	70 - 130
6266648	Chromium (Cr)	2019/08/29	94	75 - 125	97	80 - 120	<0.3	ug/g	NC	20		



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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6266648	Cobalt (Co)	2019/08/29	96	75 - 125	98	80 - 120	<0.005	ug/g	0.59	20	86	70 - 130
6266648	Copper (Cu)	2019/08/29	95	75 - 125	97	80 - 120	<0.5	ug/g	1.5	20	90	70 - 130
6266648	Iron (Fe)	2019/08/29	99	75 - 125	102	80 - 120	<3	ug/g	0.58	20		
6266648	Lead (Pb)	2019/08/29	94	75 - 125	98	80 - 120	<0.03	ug/g	11	20	92	70 - 130
6266648	Magnesium (Mg)	2019/08/29	100	75 - 125	105	80 - 120	<100	ug/g	0.17	20	98	70 - 130
6266648	Manganese (Mn)	2019/08/29	114	75 - 125	99	80 - 120	<0.3	ug/g	3.2	20	93	70 - 130
6266648	Molybdenum (Mo)	2019/08/29	94	75 - 125	98	80 - 120	<0.05	ug/g	NC	20		
6266648	Nickel (Ni)	2019/08/29	97	75 - 125	99	80 - 120	<0.05	ug/g	0.26	20	67	42 - 78
6266648	Phosphorus (P)	2019/08/29					<50	ug/g	7.6	20		
6266648	Potassium (K)	2019/08/29	95	75 - 125	102	80 - 120	<100	ug/g	1.4	20	99	70 - 130
6266648	Selenium (Se)	2019/08/29	98	75 - 125	100	80 - 120	<0.1	ug/g	NC	20		
6266648	Silver (Ag)	2019/08/29	95	75 - 125	100	80 - 120	<0.05	ug/g	NC	20		
6266648	Sodium (Na)	2019/08/29	101	75 - 125	103	80 - 120	<50	ug/g	NC	20	79	70 - 130
6266648	Strontium (Sr)	2019/08/29	94	75 - 125	96	80 - 120	<0.5	ug/g	1.6	20	94	70 - 130
6266648	Thallium (Tl)	2019/08/29	92	75 - 125	96	80 - 120	<0.003	ug/g	NC	20	97	70 - 130
6266648	Tin (Sn)	2019/08/29	94	75 - 125	100	80 - 120	<0.3	ug/g	NC	20		
6266648	Titanium (Ti)	2019/08/29	102	75 - 125	100	80 - 120	<0.5	ug/g	7.4	20		
6266648	Uranium (U)	2019/08/29					<0.005	ug/g	NC	20	39	23 - 40
6266648	Vanadium (V)	2019/08/29	94	75 - 125	96	80 - 120	<0.05	ug/g	1.2	20	40	28 - 52
6266648	Zinc (Zn)	2019/08/29	105	75 - 125	99	80 - 120	<2	ug/g	0.58	20	88	70 - 130
6266652	Antimony (Sb)	2019/08/29	99	75 - 125	98	80 - 120	<0.05	ug/g	NC	20		
6266652	Arsenic (As)	2019/08/29	101	75 - 125	100	80 - 120	<0.1	ug/g	1.4	20	93	70 - 130
6266652	Barium (Ba)	2019/08/29	104	75 - 125	95	80 - 120	<0.3	ug/g	2.7	20		
6266652	Beryllium (Be)	2019/08/29	92	75 - 125	94	80 - 120	<0.05	ug/g	NC	20		
6266652	Bismuth (Bi)	2019/08/29	103	75 - 125	102	80 - 120	<0.05	ug/g	NC	20		
6266652	Boron (B)	2019/08/29	90	75 - 125	94	80 - 120	<0.5	ug/g	4.8	20	93	70 - 130
6266652	Cadmium (Cd)	2019/08/29	100	75 - 125	98	80 - 120	<0.01	ug/g	0.66	20	95	70 - 130
6266652	Calcium (Ca)	2019/08/29	93	75 - 125	99	80 - 120	<50	ug/g	0.57	20	97	70 - 130
6266652	Chromium (Cr)	2019/08/29	NC	75 - 125	96	80 - 120	<0.3	ug/g	2.2	20		
6266652	Cobalt (Co)	2019/08/29	99	75 - 125	98	80 - 120	<0.005	ug/g	1.6	20	89	70 - 130
6266652	Copper (Cu)	2019/08/29	97	75 - 125	95	80 - 120	<0.5	ug/g	1.9	20	92	70 - 130
6266652	Iron (Fe)	2019/08/29	101	75 - 125	101	80 - 120	<3	ug/g	4.6	20		



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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6266652	Lead (Pb)	2019/08/29	98	75 - 125	100	80 - 120	<0.03	ug/g	1.2	20	99	70 - 130
6266652	Magnesium (Mg)	2019/08/29	102	75 - 125	104	80 - 120	<100	ug/g	3.8	20	102	70 - 130
6266652	Manganese (Mn)	2019/08/29	NC	75 - 125	99	80 - 120	<0.3	ug/g	7.6	20	95	70 - 130
6266652	Molybdenum (Mo)	2019/08/29	99	75 - 125	97	80 - 120	<0.05	ug/g	0.95	20		
6266652	Nickel (Ni)	2019/08/29	102	75 - 125	99	80 - 120	<0.05	ug/g	2.2	20	72	42 - 78
6266652	Phosphorus (P)	2019/08/29					<50	ug/g	4.5	20		
6266652	Potassium (K)	2019/08/29	103	75 - 125	101	80 - 120	<100	ug/g	3.8	20	98	70 - 130
6266652	Selenium (Se)	2019/08/29	100	75 - 125	101	80 - 120	<0.1	ug/g	1.9	20		
6266652	Silver (Ag)	2019/08/29	98	75 - 125	99	80 - 120	<0.05	ug/g	NC	20		
6266652	Sodium (Na)	2019/08/29	105	75 - 125	103	80 - 120	<50	ug/g	NC	20	83	70 - 130
6266652	Strontium (Sr)	2019/08/29	99	75 - 125	95	80 - 120	<0.5	ug/g	0.39	20	95	70 - 130
6266652	Thallium (Tl)	2019/08/29	94	75 - 125	96	80 - 120	<0.003	ug/g	2.0	20	99	70 - 130
6266652	Tin (Sn)	2019/08/29	96	75 - 125	98	80 - 120	<0.3	ug/g	NC	20		
6266652	Titanium (Ti)	2019/08/29	NC	75 - 125	98	80 - 120	<0.5	ug/g	4.0	20		
6266652	Uranium (U)	2019/08/29					<0.005	ug/g	0.72	20	39	23 - 40
6266652	Vanadium (V)	2019/08/29	99	75 - 125	96	80 - 120	<0.05	ug/g	7.2	20	42	28 - 52
6266652	Zinc (Zn)	2019/08/29	102	75 - 125	98	80 - 120	<2	ug/g	0.43	20	90	70 - 130
6267071	Antimony (Sb)	2019/08/30	97	75 - 125	98	80 - 120	<0.05	ug/g	NC	20		
6267071	Arsenic (As)	2019/08/30	100	75 - 125	99	80 - 120	<0.1	ug/g	NC	20	96	70 - 130
6267071	Barium (Ba)	2019/08/30	NC	75 - 125	96	80 - 120	<0.3	ug/g	1.3	20		
6267071	Beryllium (Be)	2019/08/30	99	75 - 125	95	80 - 120	<0.05	ug/g	NC	20		
6267071	Bismuth (Bi)	2019/08/30	101	75 - 125	101	80 - 120	<0.05	ug/g	NC	20		
6267071	Boron (B)	2019/08/30	98	75 - 125	94	80 - 120	<0.5	ug/g	1.9	20	95	70 - 130
6267071	Cadmium (Cd)	2019/08/30	98	75 - 125	97	80 - 120	<0.01	ug/g	NC	20	93	70 - 130
6267071	Calcium (Ca)	2019/08/30	NC	75 - 125	101	80 - 120	<50	ug/g	1.8	20	97	70 - 130
6267071	Chromium (Cr)	2019/08/30	94	75 - 125	94	80 - 120	<0.3	ug/g	NC	20		
6267071	Cobalt (Co)	2019/08/30	96	75 - 125	95	80 - 120	<0.005	ug/g	1.5	20	87	70 - 130
6267071	Copper (Cu)	2019/08/30	93	75 - 125	93	80 - 120	<0.5	ug/g	0.18	20	89	70 - 130
6267071	Iron (Fe)	2019/08/30	101	75 - 125	102	80 - 120	<3	ug/g	0.23	20		
6267071	Lead (Pb)	2019/08/30	96	75 - 125	97	80 - 120	<0.03	ug/g	NC	20	96	70 - 130
6267071	Magnesium (Mg)	2019/08/30	102	75 - 125	105	80 - 120	<100	ug/g	0.26	20	100	70 - 130
6267071	Manganese (Mn)	2019/08/30	NC	75 - 125	94	80 - 120	<0.3	ug/g	5.5	20	91	70 - 130

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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6267071	Molybdenum (Mo)	2019/08/30	96	75 - 125	95	80 - 120	<0.05	ug/g	NC	20		
6267071	Nickel (Ni)	2019/08/30	99	75 - 125	98	80 - 120	<0.05	ug/g	1.0	20	67	42 - 78
6267071	Phosphorus (P)	2019/08/30					<50	ug/g	1.7	20		
6267071	Potassium (K)	2019/08/30	NC	75 - 125	104	80 - 120	<100	ug/g	2.2	20	98	70 - 130
6267071	Selenium (Se)	2019/08/30	98	75 - 125	98	80 - 120	<0.1	ug/g	NC	20		
6267071	Silver (Ag)	2019/08/30	97	75 - 125	98	80 - 120	<0.05	ug/g	NC	20		
6267071	Sodium (Na)	2019/08/30	102	75 - 125	102	80 - 120	<50	ug/g	NC	20	82	70 - 130
6267071	Strontium (Sr)	2019/08/30	95	75 - 125	93	80 - 120	<0.5	ug/g	0.22	20	94	70 - 130
6267071	Thallium (Tl)	2019/08/30	96	75 - 125	95	80 - 120	<0.003	ug/g	1.5	20	99	70 - 130
6267071	Tin (Sn)	2019/08/30	93	75 - 125	96	80 - 120	<0.3	ug/g	NC	20		
6267071	Titanium (Ti)	2019/08/30	97	75 - 125	102	80 - 120	<0.5	ug/g	10	20		
6267071	Uranium (U)	2019/08/30					<0.005	ug/g	NC	20	35	23 - 40
6267071	Vanadium (V)	2019/08/30	96	75 - 125	95	80 - 120	<0.05	ug/g	NC	20	39	28 - 52
6267071	Zinc (Zn)	2019/08/30	NC	75 - 125	97	80 - 120	<2	ug/g	0.51	20	90	70 - 130
6267575	Mercury (Hg)	2019/08/13	81	75 - 125			<0.01	ug/g	3.6	35	90	70 - 130
6269503	pH	2019/08/08			101	97 - 103			0.064	N/A	101	97 - 103
6276635	Acid Extractable Antimony (Sb)	2019/08/14	83	75 - 125	100	80 - 120	<0.20	ug/g	NC	30		
6276635	Acid Extractable Arsenic (As)	2019/08/14	91	75 - 125	102	80 - 120	<1.0	ug/g	2.1	30		
6276635	Acid Extractable Barium (Ba)	2019/08/14	NC	75 - 125	97	80 - 120	<0.50	ug/g	7.8	30		
6276635	Acid Extractable Beryllium (Be)	2019/08/14	89	75 - 125	96	80 - 120	<0.20	ug/g	11	30		
6276635	Acid Extractable Boron (B)	2019/08/14	83	75 - 125	94	80 - 120	<5.0	ug/g	0.94	30		
6276635	Acid Extractable Cadmium (Cd)	2019/08/14	92	75 - 125	101	80 - 120	<0.10	ug/g	5.1	30		
6276635	Acid Extractable Chromium (Cr)	2019/08/14	90	75 - 125	99	80 - 120	<1.0	ug/g	8.1	30		
6276635	Acid Extractable Cobalt (Co)	2019/08/14	88	75 - 125	100	80 - 120	<0.10	ug/g	11	30		
6276635	Acid Extractable Copper (Cu)	2019/08/14	88	75 - 125	98	80 - 120	<0.50	ug/g	10	30		
6276635	Acid Extractable Lead (Pb)	2019/08/14	87	75 - 125	103	80 - 120	<1.0	ug/g	11	30		
6276635	Acid Extractable Mercury (Hg)	2019/08/14	81	75 - 125	92	80 - 120	<0.050	ug/g				
6276635	Acid Extractable Molybdenum (Mo)	2019/08/14	93	75 - 125	99	80 - 120	<0.50	ug/g	NC	30		
6276635	Acid Extractable Nickel (Ni)	2019/08/14	90	75 - 125	100	80 - 120	<0.50	ug/g	9.0	30		
6276635	Acid Extractable Selenium (Se)	2019/08/14	94	75 - 125	103	80 - 120	<0.50	ug/g	NC	30		
6276635	Acid Extractable Silver (Ag)	2019/08/14	93	75 - 125	103	80 - 120	<0.20	ug/g	NC	30		
6276635	Acid Extractable Thallium (Tl)	2019/08/14	93	75 - 125	103	80 - 120	<0.050	ug/g	12	30		



BUREAU
VERITAS

BV Labs Job #: B9K9920

Report Date: 2019/09/03

QUALITY ASSURANCE REPORT(CONT'D)

Golder Associates

Client Project #: Veg and Soil Health Assessment

Sampler Initials: AO

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
6276635	Acid Extractable Uranium (U)	2019/08/14	95	75 - 125	105	80 - 120	<0.050	ug/g	0.31	30		
6276635	Acid Extractable Vanadium (V)	2019/08/14	90	75 - 125	98	80 - 120	<5.0	ug/g	4.6	30		
6276635	Acid Extractable Zinc (Zn)	2019/08/14	NC	75 - 125	104	80 - 120	<5.0	ug/g	9.2	30		
6284295	pH	2019/08/19			100	97 - 103			0.022	N/A		
6284449	pH	2019/08/19			100	97 - 103			0.091	N/A	103	97 - 103
6285945	Available (CaCl ₂) pH	2019/08/19			100	97 - 103			1.1	N/A		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

BV Labs Job #: B9K9920
Report Date: 2019/09/03

Golder Associates
Client Project #: Veg and Soil Health Assessment
Sampler Initials: AO

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

APPENDIX F

**Soil and Vegetation Samples
Laboratory Results**

SOIL METALS AND MERCURY (ICP/MS)

Sample Location						TF-S1	TF-S2	TF-S3	TF-S4	TF-S5	TF-S6	TF-S11	TF-S12	TF-S13	TF-S14	WRSA-S1
Sample Name						19-TF-S1-S	19-TF-S2-S	19-TF-S3-S	19-TF-S4-S	19-TF-S5-S	19-TF-S6-S	19-TF-S11-S	19-TF-S12-S	19-TF-S13-S	19-TF-S14-S	19-WRSA-S1-S
Sampling Date						22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	23-Jul-19	23-Jul-19
Parameter	Units	Agr	Res	Com	Ind											
Antimony (Sb)	mg/kg	20	20	40	40	0.46	<0.20	<0.20	<0.20	<0.20	0.27	0.29	<0.20	<0.20	<0.20	<0.20
Arsenic (As)	mg/kg	12	12	12	12	29	15	9.9	9.1	23	31	21	9.3	31	1.2	83
Barium (Ba)	mg/kg	750	500	2000	2000	130	33	27	110	38	87	140	30	31	67	50
Beryllium (Be)	mg/kg	4	4	8	8	0.21	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Boron (B)***	mg/kg	2	NA	NA	NA	11	<5.0	<5.0	<5.0	<5.0	7.6	8.3	<5.0	<5.0	<5.0	<5.0
Cadmium (Cd)	mg/kg	1.4	10	22	22	0.36	<0.10	<0.10	0.21	<0.10	0.27	0.27	<0.10	<0.10	0.17	<0.10
Chromium (Cr)	mg/kg	64	64	87	87	7.7	23	16	9.2	22	7.7	10	28	22	18	19
Cobalt (Co)	mg/kg	40	50	300	300	4.6	6.5	5.3	5.5	8.2	3.0	5.7	7.6	10	2.5	12
Copper (Cu)	mg/kg	63	63	91	91	160	18	9.5	55	27	50	120	15	14	94	37
Lead (Pb)	mg/kg	70	140	260	600	3.7	3.8	2.8	1.7	5.0	2.8	4.8	4.8	6.4	1.7	5.7
Mercury (Hg)	mg/kg	6.6	6.6	24	50	0.14	<0.050	<0.050	0.057	<0.050	0.079	0.13	<0.050	<0.050	<0.050	0.055
Molybdenum (Mo)	mg/kg	5	10	40	40	1.4	<0.50	1.8	1.7	<0.50	4.0	1.1	0.52	<0.50	0.57	0.56
Nickel (Ni)	mg/kg	45	45	89	89	56	16	12	26	21	42	44	18	19	21	29
Selenium (Se)	mg/kg	1	1	2.9	2.9	1.7	<0.50	<0.50	0.80	<0.50	0.87	1.7	<0.50	<0.50	0.58	<0.50
Silver (Ag)	mg/kg	20	20	40	40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.21	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	mg/kg	1	1	1	1	0.083	0.10	0.12	0.15	0.12	0.069	0.11	0.084	0.070	0.17	0.073
Uranium (U)	mg/kg	23	23	33	300	11	0.53	1.0	4.4	0.61	1.1	8.1	0.64	0.48	2.3	0.82
Vanadium (V)	mg/kg	130	130	130	130	5.8	20	19	8.4	23	10	7.2	24	19	11	16
Zinc (Zn)	mg/kg	250	250	410	410	35	25	19	5.9	29	13	7.9	26	26	23	28

Notes:

mg/kg = milligram per kilogram

< = less than laboratory method detection limit

RDL = Reportable Detection Limit

NA = Not Available

Lab Dup = Laboratory Duplicate

SOIL METALS AND MERCURY (ICP/MS)

		WRSA-S2	WRSA-S5	WRSA-S6	WRSA-S7	WRSA-S7	WRSA-S8	WRSA-S9	WRSA-S10	WRSA-S11	WRSA-S12
		19-WRSA-S2-S	19-WRSA-S5-S	19-WRSA-S6-S	19-WRSA-S7-S	19-WRSA-S7-S Lab-Dup	19-WRSA-S8-S	19-WRSA-S9-S	19-WRSA-S10-S	19-WRSA-S11-S	19-WRSA-S12-S
		23-Jul-19	23-Jul-19	23-Jul-19	24-Jul-19	24-Jul-19	24-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19
Parameter	Units										
Antimony (Sb)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic (As)	mg/kg	82	55	40	19	17	6.8	23	16	70	89
Barium (Ba)	mg/kg	37	35	30	24	20	22	36	31	37	28
Beryllium (Be)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Boron (B)***	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium (Cd)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chromium (Cr)	mg/kg	23	23	18	26	23	15	21	20	26	18
Cobalt (Co)	mg/kg	11	8.9	8.3	5.8	5.1	3.1	11	7.5	12	8.8
Copper (Cu)	mg/kg	27	22	21	11	9.6	13	15	20	27	14
Lead (Pb)	mg/kg	6.7	6.9	4.6	2.6	2.3	3.1	5.8	4.4	6.9	6.1
Mercury (Hg)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Molybdenum (Mo)	mg/kg	<0.50	<0.50	<0.50	2.3	2.1	0.52	<0.50	<0.50	0.55	<0.50
Nickel (Ni)	mg/kg	28	23	20	18	15	9.7	21	19	27	19
Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver (Ag)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	mg/kg	0.078	0.077	0.051	0.087	0.072	0.068	0.080	0.067	0.069	0.064
Uranium (U)	mg/kg	0.88	0.63	0.66	0.70	0.70	0.60	0.60	0.70	0.78	0.58
Vanadium (V)	mg/kg	22	21	18	30	26	22	21	20	22	17
Zinc (Zn)	mg/kg	28	29	21	24	22	15	26	22	33	25

Notes:

mg/kg = milligram per kilogram

< = less than laboratory method detection limit

RDL = Reportable Detection Limit

NA = Not Available

Lab Dup = Laboratory Duplicate

SOIL METALS AND MERCURY (ICP/MS)

		AWAR-S1	AWAR-S2	AWAR-S3	AWAR-S4	AWAR-S5	AWAR-S6	AWAR-S7	AWAR-S8	AWAR-S9	AWAR-S10	AWAR-S11
		19-AWAR-S1-S	19-AWAR-S2-S	19-AWAR-S3-S	19-AWAR-S4-S	19-AWAR-S5-S	19-AWAR-S6-S	19-AWAR-S7-S	19-AWAR-S8-S	19-AWAR-S9-S	19-AWAR-S10-S	19-AWAR-S11-S
		20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19
Parameter	Units											
Antimony (Sb)	mg/kg	<0.20	<0.20	<0.20	0.24	<0.20	<0.20	0.38	<0.20	<0.20	<0.20	<0.20
Arsenic (As)	mg/kg	19	10	28	16	25	13	55	34	3.8	2.0	<1.0
Barium (Ba)	mg/kg	43	83	31	72	25	89	260	42	8.2	140	150
Beryllium (Be)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Boron (B)***	mg/kg	<5.0	6.9	<5.0	7.9	<5.0	6.3	8.8	<5.0	<5.0	<5.0	5.2
Cadmium (Cd)	mg/kg	0.24	0.11	<0.10	0.18	<0.10	0.11	0.49	<0.10	<0.10	0.12	0.69
Chromium (Cr)	mg/kg	6.7	7.4	22	8.5	27	6.0	7.0	30	13	10	7.7
Cobalt (Co)	mg/kg	4.3	2.3	9.8	5.1	8.2	2.0	18	9.6	2.6	8.1	3.0
Copper (Cu)	mg/kg	43	34	23	160	30	79	90	33	1.2	69	16
Lead (Pb)	mg/kg	3.0	2.2	6.9	2.6	4.0	1.3	2.3	4.8	2.6	1.9	2.4
Mercury (Hg)	mg/kg	0.084	0.058	<0.050	0.083	<0.050	0.12	0.11	<0.050	<0.050	0.086	0.15
Molybdenum (Mo)	mg/kg	0.95	0.64	<0.50	<0.50	<0.50	<0.50	6.8	<0.50	<0.50	0.65	<0.50
Nickel (Ni)	mg/kg	20	13	24	36	22	17	53	25	5.4	16	8.9
Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	1.0	<0.50	0.97	1.8	<0.50	<0.50	0.60	0.73
Silver (Ag)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	mg/kg	<0.050	0.072	0.063	0.067	0.062	0.056	0.24	0.089	<0.050	0.23	<0.050
Uranium (U)	mg/kg	2.8	0.72	0.64	5.1	0.45	0.95	6.8	0.61	0.26	0.91	0.60
Vanadium (V)	mg/kg	6.1	7.7	18	14	23	<5.0	13	25	16	21	6.3
Zinc (Zn)	mg/kg	19	13	26	24	24	8.3	18	28	11	18	22

Notes:

mg/kg = milligram per kilogram

< = less than laboratory method detection limit

RDL = Reportable Detection Limit

NA = Not Available

Lab Dup = Laboratory Duplicate

SOIL METALS AND MERCURY (ICP/MS)

		AWAR-S12	AWAR-S13	AWAR-S14	AWAR-S15	AWAR-S16	AWAR-S17	AWAR-S18	AWAR-S19	AWAR-S20	REF1-S1
		19-AWAR-S12-S	19-AWAR-S13-S	19-AWAR-S14-S	19-AWAR-S15-S	19-AWAR-S16-S	19-AWAR-S17-S	19-AWAR-S18-S	19-AWAR-S19-S	19-AWAR-S20-S	19-REF1-S1-S
		20-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	21-Jul-19
Parameter	Units										
Antimony (Sb)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	0.40	<0.20	<0.20	<0.20	<0.20
Arsenic (As)	mg/kg	1.2	<1.0	1.1	<1.0	1.4	5.2	1.7	6.0	1.5	9.0
Barium (Ba)	mg/kg	38	140	82	7.1	24	73	13	110	120	34
Beryllium (Be)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Boron (B)***	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	6.8	<5.0	<5.0	<5.0	<5.0
Cadmium (Cd)	mg/kg	1.4	0.22	0.14	<0.10	<0.10	0.22	<0.10	0.17	<0.10	<0.10
Chromium (Cr)	mg/kg	2.1	5.6	20	4.4	15	14	27	56	68	26
Cobalt (Co)	mg/kg	1.9	1.9	7.3	0.84	2.8	6.5	4.3	15	7.6	6.5
Copper (Cu)	mg/kg	4.6	24	26	<0.50	2.7	77	2.2	31	60	21
Lead (Pb)	mg/kg	<1.0	2.3	3.7	1.1	2.1	2.3	2.8	5.1	1.5	3.0
Mercury (Hg)	mg/kg	0.14	0.15	<0.050	<0.050	<0.050	0.083	<0.050	0.086	0.063	<0.050
Molybdenum (Mo)	mg/kg	0.58	0.60	0.99	<0.50	<0.50	0.65	<0.50	0.51	0.79	<0.50
Nickel (Ni)	mg/kg	6.1	6.4	12	2.3	6.7	17	8.1	30	27	19
Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.68	<0.50	<0.50	<0.50	<0.50
Silver (Ag)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	mg/kg	<0.050	0.065	0.16	<0.050	<0.050	0.082	<0.050	0.21	0.089	0.10
Uranium (U)	mg/kg	0.31	1.1	1.4	0.24	0.45	1.4	0.40	1.2	1.3	0.97
Vanadium (V)	mg/kg	<5.0	5.3	27	5.2	17	8.9	23	41	35	23
Zinc (Zn)	mg/kg	17	18	16	6.7	14	30	11	49	41	24

Notes:

mg/kg = milligram per kilogram

< = less than laboratory method detection limit

RDL = Reportable Detection Limit

NA = Not Available

Lab Dup = Laboratory Duplicate

SOIL METALS AND MERCURY (ICP/MS)

		REF1-S2	REF1-S3	REF1-S4	REF1-S5	REF2-S1	REF2-S2	REF2-S3	REF2-S3	REF2-S4	REF2-S5	REF3-S1
		19-REF1-S2-S	19-REF1-S3-S	19-REF1-S4-S	19-REF1-S5-S	19-REF2-S1-S	19-REF2-S2-S	19-REF2-S3-S	19-REF2-S3-S Lab-Dup	19-REF2-S4-S	19-REF2-S5-S	19-REF3-S1-S
		21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19
Parameter	Units											
Antimony (Sb)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic (As)	mg/kg	32	1.1	7.4	20	3.1	4.5	3.9	4.1	3.0	16	8.3
Barium (Ba)	mg/kg	63	37	51	45	27	99	31	32	40	52	50
Beryllium (Be)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Boron (B)***	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium (Cd)	mg/kg	<0.10	0.11	<0.10	<0.10	<0.10	0.50	<0.10	<0.10	<0.10	<0.10	<0.10
Chromium (Cr)	mg/kg	30	3.3	19	25	16	19	20	20	24	36	24
Cobalt (Co)	mg/kg	16	1.9	6.7	8.9	4.1	5.8	5.4	5.5	4.8	14	5.5
Copper (Cu)	mg/kg	54	10	16	24	8.4	67	16	16	13	41	15
Lead (Pb)	mg/kg	6.8	<1.0	3.3	4.8	2.3	3.3	2.7	2.8	2.8	3.7	2.9
Mercury (Hg)	mg/kg	<0.050	0.083	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Molybdenum (Mo)	mg/kg	1.3	<0.50	0.60	0.69	<0.50	2.3	<0.50	<0.50	<0.50	<0.50	0.69
Nickel (Ni)	mg/kg	35	6.8	15	20	8.5	32	14	14	12	36	14
Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.94	<0.50	<0.50	<0.50	<0.50	<0.50
Silver (Ag)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	mg/kg	0.082	<0.050	0.075	0.096	<0.050	0.14	0.072	0.070	0.086	0.11	0.13
Uranium (U)	mg/kg	1.4	0.21	0.46	0.64	0.44	3.0	0.56	0.58	0.67	0.73	0.66
Vanadium (V)	mg/kg	41	<5.0	18	29	17	19	18	18	21	31	27
Zinc (Zn)	mg/kg	48	8.6	22	29	15	18	16	17	19	31	21

Notes:

mg/kg = milligram per kilogram

< = less than laboratory method detection limit

RDL = Reportable Detection Limit

NA = Not Available

Lab Dup = Laboratory Duplicate

SOIL METALS AND MERCURY (ICP/MS)

		REF3-S1	REF3-S2	REF3-S3	REF3-S4	REF3-S5	
		19-REF3-S1-S Lab-Dup	19-REF3-S2-S	19-REF3-S3-S	19-REF3-S4-S	19-REF3-S5-S	
		21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	RDL
Parameter	Units						
Antimony (Sb)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	0.20
Arsenic (As)	mg/kg	8.9	<1.0	2.3	3.0	5.2	1.0
Barium (Ba)	mg/kg	54	260	69	60	170	0.50
Beryllium (Be)	mg/kg	<0.20	0.20	0.22	0.25	<0.20	0.20
Boron (B)***	mg/kg	<5.0	<5.0	6.7	<5.0	<5.0	5.0
Cadmium (Cd)	mg/kg	<0.10	0.20	<0.10	<0.10	0.16	0.10
Chromium (Cr)	mg/kg	25	27	32	32	52	1.0
Cobalt (Co)	mg/kg	5.8	5.6	6.0	5.4	17	0.10
Copper (Cu)	mg/kg	17	30	14	44	34	0.50
Lead (Pb)	mg/kg	3.2	3.8	4.0	6.5	4.4	1.0
Mercury (Hg)	mg/kg	<0.050	0.17	<0.050	<0.050	0.13	0.50
Molybdenum (Mo)	mg/kg	0.71	<0.50	0.56	0.93	1.7	0.50
Nickel (Ni)	mg/kg	15	22	16	15	47	0.50
Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	0.72	0.20
Silver (Ag)	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	0.050
Thallium (Tl)	mg/kg	0.13	0.18	0.16	0.12	0.35	0.050
Uranium (U)	mg/kg	0.74	1.3	0.94	1.5	2.4	5.0
Vanadium (V)	mg/kg	28	23	34	35	45	5.0
Zinc (Zn)	mg/kg	22	42	32	24	34	0.050

Notes:

mg/kg = milligram per kilogram

< = less than laboratory method detection limit

RDL = Reportable Detection Limit

NA = Not Available

Lab Dup = Laboratory Duplicate

SOIL PERCENT MOISTURE AND pH

Sample Location		TF-S1	TF-S2	TF-S3	TF-S4	TF-S5	TF-S6	TF-S11	TF-S12	TF-S13	TF-S14	WRSA-S1	WRSA-S2
Sample Name		19-TF-S1-S	19-TF-S2-S	19-TF-S3-S	19-TF-S4-S	19-TF-S5-S	19-TF-S6-S	19-TF-S11-S	19-TF-S12-S	19-TF-S13-S	19-TF-S14-S	19-WRSA-S1-S	19-WRSA-S2-S
Sampling Date		22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19
Parameter	Units												
% Moisture	%	72	17	18	76	11	74	76	18	11	66	31	11
pH *	pH	6.3	5.96	6.43	5.19	5.18	5.82	5.88	6.38	4.67	4.83	5.65	5.88

Notes:

* pH tested by available CaCl₂

Lab Dup=Laboratory Duplicate

SOIL PERCENT MOISTURE AND pH

Sample Location		WRSA-S5	WRSA-S6	WRSA-S7	WRSA-S8	WRSA-S9	WRSA-S10	WRSA-S11	WRSA-S12	AWAR-S1	AWAR-S2
Sample Name		19-WRSA-S5-S	19-WRSA-S6-S	19-WRSA-S7-S	19-WRSA-S8-S	19-WRSA-S9-S	19-WRSA-S10-S	19-WRSA-S11-S	19-WRSA-S12-S	19-AWAR-S1-S	19-AWAR-S2-S
Sampling Date		23-Jul-19	23-Jul-19	24-Jul-19	24-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	20-Jul-19	20-Jul-19
Parameter	Units										
% Moisture	%	13	9.8	14	19	9.7	12	9.4	10	77	72
pH *	pH	4.57	5.47	6.95	5.51	5.52	5.66	4.61	5.70	3.87	6.21

Notes:

* pH tested by available CaCl2

Lab Dup=Laboratory Duplicate

SOIL PERCENT MOISTURE AND pH

Sample Location		AWAR-S3	AWAR-S4	AWAR-S5	AWAR-S6	AWAR-S7	AWAR-S8	AWAR-S9	AWAR-S9	AWAR-S10	AWAR-S11
Sample Name		19-AWAR-S3-S	19-AWAR-S4-S	19-AWAR-S5-S	19-AWAR-S6-S	19-AWAR-S7-S	19-AWAR-S8-S	19-AWAR-S9-S	AWAR-S9-S-Lab-	19-AWAR-S10-S	19-AWAR-S11
Sampling Date		20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19
Parameter	Units										
% Moisture	%	13	63	17	77	80	12	11		57	78
pH *	pH	4.50	6.29	5.07	5.82	5.57	5.45	3.91	3.88	5.44	3.98

Notes:

* pH tested by available CaCl2

Lab Dup=Laboratory Duplicate

SOIL PERCENT MOISTURE AND pH

Sample Location		AWAR-S12	AWAR-S13	AWAR-S14	AWAR-S15	AWAR-S16	AWAR-S17	AWAR-S18	AWAR-S19	AWAR-S20
Sample Name		19-AWAR-S12-S	19-AWAR-S13-S	19-AWAR-S14-S	19-AWAR-S15-S	19-AWAR-S16-S	19-AWAR-S17-S	19-AWAR-S18-S	19-AWAR-S19-S	19-AWAR-S20-S
Sampling Date		20-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19
Parameter	Units									
% Moisture	%	84	73	34	27	5.8	70	5.9	9.5	67
pH *	pH	2.95	4.01	5.11	3.86	4.33	5.77	3.97	5.41	5.94

Notes:

* pH tested by available CaCl2

Lab Dup=Laboratory Duplicate

SOIL PERCENT MOISTURE AND pH

Sample Location		REF1-S1	REF1-S2	REF1-S3	REF1-S4	REF1-S5	REF2-S1	REF2-S2	REF2-S3	REF2-S4	REF2-S5	REF3-S1
Sample Name		19-REF1-S1-S	19-REF1-S2-S	19-REF1-S3-S	19-REF1-S4-S	19-REF1-S5-S	19-REF2-S1-S	19-REF2-S2-S	19-REF2-S3-S	19-REF2-S4-S	19-REF2-S5-S	19-REF3-S1-S
Sampling Date		21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19
Parameter	Units											
% Moisture	%	17	39	72	30	29	19	72	12	18	13	17
pH *	pH	6.46	5.98	4.33	5.78	5.80	4.62	4.69	4.55	4.95	7.71	4.67

Notes:

* pH tested by available CaCl₂

Lab Dup=Laboratory Duplicate

SOIL PERCENT MOISTURE AND pH

Sample Location		REF3-S2	REF3-S3	REF3-S4	REF3-S5	Min	Max
Sample Name		19-REF3-S2-S	19-REF3-S3-S	19-REF3-S4-S	19-REF3-S5-S		
Sampling Date		21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19		
Parameter	Units						
% Moisture	%	69	17	25	62	5.8	84
pH *	pH	3.92	7.26	4.92	5.16	2.95	7.71

Notes:

* pH tested by available CaCl₂

Lab Dup=Laboratory Duplicate

SOIL RELATIVE PERCENT DIFFERENCE

Sample Location		WRSa-S7	WRSa-S7	RPD (%)	REF2-S3	REF2-S3	RPD (%)	REF3-S1	REF3-S1	RPD (%)
Sample Name		19-WRSa-S7-S	19-WRSa-S7-S Lab-Dup		19-REF2-S3-S	19-REF2-S3-S Lab-Dup		19-REF3-S1-S	19-REF3-S1-S Lab-Dup	
Sampling Date		24-Jul-19	24-Jul-19		21-Jul-19	21-Jul-19		21-Jul-19	21-Jul-19	
Parameter	Units									
Antimony (Sb)	mg/kg	<0.20	<0.20	-	<0.20	<0.20	-	<0.20	<0.20	-
Arsenic (As)	mg/kg	3.90	4.10	5.0	3.90	4.10	5.0	8.30	8.90	7.0
Barium (Ba)	mg/kg	31.00	32.00	3.2	31.00	32.00	3.2	50.00	54.00	7.7
Beryllium (Be)	mg/kg	<0.20	<0.20	-	<0.20	<0.20	-	<0.20	<0.20	-
Boron (B)	mg/kg	<5.0	<5.0	-	<5.0	<5.0	-	<5.0	<5.0	-
Cadmium (Cd)	mg/kg	<0.10	<0.10	-	<0.10	<0.10	-	<0.10	<0.10	-
Chromium (Cr)	mg/kg	20.00	20.00	0.0	20.00	20.00	0.0	24.00	25.00	4.1
Cobalt (Co)	mg/kg	5.40	5.50	1.8	5.40	5.50	1.8	5.50	5.80	5.3
Copper (Cu)	mg/kg	16.00	16.00	0.0	16.00	16.00	0.0	15.00	17.00	12.5
Lead (Pb)	mg/kg	2.70	2.80	3.6	2.70	2.80	3.6	2.90	3.20	9.8
Mercury (Hg)	mg/kg	<0.050	<0.050	-	<0.050	<0.050	-	<0.050	<0.050	-
Molybdenum (Mo)	mg/kg	<0.50	<0.50	-	<0.50	<0.50	-	0.69	0.71	2.9
Nickel (Ni)	mg/kg	14.00	14.00	0.0	14.00	14.00	0.0	14.00	15.00	6.9
Selenium (Se)	mg/kg	<0.50	<0.50	-	<0.50	<0.50	-	<0.50	<0.50	-
Silver (Ag)	mg/kg	<0.20	<0.20	-	<0.20	<0.20	-	<0.20	<0.20	-
Thallium (Tl)	mg/kg	0.07	0.07	2.8	0.07	0.07	2.8	0.13	0.13	0.0
Uranium (U)	mg/kg	0.56	0.58	3.5	0.56	0.58	3.5	0.66	0.74	11.4
Vanadium (V)	mg/kg	18.00	18.00	0.0	18.00	18.00	0.0	27.00	28.00	3.6
Zinc (Zn)	mg/kg	16.00	17.00	6.1	16.00	17.00	6.1	21.00	22.00	4.7

Notes:

RPD = relative percent difference

Lab Dup = Laboratory Duplicate

All concentrations in milligrams per kilogram (mg/kg)

"<" = less than laboratory method detection limit

"-." = not calculated because one or both concentrations were below the laboratory method detection limit

**VEGETATION TISSUE METALS (ICP/MS)
AND MERCURY (AS)**

Sample Location	TF-S1	TF-S2	TF-S3	TF-S4	TF-S5	TF-S6	TF-S11	TF-S11
Sample Name	19-TF-S1-Cr	19-TF-S2-Li	19-TF-S3-Sd	19-TF-S4-LT	19-TF-S5-Li	19-TF-S6-LT	19-TF-S11-Br	19-TF-S11-Br- Lab-Dup
Sampling Date	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19
METALS	Units							
Antimony (Sb)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.4	15.6	12.0	4.2	24.4	11.8	7.3
Barium (Ba)	mg/kg	1.5	24.1	13.4	41.3	12.4	25.6	8.5
Beryllium (Be)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bismuth (Bi)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (B)	mg/kg	2.3	1.8	2.5	9.0	1.6	10.4	5.6
Cadmium (Cd)	mg/kg	<0.01	0.13	0.01	<0.01	0.10	<0.01	0.02
Calcium (Ca)	mg/kg	291	11900	3130	2910	2550	2380	1600
Chromium (Cr)	mg/kg	<0.3	1.1	1.3	0.4	1.1	0.4	<0.3
Cobalt (Co)	mg/kg	0.006	0.379	0.073	0.058	0.331	0.070	0.085
Copper (Cu)	mg/kg	2.1	2.5	3.9	2.2	3.6	2.7	3.1
Iron (Fe)	mg/kg	10	599	176	111	670	161	108
Lead (Pb)	mg/kg	<0.03	2.66	0.90	0.35	3.89	0.83	0.38
Magnesium (Mg)	mg/kg	133	736	351	601	573	578	939
Manganese (Mn)	mg/kg	7.2	67.7	55.4	776	116	247	73.9
Mercury (Hg)	mg/kg	<0.01	0.11	<0.01	<0.01	0.29	<0.01	<0.01
Molybdenum (Mo)	mg/kg	<0.05	0.14	0.52	0.06	0.13	0.05	<0.05
Nickel (Ni)	mg/kg	0.10	1.18	1.13	0.43	1.23	0.47	1.50
Phosphorus (P)	mg/kg	236	270	388	471	575	431	583
Potassium (K)	mg/kg	1930	989	5560	2250	1500	2690	2540
Selenium (Se)	mg/kg	<0.1	0.1	<0.1	<0.1	0.1	<0.1	<0.1
Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium (Na)	mg/kg	<50	105	<50	<50	164	<50	<50
Strontium (Sr)	mg/kg	<0.5	36.2	15.2	6.2	10.4	3.7	6.4
Thallium (Tl)	mg/kg	<0.003	0.006	<0.003	0.155	0.004	0.120	<0.003
Tin (Sn)	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Titanium (Ti)	mg/kg	<0.5	12.3	2.0	2.0	7.8	1.8	1.6
Uranium (U)	mg/kg	<0.005	0.039	0.014	<0.005	0.026	<0.005	<0.005
Vanadium (V)	mg/kg	<0.05	0.66	0.10	0.09	0.52	0.10	0.08
Zinc (Zn)	mg/kg	3	31	12	19	20	15	54

Notes:

(*) lab duplicate analysis was not performed for mercury

mg/kg = milligram per kilogram

< = less than laboratory method detection limit

RDL = Reportable Detection Limit

N/A = Not Applicable

Lab Dup = Laboratory Duplicate

**VEGETATION TISSUE METALS (ICP/MS)
AND MERCURY (AS)**

Sample Location	TF-S12	TF-S13	TF-S14	WRSA-S1	WRSA-S2	WRSA-S5	WRSA-S6	WRSA-S7
Sample Name	19-TF-S12-Sd	19-TF-S13-Cr	19-TF-S14-Li	19-WRSA-S1-LT	19-WRSA-S2-Sd	19-WRSA-S5-Li	19-WRSA-S6-Br	19-WRSA-S7-Li
Sampling Date	22-Jul-19	22-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	24-Jul-19
METALS	Units							
Antimony (Sb)	mg/kg	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05
Arsenic (As)	mg/kg	4.8	0.6	1.6	14.1	99.0	4.3	8.1
Barium (Ba)	mg/kg	16.7	1.2	8.1	27.5	13.6	9.7	20.4
Beryllium (Be)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bismuth (Bi)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
Boron (B)	mg/kg	2.4	2.2	<0.5	8.7	2.7	1.7	2.0
Cadmium (Cd)	mg/kg	0.01	<0.01	0.05	<0.01	0.11	0.03	0.09
Calcium (Ca)	mg/kg	2740	268	2060	2890	7440	1720	9220
Chromium (Cr)	mg/kg	0.4	<0.3	14.2	0.8	3.7	<0.3	7.8
Cobalt (Co)	mg/kg	0.116	0.016	0.496	0.104	1.08	0.439	1.37
Copper (Cu)	mg/kg	3.3	1.9	2.0	2.3	3.6	2.7	5.6
Iron (Fe)	mg/kg	185	23	465	266	275	2360	2960
Lead (Pb)	mg/kg	0.62	<0.03	0.70	0.97	1.10	6.35	2.62
Magnesium (Mg)	mg/kg	260	147	412	711	419	993	1490
Manganese (Mn)	mg/kg	81.7	11.0	102	356	33.5	68.1	91.5
Mercury (Hg)	mg/kg	0.01	<0.01	0.07	<0.01	<0.01	0.09	<0.01
Molybdenum (Mo)	mg/kg	0.43	<0.05	1.76	0.10	0.35	0.35	<0.05
Nickel (Ni)	mg/kg	0.67	0.26	9.64	0.46	1.58	3.37	1.85
Phosphorus (P)	mg/kg	400	330	290	465	374	392	818
Potassium (K)	mg/kg	5480	1860	1120	2620	5580	1090	3070
Selenium (Se)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium (Na)	mg/kg	<50	<50	<50	<50	<50	77	<50
Strontium (Sr)	mg/kg	25.2	<0.5	6.1	5.9	16.7	29.0	5.7
Thallium (Tl)	mg/kg	<0.003	<0.003	0.003	0.025	<0.003	0.010	<0.003
Tin (Sn)	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Titanium (Ti)	mg/kg	2.8	0.7	8.6	2.9	3.7	38	2.4
Uranium (U)	mg/kg	0.011	<0.005	0.021	<0.005	0.010	0.083	<0.005
Vanadium (V)	mg/kg	0.15	<0.05	0.51	0.22	0.26	2.23	0.13
Zinc (Zn)	mg/kg	17	3	14	15	10	26	67

Notes:

(*) lab duplicate analysis was not performed for mercury

mg/kg = milligram per kilogram

< = less than laboratory method detection limit

RDL = Reportable Detection Limit

N/A = Not Applicable

Lab Dup = Laboratory Duplicate

**VEGETATION TISSUE METALS (ICP/MS)
AND MERCURY (AS)**

Sample Location	WRSA-S8	WRSA-S9	WRSA-S10	WRSA-S11	WRSA-S12	AWAR-S1	AWAR-S2
Sample Name	19-WRSA-S8-Br	19-WRSA-S9-Cr	19-WRSA-S10-Cr	19-WRSA-S11-Br	19-WRSA-S12-Li	19-AWAR-S1-Sd	19-AWAR-S2-Li
Sampling Date	24-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	20-Jul-19	20-Jul-19
METALS	Units						
Antimony (Sb)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.3	<0.1	<0.1	6.0	92.8	1.5
Barium (Ba)	mg/kg	10.7	1.2	1.2	11.6	12.4	11.4
Beryllium (Be)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bismuth (Bi)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (B)	mg/kg	4.8	1.4	1.2	8.1	1.1	2.7
Cadmium (Cd)	mg/kg	0.02	<0.01	<0.01	0.02	0.08	0.01
Calcium (Ca)	mg/kg	1820	223	242	2220	3970	2550
Chromium (Cr)	mg/kg	<0.3	<0.3	<0.3	0.6	5.1	2.7
Cobalt (Co)	mg/kg	0.170	0.034	0.017	0.225	0.604	0.647
Copper (Cu)	mg/kg	2.6	1.4	1.5	3.0	5.4	3.7
Iron (Fe)	mg/kg	97	18	23	230	1560	657
Lead (Pb)	mg/kg	0.07	<0.03	<0.03	0.31	15.6	0.27
Magnesium (Mg)	mg/kg	895	128	129	950	623	590
Manganese (Mn)	mg/kg	55.7	11.8	9.4	91.4	69.8	190
Mercury (Hg)	mg/kg	<0.01	<0.01	<0.01	<0.01	0.08	<0.01
Molybdenum (Mo)	mg/kg	<0.05	<0.05	<0.05	0.05	0.25	0.41
Nickel (Ni)	mg/kg	1.67	0.35	0.19	2.92	3.32	1.57
Phosphorus (P)	mg/kg	646	259	247	641	291	589
Potassium (K)	mg/kg	2730	1760	1770	2850	1140	5550
Selenium (Se)	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium (Na)	mg/kg	192	<50	<50	<50	72	117
Strontium (Sr)	mg/kg	9.5	0.6	0.6	7.8	15.9	16.7
Thallium (Tl)	mg/kg	<0.003	<0.003	<0.003	<0.003	0.007	0.005
Tin (Sn)	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Titanium (Ti)	mg/kg	2.2	0.7	0.8	4.1	15.0	17.7
Uranium (U)	mg/kg	<0.005	<0.005	<0.005	0.006	0.042	0.071
Vanadium (V)	mg/kg	0.12	<0.05	<0.05	0.22	0.89	1.00
Zinc (Zn)	mg/kg	47	2	2	79	21	16

Notes:

(*) lab duplicate analysis was not performed for mercury

mg/kg = milligram per kilogram

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**VEGETATION TISSUE METALS (ICP/MS)
AND MERCURY (AS)**

Sample Location	AWAR-S3	AWAR-S4	AWAR-S5	AWAR-S6	AWAR-S7	AWAR-S8	AWAR-S9
Sample Name	19-AWAR-S3-Li	19-AWAR-S4-Br	19-AWAR-S5-Sd	19-AWAR-S6-Li	19-AWAR-S7-Sd	19-AWAR-S8-Br	19-AWAR-S9-Lt
Sampling Date	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19
METALS	Units						
Antimony (Sb)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	5.1	0.4	3.6	13.8	4.3	0.2
Barium (Ba)	mg/kg	23.2	6.4	17.7	22.9	12.8	24.2
Beryllium (Be)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bismuth (Bi)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (B)	mg/kg	1.8	7.2	3.0	2.5	2.4	8.1
Cadmium (Cd)	mg/kg	0.09	0.01	0.02	0.11	0.02	<0.01
Calcium (Ca)	mg/kg	8400	2780	3760	15000	3550	1880
Chromium (Cr)	mg/kg	6.6	<0.3	1.8	11.6	2.2	0.8
Cobalt (Co)	mg/kg	1.71	0.163	0.411	2.24	0.590	0.132
Copper (Cu)	mg/kg	7.0	2.8	4.8	8.9	4.2	2.4
Iron (Fe)	mg/kg	2930	103	631	4250	778	217
Lead (Pb)	mg/kg	2.05	0.05	0.42	3.51	0.83	0.09
Magnesium (Mg)	mg/kg	1300	704	619	1780	662	576
Manganese (Mn)	mg/kg	125	71.2	67.0	107	214	369
Mercury (Hg)	mg/kg	0.14	<0.01	<0.01	0.05	0.01	<0.01
Molybdenum (Mo)	mg/kg	0.24	0.18	0.32	0.51	0.31	<0.05
Nickel (Ni)	mg/kg	4.16	1.09	2.28	6.00	1.76	0.55
Phosphorus (P)	mg/kg	372	661	402	325	545	680
Potassium (K)	mg/kg	1260	3290	4490	998	5140	2970
Selenium (Se)	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium (Na)	mg/kg	72	<50	85	101	89	<50
Strontium (Sr)	mg/kg	35.6	8.3	18.5	42.6	18.3	6.1
Thallium (Tl)	mg/kg	0.015	<0.003	<0.003	0.018	0.004	0.056
Tin (Sn)	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Titanium (Ti)	mg/kg	60	2.4	11.3	83	18.4	9.0
Uranium (U)	mg/kg	0.097	<0.005	0.028	0.140	0.075	0.010
Vanadium (V)	mg/kg	4.07	0.14	1.01	5.86	1.15	0.36
Zinc (Zn)	mg/kg	21	106	12	23	26	14

Notes:

(*) lab duplicate analysis was not performed for mercury

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**VEGETATION TISSUE METALS (ICP/MS)
AND MERCURY (AS)**

Sample Location	AWAR-S10	AWAR-S10	AWAR-S11	AWAR-S12	AWAR-S13	AWAR-S14
Sample Name	19-AWAR-S10-Li	19-AWAR-S10-Li-Lab-Dup	19-AWAR-S11-Li	19-AWAR-S12-Lt	19-AWAR-S13-Li	19-AWAR-S14-Sd
Sampling Date	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	19-Jul-19	19-Jul-19
METALS	Units					
Antimony (Sb)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.8	0.8	1.2	0.2	0.1
Barium (Ba)	mg/kg	20.1	20.6	25.9	26.0	32.8
Beryllium (Be)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bismuth (Bi)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (B)	mg/kg	1.0	1.0	0.9	9.6	0.9
Cadmium (Cd)	mg/kg	0.11	0.11	0.06	<0.01	0.13
Calcium (Ca)	mg/kg	2100	2110	2100	2430	1980
Chromium (Cr)	mg/kg	23.5	23.0	4.8	1.1	4.9
Cobalt (Co)	mg/kg	1.02	1.00	1.01	0.143	1.07
Copper (Cu)	mg/kg	3.7	3.6	4.4	2.5	4.7
Iron (Fe)	mg/kg	1060	1010	1940	274	1910
Lead (Pb)	mg/kg	1.56	1.54	1.05	0.09	3.32
Magnesium (Mg)	mg/kg	584	562	998	829	878
Manganese (Mn)	mg/kg	52.6	56.7	73.5	273	41.0
Mercury (Hg)	mg/kg	0.18	0.18	0.06	<0.01	0.25
Molybdenum (Mo)	mg/kg	2.69	2.71	0.19	0.07	0.20
Nickel (Ni)	mg/kg	15.4	15.0	2.72	0.55	2.95
Phosphorus (P)	mg/kg	276	264	444	520	283
Potassium (K)	mg/kg	1240	1190	2230	2640	1330
Selenium (Se)	mg/kg	0.2	0.1	0.1	<0.1	0.2
Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium (Na)	mg/kg	<50	<50	111	<50	<50
Strontium (Sr)	mg/kg	12.5	12.5	26.8	9.2	19.4
Thallium (Tl)	mg/kg	0.010	0.010	0.023	0.031	0.019
Tin (Sn)	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
Titanium (Ti)	mg/kg	36	34	68	10.8	65
Uranium (U)	mg/kg	0.056	0.055	0.102	0.016	0.099
Vanadium (V)	mg/kg	1.50	1.39	2.94	0.45	2.85
Zinc (Zn)	mg/kg	17	17	22	13	20

Notes:

(*) lab duplicate analysis was not performed for mercury

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**VEGETATION TISSUE METALS (ICP/MS)
AND MERCURY (AS)**

Sample Location	AWAR-S15	AWAR-S16	AWAR-S17	AWAR-S18	AWAR-S19	AWAR-S20	REF1-S1
Sample Name	19-AWAR-S15-Sd	19-AWAR-S16-Cr	19-AWAR-S17-Li	19-AWAR-S18-Li	19-AWAR-S19-Li	19-AWAR-S20-Li	19-REF1-S1-Sd
Sampling Date	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	21-Jul-19
METALS	Units						
Antimony (Sb)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.8	<0.1	0.9	0.7	2.4	1.3
Barium (Ba)	mg/kg	20.4	2.2	24.0	28.9	52.1	25.0
Beryllium (Be)	mg/kg	<0.05	<0.05	<0.05	<0.05	0.06	<0.05
Bismuth (Bi)	mg/kg	<0.05	<0.05	0.06	0.08	0.07	<0.05
Boron (B)	mg/kg	3.3	2.0	1.1	0.7	1.8	1.0
Cadmium (Cd)	mg/kg	0.04	<0.01	0.08	0.06	0.10	0.06
Calcium (Ca)	mg/kg	2350	299	5170	4440	8090	15600
Chromium (Cr)	mg/kg	1.5	<0.3	6.0	12.4	31.4	60
Cobalt (Co)	mg/kg	0.589	0.039	1.09	1.18	4.56	2.54
Copper (Cu)	mg/kg	4.7	1.3	5.3	5.7	16.4	8.4
Iron (Fe)	mg/kg	809	77	1880	1620	8060	3620
Lead (Pb)	mg/kg	0.40	<0.03	1.26	1.87	2.53	1.52
Magnesium (Mg)	mg/kg	593	156	966	770	3660	1890
Manganese (Mn)	mg/kg	46.0	7.7	35.6	41.1	131	62.5
Mercury (Hg)	mg/kg	0.02	<0.01	0.16	0.11	0.15	0.03
Molybdenum (Mo)	mg/kg	0.45	<0.05	0.10	1.03	0.21	5.69
Nickel (Ni)	mg/kg	1.49	0.30	2.55	7.17	12.2	33.7
Phosphorus (P)	mg/kg	378	269	341	440	415	448
Potassium (K)	mg/kg	3310	1610	1300	1470	1400	2120
Selenium (Se)	mg/kg	<0.1	<0.1	0.2	0.2	0.2	<0.1
Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium (Na)	mg/kg	<50	<50	<50	52	65	141
Strontium (Sr)	mg/kg	17.4	0.9	27.2	26.4	29.3	34.3
Thallium (Tl)	mg/kg	0.006	<0.003	0.024	0.022	0.056	0.029
Tin (Sn)	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Titanium (Ti)	mg/kg	20.6	3.0	74	71	342	154
Uranium (U)	mg/kg	0.048	<0.005	0.129	0.125	0.255	0.143
Vanadium (V)	mg/kg	1.04	0.13	2.83	2.33	13.1	6.19
Zinc (Zn)	mg/kg	24	2	18	13	25	20

Notes:

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**VEGETATION TISSUE METALS (ICP/MS)
AND MERCURY (AS)**

Sample Location	REF1-S2	REF1-S3	REF1-S4	REF1-S5	REF2-S1	REF2-S1	REF2-S2
Sample Name	19-REF1-S2-Li	19-REF1-S3-LT	19-REF1-S4-Br	19-REF1-S5-Sd	19-REF2-S1-LT	19-REF2-S1-LT - Lab-Dup	19-REF2-S2-Br
Sampling Date	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19
METALS	Units						
Antimony (Sb)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.4	<0.1	<0.1	0.4	<0.1	<0.1
Barium (Ba)	mg/kg	9.2	30.8	5.8	6.6	31.0	15.0
Beryllium (Be)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bismuth (Bi)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (B)	mg/kg	0.7	7.1	7.8	1.4	7.5	3.7
Cadmium (Cd)	mg/kg	0.07	<0.01	0.01	<0.01	<0.01	0.06
Calcium (Ca)	mg/kg	2100	2170	1990	2030	2140	1470
Chromium (Cr)	mg/kg	<0.3	<0.3	<0.3	0.6	<0.3	<0.3
Cobalt (Co)	mg/kg	0.374	0.057	0.076	0.110	0.021	0.337
Copper (Cu)	mg/kg	1.3	1.9	2.6	2.3	2.2	2.8
Iron (Fe)	mg/kg	129	15	14	106	17	21
Lead (Pb)	mg/kg	1.54	<0.03	<0.03	0.05	<0.03	<0.03
Magnesium (Mg)	mg/kg	406	576	824	327	523	847
Manganese (Mn)	mg/kg	86.1	448	54.8	115	524	445
Mercury (Hg)	mg/kg	0.17	<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum (Mo)	mg/kg	<0.05	<0.05	<0.05	0.26	<0.05	<0.05
Nickel (Ni)	mg/kg	0.56	0.42	1.38	0.77	0.37	2.04
Phosphorus (P)	mg/kg	254	519	676	582	534	663
Potassium (K)	mg/kg	1040	2440	3100	5410	2490	2440
Selenium (Se)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium (Na)	mg/kg	<50	<50	<50	<50	<50	<50
Strontium (Sr)	mg/kg	7.5	2.4	6.2	8.8	2.8	4.4
Thallium (Tl)	mg/kg	<0.003	0.087	<0.003	<0.003	0.128	<0.003
Tin (Sn)	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Titanium (Ti)	mg/kg	3.4	0.8	0.9	0.9	1.0	0.8
Uranium (U)	mg/kg	0.748	<0.005	<0.005	0.005	<0.005	<0.005
Vanadium (V)	mg/kg	0.15	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc (Zn)	mg/kg	14	13	91	12	15	63

Notes:

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**VEGETATION TISSUE METALS (ICP/MS)
AND MERCURY (AS)**

Sample Location	REF2-S3	REF2-S4	REF2-S5	REF3-S1	REF3-S2	REF3-S3	REF3-S4	REF3-S5
Sample Name	19-REF2-S3-Li	19-REF2-S4-Sd	19-REF2-S5-Br	19-REF3-S1-Li	19-REF3-S2-Li	19-REF3-S3-Li	19-REF3-S4-Li	19-REF3-S5-Sd
Sampling Date	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19
METALS	Units							
Antimony (Sb)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic (As)	mg/kg	0.2	<0.1	<0.1	0.1	0.1	0.7	<0.1
Barium (Ba)	mg/kg	8.8	16.0	17.5	3.6	7.5	7.3	15.1
Beryllium (Be)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bismuth (Bi)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (B)	mg/kg	1.0	2.5	3.5	<0.5	<0.5	<0.5	1.1
Cadmium (Cd)	mg/kg	0.07	0.02	0.05	0.11	0.08	0.06	0.12
Calcium (Ca)	mg/kg	1210	2650	1510	641	711	1950	2320
Chromium (Cr)	mg/kg	<0.3	0.6	<0.3	1.2	1.8	0.6	3.4
Cobalt (Co)	mg/kg	0.234	0.158	0.402	0.076	0.170	0.096	0.268
Copper (Cu)	mg/kg	1.7	4.6	2.7	1.1	1.1	1.0	2.0
Iron (Fe)	mg/kg	88	91	25	98	183	149	516
Lead (Pb)	mg/kg	0.34	0.03	<0.03	0.46	0.70	0.77	1.07
Magnesium (Mg)	mg/kg	402	429	885	312	365	436	588
Manganese (Mn)	mg/kg	222	57.0	466	40.2	54.3	37.9	42.8
Mercury (Hg)	mg/kg	0.11	<0.01	<0.01	0.11	0.12	0.10	0.07
Molybdenum (Mo)	mg/kg	<0.05	0.51	<0.05	0.13	0.18	<0.05	0.33
Nickel (Ni)	mg/kg	0.72	1.74	2.92	0.84	1.36	0.30	2.14
Phosphorus (P)	mg/kg	338	397	841	352	291	326	657
Potassium (K)	mg/kg	1290	3860	2880	1180	1220	1250	2030
Selenium (Se)	mg/kg	0.1	<0.1	<0.1	0.1	0.2	0.1	0.1
Silver (Ag)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium (Na)	mg/kg	<50	<50	<50	82	<50	168	129
Strontium (Sr)	mg/kg	3.9	9.1	3.9	3.0	3.6	7.1	8.1
Thallium (Tl)	mg/kg	<0.003	<0.003	<0.003	0.005	0.008	0.007	0.010
Tin (Sn)	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Titanium (Ti)	mg/kg	2.8	1.1	1.0	3.3	5.9	5.3	19.7
Uranium (U)	mg/kg	0.007	<0.005	<0.005	0.008	0.013	0.010	0.060
Vanadium (V)	mg/kg	0.13	0.06	<0.05	0.15	0.26	0.24	0.75
Zinc (Zn)	mg/kg	24	13	21	8	12	14	29

Notes:

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VEGETATION TISSUE PERCENT MOISTURE

Sample Location		TF-S1	TF-S2	TF-S3	TF-S4	TF-S11	TF-S5	TF-S6
Sample Name		19-TF-S1-Cr	19-TF-S2-Li	19-TF-S3-Sd	19-TF-S4-LT	19-TF-S4-LT- Lab-Dup	19-TF-S5-Li	19-TF-S6-LT
Sampling Date		22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19
Parameter	Units							
% Moisture	%	79	10	59	53	-	9.7	54
pH	pH	3.66	4.16	6.47	4.66	4.66	4.34	4.64

Notes:

"-"= Data no available

Lab Dup=Laboratory Duplicate

VEGETATION TISSUE PERCENT MOISTURE

Sample Location		TF-S11	TF-S11	TF-S12	TF-S13	TF-S14	WRSA-S1	WRSA-S2	WRSA-S5
Sample Name		19-TF-S6-LT- Lab-Dup	19-TF-S11-Br	19-TF-S12-Sd	19-TF-S13-Cr	19-TF-S14-Li	19-WRSA-S1-LT	19-WRSA-S2-Sd	19-WRSA-S5-Li
Sampling Date		22-Jul-19	22-Jul-19	22-Jul-19	22-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19
Parameter	Units								
% Moisture	%	-	61	45	79	22	54	60	17
pH	pH	4.64	4.62	6.52	4.92	4.24	4.63	6.82	4.43

Notes:

"-"= Data no available

Lab Dup=Laboratory Duplicate

VEGETATION TISSUE PERCENT MOISTURE

Sample Location		WRSA-S6	WRSA-S7	WRSA-S8	WRSA-S9	WRSA-S10	WRSA-S11	WRSA-S12	AWAR-S1
Sample Name		19-WRSA-S6-Br	19-WRSA-S7-Li	19-WRSA-S8-Br	19-WRSA-S9-Cr	19-WRSA-S10-Cr	19-WRSA-S11-Br	19-WRSA-S12-Li	19-AWAR-S1-Sd
Sampling Date		23-Jul-19	24-Jul-19	24-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	23-Jul-19	20-Jul-19
Parameter	Units								
% Moisture	%	62	20	64	79	80	63	11	62
pH	pH	3.69	4.33	4.54	6.23	3.44	4.58	4.36	4.76

Notes:

"-"= Data no available

Lab Dup=Laboratory Duplicate

VEGETATION TISSUE PERCENT MOISTURE

Sample Location		AWAR-S2	AWAR-S3	AWAR-S4	AWAR-S5	AWAR-S6	AWAR-S7	AWAR-S8	AWAR-S9
Sample Name		19-AWAR-S2-Li	19-AWAR-S3-Li	19-AWAR-S4-Br	19-AWAR-S5-Sd	19-AWAR-S6-Li	19-AWAR-S7-Sd	19-AWAR-S8-Br	19-AWAR-S9-Lt
Sampling Date		20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19
Parameter	Units								
% Moisture	%	15	16	60	47	16	49	61	62
pH	pH	4.20	4.24	3.29	6.57	4.91	5.57	4.07	4.70

Notes:

"-"= Data no available

Lab Dup=Laboratory Duplicate

VEGETATION TISSUE PERCENT MOISTURE

Sample Location		AWAR-S10	AWAR-S11	AWAR-S12	AWAR-S13	AWAR-S14	AWAR-S15	AWAR-S16	AWAR-S17
Sample Name		19-AWAR-S10-Li	19-AWAR-S11-Li	19-AWAR-S12-Lt	19-AWAR-S13-Li	19-AWAR-S14-Sd	19-AWAR-S15-Sd	19-AWAR-S16-Cr	19-AWAR-S17-Li
Sampling Date		20-Jul-19	20-Jul-19	20-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19	19-Jul-19
Parameter	Units								
% Moisture	%	14	15	54	11	62	44	79	13
pH	pH	4.12	4.42	4.81	4.31	4.62	5.08	3.50	4.64

Notes:

"-"= Data no available

Lab Dup=Laboratory Duplicate

VEGETATION TISSUE PERCENT MOISTURE

Sample Location		AWAR-S18	AWAR-S19	AWAR-S20	REF1-S1	REF1-S2	REF1-S3	REF1-S4	REF1-S5
Sample Name		19-AWAR-S18-Li	19-AWAR-S19-Li	19-AWAR-S20-Li	19-REF1-S1-Sd	19-REF1-S2-Li	19-REF1-S3-LT	19-REF1-S4-Br	19-REF1-S5-Sd
Sampling Date		19-Jul-19	19-Jul-19	19-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19
Parameter	Units								
% Moisture	%	12	17	19	46	18	55	61	57
pH	pH	4.75	4.91	4.64	5.34	3.84	4.60	4.35	4.63

Notes:

"-"= Data no available

Lab Dup=Laboratory Duplicate

VEGETATION TISSUE PERCENT MOISTURE

Sample Location		REF2-S1	REF2-S1	REF2-S2	REF2-S3	REF2-S4	REF2-S5	REF3-S1	REF3-S2
Sample Name		19-REF2-S1-LT	19-REF2-S1-LT - Lab Dup	19-REF2-S2-Br	19-REF2-S3-Li	19-REF2-S4-Sd	19-REF2-S5-Br	19-REF3-S1-Li	19-REF3-S2-Li
Sampling Date		21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19	21-Jul-19
Parameter	Units								
% Moisture	%	57		61	10	50	60	12	13
pH	pH	4.63	4.62	4.65	3.96	6.20	4.70	4.00	4.12

Notes:

"-"= Data no available

Lab Dup=Laboratory Duplicate

VEGETATION TISSUE PERCENT MOISTURE

Sample Location		REF3-S3	REF3-S4	REF3-S5
Sample Name		19-REF3-S3-Li	19-REF3-S4-Li	19-REF3-S5-Sd
Sampling Date		21-Jul-19	21-Jul-19	21-Jul-19
Parameter	Units			
% Moisture	%	11	9.3	60
pH	pH	3.93	4.15	6.13

Notes:

"-"= Data no available

Lab Dup=Laboratory Duplicate

VEGETATION TISSUE RELATIVE PERCENT DIFFERENCE

Vegetation type		Birch			Labrador Tea Leaves			Lichen		
Sample Location		TF-S11	TF-S11	RPD (%)	REF2-S1	REF2-S1	RPD (%)	AWAR-S10	AWAR-S10	RPD (%)
Sample Name	19-TF-S11-Br	19-TF-S11-Br	Lab-Dup		19-REF2-S1-LT	19-REF2-S1-LT - Lab-Dup		19-AWAR-S10-Li	19-AWAR-S10-Li-Lab-Dup	
Sampling Date	22-Jul-19	22-Jul-19			21-Jul-19	21-Jul-19		20-Jul-19	20-Jul-19	
METALS	Units									
Antimony (Sb)	mg/kg	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-
Arsenic (As)	mg/kg	7.1	7.3	2.8	<0.1	<0.1	-	0.8	0.8	0.0
Barium (Ba)	mg/kg	8.4	8.5	1.2	31.0	30.6	1.3	20.1	20.6	2.5
Beryllium (Be)	mg/kg	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-
Bismuth (Bi)	mg/kg	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-
Boron (B)	mg/kg	5.8	5.6	3.5	7.5	7.7	2.6	1.0	1.0	0.0
Cadmium (Cd)	mg/kg	0.02	0.02	0.0	<0.01	<0.01	-	0.11	0.11	0.0
Calcium (Ca)	mg/kg	1630	1600	1.9	2140	2180	1.9	2100	2110	0.5
Chromium (Cr)	mg/kg	<0.3	<0.3	-	<0.3	<0.3	-	23.5	23.0	2.2
Cobalt (Co)	mg/kg	0.085	0.085	0.0	0.021	0.022	4.7	1.02	1.00	2.0
Copper (Cu)	mg/kg	3.1	3.1	0.0	2.2	2.2	0.0	3.7	3.6	2.7
Iron (Fe)	mg/kg	108	108	0.0	17	17	0.0	1060	1010	4.8
Lead (Pb)	mg/kg	0.34	0.38	11.1	<0.03	<0.03	-	1.56	1.54	1.3
Magnesium (Mg)	mg/kg	939	940	0.1	523	525	0.4	584	562	3.8
Manganese (Mn)	mg/kg	73.9	71.6	3.2	524	553	5.4	52.6	56.7	7.5
Mercury (Hg)	mg/kg	<0.01	*	-	<0.01	0.01	-	0.18	0.18	0.0
Molybdenum (Mo)	mg/kg	<0.05	<0.05	-	<0.05	<0.05	-	2.69	2.71	0.7
Nickel (Ni)	mg/kg	1.50	1.50	0.0	0.37	0.37	0.0	15.4	15.0	2.6
Phosphorus (P)	mg/kg	583	541	7.5	534	543	1.7	276	264	4.4
Potassium (K)	mg/kg	2540	2500	1.6	2490	2550	2.4	1240	1190	4.1
Selenium (Se)	mg/kg	<0.1	<0.1	-	<0.1	<0.1	-	0.2	0.1	66.7
Silver (Ag)	mg/kg	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-
Sodium (Na)	mg/kg	<50	<50	-	<50	<50	-	<50	<50	-
Strontium (Sr)	mg/kg	6.4	6.3	1.6	2.8	2.8	0.0	12.5	12.5	0.0
Thallium (Tl)	mg/kg	<0.003	<0.003	-	0.128	0.130	1.6	0.010	0.010	0.0
Tin (Sn)	mg/kg	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	-
Titanium (Ti)	mg/kg	1.6	1.8	11.8	1.0	0.9	10.5	36	34	5.7
Uranium (U)	mg/kg	<0.005	<0.005	-	<0.005	<0.005	-	0.056	0.055	-
Vanadium (V)	mg/kg	0.08	0.08	0.0	<0.05	<0.05	-	1.50	1.39	7.6
Zinc (Zn)	mg/kg	54	54	0.0	15	15	0.0	17	17	0.0

Notes:

** * = lab duplicate analysis was not performed for mercury

RPD = relative percent difference

Lab Dup = Laboratory Duplicate

All concentrations in milligrams per kilogram (mg/kg)

< = less than laboratory method detection limit

- = not calculated because one or both concentrations were below the laboratory method detection limit

APPENDIX G

**CESCC-Non-Native and
Invasive Species in Nunavut**

Non-Native & Invasive species

In Nunavut

In 2010 the Canadian Endangered Species Conservation Council (CESCC) identified 17 species not normally found in Nunavut.

These are called “non-native species”. Some of these plants and animals can become an “invasive species”, which represents a potential major concern for the future health of the Arctic.

What is a non-native species?

A non-native species is defined as an organism that is not normally found in a region. They are introduced by human activities, which can be intentional (e.g. species introduced to control a pest species), accidental (e.g. shipping and ballast water exchange), or environmental (e.g. changes in climate leading to wildlife movements). An example of a non-native species in Nunavut is the European Starling (*Sturnus vulgaris*), which was introduced to North America from Europe intentionally by humans.

What is an invasive species?

Not all non-native species are considered invasive. This term is reserved for species that do so well in their new habitat that they end up causing harm to the environment, other species, human health, or economic activity (ISAC, 2006). An example of an invasive species in southern Canada is the Zebra Mussel (*Dreissena polymorpha*), which was introduced to North America by ships releasing their ballast water. The Zebra mussel reproduces quickly and establishes large colonies on any hard surface. In this way they take over habitat occupied by native species, reducing the availability of food for other species, and also attaching themselves in great numbers to boats and other infrastructure in the water. (Benson and Raikow, 2010).

Why should you be concerned about invasive species?

When invasive species are introduced and survive, their populations can increase rapidly because there are no natural predators. Invasive species may feed on native species, compete for food and space, as well as expose native species to new parasites and disease. Invasive species are now widely recognized as a leading cause of endangerment and/or extinction of native species (Lassuy and Lewis, 2010).

✳️ *There are currently no known species in Nunavut that can be classified as aquatic or terrestrial invasive species.*



Species: Field Sow Thistle (*Sonchus arvensis*)
Impact: The Field Sow Thistle grows quickly, easily and when there are many of them they can reduce the water resources available to other plants. They have the potential to decrease native plant diversity by competing for space and water.

Introduction pathway: Accidentally introduced from Europe into North America in a containment of agricultural crop seed. This plant has been able to spread long distances across Canada because the seeds can travel far in the wind.



Species: The European Starling (*Sturnus vulgaris*)
Impact: The European Starling can displace native bird species by taking over nesting sites and competing for food.

Introduction pathway: Introduced intentionally to North America from Europe. These birds then dispersed naturally into Canada through migration.

How might invasive species get into Nunavut?

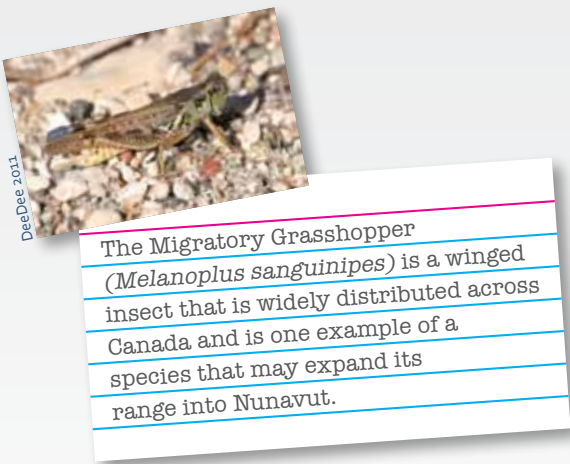
Species are transported throughout the world by human activities, like shipping, which allows species to move further distances and over barriers that they could not do on their own. Nunavut remains very remote compared to the rest of Canada and so the lack of major road systems, infrequent shipping and cold climate has limited their introduction and survival.

However, as climate change alters Arctic ecosystems, it creates conditions that are more favorable to the survival and reproduction of non-native species. It also enables greater human activity and development, which gives potential invasive species more opportunities to establish themselves. (Lassuy and Lewis, 2010).

Pathways of introduction for invasive species into Nunavut

- ✳️ Ballast water exchange and hull fouling have the greatest potential for introducing invasive species into the aquatic ecosystems of Nunavut. Ballast water is used to stabilize ships. It is pumped aboard ships from different ports around the world and often exchanged far from the region it was obtained. This water can contain species that are not native, and may establish themselves locally.
- ✳️ Seeds, insects and even small mammals can be transported around the world through the shipping of grocery produce, lumber, construction supplies, and packing materials, even dirt from someone’s footwear can contain plant seeds (IASC, 2010).
- ✳️ As climate continues to change in the Arctic, many terrestrial and aquatic plants and animals will move further north looking for the food and habitat they desire. These wildlife movements are not a threat when it comes to invasive species, but it is important to note that some species, (especially rare or threatened ones) may not survive the transition. Others may do well, like flying insects, which are already increasing in number in some areas of Nunavut. (IASC, 2010).

Wildlife movements are often referred to as “range extensions” where a species expands the area they can live in when the habitat and climate is favorable for them.



How can you help?

Report

Have you seen a different plant, animal or insect in Nunavut?

You help identifying these species is important. Report the **location** where you observed the species (GPS Coordinates are very helpful) and provide a **detailed description** of the plant, animal, or insect. If possible **take a photo**.

Remember that not all non-native species are considered invasive. If you see an unknown plant or animal, it is very important to report it.

Do not take any extreme actions; the first step is reporting the species so that territorial and federal agencies can respond appropriately. We will report our findings back to you and information about the species you have observed.

Share

Keep yourself informed and educate others about non-native and invasive species. Let them know what to do if they see an unknown or uncommon species.

Report a species to your local Conservation Officer.

For More Information or if your CO is not available please contact:

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Non-Native Species in Nunavut

As of 2011, there are 17 species known to be non-native in Nunavut, these are listed below and are all terrestrial species. Please note that it is not currently known what the potential is for any of these species to become invasive and to what extent. Two species, the starling and the sow thistle are described in more detail below.

SCIENTIFIC NAME	COMMON NAME	ORGANISM TYPE
<i>Carum carvi</i>	Wild Caraway	Flowering Plant
<i>Taraxacum officinale</i>	Common Dandelion	Flowering Plant
<i>Sonchus arvensis</i>	Field Sow Thistle	Flowering Plant
<i>Leucanthemum vulgare</i>	Oxeye Daisy	Flowering Plant
<i>Thlaspi arvense</i>	Field Pennycress	Flowering Plant
<i>Capsella bursa-pastoris</i>	Shepherd's Purse	Flowering Plant
<i>Barbarea vulgaris</i>	Yellow Rocket	Flowering Plant
<i>Amaranthus retroflexus</i>	Green Amaranth	Flowering Plant
<i>Hordeum vulgare</i>	Common Barley	Flowering Plant
<i>Puccinellia distans</i>	Spreading Alkali Grass	Flowering Plant
<i>Vicia cracca</i>	Tufted Vetch	Flowering Plant
<i>Papaver somniferum</i>	Opium Poppy	Flowering Plant
<i>Plantago major</i>	Common Plantain	Flowering Plant
<i>Polygonum aviculare</i>	Prostrate Knotweed	Flowering Plant
<i>Pieris rapae</i>	Cabbage White	Butterfly
<i>Sturnus vulgaris</i>	European Starling	Passerine Bird
<i>Passer domesticus</i>	House Sparrow	Passerine Bird

Potential Invasive Species in Nunavut

As trade and shipping continues to increase, some aquatic invasive species known to commonly foul ship hulls and ballast waters, like the Chinese Mitten Crab, are more likely to arrive at ports around Nunavut.

A recent report commissioned by Fisheries and Oceans Canada identified a number of potential aquatic invasive species, mainly for the Hudson Bay region. The table below lists only those species considered as “High Risk” to Nunavut and they are found in freshwater & marine environments.

SCIENTIFIC NAME	COMMON NAME	ORGANISM TYPE
<i>Osmerus mordax</i>	Rainbow Smelt	Fish
<i>Gymnocephalus cernuus</i>	Ruffe	Fish
<i>Caprella mutica</i>	Skeleton Shrimp	Crustacean
<i>Chelicorophium curvispinum</i>	Data unavailable	Crustacean
<i>Dikergammarus villosus</i>	Killer Shrimp	Crustacean
<i>Gmelinoides fasciatus</i>	Data unavailable	Crustacean
<i>Pontogammarus robustoides</i>	Data unavailable	Crustacean
<i>Eriocheir sinensis</i>	Chinese Mitten Crab	Crustacean
<i>Hemimysis anomala</i>	Data unavailable	Crustacean
<i>Balanus improvisus</i>	Acorn Barnacle	Crustacean
<i>Corbicula fluminea</i>	Asian Clam	Mollusc
<i>Dreissena bugensi</i>	Quagga Mussel	Mollusc
<i>Bythotrephes longimanus</i>	Spiny Water Flea	Zooplankton
<i>Cercopagis pengo</i>	Fishhook Water Flea	Zooplankton
<i>Eubosmina maritima</i>	Data unavailable	Zooplankton
<i>Marenzelleria cf. viridis</i>	Data unavailable	Worm
<i>Marenzelleria cf. wireni</i>	Data unavailable	Worm
<i>Cordylophora caspia</i>	Freshwater Hydroid	Hydrozoa
<i>Coscinodiscus wailesii</i>	Data unavailable	Phytoplankton
<i>Odontella sinensi</i>	Data unavailable	Phytoplankton
<i>Prorocentrum minimum</i>	Data unavailable	Phytoplankton
<i>Codium fragile ssp. tomentosoides</i>	Oyster Thief	Algae
<i>Glugea hertwigi</i>	Data unavailable	Protozoa
<i>Amphilina foliacea</i>	Data unavailable	Parasite



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