



Appendix E.7

Limited Phase II - Environmental Site Assessment (Beaver Dam Property)

- August 23, 2019

Completed for the Updated 2021 Beaver Dam Mine EIS



**LIMITED PHASE II ENVIRONMENTAL
SITE ASSESSMENT – BEAVER DAM
PROPERTY**

181 Beaver Dam Mines Road, Marinette, NS

August 23, 2019

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Executive Summary

At the request of Atlantic Mining NS Corporation, Stantec Consulting Ltd. (Stantec) conducted a Limited Phase II Environmental Site Assessment (ESA) between July 10 and July 11, 2019 at the proposed Atlantic Gold Beaver Dam Project property (the 'Site') located near Marinette, Nova Scotia. The purpose of the Limited Phase II ESA was to assess soil and surface water conditions at the Site with respect to historical mining operations including tailings and waste rock disposal areas identified in the Draft Phase I ESA completed by Stantec in August 2019.

The scope of the Limited Phase II ESA consisted of the following:

- Complete a visual site reconnaissance to identify areas of potential environmental concern.
- Excavate up to 40 test pits in the area of the proposed open pit and collect representative soil samples to assess the extent of metals impacts in soil from historical tailings storage at the Site.
- Collect up to five surface water samples in the area of the proposed open pit to assess the extent of metals impacts in surface water.

Based on the information gathered and on observations made during this assessment, Stantec provides the following conclusions:

- Possible tailings were visually observed in the stratigraphy of eight test pits and waste rock (WR) within four of the 29 test pits excavated as part of field activities completed between July 10 to 11, 2019. Note that visual observation of possible tailings is not necessarily indicative of elevated arsenic concentrations at that location.
- Concentrations of arsenic in soil exceeding the applicable Nova Scotia Environment (NSE) Tier 1 Environmental Quality Standards (EQS) were identified in 25 of the 29 test pit locations. The highest concentrations of arsenic are localized in the area of the Austen shaft operated in the 1980s. Concentrations of arsenic exceeding the applicable Tier 1 EQS were also identified in the areas of re-grading following site activities south of the Austen shaft area and north of Crusher Lake where historical stamp mills were operated in the late 1920s. Areas containing elevated gold concentrations tend to have elevated concentrations of arsenic due to the presence of arsenopyrite that is common in the geology of the area. Therefore, elevated arsenic concentrations are expected to be present across the Site.
- Possible waste rock was visually observed at four of the 29 test pit locations. Two of test pits were located adjacent to the Austen shaft and adjacent mine workings and two test pits were located in the identified waste rock near the historical M.E.X pit during the 1970s.
- Concentrations of aluminum, arsenic, cadmium, chromium and iron exceeding the applicable NSE Tier 1 EQS were identified in surface water samples analyzed. The detected concentrations of metals included under the *Metal and Diamond Mining Effluent Regulations* (MDMER) did not exceed Authorized Limits in any of the samples.
- The only concentration of arsenic was detected in the surface water sample collected with the settling pond immediately adjacent to the dam area constructed in the 1980s. No samples collected elsewhere within streams exceeded the Tier 1 EQS for arsenic.



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Introduction
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1.0 INTRODUCTION

1.1 GENERAL

At the request of Atlantic Mining NS Corporation, Stantec Consulting Ltd. (Stantec) conducted a Limited Phase II Environmental Site Assessment (ESA) of the proposed Atlantic Gold Beaver Dam Project property located near Marinette, Nova Scotia (NS) (refer to Figure 1, Appendix A). The purpose of the Limited Phase II ESA was to assess soil and surface water conditions at the Site with respect to historical mining operations including tailings and waste rock disposal areas identified in the Phase I ESA completed by Stantec in August 2019.

It is Stantec's understanding that the Limited Phase II ESA is required as part of project feasibility due diligence which is underway for the potential re-development of the Site as an open-pit mine operation. The general site location and location of the proposed open pit are shown on Figure 1, Appendix A. The current investigation was limited to the area of the Site consisting of the proposed open pit, ancillary mining infrastructure and surrounding area.

1.2 SITE DESCRIPTION

1.2.1 Subject Property and Surrounding Land Use

The Site is located in a rural forested area near Marinette, a region of Halifax Regional Municipality, NS. The Site is located 7 km northeast of Route 224 along Beaver Dam Mine Road which is a gravel road located approximately 17 km north-northwest of Sheet Harbour, Nova Scotia.

The Site consists of portions of several different properties owned by Northern Timber Nova Scotia Corp; Property Identification Numbers (PID) include:

- PID 40200990, Grant 13245;
- PID 40201014, Grant 15833;
- PID 40201022, Grant 13818;
- PID 41202359, Grant not listed;
- PID 40201071, Grant not listed;
- PID 40201006, Grant 14028;
- PID 40201030, Grant 9805;
- PID 41202334, Grant not listed;
- PID 40469405, Grant not listed;
- PID 40201048, Grant not listed;
- PID 00541656, Grant 10271;
- PID 40200941, Grant not listed;
- PID 40201063, Grant (portion of) 13245;
- PID 41202342, Grant (portion of) 13245



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The proposed mine and operations footprint covers a large lower portion of PID 00541656 and several others to the south, bounded by the Cameron Flowage (part of the Killaq River) to the east, Crusher Lake to the west and the approximate property lines of PID 40201030 and 41202334 to the south.

The locations of the proposed open pit and ancillary mining infrastructure as well as the mine development area are shown on Figure 1, Appendix A. The proposed open pit partially encompasses the area of historical mine workings and is located immediately south of the Cameron Flowage in the vicinity of the former Austin shaft and northwest of the historical settling pond (refer to inset, Figure 1, Appendix A).

There are no permanent buildings on the Site. The site hosts old mine workings, waste rock piles, dam structures, access roads, an old “lime” station constructed along the Killaq River in 2016 by a local salmon association and abandoned cabins. The Site is industrial in nature; Stantec is not aware of any plans to change this land use in the foreseeable future.

Site details are provided on Figure 1, Appendix A. Surrounding land use is summarized in Table 1.

Table 1 Adjoining Properties – Current Land Use

Direction	Current Land Use	Current Occupant
North	Undeveloped, forested	None
South	Undeveloped, forested	None
East	Undeveloped, forested	None
West	Undeveloped, forested	None

1.2.2 Site Services

The property is not currently serviced, being in a rural portion of the province. Though evidence of historical mining was present including waste rock piles, dams, and laydown areas, there were no obvious foundations of stamp mills or infrastructure related to historical operations. The ruins of an old cabin are located north of Crusher Lake in the vicinity of Forge Hill. On the northeast corner of Crusher Lake there was a cluster of informal cottages which was identified as a squatters camp. The camp consisted of four buildings that appear to be in a state of disrepair (Stantec, 2019).

Based on the Nova Scotia Groundwater Atlas accessed July 2019, there are no drinking water wells on the Site. The mapping does illustrate numerous drill location from the various exploration drilling programs that have been conducted on the Site surface. Stantec did identify monitoring well clusters on the Site during the July site visit. Adjacent to the wells were coils of plastic tubing suggesting that they have been sampled in the past. Since the wells were located in clusters they are likely drilled to different depths. No reports for these wells were provided to Stantec and groundwater data was not reviewed or included in this report.



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1.2.3 Topography and Regional Drainage

Based on available topographic maps and the observed site topography, the Site is located in an area of low topographic relief around an elevation of 140 metres (m) with scattered drumlins reaching 160 m. The surfaces of the Site consist of a combination of open wetland, rock piles and woodland. There are a number of boggy and forested areas within the property (FSSI Consultants (Aust) Pty. Ltd, 2015). Vegetation consists of spruce, fir and some hardwood. Logging has been widely carried out more recently including clear cutting in the immediate area of the deposit. Constructed or remains of various dams along local water ways, surface mining and excavation of numerous mine shafts/pits are located at the site.

Stormwater is anticipated to drain by infiltration and/or overland flow. Locally, water in the eastern portion of the Site is directed toward an artificial settling pond with the remains of a dam which is maintaining the water level in the pond.

Based on an available topographic map and the observed site topography, regional undisturbed surface drainage (anticipated shallow groundwater flow direction) appears to be to the north toward Crusher Lake, then via an unnamed brook to Mud Pond with eventual outflow into Killag River and Cameron Flowage. It should be noted that the direction of the shallow groundwater flow in limited areas can also be influenced by the presence of underground mine workings and is not necessarily a reflection of regional or local groundwater flow or a replica of the Site or area topography.

1.2.4 Surficial and Bedrock Geology

Based on an available surficial geology map, the native surficial soils of the Site consist of glacial till. The characteristic permeability of these soils is moderate. A site-specific determination would be required in order to obtain detailed soil profile and permeability information.

The Beaver Dam Property lies within the argillite-dominated basal greywacke, meta-sediments and minor quartzite of the Moose River Member of the Goldenville Formation (Nova Scotia Department of Natural Resources, 2000) which also hosts the Touquoy deposit 19 km to the southwest and the Fifteen Mile Stream gold deposit 17 km to the northeast. The Beaver Dam deposit is hosted in the southern limb of a north-dipping overturned anticline that hosts the vein gold mineralization.

1.3 PREVIOUS ENVIRONMENTAL REPORTS

Environmental work previously conducted at the Site by Stantec and others includes the following, which were reviewed by Stantec as part of the Phase II ESA:

- *Appendix N.1 Archaeological Assessment Beaver Dam Mine Site - part of the Beaver Dam Mine Project - Revised Environmental Impact Statement, Marquette, Nova Scotia. Prepared by Cultural Resources Management Group Limited for Conestoga-Rovers & Associates. Dated March 2015, CRM Project No. 2014-0015-01.*
- *Report Nova Scotia Department of Mines and Energy on Environmental Assessment of Beaver Dam Exploration, Beaver Dam, Nova Scotia. Prepared for Seabright Resources Inc. by Jacques Whitford*



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(now Stantec), report dated June 27, 1986, File No. M1285. Department of Natural Resources File No. PR 86-005.

- Stantec Consulting Ltd., 2019. Draft – Phase I Environmental Site Assessment, Beaverdam Property, 181 Beaver Dam Mines Rd., Marquette, NS. Prepared for Atlantic Mining NS Corporation. August 6, 2019.

The Phase I ESA completed at the Site by Stantec in August 2019 revealed evidence of actual and potential environmental contamination associated with the Site. Based on the information gathered, the Phase I ESA concluded that there are un-reclaimed tailings which may contain elevated arsenic and mercury levels on the Site, or have acid generating potential, near the Austen shaft; settlement pond and associated mine workings, trenching and historical pits which exist within and extend outside of the proposed open pit development area. Suspected tailings and waste rock generated most recently in the 1980s are mostly present in the vicinity of the Austen shaft and settlement pond located immediately west of the Cameron Flowage or were used to re-grade the site. Smaller piles of suspected waste rock were noted in the northern area of Crusher Lake and Forge Hill area, where an historical stamp mill operation occurred during the late 1920s. No reclamation of the older tailings or spread waste rock in the area was identified.

As part of the Phase I ESA, Stantec conducted LIDAR analysis to produce a Digital Elevation Model (DEM) of the Site which was used to approximately delineate potential historical tailings and waste rock storage areas prior to conducting the Phase I ESA site visit.

1.4 POTENTIAL SOURCES OF ENVIRONMENTAL IMPACTS

Table 2 provides a summary of potential sources of environmental impacts as identified in the Phase I ESA completed by Stantec in August 2019.

Table 2 Potential Sources of Environmental Impacts

Location	Potential Concern	Source
Austen Shaft Area	Potential elevated arsenic and mercury levels in tailings.	Phase I ESA
Crusher Lake	Potential elevated arsenic and mercury levels in tailings.	Phase I ESA
Settlement Pond and dam area	Potential elevated arsenic and mercury levels in tailings.	Phase I ESA
Waste Rock Dump Areas	Waste rock potentially arsenic containing and having acid generating potential.	Phase I ESA

1.5 REGULATORY FRAMEWORK

Nova Scotia Environment (NSE) released its *Contaminated Sites Regulations* on July 6, 2013 which provide the requirements for notification of contaminated sites, as well as the basis for determining the appropriate numerical remediation levels, or ongoing site exposure management measures, applicable to a contaminated site.

The overall regulatory goals for remediation are to manage contamination to reduce related risks to acceptable levels for humans and the environment (i.e. ecology). These goals may be met by a variety of



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means acceptable to NSE, from cleanup at the conservative generic (Tier 1) level, to cleanup based on site-specific conditions (Tier 2), to long-term exposure management of site contamination through engineered, physical or administrative controls.

Tier 1 Environmental Quality Standards (EQS) are substance generic environmental quality standards that may be used for remediation levels. These standards represent a standardized level of risk for contributing pathways, based on land use and other factors. Use of the Tier 1 EQS for remediation is a conservative and typical application of cleanup standards. The Tier 1 EQS incorporate human health and ecological effects where applicable.

Analytical results for soil and surface water have been compared to the applicable Tier 1 EQS for an industrial site with potable groundwater use and coarse-grained soil. Note that for metals, the Tier 1 EQS for a potable and non-potable site are equivalent.

Based on the presence of historical mine workings and tailings storage on the Site, the analytical results for surface water have also been compared to the *Metal and Diamond Mining Effluent Regulations* (MDMER) (DFO, 2018). The regulations provide Authorized Limits of Deleterious Substances for mine site effluent, which includes surface runoff “that flows over, through or out of the site of a mine”. Authorized Limits are provided for monthly mean concentrations, composite samples, and grab samples.

Table 3 provides a summary of applicable guidelines considered in this assessment.

Table 3 Summary of Regulatory Framework

Media	Metals
Soil	Tier 1 EQS for Soil at a Potable Site (coarse-grained soil, industrial land use)
Surface Water	Tier 1 EQS for Surface Water (freshwater pathway)
	MDMER, Schedule 4 Authorized Limits of Deleterious Substances (Monthly Mean Concentration, Concentration in a Composite Sample, and Concentration in a Grab Sample).

1.6 OBJECTIVES

As stated in the proposal submitted by Stantec dated June 12, 2019, the objective of the Limited Phase II ESA was to assess soil and surface water at the Site with respect to historical tailings and waste rock disposal areas identified in the Phase I ESA completed by Stantec in August 2019. The work was completed as part of project feasibility due diligence underway as part of the potential re-development of the Site.



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1.6.1 Scope of Work

The scope of this Phase II ESA, as presented in the proposal submitted by Stantec, consisted of the following:

- Stantec field technicians will travel to the property and meet with applicable Atlantic Gold staff to complete applicable site orientation and site-specific safety training.
- Complete visual site reconnaissance activities at the mine areas of interest to identify additional areas of potential environmental concern (e.g., surface water impacts near tailings, other contaminant sources such as barrel caches, buried debris, etc.) and/or constraints to the planned field program.
- Dig 30 to 40 test pits using hand tools to assess areas of potential tailings, waste rock piles or other features of interest. This sampling method has been recommended due to access restrictions for a wheel/track mounted drill rig or excavator in the areas of interest. It is unlikely that this sampling method will delineate soil impacts at depth, which will be the focus of future field programs to completely satisfy Phase II ESA requirements.
- Collect 5 to 10 surface water samples from the lakes, ponds, and streams on the property.
- Soil will be logged and representative soil samples will be collected from the test pits.
- Soil and surface water samples will be submitted to Bureau Veritas Laboratories (BV Labs), Bedford, NS for metals (all samples).
- Soil samples will be submitted to BV Labs for total petroleum hydrocarbon (TPH) and benzene, toluene, ethylbenzene and xylene (BTEX) analysis (only if potential sources/impacts are observed).

2.0 FIELD INVESTIGATION

2.1 RATIONALE

Test pit locations were chosen in the field based on areas of concern (i.e., tailings and waste rock storage areas) identified during review of the DEM and a visual assessment of the Site, and based on the location of proposed mine infrastructure. Lidar data specific to the Beaver Dam area was requested from the Nova Scotia Department of Natural Resources in August 2019 which identified historical tailing areas within the settlement pond, Crusher Lake and Forge Hill mining and stamp mill area. Surface water sampling locations were chosen based on conditions observed in the field.

Test pit and surface water sampling locations were representative across the proposed mine development area and the proposed open pit; towards the western area surrounding Crusher Lake; and towards the southeast reclaimed areas, settling pond and Cameron Flowage. It should be noted that significant portions of the Site are covered by thick vegetation which prevented a thorough assessment of the ground surface in those areas of the Site during the site visit. Test pit and surface water sampling locations are shown on Figure 2 and Figure 3, respectively in Appendix A.



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2.2 METHODOLOGY

Field activities conducted as part of the Limited Phase II ESA were carried out between July 10 and 11, 2019 and consisted of a visual assessment of the Site, the excavation of 29 test pits and associated soil sampling and the collection of surface water samples from four locations.

All samples were collected following strict Stantec sampling procedures. Samples were uniquely labelled and control was maintained through use of chain of custody forms. All samples were collected in laboratory supplied containers and preserved in insulated coolers. Appropriate sampling QA/QC procedures were adhered to at all times.

2.2.1 Soil Sampling

A total of 29 test pits (i.e., SA1 to SA29) were excavated on the site between July 10 and 11, 2019. The test pits were manually excavated using a shovel. Stantec personnel monitored the test pit excavation, maintained detailed logs and photographic records of the subsurface conditions encountered and obtained representative soil samples.

The manually excavated test pits were extended to depths ranging from 0.08 metres below ground surface (mbgs) to 0.45 mbgs, at which point refusal of the hand-held shovel was encountered. Representative bulk soil samples were collected from the various stratigraphic layers encountered in the test pits. One soil sample was collected from each test pit.

The soil samples were examined in the field for evidence of impacts (visual or olfactory), placed in new laboratory-supplied glass jars, placed on ice, and submitted to BV Labs. Based on site observations, the soil samples were submitted for laboratory analysis of available metals. Summaries of soil descriptions are provided in Table B-1 in Appendix B.

2.2.2 Surface Water Sampling

Surface water sampling was conducted during field investigations. Surface water samples were collected at four locations (i.e., SW1 to SW4). One field duplicate sample (i.e., DUP2) was collected from sampling location SW4. The samples were collected into new, laboratory-supplied bottles, placed on ice, and submitted to Bureau Veritas Laboratories in Bedford, NS. Based on site observations, the surface water samples were submitted for laboratory analysis of total metals.

2.3 LABORATORY ANALYSES

Based on field observations, 29 soil samples were submitted to BV Labs, an SCC-Accredited Laboratory for analysis of available metals with one duplicate QA/QC sample taken at SA-16. Four surface water samples (including 1 field duplicate sample) were submitted for analysis of total metals. The laboratory analysis schedule completed as part of this investigation is presented in Table 4 (including laboratory and field duplicate samples).



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Table 4 Summary of Laboratory Analysis

Parameter	Sample Media	
	Soil	Surface Water
Metals	29 + 1 Lab-Dup	4 + 1 Fld-Dup
Notes: The methodologies utilized by Bureau Veritas Laboratories in analysis of the soil and surface water samples are presented on the analytical report in Appendix C. Lab-Dup = laboratory duplicate QA/QC sample Fld-Dup = field duplicate QA/QC sample		

3.0 RESULTS

3.1 GENERAL OBSERVATIONS

Suspected tailings and waste rock were identified in several areas of the site and were identified near the Austen shaft and within the settling pond area,; adjacent to Crusher Lake, and at Forge Hill at a former mining and stamp mill location during the late 1920s. Lidar data received from NS DNR revealed suspected tailings and waste rock areas identified at these same locations. The waste rock storage areas identified during the current assessment are generally located immediately within the proposed open-pit footprint, south of the Austen Shaft and north of Crusher Lake, placed during site re-grading. Suspected waste rock piles were also observed in the general areas of the former stamp mills located at Crusher Lake and Forge Hill. Information from historical assessment reports indicated that between 1889 and 1989, 44,345 tonnes of tailings mass was produced from Beaver Dam, however material generated in the 1980s (41,000 tonnes) was milled at Gays River, leaving 3,345 tonnes of tailings on-site (Stantec, 2019).

At the time of the site visit, suspected tailings areas were covered with forest or low vegetation. No activity on the site other than various consultants and contractors conducting various due diligence tasks and preparation for a drill program to further delineate the resources was observed. Though waste rock was used to re-grade the site historically by Seabright in 1989, trenching and pits located within the proposed mine footprint exposed rocks for arsenic leaching and potential acid generation. The surface at these locations were generally undisturbed with recent activities.

3.2 SUBSURFACE CONDITIONS

3.2.1 Stratigraphy

The stratigraphy encountered in almost all of the test pits consisted of a layer of organics over poorly graded brown to grey silty sand with some gravel and cobbles. Samples SA-12, SA-14, SA-26, SA-27 and SA-28 consisted of brown-grey silt and suspected tailings with little to no sand and generally thicker overlying organic layers. Potential tailings were generally moist or wet and observed in test pits SA-6, SA-12, SA-13, SA-14, SA-15, SA-26, SA-27 and SA-28. Potential waste rock generated from historical mining activities was identified in test pits SA-1, SA-3, SA-7 and SA-8.



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The stratigraphy encountered in test pits SA-12, SA-14, SA-15, SA-17 and SA-18 consisted of a layer of organics overlying a layer of firm, well-graded grey silt which was considered to be potential tailings in SA-12, SA-14 and SA-15. This layer was underlain by poorly graded brown silty sand with some gravel and cobbles.

Detailed descriptions of stratigraphy observed are provided in Table B-1: Test Pit Soil Descriptions, Appendix B.

3.2.2 Groundwater Observations

Groundwater was not encountered in the test pits, which extended to depths ranging from 0.08 mbgs to 0.45 mbgs.

3.2.3 Free Phase Petroleum Hydrocarbons

Free liquid phase petroleum hydrocarbons (i.e., free product) was not observed on soil in the test pits. Petroleum hydrocarbon odour/sheening were also not observed on soil or surface water samples collected during the current investigation.

3.3 ANALYTICAL RESULTS

3.3.1 Soil Analytical Results

Laboratory analysis for available metals was conducted on 29 soil samples collected from the test pits, as well as one laboratory initiated duplicate QA/QC sample of SA 16. Results of the laboratory analysis of soil samples are presented in Table C-1, Appendix C. These results are summarized below:

- Metals parameters with the exception of arsenic were either not detected above the laboratory detection limits or were detected at concentrations that did not exceed the Tier 1 EQS, where such guidelines exist.
- Arsenic concentrations in 25 of the 29 soil samples were found to exceed the Tier 1 EQS of 31 mg/kg. Arsenic concentrations detected in the samples ranged from 6.9 mg/kg (SA-17) to 3,900 mg/kg (SA-28).

3.3.2 Surface Water Analytical Results

Laboratory analysis for total metals was conducted on four surface water samples collected from the Site, as well as one field duplicate QA/QC sample of SW4. Results of the laboratory analysis of surface water samples are presented in Table C-2, Appendix C. These results are summarized below:

- Aluminum and iron were detected in all water samples at concentrations which exceeded the Tier 1 EQS.
- Arsenic was only detected in one surface water sample (SW1) at concentrations which exceeded the Tier 1 EQS of 5 ug/L.



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- Cadmium was detected in all water samples, except for SW1, at concentrations which exceeded the Tier 1 EQS.
- Chromium was detected in the duplicate water sample for SW4 at a concentration which exceeded the Tier 1 EQS. All other samples had concentrations at the detection limit and at or below the Tier 1 EQS of 1.0 ug/L.
- All other metals parameters were either not detected above the laboratory detection limits or were detected at concentrations that did not exceed the Tier 1 EQS, where such guidelines exist.
- The detected metals concentrations did not exceed the applicable MDMER Authorized Limits, where such guidelines exist, in the samples analyzed.

3.3.3 Summary of Exceedances

The Limited Phase II ESA identified concentrations of arsenic in soil at the Site exceeding the NSE Tier 1 EQS. The locations of concentrations of arsenic in soil exceeding the applicable guidelines are shown on Figure 2, Appendix A. The distribution of arsenic concentrations in soil in the area of the proposed open pit is also shown on Figure 2, Appendix A.

Concentrations of aluminum, arsenic, cadmium, chromium and iron in surface water at the Site exceeded the NSE Tier 1 EQS. Elevated concentrations of metals parameters such as aluminum and iron are common in Nova Scotia due to surface and underlying geology which contains traces of these metals. The locations of metals concentrations in surface water samples exceeding the applicable NSE Tier 1 EQS are shown on Figure 3, Appendix A.

4.0 CONCLUSIONS

Based on the information gathered and on observations made during this assessment, Stantec provides the following conclusions related to potential environmental contamination associated with historical mining operations within the proposed mine area footprint:

- Possible tailings were visually observed in the stratigraphy of eight of the 29 test pits excavated as part of field activities completed between July 10 to 11, 2019 within the project area. Of the twelve test pits located within or adjacent to the proposed open pit area, four had possible tailings, in the vicinity of the Austen shaft, north of the settling pond. Four of the test pits with possible tailings were located north of Crusher Lake near historical mine workings and stamp mill operations. These locations match the suspected sites observed in Lidar data. Note that visual observation of possible tailings is not necessarily indicative of elevated arsenic concentrations at that location.
- Concentrations of arsenic in soil exceeding the applicable NSE Tier 1 EQS were identified in 25 of the 29 test pit locations. The highest concentrations of arsenic are localized in the area north of the Austen shaft and settlement pond area with the Cameron Flowage located directly east. Concentrations of arsenic exceeding the applicable Tier 1 EQS were also identified in areas where waste rock was used to re-grade the site (historical exploration camps south of the Austen shaft), and areas of historical stamp mills such as Crusher Lake and Forge Hill. Areas containing elevated gold concentrations tend to have elevated concentrations of arsenic due to the presence of arsenopyrite



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that is common in the geology of the area. Therefore, elevated arsenic concentrations are expected to be present across the Site.

- Two test pits were also conducted at the bottom of the settling pond near the dam structure (SA-2 and SA-3) and did exceed the Tier 1 EQS for arsenic. Six test pits directly south of the proposed pit and down-gradient of historical operations between Beaver Dam Mine Road and the Killag River also exceeded the Tier 1 EQS.
- Concentrations of arsenic detected in soil samples collected from test pits SA-16, SA-17 and SA-18, which were located outside the footprint of the proposed open pit and not down gradient of the settling pond did not exceed the Tier 1 EQS and are potentially indicative of background soil concentrations.
- Possible waste rock was visually observed at four of the 29 test pit locations. One of these test pits was located adjacent to the Austen shaft and adjacent mine workings (SA-1), one was located adjacent to the dam area of the settlement pond bordering the Killag River (SA-3), and two test pits were located in the identified waste rock near the historical M.E.X pit (i.e., SA-7 and SA-8). Tailings and waste rock appear to be located largely within the project area.
- Concentrations of aluminum and iron exceeding the applicable NSE Tier 1 EQS were identified in all the surface water samples analyzed. Concentrations of chromium only exceeded in a duplicate sample taken at SW4 down gradient in the Killag River. Cadmium in three of the four samples exceeded the applicable NSE Tier 1 EQS. The detected concentrations of metals did not exceed the applicable MDMER Authorized Limits in any of the samples.
- Concentrations of arsenic in surface water exceeded in only one sample taken near the dam structure within the settling pond (SW1).

5.0 CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.



LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT – BEAVER DAM PROPERTY

CLOSURE

August 23, 2019

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (e.g., utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.

This report was prepared by Jeff Burke, P.Geo, EP., and reviewed by Don Carey, M.Sc., P.Eng., and Eric Arseneau, MES.

Stantec Consulting Ltd.

<Original signed by> Digitally signed by
Don Carey
Date: 2021.03.03
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Arseneau, Eric
Date: 2021.03.03
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LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT – BEAVER DAM PROPERTY

References
August 23, 2019

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LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT – BEAVER DAM PROPERTY

References
August 23, 2019

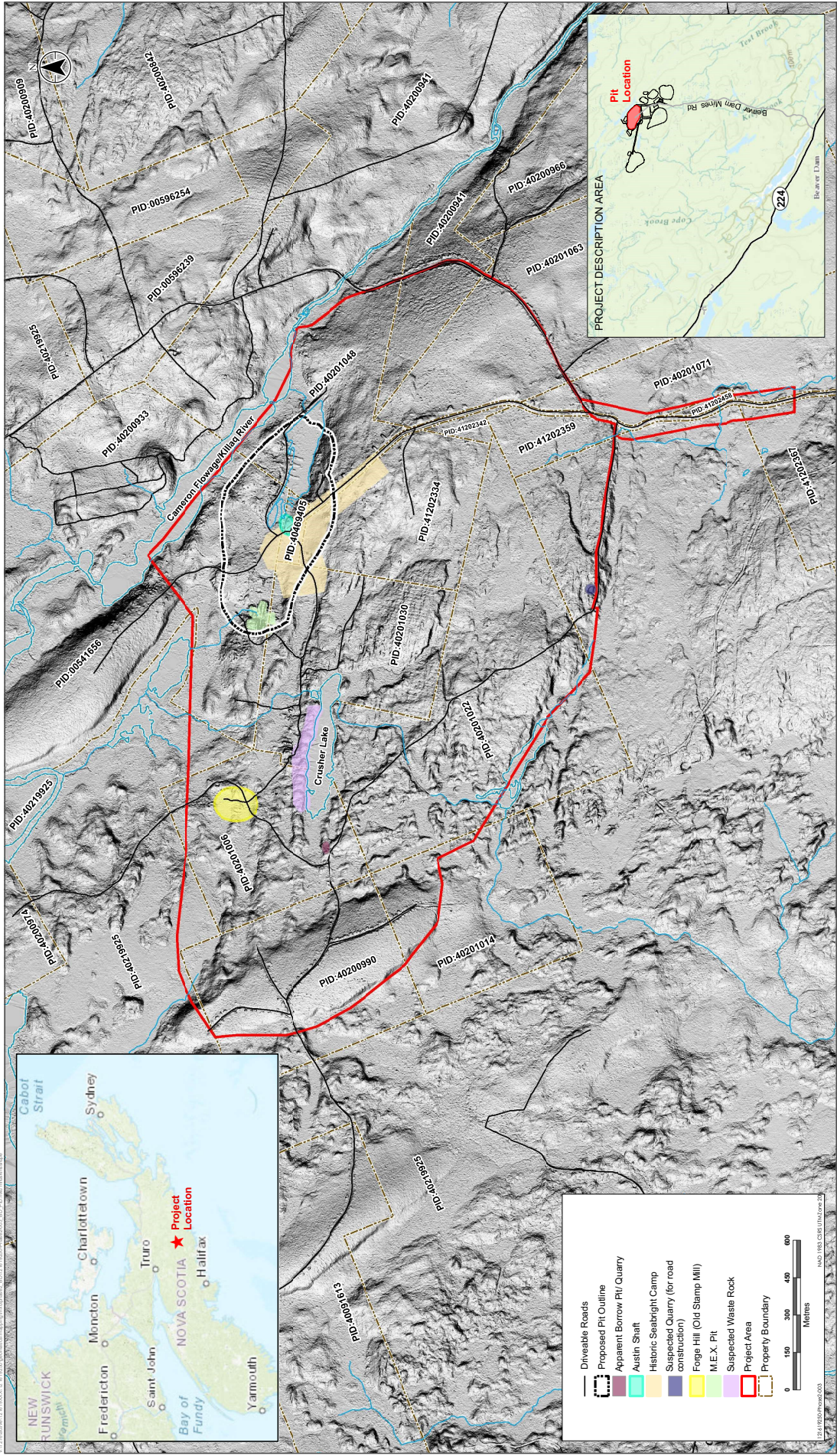


LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT – BEAVER DAM PROPERTY

August 23, 2019

APPENDIX A FIGURES



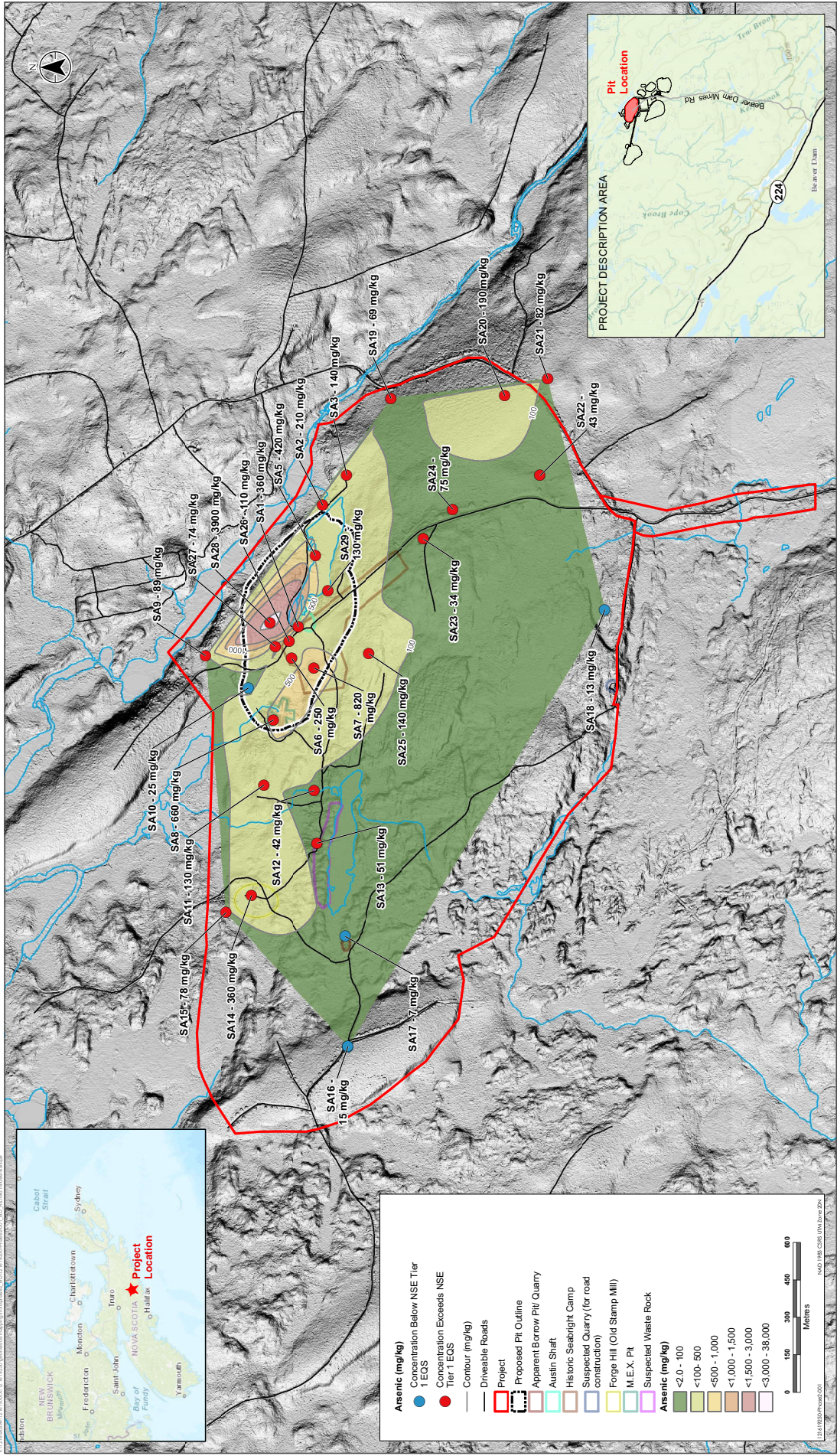


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Project Location
Atlantic Mining NS - Beaver Dam Project

Figure 1
 Appendix A

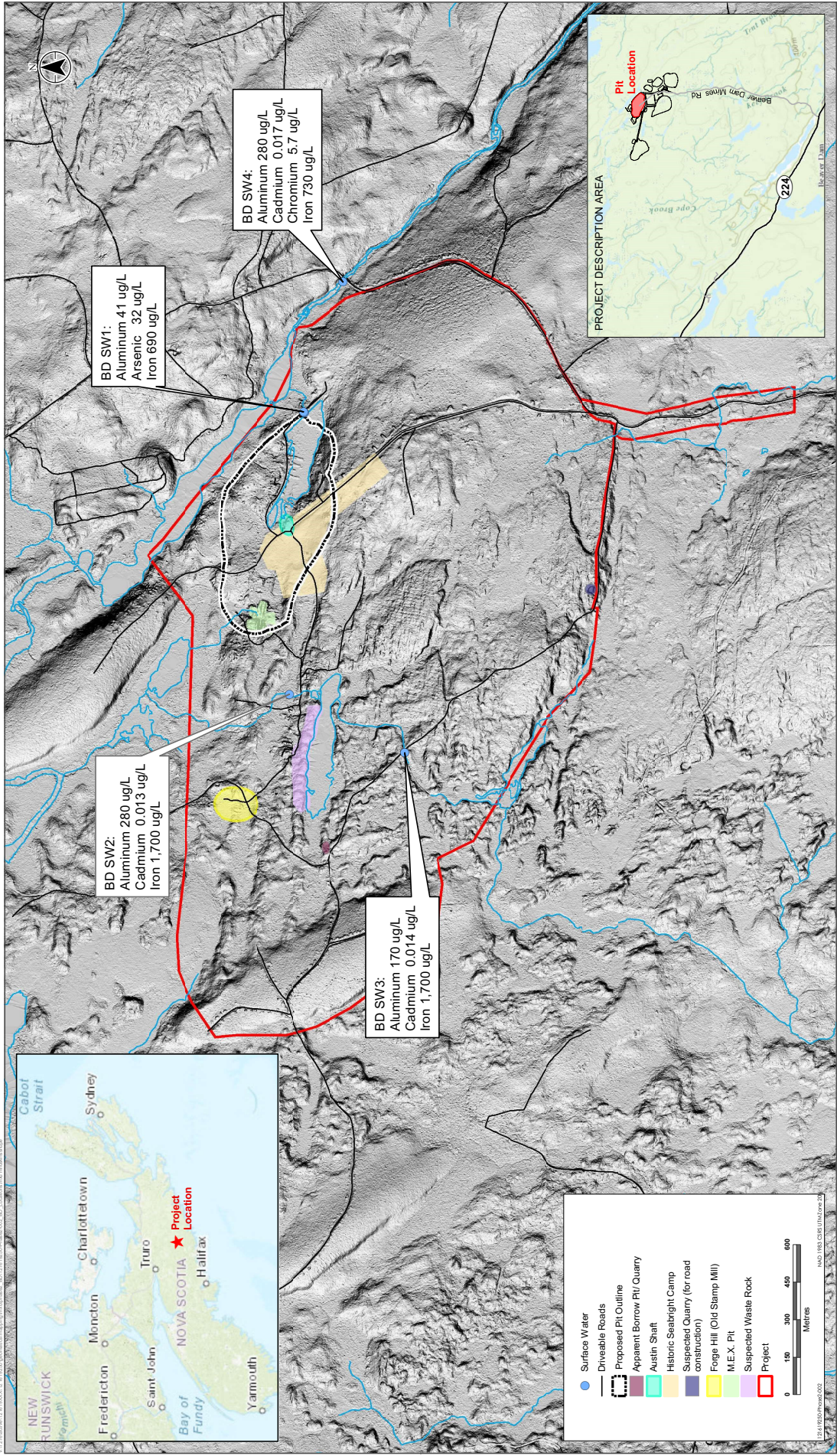




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Test Pit Locations and Arsenic Concentrations in Soil
Atlantic Mining NS - Beaver Dam Project

Figure 2
 Appendix A



Disclaimer: This map uses available topographic data for the project location. It is not intended to be used for navigation or other purposes. The data is provided for informational purposes only. The user assumes all responsibility for the use of this information. © 2022 Stantec Inc. All rights reserved.

**Surface Water Exceeding NS Tier 1 EQS
Atlantic Mining NS - Beaver Dam Project**

Figure 3
Appendix A

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT – BEAVER DAM PROPERTY

August 23, 2019

APPENDIX B TEST PIT RECORDS



**TABLE B-1 Test Pit Soil Descriptions
Atlantic Gold Corporation
Beaver Dam, Halifax, Nova Scotia
Stantec Consulting Ltd, Project No. 121619250.2500.955**

Location ID	Date	Test Pit Depth (mbg)	Soil Description
SA-1	10-Jul-19	0-0.25	Poorly graded black to brown silty SAND with cobbles Possible waste rock
SA-2	10-Jul-19		Poorly graded brown silty SAND with cobbles Collected from side of bank
SA-3	10-Jul-19	0-0.30	Firm poorly graded grey to brown silty SAND with gravel and cobbles. Moist Possible waste rock
SA-4	10-Jul-19	0-0.40	Firm poorly graded grey to brown silty SAND with gravel and cobbles. Moist
SA-5	10-Jul-19	0-0.30	Firm poorly graded brown silty SAND with gravel and cobbles. Moist
SA-6	10-Jul-19	0-0.30	Firm silty SAND. Wet Possible tailings
SA-7	10-Jul-19	0-0.30	Firm poorly graded brown to grey silty SAND with gravel and cobbles. Dry Possible waste rock
SA-8	10-Jul-19	0-0.45	Firm poorly graded brown silty SAND with gravel and cobbles. Dry Possible waste rock
SA-9	10-Jul-19	0-0.30	ROOTMAT firm poorly graded brown to grey silty SAND. Dry
SA-10	10-Jul-19	0-0.35	Firm poorly graded brown silty SAND with gravel and cobbles. Dry
SA-11	10-Jul-19	0-0.30	Firm poorly graded brown silty SAND with gravel and cobbles. Dry
SA-12	10-Jul-19	0-0.25	Black ORGANICS
		0.25-0.40	Grey SILT Possible tailings
SA-13	10-Jul-19	0-0.25	Firm grey silty SAND Trace gravel. Moist Possible tailings
SA-14	11-Jul-19	0-0.25	Black ORGANICS
		0.25-0.40	Firm sandy SILT with grass roots. Moist Possible tailings
SA-15	11-Jul-19	0-0.30	Black ORGANICS with firm grey sandy silt Moist Possible tailings
SA-16	11-Jul-19		Firm poorly graded grey silty SAND with gravel and cobbles. Moist
SA-17	11-Jul-19	0-0.08	Black ORGANICS
		0.08-0.30	Firm poorly graded reddish brown silty SAND with gravel. Dry
SA-18	11-Jul-19	0-0.35	Firm poorly graded brown silty SAND with gravel. Dry
SA-19	11-Jul-19	0-0.25	Black ORGANICS - MOSS
		0.25-0.40	Firm poorly graded grey silty SAND with cobbles. Wet


TABLE B-1 Test Pit Soil Descriptions
Atlantic Gold Corporation
Beaver Dam, Halifax, Nova Scotia
Stantec Consulting Ltd, Project No. 121619250.2500.955

Location ID	Date	Test Pit Depth (mbg)	Soil Description
SA-20	11-Jul-19	0-0.30	Firm poorly graded brown silty SAND with gravel and cobbles. Dry
SA-21	11-Jul-19	0-0.30	Firm poorly graded brown to grey silty SAND with gravel. Dry
SA-22	11-Jul-19	0-0.40	Firm poorly graded brown silty SAND with gravel. Moist
SA-23	11-Jul-19	0-0.35	Firm poorly graded brown silty SAND with gravel. Dry
SA-24	11-Jul-19	0-0.30	Firm brown silty SAND with gravel. Dry
SA-25	11-Jul-19	0-0.35	Firm brown silty SAND with gravel. Dry
SA-26	11-Jul-19	0-0.35	Firm brown to grey SILT Moist Possible tailings
SA-27	11-Jul-19	0-0.40	Firm brown SILT Moist Possible tailings
SA-28	11-Jul-19	0-0.15	Firm grey SILT Wet Possible tailings
SA-29	11-Jul-19	0-0.20	Firm poorly graded brown silty SAND with gravel and cobbles. Wet

TEST PIT: SA1

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth (ft) (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
		Ground Surface	0.00		
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">0.5</div> <div style="margin-bottom: 10px;">0.2</div> <div style="margin-bottom: 10px;">1.0</div> <div style="margin-bottom: 10px;">0.4</div> <div style="margin-bottom: 10px;">1.5</div> </div>		Poorly graded balck to brown silty SAND with cobbles - possible waste rock		1	SA
		End of TEST PIT	0.25		

STANTEC BOREHOLE AND WELL V2 121619250.2500.955 - BEAVER DAM - JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



Drawn By/Checked By: J. BURKE

TEST PIT: SA2

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth (ft) (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
0.00		Ground Surface	0.00		
0.5	[Dotted pattern]	Poorly graded brown silty SAND with cobbles - sample collected from side of bank		2	SA
1.0		End of TEST PIT	0.30		
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955 - BEAVER DAM - JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA3

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">0.5</div> <div style="margin-bottom: 10px;">0.2</div> <div style="margin-bottom: 10px;">1.0</div> <div style="margin-bottom: 10px;">0.4</div> <div style="margin-bottom: 10px;">1.5</div> </div>		Firm poorly graded grey to brown silty SAND with gravel and cobbles - moist - possible waste rock		3	SA
		End of TEST PIT	0.30		

STANTEC BOREHOLE AND WELL V2 121619250.2500.955 - BEAVER DAM - JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA4

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
	[Dotted pattern]	Firm poorly graded grey to borwn silty SAND with gravel and cobbles - moist - possible waste rock		4	SA
0.5					
0.2					
1.0					
0.4		End of TEST PIT	0.40		
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955 - BEAVER DAM - JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA5

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
0.5		Firm poorly graded brown silty SAND with gravel and cobbles - moist		5	SA
1.0			0.30		
		End of TEST PIT			
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA6

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
	Firm silty SAND - wet - possible tailings			6	SA
0.5					
	0.2				
1.0		End of TEST PIT	0.30		
0.4					
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA7

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
	[Dotted pattern]	Firm poorly graded brown to grey silty SAND with gravel and cobbles - dry - possible waste rock		7	SA
0.5					
0.2					
1.0		End of TEST PIT	0.30		
0.4					
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA8

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface			
		Firm poorly graded brown silty SAND with gravel and cobbles - dry - possible waste rock	0.00		
0.5					
	0.2			8	SA
1.0					
	0.4				
1.5		End of TEST PIT	0.45		

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

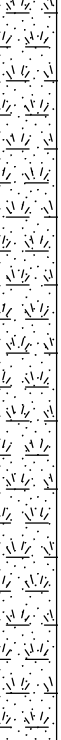
Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA9

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface			
		ROOTMAT firm poorly graded brown to grey silty SAND - dry	0.00		
0.5				9	SA
0.2					
1.0		End of TEST PIT	0.30		
0.4					
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available




Drawn By/Checked By: J. BURKE

TEST PIT: SA10

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">0.5</div> <div style="margin-bottom: 10px;">0.2</div> <div style="margin-bottom: 10px;">1.0</div> <div style="margin-bottom: 10px;">0.4</div> <div style="margin-bottom: 10px;">1.5</div> </div>		Firm poorly graded brown silty SAND with gravel and cobbles - dry		10	SA
		End of TEST PIT	0.35		

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA11

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth (ft) (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
		Ground Surface	0.00		
0.5		Firm poorly graded brown silty SAND with gravel and cobbles - dry		11	SA
1.0		End of TEST PIT	0.30		
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA12

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
	[Wavy pattern]	Black ORGANICS		SA12 A	SA
0.5					
	[Wavy pattern]				
0.2					
	[Vertical lines]	Grey SILT - possible tailings	0.25		
1.0				SA12 B	SA
	[Vertical lines]				
0.4		End of TEST PIT	0.40		
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA13

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 10-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
0.5		Firm grey silty SAND - trace gravel - moist - possible tailings		13	SA
0.2					
		End of TEST PIT	0.25		
1.0					
0.4					
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA14

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
		Black ORGANICS			
0.5				14 A	SA
0.2					
		Firm sandy SILT with grass roots - moist - possible tailings	0.25		
1.0				14 B	SA
0.4		End of TEST PIT	0.40		
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN


Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA15

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
		Black ORGANICS with firm grey sandy silt - moist - possible tailings		15	SA
0.5					
1.0		End of TEST PIT	0.30		
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA16

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
	Firm poorly graded grey silty SAND with gravel and cobbles - moist			16	SA
0.5					
0.2					
1.0		End of TEST PIT	0.30		
0.4					
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

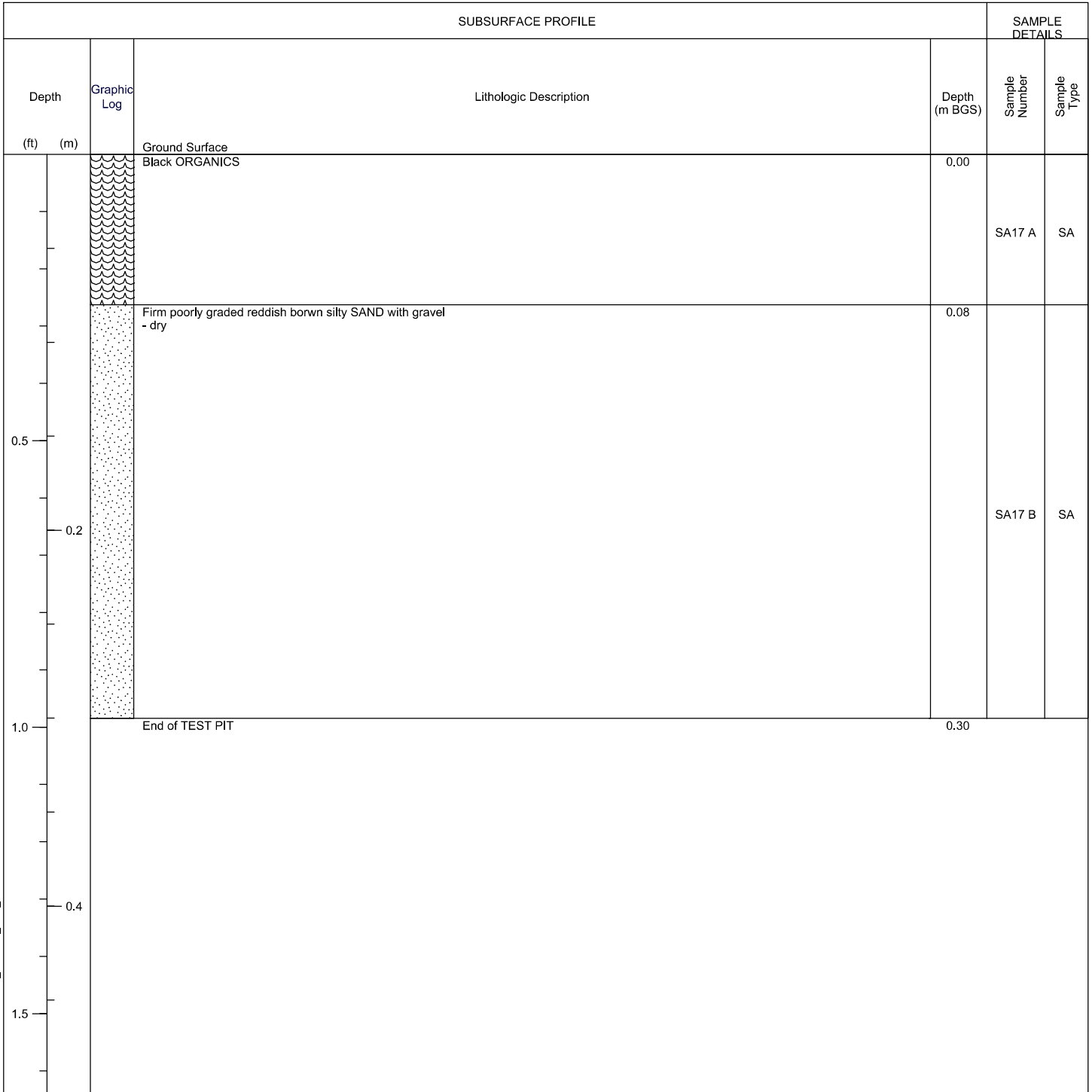
Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA17

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a



STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



Drawn By/Checked By: J. BURKE

Sheet 1 of 1

TEST PIT: SA18

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
0.5	0.2	Firm poorly graded brown silty SAND with gravel - dry		18	SA
1.0					
1.5		End of TEST PIT	0.35		

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN



Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA19

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
		Black ORGANICS - MOSS		SA19 A	SA
0.5					
		Firm poorly graded grey silty SAND with cobbles - wet	0.25		
1.0				SA19 B	SA
		End of TEST PIT	0.40		
0.4					
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWH/HALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA20

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
	[Dotted pattern]	Firm poorly graded brown silty SAND with gravel and cobbles - dry		20	SA
		End of TEST PIT	0.30		

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA21

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth (ft) (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
		Ground Surface	0.00		
0.5	0.2	Firm poorly graded brown to grey silty SAND with gravel - dry		21	SA
1.0		End of TEST PIT	0.30		
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA22

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
	Firm poorly graded brown silty SAND with gravel - moist			22	SA
0.5					
0.2					
1.0					
0.4		End of TEST PIT	0.40		
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA23

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE					SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	
(ft)	(m)					
		Ground Surface	0.00			
0.5	0.2	Firm poorly graded brown silty SAND with gravel - dry		23	SA	
1.0						
		End of TEST PIT	0.35			
0.4						
1.5						

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA24

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
	•••••	Firm brown silty SAND with gravel - dry		24	SA
0.5					
0.2		End of TEST PIT	0.20		
1.0					
0.4					
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA25

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
0.5		Firm brown silty SAND with gravel - dry		25	SA
0.2					
1.0					
0.4		End of TEST PIT	0.35		
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA26

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
		Firm brown to grey SILT - moist - possible tailings		25	SA
0.5					
	0.2				
1.0					
		End of TEST PIT	0.35		
0.4					
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA27

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE					SAMPLE DETAILS	
Depth		Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)					
		Ground Surface		0.00		
		Firm brown SILT - moist - possible tailings			27	SA
0.5						
	0.2					
1.0						
	0.4					
		End of TEST PIT		0.40		
1.5						

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

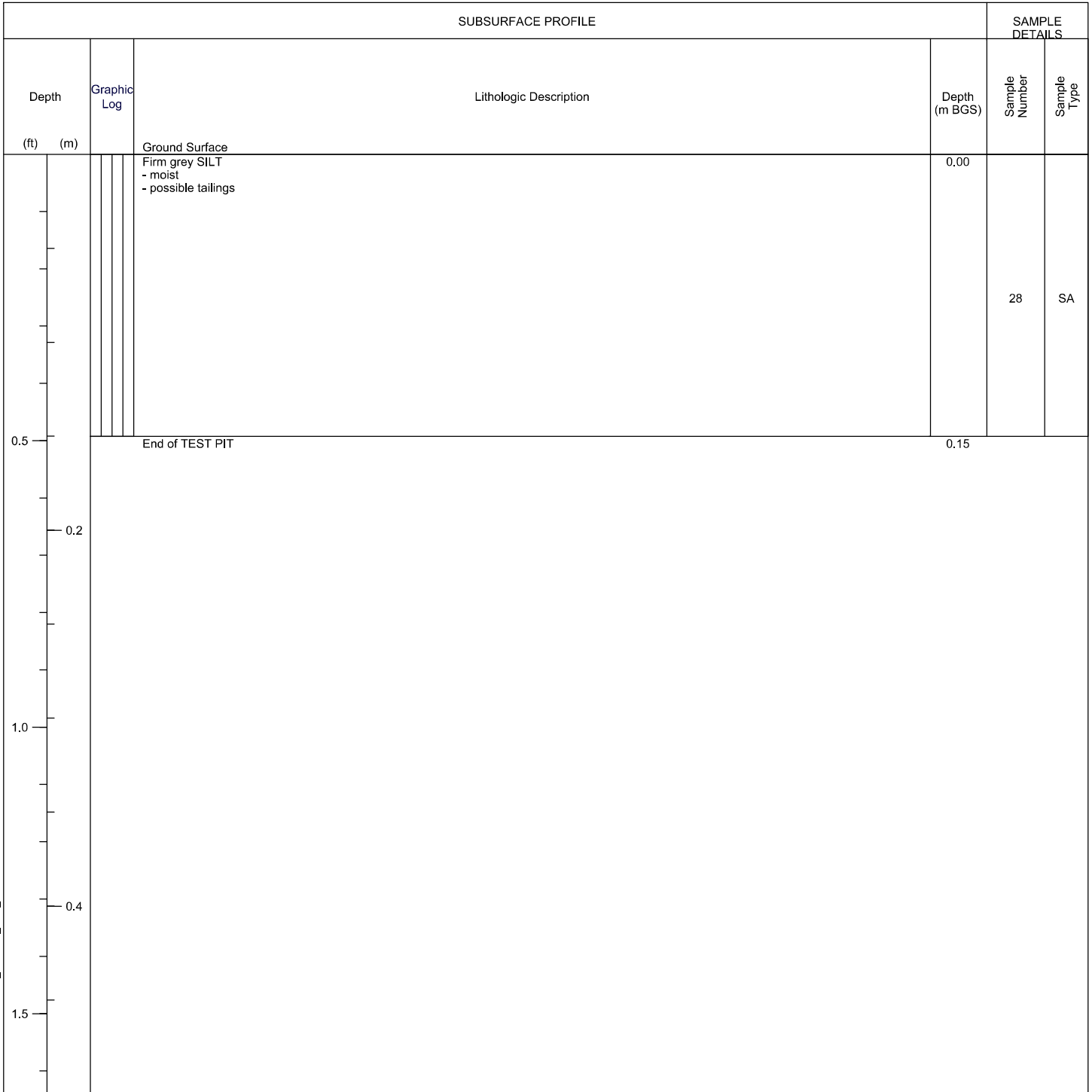
Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA28

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a



STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



TEST PIT: SA29

Project: PHASE II
Client: ATLANTIC GOLD CORPORATION
Location: BEAVER DAM, HALIFAX, NOVA SOCTIA
Number: 121619250.2500.955
Field investigator: M. PARKER
Contractor: STANTEC CONSULTING

Drilling method: HAND DUG
Date started/completed: 11-Jul-2019
Ground surface elevation: n/a
Top of casing elevation: n/a
Easting: n/a
Northing: n/a

SUBSURFACE PROFILE				SAMPLE DETAILS	
Depth	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type
(ft)	(m)				
		Ground Surface	0.00		
	•••••	Firm poorly graded brown silty SAND with gravel and cobbles - wet		29	SA
0.5					
0.2		End of TEST PIT	0.20		
1.0					
0.4					
1.5					

STANTEC BOREHOLE AND WELL V2 121619250.2500.955_BEAVER_DAM_JUL2019.GPJ STANTEC - DATA TEMPLATE.GDT 8/16/19 GWHALEN

Notes:
 m AMSL - metres above mean sea level
 m BGS - metres below ground surface
 n/a - not available



August 23, 2019

**APPENDIX C SOIL AND SURFACE WATER ANALYTICAL
SUMMARY TABLES & LABORATORY CERTIFICATES OF
ANALYSIS**



TABLE C-1

SOIL CHEMISTRY - METALS
Atlantic Mining NS Corporation
Beaver Dam, Halifax County, Nova Scotia
Stantec Consulting Ltd. Project No. 121619250

Parameter	Units	RDL	Tier 1 EQS ¹	SA1	SA2	SA3	SA4	SA5	SA6	SA7	SA8	SA9	SA10	SA11
Acid Extractable Aluminum (Al)	mg/kg	10	198,000	24000	27000	14000	18000	23000	15000	23000	31000	11000	30000	37000
Acid Extractable Antimony (Sb)	mg/kg	2.0	63	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Arsenic (As)	mg/kg	2.0	31	360	210	140	160	420	250	820	660	89	25	130
Acid Extractable Barium (Ba)	mg/kg	5.0	140,000	43	30	39	34	46	56	51	37	17	28	30
Acid Extractable Beryllium (Be)	mg/kg	2.0	320	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Bismuth (Bi)	mg/kg	2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Boron (B)	mg/kg	50	24,000	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Acid Extractable Cadmium (Cd)	mg/kg	0.30	192	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Acid Extractable Chromium (Cr)	mg/kg	2.0	2,300	35	31	22	25	31	28	44	47	18	30	43
Acid Extractable Cobalt (Co)	mg/kg	1.0	250	8.5	9.6	11	7.7	14	9.7	11	9.6	1.8	5.8	7.9
Acid Extractable Copper (Cu)	mg/kg	2.0	16,000	40	26	22	7.0	33	35	39	42	4.1	14	27
Acid Extractable Iron (Fe)	mg/kg	50	144,000	55000	36000	26000	26000	32000	33000	43000	45000	30000	38000	45000
Acid Extractable Lead (Pb)	mg/kg	0.50	740	27	15	9.6	10	16	15	110	12	17	15	13
Acid Extractable Lithium (Li)	mg/kg	2.0	-	36	35	32	29	37	36	34	32	7.1	31	34
Acid Extractable Manganese (Mn)	mg/kg	2.0	-	530	370	410	510	560	530	460	400	120	310	330
Acid Extractable Mercury (Hg)	mg/kg	0.10	99	0.11	0.13	<0.10	0.12	0.12	<0.10	<0.10	0.11	0.16	0.14	0.23
Acid Extractable Molybdenum (Mo)	mg/kg	2.0	1,200	<2.0	<2.0	<2.0	<2.0	<2.0	2.1	<2.0	17	<2.0	<2.0	<2.0
Acid Extractable Nickel (Ni)	mg/kg	2.0	2,200	16	21	20	14	25	24	24	21	5.1	14	21
Acid Extractable Rubidium (Rb)	mg/kg	2.0	-	33	14	16	12	18	20	21	17	3.3	12	12
Acid Extractable Selenium (Se)	mg/kg	1.0	1,135	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	1.1	1.7	2.2
Acid Extractable Silver (Ag)	mg/kg	0.5	490	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	5.8	<0.50	<0.50	<0.50
Acid Extractable Strontium (Sr)	mg/kg	5.0	122,000	<5.0	<5.0	5.7	8.0	5.9	10	5.8	<5.0	<5.0	6.7	<5.0
Acid Extractable Thallium (Tl)	mg/kg	0.10	1.0	0.27	0.15	0.15	<0.10	0.18	0.15	0.24	0.19	<0.10	0.14	0.16
Acid Extractable Tin (Sn)	mg/kg	2.0	122,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0
Acid Extractable Uranium (U)	mg/kg	0.10	300	0.89	0.92	0.84	0.71	0.93	1.3	0.85	0.78	0.43	0.90	0.89
Acid Extractable Vanadium (V)	mg/kg	2.0	160	36	37	24	37	35	25	31	43	58	38	46
Acid Extractable Zinc (Zn)	mg/kg	5.0	47,000	88	56	46	48	64	59	78	73	28	44	74

Notes:

1. Tier 1 EQS = Tier 1 Environmental Quality Standards for Soil at a Potable site; coarse-grained soil, industrial land use. From Nova Scotias Contaminated Sites Regulations (July 6, 2013) Notification of Contamination Protocol; Table 1A.
 2. RDL = laboratory's reportable detection limit
 3. <# = parameter not detected above RDL shown
 4. mbgs = metres below ground surface
 5. 'n/a' = no standard available; n/a = not applicable
 6. Lab-Dup = laboratory QA/QC duplicate; DUP1 = blind field QA/QC duplicate
7. [redacted] = Exceeds NSE Tier 1 Environmental Quality Standards for Soil at a Potable site coarse-grained soil, industrial land use. From Nova Scotias Contaminated

TABLE C-1

SOIL CHEMISTRY - METALS
Atlantic Mining NS Corporation
Beaver Dam, Halifax County, Nova Scotia
Stantec Consulting Ltd. Project No. 121619250

Parameter	Units	RDL	Tier 1 EQS ¹	SA12		SA13		SA14		SA15		SA16		SA17		SA18		SA19	
				0-0.40	10-Jul-19	0-0.25	10-Jul-19	0-0.40	11-Jul-19	0-0.30	11-Jul-19	11-Jul-19	11-Jul-19	11-Jul-19	11-Jul-19	11-Jul-19	11-Jul-19	11-Jul-19	11-Jul-19
Sample Depth (mbgs):				Date Sampled:															
Acid Extractable Aluminum (Al)	mg/kg	10	198,000	4600	22000	22000	22000	22000	22000	20000	21000	20000	19000	47000	33000	33000	13000		
Acid Extractable Antimony (Sb)	mg/kg	2.0	63	<2.0	<2.0	51	360	78	15	<2.0	14	<2.0	<2.0	<2.0	6.9	13	<2.0	69	<2.0
Acid Extractable Arsenic (As)	mg/kg	2.0	31	42	69	69	78	110	57	<2.0	44	<2.0	<2.0	28	31	<2.0	<2.0	21	<2.0
Acid Extractable Barium (Ba)	mg/kg	5.0	140,000	6.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Beryllium (Be)	mg/kg	2.0	320	<2.0	<2.0	<2.0	2.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Bismuth (Bi)	mg/kg	2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Boron (B)	mg/kg	50	24,000	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Acid Extractable Cadmium (Cd)	mg/kg	0.30	192	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Acid Extractable Chromium (Cr)	mg/kg	2.0	2,300	7.1	33	33	33	45	25	23	23	23	23	42	37	16	16	4.8	4.8
Acid Extractable Cobalt (Co)	mg/kg	1.0	250	<1.0	27	4.3	14	14	12	11	10	10	10	4.0	8.1	4.8	20	4.2	4.2
Acid Extractable Copper (Cu)	mg/kg	2.0	16,000	7.4	65	65	16	38	22	16	16	16	16	6.7	20	4.2	41000	19000	19000
Acid Extractable Iron (Fe)	mg/kg	50	144,000	7200	37000	37000	41000	35000	32000	30000	30000	29000	29000	47000	41000	41000	14	9.3	9.3
Acid Extractable Lead (Pb)	mg/kg	0.50	740	8.2	12	12	58	7.2	17	16	16	15	15	13	14	14	14	23	23
Acid Extractable Lithium (Li)	mg/kg	2.0	-	6.1	45	45	48	44	36	32	32	30	30	26	41	41	41	260	260
Acid Extractable Manganese (Mn)	mg/kg	2.0	-	97	520	520	410	480	740	640	640	610	610	150	310	310	0.12	0.11	0.11
Acid Extractable Mercury (Hg)	mg/kg	0.10	99	7.3	0.14	0.14	15	0.14	0.13	<0.10	<0.10	<0.10	<0.10	0.29	0.12	<2.0	<2.0	<2.0	<2.0
Acid Extractable Molybdenum (Mo)	mg/kg	2.0	1,200	<2.0	<2.0	<2.0	<2.0	3.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Nickel (Ni)	mg/kg	2.0	2,200	<2.0	38	38	8.2	29	23	18	18	18	18	10	20	9.8	20	9.8	9.8
Acid Extractable Rubidium (Rb)	mg/kg	2.0	-	3.9	36	36	59	48	18	16	16	16	16	9.4	16	16	16	9.0	9.0
Acid Extractable Selenium (Se)	mg/kg	1.0	1,135	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	1.5	<1.0	<1.0	<1.0	<1.0
Acid Extractable Silver (Ag)	mg/kg	0.5	490	<0.50	<0.50	<0.50	<0.50	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acid Extractable Strontium (Sr)	mg/kg	5.0	122,000	<5.0	8.2	8.2	<5.0	11	10	8.7	9.1	9.1	9.1	<5.0	<5.0	5.4	<5.0	5.4	5.4
Acid Extractable Thallium (Tl)	mg/kg	0.10	1.0	<0.10	0.37	0.37	0.45	0.30	0.16	0.16	0.14	0.14	0.14	0.11	0.17	0.12	<1.0	<1.0	<1.0
Acid Extractable Tin (Sn)	mg/kg	2.0	122,000	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0
Acid Extractable Uranium (U)	mg/kg	0.10	300	0.14	2.3	2.3	0.38	0.87	1.2	1.0	1.0	1.0	1.0	0.90	1.1	0.54	1.1	0.54	0.54
Acid Extractable Vanadium (V)	mg/kg	2.0	160	8.1	40	40	39	43	27	27	27	25	25	83	43	24	43	24	24
Acid Extractable Zinc (Zn)	mg/kg	5.0	47,000	15	100	100	69	65	57	50	50	48	48	32	51	33	51	33	33

Notes:

1. Tier 1 EQS = Tier 1 Environmental Quality Standards for Soil at a Potable site; coarse-grained soil, industrial land use. From Nova Scotias Contaminated Sites Regulations (July 6, 2013) Notification of Contamination Protocol; Table 1A.
2. RDL = laboratory's reportable detection limit
3. <# = parameter not detected above RDL shown
4. mbgs = metres below ground surface
5. ' - ' = no standard available; n/a = not applicable
6. Lab-Dup = laboratory QA/QC duplicate; DUP1 = blind field QA/QC duplicate
7. [redacted] = Exceeds NSE Tier 1 Environmental Quality Standards for Soil at a Potable site coarse-grained soil, industrial land use. From Nova Scotias Contaminated

TABLE C-1

SOIL CHEMISTRY - METALS
Atlantic Mining NS Corporation
Beaver Dam, Halifax County, Nova Scotia
Stantec Consulting Ltd. Project No. 121619250

Parameter	Units	RDL	Tier 1 EQS ¹	SA20		SA21	SA22	SA23	SA24	SA25	SA26	SA27	SA28	SA29
				0-0.30	Lab-Dup									
				11-Jul-19	11-Jul-19									
Sample Depth (mbgs):				Date Sampled:										
Acid Extractable Aluminum (Al)	mg/kg	10	198,000	21000	21000	7800	25000	28000	21000	25000	16000	16000	18000	16000
Acid Extractable Antimony (Sb)	mg/kg	2.0	63	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Arsenic (As)	mg/kg	2.0	31	190	190	82	43	34	75	140	110	74	3900	130
Acid Extractable Barium (Ba)	mg/kg	5.0	140,000	32	33	11	29	30	21	33	36	34	42	41
Acid Extractable Beryllium (Be)	mg/kg	2.0	320	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Bismuth (Bi)	mg/kg	2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Boron (B)	mg/kg	50	24,000	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Acid Extractable Cadmium (Cd)	mg/kg	0.30	192	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Acid Extractable Chromium (Cr)	mg/kg	2.0	2,300	26	26	8.8	25	31	23	27	21	19	66	24
Acid Extractable Cobalt (Co)	mg/kg	1.0	250	6.1	6.2	<1.0	4.3	7.4	3.2	5.6	7.1	4.5	18	7.8
Acid Extractable Copper (Cu)	mg/kg	2.0	16,000	9.2	9.3	2.8	7.9	11	7.1	17	11	9.0	91	31
Acid Extractable Iron (Fe)	mg/kg	50	144,000	32000	32000	21000	29000	36000	31000	38000	27000	23000	40000	26000
Acid Extractable Lead (Pb)	mg/kg	0.50	740	11	11	9.7	13	15	14	14	19	15	34	19
Acid Extractable Lithium (Li)	mg/kg	2.0	-	27	28	3.9	23	33	18	29	26	21	69	36
Acid Extractable Manganese (Mn)	mg/kg	2.0	-	310	310	86	200	510	160	310	360	270	660	440
Acid Extractable Mercury (Hg)	mg/kg	0.10	99	0.13	0.12	0.15	0.20	0.18	0.19	0.18	<0.10	0.14	<0.10	<0.10
Acid Extractable Molybdenum (Mo)	mg/kg	2.0	1,200	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	4.9	<2.0
Acid Extractable Nickel (Ni)	mg/kg	2.0	2,200	15	15	3.1	11	16	8.6	16	14	11	38	23
Acid Extractable Rubidium (Rb)	mg/kg	2.0	-	12	12	6.9	9.9	11	7.2	9.1	12	10	16	16
Acid Extractable Selenium (Se)	mg/kg	1.0	1,135	1.3	1.3	<1.0	1.9	1.5	1.4	1.6	<1.0	<1.0	<1.0	<1.0
Acid Extractable Silver (Ag)	mg/kg	0.5	490	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	27	<0.50
Acid Extractable Strontium (Sr)	mg/kg	5.0	122,000	5.6	5.8	<5.0	5.4	<5.0	<5.0	8.1	7.3	6.9	27	9.2
Acid Extractable Thallium (Tl)	mg/kg	0.10	1.0	0.12	0.14	0.13	0.14	0.17	0.13	0.14	0.12	0.11	0.24	0.19
Acid Extractable Tin (Sn)	mg/kg	2.0	122,000	<1.0	<1.0	1.0	<1.0	1.1	1.2	<1.0	<1.0	<1.0	<1.0	<1.0
Acid Extractable Uranium (U)	mg/kg	0.10	300	0.75	0.78	0.45	0.83	0.68	0.58	0.68	0.68	0.61	0.94	0.90
Acid Extractable Vanadium (V)	mg/kg	2.0	160	35	35	32	38	49	45	31	30	29	33	28
Acid Extractable Zinc (Zn)	mg/kg	5.0	47,000	43	43	11	32	50	26	52	45	35	79	60

Notes:

1. Tier 1 EQS = Tier 1 Environmental Quality Standards for Soil at a Potable site; coarse-grained soil, industrial land use. From Nova Scotias Contaminated Sites Regulations (July 6, 2013) Notification of Contamination Protocol; Table 1A.
2. RDL = laboratory's reportable detection limit
3. <# = parameter not detected above RDL shown
4. mbgs = metres below ground surface
5. ' - ' = no standard available; n/a = not applicable
6. Lab-Dup = laboratory QA/QC duplicate; DUP1 = blind field QA/QC duplicate
7. 38 = Exceeds NSE Tier 1 EQS

TABLE C-2 SURFACE WATER CHEMISTRY- METALS
Atlantic Mining NS Corporation
Beaver Dam, Halifax County, Nova Scotia
Stantec Consulting Ltd. Project No. 121619250

Parameter	Units	RDL	Tier 1 EQS ¹	MDMER ²			SW1	SW2	SW3	SW4	
				Monthly Mean	Composite Sample	Grab Sample				11-Jul-19	DUP2
Date Sampled:							10-Jul-19	10-Jul-19	11-Jul-19	11-Jul-19	DUP2
Total Aluminum (Al)	ug/L	5.0	5.0	-	-	-	41	280	170	280	280
Total Antimony (Sb)	ug/L	1.0	20	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Total Arsenic (As)	ug/L	1.0	5.0	500	750	1,000	32	4.3	<1.0	4.6	4.7
Total Barium (Ba)	ug/L	1.0	1,000	-	-	-	3.7	2.4	5.5	3.0	3.0
Total Beryllium (Be)	ug/L	1.0	5.3	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Total Bismuth (Bi)	ug/L	2.0	-	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0
Total Boron (B)	ug/L	50	1,200	-	-	-	<50	<50	<50	<50	<50
Total Cadmium (Cd)	ug/L	0.01	0.01	-	-	-	<0.010	0.013	0.014	0.013	0.017
Total Calcium (Ca)	ug/L	100	-	-	-	-	3600	580	1100	670	710
Total Chromium (Cr)	ug/L	1.0	1.0	-	-	-	<1.0	1.0	1.0	1.0	5.7
Total Cobalt (Co)	ug/L	0.40	10	-	-	-	<0.40	<0.40	0.74	<0.40	<0.40
Total Copper (Cu)	ug/L	2.0	2.0	300	450	600	1.4	0.51	<0.50	<0.50	0.59
Total Iron (Fe)	ug/L	50	300	-	-	-	690	750	1700	660	730
Total Lead (Pb)	ug/L	0.50	1.0	200	300	400	<0.50	<0.50	<0.50	<0.50	<0.50
Total Magnesium (Mg)	ug/L	100	-	-	-	-	650	270	430	300	310
Total Manganese (Mn)	ug/L	2.0	820	-	-	-	67	43	69	43	46
Total Mercury (Hg)	ug/L	0.013	0.026	-	-	-	<0.0020	<0.0020	0.0027	<0.0020	<0.0020
Total Molybdenum (Mo)	ug/L	2.0	73	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0
Total Nickel (Ni)	ug/L	2.0	25	500	750	1,000	<2.0	<2.0	<2.0	<2.0	2.2
Total Phosphorus (P)	ug/L	100	-	-	-	-	<100	<100	<100	<100	<100
Total Potassium (K)	ug/L	100	-	-	-	-	530	130	380	100	<100
Total Selenium (Se)	ug/L	1.0	1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
Total Silver (Ag)	ug/L	0.10	0.1	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10
Total Sodium (Na)	ug/L	100	-	-	-	-	1800	1900	2500	1900	2000
Total Strontium (Sr)	ug/L	2.0	21,000	-	-	-	18	4.2	8.4	5.8	6.4
Total Thallium (Tl)	ug/L	0.10	0.80	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10
Total Tin (Sn)	ug/L	2.0	-	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0
Total Titanium (Ti)	ug/L	2.0	-	-	-	-	<2.0	2.4	2.0	3.3	2.6
Total Uranium (U)	ug/L	0.10	300	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10
Total Vanadium (V)	ug/L	2.0	6.0	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0
Total Zinc (Zn)	ug/L	5.0	30	500	750	1,000	<5.0	<5.0	<5.0	<5.0	<5.0

Notes:

1. Tier 1 EQS = Tier 1 Environmental Quality Standards for Surface Water; fresh water pathway.
From Nova Scotias Contaminated Sites Regulations (July 6, 2013) Notification of Contamination Protocol; Table 3.
2. MDMER = Metal and Diamond Mining Effluent Regulations SOR/2002-222, Schedule 4 Authorized Limits of Deleterious Substances, Column 4 Maximum Authorized Concentration in a Grab Sample. Current to June 20, 2018.
RDL = laboratory's reportable detection limit
3. <# = parameter not detected above RDL shown
4. - = no standard available; n/a = not applicable
5. DUP2 = blind field QA/QC duplicate
6. [] = Exceeds NSE Tier 1 EQS for Freshwater



Your Project #: 121619250.2500.955
 Site Location: BEAVER DAM
 Your C.O.C. #: D33529, D40448, D40591, D40449

Attention: Patrick Turner

Stantec Consulting Ltd
 40 Highfield Park Drive
 Suite 102
 Dartmouth, NS
 CANADA B3A 0A3

Report Date: 2019/07/23
 Report #: R5809183
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J4560

Received: 2019/07/15, 14:13

Sample Matrix: Soil
 # Samples Received: 30

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Metals Solids Acid Extr. ICPMS	30	2019/07/22	2019/07/23	ATL SOP 00058	EPA 6020B R2 m

Sample Matrix: Water
 # Samples Received: 5

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Metals Water Total MS	5	2019/07/17	2019/07/17	ATL SOP 00058	EPA 6020B R2 m
Mercury (Total) by CV (1)	5	2019/07/19	2019/07/19	BBY7SOP-00015	BCMOE BCLM Oct2013 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.

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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 Bedford to Burnaby - Offsite



Your Project #: 121619250.2500.955
Site Location: BEAVER DAM
Your C.O.C. #: D33529, D40448, D40591, D40449

Attention: Patrick Turner

Stantec Consulting Ltd
40 Highfield Park Drive
Suite 102
Dartmouth, NS
CANADA B3A 0A3

Report Date: 2019/07/23
Report #: R5809183
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9J4560
Received: 2019/07/15, 14:13

Encryption Key



AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas Laboratories
23 Jul 2019 14:07:06

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Marie Muise, Key Account Specialist
Email: Marie.MUISE@bvlabs.com
Phone# (902)420-0203 Ext:253

=====

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.



ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

BV Labs ID		KGT667	KGT668	KGT669	KGT670	KGT671	KGT672		
Sampling Date		2019/07/10	2019/07/10	2019/07/10	2019/07/10	2019/07/10	2019/07/10		
COC Number		D33529	D33529	D33529	D33529	D33529	D33529		
	UNITS	SA1	SA2	SA3	SA4	SA5	SA6	RDL	QC Batch

Metals									
Acid Extractable Aluminum (Al)	mg/kg	24000	27000	14000	18000	23000	15000	10	6240247
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Arsenic (As)	mg/kg	360	210	140	160	420	250	2.0	6240247
Acid Extractable Barium (Ba)	mg/kg	43	30	39	34	46	56	5.0	6240247
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	<50	50	6240247
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	6240247
Acid Extractable Chromium (Cr)	mg/kg	35	31	22	25	31	28	2.0	6240247
Acid Extractable Cobalt (Co)	mg/kg	8.5	9.6	11	7.7	14	9.7	1.0	6240247
Acid Extractable Copper (Cu)	mg/kg	40	26	22	7.0	33	35	2.0	6240247
Acid Extractable Iron (Fe)	mg/kg	55000	36000	26000	26000	32000	33000	50	6240247
Acid Extractable Lead (Pb)	mg/kg	27	15	9.6	10	16	15	0.50	6240247
Acid Extractable Lithium (Li)	mg/kg	36	35	32	29	37	36	2.0	6240247
Acid Extractable Manganese (Mn)	mg/kg	530	370	410	510	560	530	2.0	6240247
Acid Extractable Mercury (Hg)	mg/kg	0.11	0.13	<0.10	0.12	0.12	<0.10	0.10	6240247
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.1	2.0	6240247
Acid Extractable Nickel (Ni)	mg/kg	16	21	20	14	25	24	2.0	6240247
Acid Extractable Rubidium (Rb)	mg/kg	33	14	16	12	18	20	2.0	6240247
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6240247
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	0.50	6240247
Acid Extractable Strontium (Sr)	mg/kg	<5.0	<5.0	5.7	8.0	5.9	10	5.0	6240247
Acid Extractable Thallium (Tl)	mg/kg	0.27	0.15	0.15	<0.10	0.18	0.15	0.10	6240247
Acid Extractable Tin (Sn)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6240247
Acid Extractable Uranium (U)	mg/kg	0.89	0.92	0.84	0.71	0.93	1.3	0.10	6240247
Acid Extractable Vanadium (V)	mg/kg	36	37	24	37	35	25	2.0	6240247
Acid Extractable Zinc (Zn)	mg/kg	88	56	46	48	64	59	5.0	6240247

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

BV Labs ID		KGT673	KGT674		KGT675	KGT676	KGT678	KGT679		
Sampling Date		2019/07/10	2019/07/10		2019/07/10	2019/07/10	2019/07/10	2019/07/10		
COC Number		D33529	D33529		D33529	D33529	D40448	D40448		
	UNITS	SA7	SA8	RDL	SA9	SA10	SA11	SA12	RDL	QC Batch
Metals										
Acid Extractable Aluminum (Al)	mg/kg	23000	31000	10	11000	30000	37000	4600	10	6240247
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Arsenic (As)	mg/kg	820	660	20	89	25	130	42	2.0	6240247
Acid Extractable Barium (Ba)	mg/kg	51	37	5.0	17	28	30	6.3	5.0	6240247
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Boron (B)	mg/kg	<50	<50	50	<50	<50	<50	<50	50	6240247
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	0.30	<0.30	<0.30	<0.30	<0.30	0.30	6240247
Acid Extractable Chromium (Cr)	mg/kg	44	47	2.0	18	30	43	7.1	2.0	6240247
Acid Extractable Cobalt (Co)	mg/kg	11	9.6	1.0	1.8	5.8	7.9	<1.0	1.0	6240247
Acid Extractable Copper (Cu)	mg/kg	39	42	2.0	4.1	14	27	7.4	2.0	6240247
Acid Extractable Iron (Fe)	mg/kg	43000	45000	50	30000	38000	45000	7200	50	6240247
Acid Extractable Lead (Pb)	mg/kg	110	12	0.50	17	15	13	8.2	0.50	6240247
Acid Extractable Lithium (Li)	mg/kg	34	32	2.0	7.1	31	34	6.1	2.0	6240247
Acid Extractable Manganese (Mn)	mg/kg	460	400	2.0	120	310	330	97	2.0	6240247
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.11	0.10	0.16	0.14	0.23	7.3	0.10	6240247
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	17	2.0	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Nickel (Ni)	mg/kg	24	21	2.0	5.1	14	21	<2.0	2.0	6240247
Acid Extractable Rubidium (Rb)	mg/kg	21	17	2.0	3.3	12	12	3.9	2.0	6240247
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.4	1.0	1.1	1.7	2.2	<1.0	1.0	6240247
Acid Extractable Silver (Ag)	mg/kg	<0.50	5.8	0.50	<0.50	<0.50	<0.50	<0.50	0.50	6240247
Acid Extractable Strontium (Sr)	mg/kg	5.8	<5.0	5.0	<5.0	6.7	<5.0	<5.0	5.0	6240247
Acid Extractable Thallium (Tl)	mg/kg	0.24	0.19	0.10	<0.10	0.14	0.16	<0.10	0.10	6240247
Acid Extractable Tin (Sn)	mg/kg	<1.0	<1.0	1.0	1.4	<1.0	<1.0	<1.0	1.0	6240247
Acid Extractable Uranium (U)	mg/kg	0.85	0.78	0.10	0.43	0.90	0.89	0.14	0.10	6240247
Acid Extractable Vanadium (V)	mg/kg	31	43	2.0	58	38	46	8.1	2.0	6240247
Acid Extractable Zinc (Zn)	mg/kg	78	73	5.0	28	44	74	15	5.0	6240247
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

BV Labs ID		KGT680	KGT681	KGT682	KGT683	KGT684	KGT685		
Sampling Date		2019/07/10	2019/07/11	2019/07/11	2019/07/11	2019/07/11	2019/07/11		
COC Number		D40448	D40448	D40448	D40448	D40448	D40448		
	UNITS	SA13	SA14	SA15	SA16	SA17	SA18	RDL	QC Batch

Metals									
Acid Extractable Aluminum (Al)	mg/kg	22000	22000	20000	21000	47000	33000	10	6240247
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Arsenic (As)	mg/kg	51	360	78	15	6.9	13	2.0	6240247
Acid Extractable Barium (Ba)	mg/kg	69	78	110	57	28	31	5.0	6240247
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.9	<2.0	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	<50	50	6240247
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	6240247
Acid Extractable Chromium (Cr)	mg/kg	33	33	45	25	42	37	2.0	6240247
Acid Extractable Cobalt (Co)	mg/kg	27	4.3	14	12	4.0	8.1	1.0	6240247
Acid Extractable Copper (Cu)	mg/kg	65	16	38	22	6.7	20	2.0	6240247
Acid Extractable Iron (Fe)	mg/kg	37000	41000	35000	32000	47000	41000	50	6240247
Acid Extractable Lead (Pb)	mg/kg	12	58	7.2	17	13	14	0.50	6240247
Acid Extractable Lithium (Li)	mg/kg	45	48	44	36	26	41	2.0	6240247
Acid Extractable Manganese (Mn)	mg/kg	520	410	480	740	150	310	2.0	6240247
Acid Extractable Mercury (Hg)	mg/kg	0.14	15	0.14	0.13	0.29	0.12	0.10	6240247
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	3.7	<2.0	<2.0	<2.0	2.0	6240247
Acid Extractable Nickel (Ni)	mg/kg	38	8.2	29	23	10	20	2.0	6240247
Acid Extractable Rubidium (Rb)	mg/kg	36	59	48	18	9.4	16	2.0	6240247
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	2.4	1.5	1.0	6240247
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	3.9	<0.50	<0.50	<0.50	0.50	6240247
Acid Extractable Strontium (Sr)	mg/kg	8.2	<5.0	11	10	<5.0	<5.0	5.0	6240247
Acid Extractable Thallium (Tl)	mg/kg	0.37	0.45	0.30	0.16	0.11	0.17	0.10	6240247
Acid Extractable Tin (Sn)	mg/kg	<1.0	<1.0	1.0	<1.0	1.7	<1.0	1.0	6240247
Acid Extractable Uranium (U)	mg/kg	2.3	0.38	0.87	1.2	0.90	1.1	0.10	6240247
Acid Extractable Vanadium (V)	mg/kg	40	39	43	27	83	43	2.0	6240247
Acid Extractable Zinc (Zn)	mg/kg	100	69	65	57	32	51	5.0	6240247

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

BV Labs ID		KGT686	KGT687	KGT687		KGT692	KGT693	KGT694		
Sampling Date		2019/07/11	2019/07/11	2019/07/11		2019/07/11	2019/07/11	2019/07/11		
COC Number		D40448	D40448	D40448		D40591	D40591	D40591		
	UNITS	SA19	SA20	SA20 Lab-Dup	QC Batch	SA21	SA22	SA23	RDL	QC Batch

Metals										
Acid Extractable Aluminum (Al)	mg/kg	13000	21000	21000	6240247	7800	25000	28000	10	6240253
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	6240247	<2.0	<2.0	<2.0	2.0	6240253
Acid Extractable Arsenic (As)	mg/kg	69	190	190	6240247	82	43	34	2.0	6240253
Acid Extractable Barium (Ba)	mg/kg	21	32	33	6240247	11	29	30	5.0	6240253
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	6240247	<2.0	<2.0	<2.0	2.0	6240253
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	6240247	<2.0	<2.0	<2.0	2.0	6240253
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	6240247	<50	<50	<50	50	6240253
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	6240247	<0.30	<0.30	<0.30	0.30	6240253
Acid Extractable Chromium (Cr)	mg/kg	16	26	26	6240247	8.8	25	31	2.0	6240253
Acid Extractable Cobalt (Co)	mg/kg	4.8	6.1	6.2	6240247	<1.0	4.3	7.4	1.0	6240253
Acid Extractable Copper (Cu)	mg/kg	4.2	9.2	9.3	6240247	2.8	7.9	11	2.0	6240253
Acid Extractable Iron (Fe)	mg/kg	19000	32000	32000	6240247	21000	29000	36000	50	6240253
Acid Extractable Lead (Pb)	mg/kg	9.3	11	11	6240247	9.7	13	15	0.50	6240253
Acid Extractable Lithium (Li)	mg/kg	23	27	28	6240247	3.9	23	33	2.0	6240253
Acid Extractable Manganese (Mn)	mg/kg	260	310	310	6240247	86	200	510	2.0	6240253
Acid Extractable Mercury (Hg)	mg/kg	0.11	0.13	0.12	6240247	0.15	0.20	0.18	0.10	6240253
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	6240247	<2.0	<2.0	<2.0	2.0	6240253
Acid Extractable Nickel (Ni)	mg/kg	9.8	15	15	6240247	3.1	11	16	2.0	6240253
Acid Extractable Rubidium (Rb)	mg/kg	9.0	12	12	6240247	6.9	9.9	11	2.0	6240253
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.3	1.3	6240247	<1.0	1.9	1.5	1.0	6240253
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	6240247	<0.50	<0.50	<0.50	0.50	6240253
Acid Extractable Strontium (Sr)	mg/kg	5.4	5.6	5.8	6240247	<5.0	5.4	<5.0	5.0	6240253
Acid Extractable Thallium (Tl)	mg/kg	0.12	0.12	0.14	6240247	0.13	0.14	0.17	0.10	6240253
Acid Extractable Tin (Sn)	mg/kg	<1.0	<1.0	<1.0	6240247	1.0	<1.0	1.1	1.0	6240253
Acid Extractable Uranium (U)	mg/kg	0.54	0.75	0.78	6240247	0.45	0.83	0.68	0.10	6240253
Acid Extractable Vanadium (V)	mg/kg	24	35	35	6240247	32	38	49	2.0	6240253
Acid Extractable Zinc (Zn)	mg/kg	33	43	43	6240247	11	32	50	5.0	6240253

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

BV Labs ID		KGT695	KGT696	KGT697	KGT698		KGT699		KGT700		
Sampling Date		2019/07/11	2019/07/11	2019/07/12	2019/07/12		2019/07/12		2019/07/12		
COC Number		D40591	D40591	D40591	D40591		D40591		D40591		
	UNITS	SA24	SA25	SA26	SA27	RDL	SA28	RDL	SA29	RDL	QC Batch
Metals											
Acid Extractable Aluminum (Al)	mg/kg	21000	25000	16000	16000	10	18000	10	16000	10	6240253
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	6240253
Acid Extractable Arsenic (As)	mg/kg	75	140	110	74	2.0	3900	20	130	2.0	6240253
Acid Extractable Barium (Ba)	mg/kg	21	33	36	34	5.0	42	5.0	41	5.0	6240253
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	6240253
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	6240253
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	50	<50	50	<50	50	6240253
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	0.30	<0.30	0.30	<0.30	0.30	6240253
Acid Extractable Chromium (Cr)	mg/kg	23	27	21	19	2.0	66	2.0	24	2.0	6240253
Acid Extractable Cobalt (Co)	mg/kg	3.2	5.6	7.1	4.5	1.0	18	1.0	7.8	1.0	6240253
Acid Extractable Copper (Cu)	mg/kg	7.1	17	11	9.0	2.0	91	2.0	31	2.0	6240253
Acid Extractable Iron (Fe)	mg/kg	31000	38000	27000	23000	50	40000	50	26000	50	6240253
Acid Extractable Lead (Pb)	mg/kg	14	14	19	15	0.50	34	0.50	19	0.50	6240253
Acid Extractable Lithium (Li)	mg/kg	18	29	26	21	2.0	69	2.0	36	2.0	6240253
Acid Extractable Manganese (Mn)	mg/kg	160	310	360	270	2.0	660	2.0	440	2.0	6240253
Acid Extractable Mercury (Hg)	mg/kg	0.19	0.18	<0.10	0.14	0.10	<0.10	0.10	<0.10	0.10	6240253
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	4.9	2.0	<2.0	2.0	6240253
Acid Extractable Nickel (Ni)	mg/kg	8.6	16	14	11	2.0	38	2.0	23	2.0	6240253
Acid Extractable Rubidium (Rb)	mg/kg	7.2	9.1	12	10	2.0	16	2.0	16	2.0	6240253
Acid Extractable Selenium (Se)	mg/kg	1.4	1.6	<1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	6240253
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	0.50	27	0.50	<0.50	0.50	6240253
Acid Extractable Strontium (Sr)	mg/kg	<5.0	8.1	7.3	6.9	5.0	27	5.0	9.2	5.0	6240253
Acid Extractable Thallium (Tl)	mg/kg	0.13	0.14	0.12	0.11	0.10	0.24	0.10	0.19	0.10	6240253
Acid Extractable Tin (Sn)	mg/kg	1.2	<1.0	<1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	6240253
Acid Extractable Uranium (U)	mg/kg	0.58	0.68	0.68	0.61	0.10	0.94	0.10	0.90	0.10	6240253
Acid Extractable Vanadium (V)	mg/kg	45	31	30	29	2.0	33	2.0	28	2.0	6240253
Acid Extractable Zinc (Zn)	mg/kg	26	52	45	35	5.0	79	5.0	60	5.0	6240253
RDL = Reportable Detection Limit											
QC Batch = Quality Control Batch											



ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

BV Labs ID		KGT701	KGT701		
Sampling Date		2019/07/11	2019/07/11		
COC Number		D40591	D40591		
	UNITS	DUP1	DUP1 Lab-Dup	RDL	QC Batch
Metals					
Acid Extractable Aluminum (Al)	mg/kg	20000	19000	10	6240253
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	2.0	6240253
Acid Extractable Arsenic (As)	mg/kg	14	13	2.0	6240253
Acid Extractable Barium (Ba)	mg/kg	44	43	5.0	6240253
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	2.0	6240253
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	2.0	6240253
Acid Extractable Boron (B)	mg/kg	<50	<50	50	6240253
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	0.30	6240253
Acid Extractable Chromium (Cr)	mg/kg	23	23	2.0	6240253
Acid Extractable Cobalt (Co)	mg/kg	11	10	1.0	6240253
Acid Extractable Copper (Cu)	mg/kg	16	16	2.0	6240253
Acid Extractable Iron (Fe)	mg/kg	30000	29000	50	6240253
Acid Extractable Lead (Pb)	mg/kg	16	15	0.50	6240253
Acid Extractable Lithium (Li)	mg/kg	32	30	2.0	6240253
Acid Extractable Manganese (Mn)	mg/kg	640	610	2.0	6240253
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	0.10	6240253
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	2.0	6240253
Acid Extractable Nickel (Ni)	mg/kg	18	18	2.0	6240253
Acid Extractable Rubidium (Rb)	mg/kg	16	16	2.0	6240253
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	1.0	6240253
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	0.50	6240253
Acid Extractable Strontium (Sr)	mg/kg	8.7	9.1	5.0	6240253
Acid Extractable Thallium (Tl)	mg/kg	0.16	0.14	0.10	6240253
Acid Extractable Tin (Sn)	mg/kg	<1.0	<1.0	1.0	6240253
Acid Extractable Uranium (U)	mg/kg	1.0	1.0	0.10	6240253
Acid Extractable Vanadium (V)	mg/kg	27	25	2.0	6240253
Acid Extractable Zinc (Zn)	mg/kg	50	48	5.0	6240253
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate					



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

RESULTS OF ANALYSES OF WATER

BV Labs ID		KGT703	KGT704	KGT705	KGT706	KGT707		
Sampling Date		2019/07/10	2019/07/10	2019/07/11	2019/07/11	2019/07/11		
COC Number		D40449	D40449	D40449	D40449	D40449		
	UNITS	SW1	SW2	SW3	SW4	DUP2	RDL	QC Batch
ELEMENTS								
Total Mercury (Hg)	ug/L	<0.0020	<0.0020	0.0027	<0.0020	<0.0020	0.0020	6238124
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



ELEMENTS BY ICP/MS (WATER)

BV Labs ID		KGT703	KGT704	KGT705	KGT706	KGT707		
Sampling Date		2019/07/10	2019/07/10	2019/07/11	2019/07/11	2019/07/11		
COC Number		D40449	D40449	D40449	D40449	D40449		
	UNITS	SW1	SW2	SW3	SW4	DUP2	RDL	QC Batch
Metals								
Total Aluminum (Al)	ug/L	41	280	170	280	280	5.0	6231677
Total Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6231677
Total Arsenic (As)	ug/L	32	4.3	<1.0	4.6	4.7	1.0	6231677
Total Barium (Ba)	ug/L	3.7	2.4	5.5	3.0	3.0	1.0	6231677
Total Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6231677
Total Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6231677
Total Boron (B)	ug/L	<50	<50	<50	<50	<50	50	6231677
Total Cadmium (Cd)	ug/L	<0.010	0.013	0.014	0.013	0.017	0.010	6231677
Total Calcium (Ca)	ug/L	3600	580	1100	670	710	100	6231677
Total Chromium (Cr)	ug/L	<1.0	1.0	1.0	1.0	5.7	1.0	6231677
Total Cobalt (Co)	ug/L	<0.40	<0.40	0.74	<0.40	<0.40	0.40	6231677
Total Copper (Cu)	ug/L	1.4	0.51	<0.50	<0.50	0.59	0.50	6231677
Total Iron (Fe)	ug/L	690	750	1700	660	730	50	6231677
Total Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6231677
Total Magnesium (Mg)	ug/L	650	270	430	300	310	100	6231677
Total Manganese (Mn)	ug/L	67	43	69	43	46	2.0	6231677
Total Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6231677
Total Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	2.2	2.0	6231677
Total Phosphorus (P)	ug/L	<100	<100	<100	<100	<100	100	6231677
Total Potassium (K)	ug/L	530	130	380	100	<100	100	6231677
Total Selenium (Se)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	6231677
Total Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6231677
Total Sodium (Na)	ug/L	1800	1900	2500	1900	2000	100	6231677
Total Strontium (Sr)	ug/L	18	4.2	8.4	5.8	6.4	2.0	6231677
Total Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6231677
Total Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6231677
Total Titanium (Ti)	ug/L	<2.0	2.4	2.0	3.3	2.6	2.0	6231677
Total Uranium (U)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6231677
Total Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	6231677
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	6231677
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



TEST SUMMARY

BV Labs ID: KGT667
Sample ID: SA1
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT668
Sample ID: SA2
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT669
Sample ID: SA3
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT670
Sample ID: SA4
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT671
Sample ID: SA5
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT672
Sample ID: SA6
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT673
Sample ID: SA7
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine



TEST SUMMARY

BV Labs ID: KGT674
Sample ID: SA8
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT675
Sample ID: SA9
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT676
Sample ID: SA10
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT678
Sample ID: SA11
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT679
Sample ID: SA12
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT680
Sample ID: SA13
Matrix: Soil

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT681
Sample ID: SA14
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine



TEST SUMMARY

BV Labs ID: KGT682
Sample ID: SA15
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT683
Sample ID: SA16
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT684
Sample ID: SA17
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT685
Sample ID: SA18
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT686
Sample ID: SA19
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT687
Sample ID: SA20
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT687 Dup
Sample ID: SA20
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240247	2019/07/22	2019/07/23	Bryon Angevine



TEST SUMMARY

BV Labs ID: KGT692
Sample ID: SA21
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT693
Sample ID: SA22
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT694
Sample ID: SA23
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT695
Sample ID: SA24
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT696
Sample ID: SA25
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT697
Sample ID: SA26
Matrix: Soil

Collected: 2019/07/12
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT698
Sample ID: SA27
Matrix: Soil

Collected: 2019/07/12
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

TEST SUMMARY

BV Labs ID: KGT699
Sample ID: SA28
Matrix: Soil

Collected: 2019/07/12
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT700
Sample ID: SA29
Matrix: Soil

Collected: 2019/07/12
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT701
Sample ID: DUP1
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT701 Dup
Sample ID: DUP1
Matrix: Soil

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	6240253	2019/07/22	2019/07/23	Bryon Angevine

BV Labs ID: KGT703
Sample ID: SW1
Matrix: Water

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Water Total MS	CICP/MS	6231677	2019/07/17	2019/07/17	Bryon Angevine
Mercury (Total) by CV	CV	6238124	2019/07/19	2019/07/19	Edwin Lamigo

BV Labs ID: KGT704
Sample ID: SW2
Matrix: Water

Collected: 2019/07/10
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Water Total MS	CICP/MS	6231677	2019/07/17	2019/07/17	Bryon Angevine
Mercury (Total) by CV	CV	6238124	2019/07/19	2019/07/19	Edwin Lamigo

BV Labs ID: KGT705
Sample ID: SW3
Matrix: Water

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Water Total MS	CICP/MS	6231677	2019/07/17	2019/07/17	Bryon Angevine
Mercury (Total) by CV	CV	6238124	2019/07/19	2019/07/19	Edwin Lamigo



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

TEST SUMMARY

BV Labs ID: KGT706
Sample ID: SW4
Matrix: Water

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Water Total MS	CICP/MS	6231677	2019/07/17	2019/07/17	Bryon Angevine
Mercury (Total) by CV	CV	6238124	2019/07/19	2019/07/19	Edwin Lamigo

BV Labs ID: KGT707
Sample ID: DUP2
Matrix: Water

Collected: 2019/07/11
Shipped:
Received: 2019/07/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Water Total MS	CICP/MS	6231677	2019/07/17	2019/07/17	Bryon Angevine
Mercury (Total) by CV	CV	6238124	2019/07/19	2019/07/19	Edwin Lamigo



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

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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Mercury aliquot obtained from metals bottle for samples SW1, Sw2, Sw3, Sw4 and DUP2 as requested by client. 2019/07/16 MMC

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6231677	Total Aluminum (Al)	2019/07/17	100	80 - 120	103	80 - 120	<5.0	ug/L		
6231677	Total Antimony (Sb)	2019/07/17	100	80 - 120	99	80 - 120	<1.0	ug/L		
6231677	Total Arsenic (As)	2019/07/17	99	80 - 120	98	80 - 120	<1.0	ug/L		
6231677	Total Barium (Ba)	2019/07/17	98	80 - 120	100	80 - 120	<1.0	ug/L		
6231677	Total Beryllium (Be)	2019/07/17	102	80 - 120	103	80 - 120	<1.0	ug/L		
6231677	Total Bismuth (Bi)	2019/07/17	99	80 - 120	102	80 - 120	<2.0	ug/L		
6231677	Total Boron (B)	2019/07/17	103	80 - 120	105	80 - 120	<50	ug/L		
6231677	Total Cadmium (Cd)	2019/07/17	99	80 - 120	98	80 - 120	<0.010	ug/L		
6231677	Total Calcium (Ca)	2019/07/17	103	80 - 120	106	80 - 120	<100	ug/L		
6231677	Total Chromium (Cr)	2019/07/17	98	80 - 120	98	80 - 120	<1.0	ug/L		
6231677	Total Cobalt (Co)	2019/07/17	99	80 - 120	100	80 - 120	<0.40	ug/L		
6231677	Total Copper (Cu)	2019/07/17	NC	80 - 120	99	80 - 120	<0.50	ug/L	2.1	20
6231677	Total Iron (Fe)	2019/07/17	103	80 - 120	105	80 - 120	<50	ug/L		
6231677	Total Lead (Pb)	2019/07/17	100	80 - 120	101	80 - 120	<0.50	ug/L		
6231677	Total Magnesium (Mg)	2019/07/17	104	80 - 120	107	80 - 120	<100	ug/L		
6231677	Total Manganese (Mn)	2019/07/17	98	80 - 120	100	80 - 120	<2.0	ug/L		
6231677	Total Molybdenum (Mo)	2019/07/17	105	80 - 120	106	80 - 120	<2.0	ug/L		
6231677	Total Nickel (Ni)	2019/07/17	100	80 - 120	101	80 - 120	<2.0	ug/L		
6231677	Total Phosphorus (P)	2019/07/17	105	80 - 120	105	80 - 120	<100	ug/L		
6231677	Total Potassium (K)	2019/07/17	102	80 - 120	101	80 - 120	<100	ug/L		
6231677	Total Selenium (Se)	2019/07/17	99	80 - 120	100	80 - 120	<1.0	ug/L		
6231677	Total Silver (Ag)	2019/07/17	98	80 - 120	98	80 - 120	<0.10	ug/L		
6231677	Total Sodium (Na)	2019/07/17	98	80 - 120	100	80 - 120	<100	ug/L		
6231677	Total Strontium (Sr)	2019/07/17	101	80 - 120	102	80 - 120	<2.0	ug/L		
6231677	Total Thallium (Tl)	2019/07/17	102	80 - 120	104	80 - 120	<0.10	ug/L		
6231677	Total Tin (Sn)	2019/07/17	104	80 - 120	103	80 - 120	<2.0	ug/L		
6231677	Total Titanium (Ti)	2019/07/17	97	80 - 120	98	80 - 120	<2.0	ug/L		
6231677	Total Uranium (U)	2019/07/17	103	80 - 120	105	80 - 120	<0.10	ug/L		
6231677	Total Vanadium (V)	2019/07/17	99	80 - 120	101	80 - 120	<2.0	ug/L		
6231677	Total Zinc (Zn)	2019/07/17	97	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
6238124	Total Mercury (Hg)	2019/07/19	109	80 - 120	96	80 - 120	<0.0020	ug/L	NC	20
6240247	Acid Extractable Aluminum (Al)	2019/07/23					<10	mg/kg	0.41	35



BUREAU VERITAS

BV Labs Job #: 89J4560
Report Date: 2019/07/23

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6240247	Acid Extractable Antimony (Sb)	2019/07/23	104	75 - 125	107	75 - 125	<2.0	mg/kg	NC	35
6240247	Acid Extractable Arsenic (As)	2019/07/23	NC	75 - 125	99	75 - 125	<2.0	mg/kg	1.6	35
6240247	Acid Extractable Barium (Ba)	2019/07/23	125	75 - 125	108	75 - 125	<5.0	mg/kg	1.2	35
6240247	Acid Extractable Beryllium (Be)	2019/07/23	117	75 - 125	109	75 - 125	<2.0	mg/kg	NC	35
6240247	Acid Extractable Bismuth (Bi)	2019/07/23	115	75 - 125	106	75 - 125	<2.0	mg/kg	NC	35
6240247	Acid Extractable Boron (B)	2019/07/23	106	75 - 125	112	75 - 125	<5.0	mg/kg	NC	35
6240247	Acid Extractable Cadmium (Cd)	2019/07/23	106	75 - 125	98	75 - 125	<0.30	mg/kg	NC	35
6240247	Acid Extractable Chromium (Cr)	2019/07/23	109	75 - 125	100	75 - 125	<2.0	mg/kg	0.54	35
6240247	Acid Extractable Cobalt (Co)	2019/07/23	106	75 - 125	99	75 - 125	<1.0	mg/kg	1.7	35
6240247	Acid Extractable Copper (Cu)	2019/07/23	102	75 - 125	95	75 - 125	<2.0	mg/kg	1.2	35
6240247	Acid Extractable Iron (Fe)	2019/07/23					<5.0	mg/kg	0.018	35
6240247	Acid Extractable Lead (Pb)	2019/07/23	112	75 - 125	105	75 - 125	<0.50	mg/kg	0.14	35
6240247	Acid Extractable Lithium (Li)	2019/07/23	119	75 - 125	104	75 - 125	<2.0	mg/kg	1.1	35
6240247	Acid Extractable Manganese (Mn)	2019/07/23	NC	75 - 125	105	75 - 125	<2.0	mg/kg	0.93	35
6240247	Acid Extractable Mercury (Hg)	2019/07/23	102	75 - 125	109	75 - 125	<0.10	mg/kg	7.8	35
6240247	Acid Extractable Molybdenum (Mo)	2019/07/23	113	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35
6240247	Acid Extractable Nickel (Ni)	2019/07/23	107	75 - 125	99	75 - 125	<2.0	mg/kg	1.9	35
6240247	Acid Extractable Rubidium (Rb)	2019/07/23	112	75 - 125	102	75 - 125	<2.0	mg/kg	2.1	35
6240247	Acid Extractable Selenium (Se)	2019/07/23	100	75 - 125	97	75 - 125	<1.0	mg/kg	2.2	35
6240247	Acid Extractable Silver (Ag)	2019/07/23	106	75 - 125	101	75 - 125	<0.50	mg/kg	NC	35
6240247	Acid Extractable Strontium (Sr)	2019/07/23	116	75 - 125	103	75 - 125	<5.0	mg/kg	2.6	35
6240247	Acid Extractable Thallium (Tl)	2019/07/23	113	75 - 125	105	75 - 125	<0.10	mg/kg	13	35
6240247	Acid Extractable Tin (Sn)	2019/07/23	115	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35
6240247	Acid Extractable Uranium (U)	2019/07/23	111	75 - 125	103	75 - 125	<0.10	mg/kg	3.9	35
6240247	Acid Extractable Vanadium (V)	2019/07/23	110	75 - 125	102	75 - 125	<2.0	mg/kg	0.24	35
6240247	Acid Extractable Zinc (Zn)	2019/07/23	110	75 - 125	97	75 - 125	<5.0	mg/kg	1.6	35
6240253	Acid Extractable Aluminum (Al)	2019/07/23					<10	mg/kg	4.4	35
6240253	Acid Extractable Antimony (Sb)	2019/07/23	108	75 - 125	108	75 - 125	<2.0	mg/kg	NC	35
6240253	Acid Extractable Arsenic (As)	2019/07/23	97	75 - 125	101	75 - 125	<2.0	mg/kg	5.6	35
6240253	Acid Extractable Barium (Ba)	2019/07/23	116	75 - 125	109	75 - 125	<5.0	mg/kg	3.1	35
6240253	Acid Extractable Beryllium (Be)	2019/07/23	113	75 - 125	109	75 - 125	<2.0	mg/kg	NC	35
6240253	Acid Extractable Bismuth (Bi)	2019/07/23	113	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35



BUREAU
VERITAS

BV Labs Job #: 89J4560
Report Date: 2019/07/23

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6240253	Acid Extractable Boron (B)	2019/07/23	105	75 - 125	112	75 - 125	<50	mg/kg	NC	35
6240253	Acid Extractable Cadmium (Cd)	2019/07/23	98	75 - 125	99	75 - 125	<0.30	mg/kg	NC	35
6240253	Acid Extractable Chromium (Cr)	2019/07/23	103	75 - 125	101	75 - 125	<2.0	mg/kg	2.9	35
6240253	Acid Extractable Cobalt (Co)	2019/07/23	99	75 - 125	100	75 - 125	<1.0	mg/kg	7.3	35
6240253	Acid Extractable Copper (Cu)	2019/07/23	94	75 - 125	96	75 - 125	<2.0	mg/kg	2.6	35
6240253	Acid Extractable Iron (Fe)	2019/07/23					<50	mg/kg	2.5	35
6240253	Acid Extractable Lead (Pb)	2019/07/23	104	75 - 125	105	75 - 125	<0.50	mg/kg	5.0	35
6240253	Acid Extractable Lithium (Li)	2019/07/23	114	75 - 125	104	75 - 125	<2.0	mg/kg	6.2	35
6240253	Acid Extractable Manganese (Mn)	2019/07/23	NC	75 - 125	106	75 - 125	<2.0	mg/kg	4.9	35
6240253	Acid Extractable Mercury (Hg)	2019/07/23	101	75 - 125	107	75 - 125	<0.10	mg/kg	NC	35
6240253	Acid Extractable Molybdenum (Mo)	2019/07/23	108	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35
6240253	Acid Extractable Nickel (Ni)	2019/07/23	97	75 - 125	99	75 - 125	<2.0	mg/kg	4.8	35
6240253	Acid Extractable Rubidium (Rb)	2019/07/23	110	75 - 125	106	75 - 125	<2.0	mg/kg	4.3	35
6240253	Acid Extractable Selenium (Se)	2019/07/23	94	75 - 125	99	75 - 125	<1.0	mg/kg	NC	35
6240253	Acid Extractable Silver (Ag)	2019/07/23	102	75 - 125	100	75 - 125	<0.50	mg/kg	NC	35
6240253	Acid Extractable Strontium (Sr)	2019/07/23	111	75 - 125	106	75 - 125	<5.0	mg/kg	4.5	35
6240253	Acid Extractable Thallium (Tl)	2019/07/23	114	75 - 125	106	75 - 125	<0.10	mg/kg	13	35
6240253	Acid Extractable Tin (Sn)	2019/07/23	114	75 - 125	108	75 - 125	<1.0	mg/kg	NC	35
6240253	Acid Extractable Uranium (U)	2019/07/23	105	75 - 125	105	75 - 125	<0.10	mg/kg	2.1	35
6240253	Acid Extractable Vanadium (V)	2019/07/23	103	75 - 125	104	75 - 125	<2.0	mg/kg	5.1	35
6240253	Acid Extractable Zinc (Zn)	2019/07/23	103	75 - 125	102	75 - 125	<5.0	mg/kg	3.2	35

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 <= 2x RDL).



BUREAU
VERITAS

BV Labs Job #: B9J4560
Report Date: 2019/07/23

Stantec Consulting Ltd
Client Project #: 121619250.2500.955
Site Location: BEAVER DAM
Sampler Initials: MP

VALIDATION SIGNATURE PAGE

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

<Original signed by>

Mike MacGillivray, Scientific Specialist (Inorganics)

<Original signed by>

Rob Reinert, B.Sc., Scientific Spécialist

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.