Appendix I.3

Limited Phase II Environmental Site Assessment
- Fifteen Mile Stream,
Stantec Consulting Ltd.

Limited Phase II Environmental Site Assessment – Fifteen Mile Stream

Fifteen Mile Stream, Route 374, Trafalgar, NS

February 21, 2019

Prepared for:

Atlantic Mining NS Corporation

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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 November 13 to 15, 2018 at the proposed Atlantic Gold Fifteen Mile Stream Project property located in Trafalgar, Nova Scotia (NS). The purpose of the Limited Phase II ESA was to assess soil and surface water conditions at the Site with respect to historic mining operations including tailings and waste rock disposal areas identified in the Phase I ESA completed by Stantec in November 2018.

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

- Complete a visual site reconnaissance to identify areas of potential environmental concern.
- Dig up to 20 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 5 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 at 9 of the 21 test pits excavated as part of field activities completed between November 13 and 15, 2018 (i.e., FMTP3, FMTP4, FMTP5, FMTP6, FMTP8, FMTP9, FMTP12, FMTP13, and FMTP21). The areas of possible tailings were generally located to the north and northwest of the waste rock storage area along Seloam Brook. It should be noted that at the time of site assessment, test pits could not be excavated in the northern portion of the proposed open pit along Seloam Brook due to high water levels. Note that visual observation of possible tailings is not necessarily indicative of elevated metals concentrations at that location, as is the case with test pit FMTP8.

- Concentrations of arsenic in soil exceeding the applicable NSE Tier 1 EQS were identified in 18 of the 22 test pit locations. Concentrations of lead and mercury in soil exceeding the applicable NSE Tier 1 EQS were identified in 1 of the 22 test pit locations. The highest concentrations of arsenic, lead, and mercury are localized to the southwestern portion of the proposed open pit, in the area of identified waste rock storage and probable tailings storage and along Seloam Brook. 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. Concentrations of arsenic detected in soil samples collected from test pits FMTP2, FMTP13, FMTP14, FMTP15, and FMTP17 only marginally exceeded the Tier 1 EQS and are potentially indicative of background soil concentrations.

- A waste rock storage area was observed in the southwestern portion of the proposed open pit during the November 2018 Site visit. The storage area covers an approximate area of 12,500 m^2 and consists of several large piles of waste rock. Waste rock was also identified along several trenches

located to the south and east of the proposed open pit (historical mine workings), and along the access road to the west of the proposed open pit.

- Concentrations of aluminum, arsenic, cadmium, chromium, and iron exceeding the applicable NSE Tier 1 EQS were identified in one or more surface water samples analyzed. The detected metals concentrations did not exceed the applicable MDMER Authorized Limits, where such guidelines exist. The highest concentration of arsenic was detected in the surface water sample collected immediately north of the waste rock storage area (i.e., FMSW4).

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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 Fifteen Mile Stream Project property (the "Site") located in Trafalgar, 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 historic mining operations including tailings and waste rock disposal areas identified in the Phase I ESA completed by Stantec in November 2018.

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 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 Trafalgar, a region of the Halifax Regional Municipality. The Site is located 1 km east of Route 374 along an unnamed gravel road which is located approximately 30 km north of Sheet Harbour, NS.

The Site consists of portions of several different properties owned by MacGregor Properties Limited; Property Identification Numbers (PIDs) include:

- PID 40202020, 101 acres known as "The Hudson Lot";
- PID 40201998, 100 acres known as "The Fish Lot";
- PID 40202004, 120 acres known as "The Chipman Lot";
- PID 40202012, 100 acres known as "The McDougald Lot";
- PID 00565101, 100 acres known as "The Hattie Lot".

In addition to the MacGregor lands, part of the greater proposed development of the mine operation includes undeveloped land to the south and east of the proposed pit area owned by the Province of Nova Scotia, including portions of the following PIDs:

- PID 40750796, 50 acres;
- PID 40750622, 13,729 acres (approximately 400 acres of the northern portion of this PID are in the proposed development area for the Fifteen Mile Stream Project).

The locations of the proposed open pit and the mine development area are shown on Figure 1, Appendix A. There are no permanent buildings on the Site, only temporary camp buildings associated with the exploration project which are located to the west of the proposed pit location. Foundations of a suspected former stamp mill along with other mine workings were located during the site visit conducted as part of the Phase I ESA in November 2018, along with several DNR signs indicating the presence of underground mine workings.

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, followed by Route 374	None

1.2.2 Site Services

The property is not currently serviced, being in a rural portion of the province. The exploration camp is currently serviced with temporary toilet facilities and portable diesel generators. Based on a review of the Nova Scotia Well Logs Database (NSE, 2019), there are no potable water wells on the Site.

1.2.3 Topography and Regional Drainage

Based on available topographic maps and site observations, topography in the southern portion of the Site flows north towards Seloam Brook and topography in the central portion of the site slopes west along Seloam Brook towards Fifteen Mile Stream. Regional undisturbed surface drainage (anticipated shallow groundwater flow direction) appears to be to the west following Seloam Brook toward Fifteen Mile Stream.

The surfaces at the Site consist of a combination of open wetland, rock piles, and woodland. Stormwater is anticipated to drain by infiltration and/or overland flow. Seloam Brook crosses the Site from the east to the west and there are various pools and ponds on the Site.

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 available surficial geology mapping, the native surficial soils of the Site consist of glacial till (Stea, 1992). The characteristic permeability of these soils is moderate. Previous subsurface investigations conducted on the Site indicates that the subsurface soil profile consists of glacial till, in some areas between 2 m and 3 m thick (MacEachern, 1983). Bedrock was encountered between 2 m and 3 m below grade (MacEachern, 1983).

Based on available bedrock geology mapping, bedrock in the area of the Site consists of slate and quartzite of the Goldenville Formation (Keppie, 2001).

1.3 PREVIOUS ENVIRONMENTAL REPORTS

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

- *Jacques Whitford (now Stantec), 1989. Design Brief for Flood Protection Levee and Effluent Retention Structure at Fifteen Mile Stream Gold Property, Halifax County, Nova Scotia. February 1989.*
- *Hudgtec Consulting Limited, 2008. NI 43-101 Technical Report and Resource Estimate on the Fifteen Mile Stream Gold Property, Halifax County, Nova Scotia. Prepared for 6179053 Canada Inc., Acadian Mining Corporation, Annapolis Gold Corporation. May 27, 2008.*
- *Acadian Mining Corporation, 2012. NI 43-101 Technical Report on Updated Mineral Resource Estimate – Fifteen Mile Stream Property, Halifax County, Nova Scotia, Canada. August 29, 2012.*
- *Stantec Consulting Ltd., 2018. Final – Phase I Environmental Site Assessment, Fifteen Mile Stream, Route 374, Trafalgar, NS. Prepared for Atlantic Mining NS Corporation. December 19, 2018.*

Potential liabilities identified by Jacques Whitford (1989) included the possibility of salmon spawning habitat in the area of the Site and historical mill tailings in the flood plain of and in Seloam Brook.

The Technical Report prepared by Hudgtec Consulting referred to a report prepared by MGI Limited (report not provided) in 2004 which identified potential environmental liabilities including acid generation potential from waste rock piles, possible un-reclaimed trenches, possible safety hazards related to open shafts and diamond drill casings, and possible contaminant pathways related to improperly abandoned diamond drill holes.

The Phase I ESA completed at the Site by Stantec in November 2018 revealed evidence of potential environmental contamination associated with the Site. Based on the information gathered, the Phase I ESA concluded there are apparent tailings and waste rock both within the area of the proposed open pit development as well as adjacent to the proposed open pit operations which are potentially impacted with arsenic and mercury and have an acid generating potential.

As part of the Phase I ESA, Stantec conducted LIDAR analysis to produce a Digital Elevation Model (DEM) of the Site. The DEM is presented on Figure 1, Appendix A. The DEM 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 November 2018.

Table 2 Potential Sources of Environmental Impacts

Location	Potential Concern	Source
Apparent Tailings	Potential elevated arsenic and mercury levels in tailings.	Phase I ESA
Waste Rock	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 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 non-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 I EQS for Surface Water (fresh water 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 September 12, 2018, the objective of the Limited Phase II ESA was to assess soil and surface water at the Site with respect to historic tailings storage and waste rock disposal areas identified at the Site in the Phase I ESA completed by Stantec in November 2018. The work was completed as part of project feasibility due diligence underway as part of the potential re-development of the Site.

1.6.1 Scope of Work

The scope of this Phase II ESA, as presented in the proposal submitted by Stantec dated September 12, 2018, consisted of the following:

- Complete a visual site reconnaissance to identify areas of potential environmental concern.
- Dig up to 20 test pits using a gas-powered hand auger and/or hand tools to delineate the extent of soil impacts from historical tailings storage at the Site.
- Collect representative soil samples from the test pits and submit soil samples to Maxxam Analytics in Bedford, NS for analysis of available metals.
- If potential petroleum hydrocarbon sources/impacts are observed, submit select soil samples to Maxxam Analytics for analysis of petroleum hydrocarbons (benzene, toluene, ethylbenzene, xylenes (BTEX) and total petroleum hydrocarbons (TPH)).
- Collect up to 5 surface water samples at the Site to assess the presence/absence of surface water impacts from historical mining activities at the Site. Submit the surface water samples to Maxxam Maxxam Analytics in Bedford, NS for analysis of total metals.

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. It should be noted that at the time of site assessment, test pits could not be excavated in the northern portion of the proposed open pit area due to high water levels in Seloam Brook. Surface water sampling locations were chosen based on conditions observed in the field.

Test pit and surface water sampling locations were limited to the area of the proposed open pit and immediate area, with the exception of test pit location FMTP17 and surface water location FMSW5 which are located approximately 400 m south and 450 m east of the proposed open pit, respectively. Test pit and surface water sampling locations are shown on Figure 1, Appendix A. Note that test pit FMTP16 could not be advanced due to the presence of waste rock at surface, and soil sampling could not be completed at this location. A Test Pit Record is not provided for FMTP16.

2.2 METHODOLOGY

Field activities conducted as part of the Limited Phase II ESA were carried out between November 13 and 15, 2018 and consisted of a visual assessment of the Site, the excavation of 21 test pits and associated soil sampling and the collection of surface water samples from 4 locations. Test pit and surface water sampling locations are shown on Figure 1, Appendix A.

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 21 test pits (i.e., FMTP1 to FMTP21) were excavated at the site between November 13 and 15, 2018. The test pits were manually excavated by Stantec personnel using a hand-held shovel. Stantec personnel monitored the test pit excavation, maintained detailed logs and photographic records of the subsurface conditions encountered and obtain representative soil samples. Note that waste rock was encountered at surface at test pit location FMTP16 and the test pit could not be advanced. A soil sample was not collected at this location.

The test pits were extended to depths ranging from 0.21 metres below ground surface (mbgs) to 0.67 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, with the exception of test pits FMTP6 and FMTP8, where two soil samples were collected based on soil horizon change.

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 Maxxam Analytics in Bedford, NS. Based on site observations, the soil samples were submitted for laboratory analysis of available metals.

2.2.2 Surface Water Sampling

Surface water sampling was conducted on November 15, 2018. Surface water samples were collected at 4 locations (i.e., FMSW2, FMSW3, FMSW4, and FMSW5) One field duplicate sample (i.e., FM SW 1) was collected from sampling location FMSW2. The samples were collected into new, laboratory-supplied bottles, placed on ice, and submitted to Maxxam Analytics 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, 22 soil samples were submitted to Maxxam Analytics, Bedford, NS, SCC-Accredited Laboratory No. 161, for analysis of available metals. Five 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).

Table 4 Summary of Laboratory Analysis

Parameter	Sample Media	
	Soil	Surface Water
Metals	22 + 1 Lab-Dup	4 + 1 Fld-Dup

Notes:
The methodologies utilized by Maxxam Analytics 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

Based on a review of the DEM and field observations, several trenches of varying lengths are located to the south and east of the proposed open pit, and along the access road to the west of the proposed open pit. The trenches are considered to be historic surface mine workings, and waste rock piles were observed at surface along the trenches during the Site visit conducted in November 2018. The locations of observed historical mine workings and associated waste rock piles are shown on Figure 1, Appendix A.

A waste rock storage area was observed in the southwestern portion of the proposed open pit during the November 2018 Site visit. The storage area is shown on Figure 1, Appendix A and consists of several large piles of waste rock.

During the November 2018 Site visit, probable tailings were observed at surface in the central portion and to the west of the proposed open pit along Seloam Brook. Areas of probable tailings storage identified in the field are shown on Figure 1, Appendix A.

3.2 SUBSURFACE CONDITIONS

3.2.1 Stratigraphy

The stratigraphy encountered in test pits FMTP1, FMTP2, FMTP7, FMTP10, FMTP11, FMTP14, FMTP15, FMTP17, FMTP18, FMTP19, and FMTP20 generally consisted of an organic layer overlying a

layer of firm, poorly-grade, brown to grey silty sand with gravel and/or cobbles. Possible waste rock was identified in test pits FMTP10, FMTP14, and FMTP15. Note that waste rock was encountered at surface at test pit FMTP16 and the test pit could not be advanced, therefore, a Test Pit Record was not completed for TP16.

The stratigraphy encountered in test pits FMTP3, FMTP4, FMTP5, FMTP6, FMTP8, FMTP9, FMTP12, FMTP13, and FMTP21 generally consisted of firm, grey to black, well-graded silt or silty sand with some cobbles (possible waste rock). The silt or silty sand layer was considered to be possible tailings. In test pits FMTP6 and FMTP8, the possible tailings layer ranged in thickness from 0.2 m to 0.4 m and was underlain by a layer of poorly-graded silty sand with frequent organics.

Bedrock was not encountered in the test pits which extended to depths ranging from 0.21 mbgs to 0.57 mbgs. Detailed descriptions of stratigraphy observed are provided on the Test Pit Records, Appendix B.

3.2.2 Groundwater Observations

Groundwater seepage was observed in test pit FMTP3 at 0.3 mbgs. Groundwater was not encountered in the remaining test pits, which extended to depths ranging from 0.21 mbgs to 0.57 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 22 soil samples collected from the test pits, as well as 1 laboratory initiated duplicate QA/QC sample of FMTP 9. 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, lead, and mercury 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 19 of the 22 soil samples were found to exceed the Tier 1 EQS of 31 mg/kg. Arsenic concentrations detected in the 19 samples ranged from 46 mg/kg to 38,000 mg/kg.
- Lead concentrations in 2 (i.e., FM TP 4 and FM TP 6 SA-2) of the 22 samples were found to exceed the Tier 1 EQS of 740 mg/kg. Lead concentrations in the 2 samples were 750 mg/kg and 1,400 mg/kg, respectively.

- Mercury concentrations in 2 (i.e., FM TP 6 SA-1 and FM TP 6 SA-2) of the 22 samples were found to exceed the Tier 1 EQS of 99 mg/kg. Mercury concentrations in the 2 samples were 140 mg/kg and 290 mg/kg, respectively.

3.3.2 Surface Water Analytical Results

Laboratory analysis for total metals was conducted on 4 surface water samples collected from the Site, as well as 1 field duplicate QA/QC sample of FM SW 2 (i.e., FM SW 1). Results of the laboratory analysis of surface water samples are presented in Table C-2, Appendix C. These results are summarized below:

- Aluminum, arsenic, cadmium, chromium, and iron were detected in one or more surface water samples at concentrations which exceeded the Tier 1 EQS.
- 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 various metals in soil and surface water exceeding the applicable NSE Tier 1 EQSs. Concentrations of arsenic, lead, and mercury in soil samples exceeding the applicable guidelines and the distribution of arsenic, lead, and mercury concentrations in soil in the area of the proposed open pit are shown on Figures 2 to 4, Appendix A, respectively.

Concentrations of aluminum, arsenic, cadmium, chromium, and iron in surface water at the Site exceeded the applicable NSE Tier 1 EQS. Elevated concentrations of metals 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 5, 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 historic mining operations within the proposed open pit area:

- Possible tailings were visually observed at 9 of the 21 test pits excavated as part of field activities completed between November 13 and 15, 2018 (i.e., FMTP3, FMTP4, FMTP5, FMTP6, FMTP8, FMTP9, FMTP12, FMTP13, and FMTP21). The areas of possible tailings were generally located to the north and northwest of the waste rock storage area along Seloam Brook. It should be noted that at the time of site assessment, test pits could not be excavated in the northern portion of the proposed open pit along Seloam Brook due to high water levels. Note that visual observation of

possible tailings is not necessarily indicative of elevated metals concentrations at that location, as is the case with test pit FMTP8.

- Concentrations of arsenic in soil exceeding the applicable NSE Tier 1 EQS were identified in 19 of the 22 test pit locations. Concentrations of lead and mercury in soil exceeding the applicable NSE Tier 1 EQS were identified in 2 of the 22 test pit locations. The highest concentrations of arsenic, lead, and mercury are localized to the southwestern portion of the proposed open pit, in the area of identified waste rock storage and probable tailings storage. 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. Concentrations of arsenic detected in soil samples collected from test pits FMTP2, FMTP13, FMTP14, FMTP15, and FMTP17 only marginally exceeded the Tier 1 EQS and are potentially indicative of background soil concentrations.
- A waste rock storage area was observed in the southwestern portion of the proposed open pit during the November 2018 Site visit. The storage area covers an approximate area of 12,500 m^2 and consists of several large piles of waste rock. Waste rock was also identified along several trenches located to the south and east of the proposed open pit (historical mine workings), and along the access road to the west of the proposed open pit.
- Concentrations of aluminum, arsenic, cadmium, chromium, and iron exceeding the applicable NSE Tier 1 EQS were identified in one or more surface water samples analyzed. The detected metals concentrations did not exceed the applicable MDMER Authorized Limits, where such guidelines exist. The highest concentration of arsenic was detected in the surface water sample collected immediately north of the waste rock storage area (i.e., FMSW4).

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.

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 Jenna Raymond, B.Sc.Eng., E.I.T., and reviewed by Don Carey, M.Sc., P.Eng., and Eric Arseneau, MES.

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APPENDIX A

Figures

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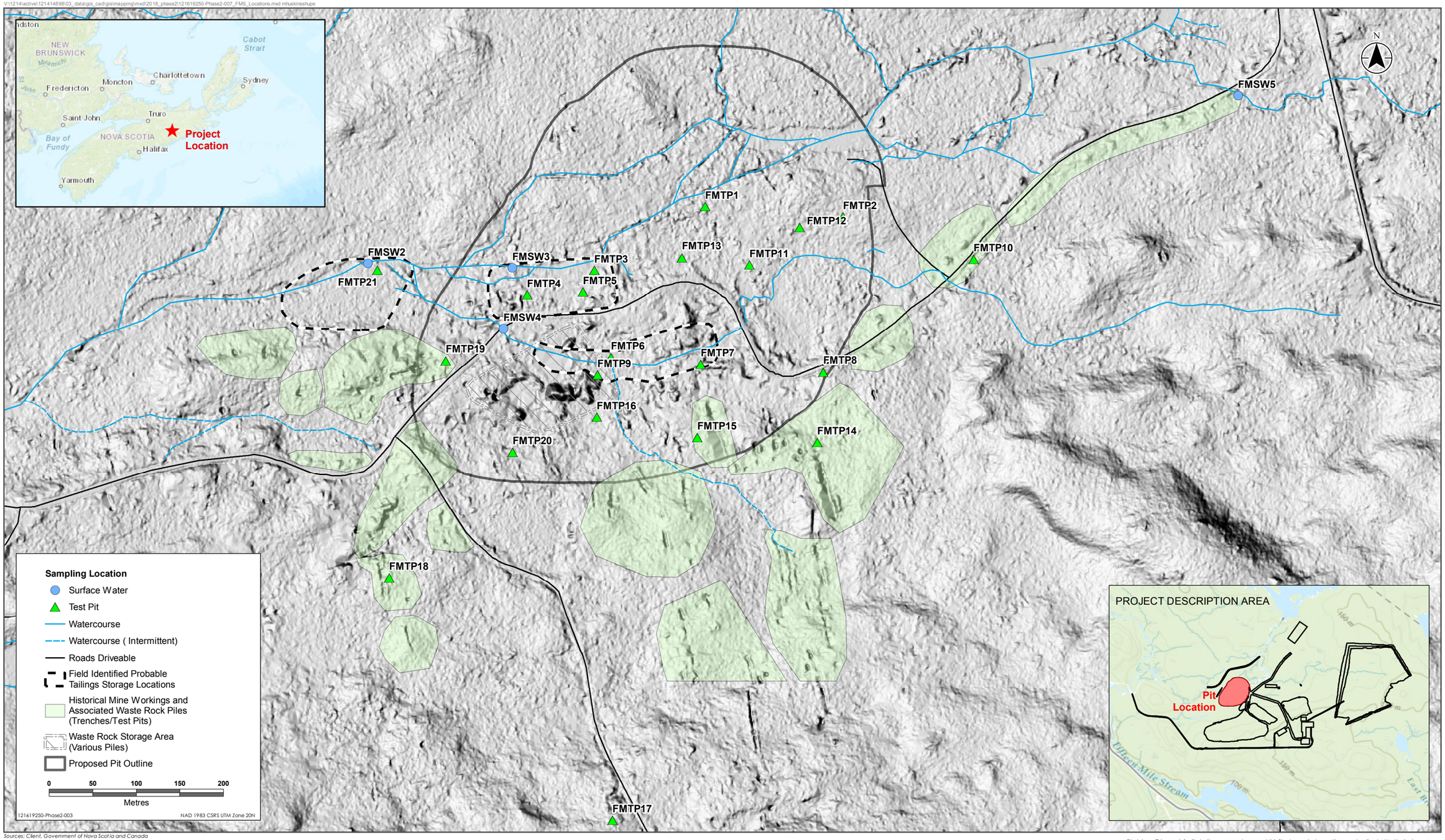


Sources: Client, Government of Nova Scotia and Canada

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Disclaimer: This map is for illustrative purposes to support this Stantec project; questions can be directed to the issuing agency.

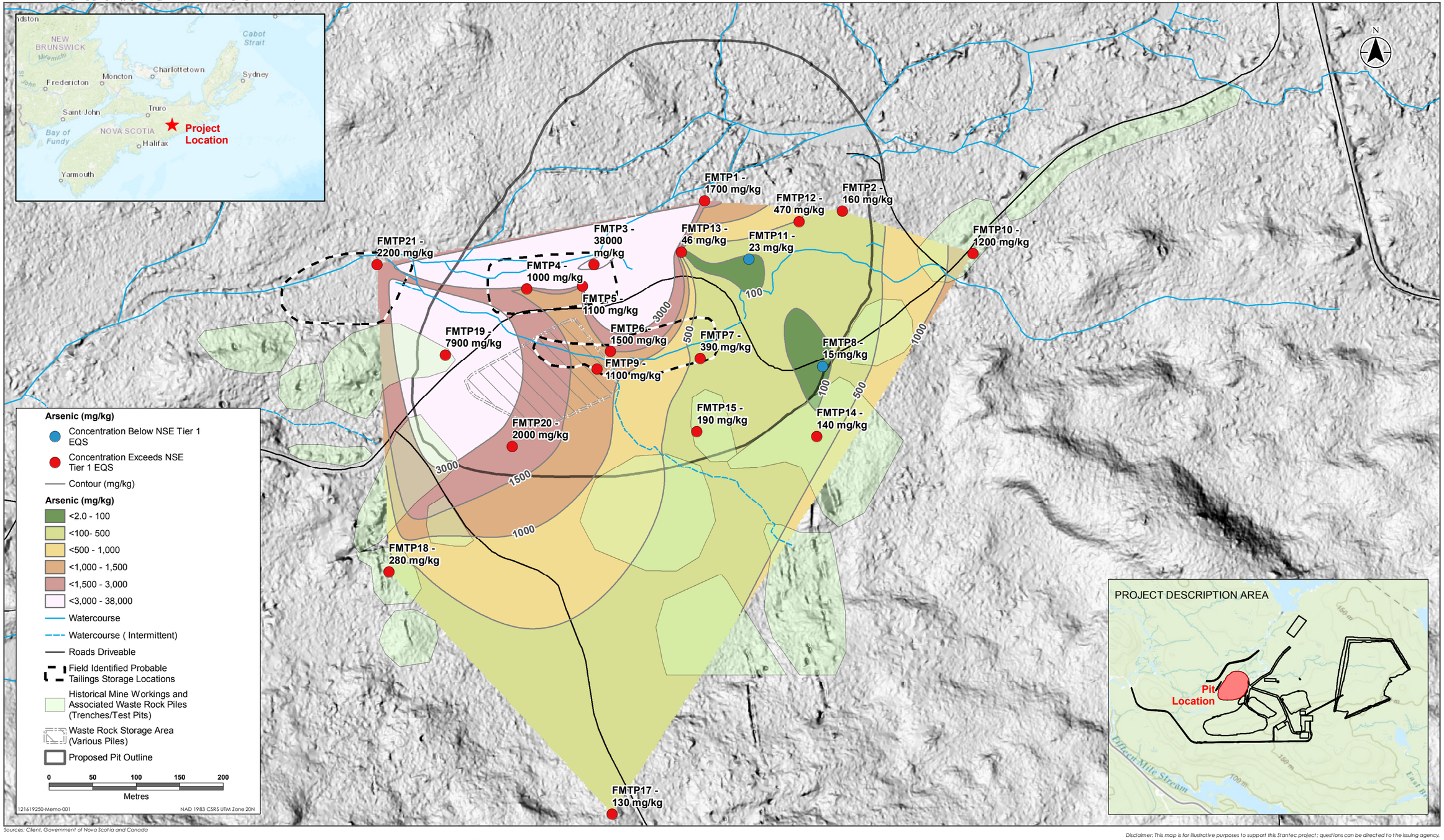
Test Pit and Surface Water Sampling Locations
Atlantic Mining NS - Fifteen Mile Stream Project

Stantec

ATLANTIC MINING NS

Figure 1

V:\1214\active\121414898\03_data\gis_cad\gis\mapping\mxd\2018_phase2\121619250-Phase2-001_FMS_As.mxd mhuskins/hupe



Sources: Client, Government of Nova Scotia and Canada

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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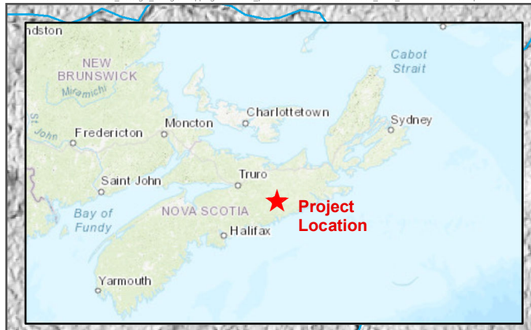
Stantec

ATLANTIC MINING NS

Arsenic Concentrations in Soil
Atlantic Mining NS - Fifteen Mile Stream Project

Figure 2

V:\1214\active\121414898\03_data\gis_cad\gis\mapping\mxd\2018_phase2\121619250-Phase2-002_FMS_Pb.mxd mhuskins/shupe



Lead (mg/kg)

- Concentration Below NSE Tier 1 EQS
- Concentration Exceeds NSE Tier 1 EQS
- Contour (mg/kg)

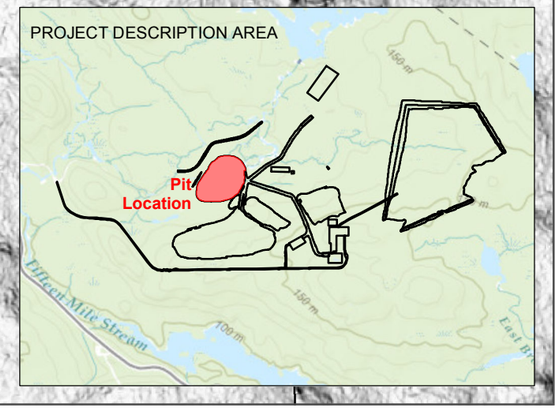
Lead (mg/kg)

- <0.50 - 10
- <10 - 15
- <15- 20
- <20 - 25
- <25- 50
- <50 - 1,400
- Watercourse
- Watercourse (Intermittent)
- Roads Driveable
- Field Identified Probable Tailings Storage Locations
- Historical Mine Workings and Associated Waste Rock Piles (Trenches/Test Pits)
- Waste Rock Storage Area (Various Piles)
- Proposed Pit Outline

0 50 100 150 200

Metres

121619250-Phase2-002 NAD 1983 CSRS UTM Zone 20N



Sources: Client, Government of Nova Scotia and Canada

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Disclaimer: This map is for illustrative purposes to support this Stantec project; questions can be directed to the issuing agency.

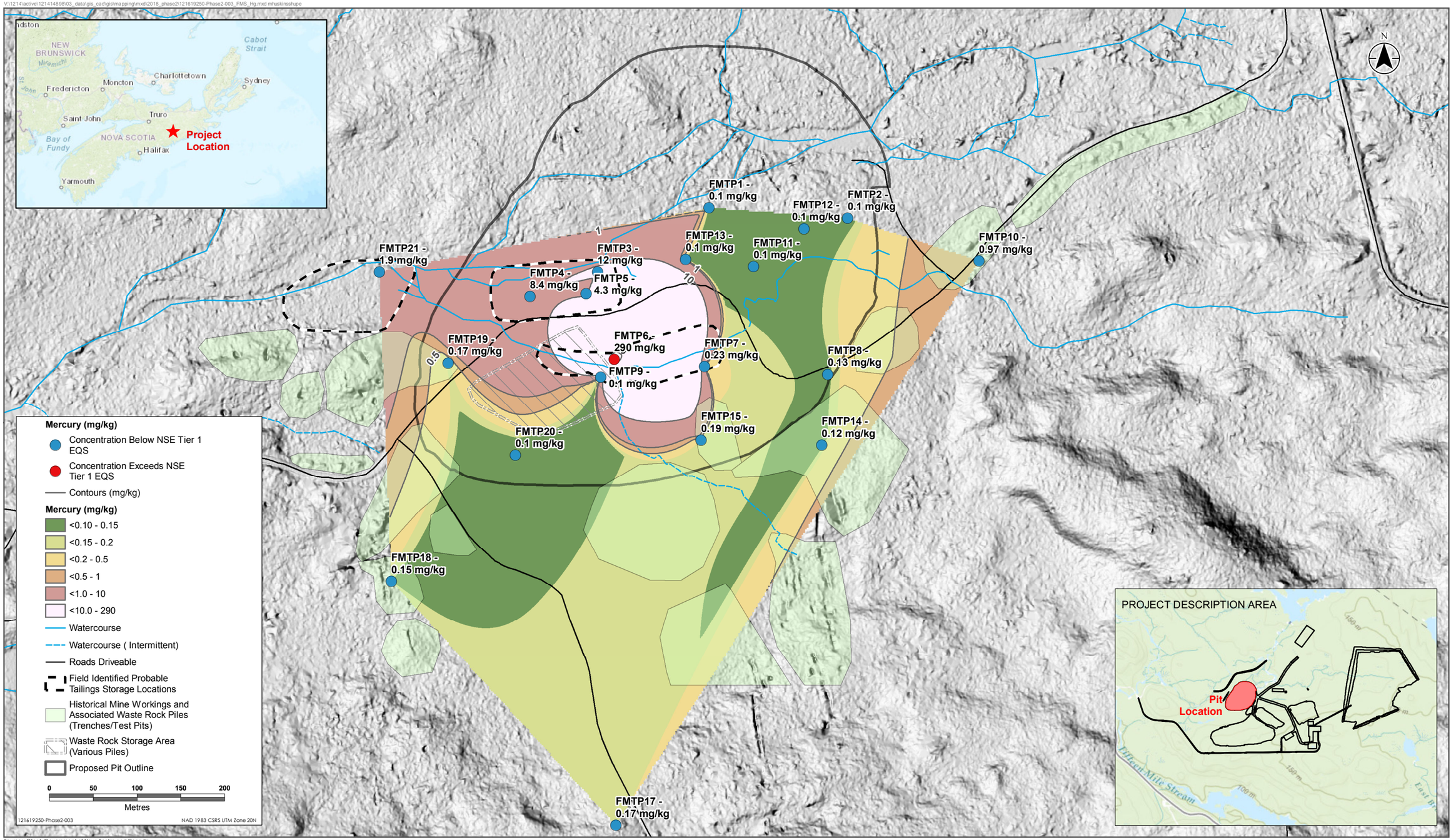
Lead Concentrations in Soil
Atlantic Mining NS - Fifteen Mile Stream Project

Stantec

ATLANTIC MINING NS

Figure 3

V:\1214\active\121414898\03_data\gis_cad\gis\mapping\mxd\2018_phase2\121619250-Phase2-003_FMS_Hg.mxd mhuskins/shupe



Sources: Client, Government of Nova Scotia and Canada

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Disclaimer: This map is for illustrative purposes to support this Stantec project; questions can be directed to the issuing agency.

Mercury Concentrations in Soil
Atlantic Mining NS - Fifteen Mile Stream Project

Stantec

ATLANTIC MINING NS

Figure 4

V:\1214\active\121414898\03_data\gis_cad\gis\mapping\mxd\2018_phase2\121619250-Phase2-005_FMS_SW.mxd mhuskinsshupe

FM SW2:
Aluminum 220 ug/L
Arsenic 18 ug/L
Cadmium 0.014 ug/L
Iron 360 ug/L

FM SW3:
Aluminum 180 ug/L
Cadmium 0.013 ug/L

FM SW4:
Aluminum 270 ug/L
Arsenic 40 ug/L
Cadmium 0.015 ug/L
Iron 590 ug/L

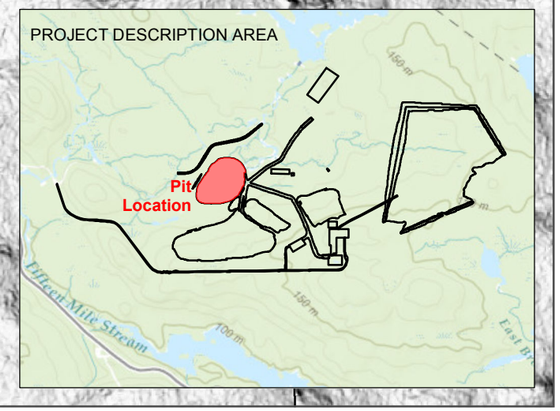
FM SW5:
Aluminum 320 ug/L
Chromium 7.6 ug/L
Iron 460 ug/L

N

Surface Water Sample Location
Watercourse
Watercourse (Intermittent)
Roads Driveable
Field Identified Probable Tailings Storage Locations
Historical Mine Workings and Associated Waste Rock Piles (Trenches/Test Pits)
Waste Rock Storage Area (Various Piles)
Proposed Pit Outline

0 50 100 150 200
Metres

121619250-Phase2-002 NAD 1983 CSRS UTM Zone 20N



Sources: Client, Government of Nova Scotia and Canada

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Disclaimer: This map is for illustrative purposes to support this Stantec project; questions can be directed to the issuing agency.

Surface Water Quality Exceeding NS Tier 1 EQS
Atlantic Mining NS - Fifteen Mile Stream Project

Stantec

ATLANTIC MINING NS

Figure 5

APPENDIX B

Test Pit Records

TEST PIT: FM TP 1

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			ROOTMAT	0.00			
0.5	0.2		Firm Brown to black silty SAND with gravel - poorly graded - refusal at 0.27 m BGS	0.04	FM TP 1	GS	METALS
			End of TEST PIT	0.27			
1.0	0.4						
1.5							
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 2

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black ROOTMAT and moss	0.00			
0.5							
	0.2		Firm brown to grey silty SAND with cobbles - poorly graded - refusal at 0.42 m BGS	0.20	FM TP 2	GS	METALS
1.0							
	0.4						
			End of TEST PIT	0.42			
1.5							
	0.6						
2.0							
	0.8						
2.5							
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 3

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Firm grey SILT - well graded - possible tailings - groundwater seepage at 0.3 m BGS - refusal at 0.5 m BGS	0.00	FM TP 3	GS	METALS
0.5	0.2						
1.0	0.4						
1.5			End of TEST PIT	0.50			
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 4

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Firm black SILT with cobbles (waste rock) - poorly graded - occasional organics - refusal at 0.37 m BGS	0.00	FM TP 4	GS	METALS
0.5	0.2						
1.0							
	0.4		End of TEST PIT	0.37			
1.5							
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 5

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
0.5	0.2		Firm black to grey SILT with cobbles (waste rock) - poorly graded - possible tailings - refusal at 0.35 m BGS	0.00	FM TP 5	GS	METALS
1.0	0.4		End of TEST PIT	0.35			
1.5							
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 6

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black organic ROOTMAT	0.00			
0.5	0.2		Firm grey SILT - well graded - possible tailings	0.09	FM TP 6 SA-1	GS	METALS
1.0	0.4		Firm black to grey SILT - frequent organics - refusal at 0.34 m BGs	0.21	FM TP 6 SA-2	GS	METALS
1.5	0.6		End of TEST PIT	0.34			
2.0	0.8						
2.5							
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 7

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black ROOTMAT and moss	0.00			
0.5	0.2		Firm grey to brown silty SAND with gravel - poorly graded - refusal at 0.44 m BGS	0.06	FM TP 7	GS	METALS
1.0	0.4						
1.5	0.6		End of TEST PIT	0.44			
2.0							
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 8

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black organic ROOTMAT	0.00			
0.5	0.2		Firm grey SILT - well graded - possible tailings	0.15	FM TP 8 SA-1	GS	METALS
1.0	0.4		Firm brown silty SAND - poorly graded - refusal at 0.57 m BGS	0.38	FM TP 8 SA-2		METALS
1.5							
	0.6		End of TEST PIT	0.57			
2.0							
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 9

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black organics, ROOTMAT and moss	0.00			
0.5	0.2		Firm grey silty SAND - well graded - possible tailings - refusal at 0.637 m BGS	0.11	FM TP 9	GS	METALS
1.0	0.4						
1.5							
2.0	0.6						
			End of TEST PIT	0.67			
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 10

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	13-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			ROOTMAT	0.00			
0.5	0.2		Firm black to grey silty SAND with gravel - poorly graded - some cobbles - possible waste rock - refusal at 0.41 m BGS	0.06	FM TP 10	GS	METALS
1.0	0.4						
			End of TEST PIT	0.41			
1.5	0.6						
2.0							
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 11

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Firm brown to grey silty SAND with gravel - poorly graded - some cobbles - refusal at 0.38 m BGS	0.00	FM TP 11	GS	METALS
0.5	0.2						
1.0							
	0.4		End of TEST PIT	0.38			
1.5							
	0.6						
2.0							
	0.8						
2.5							
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 12

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Firm grey SILT - well graded - possible tailings	0.00	FM TP 12	GS	METALS
0.5	0.2		Black ORGANICS - refusal at 0.21 m BGS	0.14			
			End of TEST PIT	0.21			
1.0	0.4						
1.5							
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 13

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black organics ROOTMAT	0.00			
0.5	0.2		Firm grey silty SAND - well graded - possible tailings and waste rock - refusal at 0.46 m BGS	0.08	FM TP 13	GS	METALS
1.0	0.4						
1.5			End of TEST PIT	0.46			
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 14

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black organics ROOTMAT	0.00			
0.5	0.2		Brown to grey silty SAND with gravel - poorly graded - some cobbles and waste rock - refusal at 0.32 m BGS	0.10	FM TP 14	GS	METALS
1.0			End of TEST PIT	0.32			
	0.4						
1.5							
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 15

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black organics ROOTMAT and moss	0.00			
0.5	0.2		Brown to grey silty SAND with gravel - poorly graded - some cobbles - refusal at 0.47 m BGS	0.07	FM TP 15	GS	METALS
	0.4		End of TEST PIT	0.37			
1.0							
1.5							
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 17

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black organics ROOTMAT and moss	0.00			
0.5	0.2		Loose brown silty SAND - poorly graded - some cobbles - refusal at 0.47 m BGS	0.20	FM TP 17	GS	METALS
1.0	0.4						
1.5	0.6		End of TEST PIT	0.47			
2.0	0.8						
2.5							
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 18

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black organics ROOTMAT and moss	0.00			
0.5							
	0.2		Firm brown silty SAND with gravel - poorly graded - some cobbles - refusal at 0.46 m BGS	0.18	FM TP 18	GS	METALS
1.0							
	0.4						
1.5			End of TEST PIT	0.46			
	0.6						
2.0							
	0.8						
2.5							
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 19

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Black organics ROOTMAT and moss	0.00			
0.5	0.2		Firm brown silty SAND with gravel - poorly graded - some cobbles - refusal at 0.44 m BGS	0.10	FM TP 19	GS	METALS
1.0	0.4						
1.5	0.6		End of TEST PIT	0.44			
2.0							
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 20

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			ROOTMAT and moss	0.00			
0.5	0.2		Firm brown silty SAND with gravel - poorly graded - some cobbles - refusal at 0.37 m BGS	0.05	FM TP 20	GS	METALS
1.0	0.4		End of TEST PIT	0.37			
1.5							
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

TEST PIT: FM TP 21

Project:	PHASE II ENVIRONMENTAL SITE ASSESSMENT	**Drilling method:**	HAND DUG
Client:	ATLANTIC GOLD CORPORATION	**Date started/completed:**	14-Nov-2018
Location:	FIFTEEN MILE STREAM ROUTE 374, TRAFALGAR, NS	**Ground surface elevation:**	n/a
Number:	121619250	**Top of casing elevation:**	n/a
Field investigator:	M. PARKER	**Easting:**	n/a
Contractor:	STANTEC CONSULTING	**Northing:**	n/a

SUBSURFACE PROFILE				SAMPLE DETAILS		
Depth (ft)	Depth (m)	Graphic Log	Lithologic Description	Depth (m BGS)	Sample Number	Sample Type	Lab Analyses
			Ground Surface				
			Firm grey silty SAND - well graded - possible tailings - refusal at 0.25 m BGS	0.00	FM TP 21	GS	METALS
0.5	0.2						
			End of TEST PIT	0.25			
1.0	0.4						
1.5							
2.0	0.6						
2.5	0.8						
3.0							

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

Stantec

Drawn By/Checked By: J. RAYMOND

APPENDIX C

Soil and Surface Water Analytical Summary Tables & Laboratory Certificates of Analysis

TABLE C-1 SOIL METALS CHEMISTRY
Atlantic Mining NS Corporation
Fifteen Mile Stream, Route 374, Trafalgar, NS
Stantec Consulting Ltd. Project No. 121619250

Parameter	Units	RDL	Tier 1 EQS [1]	FM TP 1	FM TP 2	FM TP 3	FM TP 4	FM TP 5	FM TP 6 SA-1	FM TP 6 SA-2	FM TP 7	FM TP 8 SA-1
			Date Sampled:	13-Nov-18	13-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18
Acid Extractable Aluminum (Al)	mg/kg	10	198,000	17,000	8,000	510	16,000	16,000	9,400	9,200	16,000	3,200
Acid Extractable Antimony (Sb)	mg/kg	2.0	63	<2.0	<2.0	44	3.7	<2.0	7.7	7.2	<2.0	<2.0
Acid Extractable Arsenic (As)	mg/kg	2.0	31	1,700	160	38,000	1,000	1,100	1,400	1,500	390	<2.0
Acid Extractable Barium (Ba)	mg/kg	5.0	140,000	29	8.3	9.6	600	24	28	20	30	<5.0
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
Acid Extractable Bismuth (Bi)	mg/kg	2.0	-	<2.0	<2.0	3.3	4.5	<2.0	2.8	4.7	<2.0	<2.0
Acid Extractable Boron (B)	mg/kg	50	24,000	<50	<50	<50	<50	<50	<50	<50	<50	<50
Acid Extractable Cadmium (Cd)	mg/kg	0.30	192	<0.30	<0.30	<0.30	1.8	<0.30	<0.30	<0.30	<0.30	<0.30
Acid Extractable Chromium (Cr)	mg/kg	2.0	2,300	24	5.0	<2.0	45	18	16	19	22	2.2
Acid Extractable Cobalt (Co)	mg/kg	1.0	250	10	<1.0	<1.0	19	2.2	3.4	1.9	15	<1.0
Acid Extractable Copper (Cu)	mg/kg	2.0	16,000	33	<2.0	14	320	40	12	140	37	<2.0
Acid Extractable Iron (Fe)	mg/kg	50	144,000	44,000	12,000	28,000	53,000	30,000	33,000	34,000	35,000	1,800
Acid Extractable Lead (Pb)	mg/kg	0.50	740	43	5.0	120	1,400	31	340	750	16	0.63
Acid Extractable Lithium (Li)	mg/kg	2.0	-	32	2.9	<2.0	21	34	18	7.3	34	<2.0
Acid Extractable Manganese (Mn)	mg/kg	2.0	-	510	34	3.1	1,700	300	190	80	470	16
Acid Extractable Mercury (Hg)	mg/kg	0.10	99	<0.10	<0.10	12	8.4	4.3	140	290	0.23	<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
Acid Extractable Nickel (Ni)	mg/kg	2.0	2,200	24	<2.0	<2.0	22	6.9	6.4	5.6	26	<2.0
Acid Extractable Rubidium (Rb)	mg/kg	2.0	-	13	5.3	3.0	13	5.8	12	7.7	16	<2.0
Acid Extractable Selenium (Se)	mg/kg	1.0	1,135	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	6.3	<1.0	<1.0
Acid Extractable Silver (Ag)	mg/kg	0.50	490	<0.50	<0.50	1.5	2.2	<0.50	1.5	3.0	<0.50	<0.50
Acid Extractable Strontium (Sr)	mg/kg	5.0	122,000	5.4	<5.0	<5.0	36	6.6	<5.0	<5.0	<5.0	<5.0
Acid Extractable Thallium (Tl)	mg/kg	0.10	1	0.15	<0.10	0.17	0.15	<0.10	0.38	0.58	0.17	<0.10
Acid Extractable Tin (Sn)	mg/kg	2.0	122,000	<2.0	<2.0	<2.0	150	<2.0	<2.0	2.7	<2.0	<2.0
Acid Extractable Uranium (U)	mg/kg	0.10	300	0.91	0.24	0.16	1.2	0.65	0.4	15	1.1	0.12
Acid Extractable Vanadium (V)	mg/kg	2.0	160	23	24	<2.0	19	17	14	7.3	21	6.0
Acid Extractable Zinc (Zn)	mg/kg	5.0	47,000	71	6.4	<5.0	340	52	35	16	67	<5.0

Notes:

1. Tier 1 EQS = Tier 1 Environmental Quality Standards for Soil at a Non-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. -' = no standard available, not applicable
5. Lab-Dup = laboratory QA/QC duplicate
6. 38 = Exceeds NSE Tier 1 EQS

TABLE C-1 SOIL METALS CHEMISTRY
Atlantic Mining NS Corporation
Fifteen Mile Stream, Route 374, Trafalgar, NS
Stantec Consulting Ltd. Project No. 121619250

Parameter	Units	RDL	Tier 1 EQS [1]	FM TP 8 SA-2	FM TP 9	FM TP 9 Lab-Dup	FM TP 10	FM TP 11	FM TP 12	FM TP 13	FM TP 14	FM TP 15
			Date Sampled:	14-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18
Acid Extractable Aluminum (Al)	mg/kg	10	198,000	16,000	13,000	13,000	14,000	15,000	21,000	18,000	18,000	23,000
Acid Extractable Antimony (Sb)	mg/kg	2.0	63	<2.0	2.5	2.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Arsenic (As)	mg/kg	2.0	31	15	1,100	1,100	1,200	23	470	46	140	190
Acid Extractable Barium (Ba)	mg/kg	5.0	140,000	11	23	23	29	15	63	23	23	21
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
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
Acid Extractable Boron (B)	mg/kg	50	24,000	<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
Acid Extractable Chromium (Cr)	mg/kg	2.0	2,300	20	20	20	18	19	52	23	22	22
Acid Extractable Cobalt (Co)	mg/kg	1.0	250	2.7	<1.0	<1.0	7.2	4.7	18	17	8.2	3.3
Acid Extractable Copper (Cu)	mg/kg	2.0	16,000	6.8	8.4	7.4	23	3.7	83	33	26	17
Acid Extractable Iron (Fe)	mg/kg	50	144,000	30,000	27,000	28,000	27,000	26,000	41,000	35,000	26,000	46,000
Acid Extractable Lead (Pb)	mg/kg	0.50	740	9.7	16	15	31	6.3	11	17	22	14
Acid Extractable Lithium (Li)	mg/kg	2.0	-	15	26	27	25	28	35	35	31	22
Acid Extractable Manganese (Mn)	mg/kg	2.0	-	120	230	230	360	290	560	440	310	230
Acid Extractable Mercury (Hg)	mg/kg	0.10	99	0.13	<0.10	<0.10	0.97	<0.10	<0.10	<0.10	0.12	0.19
Acid Extractable Molybdenum (Mo)	mg/kg	2.0	1,200	<2.0	<2.0	<2.0	<2.0	<2.0	5.9	<2.0	<2.0	<2.0
Acid Extractable Nickel (Ni)	mg/kg	2.0	2,200	7.5	4.5	4.6	14	11	39	28	20	6.5
Acid Extractable Rubidium (Rb)	mg/kg	2.0	-	4.4	16	15	7.7	6.0	25	13	11	6.7
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
Acid Extractable Silver (Ag)	mg/kg	0.50	490	<0.50	<0.50	<0.50	<0.50	<0.50	19	<0.50	<0.50	<0.50
Acid Extractable Strontium (Sr)	mg/kg	5.0	122,000	<5.0	<5.0	<5.0	9.6	<5.0	19	<5.0	<5.0	<5.0
Acid Extractable Thallium (Tl)	mg/kg	0.10	1	<0.10	0.19	0.18	<0.10	<0.10	0.19	0.21	0.13	0.12
Acid Extractable Tin (Sn)	mg/kg	2.0	122,000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Uranium (U)	mg/kg	0.10	300	0.4	0.37	0.37	0.66	0.41	0.74	0.94	0.98	0.49
Acid Extractable Vanadium (V)	mg/kg	2.0	160	32	19	19	18	34	28	22	22	40
Acid Extractable Zinc (Zn)	mg/kg	5.0	47,000	23	45	46	51	35	85	70	52	44

Notes:

1. Tier 1 EQS = Tier 1 Environmental Quality Standards for Soil at a Non-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. -' = no standard available, not applicable
5. Lab-Dup = laboratory QA/QC duplicate
6. 38 = Exceeds NSE Tier 1 EQS

TABLE C-1 SOIL METALS CHEMISTRY
Atlantic Mining NS Corporation
Fifteen Mile Stream, Route 374, Trafalgar, NS
Stantec Consulting Ltd. Project No. 121619250

Parameter	Units	RDL	Tier 1 EQS [1]	FM TP 17	FM TP 18	FM TP 19	FM TP 20	FM TP 21
			Date Sampled:	14-Nov-18	14-Nov-18	14-Nov-18	15-Nov-18	15-Nov-18
Acid Extractable Aluminum (Al)	mg/kg	10	198,000	22,000	41,000	19,000	20,000	11,000
Acid Extractable Antimony (Sb)	mg/kg	2.0	63	<2.0	<2.0	2.1	<2.0	2.7
Acid Extractable Arsenic (As)	mg/kg	2.0	31	130	280	7,900	2,000	2,200
Acid Extractable Barium (Ba)	mg/kg	5.0	140,000	16	18	56	22	14
Acid Extractable Beryllium (Be)	mg/kg	2.0	320	<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
Acid Extractable Boron (B)	mg/kg	50	24,000	<50	<50	<50	<50	<50
Acid Extractable Cadmium (Cd)	mg/kg	0.30	192	<0.30	<0.30	<0.30	<0.30	<0.30
Acid Extractable Chromium (Cr)	mg/kg	2.0	2,300	24	35	23	23	15
Acid Extractable Cobalt (Co)	mg/kg	1.0	250	7.8	5.4	18	17	<1.0
Acid Extractable Copper (Cu)	mg/kg	2.0	16,000	22	20	59	41	2.8
Acid Extractable Iron (Fe)	mg/kg	50	144,000	37,000	45,000	47,000	36,000	24,000
Acid Extractable Lead (Pb)	mg/kg	0.50	740	13	15	28	16	14
Acid Extractable Lithium (Li)	mg/kg	2.0	-	29	31	34	31	27
Acid Extractable Manganese (Mn)	mg/kg	2.0	-	290	220	520	470	190
Acid Extractable Mercury (Hg)	mg/kg	0.10	99	0.17	0.15	0.17	<0.10	1.9
Acid Extractable Molybdenum (Mo)	mg/kg	2.0	1,200	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Nickel (Ni)	mg/kg	2.0	2,200	20	16	26	23	2.9
Acid Extractable Rubidium (Rb)	mg/kg	2.0	-	8.4	9.1	15	11	11
Acid Extractable Selenium (Se)	mg/kg	1.0	1,135	1.1	1.9	<1.0	<1.0	<1.0
Acid Extractable Silver (Ag)	mg/kg	0.50	490	<0.50	<0.50	<0.50	<0.50	<0.50
Acid Extractable Strontium (Sr)	mg/kg	5.0	122,000	<5.0	<5.0	5.5	<5.0	<5.0
Acid Extractable Thallium (Tl)	mg/kg	0.10	1	0.11	0.12	0.16	0.12	<0.10
Acid Extractable Tin (Sn)	mg/kg	2.0	122,000	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Uranium (U)	mg/kg	0.10	300	0.79	0.86	1.4	1.0	0.27
Acid Extractable Vanadium (V)	mg/kg	2.0	160	21	32	21	21	15
Acid Extractable Zinc (Zn)	mg/kg	5.0	47,000	61	52	70	62	37

Notes:

1. Tier 1 EQS = Tier 1 Environmental Quality Standards for Soil at a Non-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. -' = no standard available, not applicable
5. Lab-Dup = laboratory QA/QC duplicate
6. 38 = Exceeds NSE Tier 1 EQS

TABLE C-2 **SURFACE WATER METALS CHEMISTRY**
Atlantic Mining NS Corporation
Fifteen Mile Stream, Route 374, Trafalgar, NS
Stantec Consulting Ltd. Project No. 121619250

Parameter	Units	RDL	Tier 1 EQS [1]	MDMER [2]			FM SW 2	FM SW 1 Fld-Dup of FM SW 2	FM SW 3	FM SW 4	FM SW 5
				Monthly Mean	Composite Sample	Grab Sample					
						Date Sampled:	15-Nov-18	15-Nov-18	15-Nov-18	15-Nov-18	15-Nov-18
Total Aluminum (Al)	ug/L	5.0	5	-	-	-	210	220	180	270	320
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	500	750	1,000	15	18	1.2	40	<1.0
Total Barium (Ba)	ug/L	1.0	1,000	-	-	-	2.9	3.0	2.8	2.7	2.4
Total Beryllium (Be)	ug/L	1.0	5	-	-	-	<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	0.010	0.01	-	-	-	0.014	0.015	0.013	0.015	<0.010
Total Calcium (Ca)	ug/L	100	-	-	-	-	1,100	1,200	600	2,000	790
Total Chromium (Cr)	ug/L	1.0	1.0	-	-	-	<1.0	<1.0	<1.0	<1.0	7.6
Total Cobalt (Co)	ug/L	0.40	10	-	-	-	<0.40	<0.40	<0.40	0.48	0.42
Total Copper (Cu)	ug/L	2.0	2	300	450	600	<2.0	<2.0	<2.0	<2.0	<2.0
Total Iron (Fe)	ug/L	50	300	-	-	-	330	360	200	590	460
Total Lead (Pb)	ug/L	0.50	1	200	300	400	<0.50	<0.50	<0.50	<0.50	<0.50
Total Magnesium (Mg)	ug/L	100	-	-	-	-	390	400	370	420	380
Total Manganese (Mn)	ug/L	2.0	820	-	-	-	77	83	47	130	85
Total Mercury (Hg)	ug/L	0.013	0.026	-	-	-	<0.013	<0.013	<0.013	<0.013	<0.013
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	<2.0
Total Phosphorus (P)	ug/L	100	-	-	-	-	<100	<100	<100	<100	<100
Total Potassium (K)	ug/L	100	-	-	-	-	250	250	250	260	160
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	-	-	-	-	2,600	2,600	2,500	2,700	2,600
Total Strontium (Sr)	ug/L	2.0	21,000	-	-	-	6.5	6.8	5.5	8.2	6.0
Total Thallium (Tl)	ug/L	0.10	0.8	-	-	-	<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	-	-	-	-	2.2	<2.0	2.2	2.8	3.1
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	-	-	-	<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 Monthly Mean Sample, Composite Sample, and Grab Sample. Current to December 12, 2018.
3. RDL = laboratory's reportable detection limit
4. <# = parameter not detected above RDL shown
5. -' = no standard available, not applicable
6. Fld-Dup = Field duplicate QA/QC sample
7. 38 = Exceeds NSE Tier 1 EQS

Maxxam
A Bureau Veritas Group Company

Your Project #: 121619250
Your C.O.C. #: D 37649, D 37642, D 37643

Attention: Morgan Schauerte

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

Report Date: 2018/12/12
Report #: R5522806
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8U6745
Received: 2018/11/16, 13:29

Sample Matrix: Soil
Samples Received: 22

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Metals Solids Acid Extr. ICPMS	4	2018/11/19	2018/11/19	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	18	2018/11/19	2018/11/20	ATL SOP 00058	EPA 6020A R1 m

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Mercury - Total (CVAA,LL)	5	2018/12/11	2018/12/12	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Total MS	5	2018/11/20	2018/11/20	ATL SOP 00058	EPA 6020A R1 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam 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 Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam 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.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

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.

Encryption Key

Your Project #: 121619250
Your C.O.C. #: D 37649, D 37642, D 37643

Attention: Morgan Schauerte

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

Report Date: 2018/12/12
Report #: R5522806
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8U6745
Received: 2018/11/16, 13:29

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

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam
A Bureau Veritas Group Company

Maxxam Job #: B8U6745
Report Date: 2018/12/12

Stantec Consulting Ltd
Client Project #: 121619250

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IHW152		IHW153		IHW154		IHW155	IHW156		
Sampling Date		2018/11/13		2018/11/13		2018/11/14		2018/11/14	2018/11/14		
COC Number		D 37649		D 37649		D 37649		D 37649	D 37649		
	UNITS	**FM TP 1**	**RDL**	**FM TP 2**	**RDL**	**FM TP 3**	**RDL**	**FM TP 4**	**FM TP 5**	**RDL**	**QC Batch**
Metals											
Acid Extractable Aluminum (Al)	mg/kg	17000	10	8000	10	510	10	16000	16000	10	5843856
Acid Extractable Antimony (Sb)	mg/kg	<2.0	2.0	<2.0	2.0	44	2.0	3.7	<2.0	2.0	5843856
Acid Extractable Arsenic (As)	mg/kg	1700	20	160	2.0	38000	200	1000	1100	20	5843856
Acid Extractable Barium (Ba)	mg/kg	29	5.0	8.3	5.0	9.6	5.0	600	24	5.0	5843856
Acid Extractable Beryllium (Be)	mg/kg	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.0	<2.0	2.0	3.3	2.0	4.5	<2.0	2.0	5843856
Acid Extractable Boron (B)	mg/kg	<50	50	<50	50	<50	50	<50	<50	50	5843856
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.30	<0.30	0.30	<0.30	0.30	1.8	<0.30	0.30	5843856
Acid Extractable Chromium (Cr)	mg/kg	24	2.0	5.0	2.0	<2.0	2.0	45	18	2.0	5843856
Acid Extractable Cobalt (Co)	mg/kg	10	1.0	<1.0	1.0	<1.0	1.0	19	2.2	1.0	5843856
Acid Extractable Copper (Cu)	mg/kg	33	2.0	<2.0	2.0	14	2.0	320	40	2.0	5843856
Acid Extractable Iron (Fe)	mg/kg	44000	50	12000	50	28000	50	53000	30000	50	5843856
Acid Extractable Lead (Pb)	mg/kg	43	0.50	5.0	0.50	120	0.50	1400	31	0.50	5843856
Acid Extractable Lithium (Li)	mg/kg	32	2.0	2.9	2.0	<2.0	2.0	21	34	2.0	5843856
Acid Extractable Manganese (Mn)	mg/kg	510	2.0	34	2.0	3.1	2.0	1700	300	2.0	5843856
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.10	<0.10	0.10	12	0.10	8.4	4.3	0.10	5843856
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Nickel (Ni)	mg/kg	24	2.0	<2.0	2.0	<2.0	2.0	22	6.9	2.0	5843856
Acid Extractable Rubidium (Rb)	mg/kg	13	2.0	5.3	2.0	3.0	2.0	13	5.8	2.0	5843856
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.0	<1.0	1.0	1.8	1.0	<1.0	<1.0	1.0	5843856
Acid Extractable Silver (Ag)	mg/kg	<0.50	0.50	<0.50	0.50	1.5	0.50	2.2	<0.50	0.50	5843856
Acid Extractable Strontium (Sr)	mg/kg	5.4	5.0	<5.0	5.0	<5.0	5.0	36	6.6	5.0	5843856
Acid Extractable Thallium (Tl)	mg/kg	0.15	0.10	<0.10	0.10	0.17	0.10	0.15	<0.10	0.10	5843856
Acid Extractable Tin (Sn)	mg/kg	<2.0	2.0	<2.0	2.0	<2.0	2.0	150	<2.0	2.0	5843856
Acid Extractable Uranium (U)	mg/kg	0.91	0.10	0.24	0.10	0.16	0.10	1.2	0.65	0.10	5843856
Acid Extractable Vanadium (V)	mg/kg	23	2.0	24	2.0	<2.0	2.0	19	17	2.0	5843856
Acid Extractable Zinc (Zn)	mg/kg	71	5.0	6.4	5.0	<5.0	5.0	340	52	5.0	5843856

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U6745
Report Date: 2018/12/12

Stantec Consulting Ltd
Client Project #: 121619250

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IHW157	IHW158		IHW159	IHW160	IHW161		
Sampling Date		2018/11/14	2018/11/14		2018/11/14	2018/11/14	2018/11/14		
COC Number		D 37649	D 37649		D 37649	D 37649	D 37649		
	UNITS	**FM TP 6 SA-1**	**FM TP 6 SA-2**	**RDL**	**FM TP 7**	**FM TP 8 SA-1**	**FM TP 8 SA-2**	**RDL**	**QC Batch**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	9400	9200	10	16000	3200	16000	10	5843856
Acid Extractable Antimony (Sb)	mg/kg	7.7	7.2	2.0	<2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Arsenic (As)	mg/kg	1400	1500	20	390	<2.0	15	2.0	5843856
Acid Extractable Barium (Ba)	mg/kg	28	20	5.0	30	<5.0	11	5.0	5843856
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Bismuth (Bi)	mg/kg	2.8	4.7	2.0	<2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Boron (B)	mg/kg	<50	<50	50	<50	<50	<50	50	5843856
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	0.30	<0.30	<0.30	<0.30	0.30	5843856
Acid Extractable Chromium (Cr)	mg/kg	16	19	2.0	22	2.2	20	2.0	5843856
Acid Extractable Cobalt (Co)	mg/kg	3.4	1.9	1.0	15	<1.0	2.7	1.0	5843856
Acid Extractable Copper (Cu)	mg/kg	12	140	2.0	37	<2.0	6.8	2.0	5843856
Acid Extractable Iron (Fe)	mg/kg	33000	34000	50	35000	1800	30000	50	5843856
Acid Extractable Lead (Pb)	mg/kg	340	750	0.50	16	0.63	9.7	0.50	5843856
Acid Extractable Lithium (Li)	mg/kg	18	7.3	2.0	34	<2.0	15	2.0	5843856
Acid Extractable Manganese (Mn)	mg/kg	190	80	2.0	470	16	120	2.0	5843856
Acid Extractable Mercury (Hg)	mg/kg	140	290	1.0	0.23	<0.10	0.13	0.10	5843856
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Nickel (Ni)	mg/kg	6.4	5.6	2.0	26	<2.0	7.5	2.0	5843856
Acid Extractable Rubidium (Rb)	mg/kg	12	7.7	2.0	16	<2.0	4.4	2.0	5843856
Acid Extractable Selenium (Se)	mg/kg	<1.0	6.3	1.0	<1.0	<1.0	<1.0	1.0	5843856
Acid Extractable Silver (Ag)	mg/kg	1.5	3.0	0.50	<0.50	<0.50	<0.50	0.50	5843856
Acid Extractable Strontium (Sr)	mg/kg	<5.0	<5.0	5.0	<5.0	<5.0	<5.0	5.0	5843856
Acid Extractable Thallium (Tl)	mg/kg	0.38	0.58	0.10	0.17	<0.10	<0.10	0.10	5843856
Acid Extractable Tin (Sn)	mg/kg	<2.0	2.7	2.0	<2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Uranium (U)	mg/kg	0.40	15	0.10	1.1	0.12	0.40	0.10	5843856
Acid Extractable Vanadium (V)	mg/kg	14	7.3	2.0	21	6.0	32	2.0	5843856
Acid Extractable Zinc (Zn)	mg/kg	35	16	5.0	67	<5.0	23	5.0	5843856

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8U6745
Report Date: 2018/12/12

Stantec Consulting Ltd
Client Project #: 121619250

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IHW164	IHW164	IHW165		IHW166	IHW167	IHW168		
Sampling Date		2018/11/13	2018/11/13	2018/11/13		2018/11/14	2018/11/14	2018/11/14		
COC Number		D 37642	D 37642	D 37642		D 37642	D 37642	D 37642		
	UNITS	**FM TP 9**	**FM TP 9 Lab-Dup**	**FM TP 10**	**RDL**	**FM TP 11**	**FM TP 12**	**FM TP 13**	**RDL**	**QC Batch**
Metals										
Acid Extractable Aluminum (Al)	mg/kg	13000	13000	14000	10	15000	21000	18000	10	5843856
Acid Extractable Antimony (Sb)	mg/kg	2.5	2.5	<2.0	2.0	<2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Arsenic (As)	mg/kg	1100	1100	1200	20	23	470	46	2.0	5843856
Acid Extractable Barium (Ba)	mg/kg	23	23	29	5.0	15	63	23	5.0	5843856
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	50	<50	<50	<50	50	5843856
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	0.30	<0.30	<0.30	<0.30	0.30	5843856
Acid Extractable Chromium (Cr)	mg/kg	20	20	18	2.0	19	52	23	2.0	5843856
Acid Extractable Cobalt (Co)	mg/kg	<1.0	<1.0	7.2	1.0	4.7	18	17	1.0	5843856
Acid Extractable Copper (Cu)	mg/kg	8.4	7.4	23	2.0	3.7	83	33	2.0	5843856
Acid Extractable Iron (Fe)	mg/kg	27000	28000	27000	50	26000	41000	35000	50	5843856
Acid Extractable Lead (Pb)	mg/kg	16	15	31	0.50	6.3	11	17	0.50	5843856
Acid Extractable Lithium (Li)	mg/kg	26	27	25	2.0	28	35	35	2.0	5843856
Acid Extractable Manganese (Mn)	mg/kg	230	230	360	2.0	290	560	440	2.0	5843856
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	0.97	0.10	<0.10	<0.10	<0.10	0.10	5843856
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	2.0	<2.0	5.9	<2.0	2.0	5843856
Acid Extractable Nickel (Ni)	mg/kg	4.5	4.6	14	2.0	11	39	28	2.0	5843856
Acid Extractable Rubidium (Rb)	mg/kg	16	15	7.7	2.0	6.0	25	13	2.0	5843856
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	1.0	5843856
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	0.50	<0.50	19	<0.50	0.50	5843856
Acid Extractable Strontium (Sr)	mg/kg	<5.0	<5.0	9.6	5.0	<5.0	19	<5.0	5.0	5843856
Acid Extractable Thallium (Tl)	mg/kg	0.19	0.18	<0.10	0.10	<0.10	0.19	0.21	0.10	5843856
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	2.0	5843856
Acid Extractable Uranium (U)	mg/kg	0.37	0.37	0.66	0.10	0.41	0.74	0.94	0.10	5843856
Acid Extractable Vanadium (V)	mg/kg	19	19	18	2.0	34	28	22	2.0	5843856
Acid Extractable Zinc (Zn)	mg/kg	45	46	51	5.0	35	85	70	5.0	5843856

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

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Maxxam
A Bureau Veritas Group Company

Maxxam Job #: B8U6745
Report Date: 2018/12/12

Stantec Consulting Ltd
Client Project #: 121619250

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IHW169	IHW170	IHW171	IHW172		IHW173		IHW186		
Sampling Date		2018/11/14	2018/11/14	2018/11/14	2018/11/14		2018/11/14		2018/11/15		
COC Number		D 37642	D 37642	D 37642	D 37642		D 37642		D 37643		
	UNITS	**FM TP 14**	**FM TP 15**	**FM TP 17**	**FM TP 18**	**RDL**	**FM TP 19**	**RDL**	**FM TP 20**	**RDL**	**QC Batch**
Metals											
Acid Extractable Aluminum (Al)	mg/kg	18000	23000	22000	41000	10	19000	10	20000	10	5843960
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	2.1	2.0	<2.0	2.0	5843960
Acid Extractable Arsenic (As)	mg/kg	140	190	130	280	2.0	7900	200	2000	20	5843960
Acid Extractable Barium (Ba)	mg/kg	23	21	16	18	5.0	56	5.0	22	5.0	5843960
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	5843960
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	5843960
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	50	<50	50	<50	50	5843960
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	0.30	<0.30	0.30	<0.30	0.30	5843960
Acid Extractable Chromium (Cr)	mg/kg	22	22	24	35	2.0	23	2.0	23	2.0	5843960
Acid Extractable Cobalt (Co)	mg/kg	8.2	3.3	7.8	5.4	1.0	18	1.0	17	1.0	5843960
Acid Extractable Copper (Cu)	mg/kg	26	17	22	20	2.0	59	2.0	41	2.0	5843960
Acid Extractable Iron (Fe)	mg/kg	26000	46000	37000	45000	50	47000	50	36000	50	5843960
Acid Extractable Lead (Pb)	mg/kg	22	14	13	15	0.50	28	0.50	16	0.50	5843960
Acid Extractable Lithium (Li)	mg/kg	31	22	29	31	2.0	34	2.0	31	2.0	5843960
Acid Extractable Manganese (Mn)	mg/kg	310	230	290	220	2.0	520	2.0	470	2.0	5843960
Acid Extractable Mercury (Hg)	mg/kg	0.12	0.19	0.17	0.15	0.10	0.17	0.10	<0.10	0.10	5843960
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	5843960
Acid Extractable Nickel (Ni)	mg/kg	20	6.5	20	16	2.0	26	2.0	23	2.0	5843960
Acid Extractable Rubidium (Rb)	mg/kg	11	6.7	8.4	9.1	2.0	15	2.0	11	2.0	5843960
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.0	1.1	1.9	1.0	<1.0	1.0	<1.0	1.0	5843960
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	0.50	<0.50	0.50	<0.50	0.50	5843960
Acid Extractable Strontium (Sr)	mg/kg	<5.0	<5.0	<5.0	<5.0	5.0	5.5	5.0	<5.0	5.0	5843960
Acid Extractable Thallium (Tl)	mg/kg	0.13	0.12	0.11	0.12	0.10	0.16	0.10	0.12	0.10	5843960
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	5843960
Acid Extractable Uranium (U)	mg/kg	0.98	0.49	0.79	0.86	0.10	1.4	0.10	1.0	0.10	5843960
Acid Extractable Vanadium (V)	mg/kg	22	40	21	32	2.0	21	2.0	21	2.0	5843960
Acid Extractable Zinc (Zn)	mg/kg	52	44	61	52	5.0	70	5.0	62	5.0	5843960

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IHW187		
Sampling Date		2018/11/15		
COC Number		D 37643		
	UNITS	**FM TP 21**	**RDL**	**QC Batch**
Metals				
Acid Extractable Aluminum (Al)	mg/kg	11000	10	5843960
Acid Extractable Antimony (Sb)	mg/kg	2.7	2.0	5843960
Acid Extractable Arsenic (As)	mg/kg	2200	20	5843960
Acid Extractable Barium (Ba)	mg/kg	14	5.0	5843960
Acid Extractable Beryllium (Be)	mg/kg	<2.0	2.0	5843960
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.0	5843960
Acid Extractable Boron (B)	mg/kg	<50	50	5843960
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.30	5843960
Acid Extractable Chromium (Cr)	mg/kg	15	2.0	5843960
Acid Extractable Cobalt (Co)	mg/kg	<1.0	1.0	5843960
Acid Extractable Copper (Cu)	mg/kg	2.8	2.0	5843960
Acid Extractable Iron (Fe)	mg/kg	24000	50	5843960
Acid Extractable Lead (Pb)	mg/kg	14	0.50	5843960
Acid Extractable Lithium (Li)	mg/kg	27	2.0	5843960
Acid Extractable Manganese (Mn)	mg/kg	190	2.0	5843960
Acid Extractable Mercury (Hg)	mg/kg	1.9	0.10	5843960
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	2.0	5843960
Acid Extractable Nickel (Ni)	mg/kg	2.9	2.0	5843960
Acid Extractable Rubidium (Rb)	mg/kg	11	2.0	5843960
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.0	5843960
Acid Extractable Silver (Ag)	mg/kg	<0.50	0.50	5843960
Acid Extractable Strontium (Sr)	mg/kg	<5.0	5.0	5843960
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.10	5843960
Acid Extractable Tin (Sn)	mg/kg	<2.0	2.0	5843960
Acid Extractable Uranium (U)	mg/kg	0.27	0.10	5843960
Acid Extractable Vanadium (V)	mg/kg	15	2.0	5843960
Acid Extractable Zinc (Zn)	mg/kg	37	5.0	5843960

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		IHW188	IHW189	IHW190	IHW191	IHW192		
Sampling Date		2018/11/15	2018/11/15	2018/11/15	2018/11/15	2018/11/15		
COC Number		D 37643	D 37643	D 37643	D 37643	D 37643		
	UNITS	**FM SW 1**	**FM SW 2**	**FM SW 3**	**FM SW 4**	**FM SW 5**	**RDL**	**QC Batch**
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	5881274

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

Maxxam ID		IHW188	IHW189	IHW190	IHW191	IHW192		
Sampling Date		2018/11/15	2018/11/15	2018/11/15	2018/11/15	2018/11/15		
COC Number		D 37643	D 37643	D 37643	D 37643	D 37643		
	UNITS	**FM SW 1**	**FM SW 2**	**FM SW 3**	**FM SW 4**	**FM SW 5**	**RDL**	**QC Batch**
Metals								
Total Aluminum (Al)	ug/L	220	210	180	270	320	5.0	5846049
Total Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5846049
Total Arsenic (As)	ug/L	18	15	1.2	40	<1.0	1.0	5846049
Total Barium (Ba)	ug/L	3.0	2.9	2.8	2.7	2.4	1.0	5846049
Total Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5846049
Total Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5846049
Total Boron (B)	ug/L	<50	<50	<50	<50	<50	50	5846049
Total Cadmium (Cd)	ug/L	0.015	0.014	0.013	0.015	<0.010	0.010	5846049
Total Calcium (Ca)	ug/L	1200	1100	600	2000	790	100	5846049
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	7.6	1.0	5846049
Total Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	0.48	0.42	0.40	5846049
Total Copper (Cu)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5846049
Total Iron (Fe)	ug/L	360	330	200	590	460	50	5846049
Total Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5846049
Total Magnesium (Mg)	ug/L	400	390	370	420	380	100	5846049
Total Manganese (Mn)	ug/L	83	77	47	130	85	2.0	5846049
Total Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5846049
Total Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5846049
Total Phosphorus (P)	ug/L	<100	<100	<100	<100	<100	100	5846049
Total Potassium (K)	ug/L	250	250	250	260	160	100	5846049
Total Selenium (Se)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5846049
Total Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5846049
Total Sodium (Na)	ug/L	2600	2600	2500	2700	2600	100	5846049
Total Strontium (Sr)	ug/L	6.8	6.5	5.5	8.2	6.0	2.0	5846049
Total Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5846049
Total Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5846049
Total Titanium (Ti)	ug/L	<2.0	2.2	2.2	2.8	3.1	2.0	5846049
Total Uranium (U)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5846049
Total Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5846049
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	5846049

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

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

Package 1	2.0°C

Revised Report: Mercury analysis added to samples IHW188-192 as requested by Eric Arseneau.2018/12/10 MMC

Results relate only to the items tested.

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Maxxam Job #: B8U6745
Report Date: 2018/12/12

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: 121619250

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5843856	Acid Extractable Aluminum (Al)	2018/11/20					<10	mg/kg	0.77	35
5843856	Acid Extractable Antimony (Sb)	2018/11/20	98	75 - 125	97	75 - 125	<2.0	mg/kg	1.0	35
5843856	Acid Extractable Arsenic (As)	2018/11/20	NC	75 - 125	101	75 - 125	<2.0	mg/kg	3.1	35
5843856	Acid Extractable Barium (Ba)	2018/11/20	101	75 - 125	98	75 - 125	<5.0	mg/kg	2.0	35
5843856	Acid Extractable Beryllium (Be)	2018/11/20	99	75 - 125	98	75 - 125	<2.0	mg/kg	NC	35
5843856	Acid Extractable Bismuth (Bi)	2018/11/20	103	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35
5843856	Acid Extractable Boron (B)	2018/11/20	98	75 - 125	101	75 - 125	<50	mg/kg	NC	35
5843856	Acid Extractable Cadmium (Cd)	2018/11/20	99	75 - 125	102	75 - 125	<0.30	mg/kg	NC	35
5843856	Acid Extractable Chromium (Cr)	2018/11/20	96	75 - 125	98	75 - 125	<2.0	mg/kg	0.76	35
5843856	Acid Extractable Cobalt (Co)	2018/11/20	97	75 - 125	98	75 - 125	<1.0	mg/kg	NC	35
5843856	Acid Extractable Copper (Cu)	2018/11/20	94	75 - 125	95	75 - 125	<2.0	mg/kg	12	35
5843856	Acid Extractable Iron (Fe)	2018/11/20					<50	mg/kg	1.1	35
5843856	Acid Extractable Lead (Pb)	2018/11/20	98	75 - 125	98	75 - 125	<0.50	mg/kg	3.2	35
5843856	Acid Extractable Lithium (Li)	2018/11/20	104	75 - 125	99	75 - 125	<2.0	mg/kg	2.9	35
5843856	Acid Extractable Manganese (Mn)	2018/11/20	NC	75 - 125	98	75 - 125	<2.0	mg/kg	2.5	35
5843856	Acid Extractable Mercury (Hg)	2018/11/20	95	75 - 125	101	75 - 125	<0.10	mg/kg	NC	35
5843856	Acid Extractable Molybdenum (Mo)	2018/11/20	101	75 - 125	97	75 - 125	<2.0	mg/kg	NC	35
5843856	Acid Extractable Nickel (Ni)	2018/11/20	94	75 - 125	97	75 - 125	<2.0	mg/kg	2.3	35
5843856	Acid Extractable Rubidium (Rb)	2018/11/20	98	75 - 125	98	75 - 125	<2.0	mg/kg	6.1	35
5843856	Acid Extractable Selenium (Se)	2018/11/20	100	75 - 125	103	75 - 125	<1.0	mg/kg	NC	35
5843856	Acid Extractable Silver (Ag)	2018/11/20	96	75 - 125	98	75 - 125	<0.50	mg/kg	NC	35
5843856	Acid Extractable Strontium (Sr)	2018/11/20	100	75 - 125	101	75 - 125	<5.0	mg/kg	NC	35
5843856	Acid Extractable Thallium (Tl)	2018/11/20	100	75 - 125	99	75 - 125	<0.10	mg/kg	5.7	35
5843856	Acid Extractable Tin (Sn)	2018/11/20	106	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35
5843856	Acid Extractable Uranium (U)	2018/11/20	100	75 - 125	98	75 - 125	<0.10	mg/kg	1.6	35
5843856	Acid Extractable Vanadium (V)	2018/11/20	98	75 - 125	99	75 - 125	<2.0	mg/kg	0.21	35
5843856	Acid Extractable Zinc (Zn)	2018/11/20	92	75 - 125	98	75 - 125	<5.0	mg/kg	3.5	35
5843960	Acid Extractable Aluminum (Al)	2018/11/19					<10	mg/kg		
5843960	Acid Extractable Antimony (Sb)	2018/11/19	105	75 - 125	104	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Arsenic (As)	2018/11/19	101	75 - 125	99	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Barium (Ba)	2018/11/19	NC	75 - 125	100	75 - 125	<5.0	mg/kg		
5843960	Acid Extractable Beryllium (Be)	2018/11/19	98	75 - 125	99	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Bismuth (Bi)	2018/11/19	100	75 - 125	105	75 - 125	<2.0	mg/kg		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5843960	Acid Extractable Boron (B)	2018/11/19	99	75 - 125	101	75 - 125	<50	mg/kg		
5843960	Acid Extractable Cadmium (Cd)	2018/11/19	104	75 - 125	102	75 - 125	<0.30	mg/kg		
5843960	Acid Extractable Chromium (Cr)	2018/11/19	99	75 - 125	98	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Cobalt (Co)	2018/11/19	98	75 - 125	99	75 - 125	<1.0	mg/kg		
5843960	Acid Extractable Copper (Cu)	2018/11/19	NC	75 - 125	96	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Iron (Fe)	2018/11/19					<50	mg/kg		
5843960	Acid Extractable Lead (Pb)	2018/11/19	95	75 - 125	100	75 - 125	<0.50	mg/kg		
5843960	Acid Extractable Lithium (Li)	2018/11/19	103	75 - 125	101	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Manganese (Mn)	2018/11/19	NC	75 - 125	102	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Mercury (Hg)	2018/11/19	96	75 - 125	104	75 - 125	<0.10	mg/kg		
5843960	Acid Extractable Molybdenum (Mo)	2018/11/19	99	75 - 125	103	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Nickel (Ni)	2018/11/19	96	75 - 125	98	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Rubidium (Rb)	2018/11/19	97	75 - 125	99	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Selenium (Se)	2018/11/19	104	75 - 125	101	75 - 125	<1.0	mg/kg		
5843960	Acid Extractable Silver (Ag)	2018/11/19	97	75 - 125	98	75 - 125	<0.50	mg/kg		
5843960	Acid Extractable Strontium (Sr)	2018/11/19	NC	75 - 125	100	75 - 125	<5.0	mg/kg		
5843960	Acid Extractable Thallium (Tl)	2018/11/19	92	75 - 125	101	75 - 125	<0.10	mg/kg		
5843960	Acid Extractable Tin (Sn)	2018/11/19	105	75 - 125	107	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Uranium (U)	2018/11/19	101	75 - 125	100	75 - 125	<0.10	mg/kg		
5843960	Acid Extractable Vanadium (V)	2018/11/19	103	75 - 125	100	75 - 125	<2.0	mg/kg		
5843960	Acid Extractable Zinc (Zn)	2018/11/19	NC	75 - 125	100	75 - 125	<5.0	mg/kg		
5846049	Total Aluminum (Al)	2018/11/20	99	80 - 120	99	80 - 120	<5.0	ug/L	17	20
5846049	Total Antimony (Sb)	2018/11/20	105	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
5846049	Total Arsenic (As)	2018/11/20	100	80 - 120	100	80 - 120	<1.0	ug/L	0.23	20
5846049	Total Barium (Ba)	2018/11/20	95	80 - 120	95	80 - 120	<1.0	ug/L	1.7	20
5846049	Total Beryllium (Be)	2018/11/20	102	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
5846049	Total Bismuth (Bi)	2018/11/20	101	80 - 120	102	80 - 120	<2.0	ug/L	NC	20
5846049	Total Boron (B)	2018/11/20	106	80 - 120	107	80 - 120	<50	ug/L	NC	20
5846049	Total Cadmium (Cd)	2018/11/20	101	80 - 120	100	80 - 120	<0.010	ug/L	4.6	20
5846049	Total Calcium (Ca)	2018/11/20	101	80 - 120	104	80 - 120	<100	ug/L	0.072	20
5846049	Total Chromium (Cr)	2018/11/20	100	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
5846049	Total Cobalt (Co)	2018/11/20	99	80 - 120	102	80 - 120	<0.40	ug/L	NC	20
5846049	Total Copper (Cu)	2018/11/20	97	80 - 120	101	80 - 120	<2.0	ug/L	0.33	20

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			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5846049	Total Iron (Fe)	2018/11/20	NC	80 - 120	104	80 - 120	<50	ug/L	0.41	20
5846049	Total Lead (Pb)	2018/11/20	96	80 - 120	97	80 - 120	<0.50	ug/L	2.3	20
5846049	Total Magnesium (Mg)	2018/11/20	102	80 - 120	105	80 - 120	<100	ug/L	0.41	20
5846049	Total Manganese (Mn)	2018/11/20	NC	80 - 120	102	80 - 120	<2.0	ug/L	0.24	20
5846049	Total Molybdenum (Mo)	2018/11/20	NC	80 - 120	103	80 - 120	<2.0	ug/L	NC	20
5846049	Total Nickel (Ni)	2018/11/20	100	80 - 120	103	80 - 120	<2.0	ug/L	NC	20
5846049	Total Phosphorus (P)	2018/11/20	108	80 - 120	106	80 - 120	<100	ug/L	2.0	20
5846049	Total Potassium (K)	2018/11/20	104	80 - 120	106	80 - 120	<100	ug/L	1.3	20
5846049	Total Selenium (Se)	2018/11/20	99	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
5846049	Total Silver (Ag)	2018/11/20	100	80 - 120	99	80 - 120	<0.10	ug/L	NC	20
5846049	Total Sodium (Na)	2018/11/20	NC	80 - 120	102	80 - 120	<100	ug/L	0.21	20
5846049	Total Strontium (Sr)	2018/11/20	NC	80 - 120	101	80 - 120	<2.0	ug/L	0.97	20
5846049	Total Thallium (Tl)	2018/11/20	101	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
5846049	Total Tin (Sn)	2018/11/20	106	80 - 120	102	80 - 120	<2.0	ug/L	NC	20
5846049	Total Titanium (Ti)	2018/11/20	107	80 - 120	104	80 - 120	<2.0	ug/L	NC	20
5846049	Total Uranium (U)	2018/11/20	104	80 - 120	103	80 - 120	<0.10	ug/L	0.34	20
5846049	Total Vanadium (V)	2018/11/20	102	80 - 120	104	80 - 120	<2.0	ug/L	NC	20
5846049	Total Zinc (Zn)	2018/11/20	99	80 - 120	100	80 - 120	<5.0	ug/L	0.16	20
5881274	Total Mercury (Hg)	2018/12/12	101	80 - 120	105	80 - 120	<0.013	ug/L	NC	20

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

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

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

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

NC (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).

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Maxxam Job #: B8U6745
Report Date: 2018/12/12

Stantec Consulting Ltd
Client Project #: 121619250

VALIDATION SIGNATURE PAGE

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

Eric Dearman, Scientific Specialist

Mike MacGillivray, Scientific Specialist (Inorganics)

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ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D37649 Page 1 of 3

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: STANTEC	Company Name:	Quotation #:	☐ Regular TAT (5 business days) Most analyses
Contact Name: MORGAN SCHAUERTE	Contact Name:	P.O. #:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	Address:	Project #: 121619250	IF RUSH please specify date (Surcharges will be applied)
Postal Code:	Postal Code:	Site Location:	DATE REQUIRED:
Phone: Fax:	Phone: Fax:	Site #:	
Email: MORGAN.SCHAUERTE@STANTEC.COM	Email:	Sampled By:	

Laboratory Use Only

CUSTODY SEAL Present	CUSTODY SEAL Intact	COOLER TEMPERATURES	COOLER TEMPERATURES
		2, 1, 3	

COOLING MEDIA PRESENT (Y) / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water): Total Digest (Default Method) for well water & surface water	Metals (Water): Dissolved for ground water	Metals (Water): Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil): Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil): Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil): Mercury Low level by Cold Vapour AA	Metals (Soil): Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.coli (Count)		HOLD- DO NOT ANALYZE	Regulatory Requirements (Specify) / COMMENTS
1	FM TP 1	2018/11/13	AM		1								✓															
2	FM TP 2	"	AM		1								✓															
3	FM TP 3	"	AM		1								✓															
4	FM TP 4	"	AM		1								✓															
5	FM TP 5	"	AM		1								✓															
6	FM TP 6 SA-1	"	AM		1								✓															
7	FM TP 6 SA-2	"	AM		1								✓															
8	FM TP 7	"	PM		1								✓															
9	FM TP 8 SA-1	"	PM		1								✓															
10	FM TP 8 SA-2	"	PM		1								✓															

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	2018/11/16					B8U6745
Justin Ogden						

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CHAIN OF CUSTODY RECORD

COC #: D 37642 Page 2 of 3

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: STANTEC	Company Name:	Quotation #:	☐ Regular TAT (5 business days) Most analyses
Contact Name: MORGAN SCHAUERTE	Contact Name:	P.O. #:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	Address:	Project #: 121619250	IF RUSH please specify date (Surcharges will be applied)
Postal Code:	Postal Code:	Site Location:	DATE REQUIRED:
Phone: Fax:	Phone: Fax:	Site #:	
Email: MORGAN.SCHAUERTE@stantec.com	Email:	Sampled By:	

Laboratory Use Only

CUSTODY SEAL Present	CUSTODY SEAL Intact	COOLER TEMPERATURES	COOLER TEMPERATURES
		2, 1, 3	

COOLING MEDIA PRESENT (Y) N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS [Total Metals] Well / Surface water	RCAP-MS [Dissolved Metals] Ground waters	Metals (Water): Total Digest (Default Method) for well water & surface water	Metals (Water): Dissolved for ground water	Metals (Water): Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil): Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil): Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil): Mercury Low level by Cold Vapour AA	Metals (Soil): Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX ,C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.Coli (Count)		HOLD- DO NOT ANALYZE	Regulatory Requirements (Specify) / COMMENTS
1	FM TP 9	2018/11/13	PM		1								✓															
2	FM TP 10	"	PM		1								✓															
3	FM TP 11	2018/11/14	AM		1								✓															
4	FM TP 12	"	AM		1								✓															
5	FM TP 13	"	AM		1								✓															
6	FM TP 14	"	AM		1								✓															
7	FM TP 15	"	AM		1								✓															
8	FM TP 17	"	AM		1								✓															
9	FM TP 18	"	PM		1								✓															
10	FM TP 19	"	PM		1								✓															

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
Justin Ogden	2018/11/16					B8U6745

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CHAIN OF CUSTODY RECORD

COC #: D 37643 Page 3 of 3

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: STANTEC	Company Name:	Quotation #:	☐ Regular TAT (5 business days) Most analyses
Contact Name: MORGAN SCHAVERTE	Contact Name:	P.O. #:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	Address:	Project #: 121619250	IF RUSH please specify date (Surcharges will be applied)
Postal Code:	Postal Code:	Site Location:	DATE REQUIRED:
Phone: Fax:	Phone: Fax:	Site #:	
Email: MORGAN.SCHAVERTE@STANTEC.COM	Email:	Sampled By:	

Laboratory Use Only

CUSTODY SEAL Present	CUSTODY SEAL Intact	COOLER TEMPERATURES	COOLER TEMPERATURES
		2.1.3	

COOLING MEDIA PRESENT (Y) N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS [Total Metals] Well / Surface water	RCAP-MS [Dissolved Metals] Ground waters	Metals (Water): Total Digest (Default Method) for well water & surface water	Metals (Water): Dissolved for ground water	Metals (Water): Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil): Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil): Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil): Mercury Low level by Cold Vapour AA	Metals (Soil): Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX ,C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.Coli (Count)		HOLD- DO NOT ANALYZE	Regulatory Requirements (Specify) / COMMENTS
1	FM TP 20	2018/11/15	AM		1								✓															
2	FM TP 21	"	AM		1								✓															
3																												
4	FM SW 1	"	AM		1					✓																		
5	FM SW 2	"	AM		1					✓																		
6	FM SW 3	"	AM		1					✓																		
7	FM SW 4	"	AM		1					✓																		
8	FM SW 5	"	AM		1					✓																		
9																												
10																												

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JUSTIN OGDEN	2018/11/16					B8U6745

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