APPENDIX E.12

2019 Groundwater Monitoring Report

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

Groundwater 2019 Monitoring Program Report

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Date	**Rev.**	**Prepared By**	**Reviewed and Approved By**	

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1. INTRODUCTION

In accordance with Condition 23 of the Project Certificate No. 005 – Amendment No. 2 issued to Baffinland Iron Mines Corporation (Baffinland) by the Nunavut Impact Review Board (NIRB) for the Mary River Project (the Project), Baffinland continued to conduct a groundwater monitoring program in 2019. The 2019 Groundwater Monitoring Program (2019 Monitoring Program) used a similar methodology as the 2018 Groundwater Monitoring Program (2018 Monitoring Program), and the 2017 Groundwater Pilot Program (2017 Pilot Program) and involved establishing shallow groundwater wells up-gradient and down-gradient of the Mine Site non-hazardous waste Landfill Facility using drive-point piezometers and collecting water samples near the depth of the active layer (approximately 1.1 to 1.8 metres) at the end of September, 2019.

The objective of the 2019 program was to continue to assess the feasibility and utility of monitoring groundwater quality near Project infrastructure using drive-point piezometers. The following sections discuss the methods and results of the 2019 Monitoring Program conducted at the Landfill Facility and provides recommendations for future groundwater monitoring at the Project.

2. METHODS

2.1 Installation of Monitoring Wells

The 2019 Monitoring Program was conducted by establishing groundwater wells up-gradient and down-gradient of the Landfill Facility. Groundwater monitoring locations were established to the depth of the active layer (approximately 1.1 to 1.8 metres) using drive-point piezometers. Drive-point piezometers used in the 2019 Monitoring Program were Solinst Model 615 Drive-Point Piezometers equipped with 5/8" x 1/2" low density polyethylene (LDPE) open tubing. Three (3) wells (MS-LF-GW1, MS-LF-GW2, and MS-LF-GW3) were established in locations inferred to be down-gradient of the Landfill Facility and two (2) reference wells (MS-LF-GW-REF1, MS-LF-GW-REF2) were established in locations inferred to be up-gradient of the Landfill Facility. Surface topography and drainage paths near the Landfill Facility were used to estimate the groundwater flow direction and determine the appropriate well locations. All down-gradient monitoring locations were established within 30 metres of the limits of the Landfill Facility.

Installation of the wells involved advancing drive-point piezometers by hand into the ground until the depth of refusal was reached (Figure 2). Depth of refusal was inferred to be the top of the permafrost zone (lower limit of the active layer). Upon reaching the depth of refusal, the depth was recorded in a field note book and the location was assigned a well ID.

Figure 1 presents the locations of the wells monitored during the 2017 Pilot Program, 2018 Monitoring Program, and 2019 Monitoring Program. As shown in Figure 1, down-gradient wells monitored on the west and north sides of the Landfill Facility remained generally in the same locations for the 2017, 2018, and 2019 programs. To better characterize the water quality of up-gradient inflows near the Landfill Facility, two (2) up-gradient (reference) wells were established in close proximity to the northwest and southwest corners of Landfill Facility.

Table 1 provides the coordinates and depths for the monitoring wells established near the Landfill Facility during the 2019 Monitoring Program.

Similar to the 2017 Pilot Program and 2018 Monitoring Program, the 2019 Monitoring Program was conducted in September (September 27 to 28); the time at which the permafrost active layer within the Project area should be at its maximum depth during the year.

2.2 Water Level Elevation Measurements

Following both the installation and purging of each well, water level was measured using a Solinst Model 102 Coaxial Water Level Meter and recorded in a field note book. A ground surface elevation survey was conducted at each 2019 well location to calculate the 2019 well water level elevations. Ground surface and water level elevations for the 2019 wells are presented in Table 1.

2.3 Water Sample Collection and Analysis

Following monitoring well installation and the initial water level measurement, a minimum of 4 litres (L) was purged from each well to remove standing water from the screened zone of the piezometer. Field readings were monitored during purging with a YSI ProDSS Handheld Water Quality Meter to indicate when water quality had stabilized and purging was complete. Flow rates on the peristaltic pump were

adjusted based off the stabilization of field readings to ensure stable water quality and water levels. Purging and sample collection was completed using a Solinst Model 410 Peristaltic Pump equipped with 5/8" outside diameter (OD) silicone open tubing (Figure 3).

Samples were collected in bottle sets provided by ALS Canada Ltd. (ALS). Sample bottle sets collected were labelled with the company name, well ID, date, time and if field filtration or preservatives were applied to the samples. The samples were packed in coolers with ice and shipped off-site for analysis to ALS Environmental, located in Waterloo, Ontario. Sample preservation, storage and holding times were conducted as outlined by ALS lab requirements.

Water samples were analyzed for routine chemistry (pH, conductivity), nutrients (ammonia, nitrate), chloride, total and dissolved metals, oil and grease, and petroleum hydrocarbon (PHC) fractions F2 to F4. Refer to Table 2 for a complete list of the parameters analyzed.

2.3.1 Quality Assurance and Quality Control (QA/QC)

Samples collected during 2019 followed the water sampling principles outlined in the Project's *Surface Water Sampling Program - Quality Assurance and Quality Control Plan* (BAF-PH1-830-P16-0001; QA/QC Plan). One (1) duplicate for MS-LF-GW-REF1 was taken during the 2019 Monitoring Program, meeting the 10% QA/QC sampling requirement outlined in the QA/QC Plan.

3. RESULTS AND DISCUSSION

3.1 Permafrost Active Layer Depths

Table 1 presents the field measurements and observations documented during the 2019 program, including the estimated depths of the active layer at the monitoring wells established in 2019. As discussed in Section 2.1, drive-point piezometers were advanced into the ground by hand until the depth of refusal was encountered (Figure 2). The depth of refusal was estimated to be the depth (lower limit) of the active layer at each monitoring well location. Depths of the active layer during 2019, observed during the September 27 - 28 sampling event, ranged between 1.08 m at MS-LF-GW-REF1 to 1.84 m at MS-LF-GW1. On average, active layer depths measured during 2019 are generally consistent with previous years, with the exception of a few locations which were significantly deeper in 2019 than 2018.

3.2 Water Level Elevations and Estimated Flow Direction

Table 1 presents the calculated water level elevations (masl) at each monitoring well established during the 2019 program.

As shown in Table 1, calculated water level elevations (hydraulic head) at the 2019 monitoring wells indicated that the direction of groundwater flows was consistent with the observed surface water flows near the Landfill Facility and the perceived flow direction estimated using the surrounding topography and ground surface elevations. Water level elevations on the north perimeter suggest that groundwater flows west from up-gradient (reference) monitoring well MS-LF-GW-REF1 towards the down-gradient (exposed) monitoring well MS-LF-GW1. Similarly, on the Landfill Facility's west perimeter, water level elevations suggest that groundwater flows north from up-gradient (reference) monitoring well MS-LF-GW-REF2 towards down-gradient (exposed) monitoring wells MS-LF-GW3 and MS-LF-GW2. Based on the data set and limited characterization of the stratigraphy, local groundwater flows are inferred to be towards the southwest.

3.3 Analytical Water Quality Results

Water samples were collected at the three (3) monitoring wells down-gradient of the Landfill Facility and at the two (2) reference monitoring wells up-gradient of the Landfill Facility. Analytical groundwater quality results for the samples collected at the monitoring wells are provided in Table 2. Due to the limited water quality data set for groundwater at the Project, Project specific guidelines for groundwater quality based on baseline data and/or Canadian environmental guidelines have not been developed for the Project.

Analytical groundwater quality results indicate select elevated parameters in the inferred down-gradient monitoring wells, relative to the inferred up-gradient monitoring wells. In particular, general parameters such as conductivity, chloride and nitrate demonstrated elevated levels relative to reference locations. Select total metals parameters were also elevated (for example; aluminum, nickel, iron), however, the same parameters did not demonstrate a similar trend in the dissolved metals analysis, suggesting that these elevated parameters may be attributed to sediment content entrained during the sampling procedure. As there is only three (3) years of monitoring completed to date, there is insufficient data to

complete a robust statistical analysis to evaluate the significance of changes in water quality between up-gradient and down-gradient locations.

3.3.1 Quality Assurance and Quality Control (QA/QC)

Table 3 summarizes the relative percent differences (RPDs) between parameter results for the MS-LF-GW-REF1 sample and its field duplicate (MS-LF-GW-REF101). As shown in Table 3, calculated RPDs between the MS-LF-GW-REF1 sample and its field duplicate are acceptable. All parameters had RPDs less than 30%, indicating a high degree of confidence in the sampling methodology.

To ensure the continued collection of representative, accurate and reliable water quality data at the Project, Baffinland will continue to require all personnel involved with water quality sampling to be experienced and fully trained in the Project's QA/QC procedures and processes outlined in the Project's *QA/QC Plan*.

4. CONCLUSIONS AND RECOMMENDATIONS

The objective of the 2019 Monitoring Program was to continue to assess the feasibility and utility of monitoring groundwater near Project infrastructure using drive-point piezometers. While challenges to implementing a groundwater monitoring program in shallow soils do exist, the results of the 2019 Monitoring Program further demonstrate that groundwater monitoring may be feasible using drive-point piezometers at the Project. Due to the limited data set, further groundwater monitoring and assessment of the stratigraphy is required to gain a better understanding of natural groundwater chemistry and hydrogeology at the Project. As additional monitoring is conducted in future years, Baffinland will be able to better characterize groundwater chemistry at Project locations and identify any trends, including potential impacts from Project activities or infrastructure. Consideration will be given to the development of site-specific groundwater quality screening criteria based on background (reference) conditions (if available) and potentially utilizing groundwater quality guidelines from other jurisdictions, as appropriate.

During 2019, Baffinland implemented the following initiatives regarding groundwater monitoring at the Project:

- Updated the Project's *QA/QC Plan* to outline additional QA/QC protocols for groundwater sampling at the Project; and,
- Monitored changes in solids concentrations (visual assessment, turbidity) during groundwater sampling events to reduce potential water quality variability in duplicates and improve the reproducibility of analytical results.

Baffinland notes that implementing a groundwater program in a permafrost-rich environment presents significant methodological challenges including quantifying groundwater direction and flow and interpretation of groundwater quality. Additionally, groundwater flow dynamics are driven primarily by the permafrost table elevations rather than soil stratigraphy, resulting in significant challenges to determine flow direction and gradient. Baffinland plans to continue the groundwater monitoring program in 2020, and plans to implement an expansion to the program to gain a better understanding of natural groundwater chemistry at the Project site. Due to the challenges associated with sampling methodologies for groundwater data collection in a permafrost environment and the challenges in interpreting this data, however, long-term trends will likely not be identified even with an expanded dataset. Despite these operational challenges, Baffinland is committed to retaining groundwater consultants that are specialized in Arctic environments, to further assess the current program and provide recommendations in 2020. Following 2020, Baffinland will provide further recommendations to relevant parties regarding Baffinland's proposed path forward.

FIGURES

LEGEND

- 2019 Well Location
- 2018 Well Location
- 2017 Well Location

Exposure Status

- Up-Gradient Well (Reference)
- Down-Gradient Well (Exposed)

Base Map: © 2019 Digital Globe, Inc.
Imagery and Infrastructure are representative as of August 2019.

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2019 Groundwater Monitoring Program

Projection: NAD 1983 UTM ZONE 17N.
Source: © Her Majesty the Queen in rights of Canada Department of Natural Resources (2009).

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FIGURE **1**

SAVED: C:\Users\katie.mcguire\Documents\4 - Maps\Reporting\Groundwater\BIM_Fig 1 Groundwater_20.mxd; 25-Feb-20

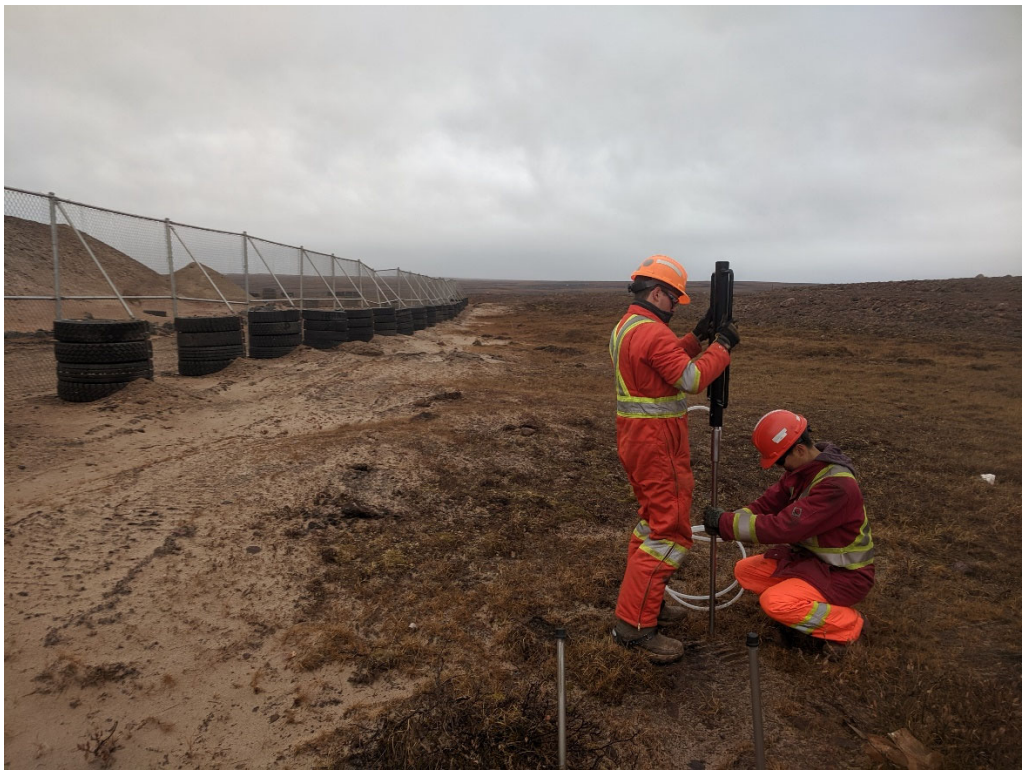

Figure 2: Installation of MS-LF-GW1 on September 27, 2019

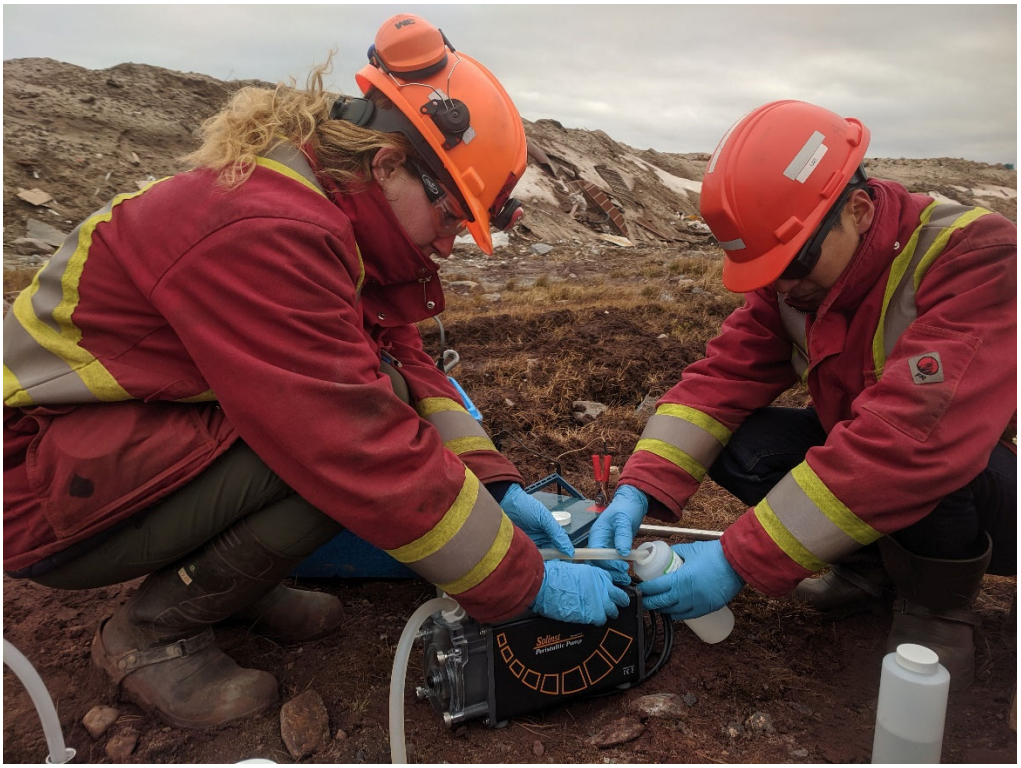

Figure 3: Sampling of MS-LF-GW-REF1 on September 27, 2019

TABLES

Table 1 - Field Measurements and Elevations - 2019 Groundwater Monitoring Program

Monitoring Well ID	MS-LF-GW-REF1-19	MS-LF-GW-REF2-19	MS-LF-GW1-19	MS-LF-GW2-19	MS-LF-GW3-19
Well Type	**Up-gradient (Reference)**	**Up-gradient (Reference)**	**Down-gradient (Exposed)**	**Down-gradient (Exposed)**	**Down-gradient (Exposed)**
Coordinates (UTM; 17W; NAD83)	7912637.291 560838.181	7912408.379 560877.464	7912598.776 560815.921	7912485.875 560811.958	7912460.266 560822.564
Active Layer Depth (mbgs)[1]	1.08	1.55	1.84	1.59	1.80
Ground Surface Elevation (masl)	179.78	179.30	179.23	178.13	178.05
Water Level Elevation (masl)	179.19	178.60	178.58	177.01	177.30

Notes:

[1]Metres below ground surface (mbgs) – determined by depth of refusal during drive-point piezometer installation.

Table 2 – Analytical Water Quality Results – 2019 Groundwater Monitoring Program

ANALYTE	Monitoring Well ID		MS-LF-GW-REF1-19	MS-LF-GW-REF101	MS-LF-GW-REF2-19	MS-LF-GW1-19
	Sample Date (MM/DD/YYYY)		9/27/2019	9/27/2019	9/28/2019	9/27/2019
	Sample Time		15:40 HRS	15:40 HRS	16:10 HRS	14:20 HRS
	ALS Laboratory ID		L2356948-1	L2356948-2	L2356948-3	L2356948-4
	Sample Type		Up-gradient (Reference)	Up-gradient (Reference); Field Duplicate	Up-gradient (Reference)	Down-gradient (Exposed)
General Parameters	**Unit**	**LDL**				
Conductivity	umhos/cm	3.0	1700	1700	762	1970
pH	pH Units	0.10	6.82	6.83	7.86	6.94
Chloride	mg/L	0.50	32.3	32.5	13.6	35.5
Total Ammonia (as N)	mg/L	0.010	5.15	5.00	0.018	5.10
Total Nitrate (as N)	mg/L	0.020	<0.10	<0.10	0.285	<0.10
Total Metals						
Aluminium (Al)	mg/L	0.050	0.087	0.085	0.212	18.0
Antimony (Sb)	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Arsenic (As)	mg/L	0.0010	<0.0010	<0.0010	<0.0010	0.0112
Barium (Ba)	mg/L	0.0010	0.236	0.243	0.0739	0.387
Cadmium (Cd)	mg/L	0.000050	0.000446	0.000469	<0.000050	0.000699
Chromium (Cr)	mg/L	0.0050	<0.0050	<0.0050	<0.0050	0.318
Cobalt (Co)	mg/L	0.0010	0.0283	0.0286	<0.0010	0.0901
Copper (Cu)	mg/L	0.010	0.016	0.015	<0.010	0.049
Iron (Fe)	mg/L	0.10	0.14	0.12	0.37	40.0
Lead (Pb)	mg/L	0.00050	0.00098	0.00093	0.00066	0.0442
Lithium (Li)	mg/L	0.010	0.024	0.023	<0.010	0.082
Manganese (Mn)	mg/L	0.0050	4.29	4.31	0.0108	9.52
Molybdenum (Mo)	mg/L	0.00050	0.00069	0.00061	<0.00050	0.00330
Nickel (Ni)	mg/L	0.0050	0.0389	0.0390	0.0151	0.706
Selenium (Se)	mg/L	0.00050	<0.00050	<0.00050	<0.00050	0.00051
Strontium (Sr)	mg/L	0.010	0.292	0.291	0.043	0.618
Thallium (Tl)	mg/L	0.00010	0.00015	0.00017	<0.00010	0.00063
Tin (Sn)	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Titanium (Ti)	mg/L	0.0030	0.0051	0.0049	0.0141	1.10
Uranium (U)	mg/L	0.00010	0.0102	0.0102	0.00591	0.0323
Vanadium (V)	mg/L	0.0050	<0.0050	<0.0050	<0.0050	0.0481
Zinc (Zn)	mg/L	0.030	<0.030	<0.030	<0.030	0.067
Dissolved Metals						
Aluminium (Al)	mg/L	0.050	<0.050	<0.050	<0.050	<0.050
Antimony (Sb)	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Arsenic (As)	mg/L	0.0010	<0.0010	<0.0010	<0.0010	0.0017
Barium (Ba)	mg/L	0.0010	0.230	0.225	0.0602	0.186
Cadmium (Cd)	mg/L	0.000050	0.000505	0.000452	<0.000050	0.000251
Chromium (Cr)	mg/L	0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cobalt (Co)	mg/L	0.0010	0.0284	0.0284	<0.0010	0.0538
Copper (Cu)	mg/L	0.0020	0.0121	0.0118	0.0039	<0.0020
Iron (Fe)	mg/L	0.10	<0.10	<0.10	<0.10	0.13
Lead (Pb)	mg/L	0.00050	0.00072	0.00071	<0.00050	0.00148
Lithium (Li)	mg/L	0.010	0.030	0.026	<0.010	0.059
Manganese (Mn)	mg/L	0.0050	4.78	4.63	<0.0050	9.99
Mercury (Hg)	mg/L	0.000005	0.0000076	0.0000096	<0.0000050	<0.0000050
Molybdenum (Mo)	mg/L	0.00050	0.00057	0.00052	<0.00050	0.00173
Nickel (Ni)	mg/L	0.0050	0.0385	0.0386	0.0106	0.303
Selenium (Se)	mg/L	0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium (Sr)	mg/L	0.010	0.298	0.289	0.037	0.626
Thallium (Tl)	mg/L	0.00010	0.00015	0.00015	<0.00010	0.00028
Tin (Sn)	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Titanium (Ti)	mg/L	0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Uranium (U)	mg/L	0.00010	0.00969	0.00973	0.00493	0.0296
Vanadium (V)	mg/L	0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zinc (Zn)	mg/L	0.010	<0.010	<0.010	<0.010	0.017
Organics						
Oil & Grease	mg/L	2.0	<2.0	<2.0	<2.0	<2.0
Oil & Grease	-	-	No visible sheen	No visible sheen	No visible sheen	No visible sheen
F2 (C10-C16)	ug/L	100	<100	<100	<100	<100
F3 (C16-C34)	ug/L	250	<250	<250	<250	<250
F4 (C34-C50)	ug/L	250	<250	<250	<250	<250

ANALYTE	Monitoring Well ID		MS-LF-GW2-19	MS-LF-GW3-19
	Sample Date (MM/DD/YYYY)		9/28/2019	9/28/2019
	Sample Time		11:00 HRS	12:45 HRS
	ALS Laboratory ID		L2356948-5	L2356948-6
	Sample Type		Down-gradient (Exposed)	Down-gradient (Exposed)
General Parameters	**Unit**	**LDL**		
Conductivity	umhos/cm	3.0	2440	1470
pH	pH Units	0.10	7.21	7.27
Chloride	mg/L	0.50	730	59.2
Total Ammonia (as N)	mg/L	0.010	0.88	0.019
Total Nitrate (as N)	mg/L	0.020	2.14	<0.10
Total Metals				
Aluminium (Al)	mg/L	0.050	4.50	1.67
Antimony (Sb)	mg/L	0.00100	<0.0010	<0.0010
Arsenic (As)	mg/L	0.0010	0.0041	0.0011
Barium (Ba)	mg/L	0.0010	0.167	0.139
Cadmium (Cd)	mg/L	0.000050	0.000175	0.000266
Chromium (Cr)	mg/L	0.0050	0.0573	0.0102
Cobalt (Co)	mg/L	0.0010	0.0112	0.0035
Copper (Cu)	mg/L	0.010	0.023	0.020
Iron (Fe)	mg/L	0.10	11.4	3.12
Lead (Pb)	mg/L	0.00050	0.0142	0.00732
Lithium (Li)	mg/L	0.010	1.18	<0.010
Manganese (Mn)	mg/L	0.0050	0.363	0.305
Molybdenum (Mo)	mg/L	0.00050	0.00085	0.00125
Nickel (Ni)	mg/L	0.0050	0.125	0.0660
Selenium (Se)	mg/L	0.00050	<0.00050	<0.00050
Strontium (Sr)	mg/L	0.010	0.134	0.089
Thallium (Tl)	mg/L	0.00010	0.00032	0.00012
Tin (Sn)	mg/L	0.0010	<0.0010	<0.0010
Titanium (Ti)	mg/L	0.0030	0.235	0.101
Uranium (U)	mg/L	0.00010	0.0110	0.0171
Vanadium (V)	mg/L	0.0050	0.0140	<0.0050
Zinc (Zn)	mg/L	0.030	<0.030	0.139
Dissolved Metals				
Aluminium (Al)	mg/L	0.050	<0.050	<0.050
Antimony (Sb)	mg/L	0.0010	<0.0010	<0.0010
Arsenic (As)	mg/L	0.0010	<0.0010	<0.0010
Barium (Ba)	mg/L	0.0010	0.120	0.121
Cadmium (Cd)	mg/L	0.000050	0.000083	0.000142
Chromium (Cr)	mg/L	0.0050	<0.0050	<0.0050
Cobalt (Co)	mg/L	0.0010	<0.0010	0.0011
Copper (Cu)	mg/L	0.0020	0.0027	0.0055
Iron (Fe)	mg/L	0.10	<0.10	<0.10
Lead (Pb)	mg/L	0.00050	<0.00050	<0.00050
Lithium (Li)	mg/L	0.010	1.23	<0.010
Manganese (Mn)	mg/L	0.0050	0.0290	0.194
Mercury (Hg)	mg/L	0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)	mg/L	0.00050	0.00066	0.00065
Nickel (Ni)	mg/L	0.0050	0.0268	0.0474
Selenium (Se)	mg/L	0.00050	<0.00050	<0.00050
Strontium (Sr)	mg/L	0.010	0.126	0.084
Thallium (Tl)	mg/L	0.00010	0.00019	<0.00010
Tin (Sn)	mg/L	0.0010	<0.0010	<0.0010
Titanium (Ti)	mg/L	0.0030	<0.0030	<0.0030
Uranium (U)	mg/L	0.00010	0.0100	0.0159
Vanadium (V)	mg/L	0.0050	<0.0050	<0.0050
Zinc (Zn)	mg/L	0.010	<0.010	<0.010
Organics				
Oil & Grease	mg/L	2.0	<2.0	<2.0
Oil & Grease	-	-	No visible sheen	No visible sheen
F2 (C10-C16)	ug/L	100	<100	<100
F3 (C16-C34)	ug/L	250	<250	<250
F4 (C34-C50)	ug/L	250	<250	<250

Table 3 - QA/QC Analysis – MS-LF-GW-REF1 Field Duplicate – 2019 Groundwater Monitoring Program

ANALYTE	Monitoring Well ID		MS-LF-GW-REF1-19	MS-LF-GW-REF1-19	Relative Percent Difference (%)[1]
	Sample Date (MM/DD/YYYY)		9/27/2019	9/27/2019	
	Sample Time		15:40 HRS	15:40 HRS	
	ALS Laboratory ID		L2356948-1	L2356948-2	
	Sample Type		Up-gradient (Reference)	Up-gradient (Reference); Field Duplicate	
General Parameters	**Unit**	**LDL**			
Conductivity	umhos/cm	3.0	1700	1700	0.0
pH	pH Units	0.10	6.82	6.83	0.1
Chloride	mg/L	0.50	32.3	32.5	0.6
Total Ammonia (as N)	mg/L	0.010	5.15	5.00	2.9
Total Nitrate (as N)	mg/L	0.020	<0.10	<0.10	0.0
Total Metals					
Aluminium (Al)	mg/L	0.050	0.087	0.085	2.3
Antimony (Sb)	mg/L	0.0010	<0.0010	<0.0010	0.0
Arsenic (As)	mg/L	0.0010	<0.0010	<0.0010	0.0
Barium (Ba)	mg/L	0.0010	0.236	0.243	3.0
Cadmium (Cd)	mg/L	0.000050	0.000446	0.000469	5.2
Chromium (Cr)	mg/L	0.0050	<0.0050	<0.0050	0.0
Cobalt (Co)	mg/L	0.0010	0.0283	0.0286	1.1
Copper (Cu)	mg/L	0.010	0.016	0.015	6.3
Iron (Fe)	mg/L	0.10	0.14	0.12	14.3
Lead (Pb)	mg/L	0.00050	0.00098	0.00093	5.1
Lithium (Li)	mg/L	0.010	0.024	0.023	4.2
Manganese (Mn)	mg/L	0.0050	4.29	4.31	0.5
Molybdenum (Mo)	mg/L	0.00050	0.00069	0.00061	11.6
Nickel (Ni)	mg/L	0.0050	0.0389	0.0390	0.3
Selenium (Se)	mg/L	0.00050	<0.00050	<0.00050	0.0
Strontium (Sr)	mg/L	0.010	0.292	0.291	0.3
Thallium (Tl)	mg/L	0.00010	0.00015	0.00017	13.3
Tin (Sn)	mg/L	0.0010	<0.0010	<0.0010	0.0
Titanium (Ti)	mg/L	0.0030	0.0051	0.0049	3.9
Uranium (U)	mg/L	0.00010	0.0102	0.0102	0.0
Vanadium (V)	mg/L	0.0050	<0.0050	<0.0050	0.0
Zinc (Zn)	mg/L	0.030	<0.030	<0.030	0.0
Dissolved Metals					
Aluminium (Al)	mg/L	0.050	<0.050	<0.050	0.0
Antimony (Sb)	mg/L	0.0010	<0.0010	<0.0010	0.0
Arsenic (As)	mg/L	0.0010	<0.0010	<0.0010	0.0
Barium (Ba)	mg/L	0.0010	0.230	0.225	2.2
Cadmium (Cd)	mg/L	0.000050	0.000505	0.000452	10.5
Chromium (Cr)	mg/L	0.0050	<0.0050	<0.0050	0.0
Cobalt (Co)	mg/L	0.0010	0.0284	0.0284	0.0
Copper (Cu)	mg/L	0.0020	0.0121	0.0118	2.5
Iron (Fe)	mg/L	0.10	<0.10	<0.10	0.0
Lead (Pb)	mg/L	0.00050	0.00072	0.00071	1.4
Lithium (Li)	mg/L	0.010	0.030	0.026	13.3
Manganese (Mn)	mg/L	0.0050	4.78	4.63	3.1
Mercury (Hg)	mg/L	0.0000050	0.0000076	0.0000096	26.3
Molybdenum (Mo)	mg/L	0.00050	0.00057	0.00052	8.8
Nickel (Ni)	mg/L	0.0050	0.0385	0.0386	0.3
Selenium (Se)	mg/L	0.00050	<0.00050	<0.00050	0.0
Strontium (Sr)	mg/L	0.010	0.298	0.289	3.0
Thallium (Tl)	mg/L	0.00010	0.00015	0.00015	0.0
Tin (Sn)	mg/L	0.0010	<0.0010	<0.0010	0.0
Titanium (Ti)	mg/L	0.0030	<0.0030	<0.0030	0.0
Uranium (U)	mg/L	0.00010	0.00969	0.00973	0.4
Vanadium (V)	mg/L	0.0050	<0.0050	<0.0050	0.0
Zinc (Zn)	mg/L	0.010	<0.010	<0.010	0.0
Organics					
Oil & Grease	mg/L	2.0	<2.0	<2.0	0.0
Oil & Grease	-	-	No visible sheen	No visible sheen	-
F2 (C10-C16)	ug/L	100	<100	<100	0.0
F3 (C16-C34)	ug/L	250	<250	<250	0.0
F4 (C34-C50)	ug/L	250	<250	<250	0.0

Notes:

[1]Relative Percent Difference (RPD) for a parameter is calculated by dividing the absolute difference between the sample and its duplicate by the analytical result of the sample, and multiplying by 100.