BC Geological Survey
Assessment Report
38146

**Ministry of Energy, Mines & Petroleum Resources**
Mining & Minerals Division
BC Geological Survey

**Assessment Report**
**Title Page and Summary**

**TYPE OF REPORT [type of survey(s)]:** Geological Assessment and Geochemical Sampling
Sustut Property, Omenica Mining Division, British Columbia

**TOTAL COST:** $41, 905.03

**AUTHOR(S):** Stephen Wetherup

**SIGNATURE(S):** S. Wetherup

**NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):** July 16 to 21.

**YEAR OF WORK:** 2018

**STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S):** 5726990

**PROPERTY NAME:** Sustut Property

**CLAIM NAME(S) (on which the work was done):** 1057904, 1057905, 1057906, 1057907

**COMMODITIES SOUGHT:** Cu, Mo, Au, Ag

**MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:** 094E 001, 126, 234, 168, 065, 171, 170, 169, 187

**MINING DIVISION:** Omineca

**NTS/BCGS:** 094 D/10

**LATITUDE:** 56 ° 38.5 ' " **LONGITUDE:** 126 ° 41.5 " **(at centre of work)**

**OWNER(S):**
1) Freeport-McMoRan Mineral Properties Canada, Ltd.
2)

**MAILING ADDRESS:**
Suite 1409-409 Granville Street
Vancouver, BC, V6C 1T2

**OPERATOR(S) [who paid for the work]:**
1) Freeport-McMoran Mineral Properties Canada Inc.
2)

**MAILING ADDRESS:**
Suite 1409-409 Granville Street
Vancouver, BC, V6C 1T2

**PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):**
Moosevale Fm, Savage Mountain Fm, Dewar Fm, Asika Group, andesitic volcaniclastic, andesitic agglomerate, conglomerate, pillow basalt, mafic volcanic, chert, siltstone, limestone, epidote, chlorite, hematite, carbonate, chalcopyrite, bornite

**REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:** 4625, 4700, 4824, 4882, 4883, 5060, 5061, 5062
5063, 5064, 5366, 10340, 25266, 26627, 27141

Next Page

| TYPE OF WORK IN THIS REPORT | EXTENT OF WORK (IN METRIC UNITS) | ON WHICH CLAIMS | PROJECT COSTS APPORTIONED (incl. support) |
|---|---|---|---|
| **GEOLOGICAL (scale, area)** | | | |
| **Ground, mapping** | | | |
| **Photo interpretation** | | | |
| **GEOPHYSICAL (line-kilometres)** | | | |
| Ground | | | |
| **Magnetic** | | | |
| **Electromagnetic** | | | |
| **Induced Polarization** | | | |
| **Radiometric** | | | |
| **Seismic** | | | |
| **Other** | | | |
| **Airborne** | | | |
| **GEOCHEMICAL (number of samples analysed for...)** | | | |
| **Soil** | | | |
| **Silt** | 16 samples | 1057904, 1057905, 1057906, 1057907 | $20,055.06 |
| **Rock** | 20 samples | | $20,055.06 |
| **Other** | | | |
| **DRILLING (total metres; number of holes, size)** | | | |
| **Core** | | | |
| **Non-core** | | | |
| **RELATED TECHNICAL** | | | |
| **Sampling/assaying** | 16 silt, 20 rock | | $1,794.91 |
| **Petrographic** | | | |
| **Mineralographic** | | | |
| **Metallurgic** | | | |
| **PROSPECTING (scale, area)** | | | |
| **PREPARATORY / PHYSICAL** | | | |
| **Line/grid (kilometres)** | | | |
| **Topographic/Photogrammetric (scale, area)** | | | |
| **Legal surveys (scale, area)** | | | |
| **Road, local access (kilometres)/trail** | | | |
| **Trench (metres)** | | | |
| **Underground dev. (metres)** | | | |
| **Other** | | | |
| | | **TOTAL COST:** | $41, 905.03 |

# ASSESSMENT REPORT

## GEOLOGICAL ASSESSMENT AND GEOCHEMICAL SAMPLING, SUSTUT PROPERTY

Omineca Mining Division, British Columbia

OWNER AND OPERATOR:

FREEPORT-MCMORAN MINERAL PROPERTIES CANADA INC.
Suite 1409 – 409 Granville Street
Vancouver, British Columbia
V6C 1T2

LOCATED:

210 km north of Smithers, BC
Omineca Mining Division
56°38.5 ' North Lat., 126°41.5' West Long.
NTS: 094 D/10

April 24th, 2019

Prepared By:

WETHERUP GEOLOGICAL CONSULTING
Stephen Wetherup, B.Sc., P.Geo.

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# APPENDICES

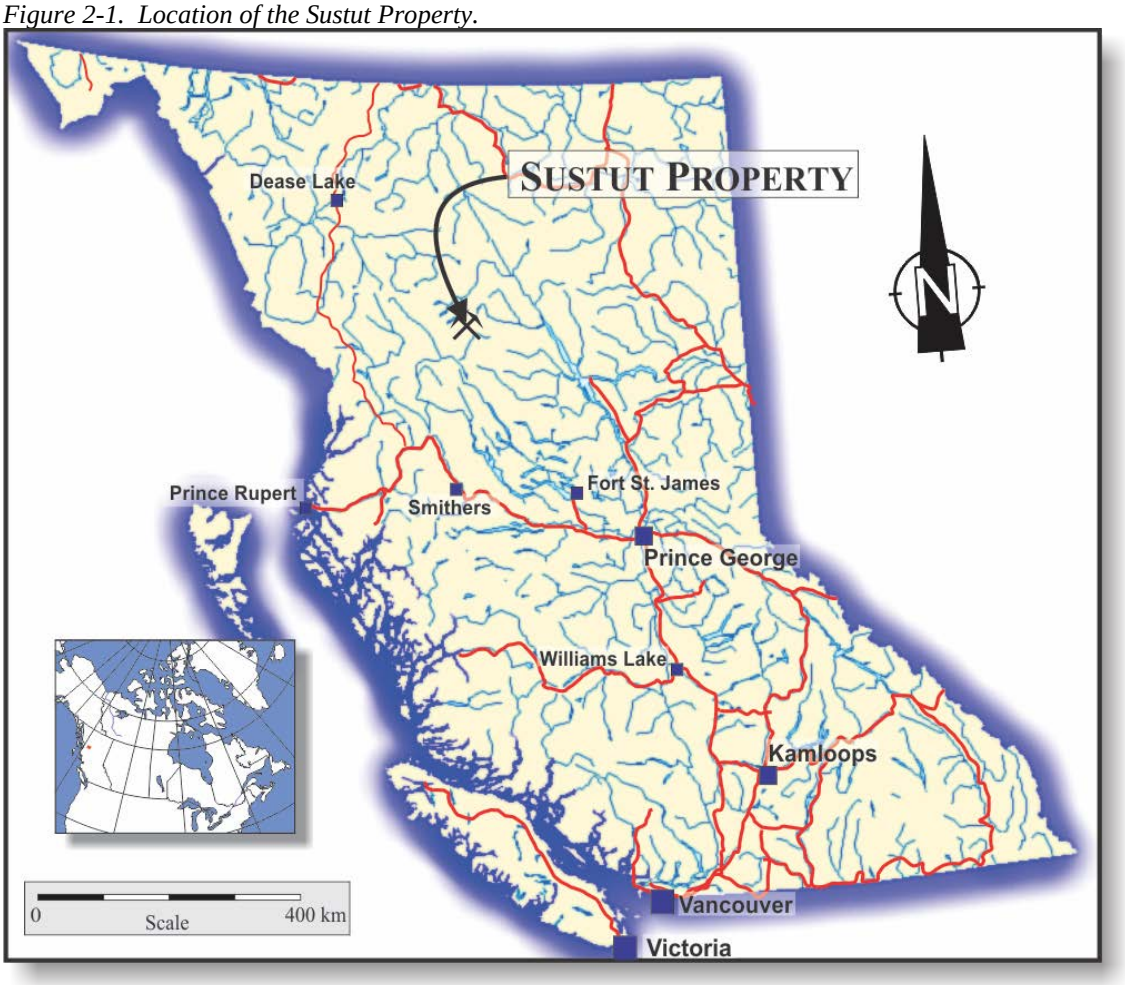
# 1.0 INTRODUCTION

Freeport-McMoRan Mineral Properties Canada Inc. ("FMMP") completed a $41,905.03, CAD exploration program on the Sustut Property, owned 100% by Freeport, in the summer of 2018. Work consisted of reconnaissance rock and silt sampling. The results of the program and interpretations derived from the data constitute the basis of this Assessment Report.

# 2.0 LOCATION AND PROPERTY DESCRIPTION

The Sustut property is in north-central British Columbia ~35 km S of the Kemess copper-gold mine, 400 km NW of Prince George, and 210 km north of Smithers, BC (Figure 2-1). Property co-ordinates for the centre of the claim bloc are 56°38.5' north Latitude and 126°41.5' west Longitude on N.T.S. Map No. 94D/10. The UTM (NAD83) co-ordinates are Zone 9 642020E, 6280693N.

*Figure 2-1. Location of the Sustut Property.*



**Freeport-McMoRan Mineral Properties of Canada Ltd.**

Date: Apr 24, 2019

Drafted by: S. Wetherup

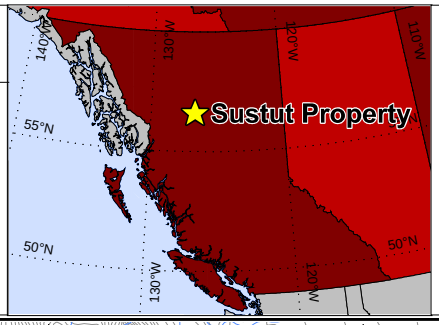
Figure: 2-2

Sustut Project

Claim Map

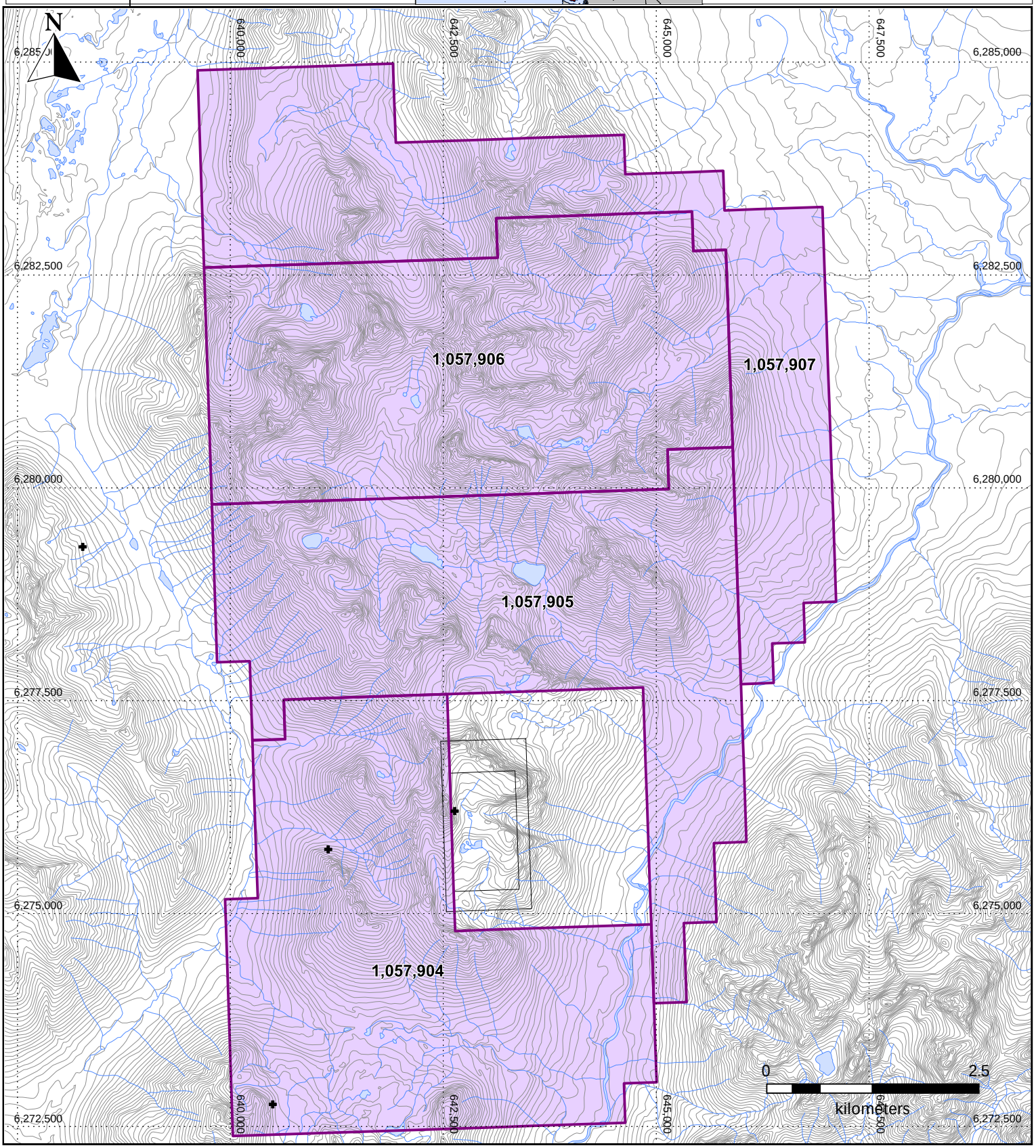
British Columbia, Canada

UTM NAD83 Zone 9




Legend

- Minfile
- Sustut Claims
- Other claims
- Watercourse
- Waterbody
- Elevation contour



The Sustut property is comprised of a contiguous bloc of 4 mineral claims of which Freeport-McMoRan Mineral Properties Canada Inc. (FMC# 284568) is 100% owner (Figure 2-2). The property covers an area of 6834.5 hectares or 68.3 $km^2$. Details of the claims downloaded from the Mineral Titles Online (MTO) website are listed below in Table 2-1. None of the claims have been have been legally surveyed.

*Table 2-1. Mineral tenure summary data for the Sustut Property (January 30th, 2019).*

| Tenure Number | Claim Name | Owner | Issue Date | Good to Date | Area (ha) |
|---|---|---|---|---|---|
| 1057904 | SUSTUT1 | 284568 | 20180124 | 20190124 | 1781.63 |
| 1057905 | SUSTUT2 | 284568 | 20180124 | 20190124 | 1780.14 |
| 1057906 | SUSTUT3 | 284568 | 20180124 | 20190124 | 1778.84 |
| 1057907 | SUSTUT4 | 284568 | 20180124 | 20190124 | 1493.86 |
| | | | | | **6834.47** |

# 3.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

## 3.1 Access

The Sustut property's nearest road access is the Omenica Mining Road which is about 2 km from the northeast corner of the claims. This point can be reached from Prince George, a distance of ~600 km and a drive of 9 to 11 hours. Travel from Prince George is 164 km north along Hwy 97 to Windy Point and then along Hwy 39 toward Mackenzie. Before Mackenzie the Finlay Forest Service Road heads westerly and crosses the southern end of Williston Lake. This road continues northerly along the west side of Williston Lake. Logging activity eventually ceases near Osilinka camp and travel continues north along the Omineca Mining (Kemess) road. At the 400 km mark is the Johannsen Lake camp and another 26 km west from this point is the closest point along the Omenica Road to the Sustut Property.

The Property is approximately 210 km due north of Smithers BC where the property can be directly accessed by helicopter.

## 3.2 Climate and Vegetation

Seasonal temperatures range from lows of -35°C in winter to +30°C in July and August. January and July mean temperatures are -14°C and 15° to 20°C respectively. The property area receives moderate precipitation with winter snow pack reportedly around 1.5 to 2 m. Access to the area is possible from June

to September.

The property is forested with stands of balsam, spruce and pine. Timberline is around 1,500 m. Steeper slopes, especially those prone to avalanches, are often covered with very thick mats of low growing and tangled balsam. Terrain above 1,500 m consists of grassy alpine meadows interspersed with talus on steeper slopes.

### 3.3 Physiography

The Sustut property is situated in the northern Omineca Mountains of northern BC. Slopes on the property are moderate with occasional steep slopes along and at the headwaters of drainages. Topographic relief is ~1200 m, ranging from 1000 m along the Sustut River to just over 2200 m on Savage Mountain in the north central portion of the property.

### 3.4 Infrastructure and Local Resources

The nearest major town centre is Smithers (210 km south) or Prince George (400 km SE) which are both resource (mining, logging, and ranching) based community with an experienced labour force. They can supply fuel, groceries, accommodation and heavy construction equipment and have regular scheduled air and train service. Major electrical transmission lines serve the Kemess mill 35 km to the north and the road that leads to Kemess was the main haul road for concentrate while it was operating.

## 4.0 EXPLORATION HISTORY

Freeport's Sustut Property surrounds claims owned by Selkirk Metals Corp. which cover the "Sustut Deposit" (Minfile 094D63). The vast majority of exploration work in the area has been focussed on the defining the resources on the Sustut Deposit as such much of the work history revolves around this deposit with some work extending onto areas covered by Freeport's claims.

Lord (1948) conducted reconnaissance mapping in the area and described many of the small copper showings in the area. In 1969, Union Oil Ltd. Conducted reconnaissance exploration for petroleum but did not note any mineralization. In 1971, Wesfrob Mining/Falconbridge discovered the Sustut Deposit and followed up with 139 drill holes totalling 17,195 m of AQ core up to 1974. During this time most of the area was staked and several small reconnaissance programs occurred in the area. Virtually no recorded exploration occurred in the area until 1997 when Cross Lake Minerals conducted an evaluation of the resources on the Sustut Deposit and conducted minor rock sampling and prospecting in the area and on the

southern of Freeport's current claims. This work was followed up by Doublestar Resources from 1999 to 2002 with additional drilling on the Sustut Deposit and a re-evaluation of the resources.

| Year | Operator | Area | Work summary | ARIS |
|---|---|---|---|---|
| 1973 | Cons. Standard Mines | SW of claims | mapping, 215 silt, 14 soil, 10 rock (Cu, Ag) | 4625 |
| 1973 | Wesfrob Mines | SW of claims | aeromag, HEM | 4700 |
| 1973 | Benson Mines Ltd. | Sustut River (NE corner) | 15 silt, 454 soil | 4824 |
| 1973 | Brascan Res. | Topper showing, W claims | 970 soil, 49 silt, ground mag | 4882 |
| 1973 | Brascan Res. | Sustut River (NE corner) | 1854 soil, 40 silt, mapping | 4883 |
| 1974 | Wesfrob Mines/ Falconbridge | Sustut deposit | 139 ddh, 17,195 m | 5060, 61, 62, 63, 64 |
| 1974 | Brascan Res. | Topper showing | 25 rock, mapping, 8 trenches | 5366 |
| 1981 | Golden Rule Res. Ltd. | SE Sustut Property | 61 silt, prospecting | 10340 |
| 1997 | Cross Lake Min. Ltd | S half of Property | 14 rock, prospecting | 25266 |
| 2000 | Doublestar Res. Ltd. | Sustut deposit | 22 ddh, 1967.7 m | 26627 |
| 2002 | Doublestar Res. Ltd. | Sustut deposit | 27 ddh, 2290.4 m | 27141 |

*Table 4-1. Summary of work programs completed on the Sustut Property and surrounding area.*

# 5.0 GEOLOGICAL SETTING

## 5.1 Regional Geology

The geology of the regions surrounding the Sustut Property is dominated by basement rocks belonging to the exotic island-arc Stikine Terrane. There are three major episodes of volcanism occurred within the Stikine Terrane, starting with Permian bi-modal volcanism, clastic sedimentary rocks and limestone deposition characteristic of the Asitka Group. Built upon the Asitka Group is the late Triassic, Takla/Stuhini Group largely mafic to andesitic sub-aqueous volcanic rocks and sedimentary rocks and locally subaerial coarse clastic and volcaniclastic rocks, which host the Cu-Ag mineralization in the Sustut Deposit. Overlying the Takla Group rocks are the sub-aerial andesite to rhyolite volcanic flows and pyroclastic rocks and clastic sedimentary rocks of the early Jurassic Hazelton Group.

The Stikine Terrane is thought to have obducted/docked with North America in the middle Jurassic and subsequent post-collisional ("overlap") mid to late Jurassic Bowser Group lithic arenite and shale (commonly thrusted and folded), followed by Cretaceous chert pebble conglomerate and sandstone deposition of the Sustut Formation, which are generally gently dipping to horizontal.

## 5.2 Property Geology

The Sustut Property is underlain entirely by Stikine Terrane rocks with Asitka Group sedimentary rocks

**Freeport-McMoRan Mineral Properties of Canada Ltd.**

Date: Apr 24, 2019

Drafted by: S. Wetherup

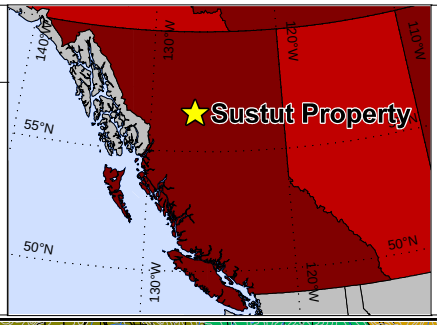
Figure: 5-1

Sustut Project

Regional Geology

British Columbia, Canada

UTM NAD83 Zone 9




Legend

- Sustut Claims
- Other claims
- Watercourse
- Waterbody
- Elevation contour (100 m)

Geological Terranes

- Tertiary Volcanic Rocks
- Post Accretionary Intrusions
- Bowser and Sustut Group
- Stikine Terrane
- Cache Creek Terrane
- Quesnel Terrane
- Cariboo/Cassiar

Minfile Deposit Types

- Porphyry Cu-Au
- Alkalic Porphyry Cu-Au
- Porphyry Mo
- Epithermal Au-Ag
- Au-quartz veins
- Polymetallic Veins
- Skarn
- VMS
- Volcanic redbed Cu

625,000 650,000 675,000

6,300,000 6,275,000 6,250,000 6,225,000

N

0 20 kilometers

**Freeport-McMoRan Mineral Properties of Canada Ltd.**

Date: Apr 24, 2019

Drafted by: S. Wetherup

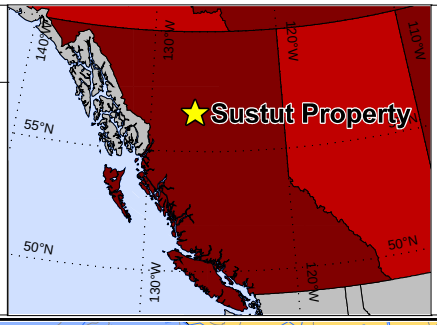
Figure: 5-2

Sustut Project

Regional Geology

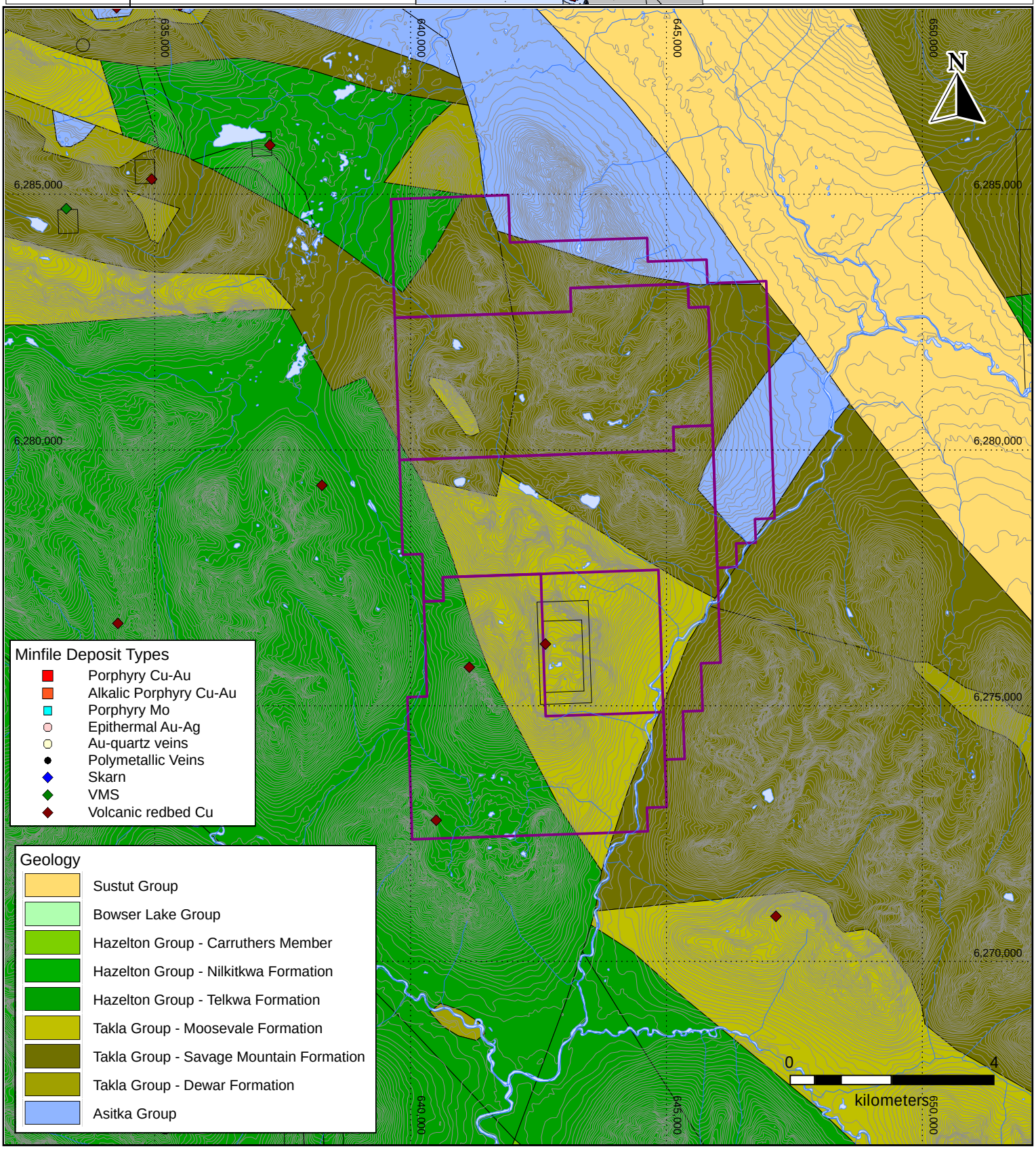
British Columbia, Canada

UTM NAD83 Zone 9




Legend

- Sustut Claims
- Other claims
- Watercourse
- Waterbody
- Elevation contour (20 m)



(siliceous siltstone/chert) and limestone at the north-eastern most ridges. In fault contact and to the south of the Asitka Group are Savage Mountain Formation pillowed basalt and volcaniclastic rocks which are in turn overlain by Moosevale Formation polymictic andesite conglomerate, agglomerate and lithic arenite (andesitic) interbedded with andesite tuff (Figure 5-2).

The Moosevale Formation is host to the Sustut Deposit and has been divided into several members by different workers. Characteristic with the unit is the conglomerates and agglomerate with clasts comprised exclusively of andesite fragments which are both dark green (with epidote) and reddish brown and commonly containing 1-5% plagioclase, 1 to 3 mm plagioclase phenocrysts. In the upper units within this sequence is a pronounced red-brown dominated conglomerate/agglomerate ("Upper Red Agglomerate; Gray, 2003) with the copper mineralization occurring at its base and mainly within the green conglomerate/agglomerate which contains abundant calcite-epidote veins ("Upper Green Agglomerate"; Gray, 2003).

### *5.2.1 Structural Geology*

Generally, bedding on the property dips shallowly southwestward exposing the oldest units on NE side of the property and the youngest on the SW. There are numerous minor faults on the property many of which are either strike-slip (020 to N strike) or normal block faults which shuffle this general monocline, but several SW dipping shallow thrust/reverse faults were observed which as well are often cut by the more through-going strike-slip and normal faults.

## 6.0 MINERALIZATION

The dominant mineralization on Freeport's property are rare bornite/chalcocite-calcite-epidote veins and veinlets which occur in the upper Moosevale sequences on the south end of the property. Two Minfile occurrences are on the property, 094D067 the A Bornite and 094D057 the A Chalcocite showing both of which are copper bearing epidote-calcite vein showings.

## 7.0 EXPLORATION

Exploration in 2018 was aimed at investigating the nature of magnetic anomalism from recent GeoscienceBC regional airborne magnetic survey data and if there is possible Cu-Au porphyry potential on the property. The geological investigation and sampling were conducted by a group of 4 working in pairs

**Freeport-McMoRan Mineral Properties of Canada Ltd.**

Date: Apr 24, 2019

Drafted by: S. Wetherup

Figure: 7-1

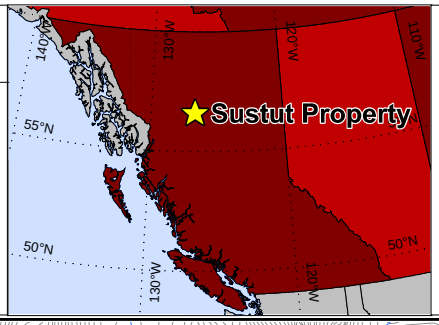
Sustut Project

Rock and Silt Samples

Sample Numbers

British Columbia, Canada

UTM NAD83 Zone 9




Legend

- Sustut Claims
- Other claims
- Watercourse
- Waterbody
- Elevation contour (20 m)

Samples (Sample Number)

- Bedrock
- Talus
- Silt

N

640,000

645,000

6,280,000

6,275,000

100171 100170

100354 100306

100251 100167 100169 100168

100304

100253 100252 100177 100176 100178

100406 100303

100405 100403 100404

100401 100402 100161 100302 100301

B

100163 100162 100164 100165 100166

100409 100310

100175

100173 100172

SUSTUT

100307 100355

100257 100183 100255 100256

100174

A CHALCOCITE

100308

0 2.4 kilometers

Minfile Deposit Types

- Porphyry Cu-Au
- Alkalic Porphyry Cu-Au
- Porphyry Mo
- Epithermal Au-Ag
- Au-quartz veins
- Polymetallic Veins
- Skarn
- VMS
- Volcanic redbed Cu

**Freeport-McMoRan Mineral Properties of Canada Ltd.**

Date: Apr 24, 2019

Drafted by: S. Wetherup

Figure: 7-2

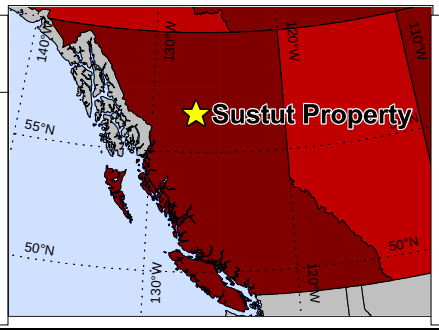
Sustut Project

Rock and Silt Samples

Cu and Au Analyses

British Columbia, Canada

UTM NAD83 Zone 9




Legend

- Sustut Claims
- Other claims
- Watercourse
- Waterbody
- Elevation contour (20 m)

Samples (Cu ppm, Au ppb)

- Bedrock
- Talus
- Silt

N

640,000
645,000
6,280,000
6,275,000

7820.3, 12
121, 6
100.4, 5
68, 5
19.1, 4
129, 5
170.6, 3
170, 4
165, 8
1359.5, 43
20.9, 6
97, 3
157.2, 4
163.9, 11
0, 0
194, 8
0, 0
0, 0
0, 0
0, 0
0, 0
58.6, 8
95, 5
144, 6
132, 7
91, 6
29.2, 5
1430.9, 35
108, 3
B
0, 0
128, 4
106, 5
29.9, 3
213, 4
SUSTUT
110, 6
10000, 7
10000, 4
4037.7, 3
10000, 36
10000, 39
49, 8
A CHALCOCITE
55, 6

Minfile Deposit Types

- Porphyry Cu-Au
- Alkalic Porphyry Cu-Au
- Porphyry Mo
- Epithermal Au-Ag
- Au-quartz veins
- Polymetallic Veins
- Skarn
- VMS
- Volcanic redbed Cu

0 2.4 kilometers

and investigating most of the major drainages on the Property over a period of 5 days.

### 7.1 Geological Assessment

Rocks regionally mapped as Asikta Group on the NE end of the property consist of some limestone bodies but generally highly siliceous siltstone interbedded with minor shale and siliceous tuff. These fine-grained clastic units may be Dewar formation (part of Takla Group) as they appear to underlie Savage Mountain formation pillowed basalt units with little structural relocation. As mentioned, these rocks are highly silicified with abundant chlorite along fractures and local epidote. Locally, these appear to be possibly exhalative chert horizons.

Overlying the "Dewar Fm" and occurring in the northcentral portion of the property are the Savage Mountain Formation as well as Savage Mountain itself. It is a thick succession of mafic flows many of which are pillowed with moderate chlorite-epidote-carbonate alteration and possible spilitic (albite-chlorite) alteration of the pillow margins and inter-pillow matrices. Rare malachite stains were noted in this unit.

Finally, the conglomerate, agglomerate, lithic arenite and tuffaceous units of the Moosevale Formation rocks overlie the Savage Mountain Fm on the southern half of the property and are moderately prehnite/chlorite, epidote, calcite, or hematite-calcite altered. Several chalcocite+/-bornite-calcite-epidote fracture fillings were noted in stream cobbles, talus or in outcrop.

### 7.2 Rock Sampling

As the focus was to investigate if there is alteration or veining which may suggest porphyry Cu-Au mineralization in the area, not only were bedrock samples taken but also talus, till cobbles and cobbles in creeks provided they were in relatively small side drainages and drainages from the property. Rock samples collected are all selected grab samples. Rocks were broken into ~0.5-2 kg size fragments and placed into plastic sample bags along with a waterproof sample tag with the unique sample identification number. UTM location, sample description and other geological notes were recorded for each sample before shipping the samples to the laboratory for analysis.

Most samples were submitted for four-acid digestion, multi-element ICP-MS analysis and all samples were analyzed for clay/alteration mineralogy by short-wave IR Terraspec by Freeport employees. Locations of samples are presented in Figure 7-1 and Cu-Au assay results in Figure 7-2. A summary description of the samples and analytical certificates are in Appendices 1 and 2, respectively.

### 7.3 Stream Sediment Sampling

Stream sediment samples were collected from active water drainages by using a shovel and 2 mm sieve. A "pan" (2-4 kg) of sand and smaller material was collected at each site from a central gravel bar within the flood plain of each creek and placed into a cloth bag along with a waterproof sample tag with the unique sample identification number. This sample number along with the UTM coordinate of the sample were recorded as well as geological and/or site description comments. Samples were dried and sent to Bureau Veritas' laboratory in Vancouver, BC and analyzed by four-acid digestion for 35 elements with ICP-ES and by fire assay for Au.

Sixteen stream sediment samples were collected which returned a high Cu assay of 213 ppm and negligible Au, Mo, Ag, and As. Unfortunately, without anomalous Au, Mo or As, these silt samples do not suggest the presence of a porphyry Cu-Au hydrothermal system in any of the drainages sampled. Locations are presented in Figures 7-1and 7-2 and assay results in Appendices 1 and 2.

## 8.0 CONCLUSIONS

The focus of this exploration program was to ascertain the origin of the high magnetic susceptibility in the area denoted in recent airborne magnetic surveys and to determine if there is intrusive activity and hence hydrothermal mineral deposit potential.

Geological assessment has shown that the Savage Mountain mafic volcanic rocks are generally highly magnetic and common enough to explain the magnetic anomalism in the area. Furthermore, the lack of intrusive units observed in outcrop or in stream cobbles as well as the lack of high temperature alteration mineral assemblages, also suggests there is very low potential for an intrusive stock in the area and certainly no evidence for a hydrothermal system which could host a porphyry Cu-Au deposit. Silt and rock sampling also failed to return anomalous Mo, Au or As values which would possibly suggest a hydrothermal system that hosts a porphyry deposit.

Obviously, the presence the Sustut Deposit and the numerous showings of copper mineralization within low temperature chlorite-carbonate-hematite-epidote veins and within clastic sedimentary and volcanic units demonstrates the potential for additional "red-bed" or sedimentary hosted copper-silver mineralization on the property. Additionally, "spilitic alteration" within Savage Mountain mafic volcanic rocks and common cherty sedimentary horizons in and around these basalts may suggest VMS potential, lower in the stratigraphy below the Moosevale Fm.

# 9.0 EXPLORATION EXPENDITURES

These expenditures cover the costs of field work, assays, interpretation and report writing for Event # 5726990 which applied $41,828.46 CAD.

*Table 9-1. Summary of exploration expenses.*

| Item | Category/Description | Amt | Units | Cost/Unit | Total |
|---|---|---|---|---|---|
| Labour | S. Wetherup (July 16-21) | 6 | days | $700.00 | $4,200.00 |
| Labour | Ingemar Arellano (July 16-21) | 6 | days | $574.17 | $3,445.00 |
| Labour | Max Estaris (July 16-21) | 6 | days | $584.38 | $3,506.25 |
| Labour | Don Coolidge (July 16-21) | 5 | days | $270.00 | $1,350.00 |
| Acc and Board | Black Lake Lodge | 24 | nights | $211.96 | $5,087.00 |
| Geochemical Analysis | Bureau Veritas (20 rock, 16 silt) | 36 | samples | $47.36 | $1,704.91 |
| Helicopter | Lakelse Helicopters (2 engine) | 9 | hours | $2,227.01 | $20,043.12 |
| Report writing | S. Wetherup | 2 | days | $700.00 | $1,400.00 |
| Terraspec Analysis | Max Estaris | 2 | days | $584.38 | $1,168.75 |
| | | | | | **$41,905.03** |

# 10.0 STATEMENTS OF AUTHORSHIP

Stephen William Wetherup
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CERTIFICATE OF AUTHOR

I, Stephen Wetherup, do hereby certify that,

1. I am a graduate of the University of Manitoba with a B.Sc. Honours in Geology.

2. I am a member of the Association of Association of Professional Engineers and Geoscientists of British Columbia (APEGBC, #27770). I am a member of the Society of Economic Geologists and the Vancouver Mining Exploration Group.

3. I have been operating a business as a geological consultant under my own name since June, 2001, and under the name of Wetherup Geological Consulting since June 2017.

4. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report, the omission to disclose which makes the Report misleading.

5. I am responsible for the preparation of the Report titled "Assessment Report: Geological Assessment and Geochemical Sampling, Sustut Property, Omineca Mining Division, British Columbia", (the "Report"), dated April 24th, 2019.

Dated this 24th Day of April, 2019.

Stephen William Wetherup,
BSc., P.Geo. (APEGBC, #27770)

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# APPENDIX 1

Summary Data – Rock and Sediment Samples

# Rock and Silt Sample Summary Data

| Sample No. | Date | Samplers | E_NAD83z9 | N_NAD83z9 | Elev. | Sample Comments | Sample Type | Rock type | aiSiris_Result |
|---|---|---|---|---|---|---|---|---|---|
| 100161 | 17-Jul-18 | ILA, SW, ME, DC | 641608 | 6280119 | 1627 | basalt; weak-moderate magnetic; weak-moderate ch-ep alt, pv ch-ep; some carb veins; weak hem | bedrock | Basalt | chlorite:30+amphibole:25+white mica:25+carbonate:20 |
| 100164 | 17-Jul-18 | ILA, DC | 642155 | 6279208 | 1561 | cp-ep alt clasts in qz-ca cement bx; poorly sorted, subangular-subrounded, pebble-sized clasts, clast-sup; cut by 2-5mm white milky white qz vein with ep selvage | bedrock | Breccia | chlorite:45+epidote:45+prehnite:10 |
| 100255 | 20-Jul-18 | DC | 641595 | 6274932 | 1787 | Strong malachite with moderate quartz flooding. Contains 2 % patchy chalcocite, and a fine grained silver sulphide, hosted in conglomerate. | bedrock | quartz-epidote vein | epidote:85+carbonate:15 |
| 100256 | 20-Jul-18 | DC | 641625 | 6274950 | 1782 | Vein altered zone with strong epidote, moderate malachite and trace amounts of chalcopyrite. NW strike and steeply dipping quartz vein. | bedrock | quartz-epidote vein | carbonate:35+chlorite:35+epidote:30 |
| 100337 | 19-Jul-18 | SW | 643510 | 6284357 | | blue green chert and limonitic chert | bedrock | Chert | white mica:85+carbonate:10+chlorite:5 |
| 100402 | 17-Jul-18 | ME | 641581 | 6280081 | 1621 | OC - strongly chl-epi altered massive basalt; no min observed | bedrock | Basalt | carbonate:55+chlorite:45 |
| 100403 | 17-Jul-18 | ME | 644299 | 6280581 | 1640 | OC - strongly magnetic basalt; massive; cut by few thin cb vlts | bedrock | Basalt | carbonate:50+chlorite:50 |
| 100404 | 17-Jul-18 | ME | 644278 | 6280533 | 1653 | OC - magnetic basalt with strong epi with adamantine luster | bedrock | Basalt | prehnite:90+chlorite:10 |
| 100409 | 20-Jul-18 | ME | 643002 | 6277850 | 1735 | Chl-epi-hem - altered basalt, trace pyr | bedrock | Basalt | chlorite:50+white mica:30+prehnite:20 |
| 100165 | 17-Jul-18 | ILA, DC | 642169 | 6279190 | 1566 | quartz-epidote vein -1cm w/ malacchite + Azurite stains & chalcocite spots | talus | | chlorite:50+white mica:35+carbonate:15 |
| 100168 | 18-Jul-18 | ILA, DC | 644447 | 6282307 | 1474 | basalt; gray, weakly silicified, <1% fine cubic pyrite; milky white 1-2mm wide qz vein | talus | Basalt | chlorite:40+zeolite:40+montmorillonite:20 |
| 100169 | 18-Jul-18 | ILA, DC | 644472 | 6282306 | 1476 | hydrothermal breccia; clast-sup, subangular to subrounded, pebble-sized poorly sorted, mostly ch-alt clasts cemented in milky white quartz | talus | Hydrothermal Breccia | prehnite:95+chlorite:5 |
| 100171 | 18-Jul-18 | ILA, DC | 641805 | 6283763 | 1514 | basalt, pillow? Common malachite stains; weakly magnetic | talus | Basalt | water_silica:60+chlorite:20+amphibole:15 +carbonate:5 |
| 100176 | 19-Jul-18 | ILA | 642297 | 6281341 | 1826 | big float (5m x 5m), rounded pinkish (hem?) qz "eyes" porphyry; feldspars @ 40% medium-grained; rare primary biotite; intense pv ch alt; not magnetic; aphanatic ch-alt groundmass qz-carb filling rounded empty vesicles? - lots of qz carb medium-grained | talus | | chlorite:55+carbonate:45 |
| 100177 | 19-Jul-18 | ILA | 642326 | 6281338 | 1829 | basalt, dark green; aphanatic, int pv ch-alt; rare epidote crystals; fine pyrite @ <1-1%; carb vein bxtng MV in portions; weakly hematitic in vein & at selvage | talus | Basalt | montmorillonite:75+carbonate:20+chlorite: 5 |
| 100178 | 19-Jul-18 | ILA | 642339 | 6281329 | 1835 | dark green basalt; non-magnetic; moderate-strong pv ch alt on aphanatic groundmass; ep _____; weak hem stains primary biotite (?) | talus | Basalt | chlorite:55+amphibole:30+white mica:15 |
| 100252 | 19-Jul-18 | DC | 642061 | 6281424 | 1863 | quartz-carb vein with specular hematite in foot wall to small shear zone exposure | talus | carb altered zone | chlorite:50+carbonate:30+white mica:20 |
| 100253 | 19-Jul-18 | DC | 642094 | 6281399 | 1813 | Frothy to vuggy quartz- calcite altered materia lwith 0.5 - 1% chalcopyrite | talus | quartz-calcite vein | carbonate:60+white mica:35+chlorite:5 |
| 100257 | 20-Jul-18 | DC | 641978 | 6275118 | 1671 | quartz-carb vein hosted in maroon chert pebble conglomerate. Strong malachite, weak azurite, moderate epidote and trace amounts of chalcopyrite. | talus | quartz-calcite vein | prehnite:80+chlorite:20 |

Rock and Silt Sample Summary Data

| Sample No. | Au ppb | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | Ni ppm | Co ppm | Mn ppm | Fe % | As ppm | U ppm | Th ppm | Sr ppm | Cd ppm | Sb ppm | Bi ppm | V ppm | Ca % | P % | La ppm | Cr ppm | Mg % | Ba ppm | Ti % | Al % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100161 | 8 | 0.9 | 58.6 | 2.6 | 77 | 0.05 | 14.2 | 31.2 | 1060 | 6.35 | 4 | 1.3 | 1.1 | 199 | 0.05 | 0.2 | 0.05 | 301 | 5.86 | 0.144 | 6.7 | 15 | 2.35 | 18 | 0.659 | 7.85 |
| 100164 | 5 | 0.2 | 29.2 | 2.6 | 64 | 0.05 | 26.3 | 32.4 | 1238 | 6.58 | 5 | 0.3 | 0.5 | 1089 | 0.1 | 0.2 | 0.05 | 301 | 9.71 | 0.075 | 6 | 51 | 1.98 | 6 | 0.671 | 8.43 |
| 100255 | 36 | 0.4 | >10000 | 9.3 | 37 | 77 | 15.9 | 14 | 1630 | 4.85 | 4 | 1 | 1.1 | 657 | 1.8 | 0.8 | 0.5 | 220 | 10.48 | 0.058 | 7.6 | 31 | 0.73 | 29 | 0.33 | 6.57 |
| 100256 | 39 | 0.9 | >10000 | 10.3 | 26 | 114.4 | 8.5 | 8.2 | 1088 | 3.53 | 3 | 1.8 | 1 | 591 | 16.2 | 1.1 | 0.4 | 211 | 12.55 | 0.049 | 6.7 | 19 | 0.62 | 78 | 0.254 | 5.46 |
| 100337 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100402 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100403 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100404 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100409 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100165 | 35 | 0.05 | 1430.9 | 1.1 | 42 | 0.4 | 4.3 | 12.8 | 1210 | 3.04 | 1 | 0.05 | 0.1 | 314 | 0.2 | 0.3 | 0.05 | 79 | 12.81 | 0.013 | 2.8 | 6 | 0.96 | 28 | 0.124 | 2.61 |
| 100168 | 4 | 0.8 | 170 | 1.8 | 83 | 0.05 | 13 | 22.8 | 1300 | 5.23 | 5 | 1 | 1.6 | 549 | 0.05 | 0.3 | 0.05 | 233 | 4.45 | 0.129 | 9.1 | 15 | 2 | 869 | 0.499 | 8.11 |
| 100169 | 3 | 0.4 | 170.6 | 2.5 | 102 | 0.05 | 24.7 | 35.2 | 1330 | 6.95 | 2 | 0.8 | 1.4 | 192 | 0.1 | 0.2 | 0.05 | 276 | 5.67 | 0.131 | 9.3 | 59 | 2.68 | 261 | 0.503 | 7.58 |
| 100171 | 12 | 2.4 | 7820.3 | 2.5 | 76 | 0.3 | 40.7 | 37.1 | 1335 | 6.08 | 3 | 1.5 | 0.9 | 115 | 0.3 | 0.3 | 0.05 | 326 | 3.94 | 0.085 | 7.3 | 81 | 4.2 | 151 | 0.409 | 5.95 |
| 100176 | 4 | 0.2 | 157.2 | 2.8 | 88 | 0.1 | 77.4 | 49 | 1507 | 7.68 | 2 | 0.7 | 1.1 | 258 | 0.05 | 0.2 | 0.05 | 280 | 6.72 | 0.085 | 6.8 | 237 | 5.07 | 480 | 0.44 | 5.6 |
| 100177 | 3 | 0.3 | 97 | 1.5 | 56 | 0.05 | 45 | 29.8 | 924 | 5.16 | 6 | 0.5 | 0.7 | 351 | 0.05 | 0.4 | 0.05 | 149 | 9.42 | 0.057 | 3.8 | 144 | 2.6 | 710 | 0.291 | 4.04 |
| 100178 | 11 | 0.3 | 163.9 | 3.2 | 91 | 0.1 | 42.1 | 38.6 | 1353 | 6.83 | 2 | 0.8 | 1.2 | 766 | 0.1 | 0.05 | 0.05 | 279 | 5.46 | 0.106 | 7.6 | 147 | 3.8 | 344 | 0.484 | 6.68 |
| 100252 | 6 | 0.6 | 20.9 | 4.3 | 26 | 0.05 | 50 | 25.9 | 1884 | 4.99 | 2 | 0.1 | 0.1 | 1502 | 0.3 | 0.6 | 0.05 | 90 | 15.02 | 0.009 | 2.1 | 182 | 6.56 | 820 | 0.059 | 0.87 |
| 100253 | 43 | 0.2 | 1359.5 | 2.7 | 52 | 4.4 | 53.9 | 24.9 | 2028 | 3.35 | 2 | 0.05 | 0.05 | 302 | 0.4 | 0.8 | 0.05 | 52 | 11.36 | 0.013 | 1.8 | 65 | 5.76 | 85 | 0.023 | 0.4 |
| 100257 | 4 | 0.3 | >10000 | 5.6 | 26 | 16.2 | 21 | 18.4 | 985 | 4.77 | 5 | 0.5 | 0.8 | 517 | 0.9 | 0.2 | 0.05 | 368 | 13.51 | 0.065 | 5.7 | 72 | 1.19 | 53 | 0.474 | 8.27 |

Rock and Silt Sample Summary Data

| Sample No. | Na % | K % | W ppm | Zr ppm | Ce ppm | Sn ppm | Y ppm | Nb ppm | Ta ppm | Be ppm | Sc ppm | Li ppm | S % | Rb ppm | Hf ppm | In ppm | Re ppm | Se ppm | Te ppm | Tl ppm | Wgt kg | Job No | Date Received | Date Reported | White Mica |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100161 | 3.366 | 0.05 | 0.5 | 69.8 | 16 | 0.8 | 17.8 | 4 | 0.2 | 0.5 | 22 | 7.4 | 0.05 | 0.4 | 2.1 | 0.06 | 0.003 | 0.5 | 0.7 | 0.25 | 0.75 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 1 |
| 100164 | 0.019 | 0.005 | 0.3 | 50.2 | 13 | 0.5 | 17.6 | 2.4 | 0.1 | 0.5 | 25 | 6.5 | 0.05 | 0.2 | 1.6 | 0.07 | 0.003 | 0.5 | 0.9 | 0.25 | 1.38 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100255 | 0.661 | 0.05 | 0.7 | 29 | 13 | 0.6 | 12.7 | 2.7 | 0.2 | 0.5 | 13 | 5.9 | 0.7 | 1.7 | 1.1 | 0.06 | 0.007 | 11 | 0.7 | 0.25 | 1.4 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100256 | 1.303 | 0.29 | 0.8 | 30.2 | 12 | 0.5 | 11.3 | 2.2 | 0.1 | 0.5 | 10 | 5 | 0.8 | 9.3 | 1.1 | 0.025 | 0.003 | 8 | 1.5 | 0.25 | 2.1 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100337 | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 100402 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 100403 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 100404 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 100409 | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 100165 | 0.014 | 0.16 | 0.3 | 7.4 | 5 | 0.1 | 6.8 | 0.5 | 0.05 | 0.5 | 4 | 8.8 | 0.05 | 3.4 | 0.3 | 0.025 | 0.003 | 0.5 | 0.8 | 0.25 | 0.78 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 1 |
| 100168 | 2.705 | 2.57 | 0.4 | 54.5 | 20 | 0.7 | 13.4 | 6.6 | 0.3 | 0.5 | 15 | 14.8 | 0.05 | 39.5 | 1.9 | 0.06 | 0.003 | 0.5 | 0.25 | 0.25 | 0.77 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100169 | 2.34 | 1.12 | 0.4 | 54.8 | 19 | 0.6 | 14.3 | 3.4 | 0.2 | 0.5 | 19 | 9.2 | 0.05 | 14 | 1.6 | 0.06 | 0.003 | 0.5 | 0.8 | 0.25 | 0.54 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100171 | 1.948 | 0.63 | 0.5 | 37.7 | 14 | 0.6 | 11.9 | 2.1 | 0.1 | 0.5 | 22 | 23.5 | 0.4 | 8.9 | 1.3 | 0.025 | 0.003 | 0.5 | 1.1 | 0.25 | 0.87 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100176 | 1.253 | 1.46 | 0.4 | 40.3 | 14 | 0.5 | 13.6 | 1.6 | 0.05 | 0.5 | 31 | 7.6 | 0.05 | 29.5 | 1.2 | 0.08 | 0.003 | 0.5 | 1.4 | 0.25 | 1.09 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100177 | 0.442 | 1.67 | 0.4 | 23.7 | 8 | 0.3 | 7.9 | 1.1 | 0.05 | 0.5 | 20 | 11.6 | 0.05 | 40.4 | 0.8 | 0.025 | 0.003 | 0.5 | 1 | 0.25 | 0.94 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100178 | 2.868 | 0.99 | 0.2 | 41.1 | 15 | 0.6 | 14.3 | 2.4 | 0.1 | 0.5 | 26 | 11.7 | 0.05 | 20.9 | 1.5 | 0.025 | 0.003 | 0.5 | 0.8 | 0.25 | 0.51 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 1 |
| 100252 | 0.018 | 0.23 | 1.7 | 4.2 | 4 | 0.1 | 5.4 | 0.2 | 0.05 | 0.5 | 11 | 3.7 | 0.05 | 8.6 | 0.1 | 0.025 | 0.003 | 0.5 | 5.3 | 0.25 | 1.09 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 1 |
| 100253 | 0.022 | 0.1 | 0.8 | 2 | 3 | 0.05 | 4.5 | 0.1 | 0.05 | 0.5 | 5 | 3 | 0.05 | 3.1 | 0.05 | 0.025 | 0.003 | 0.5 | 3.6 | 0.25 | 1.14 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 1 |
| 100257 | 1.603 | 0.14 | 0.7 | 35.9 | 13 | 0.4 | 14.9 | 1.9 | 0.1 | 0.5 | 25 | 5.5 | 0.4 | 2.2 | 1.3 | 0.07 | 0.003 | 0.5 | 1.6 | 0.25 | 0.95 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |

Rock and Silt Sample Summary Data

| Sample No. | Chlorite | Carbonate | Biotite | Epidote | Kaolinite | Dickite | Halloysite | Amphibole | Talc | Serpentine | Montmor | Nontronite | Saponite | Zeolite | Palygor | Alunite | Ca Alunite | Jarosite |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100161 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100164 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100255 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100256 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100337 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100402 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100403 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100404 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100409 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100165 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100168 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 100169 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100171 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100176 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100177 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100178 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100252 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100253 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100257 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Rock and Silt Sample Summary Data

| Sample No. | Gypsum | Pyrophyllite | Diaspore | Topaz | Zunyite | Tourm | Sudoite | Prehnite | Pumpell | Zoisite | Ottrelite | NH4Wt Mica | NH4 Min | Malachite | Antlerite | Azurite | Chryscll | Gibbsite |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100161 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100164 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100255 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100256 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100337 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100402 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100403 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100404 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100409 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100165 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100168 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100169 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100171 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100176 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100177 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100178 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100252 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100253 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100257 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Sample No. | Boehmite | Apoph | Chondrt | Brucite | Scorodite | Beryl | Water silica |
|---|---|---|---|---|---|---|---|
| 100161 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100164 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100255 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100256 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100337 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100402 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100403 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100404 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100409 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100165 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100168 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100169 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100171 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 100176 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100177 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100178 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100252 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100253 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100257 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# Rock and Silt Sample Summary Data

| Sample No. | Date | Samplers | E_NAD83z9 | N_NAD83z9 | Elev. | Sample Comments | Sample Type | Rock type | aiSiris_Result |
|---|---|---|---|---|---|---|---|---|---|
| 100354 | 18-Jul-18 | ME | 640038 | 6282954 | 1447 | Float - intensely silicified intrusive with 1% pyr diss; mod chl (remnant texture observed) | float | Intrusive | kaolinite:45+white mica:40+chlorite:10+carbonate:5 |
| 100355 | 18-Jul-18 | ME | 641342 | 6275777 | 1441 | Boulder containing ~10cm vuggy silica vlt with epi, mal, covellite?-cpy, black stained sulfide, cutting greywacke | float | | prehnite:85+chlorite:15 |
| 100405 | 17-Jul-18 | ME | 644313 | 6280616 | 1639 | Boulder - very dark vesicular basalt with abundant epidote | float | Basalt | chlorite:55+carbonate:30+amphibole:15 |
| 100406 | 17-Jul-18 | ME | 644682 | 6281143 | 1458 | Very dark fgr gabbro with epi-chl-cb alteration | float | Gabbro | epidote:65+chlorite:30+carbonate:5 |
| 100173 | 18-Jul-18 | ILA, DC | 640799 | 6276975 | 1367 | basalt, reddish-green; moderate-strong hem; modrate epidote in fractures & veins; wavy, milky white quartz±carb veins cut by thin <1mm wide, wavy quartz vein | cobble | Basalt | prehnite:60+epidote:40 |
| 100162 | 17-Jul-18 | ILA, DC | 641810 | 6279327 | 1571 | relatively flat area; some gravel bars; 3-4m wide creek; meadow area | silt | | |
| 100163 | 17-Jul-18 | ILA, DC | 641895 | 6279453 | 1559 | flat, meadow area; sampled by BCGS; 5-8 wide creek; common cp-ep altered rock; some carbonate cement basalt breccia floats common ep alt | silt | | |
| 100166 | 17-Jul-18 | ILA, DC | 643206 | 6279115 | 1472 | on gravel/sand bar Creek curve- weaker current 3-5m wide creek; BR is dark gray/black MV; weak ep, weak mt | silt | | |
| 100167 | 18-Jul-18 | ILA, DC | 644393 | 6282395 | 1463 | valley area/meadow; common basalt floats - moderate ch-ep alt; common qz-ep±act veinings; carbonate veining; epithermal qz veins-vuggy; 3-4m wide creek | silt | | |
| 100170 | 18-Jul-18 | ILA, DC | 641914 | 6283772 | 1508 | valley, flat area/meadow; 3-5m wide creek; lots of shrubs; common ch-ep alt, basalt samples with rare to <1% fine pyrite blebs; pebble-cobble floats; some BFP feldspars ! | silt | | |
| 100172 | 18-Jul-18 | ILA, DC | 640797 | 6276970 | 1367 | valley, flat area; 3-4m wide creek; common ep-ch alt basalt peb-cob Hematitic basalt w/ milky white quartz veining w/ thin gray <1mm qz veins | silt | | |
| 100174 | 18-Jul-18 | ILA, DC | 641270 | 6273164 | 1447 | valley, very flat area, slow-going stream; 5-6 wide, 50-70% red/hematitic sedimentary rock; few boulders at ch-alt sandstone?-medium-grained? Xtln? Hm-ch-ep in fgn seds | silt | | |
| 100175 | 18-Jul-18 | ILA, DC, SW, ME | 645889 | 6277244 | 1107 | flat area, middle of creek; 8-10m wide creek, 60% basalt; 30% red sandstone/arenite; vesicular basalt filled with milky white quartz; ep-alt seds? Ss; rare BFP | silt | | |
| 100301 | 17-Jul-18 | SW | 641511 | 6280062 | | silt sample. all silt within boulders active flow over silt | silt | | |
| 100302 | 17-Jul-18 | SW | 641668 | 6280048 | | hematitic and ep chl lith arenite and volc congl boukders here. clasts dominantly mafic volc some red some green. few qtz cb ep chl veins and ep chl fractures. | silt | | |
| 100303 | 17-Jul-18 | SW | 644691 | 6281149 | | silt colle ted from small pond at mouth with creek. creek to rocky to sample up to here. rocks all boulders of ep chl alteres basalt and basalt bx. cobbles of hematitic arenite and congl locally. basalt commonly ep chl veins with albitic or bleached haloes. looks to be sea floor alt assoc w fhe pillows. | silt | | |
| 100304 | 17-Jul-18 | SW | 645654 | 6281739 | | re smple of rgs site | silt | | |
| 100306 | 18-Jul-18 | SW | 640033 | 6282956 | | mostly light green chl ep altered lith arenite congl andesite 20pct reddish andesite. rare limonitic clasts of qsp sltered congl or volc bx. | silt | | |

Rock and Silt Sample Summary Data

| Sample No. | Au ppb | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | Ni ppm | Co ppm | Mn ppm | Fe % | As ppm | U ppm | Th ppm | Sr ppm | Cd ppm | Sb ppm | Bi ppm | V ppm | Ca % | P % | La ppm | Cr ppm | Mg % | Ba ppm | Ti % | Al % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100354 | 5 | 0.4 | 100.4 | 2.9 | 100 | 0.05 | 22.9 | 31.9 | 754 | 6.48 | 18 | 0.6 | 1.1 | 72 | 0.05 | 1.7 | 0.05 | 251 | 4.59 | 0.103 | 7 | 36 | 1.39 | 254 | 0.544 | 8.09 |
| 100355 | 7 | 0.2 | >10000 | 2.9 | 57 | 2.5 | 11.2 | 17.8 | 1098 | 4.44 | 2 | 0.5 | 1.6 | 610 | 0.3 | 0.2 | 0.05 | 224 | 5.19 | 0.09 | 8.3 | 22 | 1.36 | 62 | 0.476 | 8.14 |
| 100405 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100406 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100173 | 3 | 0.3 | 29.9 | 4.3 | 35 | 0.05 | 17.7 | 18.1 | 906 | 7.1 | 10 | 0.7 | 1.1 | 975 | 0.2 | 0.5 | 0.05 | 339 | 8.64 | 0.083 | 8.6 | 21 | 0.74 | 7 | 0.73 | 7.87 |
| 100162 | 6 | 1 | 91 | 2.5 | 84 | 0.25 | 48 | 31 | 1365 | 6.45 | 2.5 | 10 | 1 | 338 | 0.2 | 2.5 | 2.5 | 241 | 5.62 | 0.057 | 4 | 95 | 2.95 | 109 | 0.58 | 8.4 |
| 100163 | 7 | 1 | 132 | 2.5 | 93 | 0.25 | 51 | 31 | 1195 | 6.22 | 2.5 | 10 | 1 | 251 | 0.2 | 2.5 | 2.5 | 203 | 4.45 | 0.124 | 7 | 295 | 3.26 | 146 | 0.42 | 6.8 |
| 100166 | 3 | 1 | 108 | 2.5 | 97 | 0.25 | 118 | 52 | 1425 | 7.63 | 2.5 | 10 | 1 | 182 | 0.2 | 2.5 | 2.5 | 227 | 5.59 | 0.088 | 7 | 595 | 6.06 | 129 | 0.4 | 6.06 |
| 100167 | 5 | 1 | 129 | 2.5 | 89 | 0.25 | 77 | 40 | 1397 | 7.06 | 2.5 | 10 | 2 | 231 | 0.2 | 2.5 | 2.5 | 282 | 4.92 | 0.089 | 9 | 299 | 4.35 | 251 | 0.5 | 6.41 |
| 100170 | 6 | 1 | 121 | 13 | 99 | 0.25 | 89 | 41 | 1721 | 7.92 | 2.5 | 10 | 1 | 261 | 0.2 | 2.5 | 2.5 | 282 | 4.85 | 0.084 | 9 | 446 | 4.46 | 298 | 0.49 | 6.75 |
| 100172 | 4 | 1 | 213 | 2.5 | 90 | 0.25 | 17 | 22 | 1259 | 7.1 | 2.5 | 10 | 1 | 484 | 0.5 | 2.5 | 2.5 | 311 | 5.28 | 0.103 | 9 | 39 | 1.91 | 326 | 0.64 | 8.41 |
| 100174 | 8 | 1 | 49 | 9 | 79 | 0.25 | 9 | 15 | 1049 | 5.15 | 8 | 10 | 1 | 320 | 0.2 | 2.5 | 2.5 | 167 | 3.56 | 0.08 | 8 | 18 | 1.31 | 678 | 0.39 | 7.47 |
| 100175 | 5 | 1 | 106 | 2.5 | 78 | 0.25 | 26 | 21 | 1184 | 6.59 | 2.5 | 10 | 1 | 363 | 0.2 | 2.5 | 2.5 | 261 | 3.83 | 0.081 | 8 | 106 | 1.93 | 571 | 0.52 | 7.32 |
| 100301 | 6 | 1 | 144 | 2.5 | 102 | 0.25 | 23 | 30 | 1360 | 6.04 | 2.5 | 10 | 3 | 263 | 0.2 | 2.5 | 2.5 | 178 | 3.51 | 0.144 | 5 | 36 | 2.68 | 162 | 0.43 | 8.03 |
| 100302 | 5 | 1 | 95 | 2.5 | 86 | 0.25 | 71 | 32 | 1163 | 6.63 | 2.5 | 10 | 1 | 237 | 0.2 | 2.5 | 2.5 | 217 | 5.58 | 0.109 | 6 | 573 | 4.02 | 123 | 0.4 | 6.2 |
| 100303 | 8 | 1 | 194 | 2.5 | 91 | 0.25 | 120 | 52 | 1193 | 6.53 | 2.5 | 10 | 4 | 165 | 0.2 | 2.5 | 2.5 | 209 | 3.62 | 0.144 | 8 | 246 | 5.07 | 164 | 0.33 | 5.71 |
| 100304 | 8 | 1 | 165 | 2.5 | 99 | 0.25 | 110 | 49 | 1470 | 7.45 | 2.5 | 10 | 1 | 202 | 0.2 | 2.5 | 2.5 | 240 | 5.35 | 0.104 | 9 | 515 | 5.4 | 218 | 0.4 | 5.77 |
| 100306 | 5 | 1 | 68 | 7 | 77 | 0.25 | 16 | 20 | 1155 | 6.56 | 9 | 10 | 1 | 386 | 0.2 | 2.5 | 2.5 | 250 | 3.49 | 0.082 | 9 | 42 | 1.74 | 444 | 0.53 | 8.35 |

Rock and Silt Sample Summary Data

| Sample No. | Na % | K % | W ppm | Zr ppm | Ce ppm | Sn ppm | Y ppm | Nb ppm | Ta ppm | Be ppm | Sc ppm | Li ppm | S % | Rb ppm | Hf ppm | In ppm | Re ppm | Se ppm | Te ppm | Tl ppm | Wgt kg | Job No | Date Received | Date Reported | White Mica |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100354 | 0.143 | 2.36 | 0.5 | 35.4 | 16 | 0.7 | 10.9 | 3.7 | 0.2 | 0.5 | 19 | 28.7 | 0.3 | 43.3 | 1.1 | 0.07 | 0.003 | 1 | 0.25 | 0.25 | 0.48 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 1 |
| 100355 | 4.028 | 0.28 | 0.2 | 44.8 | 16 | 0.6 | 13 | 4 | 0.2 | 0.5 | 13 | 7.3 | 0.2 | 2.7 | 1.6 | 0.05 | 0.005 | 0.5 | 0.7 | 0.25 | 1.13 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100405 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 100406 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| 100173 | 1.616 | 0.005 | 0.3 | 56.5 | 17 | 0.7 | 17.1 | 3.1 | 0.2 | 0.5 | 24 | 9.2 | 0.05 | 0.3 | 1.6 | 0.07 | 0.003 | 0.5 | 0.25 | 0.25 | 0.7 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100162 | 1.39 | 0.3 | 2 | 37 | | 1 | 12 | 3 | | 0.5 | 19 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100163 | 1.45 | 0.49 | 2 | 40 | | 1 | 14 | 3 | | 0.5 | 24 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100166 | 1.03 | 0.49 | 2 | 34 | | 1 | 12 | 4 | | 0.5 | 31 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100167 | 1.52 | 0.7 | 2 | 60 | | 2 | 19 | 5 | | 0.5 | 36 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100170 | 1.77 | 0.73 | 2 | 50 | | 1 | 16 | 4 | | 0.5 | 31 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100172 | 2.46 | 0.89 | 2 | 52 | | 1 | 15 | 6 | | 0.5 | 19 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100174 | 2.31 | 1.05 | 2 | 55 | | 1 | 17 | 5 | | 1 | 17 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100175 | 2.48 | 1.06 | 2 | 49 | | 1 | 16 | 4 | | 0.5 | 23 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100301 | 1.36 | 0.54 | 2 | 46 | | 1 | 12 | 4 | | 0.5 | 16 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100302 | 1.4 | 0.46 | 2 | 34 | | 1 | 13 | 4 | | 0.5 | 30 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100303 | 0.86 | 0.52 | 2 | 43 | | 1 | 15 | 3 | | 0.5 | 27 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100304 | 1.13 | 0.61 | 2 | 48 | | 1 | 16 | 4 | | 0.5 | 35 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100306 | 3.13 | 1.06 | 2 | 54 | | 1 | 17 | 4 | | 0.5 | 20 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |

Rock and Silt Sample Summary Data

| Sample No. | Chlorite | Carbonate | Biotite | Epidote | Kaolinite | Dickite | Halloysite | Amphibole | Talc | Serpentine | Montmor | Nontronite | Saponite | Zeolite | Palygor | Alunite | Ca Alunite | Jarosite |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100354 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100355 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100405 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100406 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100173 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100162 | | | | | | | | | | | | | | | | | | |
| 100163 | | | | | | | | | | | | | | | | | | |
| 100166 | | | | | | | | | | | | | | | | | | |
| 100167 | | | | | | | | | | | | | | | | | | |
| 100170 | | | | | | | | | | | | | | | | | | |
| 100172 | | | | | | | | | | | | | | | | | | |
| 100174 | | | | | | | | | | | | | | | | | | |
| 100175 | | | | | | | | | | | | | | | | | | |
| 100301 | | | | | | | | | | | | | | | | | | |
| 100302 | | | | | | | | | | | | | | | | | | |
| 100303 | | | | | | | | | | | | | | | | | | |
| 100304 | | | | | | | | | | | | | | | | | | |
| 100306 | | | | | | | | | | | | | | | | | | |

Rock and Silt Sample Summary Data

| Sample No. | Gypsum | Pyrophyllite | Diaspore | Topaz | Zunyite | Tourm | Sudoite | Prehnite | Pumpell | Zoisite | Ottrelite | NH4Wt Mica | NH4 Min | Malachite | Antlerite | Azurite | Chryscll | Gibbsite |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100354 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100355 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100405 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100406 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100173 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100162 | | | | | | | | | | | | | | | | | | |
| 100163 | | | | | | | | | | | | | | | | | | |
| 100166 | | | | | | | | | | | | | | | | | | |
| 100167 | | | | | | | | | | | | | | | | | | |
| 100170 | | | | | | | | | | | | | | | | | | |
| 100172 | | | | | | | | | | | | | | | | | | |
| 100174 | | | | | | | | | | | | | | | | | | |
| 100175 | | | | | | | | | | | | | | | | | | |
| 100301 | | | | | | | | | | | | | | | | | | |
| 100302 | | | | | | | | | | | | | | | | | | |
| 100303 | | | | | | | | | | | | | | | | | | |
| 100304 | | | | | | | | | | | | | | | | | | |
| 100306 | | | | | | | | | | | | | | | | | | |

| Sample No. | Boehmite | Apoph | Chondrt | Brucite | Scorodite | Beryl | Water silica |
|---|---|---|---|---|---|---|---|
| 100354 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100355 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100405 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100406 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100173 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100162 | | | | | | | |
| 100163 | | | | | | | |
| 100166 | | | | | | | |
| 100167 | | | | | | | |
| 100170 | | | | | | | |
| 100172 | | | | | | | |
| 100174 | | | | | | | |
| 100175 | | | | | | | |
| 100301 | | | | | | | |
| 100302 | | | | | | | |
| 100303 | | | | | | | |
| 100304 | | | | | | | |
| 100306 | | | | | | | |

# Rock and Silt Sample Summary Data

| Sample No. | Date | Samplers | E_NAD83z9 | N_NAD83z9 | Elev. | Sample Comments | Sample Type | Rock type | aiSiris_Result |
|---|---|---|---|---|---|---|---|---|---|
| 100307 | 18-Jul-18 | SW | 641167 | 6275882 | | malachite stained cliff face up stream and several boulders and frags of arenite and congl with rare ep qtz cc bn veins. | silt | | |
| 100308 | 18-Jul-18 | SW | 643947 | 6272626 | | | silt | | |
| 100310 | 20-Jul-18 | SW | 642983 | 6277791 | | silt sample ust north of sustut vlaim line. | silt | | |
| 100183 | 20-Jul-18 | ILA | 641970 | 6275118 | 1689 | 10cm wide breccia dike with pebble-sized clasts, subangular to subrounded; poorly sorted; wacke/sandstone clasts(?) gray and feldspar-rich clasts in pinkish(?)-white matrix-carb?? With moderate malachite & azurite stains; moderately hematitic | talus | Conglomerate | prehnite:95+chlorite:5 |
| 100251 | 18-Jul-18 | DC | 644320 | 6282453 | 1471 | Vuggy to banded quartz in int volcanics. | talus | volcanics | prehnite:95+chlorite:5 |
| 100401 | 17-Jul-18 | ME | 641473 | 6280097 | 1617 | Talus - oxidized basalt with intense epi + chl, no min observed | talus | Basalt | chlorite:40+carbonate:30+white mica:30 |

Rock and Silt Sample Summary Data

| Sample No. | Au ppb | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | Ni ppm | Co ppm | Mn ppm | Fe % | As ppm | U ppm | Th ppm | Sr ppm | Cd ppm | Sb ppm | Bi ppm | V ppm | Ca % | P % | La ppm | Cr ppm | Mg % | Ba ppm | Ti % | Al % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100307 | 6 | 1 | 110 | 2.5 | 91 | 0.25 | 36 | 31 | 1594 | 8.16 | 2.5 | 10 | 1 | 486 | 0.2 | 2.5 | 2.5 | 362 | 5.5 | 0.081 | 6 | 157 | 3.13 | 381 | 0.66 | 7.86 |
| 100308 | 6 | 1 | 55 | 6 | 74 | 0.25 | 29 | 19 | 1035 | 5.93 | 6 | 10 | 3 | 365 | 0.2 | 2.5 | 2.5 | 227 | 3.6 | 0.071 | 11 | 123 | 1.73 | 653 | 0.46 | 7.35 |
| 100310 | 4 | 1 | 128 | 2.5 | 86 | 0.25 | 19 | 25 | 1368 | 6.15 | 2.5 | 10 | 2 | 441 | 0.7 | 2.5 | 2.5 | 273 | 5.55 | 0.108 | 9 | 53 | 2.52 | 249 | 0.53 | 8.39 |
| 100183 | 3 | 0.2 | 4037.7 | 3.7 | 56 | 0.7 | 13.2 | 18.1 | 774 | 5.55 | 7 | 0.5 | 0.9 | 167 | 0.05 | 0.1 | 0.05 | 194 | 6.99 | 0.085 | 8.8 | 32 | 0.96 | 18 | 0.48 | 8.07 |
| 100251 | 4 | 0.2 | 19.1 | 1.8 | 18 | 0.05 | 15 | 11.5 | 465 | 2.84 | 3 | 0.2 | 0.3 | 44 | 0.2 | 0.1 | 0.05 | 176 | 16.32 | 0.032 | 3 | 37 | 0.84 | 8 | 0.254 | 7.18 |
| 100401 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Rock and Silt Sample Summary Data

| Sample No. | Na % | K % | W ppm | Zr ppm | Ce ppm | Sn ppm | Y ppm | Nb ppm | Ta ppm | Be ppm | Sc ppm | Li ppm | S % | Rb ppm | Hf ppm | In ppm | Re ppm | Se ppm | Te ppm | Tl ppm | Wgt kg | Job No | Date Received | Date Reported | White Mica |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100307 | 2.11 | 0.98 | 2 | 42 | | 1 | 16 | 4 | | 0.5 | 35 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100308 | 2.43 | 1.22 | 2 | 48 | | 1 | 18 | 6 | | 0.5 | 22 | | 0.05 | | | | | | | | | VAN18001968 | 02-Aug-18 | 30-Nov-18 | |
| 100310 | 2.59 | 0.74 | 2 | 53 | | 1 | 16 | 3 | | 0.5 | 26 | | 0.05 | | | | | | | | | VAN18002038 | 09-Aug-18 | 29-Aug-18 | |
| 100183 | 3.873 | 0.03 | 0.3 | 55.9 | 17 | 0.6 | 17.7 | 2.8 | 0.2 | 0.5 | 15 | 4.7 | 0.05 | 0.3 | 1.7 | 0.06 | 0.003 | 0.5 | 0.25 | 0.25 | 0.87 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100251 | 0.058 | 0.01 | 1.2 | 25.8 | 6 | 0.4 | 8 | 0.9 | 0.05 | 0.5 | 11 | 11.2 | 0.05 | 0.4 | 0.7 | 0.025 | 0.003 | 0.5 | 1.5 | 0.25 | 0.53 | VAN18001969 | 02-Aug-18 | 29-Aug-18 | 0 |
| 100401 | | | | | | | | | | | | | | | | | | | | | | | | | 1 |

Rock and Silt Sample Summary Data

| Sample No. | Chlorite | Carbonate | Biotite | Epidote | Kaolinite | Dickite | Halloysite | Amphibole | Talc | Serpentine | Montmor | Nontronite | Saponite | Zeolite | Palygor | Alunite | Ca Alunite | Jarosite |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100307 | | | | | | | | | | | | | | | | | | |
| 100308 | | | | | | | | | | | | | | | | | | |
| 100310 | | | | | | | | | | | | | | | | | | |
| 100183 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100251 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100401 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Rock and Silt Sample Summary Data

| Sample No. | Gypsum | Pyrophyllite | Diaspore | Topaz | Zunyite | Tourm | Sudoite | Prehnite | Pumpell | Zoisite | Ottrelite | NH4Wt Mica | NH4 Min | Malachite | Antlerite | Azurite | Chryscll | Gibbsite |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100307 | | | | | | | | | | | | | | | | | | |
| 100308 | | | | | | | | | | | | | | | | | | |
| 100310 | | | | | | | | | | | | | | | | | | |
| 100183 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100251 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100401 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Sample No. | Boehmite | Apoph | Chondrt | Brucite | Scorodite | Beryl | Water silica |
|---|---|---|---|---|---|---|---|
| 100307 | | | | | | | |
| 100308 | | | | | | | |
| 100310 | | | | | | | |
| 100183 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100251 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100401 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# APPENDIX 2

Assay Certificates

BUREAU VERITAS
MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

**Client:** **Freeport-McMoran of Canada Ltd.**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Submitted By: Ramon Taningco
Receiving Lab: Canada-Vancouver
Received: August 02, 2018
Report Date: August 29, 2018
Page: 1 of 2

# CERTIFICATE OF ANALYSIS VAN18001968.1

## CLIENT JOB INFORMATION

Project: None Given
Shipment ID:
P.O. Number
Number of Samples: 16

## SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days
DISP-RJT-SOIL Immediate Disposal of Soil Reject

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Procedure Code | Number of Samples | Code Description | Test Wgt (g) | Report Status | Lab |
|---|---|---|---|---|---|
| DY060 | 16 | Dry at 60C | | | VAN |
| SS80 | 16 | Dry at 60C sieve 100g to -80 mesh | | | VAN |
| FA330-Au | 16 | Fire assay fusion Au by ICP-ES | 30 | Completed | VAN |
| EN002 | 16 | Environmental disposal charge-Fire assay lead waste | | | VAN |
| MA300 | 16 | 4 Acid digestion ICP-ES analysis | 0.25 | Completed | VAN |
| DISPL | 16 | Disposal of pulps | | | VAN |

## ADDITIONAL COMMENTS

Invoice To: Freeport-McMoran of Canada Ltd.
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2
Canada

CC: Ingemar Arellano

BRITISH COLUMBIA CERTIFIED ASSAYER
Marcus Lau
MARCUS LAU
Production Manager

BUREAU VERITAS
MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

**Client:** **Freeport-McMoran of Canada Ltd.**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: August 29, 2018



# CERTIFICATE OF ANALYSIS VAN18001968.1

| | Method | FA330 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Au | Mo | Cu | Pb | Zn | Ag | Ni | Co | Mn | Fe | As | U | Th | Sr | Cd | Sb | Bi | V | Ca | P |
| | Unit | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | % |
| | MDL | 2 | 2 | 2 | 5 | 2 | 0.5 | 2 | 2 | 5 | 0.01 | 5 | 20 | 2 | 2 | 0.4 | 5 | 5 | 2 | 0.01 | 0.002 |
| 100301 | Stream | 6 | <2 | 144 | <5 | 102 | <0.5 | 23 | 30 | 1360 | 6.04 | <5 | <20 | 3 | 263 | <0.4 | <5 | <5 | 178 | 3.51 | 0.144 |
| 100302 | Stream | 5 | <2 | 95 | <5 | 86 | <0.5 | 71 | 32 | 1163 | 6.63 | <5 | <20 | <2 | 237 | <0.4 | <5 | <5 | 217 | 5.58 | 0.109 |
| 100303 | Stream | 8 | <2 | 194 | <5 | 91 | <0.5 | 120 | 52 | 1193 | 6.53 | <5 | <20 | 4 | 165 | <0.4 | <5 | <5 | 209 | 3.62 | 0.144 |
| 100304 | Stream | 8 | <2 | 165 | <5 | 99 | <0.5 | 110 | 49 | 1470 | 7.45 | <5 | <20 | <2 | 202 | <0.4 | <5 | <5 | 240 | 5.35 | 0.104 |
| 100305 | Stream | 5 | 3 | 70 | 12 | 189 | <0.5 | 33 | 24 | 1212 | 6.74 | 14 | <20 | 3 | 169 | 1.0 | <5 | <5 | 215 | 2.19 | 0.085 |
| 100306 | Stream | 5 | <2 | 68 | 7 | 77 | <0.5 | 16 | 20 | 1155 | 6.56 | 9 | <20 | <2 | 386 | <0.4 | <5 | <5 | 250 | 3.49 | 0.082 |
| 100307 | Stream | 6 | <2 | 110 | <5 | 91 | <0.5 | 36 | 31 | 1594 | 8.16 | <5 | <20 | <2 | 486 | <0.4 | <5 | <5 | 362 | 5.50 | 0.081 |
| 100308 | Stream | 6 | <2 | 55 | 6 | 74 | <0.5 | 29 | 19 | 1035 | 5.93 | 6 | <20 | 3 | 365 | <0.4 | <5 | <5 | 227 | 3.60 | 0.071 |
| 100162 | Stream | 6 | <2 | 91 | <5 | 84 | <0.5 | 48 | 31 | 1365 | 6.45 | <5 | <20 | <2 | 338 | <0.4 | <5 | <5 | 241 | 5.62 | 0.057 |
| 100163 | Stream | 7 | <2 | 132 | <5 | 93 | <0.5 | 51 | 31 | 1195 | 6.22 | <5 | <20 | <2 | 251 | <0.4 | <5 | <5 | 203 | 4.45 | 0.124 |
| 100166 | Stream | 3 | <2 | 108 | <5 | 97 | <0.5 | 118 | 52 | 1425 | 7.63 | <5 | <20 | <2 | 182 | <0.4 | <5 | <5 | 227 | 5.59 | 0.088 |
| 100167 | Stream | 5 | <2 | 129 | <5 | 89 | <0.5 | 77 | 40 | 1397 | 7.06 | <5 | <20 | 2 | 231 | <0.4 | <5 | <5 | 282 | 4.92 | 0.089 |
| 100170 | Stream | 6 | <2 | 121 | 13 | 99 | <0.5 | 89 | 41 | 1721 | 7.92 | <5 | <20 | <2 | 261 | <0.4 | <5 | <5 | 282 | 4.85 | 0.084 |
| 100172 | Stream | 4 | <2 | 213 | <5 | 90 | <0.5 | 17 | 22 | 1259 | 7.10 | <5 | <20 | <2 | 484 | 0.5 | <5 | <5 | 311 | 5.28 | 0.103 |
| 100174 | Stream | 8 | <2 | 49 | 9 | 79 | <0.5 | 9 | 15 | 1049 | 5.15 | 8 | <20 | <2 | 320 | <0.4 | <5 | <5 | 167 | 3.56 | 0.080 |
| 100175 | Stream | 5 | <2 | 106 | <5 | 78 | <0.5 | 26 | 21 | 1184 | 6.59 | <5 | <20 | <2 | 363 | <0.4 | <5 | <5 | 261 | 3.83 | 0.081 |

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Canada

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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

**Client:** **Freeport-McMoran of Canada Ltd.**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: August 29, 2018



# CERTIFICATE OF ANALYSIS VAN18001968.1

| | Method | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | La | Cr | Mg | Ba | Ti | Al | Na | K | W | Zr | Sn | Y | Nb | Be | Sc | S |
| | Unit | ppm | ppm | % | ppm | % | % | % | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % |
| | MDL | 2 | 2 | 0.01 | 1 | 0.01 | 0.01 | 0.01 | 0.01 | 4 | 2 | 2 | 2 | 2 | 1 | 1 | 0.1 |
| 100301 | Stream | 5 | 36 | 2.68 | 162 | 0.43 | 8.03 | 1.36 | 0.54 | <4 | 46 | <2 | 12 | 4 | <1 | 16 | <0.1 |
| 100302 | Stream | 6 | 573 | 4.02 | 123 | 0.40 | 6.20 | 1.40 | 0.46 | <4 | 34 | <2 | 13 | 4 | <1 | 30 | <0.1 |
| 100303 | Stream | 8 | 246 | 5.07 | 164 | 0.33 | 5.71 | 0.86 | 0.52 | <4 | 43 | <2 | 15 | 3 | <1 | 27 | <0.1 |
| 100304 | Stream | 9 | 515 | 5.40 | 218 | 0.40 | 5.77 | 1.13 | 0.61 | <4 | 48 | <2 | 16 | 4 | <1 | 35 | <0.1 |
| 100305 | Stream | 18 | 119 | 1.99 | 601 | 0.74 | 7.62 | 1.67 | 1.78 | <4 | 113 | 3 | 29 | 12 | 2 | 23 | <0.1 |
| 100306 | Stream | 9 | 42 | 1.74 | 444 | 0.53 | 8.35 | 3.13 | 1.06 | <4 | 54 | <2 | 17 | 4 | <1 | 20 | <0.1 |
| 100307 | Stream | 6 | 157 | 3.13 | 381 | 0.66 | 7.86 | 2.11 | 0.98 | <4 | 42 | <2 | 16 | 4 | <1 | 35 | <0.1 |
| 100308 | Stream | 11 | 123 | 1.73 | 653 | 0.46 | 7.35 | 2.43 | 1.22 | <4 | 48 | <2 | 18 | 6 | <1 | 22 | <0.1 |
| 100162 | Stream | 4 | 95 | 2.95 | 109 | 0.58 | 8.40 | 1.39 | 0.30 | <4 | 37 | <2 | 12 | 3 | <1 | 19 | <0.1 |
| 100163 | Stream | 7 | 295 | 3.26 | 146 | 0.42 | 6.80 | 1.45 | 0.49 | <4 | 40 | <2 | 14 | 3 | <1 | 24 | <0.1 |
| 100166 | Stream | 7 | 595 | 6.06 | 129 | 0.40 | 6.06 | 1.03 | 0.49 | <4 | 34 | <2 | 12 | 4 | <1 | 31 | <0.1 |
| 100167 | Stream | 9 | 299 | 4.35 | 251 | 0.50 | 6.41 | 1.52 | 0.70 | <4 | 60 | 2 | 19 | 5 | <1 | 36 | <0.1 |
| 100170 | Stream | 9 | 446 | 4.46 | 298 | 0.49 | 6.75 | 1.77 | 0.73 | <4 | 50 | <2 | 16 | 4 | <1 | 31 | <0.1 |
| 100172 | Stream | 9 | 39 | 1.91 | 326 | 0.64 | 8.41 | 2.46 | 0.89 | <4 | 52 | <2 | 15 | 6 | <1 | 19 | <0.1 |
| 100174 | Stream | 8 | 18 | 1.31 | 678 | 0.39 | 7.47 | 2.31 | 1.05 | <4 | 55 | <2 | 17 | 5 | 1 | 17 | <0.1 |
| 100175 | Stream | 8 | 106 | 1.93 | 571 | 0.52 | 7.32 | 2.48 | 1.06 | <4 | 49 | <2 | 16 | 4 | <1 | 23 | <0.1 |

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**Client:** **Freeport-McMoran of Canada Ltd.**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: August 29, 2018



# QUALITY CONTROL REPORT VAN18001968.1

| | Method | FA330 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Au | Mo | Cu | Pb | Zn | Ag | Ni | Co | Mn | Fe | As | U | Th | Sr | Cd | Sb | Bi | V | Ca | P |
| | Unit | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | % |
| | MDL | 2 | 2 | 2 | 5 | 2 | 0.5 | 2 | 2 | 5 | 0.01 | 5 | 20 | 2 | 2 | 0.4 | 5 | 5 | 2 | 0.01 | 0.002 |
| Pulp Duplicates | | | | | | | | | | | | | | | | | | | | | |
| 100302 | Stream Sedim | 5 | <2 | 95 | <5 | 86 | <0.5 | 71 | 32 | 1163 | 6.63 | <5 | <20 | <2 | 237 | <0.4 | <5 | <5 | 217 | 5.58 | 0.109 |
| REP 100302 | QC | | <2 | 98 | <5 | 93 | <0.5 | 77 | 35 | 1191 | 6.86 | <5 | <20 | 3 | 234 | <0.4 | <5 | <5 | 235 | 5.92 | 0.111 |
| Reference Materials | | | | | | | | | | | | | | | | | | | | | |
| STD OREAS25A-4A | Standard | | <2 | 33 | 27 | 45 | <0.5 | 45 | 8 | 476 | 6.57 | 9 | <20 | 13 | 46 | <0.4 | <5 | <5 | 158 | 0.28 | 0.050 |
| STD OREAS45E | Standard | | <2 | 772 | 12 | 49 | <0.5 | 465 | 58 | 549 | 24.91 | 8 | <20 | 12 | 16 | <0.4 | <5 | <5 | 324 | 0.07 | 0.034 |
| STD OXC145 | Standard | 214 | | | | | | | | | | | | | | | | | | | |
| STD OXH139 | Standard | 1275 | | | | | | | | | | | | | | | | | | | |
| STD OXC145 Expected | | 212 | | | | | | | | | | | | | | | | | | | |
| STD OXH139 Expected | | 1312 | | | | | | | | | | | | | | | | | | | |
| STD OREAS45E Expected | | | 2.4 | 780 | 18.2 | 46.7 | 0.311 | 454 | 57 | 570 | 24.12 | 16.3 | 2.41 | 12.9 | 15.9 | | 1 | | 322 | 0.065 | 0.034 |
| STD OREAS25A-4A Expected | | | 2.55 | 33.9 | 25.2 | 44.4 | | 45.8 | 8.2 | 470 | 6.6 | 9.94 | 2.94 | 15.8 | 48.5 | | 0.67 | 0.35 | 157 | 0.309 | 0.048 |
| BLK | Blank | 2 | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | 4 | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | <2 | <2 | <5 | <2 | <0.5 | <2 | <2 | <5 | <0.01 | <5 | <20 | <2 | <2 | <0.4 | <5 | <5 | <2 | <0.01 | <0.002 |

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9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

**Client:** **Freeport-McMoran of Canada Ltd.**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: August 29, 2018



# QUALITY CONTROL REPORT VAN18001968.1

| | Method | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 | MA300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | La | Cr | Mg | Ba | Ti | Al | Na | K | W | Zr | Sn | Y | Nb | Be | Sc | S |
| | Unit | ppm | ppm | % | ppm | % | % | % | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % |
| | MDL | 2 | 2 | 0.01 | 1 | 0.01 | 0.01 | 0.01 | 0.01 | 4 | 2 | 2 | 2 | 2 | 1 | 1 | 0.1 |
| Pulp Duplicates | | | | | | | | | | | | | | | | | |
| 100302 | Stream Sedim | 6 | 573 | 4.02 | 123 | 0.40 | 6.20 | 1.40 | 0.46 | <4 | 34 | <2 | 13 | 4 | <1 | 30 | <0.1 |
| REP 100302 | QC | 6 | 623 | 4.17 | 128 | 0.42 | 6.25 | 1.45 | 0.49 | <4 | 35 | <2 | 14 | 4 | <1 | 32 | <0.1 |
| Reference Materials | | | | | | | | | | | | | | | | | |
| STD OREAS25A-4A | Standard | 22 | 96 | 0.32 | 147 | 0.87 | 9.03 | 0.12 | 0.52 | <4 | 148 | 4 | 11 | 20 | <1 | 13 | <0.1 |
| STD OREAS45E | Standard | 12 | 1024 | 0.15 | 248 | 0.52 | 6.93 | 0.05 | 0.36 | <4 | 94 | <2 | 8 | 10 | <1 | 92 | <0.1 |
| STD OXC145 | Standard | | | | | | | | | | | | | | | | |
| STD OXH139 | Standard | | | | | | | | | | | | | | | | |
| STD OXC145 Expected | | | | | | | | | | | | | | | | | |
| STD OXH139 Expected | | | | | | | | | | | | | | | | | |
| STD OREAS45E Expected | | 11 | 979 | 0.156 | 252 | 0.559 | 6.78 | 0.059 | 0.324 | 1.07 | 97 | 1.32 | 8.28 | 6.8 | 0.62 | 93 | 0.046 |
| STD OREAS25A-4A Expected | | 21.8 | 115 | 0.327 | 147 | 0.977 | 8.87 | 0.134 | 0.482 | 2 | 155 | 4.06 | 10.5 | 20.9 | 0.93 | 13.7 | 0.047 |
| BLK | Blank | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | |
| BLK | Blank | <2 | <2 | <0.01 | <1 | <0.01 | <0.01 | <0.01 | <0.01 | <4 | <2 | <2 | <2 | <2 | <1 | <1 | <0.1 |

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Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

**Client:** **Freeport-McMoRan Mineral Properties Cana**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Submitted By: Ramon Taningco
Receiving Lab: Canada-Vancouver
Received: August 02, 2018
Report Date: January 31, 2019


# CERTIFICATE OF ANALYSIS VAN18001969.2

## CLIENT JOB INFORMATION

Project: None Given
Shipment ID:
P.O. Number
Number of Samples: 23

## SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days
DISP-RJT Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Procedure Code | Number of Samples | Code Description | Test Wgt (g) | Report Status | Lab |
|---|---|---|---|---|---|
| PRP70-250 | 23 | Crush, split and pulverize 250 g rock to 200 mesh | | | VAN |
| FA330-Au | 23 | Fire assay fusion Au by ICP-ES | 30 | Completed | VAN |
| EN002 | 23 | Environmental disposal charge-Fire assay lead waste | | | VAN |
| MA200 | 23 | 4 Acid digestion ICP-MS analysis | 0.25 | Completed | VAN |
| MA370 | 4 | 4-Acid Digestion ICP-ES Finish | 0.5 | Completed | VAN |

## ADDITIONAL COMMENTS

Version 2 : MA370-Cu included.

Invoice To: Freeport-McMoRan Mineral Properties Canada
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2
Canada

CC: Ingemar Arellano

JEFFREY CANNON
Geochemistry Department Supervisor

BUREAU VERITAS
MINERAL LABORATORIES
Canada

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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

**Client:** **Freeport-McMoRan Mineral Properties Cana**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: January 31, 2019



# CERTIFICATE OF ANALYSIS VAN18001969.2

| | Method | WGHT | FA330 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Wgt | Au | Mo | Cu | Pb | Zn | Ag | Ni | Co | Mn | Fe | As | U | Th | Sr | Cd | Sb | Bi | V | Ca |
| | Unit | kg | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % |
| | MDL | 0.01 | 2 | 0.1 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.2 | 1 | 0.01 | 1 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.1 | 1 | 0.01 |
| 100251 | Rock | 0.53 | 4 | 0.2 | 19.1 | 1.8 | 18 | <0.1 | 15.0 | 11.5 | 465 | 2.84 | 3 | 0.2 | 0.3 | 44 | 0.2 | 0.1 | <0.1 | 176 | 16.32 |
| 100252 | Rock | 1.09 | 6 | 0.6 | 20.9 | 4.3 | 26 | <0.1 | 50.0 | 25.9 | 1884 | 4.99 | 2 | 0.1 | 0.1 | 1502 | 0.3 | 0.6 | <0.1 | 90 | 15.02 |
| 100253 | Rock | 1.14 | 43 | 0.2 | 1359.5 | 2.7 | 52 | 4.4 | 53.9 | 24.9 | 2028 | 3.35 | 2 | <0.1 | <0.1 | 302 | 0.4 | 0.8 | <0.1 | 52 | 11.36 |
| 100255 | Rock | 1.40 | 36 | 0.4 | >10000 | 9.3 | 37 | 77.0 | 15.9 | 14.0 | 1630 | 4.85 | 4 | 1.0 | 1.1 | 657 | 1.8 | 0.8 | 0.5 | 220 | 10.48 |
| 100256 | Rock | 2.10 | 39 | 0.9 | >10000 | 10.3 | 26 | 114.4 | 8.5 | 8.2 | 1088 | 3.53 | 3 | 1.8 | 1.0 | 591 | 16.2 | 1.1 | 0.4 | 211 | 12.55 |
| 100257 | Rock | 0.95 | 4 | 0.3 | >10000 | 5.6 | 26 | 16.2 | 21.0 | 18.4 | 985 | 4.77 | 5 | 0.5 | 0.8 | 517 | 0.9 | 0.2 | <0.1 | 368 | 13.51 |
| 100351 | Rock | 0.45 | <2 | 0.4 | 49.4 | 7.8 | 12 | <0.1 | 0.6 | 0.3 | 130 | 0.53 | 6 | 5.6 | 14.4 | 178 | <0.1 | 0.8 | <0.1 | 2 | 0.54 |
| 100352 | Rock | 0.49 | 4 | 0.5 | 97.4 | 5.2 | 57 | 0.2 | 38.4 | 19.6 | 942 | 4.25 | 14 | 0.9 | 2.2 | 655 | <0.1 | 2.2 | <0.1 | 201 | 5.81 |
| 100353 | Rock | 0.57 | <2 | 0.1 | 13.7 | 8.0 | 30 | <0.1 | 2.1 | 1.3 | 173 | 0.71 | 5 | 1.3 | 1.1 | 698 | <0.1 | 0.2 | <0.1 | 14 | 0.47 |
| 100354 | Rock | 0.48 | 5 | 0.4 | 100.4 | 2.9 | 100 | <0.1 | 22.9 | 31.9 | 754 | 6.48 | 18 | 0.6 | 1.1 | 72 | <0.1 | 1.7 | <0.1 | 251 | 4.59 |
| 100355 | Rock | 1.13 | 7 | 0.2 | >10000 | 2.9 | 57 | 2.5 | 11.2 | 17.8 | 1098 | 4.44 | 2 | 0.5 | 1.6 | 610 | 0.3 | 0.2 | <0.1 | 224 | 5.19 |
| 100356 | Rock | 0.37 | <2 | 0.3 | 114.6 | 15.2 | 45 | <0.1 | 0.9 | 0.9 | 218 | 1.07 | 3 | 5.4 | 15.8 | 186 | 0.1 | 0.7 | 0.1 | 3 | 0.48 |
| 100161 | Rock | 0.75 | 8 | 0.9 | 58.6 | 2.6 | 77 | <0.1 | 14.2 | 31.2 | 1060 | 6.35 | 4 | 1.3 | 1.1 | 199 | <0.1 | 0.2 | <0.1 | 301 | 5.86 |
| 100164 | Rock | 1.38 | 5 | 0.2 | 29.2 | 2.6 | 64 | <0.1 | 26.3 | 32.4 | 1238 | 6.58 | 5 | 0.3 | 0.5 | 1089 | 0.1 | 0.2 | <0.1 | 301 | 9.71 |
| 100165 | Rock | 0.78 | 35 | <0.1 | 1430.9 | 1.1 | 42 | 0.4 | 4.3 | 12.8 | 1210 | 3.04 | 1 | <0.1 | 0.1 | 314 | 0.2 | 0.3 | <0.1 | 79 | 12.81 |
| 100168 | Rock | 0.77 | 4 | 0.8 | 170.0 | 1.8 | 83 | <0.1 | 13.0 | 22.8 | 1300 | 5.23 | 5 | 1.0 | 1.6 | 549 | <0.1 | 0.3 | <0.1 | 233 | 4.45 |
| 100169 | Rock | 0.54 | 3 | 0.4 | 170.6 | 2.5 | 102 | <0.1 | 24.7 | 35.2 | 1330 | 6.95 | 2 | 0.8 | 1.4 | 192 | 0.1 | 0.2 | <0.1 | 276 | 5.67 |
| 100171 | Rock | 0.87 | 12 | 2.4 | 7820.3 | 2.5 | 76 | 0.3 | 40.7 | 37.1 | 1335 | 6.08 | 3 | 1.5 | 0.9 | 115 | 0.3 | 0.3 | <0.1 | 326 | 3.94 |
| 100173 | Rock | 0.70 | 3 | 0.3 | 29.9 | 4.3 | 35 | <0.1 | 17.7 | 18.1 | 906 | 7.10 | 10 | 0.7 | 1.1 | 975 | 0.2 | 0.5 | <0.1 | 339 | 8.64 |
| 100176 | Rock | 1.09 | 4 | 0.2 | 157.2 | 2.8 | 88 | 0.1 | 77.4 | 49.0 | 1507 | 7.68 | 2 | 0.7 | 1.1 | 258 | <0.1 | 0.2 | <0.1 | 280 | 6.72 |
| 100177 | Rock | 0.94 | 3 | 0.3 | 97.0 | 1.5 | 56 | <0.1 | 45.0 | 29.8 | 924 | 5.16 | 6 | 0.5 | 0.7 | 351 | <0.1 | 0.4 | <0.1 | 149 | 9.42 |
| 100178 | Rock | 0.51 | 11 | 0.3 | 163.9 | 3.2 | 91 | 0.1 | 42.1 | 38.6 | 1353 | 6.83 | 2 | 0.8 | 1.2 | 766 | 0.1 | <0.1 | <0.1 | 279 | 5.46 |
| 100183 | Rock | 0.87 | 3 | 0.2 | 4037.7 | 3.7 | 56 | 0.7 | 13.2 | 18.1 | 774 | 5.55 | 7 | 0.5 | 0.9 | 167 | <0.1 | 0.1 | <0.1 | 194 | 6.99 |

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PHONE (604) 253-3158

**Client:** **Freeport-McMoRan Mineral Properties Cana**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: January 31, 2019



# CERTIFICATE OF ANALYSIS VAN18001969.2

| | Method | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | P | La | Cr | Mg | Ba | Ti | Al | Na | K | W | Zr | Ce | Sn | Y | Nb | Ta | Be | Sc | Li | S |
| | Unit | % | ppm | ppm | % | ppm | % | % | % | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % |
| | MDL | 0.001 | 0.1 | 1 | 0.01 | 1 | 0.001 | 0.01 | 0.001 | 0.01 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.1 | 0.1 | 1 | 1 | 0.1 | 0.1 |
| 100251 | Rock | 0.032 | 3.0 | 37 | 0.84 | 8 | 0.254 | 7.18 | 0.058 | 0.01 | 1.2 | 25.8 | 6 | 0.4 | 8.0 | 0.9 | <0.1 | <1 | 11 | 11.2 | <0.1 |
| 100252 | Rock | 0.009 | 2.1 | 182 | 6.56 | 820 | 0.059 | 0.87 | 0.018 | 0.23 | 1.7 | 4.2 | 4 | 0.1 | 5.4 | 0.2 | <0.1 | <1 | 11 | 3.7 | <0.1 |
| 100253 | Rock | 0.013 | 1.8 | 65 | 5.76 | 85 | 0.023 | 0.40 | 0.022 | 0.10 | 0.8 | 2.0 | 3 | <0.1 | 4.5 | 0.1 | <0.1 | <1 | 5 | 3.0 | <0.1 |
| 100255 | Rock | 0.058 | 7.6 | 31 | 0.73 | 29 | 0.330 | 6.57 | 0.661 | 0.05 | 0.7 | 29.0 | 13 | 0.6 | 12.7 | 2.7 | 0.2 | <1 | 13 | 5.9 | 0.7 |
| 100256 | Rock | 0.049 | 6.7 | 19 | 0.62 | 78 | 0.254 | 5.46 | 1.303 | 0.29 | 0.8 | 30.2 | 12 | 0.5 | 11.3 | 2.2 | 0.1 | <1 | 10 | 5.0 | 0.8 |
| 100257 | Rock | 0.065 | 5.7 | 72 | 1.19 | 53 | 0.474 | 8.27 | 1.603 | 0.14 | 0.7 | 35.9 | 13 | 0.4 | 14.9 | 1.9 | 0.1 | <1 | 25 | 5.5 | 0.4 |
| 100351 | Rock | 0.004 | 24.6 | 2 | 0.09 | 201 | 0.061 | 5.38 | 4.230 | 0.19 | 1.0 | 118.2 | 50 | 2.6 | 30.8 | 5.1 | 0.4 | 2 | 2 | 1.0 | <0.1 |
| 100352 | Rock | 0.074 | 11.1 | 69 | 2.16 | 169 | 0.318 | 8.63 | 2.207 | 0.20 | 0.7 | 12.8 | 20 | 0.5 | 12.4 | 2.3 | 0.1 | <1 | 21 | 12.6 | <0.1 |
| 100353 | Rock | 0.021 | 2.9 | 3 | 0.07 | 1128 | 0.060 | 7.23 | 5.397 | 0.51 | 0.2 | 36.4 | 6 | 0.6 | 2.1 | 1.6 | <0.1 | 1 | <1 | 14.8 | <0.1 |
| 100354 | Rock | 0.103 | 7.0 | 36 | 1.39 | 254 | 0.544 | 8.09 | 0.143 | 2.36 | 0.5 | 35.4 | 16 | 0.7 | 10.9 | 3.7 | 0.2 | <1 | 19 | 28.7 | 0.3 |
| 100355 | Rock | 0.090 | 8.3 | 22 | 1.36 | 62 | 0.476 | 8.14 | 4.028 | 0.28 | 0.2 | 44.8 | 16 | 0.6 | 13.0 | 4.0 | 0.2 | <1 | 13 | 7.3 | 0.2 |
| 100356 | Rock | 0.006 | 30.2 | 3 | 0.26 | 374 | 0.074 | 6.19 | 4.511 | 0.35 | 1.4 | 139.8 | 59 | 2.8 | 26.2 | 5.9 | 0.5 | <1 | 2 | 4.2 | <0.1 |
| 100161 | Rock | 0.144 | 6.7 | 15 | 2.35 | 18 | 0.659 | 7.85 | 3.366 | 0.05 | 0.5 | 69.8 | 16 | 0.8 | 17.8 | 4.0 | 0.2 | <1 | 22 | 7.4 | <0.1 |
| 100164 | Rock | 0.075 | 6.0 | 51 | 1.98 | 6 | 0.671 | 8.43 | 0.019 | <0.01 | 0.3 | 50.2 | 13 | 0.5 | 17.6 | 2.4 | 0.1 | <1 | 25 | 6.5 | <0.1 |
| 100165 | Rock | 0.013 | 2.8 | 6 | 0.96 | 28 | 0.124 | 2.61 | 0.014 | 0.16 | 0.3 | 7.4 | 5 | 0.1 | 6.8 | 0.5 | <0.1 | <1 | 4 | 8.8 | <0.1 |
| 100168 | Rock | 0.129 | 9.1 | 15 | 2.00 | 869 | 0.499 | 8.11 | 2.705 | 2.57 | 0.4 | 54.5 | 20 | 0.7 | 13.4 | 6.6 | 0.3 | <1 | 15 | 14.8 | <0.1 |
| 100169 | Rock | 0.131 | 9.3 | 59 | 2.68 | 261 | 0.503 | 7.58 | 2.340 | 1.12 | 0.4 | 54.8 | 19 | 0.6 | 14.3 | 3.4 | 0.2 | <1 | 19 | 9.2 | <0.1 |
| 100171 | Rock | 0.085 | 7.3 | 81 | 4.20 | 151 | 0.409 | 5.95 | 1.948 | 0.63 | 0.5 | 37.7 | 14 | 0.6 | 11.9 | 2.1 | 0.1 | <1 | 22 | 23.5 | 0.4 |
| 100173 | Rock | 0.083 | 8.6 | 21 | 0.74 | 7 | 0.730 | 7.87 | 1.616 | <0.01 | 0.3 | 56.5 | 17 | 0.7 | 17.1 | 3.1 | 0.2 | <1 | 24 | 9.2 | <0.1 |
| 100176 | Rock | 0.085 | 6.8 | 237 | 5.07 | 480 | 0.440 | 5.60 | 1.253 | 1.46 | 0.4 | 40.3 | 14 | 0.5 | 13.6 | 1.6 | <0.1 | <1 | 31 | 7.6 | <0.1 |
| 100177 | Rock | 0.057 | 3.8 | 144 | 2.60 | 710 | 0.291 | 4.04 | 0.442 | 1.67 | 0.4 | 23.7 | 8 | 0.3 | 7.9 | 1.1 | <0.1 | <1 | 20 | 11.6 | <0.1 |
| 100178 | Rock | 0.106 | 7.6 | 147 | 3.80 | 344 | 0.484 | 6.68 | 2.868 | 0.99 | 0.2 | 41.1 | 15 | 0.6 | 14.3 | 2.4 | 0.1 | <1 | 26 | 11.7 | <0.1 |
| 100183 | Rock | 0.085 | 8.8 | 32 | 0.96 | 18 | 0.480 | 8.07 | 3.873 | 0.03 | 0.3 | 55.9 | 17 | 0.6 | 17.7 | 2.8 | 0.2 | <1 | 15 | 4.7 | <0.1 |

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1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: January 31, 2019



# CERTIFICATE OF ANALYSIS VAN18001969.2

| | Method | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA370 |
|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Rb | Hf | In | Re | Se | Te | Tl | Cu |
| | Unit | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % |
| | MDL | 0.1 | 0.1 | 0.05 | 0.005 | 1 | 0.5 | 0.5 | 0.001 |
| 100251 | Rock | 0.4 | 0.7 | <0.05 | <0.005 | <1 | 1.5 | <0.5 | |
| 100252 | Rock | 8.6 | 0.1 | <0.05 | <0.005 | <1 | 5.3 | <0.5 | |
| 100253 | Rock | 3.1 | <0.1 | <0.05 | <0.005 | <1 | 3.6 | <0.5 | |
| 100255 | Rock | 1.7 | 1.1 | 0.06 | 0.007 | 11 | 0.7 | <0.5 | 4.832 |
| 100256 | Rock | 9.3 | 1.1 | <0.05 | <0.005 | 8 | 1.5 | <0.5 | 5.533 |
| 100257 | Rock | 2.2 | 1.3 | 0.07 | <0.005 | <1 | 1.6 | <0.5 | 2.528 |
| 100351 | Rock | 5.9 | 4.2 | <0.05 | <0.005 | <1 | <0.5 | <0.5 | |
| 100352 | Rock | 2.0 | 0.4 | <0.05 | <0.005 | <1 | 0.9 | <0.5 | |
| 100353 | Rock | 11.7 | 1.4 | <0.05 | <0.005 | <1 | <0.5 | <0.5 | |
| 100354 | Rock | 43.3 | 1.1 | 0.07 | <0.005 | 1 | <0.5 | <0.5 | |
| 100355 | Rock | 2.7 | 1.6 | 0.05 | 0.005 | <1 | 0.7 | <0.5 | 2.138 |
| 100356 | Rock | 13.1 | 4.9 | <0.05 | <0.005 | <1 | <0.5 | <0.5 | |
| 100161 | Rock | 0.4 | 2.1 | 0.06 | <0.005 | <1 | 0.7 | <0.5 | |
| 100164 | Rock | 0.2 | 1.6 | 0.07 | <0.005 | <1 | 0.9 | <0.5 | |
| 100165 | Rock | 3.4 | 0.3 | <0.05 | <0.005 | <1 | 0.8 | <0.5 | |
| 100168 | Rock | 39.5 | 1.9 | 0.06 | <0.005 | <1 | <0.5 | <0.5 | |
| 100169 | Rock | 14.0 | 1.6 | 0.06 | <0.005 | <1 | 0.8 | <0.5 | |
| 100171 | Rock | 8.9 | 1.3 | <0.05 | <0.005 | <1 | 1.1 | <0.5 | |
| 100173 | Rock | 0.3 | 1.6 | 0.07 | <0.005 | <1 | <0.5 | <0.5 | |
| 100176 | Rock | 29.5 | 1.2 | 0.08 | <0.005 | <1 | 1.4 | <0.5 | |
| 100177 | Rock | 40.4 | 0.8 | <0.05 | <0.005 | <1 | 1.0 | <0.5 | |
| 100178 | Rock | 20.9 | 1.5 | <0.05 | <0.005 | <1 | 0.8 | <0.5 | |
| 100183 | Rock | 0.3 | 1.7 | 0.06 | <0.005 | <1 | <0.5 | <0.5 | |

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**Client:** **Freeport-McMoRan Mineral Properties Cana**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: January 31, 2019



# QUALITY CONTROL REPORT VAN18001969.2

| | Method | WGHT | FA330 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Wgt | Au | Mo | Cu | Pb | Zn | Ag | Ni | Co | Mn | Fe | As | U | Th | Sr | Cd | Sb | Bi | V | Ca |
| | Unit | kg | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % |
| | MDL | 0.01 | 2 | 0.1 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.2 | 1 | 0.01 | 1 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.1 | 1 | 0.01 |
| Pulp Duplicates | | | | | | | | | | | | | | | | | | | | | |
| 100257 | Rock | 0.95 | 4 | 0.3 | >10000 | 5.6 | 26 | 16.2 | 21.0 | 18.4 | 985 | 4.77 | 5 | 0.5 | 0.8 | 517 | 0.9 | 0.2 | <0.1 | 368 | 13.51 |
| REP 100257 | QC | | | | | | | | | | | | | | | | | | | | |
| 100355 | Rock | 1.13 | 7 | 0.2 | >10000 | 2.9 | 57 | 2.5 | 11.2 | 17.8 | 1098 | 4.44 | 2 | 0.5 | 1.6 | 610 | 0.3 | 0.2 | <0.1 | 224 | 5.19 |
| REP 100355 | QC | | 7 | 0.2 | >10000 | 2.9 | 57 | 2.6 | 10.5 | 19.3 | 1106 | 4.46 | 3 | 0.4 | 1.5 | 603 | 0.4 | 0.2 | <0.1 | 224 | 5.24 |
| 100183 | Rock | 0.87 | 3 | 0.2 | 4037.7 | 3.7 | 56 | 0.7 | 13.2 | 18.1 | 774 | 5.55 | 7 | 0.5 | 0.9 | 167 | <0.1 | 0.1 | <0.1 | 194 | 6.99 |
| REP 100183 | QC | | 4 | | | | | | | | | | | | | | | | | | |
| Core Reject Duplicates | | | | | | | | | | | | | | | | | | | | | |
| 100161 | Rock | 0.75 | 8 | 0.9 | 58.6 | 2.6 | 77 | <0.1 | 14.2 | 31.2 | 1060 | 6.35 | 4 | 1.3 | 1.1 | 199 | <0.1 | 0.2 | <0.1 | 301 | 5.86 |
| DUP 100161 | QC | | 7 | 0.7 | 43.1 | 2.4 | 78 | <0.1 | 14.7 | 32.8 | 1067 | 6.37 | 5 | 1.4 | 1.1 | 201 | <0.1 | 0.1 | <0.1 | 303 | 5.91 |
| Reference Materials | | | | | | | | | | | | | | | | | | | | | |
| STD CDN-ME-14 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD CDN-ME-9 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OREAS25A-4A | Standard | | | 2.3 | 32.6 | 24.6 | 40 | <0.1 | 45.2 | 7.7 | 453 | 6.24 | 9 | 2.7 | 14.8 | 42 | <0.1 | 0.6 | 0.3 | 150 | 0.27 |
| STD OREAS45E | Standard | | | 2.4 | 749.7 | 19.0 | 45 | 0.3 | 450.2 | 58.0 | 543 | 23.35 | 17 | 2.6 | 13.3 | 17 | <0.1 | 0.9 | 0.3 | 310 | 0.07 |
| STD OXC145 | Standard | | 211 | | | | | | | | | | | | | | | | | | |
| STD OXC145 | Standard | | 214 | | | | | | | | | | | | | | | | | | |
| STD OXH139 | Standard | | 1275 | | | | | | | | | | | | | | | | | | |
| STD OXC145 Expected | | | 212 | | | | | | | | | | | | | | | | | | |
| STD OXH139 Expected | | | 1312 | | | | | | | | | | | | | | | | | | |
| STD OREAS25A-4A Expected | | | | 2.55 | 33.9 | 25.2 | 44.4 | | 45.8 | 8.2 | 470 | 6.6 | 9.94 | 2.94 | 15.8 | 48.5 | | 0.67 | 0.35 | 157 | 0.309 |
| STD OREAS45E Expected | | | | 2.4 | 780 | 18.2 | 46.7 | 0.311 | 454 | 57 | 570 | 24.12 | 16.3 | 2.41 | 12.9 | 15.9 | 0.06 | 1 | 0.28 | 322 | 0.065 |
| STD CDN-ME-14 Expected | | | | | | | | | | | | | | | | | | | | | |
| STD CDN-ME-9 Expected | | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | <2 | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | 2 | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | 4 | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | | <0.1 | 0.3 | <0.1 | <1 | <0.1 | <0.1 | <0.2 | <1 | <0.01 | 2 | <0.1 | <0.1 | <1 | <0.1 | <0.1 | <0.1 | <1 | <0.01 |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |

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Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: January 31, 2019



# QUALITY CONTROL REPORT VAN18001969.2

| | Method | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | P | La | Cr | Mg | Ba | Ti | Al | Na | K | W | Zr | Ce | Sn | Y | Nb | Ta | Be | Sc | Li | S |
| | Unit | % | ppm | ppm | % | ppm | % | % | % | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % |
| | MDL | 0.001 | 0.1 | 1 | 0.01 | 1 | 0.001 | 0.01 | 0.001 | 0.01 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.1 | 0.1 | 1 | 1 | 0.1 | 0.1 |
| Pulp Duplicates | | | | | | | | | | | | | | | | | | | | | |
| 100257 | Rock | 0.065 | 5.7 | 72 | 1.19 | 53 | 0.474 | 8.27 | 1.603 | 0.14 | 0.7 | 35.9 | 13 | 0.4 | 14.9 | 1.9 | 0.1 | <1 | 25 | 5.5 | 0.4 |
| REP 100257 | QC | | | | | | | | | | | | | | | | | | | | |
| 100355 | Rock | 0.090 | 8.3 | 22 | 1.36 | 62 | 0.476 | 8.14 | 4.028 | 0.28 | 0.2 | 44.8 | 16 | 0.6 | 13.0 | 4.0 | 0.2 | <1 | 13 | 7.3 | 0.2 |
| REP 100355 | QC | 0.091 | 8.2 | 23 | 1.37 | 60 | 0.487 | 8.16 | 4.048 | 0.27 | 0.2 | 46.2 | 16 | 0.6 | 13.4 | 3.9 | 0.2 | <1 | 13 | 7.3 | 0.2 |
| 100183 | Rock | 0.085 | 8.8 | 32 | 0.96 | 18 | 0.480 | 8.07 | 3.873 | 0.03 | 0.3 | 55.9 | 17 | 0.6 | 17.7 | 2.8 | 0.2 | <1 | 15 | 4.7 | <0.1 |
| REP 100183 | QC | | | | | | | | | | | | | | | | | | | | |
| Core Reject Duplicates | | | | | | | | | | | | | | | | | | | | | |
| 100161 | Rock | 0.144 | 6.7 | 15 | 2.35 | 18 | 0.659 | 7.85 | 3.366 | 0.05 | 0.5 | 69.8 | 16 | 0.8 | 17.8 | 4.0 | 0.2 | <1 | 22 | 7.4 | <0.1 |
| DUP 100161 | QC | 0.140 | 7.1 | 16 | 2.39 | 19 | 0.668 | 8.18 | 3.418 | 0.05 | 0.6 | 72.9 | 17 | 0.7 | 18.1 | 4.0 | 0.2 | <1 | 23 | 7.6 | <0.1 |
| Reference Materials | | | | | | | | | | | | | | | | | | | | | |
| STD CDN-ME-14 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD CDN-ME-9 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OREAS25A-4A | Standard | 0.044 | 20.4 | 116 | 0.29 | 137 | 0.887 | 8.37 | 0.130 | 0.44 | 2.1 | 134.0 | 42 | 3.6 | 9.3 | 18.2 | 1.3 | <1 | 11 | 35.2 | <0.1 |
| STD OREAS45E | Standard | 0.029 | 11.3 | 939 | 0.14 | 242 | 0.516 | 6.43 | 0.051 | 0.33 | 1.9 | 88.0 | 24 | 1.3 | 7.6 | 5.8 | 0.5 | <1 | 83 | 5.6 | <0.1 |
| STD OXC145 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OXC145 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OXH139 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OXC145 Expected | | | | | | | | | | | | | | | | | | | | | |
| STD OXH139 Expected | | | | | | | | | | | | | | | | | | | | | |
| STD OREAS25A-4A Expected | | 0.048 | 21.8 | 115 | 0.327 | 147 | 0.977 | 8.87 | 0.134 | 0.482 | 2 | 155 | 48.9 | 4.06 | 10.5 | 20.9 | 1.5 | 0.93 | 13.7 | 36.7 | 0.047 |
| STD OREAS45E Expected | | 0.034 | 11 | 979 | 0.156 | 252 | 0.559 | 6.78 | 0.059 | 0.324 | 1.07 | 97 | 23.5 | 1.32 | 8.28 | 6.8 | 0.54 | | 93 | 6.58 | 0.046 |
| STD CDN-ME-14 Expected | | | | | | | | | | | | | | | | | | | | | |
| STD CDN-ME-9 Expected | | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | <0.001 | <0.1 | <1 | <0.01 | <1 | <0.001 | <0.01 | 0.005 | <0.01 | <0.1 | <0.1 | <1 | <0.1 | <0.1 | <0.1 | <0.1 | <1 | <1 | <0.1 | <0.1 |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |

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1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: January 31, 2019



# QUALITY CONTROL REPORT VAN18001969.2

| | Method | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA370 |
|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Rb | Hf | In | Re | Se | Te | Tl | Cu |
| | Unit | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % |
| | MDL | 0.1 | 0.1 | 0.05 | 0.005 | 1 | 0.5 | 0.5 | 0.001 |
| Pulp Duplicates | | | | | | | | | |
| 100257 | Rock | 2.2 | 1.3 | 0.07 | <0.005 | <1 | 1.6 | <0.5 | 2.528 |
| REP 100257 | QC | | | | | | | | 2.514 |
| 100355 | Rock | 2.7 | 1.6 | 0.05 | 0.005 | <1 | 0.7 | <0.5 | 2.138 |
| REP 100355 | QC | 2.5 | 1.6 | 0.07 | 0.006 | <1 | <0.5 | <0.5 | |
| 100183 | Rock | 0.3 | 1.7 | 0.06 | <0.005 | <1 | <0.5 | <0.5 | |
| REP 100183 | QC | | | | | | | | |
| Core Reject Duplicates | | | | | | | | | |
| 100161 | Rock | 0.4 | 2.1 | 0.06 | <0.005 | <1 | 0.7 | <0.5 | |
| DUP 100161 | QC | 0.5 | 2.2 | 0.06 | <0.005 | <1 | <0.5 | <0.5 | |
| Reference Materials | | | | | | | | | |
| STD CDN-ME-14 | Standard | | | | | | | | 1.227 |
| STD CDN-ME-9 | Standard | | | | | | | | 0.665 |
| STD OREAS25A-4A | Standard | 51.9 | 3.6 | 0.10 | <0.005 | 1 | <0.5 | <0.5 | |
| STD OREAS45E | Standard | 20.6 | 2.9 | 0.09 | <0.005 | 3 | <0.5 | <0.5 | |
| STD OXC145 | Standard | | | | | | | | |
| STD OXC145 | Standard | | | | | | | | |
| STD OXH139 | Standard | | | | | | | | |
| STD OXC145 Expected | | | | | | | | | |
| STD OXH139 Expected | | | | | | | | | |
| STD OREAS25A-4A Expected | | 61 | 4.28 | 0.09 | | 2.5 | | 0.35 | |
| STD OREAS45E Expected | | 21.2 | 3.11 | 0.099 | | 2.97 | 0.1 | 0.15 | |
| STD CDN-ME-14 Expected | | | | | | | | | 1.221 |
| STD CDN-ME-9 Expected | | | | | | | | | 0.654 |
| BLK | Blank | | | | | | | | |
| BLK | Blank | | | | | | | | |
| BLK | Blank | | | | | | | | |
| BLK | Blank | 0.5 | <0.1 | <0.05 | <0.005 | <1 | <0.5 | <0.5 | |
| BLK | Blank | | | | | | | | <0.001 |

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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

**Client:** **Freeport-McMoRan Mineral Properties Cana**
1409 - 409 Granville Street
Vancouver British Columbia V6C 1T2 Canada

Project: None Given
Report Date: January 31, 2019



# QUALITY CONTROL REPORT VAN18001969.2

| | | WGHT | FA330 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 | MA200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Wgt | Au | Mo | Cu | Pb | Zn | Ag | Ni | Co | Mn | Fe | As | U | Th | Sr | Cd | Sb | Bi | V | Ca |
| | | kg | ppb | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % |
| | | 0.01 | 2 | 0.1 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.2 | 1 | 0.01 | 1 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.1 | 1 | 0.01 |
| Prep Wash | | | | | | | | | | | | | | | | | | | | | |
| ROCK-VAN | Prep Blank | | <2 | 1.3 | 4.8 | 2.4 | 39 | <0.1 | 1.3 | 4.3 | 685 | 2.02 | 6 | 1.2 | 2.7 | 190 | <0.1 | 0.1 | <0.1 | 34 | 1.48 |
| ROCK-VAN | Prep Blank | | 2 | 1.2 | 5.3 | 2.5 | 38 | <0.1 | 0.9 | 3.9 | 650 | 1.95 | 4 | 1.3 | 2.7 | 189 | <0.1 | 0.1 | <0.1 | 33 | 1.42 |

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# QUALITY CONTROL REPORT VAN18001969.2

| | | MA200 P % 0.001 | MA200 La ppm 0.1 | MA200 Cr ppm 1 | MA200 Mg % 0.01 | MA200 Ba ppm 1 | MA200 Ti % 0.001 | MA200 Al % 0.01 | MA200 Na % 0.001 | MA200 K % 0.01 | MA200 W ppm 0.1 | MA200 Zr ppm 0.1 | MA200 Ce ppm 1 | MA200 Sn ppm 0.1 | MA200 Y ppm 0.1 | MA200 Nb ppm 0.1 | MA200 Ta ppm 0.1 | MA200 Be ppm 1 | MA200 Sc ppm 1 | MA200 Li ppm 0.1 | MA200 S % 0.1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Prep Wash | | | | | | | | | | | | | | | | | | | | | |
| ROCK-VAN | Prep Blank | 0.037 | 11.7 | 3 | 0.53 | 838 | 0.204 | 6.84 | 3.281 | 1.69 | 1.9 | 51.6 | 22 | 0.7 | 15.1 | 5.0 | 0.4 | <1 | 6 | 2.7 | <0.1 |
| ROCK-VAN | Prep Blank | 0.037 | 11.2 | 3 | 0.50 | 811 | 0.203 | 6.48 | 3.188 | 1.64 | 1.5 | 52.2 | 21 | 0.7 | 14.9 | 5.0 | 0.3 | 1 | 6 | 2.3 | <0.1 |

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# QUALITY CONTROL REPORT VAN18001969.2

| | | MA200 Rb ppm 0.1 | MA200 Hf ppm 0.1 | MA200 In ppm 0.05 | MA200 Re ppm 0.005 | MA200 Se ppm 1 | MA200 Te ppm 0.5 | MA200 Tl ppm 0.5 | MA370 Cu % 0.001 |
|---|---|---|---|---|---|---|---|---|---|
| Prep Wash | | | | | | | | | |
| ROCK-VAN | Prep Blank | 31.7 | 1.6 | <0.05 | <0.005 | <1 | <0.5 | <0.5 | |
| ROCK-VAN | Prep Blank | 31.2 | 1.6 | <0.05 | <0.005 | <1 | <0.5 | <0.5 | |

# APPENDIX 3

Statement of Work Confirmation

BRITISH COLUMBIA

Print and Close Cancel

# Mineral Titles Online

## Mineral Claim Exploration and Development Work/Expiry Date Change

**Confirmation**

**Recorder:** WETHERUP, STEPHEN WILLIAM (141077)
**Submitter:** WETHERUP, STEPHEN WILLIAM (141077)
**Recorded:** 2019/JAN/16
**Effective:** 2019/JAN/16
**D/E Date:** 2019/JAN/16

### Confirmation

If you have not yet submitted your report for this work program, your technical work report is due in 90 days. The Exploration and Development Work/Expiry Date Change event number is required with your report submission. **Please attach a copy of this confirmation page to your report.** Contact Mineral Titles Branch for more information.

**Event Number:** **5726990**

**Work Type:** Technical Work
**Technical Items:** Geochemical, Geological, Prospecting

**Work Start Date:** 2018/JUL/17
**Work Stop Date:** 2018/JUL/21
**Total Value of Work:** $ 41905.03
**Mine Permit No:**

### Summary of the work value:

| Title Number | Claim Name/Property | Issue Date | Good To Date | New Good To Date | # of Days For-ward | Area in Ha | Applied Work Value | Sub-mission Fee |
|---|---|---|---|---|---|---|---|---|
| 1057904 | SUSTUT1 | 2018/JAN/24 | 2019/JAN/24 | 2020/APR/15 | 447 | 1781.63 | $ 10903.95 | $ 0.00 |
| 1057905 | SUSTUT2 | 2018/JAN/24 | 2019/JAN/24 | 2020/APR/15 | 447 | 1780.14 | $ 10894.86 | $ 0.00 |
| 1057906 | SUSTUT3 | 2018/JAN/24 | 2019/JAN/24 | 2020/APR/15 | 447 | 1778.84 | $ 10886.92 | $ 0.00 |
| 1057907 | SUSTUT4 | 2018/JAN/24 | 2019/JAN/24 | 2020/APR/15 | 447 | 1493.86 | $ 9142.73 | $ 0.00 |

### Financial Summary:

**Total applied work value:** $ 41828.46

**PAC name:** 284568
**Debited PAC amount:** $ 0.0
**Credited PAC amount:** $ 76.57

**Total Submission Fees:** $ 0.0

**Total Paid:** **$ 0.0**

*Please print this page for your records.*

The event was successfully saved.

Click here to return to the Main Menu.