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BC Geological Survey
Assessment Report
39595

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)]: Geochemical, Geological and Geophysical **TOTAL COST:** $724,072.67

AUTHOR(S): Christopher O. Naas **SIGNATURE(S):**

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): MX-13-240 **YEAR OF WORK:** 2020

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5842956

PROPERTY NAME: Thane

CLAIM NAME(S) (on which the work was done): 684244, 688843, 689828, 689843, 689845, 1021097, 1025889, 1040106, 1045081, 1055230, 1055238, 1055259, 1055274, 1057886

COMMODITIES SOUGHT: Cu, Au, Ag, Mo

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 094C-135, 094C-010, 094C-071, 094C-072, 094C-133, 094C-016, 094C-123

MINING DIVISION: Omineca **NTS/BCGS:** 094C03, 094C04, 094C05, 094C06

LATITUDE: 56 ° 05 '12 " **LONGITUDE:** 125 ° 26 '40 " **(at centre of work)**

OWNER(S):
1) Thane Minerals Inc. 2)

MAILING ADDRESS:
2200 885 W. Georgia St.
Vancouver, BC V6C 3E8

OPERATOR(S) [who paid for the work]:
1) Thane Minerals Inc. 2)

MAILING ADDRESS:
2200 885 W. Georgia St.
Vancouver, BC V6C 3E8

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
Property is mainly underlain by early Jurassic Hogem batholith comprised of quartz monzonites, diorites and syenites. The intrusives are in contact with the Upper Triassic Takla Group volcanics, comprised of volcanic flows, breccias and agglomerates. Copper mineralization is documented in many occurrences over much of the property, typically chalcopyrite along with malachite/azurite staining on rock surfaces. Alteration is mainly propylitic with potassic alteration associated with veining.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 04599,14192,17742,17743,21419,21425 21426,26530A,29112,32106,33099,33294,33947,34793,35882,36337,37045,37736,38499

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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	5 km2 (1:2000)	684244, 688843, 689828, 689843, 68[redacted]	$202,798.94
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization	12.5 km	1055230, 1055238, 1055274, 102588[redacted]	$151,257.19
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil	610 samples (ICP-MS, Au geochem)	1025889, 1055274, 689828	$187,984.97
Silt	3 samples (ICP-MS, Au geochem)		$6,435.94
Rock	203 samples (ICP-MS, Au geochem)	1055230, 1055238, 1055274, 102588[redacted]	$87,678.68
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic	41 samples	1055234, 1055236, 1055274, 102588[redacted]	$14,460.71
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)	18.05 km	11025889, 1055274, 689828	$73,456.24
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	$724,072.67

ASSESSMENT REPORT
GEOCHEMISTRY, GEOLOGY AND GEOPHYSICS
at the
Thane Property

(684244, 688843, 689828, 689843, 689845, 1021097, 1025889, 1040106, 1045081, 1055230, 1055238, 1055259, 1055274, 1057886)
Omineca Mining Division, British Columbia, Canada

Owner: Thane Minerals Inc.
Operator: Thane Minerals Inc.

by
Christopher O. Naas, *P.Geo.*
December 20, 2020

Latitude: 56°10'N
Longitude: 125°38'W
NTS 094C03/04/05

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1.0 INTRODUCTION

This report has been prepared by CME Consultants Inc. ("**CME**") at the request of IMC International Mining Corp. ("**IMC**"). The report details the results of the work program conducted by CME on the Thane property and provides recommendations for future work. Fieldwork was carried out from July 3 to August 27, 2020 at the Cathedral, Cirque, Lake and Mat Areas. A helicopter-supported base camp was setup at the Cathedral Area.

The objectives of the work program were to:

- identify areas within the Cathedral and Cirque areas that warrant testing by diamond drilling; and
- investigate some of the known areas of copper and gold mineralization to:
    a. obtain a better understanding on the controls on mineralization; and
    b. expand the mineralization footprint.

To fulfill these objectives, the following work was completed:

- silt sampling;
- grid establishment and soil sampling;
- IP surveying
- petrographic studies;
- geological mapping;
- rock sampling; and
- development of a geological model.

A list of definitions, abbreviations and conversion factors are presented in Appendix I. Structural orientations or Cartesian directions in this report are referenced with respect to true north.

2.0 PROPERTY DESCRIPTION AND LOCATION

The Thane property (the "**Property**") is centred at latitude 56° 10' N and longitude 125° 38' W, approximately 180 kilometres northwest of Mackenzie and 185 kilometres north-northeast of Smithers (Figure 1). The Property is located in the Omineca Mining Division of north-central British Columbia, Canada.

2.1 TITLE

The 20,658.0347 hectare Property consists of 48 MTO cell tenures, which are 100% owned by Thane Minerals Inc., with a 1% NSR to the original claim owner. Mineral tenure details are presented in Table 1 and a plan map of the mineral tenures is presented in Figure 2.



LEGEND

- Thane property
- Proposed mine or mine under construction
- Proposed mine development
- Major exploration project
- Highway
- Secondary routes
- Railway
- River
- Waterbody

0 100km

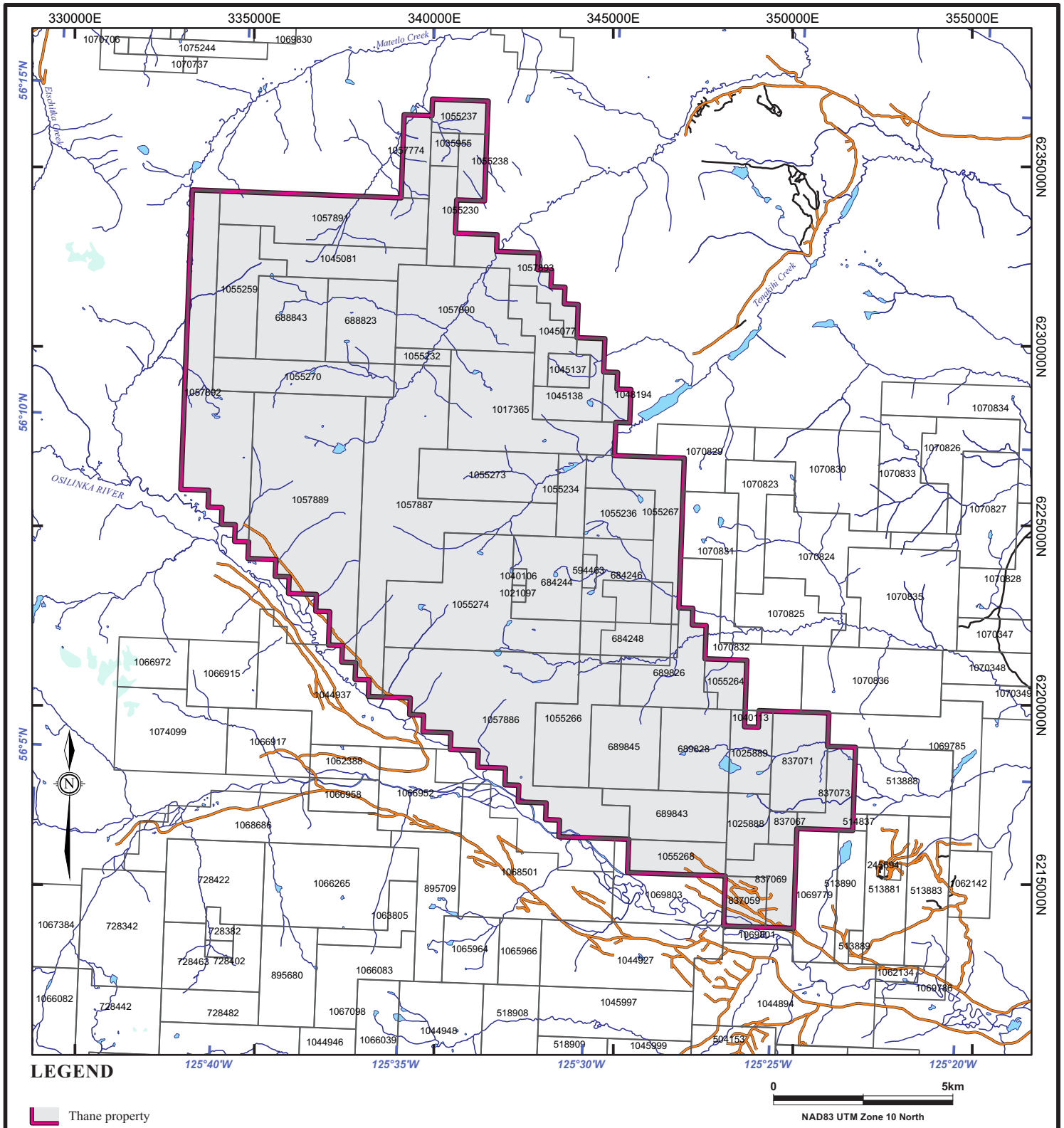
IMC INTERNATIONAL MINING CORP.

LOCATION MAP
THANE PROPERTY

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	CN
Scale:	1:3,000,000	Drawn:	TV, CN
Figure:	1	Date:	December 2020

CME



LEGEND

Thane property

837069 Mineral tenure boundary with tenure ID (December 1, 2020)

TOPOGRAPHY

Secondary routes

Watercourse

Waterbody

IMC INTERNATIONAL MINING CORP.

MINERAL TENURES
Thane Property

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	CN
Scale:	1:150,000	Drawn:	TV, CN
Figure:	2	Date:	December 2020

CME

On March 27, 2020, the Chief Gold Commissioner issued a blanket Time Extension Order for all claims and leases in the province of British Columbia. The Order gave more time for recorded holders to register work or make cash in lieu of work payments. Claims with an expiry date prior to December 31, 2021 are amended from their current expiry date to December 31, 2021.

Table 1: List of mineral tenures, Thane property

Tenure Number	Area (ha)	Owner	Tenure Type	Good To Date
594463	36.0654	Thane Minerals Inc.	MTO Cell	2020SEP/27*
684244	414.7706	Thane Minerals Inc.	MTO Cell	2020SEP/27*
684246	414.7606	Thane Minerals Inc.	MTO Cell	2020SEP/27*
684248	252.555	Thane Minerals Inc.	MTO Cell	2020SEP/27*
688823	450.1158	Thane Minerals Inc.	MTO Cell	2020SEP/27*
688843	450.1199	Thane Minerals Inc.	MTO Cell	2020SEP/27*
689826	433.0388	Thane Minerals Inc.	MTO Cell	2020SEP/27*
689828	451.2893	Thane Minerals Inc.	MTO Cell	2020SEP/27*
689843	415.3282	Thane Minerals Inc.	MTO Cell	2020SEP/27*
689845	451.2932	Thane Minerals Inc.	MTO Cell	2020SEP/27*
837059	162.6033	Thane Minerals Inc.	MTO Cell	2020SEP/27*
837067	72.2301	Thane Minerals Inc.	MTO Cell	2020SEP/27*
837069	252.8936	Thane Minerals Inc.	MTO Cell	2020SEP/27*
837071	433.2248	Thane Minerals Inc.	MTO Cell	2020SEP/27*
837073	216.6435	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1017365	864.7239	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1021097	18.0354	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1025888	198.6395	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1025889	252.7215	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1035955	71.9387	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1040106	18.0336	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1045077	234.071	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1045081	377.9497	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1045137	108.0609	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1045138	252.1758	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1048194	90.0613	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055230	215.9103	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055232	72.0359	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055234	180.2442	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055236	270.3817	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055237	143.8463	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055238	143.8938	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055259	468.037	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055264	144.352	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055266	523.4329	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055267	540.7679	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055268	252.8778	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055270	468.2975	Thane Minerals Inc.	MTO Cell	2020SEP/27*

Table 1: List of mineral tenures, Thane Property *(cont'd)*

Tenure Number	Area (ha)	Owner	Tenure Type	Good To Date
1055273	540.6773	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1055274	1100.2454	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1057774	179.8537	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1057886	1588.3245	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1057887	1748.4763	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1057889	1784.4579	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1057890	774.1504	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1057891	737.7081	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1057892	1080.7358	Thane Minerals Inc.	MTO Cell	2020SEP/27*
1057893	305.9846	Thane Minerals Inc.	MTO Cell	2020SEP/27*

* Claim protected with a Good To Date of December 31, 2021

2.2 ACCESSIBILITY

Road access to the Property from Prince George is gained by taking Highway 97 north to Highway 39 (Mackenzie turnoff). At 16.2 kilometres along Highway 39, a 300 metre all-weather road exits to the west and connects to the Finlay FSR at the 8.2 km marker. At this junction, northbound travel heads to Mackenzie while southbound travel heads to Williston Lake via the Causeway and on to the Phillips Connection at the 18.6 km marker. At the Phillips Connection, the Mt. Milligan mine site and Fort St. James are accessed via the FSR that exits to the west, while access to the Thane property is north via the Finlay FSR. Continuing northward on the Finlay FSR, at the 173 km marker is the junction with the Finlay-Osilinka FSR. The Finlay FSR heads north to several small settlements such as Fort Ware, while the Finlay-Osilinka FSR heads west for 46.5 kilometres to the junction of the Osilinka FSR (46.5 km marker eastbound, 46 km marker westbound). At this junction, road signage designates the Finlay-Osilinka FSR as the Tenakihi Mainline. An abandoned logging camp is located to the northwest of the junction. The Tenakihi Mainline continues approximately 168 kilometres northwest from the junction to the closed Kemess South mine site.

From the Tenakihi Mainline/Osilinka FSR junction, access is limited to the southern and eastern fringes of the Property. Access to the southern part of the Property is by the Thane Mountain FSR (63 km marker) and the Upper Osilinka Mainline (64 km marker), which is gained via the Osilinka FSR. Access to the eastern part of the Property is by the Tenakihi FSR (14.5 km marker), which is gained via the Tenakihi Mainline. Access to the northern part of the Property is unknown, as an unnamed logging road exits to the west of the Tenakihi Mainline at the 23.8 km marker, but topographic maps show this road as being washed out.

Alternatively, helicopter charters can be obtained from Smithers, Fort St. James and Mackenzie. An airstrip is located 3.2 kilometres north of the Tenakihi Mainline/Osilinka FSR junction along the Tenakihi Mainline (west side). The condition and capabilities of this airstrip for fixed wing aircraft is unknown.

2.3 PHYSIOGRAPHY

The property is located in Osilinka Ranges of the Omineca Mountains. The property is characterized by steep mountainous terrain. Elevations range from 960 metres in the Osilinka River valley along the southwestern boundary of the property to 2,360 metres above sea level at the mountain peaks. Numerous small tarns are found in the many cirques. Drainage is dendritic with a general flow to the southeast.

The Property is located on the eastern side of the Continental Divide and all drainage flows into Williston Lake, a man-made reservoir formed behind the W.A.C. Bennett dam and hydroelectric generating station. Drainage continues on to the Arctic Ocean.

3.0 WORK HISTORY

3.1 EXPLORATION AND DEVELOPMENT BY PRIOR OWNERS

The Property has been subject to a number of preliminary regional exploration projects with only localized detailed exploration and sampling in specific areas.

Exploration of the Hogem batholith and surrounding area was initiated in the late 1800's with placer gold being discovered in the district in 1868. During the 1930's Consolidated Mining and Smelting Ltd. explored the margins of the Hogem batholith and conducted underground exploration on several properties for gold, silver, lead and mercury. Kennco Explorations Ltd. explored and staked portions of the Hogem batholith near Duckling Creek in the 1940's. In the early 1970's, mineralization on the Lorraine property discovered by Kennco and subsequently held by Granby Mining Company represented the only significant mineralization found to that date. At the time it was estimated that the Lorraine deposit contained a maximum of 10 million tons grading 0.70% copper.

In the late 1960's and early 1970's the Belgian company, Union Miniere Exploration and Mining Corp. Ltd (UMEX) of Montreal conducted extensive regional exploration in north-central British Columbia, over the Property and surrounding areas. Regional work, carried out by Dolmage Campbell & Associates Ltd., included aeromagnetic surveying and silt sampling (Kahlert, 2006). The aeromagnetic survey outlined three anomalies along the northeast flank of the Hogem batholith. The silt sampling revealed anomalous copper values at the headwaters of Matetlo Creek. Further investigation found low-grade copper mineralization in fractures and disseminated in both the volcanic and intrusive rocks. In 1970, a soil sample grid was established over what was known as the western half of the Mate 2 claim. An open-ended east-west trending copper anomaly (>l00 ppm) measuring 1500 by 750 meters was outlined. Anomalous copper values were found in silts in the headwaters of the south fork of Matetlo Creek.

Stevenson (1991) reports that during the summer of 1971, Amoco Canada conducted a reconnaissance stream sediment sampling-mapping program over the Hogem batholith in search of porphyry copper-molybdenum deposits. A total of 7,376 silts, water, rock and soil

samples were collected from an area of approximately 2,400 square kilometers and analyzed for copper and molybdenum. Amoco did not assay for gold in any of these samples. Numerous areas with anomalous copper and/or molybdenum in stream sediments were detected. Four areas were staked and worked by Amoco during 1972 and 1974. These areas were known as the Tyger, Needle, Oy and Hawk properties. Property work consisted of reconnaissance and detailed soil sampling and geological mapping. The latter three properties were restaked by Cyprus in 1990 and named the Steele, Ten and Hawk properties, respectively. It is unclear how much overlap is between the Oy property and the subsequent Ten property. The former, based on limited information appears to have been located east of the Ten area, in and around the current OY occurrence (Minfile 094C 071). Geology and Exploration and Mining (1973) describes this as an area of monzodiorite and diorite, invaded by numerous dykes and apophyses of fine-grained quartz monzonite and monzonite which are in contact with Takla Group rocks Chalcopyrite occurs as fracture coatings, coarse grains in quartz veins, and minor disseminations over the whole property. Mineralization includes chalcopyrite and specular hematite. No reports of the results of work undertaken are known.

In 1971, Fortune Island Mines Ltd. located several copper occurrences proximal to the earlier UMEX showings. Chip samples from disseminated and fracture-controlled mineralization in propylitized intrusive assayed up to 0.23% and 0.38% copper over 50 and 30 feet respectively. A chip sample across the core of a six foot wide quartz-vein assayed 2.18% copper over 3.5 feet (1.07 m). A six inch (15 cm) chip sample from a four foot (1.22 m) wide quartz-vein returned 3.52% copper and 0.02 oz/ton gold and represents the only gold assay reported. Four aeromagnetic positive anomalies were identified on and adjacent to the Mate property.

In 1972, Noranda Exploration Company, Limited staked the Gail Group claims encompassing a copper-molybdenum prospect located in a small north-facing cirque at the headwaters of Tenakihi Creek. Work on the Gail Group in 1973, included line cutting, soil sampling (40), rock geochemistry (30 talus chips representing a 200 foot section of the contour sampling traverse line), prospecting and mapping at a scale of 1"=400'. Soil and talus samples were analyzed for copper, molybdenum and zinc in Noranda's company laboratory in Vancouver, British Columbia. It was noted that in soils, zinc values were erratic and didn't correlate well with either copper or molybdenum, both of which were considered to be anomalous over the entire grid. The talus chips were noted as having values consistent with observed copper mineralization in the cirque walls to the south and southeast and its noted absence on the walls to the west.

Major General Resources Ltd. (now Commander Resources Ltd.) acquired the extensive UMEX database when UMEX closed its Canadian operations in the early 1980's. With the discovery of the Mt. Milligan deposit and favorable metal prices, interest in copper-gold porphyry deposits resurged in the late 1980's.

In 1990, Cyprus Gold (Canada) Ltd. investigated several properties in the Thane Creek area. These included the Ten claims encompassing the Gail Area as well as the ET, OS, Hawk and Steele claim groups located south of the Property. All prospects were explored for potential gold mineralization.

Work done on the Ten and the ET claims included reconnaissance style geological mapping, soil sampling, rock sampling and proton magnetometer surveying. All soil and rock samples were analyzed for gold and copper.

On the Ten property there were no significant gold values returned from the analyses and as such, no further work was recommended for gold exploration. It was noted that the property did host several broad, moderate to strong copper anomalies associated with strongly potassic-altered syenites. Some of these anomalies were traced for greater than 1,400 metres along strike and up to 400 metres in width, with copper values ranging from 300 ppm to 600 ppm copper and a high noted at 1,200 ppm copper. From these significantly anomalous copper results, it was recommended that the property should be investigated further for its porphyry copper potential.

Soil and rock geochemistry results from the ET property yielded low gold values with a single high gold-in-soil value of 25 ppb and the highest gold value in rocks being 315 ppb. In terms of copper, several rock samples yielded results of >5000 ppm with the highest value being 1.9% copper found in float and 1.1% copper returned from an outcrop. Soil samples generally outline broad anomalous copper zones associated with the anomalous rock sample values. The largest anomalous zone measures 600 metres by 300 metres and has soil values ranging from 300 ppm to 500 ppm copper. Further exploration for gold on the ET property was dissuaded, however, as the property hosts several significant copper soil anomalies, further exploration of the property's porphyry copper potential was recommended.

The TK 1 and TK 2 mineral claims were staked by Electrum Resource Corporation in June of 1990 and subsequently worked on in the 1991 and 1992 field seasons. In 1992, preliminary mapping was done at a scale of 1:15,000 and 19 rock chip samples and 1 heavy mineral stream sediment sample were collected and analyzed. The highest copper value to come out of the 1992 work was 2,907 ppm copper from a piece of intensely calcified Takla volcanic float. The setting indicated that the float is locally derived and that further work was needed in order to define where the sample originated.

In 1991, Major General utilized the UMEX data to select specific porphyry targets within the Hogem batholith. Major General staked and subsequently explored number of properties, including the Mate property encompassed by the current Property.

Also in 1990 and1991 a program of prospecting and sampling was performed around the Link claims which included rock, silt and soil samples. Disseminated chalcopyrite, magnetite and pyrite were noted in rock samples. Soil samples returned anomalous copper up to 261 ppm copper and a rock sample returned 1,547 ppm copper (Ethier, 1991, BC Minfile 094C 123).

Regional mapping in 1991 by BC Geological Survey crews resulted in the defining of several new occurrences on and around the Mate property, which have been added to the provincial mineral occurrence database (MINFILE). These include 094C 113 (Yak), 114 (Koala), 115 (Intrepid), 116 (Bill), 117 (Yeti) and 118 (Dragon).

During the 1991 and 1992 field season, Major General's Mate property was explored under an option agreement with Swannell Minerals Corporation. Prospecting, silt sampling and geological mapping, followed by grid-controlled soil sampling over the previously identified soil anomaly, were carried out. Mapping noted that Takla volcanics on the property were intruded by a monzonite stock in the central portion of the then current Mate property and by the Hogem batholith in the south. Narrow granodioritic dykes cut Takla volcanics proximal to the monzonite stock. Mineralization occurred as disseminated magnetite and pyrite in monzonite and volcanics; fracture-controlled malachite, azurite with or without minor chalcopyrite, and, magnetite and pyrite in monzonite; magnetite veins up to 15 cm wide with rare chalcopyrite and quartz veins with azurite, malachite and rare bornite. While extensive propylitic or potassic alteration was not found, two areas of significant copper mineralization were identified. Of particular note was malachite-azurite in quartz monzonite traced in talus for 200 metres along the base of a slope.

Lithogeochemical response from the work on the Mate claims include 7 samples of greater than 1,000 ppm copper with a maximum 3.08% copper and 0.039 oz/ton gold. Gold response was generally <15 ppb with the exception of one other sample that ran 175 ppb gold and 2135 ppm copper and two with 107 and 500 ppb gold, both with copper <65 ppm. A total of 228 soil samples were collected. Copper ranged from 14 to 468 ppm. Gold ranged from 1 to 152 ppb. Material sampled was primarily talus fines and stream sediment. Additional work including detailed mapping and sampling was recommended on the Mate property. However, interest in porphyry targets waned and shortly thereafter a major decline occurred in the provincial mineral sector leading to the inability to raise exploration funds to pursue the targets and the property was allowed to lapse.

Swannell Minerals Corporation was also working on an area designated as the Aten group of claims, partially encompassed by the current northeastern portion of the Property, and enclosing three Minfile showings: Gail, Ten and Tenakihi Creek. In 1991, Swanell contracted Reliance Geological Services Inc. to explore the Aten group of claims for its alkalic porphyry copper-gold potential. During October 1991, a program of rock sampling (11 samples), stream sediment sampling (31 samples) and reconnaissance geological mapping at a scale of 1:10,000 was carried out. Two rock samples returned copper values of 2.82% and 2.83%. Based these values and on anomalous results from stream drainages, three target areas were identified. From there, further work was recommended consisting of grid establishment, detailed geological mapping, soil sampling, and talus fines sampling.

In 1993, Swanell Minerals Corporation worked on the Aten property encompassing the Tenakihi Creek Minfile occurrence. Fieldwork was designed to follow-up the anomalous rock and soil geochemistry identified in earlier exploration. Fieldwork consisted of a surveyed grid laid out over the north-central area of the property, geological mapping on the gridded area at a scale of 1:10,000, collection of 23 rock samples and 88 soil samples both analyzed for copper and gold. Lithogeochemistry results includes 9 samples of >1,000 ppm copper with a maximum of 3.20% copper. Gold response was lower and erratic, with 4 samples greater than 100 ppb gold and a maximum of 205 ppb gold and 3,599 ppm copper. Gold response from the 88 soil samples collected was noted as being below the 5 ppb

detection limit, the only exceptions being two high values of 28 and 32 ppb gold. Further work was recommended targeting three specific areas on the property.

During 1994, a regional geochemical survey was carried out by the BCGS sampling drainages throughout the 1:250,000 scale NTS map area, 94C (Mesilinka River). A total of 1068 sites were visited. Anomalous samples collected from the Property area included 302 ppm copper from a creek draining the ET area, 246, 258 and 270 ppm copper from creeks draining the Mate/Mat areas, and 216 ppm, 220 ppm and 246 ppm copper draining areas in the Ten/Gail area. Several strong gold-in-silt anomalies were also noted particularly in the north of the property (154 ppb gold) from a creek draining into Matetlo Creek. In the Ten area a sample yielded 86 ppb gold and associated with copper values greater than 200 ppm.

Phelps Dodge Corporation staked claims in the area in late 1999 after completing a regional silt sampling and prospecting program consisting of collecting 16 rock samples and 8 silt samples.

The following year, Phelps Dodge Corporation conducted preliminary soil, bedrock and silt sampling and geological mapping in the Tenakihi Creek area, located near the eastern part of the property. A total of 83 bedrock and float samples, 15 chip samples and 25 silt samples were collected from the claim area and an additional 36 rock, 8 soil and 29 silt samples collected outside the claim area. Of the grab samples collected, 23 returned greater than 0.5% copper, and 8 samples returned greater than 2% copper (Kulla, 2001). This preliminary evaluation of the Tenakihi claims identified widespread disseminated chalcopyrite, chalcopyrite-bornite-malachite-magnetite veins and chalcopyrite-bearing quartz-carbonate veins. Numerous anomalous copper zones appear to be hosted in monzonitic intrusions of the Hogem batholith and are locally associated with prominent but discontinuous east-west trending faults and shear zones within the intrusions. Results from the work of Phelps Dodge were deemed favourable, warranting a follow-up program of detailed mapping, soil sampling and trenching as well as additional prospecting outside the claim boundaries.

In 2005, renewed interest in porphyry copper-molybdenum occurrences, inspired by increased metal prices, prompted Commander Resources to review their in-house data and former projects of the entire area. The Mate property, the Aten property, and four other prospective areas were acquired. In August 2005, a short prospecting program was completed on the Mate with 31 soil samples and 2 rock samples taken. From this cursory program further recommendations were made. These were that a detailed soil and induced polarization survey be completed, that all showings were to be re-sampled and assayed for gold and that drilling be done on any IP chargeability highs outlined in the follow-up.

On the Aten property, Commander Resources conducted a limited soil surveying and prospecting in August 2005. A total of 11 soil samples and 17 rock samples were collected while prospecting the property. This short program was successful in discovering a new high-grade copper prospect called the CJL Zone, located in the southern part of the property. The CJL Zone is hosted in highly altered, foliated syenite, not previously noted on the Aten property. Float samples were noted with values ranging as high as 12.4% copper. A program of detailed geological mapping, prospecting, gridding and magnetics surveying was

recommended for follow-up, as well as diamond drilling on the CJL Zone should it warrant further work.

Also during 2005, Geoscience BC sponsored a program of increasing the ASTER imagery dataset for the BC Ministry of Mines, Energy and Petroleum Resources. Four alteration images for each scene were prepared using combinations of the standard ASTER bands. The images are designed to map the relative abundances of siliceous rocks, iron oxides, sericite and illite, and alunite and/or kaolinite (Kilby and Kilby, 2006). This work includes coverage over the current Property.

In 2006, Geoinformatics Exploration Canada Ltd (Geoinformatics) acquired a large tract of land totaling 126,664 hectares in the Mesilinka area of the Hogem batholith through staking and option agreements with Commander Resources and Norwest Enterprises. Commander conducted a regional exploration and data compilation on the ground, focusing on porphyry copper and copper-gold skarn potential within central to northern Quesnel Terrane. The fieldwork followed an extensive phase of digital data capture, integration and interpretation, and subsequent regional target generation. The data captured and compiled included 3,168 stream sediment samples, 4,491 rock samples (and rock chip samples), and 1,455 soil samples. Of the stream samples, 226 of the were collected over the southern portion of their project area during the 2006 field season due to insufficient data available in the public domain on that particular area. In addition to the stream sediment sample collection, a two hole diamond drill campaign totaling 751.5 metres on the previously drilled Kliyul copper-gold skarn located north of the Property, aimed to further evaluate the skarn potential.

From the work done on the Mesilinka project in the 2006 season, the regional stream sediment sample program identified a number of strongly anomalous catchments to focus the 2007 field program and validate copper-gold targets identified through the data compilation process. This both confirmed the significance of known copper-gold prospects and Minfile occurrences, and identified new target areas.

Follow-up work in 2007 by Geoinformatics involved geological mapping and diamond drilling on several prospects derived from the data gathered in the previous year's work. Within the greater area of their project, four main areas were investigated through detailed geological mapping and subsequent diamond drilling. These prospects were Norwest, Abe, Aten and Pal prospects with the Aten and Pal prospects closest to the current Property area. Two (2) diamond drill holes totaling 885.4 metres were drilled on Aten and three (3) diamond drill holes totaling 510.9 metres were drilled on Pal. Results at the Aten and Pal prospects were deemed insignificant and no further work was recommended.

Also during 2007, Geoscience BC commissioned airborne geophysical surveys including magnetics and gravity surveys as part of the QUEST Project. The surveys covered ground of the Quesnel Terrane from Williams Lake to Mackenzie, BC. The Property lies at the extreme northwestern edge of the survey coverage. Processed gravity data is available as images that cover the entire Property. Magnetic surveying did not completely cover the Property area so complete gridded coverage is not available.

During 2010, CME Consultants Inc. carried out a comprehensive compilation program of the Property and the surrounding area using data from assessment reports as well as public domain sources of geochemical, geophysical and geological data. This compilation led to identify four areas of interest. Three of the four areas of interest were visited over four days in August and September 2010. Exploration consisted of prospecting, rock sampling (69 samples) and stream sediment sampling (10 samples). In Area 1, rock sampling identified numerous anomalous samples (>0.1%) with copper and/or gold mineralization of up to 13.9% copper, and 23.6 g/t gold (also 27.6 g/t Ag). Other highlights included 1.23% copper and 0.65% copper. In Area 2, rock sampling also identified numerous samples of anomalous copper and/or gold mineralization including 2.85% copper and 265 ppb gold and 1.08% copper and 435 ppb gold. Significant results in Area 3 included 0.84% copper and 195 ppb gold and 0.54% copper and 45 ppb gold (Naas, 2011).

Follow-up exploration by CME during 2011 focused on the Cathedral Area and the Link Area in the southern portion of the Property. The Cathedral Zone has been previously referred to as Area 1 (Naas, 2011). The Link Zone is in the area of the BC Minfile showing 094C 123 (Link). Geochemical sampling consisted of rock, silt and soil sampling. Numerous high-grade rock samples of over 1% copper and 1 g/t gold were collected from a variety of locations in the explored area. Sampling at the Cathedral Area in the vicinity of a high-grade copper-gold sample collected the previous year (13.9% copper, 23.6 g/t gold) returned another high-grade rock samples grading 3.29% copper and 20.1 g/t gold. Silt samples yielded strongly anomalous copper values of up to 419 ppm copper in the northwest portion of the Cathedral Zone, an area which remains relatively unexplored. Silt samples from a creek draining the eastern portion of the Cathedral Area yielded anomalous gold values of up to 80 ppb gold. Soil sample analysis by a hand-held XRF unit returned anomalous copper values in the area of the Link Showing and suggest several parallel to sub-parallel zones of greater than 100 ppm copper striking in a north-north west direction with lengths of up to 500 metres and widths of up to 150 metres.

3.2 EXPLORATION AND DEVELOPMENT BY THANE MINERALS

In 2012, Thane Minerals (TMI) acquired the Property from CME and undertook geological mapping, rock sampling, and soil sampling within the Cathedral, Gail, Cirque and Lake Areas. Detailed silt sampling was undertaken in the Lake Area. Results returned up to 13.9% Cu from the Cathedral Showing, up to 13.0 g/t Au from the Pinnacle Showing and 4.56% Cu from the Lake Area. Silt samples from the drainage of the Lake Area returned up to 627 ppm Cu (Naas 2013).

In 2013, TMI undertook a prospecting program at the Pinnacle Showing and at the Lake Area (Naas, 2014). A total of 54 rock samples were collected at the Pinnacle Showing, while 23 rock samples were collected at the Lake Area. Additionally, a 2.275 line-km survey grid was established at the Lake Area from which 96 soil samples were collected.

At the Pinnacle Showing, series of narrow fault structures over a width of 60 metres was mapped, which contained a minimum of seven faults striking 150° to 170° and dipping 50° to 60° W. Sampling from the two westernmost and two easternmost faults of the fault returned

the most significant gold results (up to 3.60 g/t Au and 7.78 g/t Au respectively), though anomalous gold is also present within the central structures of the 60 metre wide zone. Significant gold samples were found to have anomalous arsenic values, although the converse did not necessarily hold.

Of the 54 rock samples collected from the Pinnacle Showing (and its strike extensions), 16 returned greater than 0.1 g/t Au and 7 returned greater than 1.0 g/t. Additionally 8 samples returned greater than 0.1% Cu with a maximum of 2.91% Cu.

In 2015, an airborne geophysical survey was undertaken on all mineral tenures of the Thane Property and four days of prospecting at the Mat and Pinnacle Showings and the ET and Lake Areas (Naas, 2016a). The work program consisted of:

- 974 line-km of helicopter-borne magnetic and radiometric surveying;
- 22 rock samples and 7 sediment samples for geochemical analysis.

The results from the propspecting program confirmed the presence of historically reported copper mineralization at the ET Showing and silver at the Mat Showing. Stream sediment sampling at the ET Showing failed to duplicate historical tin values.

Copper mineralization was discovered in a new area within the Lake Area, north of current known mineralization.

In 2016, prospecting was undertaken on select areas of the Property (Naas, 2016b). A total of 56 rock samples and 79 soil samples were collected at the newly acquired CJL Showing. A total of 6 stream sediment samples, 49 soil samples and 24 rock samples were collected to test a historical sediment sample of anomalous gold values from the northern portion of the property, west of the Mat Showing (RS Creek). At the OY Showing, a total of 22 stream sediment samples and were collected.

At the CJL Showing, a total of 31 of the 56 samples returned greater than 0.10% Cu, with 10 samples returning greater than 1.0% Cu. The style of mineralization at the CJL Showing was observed to be a copper-rich magnetite/specular hematite breccia

At RS Creek, although the anomalous historical gold-in-silt sample was confirmed with a sample that returned 0.582 ppm Au, this sample was considered to be the result by glacial till contamination and not from bedrock sources.

At the OY Showing, the historical gold-in-silt sample was confirmed, but no other anomalous samples were returned from the creek.

In 2017, a structural and alteration study was undertaken at the Cathedral Area. Mineralization was considered to be the result of a structurally controlled alkalic porphyry system. Due to the moderate dip of the mineralization, the system was speculated to be tilted post-emplacement about a north-south to northwest-southeast axis of approximately 45 degrees, similar to Mount Milligan (Gordon *et al.*, 2018).

In 2019, 27 rock samples collected during the structural and alteration study of 2017 were submitted for petrographic study. To complement this study, samples were also submitted for multi-element and gold analysis. The petrographic study confirmed the field mapping of syenite rock at the Cathedral Showings and supports the interpretation from 2017 that mineralization at the Cathedral Area is related to an alkali porphyry system (Naas, 2019).

Sulphide mineralization consisted of pyrite and lesser chalcopyrite The strongest copper values were found to be structurally controlled. A 2 cm quartz vein, contained within a north-south fracture system hosted in quartz monzonite, returned the highest copper grade of 1.33% Cu.

In August of 2019, 8.4 km of Induced Polarization surveying was undertaken at the Cathedral Area as a test to determine the effectiveness of this type of geophysical study. A total of 5 survey lines were established at an orientation of 080-260 Az. with stations established at 100 metre intervals. The pole-dipole survey utilized a 100 metre dipole array. Results returned three geophysical anomalous zones, with each zone returning both narrow near-surface and broad at-depth features.

In May 2020, TMI undertook a study to determine the quality of the results from samples previously collected by TMI that were only analyzed by pXRF. The study involved the submission for geochemical analysis of 452 rock samples pulps originally collected in 2012 from through-out the Property, and 223 contour soil samples, originally collected in 2012 from the Cathedral Area. The analytical results for both rock and soil samples returned similar values to the values returned from the pXRF. In addition to confirming the copper values, all rock samples previously collected by TMI now have multi-element results.

4.0 GEOLOGICAL SETTING AND MINERALIZATION

4.1 REGIONAL GEOLOGY

The Property is situated within the Quesnel Terrane, on the eastern flank of the northern end of the Hogem batholith (Figure 3). The Quesnel Terrane is an accreted Mesozoic volcanic arc terrane that forms a north-south trending linear belt of rocks approximately 1,600 kilometre long along the eastern margin of the Canadian Cordillera. The terrane is dominantly Upper Triassic to Lower Jurassic volcano-sedimentary sequences that include the Takla, Nicola and Stuhini groups. Coeval and post-accretionary Cretaceous intrusions are scattered throughout this terrane. The Jurassic to Cretaceous Hogem multi-phase batholith is the largest of these intrusions, forming the spine of this island arc allochthonous, intermontane superterrane. The northwest trending elongate Hogem batholith extends for approximately 120 kilometres from Chuchi Lake at the southernmost limits, to the Mesilinka River at the northern limit. It is bound on the west by the Pinchi Fault and on the east by the Upper Triassic to Lower Jurassic Takla volcanics.

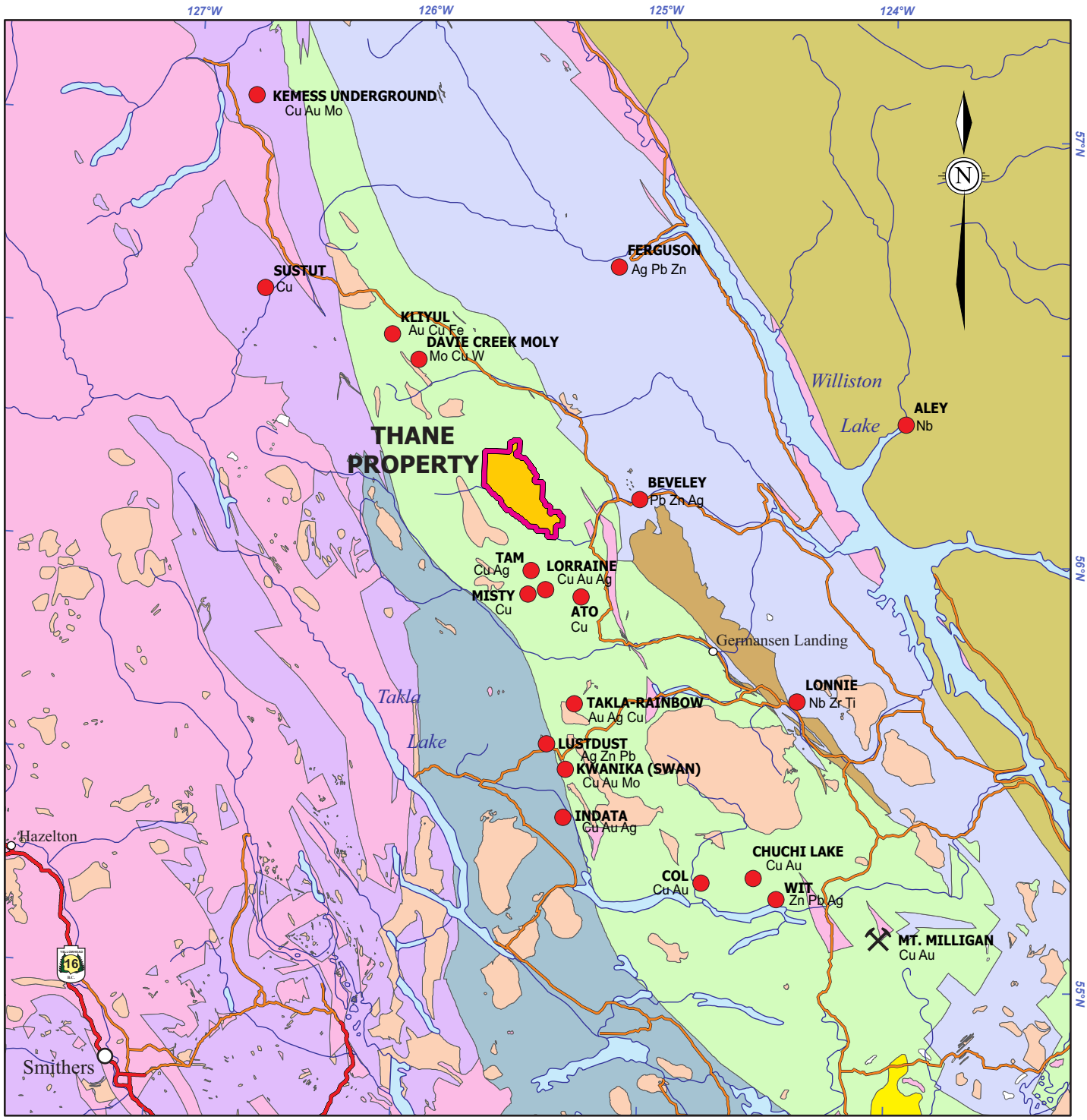
Ootes (2019) organized the intrusive phases of the Hogem baltholith into four suites, modified after Woodsworth (1976) and Woodsworth et al (1991), all of which are deformed. These suites include the Thane Creek, Duckling Creek, Mesilinka and Osilinka that are cut by

younger small intermediate sub-horizontal sheets and dykes (Table 2). Ootes adopted the term Nicola Group rocks, as these rocks matched similar rocks in the southern part of the Quesnel Terrane.

Table 2: Summary of plutonic units, Hogem batholith

Suite	Rock Type	Deformation	Relative Magnetism	Other Features	Mineralogy of Note
Porphyry Sheets	feldspar/qtz. Feldspar porphyry	magmatic foliation	low	fresh	
Osilinka	equigranular granite	localized shear zones	low	local muscovite	<5% biotite, local muscovite
Mesilinka	K-feldspar porphyritic granite	foliated	low to moderate (diorite xenoliths)	local garnet and muscovite, abundant aplite and pegmatite dykes	
	equigranular granite	foliated	low to moderate	K-feldspar pheno's <5cm	
Duckling Creek	syenite to monzonite	magmatic layering and foliated	high	K-feldspar rich and quartz. deficient, K-feldspar pegmatite common	sodic(?) amphibole, pyroxene, apatite and titanite common
	pyroxenite	magmatic layering and foliated	high to highest	contains copper mineralization and malachite common	contains biotite
Thane Creek	tonalite	foliated	low	grey lacks K-feldspar	plagioclase and quartz.
	granodiorite to quartz. monzonite	foliated	moderate to high	contains quartz, variable amounts of biotite, and does not appear altered	pristine igneous mineralogy, magnetite and titanite common
	diorite to quartz monzodiorite	Foliated to locally mylonitic	low to high	equigranular hornblende-plagioclase bearing; local moderate to extensive alteration; local strong deformation	extensive biotite and epidote, little amphibole, coincide with K-feldspar-bearing phases, titanite, apatite, and magnetite common

The Hogem batholith is transected by numerous north and north-west trending dextral transcurrent faults that span the Cretaceous to Tertiary. The Thane property is located at a dextral transfer from the Ingenika fault that lies to the west to the Pinchi fault to the East.



LEGEND

GEOLOGY

- Younger volcanics
- Post Accretionary
- Cache Creek Terrane
- Cariboo/Cassiar Terrane
- Quesnel Terrane
- Slide Mountain Terrane
- Stikine Terrane
- Overlap Assemblage
- North America

SYMBOLS

- Thane property
- Producing mine or mine under construction
- Major exploration project
- Highway
- Secondary routes
- Railway
- Watercourse
- Waterbody

0 50km

IMC INTERNATIONAL MINING CORP.

REGIONAL GEOLOGY & ECONOMIC SETTING

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	CN
Scale:	1:1,150,000	Drawn:	TV, CN
Figure:	3	Date:	December 2020

CME

These dextral transfer zones commonly result in positive flower or pop-up structures as well as reverse and thrust faults within the transfer zone (Nelson and Bellefontaine, 1996).

4.2 PROPERTY GEOLOGY

The Property is predominantly underlain by intrusive rocks of the Hogem Plutonic Suite. Intermediate volcanic rocks of the Nicola Group are in contact with the Hogem intrusives at the northeastern portion of the Property (Figure 4).

Hogem Plutonic

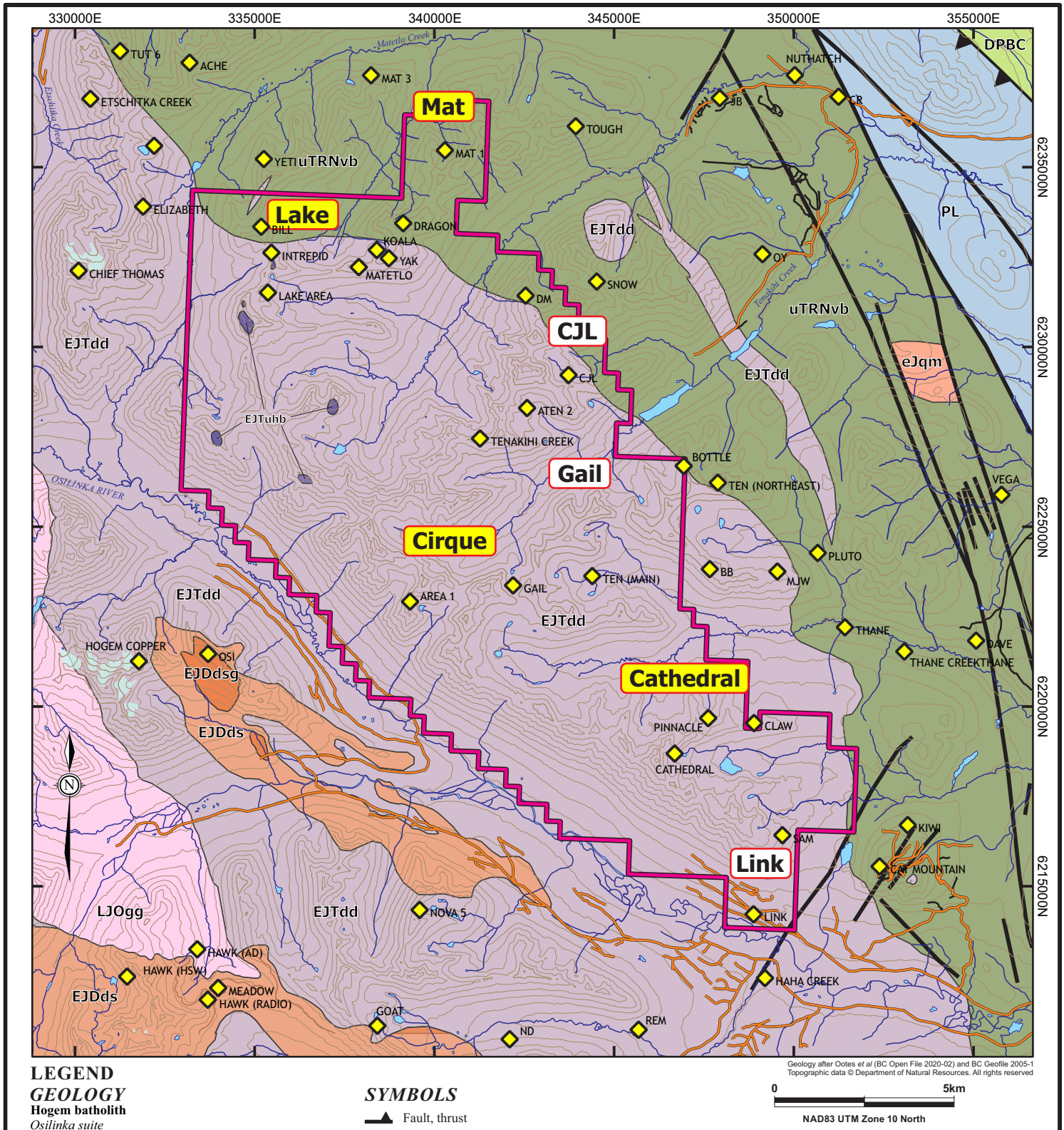
Hornblendite

Predominately, within the northern areas of the Thane property, several alkali rich gabbroic whole rock classified bodies ranging from peridotgabbro (olivine bearing), to alkalic gabbro are currently interpreted to represent hornblendite classified rock types within the Thane Creek Suite. Recently provided updates to the more mafic bodies observed in these areas however have separated the more mafic-ultramafic bodies into the Abraham and Dortatelle Creek intrusive complexes. They differ from the hornblendite bodies typically found in the Lake prospect area by containing olivine and clinopyroxene rich minerals. The age of these complexes currently remains unknown, but they are considered to be Late Triassic to Early Jurassic in age (Ootes et. al, 2020b). The hornblendites observed within the Lake area occur as <10m dyke swarms in addition to small tens of centimeters to several ten's of meter sized pods and xenoliths scattered within the diorite phases. The hornblendites appear to be entirely within the diorite, display both sharp and diffuse contact margins, the latter indicating magma co-mingling and have been interpreted to be comagmatic with the diorite plutons (Ootes et., al., 2019a,b). Recent geochronological studies on a hornblendite sample yielded a U-Pb zircon age of 197.55±0.11 Ma and has been interpreted as a crystallization age (Ootes et al., 2020b).

A single dark grey to black, fine-to medium grained clinopyroxenite sample collected within a xenolith hosted in the monzodiorite compositionally contained 55% weakly actinolite altered clinopyroxene, 20% hornblende, 10-15% moderate to strongly K-spar and sericite altered plagioclase, 5-7% magnetite, 1-2%quartz and 1-2% apatite.

The hornblendite is black to dark green and weathers a dark grey. It is medium- to coarse grained and frequently pegmatitic with a 60-70% mafic component. Compositionally, it contains 50-60% black to dark green amphibole crystals, with rare corroded pyroxene and rarely talc/serpentine olivine cores, 10-30% fine to coarse grained plagioclase and where present, is interstitial between amphibole and 0-20% generally medium grained biotite. Magnetite abundance within the hornblendite varies from 1-5%, and as a result these rocks have a moderate to strong magnetic signature. Accessory minerals include subhedral titanite and euhedral to subhedral crystals of apatite are also common. Subtle epidote secondary alteration is noted within the hornblendite.

Trace amounts of disseminated to blebby pyrite and chalcopyrite occur and locally copper mineralization comprises a few percent of these rocks in areas where fractures and veinlets are noted with malachite or iron rust staining on weathered surfaces.



Geology after Ootes *et al* (BC Open File 2020-02) and BC Geofile 2005-1
Topographic data © Department of Natural Resources. All rights reserved

0 5km

NAD83 UTM Zone 10 North

LEGEND

GEOLOGY

Hogem batholith

Osilinka suite

- LJOgg: Equigranular unfoliated granite

Duckling Creek suite

- EJDds: Granodiorite to Quartz diorite/monzodiorite
- EJDdsg: Biotite pyroxenite

Thane Creek suite

- EJTdd: Diorite to monzodiorite
- EJTuhb: Hornblendite

Nicola Group

- uTrNvb: Undifferentiated volcanic rocks

La Range Assemblage

- PL: volcaniclastic rocks

Big Creek Group

- DPBC: mudstone, siltstone, shale

SYMBOLS

- Fault, thrust
- Thane property
- Secondary routes
- Contour (100 metre interval)
- Watercourse
- Waterbody
- Icefield
- ND Minfile location with name

IMC INTERNATIONAL MINING CORP.

PROPERTY GEOLOGY
Thane Property

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	CN
Scale:	1:150,000	Drawn:	TV, CN
Figure:	4	Date:	December 2020

CME

The magnetic susceptibility of the pyroxenite sampled in the Lake prospect area is high with a single reading of $108.37x10^{-3}$ SI units. In comparison, the hornblendite, also considered relatively high has an average of $35.03x10^{-3}$ SI units on the Property.

Diorite to Quartz Diorite

The diorite bodies encountered appear analogous to those classified rock types within the Thane Creek Suite and with monzodiorite intrusive phases form the bulk of the mountainous areas mapped within the Property. Recent geochronological studies on a diorite sample yielded a $^{206}Pb/^{238}U$ zircon age of 196.61 ±0.19 and has been interpreted as a crystallization age (Ootes et al., 2020).

They weather dark grey-green, are equigranular and medium- to coarse grained. Proximal to areas of alteration and locally mineralization they typically contain moderate to intense patchy to pervasive texturally destructive alteration with variable values of magnetic susceptibility. Where albite alteration predominates, the diorite is pale green to buff white grey in color and in areas of moderate to intense patchy to pervasive K-feldspar alteration they are orange pink in color. Quartz diorite bodies are locally noted however they frequently occur in the flanking areas of later more siliceous intrusive phases and or localized silicification. In northern and eastern areas of the property they are noted to contain a moderate to strongly developed foliation observed predominately by the alignment of mafic minerals and locally as elongated ultra mafic to mafic xenoliths of hornblendite and or volcanics.

Contacts with later intrusive phases are observed as sharp, frequently faulted and in areas with increased alteration and local mineralization, difficult to discern as they are frequently diffuse and as a result frequently inferred.

Magnetic susceptibility values of the diorite are a function of proximity to type and intensity of alteration in addition to abundance of mafic xenolithic component. Overall, the diorite has a moderate to high magnetic susceptibility with an average of $30.61x10^{-3}$ SI units on the Property.

Monzodiorite to Quartz Monzodiorite

The monzodiorite to quartz monzodiorite bodies encountered appear analogous to those classified rock types within the Thane Creek Suite containing diorite to monzodiorite to quartz monzodiorite lithologies (Ootes et al., 2019).

Similarly, to the diorite phases, they weather dark grey-green, and are frequently equigranular and medium- to coarse grained with a pinkish to light green hue as a result of increased primary K-feldspar and often patchy epidote alteration of plagioclase and primary mafics. Monzodiorite phases are noted as transitional phases with the diorite and occur to some extent within all prospect areas on the Property. Monzodiorite samples collected within the Property do not contain a developed foliation at this stage; however as with the diorite have been noted to contain mafic to ultra mafic xenoliths of hornblendite, Nicola volcanics and pyroxenite specifically within the Lake Area. Quartz monzodiorite bodies are locally noted within the Property at the southern area of the Cirque and within the Gail Areas.

Contacts have frequently been noted within faulted areas and often appear diffuse resulting in inferred contacts.

The monzodiorite has a high magnetic signature with susceptibility values that average $45.52x10^{-3}$ SI units whereas the quartz monzodiorite bodies at Cirque contain a much lower magnetic signature with an average susceptibility of $15.58x10^{-3}$ SI units, and likely results as a function of a reduced ultra mafic to mafic xenolith component.

Quartz Monzonite

The quartz monzonite appears analogous to part of the Thane Creek Suite containing granodiorite to quartz monzonite lithologies (Ootes et al., 2019). Recently provided geochronological updates from a granodiorite phase yielded an $^{40}Ar/^{39}Ar$ age for hornblende of ca. 139Ma (Ootes et al., 2020b) and with the quartz monzonite within this suite have now classified both units to be within the much later Mesilinka intusive suite of S-type granites.

The quartz monzonite is fine-to medium grained, equigranular and typically weathers light grey to pinkish white depending on type and intensity of alteration. Significant outcrops of the quartz monzonite are noted within the Cathedral Area seemingly trending somewhat north south on both the East and West side of the Gully fault. At this time, they are noticeably absent or significantly reduced at the Cirque and Gail Areas where granodiorite intrusive phases predominate. Ootes has suggested these rocks to be younger than the diorite phase due to a noted lack of hornblendite phases, strong deformation and potassic alteration and older than the Duckling Creek suite as they are cut by younger K-feldspar pegmatites. Within this study these relationships have also been noted except for notable potassic alteration, specifically within the Cathedral Area, where variable moderate to strong potassic alteration dominated by K-feldspar and lessor biotite has been observed.

Comparable to the findings with Ootes, intrusive contacts are difficult to observe as virtually all are masked by either strong to intense alteration, and or within areas of strong to intense deformation proximal to major faults and shears. As a result, most contacts are diffuse and frequently fault bounded.

Similar to the diorite phases, the quartz monzonite recorded magnetic susceptibility values are a function of proximity to type and intensity of alteration and within this study typically have a low to moderate magnetic signature with susceptibility values averaging $22.70x10^{-3}$ SI units.

Granodiorite

The granodiorite appears analogous to part of the Thane Creek Suite containing granodiorite to quartz monzonite lithologies (Ootes et al., 2019). Recently provided geochronological updates from a granodiorite phase yielded an $^{40}Ar/^{39}Ar$ age for hornblende of ca. 139Ma (Ootes et al., 2020b) and with the quartz monzonite within this suite have now classified both units to be within the Mesilinka intusive suite of S-type granites.

The granodiorite is fine-to medium grained, equigranular and typically weathers a light grey to greenish white. It is wholly noted to occur within the Cirque and potentially within the Gail

Areas with a single potential albite altered outcropping in the higher elevations of the Cathedral area. Locally, increased silicification and patchy potassic alteration dominated by K-feldspar is observed proximal to alkali-granite (aplite) and quartz syenite pegmatitic dykes. Within the Cirque Area, a large body of the phase separates the Cirque and the Cirque East areas and dykes of the granodiorite are noted to trend northwest and dip moderate to steeply north-northeast.

Ootes has suggested these rocks to be younger than the diorite phase due to a noted lack of hornblendite phases, strong deformation and potassic alteration and older than the Duckling Creek suite as they are cut by younger K-feldspar pegmatites. Within this study these relationships related to the granodiorite are agreeable to those within his report with the exception of the cross-cutting relationship with the K-feldspathic pegmatitic bodies as they have been noted to cross-cut and locally significantly K-spar alter the granodiorite?

Intrusive contacts are typically observed as sharp and locally contain stoped diorite xenoliths proximal to contact margins. Silicification of the diorite proximal to granodiorite bodies is common and often an increase in secondary booky biotite within the diorite is noted potentially indicating hornfels of the host. At this stage, the granodiorite has only been noted to cross-cut the diorite phase within the Thane property.

The granodiorite has a low magnetic signature with susceptibility values averaging 13.68×10^{-3} SI units.

Monzonite

The Monzonite is analogous to part of the Duckling Creek Suite containing syenite to monzonite lithologies. Rocks within this suite are K-feldspar rich, quartz poor and texturally heterogenous ranging from equigranular to porphyritic to pegmatitic (Ootes et al., 2019). At the Lorraine Cu-Au deposit, K-feldspar rich monzonite lithologies are considered Stage 2 timing within the Duckling Creek suite constrained by U-Pb zircon ages ca 178.8 to 178.4 Ma. (Devine et al., 2014).

The monzonite weathers a mottled grey-pink to grey-green-in color, is fine- to medium grained and equigranular. Within the Cathedral Area, the monzonite frequently contains pervasive and texturally destructive strong to intense potassic and propylitic alteration. Intrusive contacts within the Cathedral Area are virtually never preserved and or exposed other than a single contact trending northeast-southwest within a brittle structure. At the Lake Area, it is observed as fine- to medium grained, rarely coarse grained, sub-trachytic, dykes (<100m in width), north-south trending moderately fractured bodies that cross-cut and biotite hornfels diorite and monzodiorite phases proximal to faulted contacts.

The monzonite contains a moderate magnetic signature with an average magnetic susceptibility of 20.53×10^{-3} SI units.

K-Feldspar Magacrystic Monzonite Porphyry

The K-Feldspar megacrystic monzonite porphyry is classified as part of the Duckling Creek Suite containing syenite to monzonite lithologies (Ootes et al., 2019). At the Lorraine Cu-Au

deposit, the K-feldspar megacrystic monzonite porphyry along with massive syenite (below) are considered Stage 3 timing within the Duckling Creek suite constrained by U-Pb zircon ages ca 177 to 175 Ma (Devine et al., 2014).

The megacrystic monzonite porphyry is wholly observed within the Cathedral Area as localized north-south trending and rare east-west trending, frequently moderately to strongly fractured, calcium carbonate altered and faulted dykes (<3m wide). They typically weather a pale grey to pink color and are easily identifiable due to the presence of frequent megacrystic K-feldspar phenocrysts <10cm in size that are often trachytic and define a flow texture within an aphyric groundmass.

Intrusive contacts are locally sharp, chilled with a trachytic texture and predominately noted cross-cutting the diorite phase proximal to major north-south trending structures.

The K-feldspar megacrystic monzonite porphyry contains a low magnetic signature with an average magnetic susceptibility of 9.65 $x10^{-3}$ SI units.

Syenite

The syenite is classified as part of the Duckling Creek Suite that are K-feldspar rich and quartz deficient intrusive bodies (Ootes et al., 2019). The syenite, at the Lorraine Cu-Au deposit is considered within both stage 2 and stage 3 timing of the Duckling Creek suite. The stage 2 syenite is interpreted as porphyritic, occurs spatially with the K-feldspar megacrystic monzonite and has been historically constrained by U-Pb zircon ages ca 178.8 to 178.4 Ma (Devine et al., 2014). The stage 3 syenite is massive, occurs spatially with K-feldspar pegmatites and has been historically constrained by U-Pb zircon ages ca 177 to 175 Ma (Devine et al., 2014). Recent geochronological timing using hornblende separated from a porphyritic syenite sample yielded an integrated 40Ar/39Ar age of ca. 177.6 Ma (Ootes et al., 2020b) and overlaps with uncertainty with a previously reported 40Ar/39Ar biotite age of 177.1+/-0.9 for a similar syenite (Devine et al., 2014).

Two varieties of syenite have been noted within the Cathedral Area as massive and porphyritic, however defining and constraining their lithological boundaries relative to each other has proved difficult within the area. As such, they are currently classified together as a single orientation. In comparison to the Lorraine deposit, the syenite is currently interpreted to be the progenitor to the alkalic porphyry system within the Cathedral Area due to both spatial proximity and temporal overlap between emplacement and copper mineralization.

Surface samples collected over the past several seasons indicate the syenite to occur as localized outcrops in a north-south trend within a gully on the western flank (hang wall) of the Gully thrust fault. Compositionally, the syenite intrusive phase contains a high K-feldspathic component and is observed to lack appreciable mineralization. As a result, it is considered a highly resistive body with a low chargeability. As most of the syenite is subsurface, current interpretations based on field surface studies combined with the use of the modelled 2D IP Pole-Dipole resistivity high and chargeability low appear to confirm the interpreted location and trend of the syenite body and it’s close proximity to the Gully Thrust. The highly resistive

and low chargeable syenite is traceable through all east west trending IP lines and appears to dip moderately to the southeast below the Gully area.

In outcrop they weather pink to greyish orange, typically appear as massive, rarely porphyritic, and are fine- to medium grained. Post syenite emplacement veinlets of epidote +/- quartz locally with K-feldspar alteration selvages are noted to post date syenite emplacement. Syenite intrusive bodies appear to strike south-southwest and have moderate southeasterly dips. They range from unmappable cm-scale dyke swarms up to mappable bodies more than 100 meters in width, frequently with very sharp contacts that cut most observed units. Proximal to dyke contacts, the host contains predominately K-feldspar alteration with localized actinolite, chlorite and epidote alteration with localized pyrite and chalcopyrite mineralization.

Magnetic susceptibility readings for the syenite are moderate to predominately low with an average of 17.20 $x10^{-3}$ SI units.

Quartz Syenite

The quartz syenite may be analogous to the either the Osilinka suite or potentially an earlier phase of the Mesilinka Suite, both of which contain K-feldspar and quartz rich intrusive bodies. Preliminary studies conducted by the BCGS thought the Osilinka suite of granites was the youngest mappable suite within the batholith (Ootes et al., 2019), however recent interpretations now have this suite to be older than the Mesilinka suite (Ootes et al., 2020). Findings within this study indicate this intrusive phase is generally; poor in primary mafic's that are generally noted as biotite and are cross-cut by the alkali-granite of the Mesilinka suite. As a result, this study finds the quartz syenite is best relegated to and agree with the recent older age interpretation of the Osilinka suite relative to the Mesilinka suite.

Within the Property, the quartz syenite is at this stage wholly noted within the Cathedral Area as a small intrusive plug and localized north-south to northwest-southeast trending and southwest dipping dykes proximal to the footwall and hangwall of the Gully Fault. Locally, and in particularly on its southern margin, it is cross-cut, K-feldspar and silica altered by sheeted alkali-granitic (aplitic) dykes.

The quartz syenite is typically fine- to medium grained, equigranular, weathers light pinkish white to orange. Thin section analysis for the quartz syenite specify felsic minerals consist of 60-65%, <2mm., randomly oriented, subhedral, interlocking K-feldspar; 13-25%, <2mm., subhedral to interstitial quartz; and 10-15%, <2mm., sub-euhedral, tabular to lathe weakly sericite altered plagioclase. Mafic minerals are typically <10%, relict moderate to strongly chlorite altered, <1mm., biotite and 1-2%, <1mm., variable hematite altered magnetite.

Dyke contacts with earlier intrusive phases are noted as sharp with a <1 meter K-feldspar and silica alteration halo. Locally, late post emplacement quartz, epidote and lessor pyrite+/- chalcopyrite veining is observed.

Magnetic susceptibility readings for the quartz syenite are low with an average of 7.80x10^{-3} SI units.

Alkali-Granite (Aplite to Pegmatite)
The alkali-granite (aplite) appear analogous to the Mesilinka Suite that contain K-feldspar and quartz rich intrusive bodies. Within the Property this phase of intrusive is observed predominately as thin (<2m) aplitic to pegmatitic dykes, dyklets and pencil veins that cross-cut and alter both the Thane Creek and Duckling Creek suites of rocks. They are also noted to cut the quartz syenite (see above) and localized observations indicate the pegmatitic phase cuts the aplitic phase.

Within the Cathedral Area, the aplite occur as late crosscutting north-south to northeast-southwest trending sub-vertical to moderately west dipping fine grained dykes and local <1 meter gradational swarms. Within the Lake and Gail Areas they occur as more east west trending and sub-vertical. The pegmatitic varieties are observed frequently as thin dyklets <1 meter in size and often proximal to its aplitic counterpart and major structures. Where they cross-cut earlier intrusive phases, up to 1 meter K feldspar and silica alteration halos exist.

Thin section analysis for the alkali-granite/aplite specify felsic minerals consist of 55-60%, <1mm., randomly oriented, sub-anhedral K-feldspar; 15-20%, <1mm., randomly oriented, interstitial, sub-euhedral quartz and 10-15%, <3mm., randomly oriented, tabular, sub-euhedral, variably sericite and calcium carbonate altered plagioclase. Mafics are comprised of 7-10%, <1mm., variably chloritized, ragged, subhedral biotite and actinolite. Accessory variably hematite altered magnetite 1-2% and pyrite <1% are noted.

No thin section analysis has yet to be completed on the pegmatitic variety. From hand sample descriptions it is composed of ~60-65%, <15mm., coarse grained to pegmatitic, sub-euhedral, salmon-pink K-feldspar; 10-15%, <10mm sub-euhedral translucent grey quartz; 5-7%, <7mm sub-euhedral, variably sericite altered plagioclase and 5-7%, <10mm., sub-euhedral moderately chlorite altered hornblende.

Both the aplitic and pegmatitic phase are noted to crosscut all lithologies. Dyke contacts with earlier intrusive phases are noted as sharp with a <1 meter K-feldspar and silica alteration halo. Locally, late post emplacement quartz, epidote and lessor pyrite+/-chalcopyrite veining is observed within both.

Magnetic susceptibility readings for this suite are low with an average of 7.59×10^{-3} SI units.

Porphyry Sheets (Latite Porphyry)
Feldspar and Quartz-feldspar porphyry dykes frequently containing contact parallel magmatic foliation (trachytic texture) have been noted within virtually all of the study areas of the Property and appears analogous to the porphyry sheets and dykes mapped by Ootes et., al., 2019. They are relatively fresh with a low relative magnetism and commonly contain chilled and sheared margins (Ootes et. al., 2019). Two compositionally different subtypes are noted and range in mafic composition from biotite to amphibole bearing, the latter noted to contain a trachytic texture with minor quartz and coincides with the two types observed by Ootes.

In outcrop they weather a dark grey-green to brown in color, and frequently contain variable calcium carbonate, Fe-oxide and locally increased silicification and alteration. They are predominately fine-to medium grained with an obvious porphyritic texture defined by variable sericite and epidote altered fine-medium grained plagioclase, fine grained biotite or amphibole phenocrysts within an aphyric greyish brown- to green groundmass. Within the Cathedral prospect area particularly proximal to major structures they are deformed and highly chloritized. The latite porphyry occur as late crosscutting predominately north-south to northeast-southwest trending sub-vertical to moderately west to southwest dipping dykes <5meters in width.

Thin section analysis for the latite porphyry specify felsic minerals consist of 20-40% sub- to euhedral, variably clay, sericite and epidote altered tabular to lathe-like plagioclase phenocrysts <5mm long, 10-15% slender, euhedral, acicular and variable tremolite/actinolite and chlorite altered amphibole phenocrysts <2 mm (rarely up to 4mm) long and 15-20% rectangular, euhedral weakly carbonate, chlorite and epidote altered biotite phenocrysts <2mm in size. Primary quartz is not discernable in hand sample and is noted only within the trachytic textured amphibole bearing varieties as weakly strained and scattered within the groundmass in an abundance of <2%. Accessory minerals include very fine-grained magnetite 2-3% trace apatite and sphene. The aphanitic groundmass is grey-green consisting of predominately K-feldspar ranging from 25-50% in addition to plagioclase, amphibole, biotite and magnetite. Veinlets of epidote and prehnite appear to be associated with increased clay-sericite-epidote alteration of the phenocrysts.

Contacts with earlier intrusive phases range from sharp to diffuse, locally propylitic altered to faulted.

The Latite porphyry is moderately magnetic with an average magnetic susceptibility of 22.66×10^{-3} SI units**.**

4.3 PROPERTY ALTERATION AND MINERALIZATION

Alteration and mineralization observed throughout the Thane Property ranges from Alkalic Cu-Au Porphyry related (Cathedral) to potential Calc-alkaline porphyry and vein hosted mineralization (Cirque, Gail, Lake and Mat Areas).

The principal areas of copper mineralization on the Property are the Cathedral (Cathedral, Cathedral South, Pinnacle and Gully Showings), Cirque, Gail, CJL, Mat and Lake Areas.

Copper mineralization consists predominantly of chalcopyrite with rare occurrences of bornite. In the Cathedral Area, areas of massive mineralization have been identified including pyrite, chalcopyrite, specularite and magnetite. Throughout the Property malachite+/-azurite staining is also common on exposed rock faces. Molybdenite, galena and sphalerite occur as occasional accessory sulphides. Arsenopyrite is noted at the Pinnacle Showing of the Cathedral Area and appears to be an accessory indicator for significant gold mineralization.

At the CJL, chalcopyrite is associated with magnetite +- specular hematite breccias. At the Mat showing, argentite and galena occurs within milky white quartz veins up to 0.4 metre in thickness.

Controls on mineralization are not yet well-defined. General observations thus far indicated that mineralization in the southern portion of the Property (i.e. Cathedral Area, Pinnacle Showing) is principally structurally controlled. The northern portions (i.e. Lake Area) show a more disseminated character of mineralization.

Field relations and petrographic work indicate that the sulphide mineralization is related to the lithologically complex Hogem batholith. A rare earth element (REE) geochemistry study done on several samples taken from the Property indicates that most of the intrusive phases have a common parent magma (Naas, 2011).

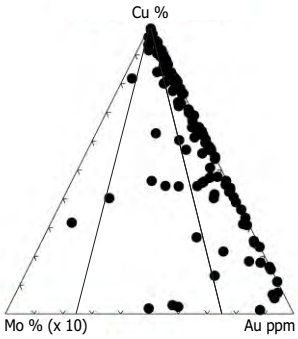
Mineralization observed at the Property is similar to other well-studied alkalic porphyry copper systems in BC. Similarities include the variability and chemistry of the host intrusive complex and the style and grade of mineralization. Look-alike deposits include the deposits of the Iron Mask camp (Afton, Rainbow, DM), Galore Creek and Lorraine (Naas, 2011).

Ternary plots (Cu-Mo-Au) of rock samples collected by TMI from the different areas of the Property suggests the mineralization lies within the spectrum of a copper-gold porphyry system (Figure 5).

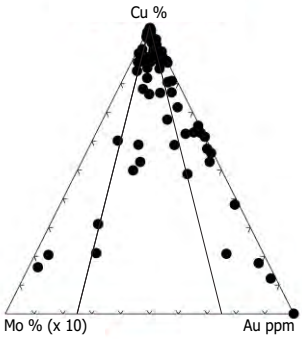
4.4 PROPERTY STRUCTURE

Historical studies on the structural setting within the Cathedral prospect area in 2017 found the structural features of the Property are interpreted to be a local expression of province-scale, dextral strike-slip faulting in the Eocene. The property lies within a step-over domain from the north-northwest striking Ingenika fault to the Pinchi fault (Figure 3). The anticipated structure within such a setting would be northwest-verging reverse faults in the northern extent of the domain and southeast-verging in the southern domain. The moderate west-dipping dextral-reverse faults of the Thane property are considered to be a second order structure that is oblique and synthetic to the first order Pinchi fault. As the geometry of these faults coincides with the geometry of the speculated sinistral-normal Jurassic faults, many may reflect Eocene reactivations (Gordon et al., 2018).

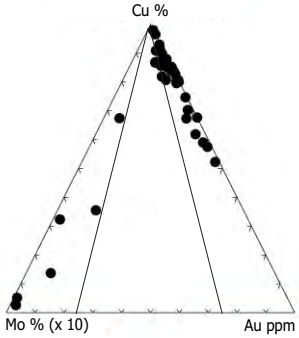
Lake



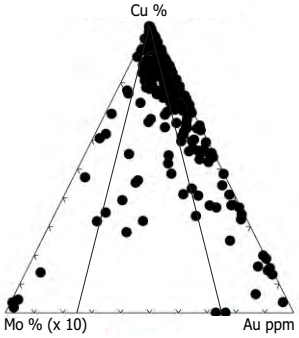
CJL



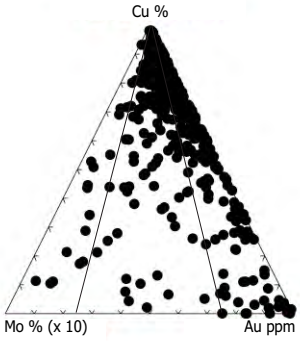
Cirque



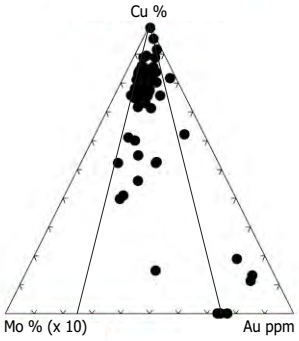
Gail



Cathedral



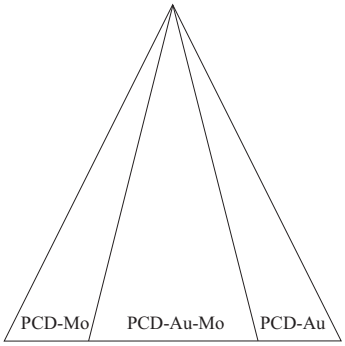
Link



after Cox and Singer, 1988 and Sillitoe, 1991

LEGEND

Cathedral - prospect name



- Porphyry Copper Deposit (PCD) metal zonations

IMC INTERNATIONAL MINING CORP.

PORPHYRY COPPER DEPOSIT
METAL VARIATION PLOTS
Thane Property

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	PG
Scale:	*Schematic*	Drawn:	CN
Figure:	5	Date:	December 2020

CME

5.0 WORK PROGRAM

Fieldwork was carried out from July 3 to August 27, 2020 and consisted of:

- setup and operation of a 16 person helicopter-supported tent camp;
- 3 silt samples;
- 18.05 km grid established at 25 and 50 metre stations;
- 610 soil samples (multi-element and gold analysis);
- 12.5 km IP surveying
- 41 petrographic descriptions.
- 5.0 km^2 geological mapping at 1:2,000 scale; and
- 203 rock samples (multi-element and gold analysis);

Prior to the commencement of field activities, a geological library was created. Reference samples from the 2012 work program, held in storage at CME's field office in Vavenby BC, were reviewed, from which a representative suite of samples were submitted for petrographic description. At the conclusion of field activities, selective samples from the current work program were submitted for petrographic description, to add to the geological library.

Fieldwork was carried out between July 3 and August 27, 2020. A helicopter-supported tent camp was established within the western portion of the Cathedral Area, at UTM10N 347000E 6218660N. An Astar B2 helicopter and pilot were supplied by Canadian Helicopters out of Smithers BC. The helicopter was based full time at the Property during the geophysical program of IP surveying.

Work was undertaken in four areas on the property, namely Cathedral, Cirque, Lake and Mat (Figure 6). A single rock sample collected from the Gail Showing, located approximately 2.8 km east of the Cirque Showing, has been grouped with the Cirque Area. Geological mapping and rock sampling on mapsheet M4O, located approximately 2 km northwest of the Cathedral main zone of showings, has been grouped with the Cathedral Area.

The petrographic study undertaken prior to start of field work included rocks collected during 2012 from various locations on the Property.

By area, the 2020 work program included the following:

- Property Wide (pre field work)
  - 3 silt samples; and
  - 24 petrographic descriptions (including whole rock analysis, if needed)
- Cathedral
  - setup and operation of a 16-person helicopter-supported tent camp;
  - 6 petrographic descriptions;
  - 12.25 line-km grid established with 25 m stations;
  - 2.35 line-km cross-lines established with 50 m stations;
  - 507 soil samples;

- 11 line-km IP surveying (3.6 km at 25m a-spacing, 7.4 km at 100 m a-spacing);
- 108 rock soil samples; and
- 3.1 km^2geological mapping at 1:2,000 scale;

- Cirque
  - 8 petrographic descriptions;
  - 1.5 line-km grid established with 50 m stations;
  - 29 soil samples;
  - 1.5 line-km IP surveying (100 m a-spacing);
  - 74 rock soil samples; and
  - 1.6 km^2geological mapping at 1:2,000 scale;
- Lake
  - 2 petrographic descriptions;
  - 20 rock soil samples; and
  - 0.3 km^2geological mapping at 1:2,000 scale;
- Mat
  - 1 petrographic description;
  - 1.95 line-km grid established with 25 m stations;
  - 74 soil samples; and
  - 1 rock soil sample.

5.1 SILT SAMPLING

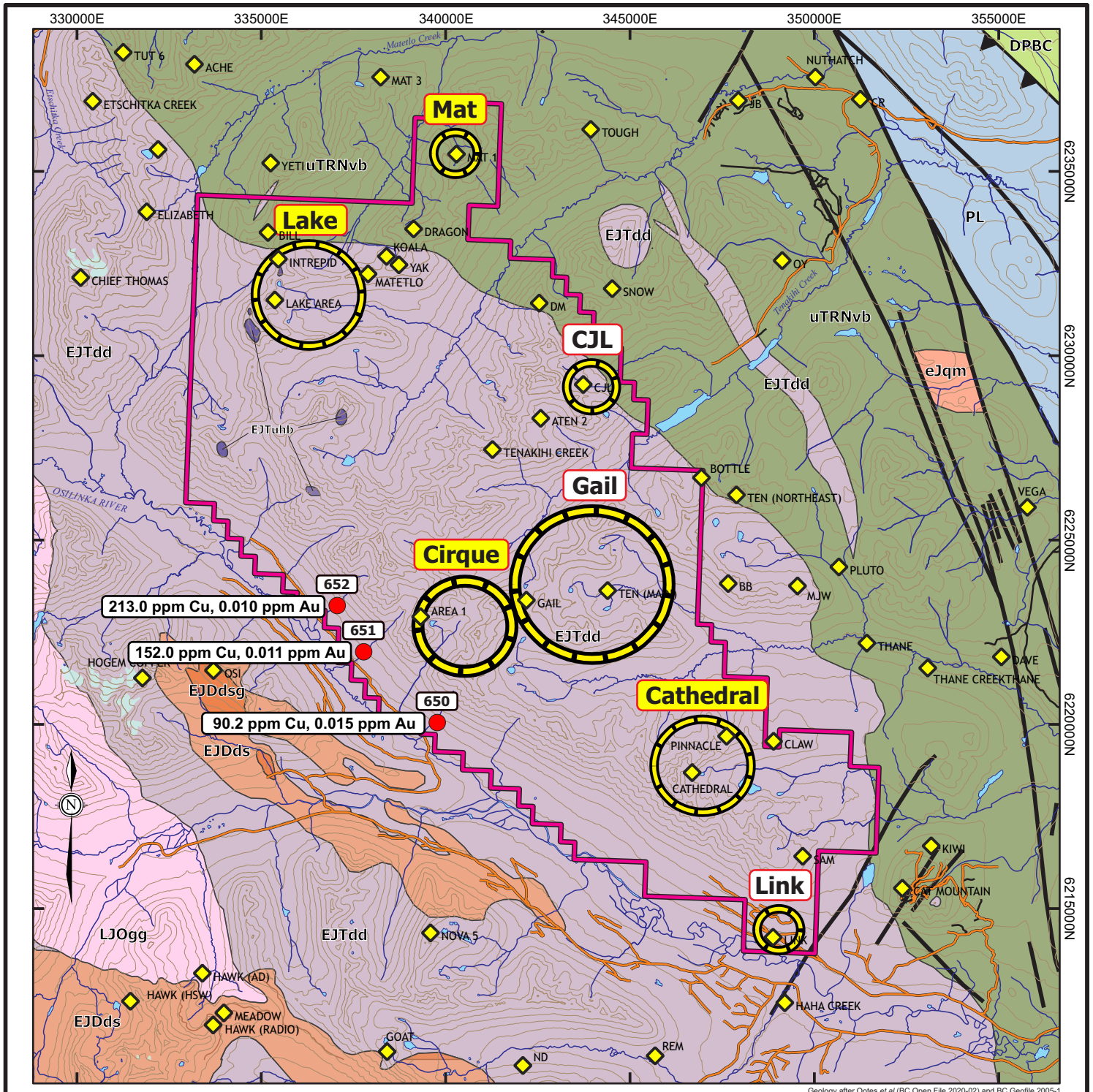
A total of 3 silt samples were collected from three drainages along the south facing slope of the Osilinka River, with two samples bracketing the Cirque Area (Figure 6).

At each sample site, approximately 3 to 5 kilograms of -10 mesh material was collected to ensure sufficient fine fraction material was gathered for analytical studies. Sediment samples were placed in labeled 10" x 17" Hubco Sentry bags. Sample tags were placed in each bag prior to tie-locking the bag for security. GPS readings were also taken at each sample site whenever possible using a Garmin GPS 60 handheld receiver.

Methodology for sample preparation and analysis is presented in sections 7.1 and 7.2, respectively. All samples were analyzed by multi-elements by ICP-MS and gold by fire assay. Sample details including location coordinates and selected analytical results are presented in Appendix IIa. Certificate of analysis is presented in Appendix IIIa. Sample location coordinates and selected analytical results are presented in Table 3.

Results

No significant results were returned from two of the three silt samples. Sample 652, the most northerly sample collected, returned elevated copper and molybdenum values. This sample is located approximately 1.5 km northwest of the Cirque Area.



Geology after Ootes *et al* (BC Open File 2020-02) and BC Geofile 2005-1
Topographic data © Department of Natural Resources. All rights reserved

0 5km

NAD83 UTM Zone 10 North

LEGEND

GEOLOGY

Hogem batholith

Osilinka suite

- LJOgg: Equigranular unfoliated granite

Duckling Creek suite

- EJDds: Granodiorite to Quartz diorite/monzodiorite
- EJDdsg: Biotite pyroxenite

Thane Creek suite

- EJTdd: Diorite to monzodiorite
- EJTuhb: Hornblendite

Nicola Group

- uTrNvb: Undifferentiated volcanic rocks

La Range Assemblage

- PL: volcaniclastic rocks

Big Creek Group

- DPBC: mudstone, siltstone, shale

SYMBOLS

- Fault, thrust
- Thane property
- Secondary routes
- Contour (100 metre interval)
- Watercourse
- Waterbody
- Icefield
- ND — Minfile location with name
- Gail — Prospect location with name
- Mat — 2020 Study area
- 652 — Silt sample with ID and result

IMC INTERNATIONAL MINING CORP.

STUDY AREAS
Thane Property

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	CN
Scale:	1:150,000	Drawn:	TV, CN
Figure:	6	Date:	December 2020

CME

Table 3: Silt samples results

Sample	UTM		Results			
	Easting	Northing	Ag (ppm)	Mo (ppm)	Cu (ppm)	Au (ppm)
650	339631	6220023	0.07	0.70	90.2	0.015
651	337615	6221787	0.10	2.05	152.5	0.011
652	336627	6222942	0.22	3.57	213.0	0.010

5.2 SOIL SAMPLING

A total of 18.05 line-km of grid was established at Property, with 14.6 km in 8 lines at the Cathedral Area, a single line of 1.5 km at the Cirque Area and two lines totaling 1.95 km at the Mat Area.

At Cathedral, east-west trending lines were oriented at 080° Az with two north-south trending cross lines oriented at 040° Az. (L6350E) and 170° Az (L6650E). Stations were established at 25 metres intervals for the east-west trending lines and at 50 metres for the north-south trending lines. At Cirque, a single line was established at 065° Az with stations established every 50 metres. At the Mat Area, lines were established at 060° Az with stations set at 25 metres. Due to extreme topographic relieve, one line was changed mid distance to 030° Az, allowing the line to follow the crest of the ridge.

GPS readings were collected at each station using a GLONASS equipped Garmin C66 handheld GPS receiver. Soil sampling was carried out at every station where appropriate soil was available. Soil samples were collected from the B horizon at an average depth of 15.3 centimetres and placed into labeled kraft sample bags.

Methodology for sample preparation and analysis is presented in sections 7.1 and 7.2, respectively. All samples were analyzed by multi-elements by ICP-MS and gold by fire assay. Grid and soil logistics is presented in Table 4. Sample details including location coordinates and selected analytical results are presented in Appendix IIb. Certificate of analysis is presented in Appendix IIIb.

Table 4: Summary of grid and soil sampling

Study Area	Line	Station Start	Station End	Distance (m)	Station Spacing (m)	Station Quantity	Soil Quantity	Avg. Depth (cm)
Cathedral	4600N	6500E	7400E	900	25	37	35	15.7
Cathedral	4700N	6500E	7400E	900	25	37	34	14.7
Cathedral	5000N	6550E	7300E	750	25	31	28	19.6
Cathedral	5200N	5800E	8400E	2600	25	105	92	16.3
Cathedral	5300N	6000E	8400E	2400	25	97	96	17.0
Cathedral	5400N	6000E	8400E	2400	25	97	91	13.4
Cathedral	5500N	6100E	8400E	2300	25	93	91	13.8
Cathedral	6350E	4900N	5800N	900	50	20	18	13.2
Cathedral	6650E	4400N	5850N	1450	50	27	22	15.2

Table 4: Summary of Grid and Soil Sampling (*cont'd*)

Study Area	Line	Station Start	Station End	Distance (m)	Station Spacing (m)	Station Quantity	Soil Quantity	Avg. Depth (cm)
Cirque	17400N	4500E	6000E	1500	50	31	29	15.2
Mat	23900N	4500E	5250E	750	25	31	29	16.2
Mat	24000N	4800E	6000E	1200	25	49	45	13.0

Results

Table 5 presents the results of a simple statistical analysis for copper, arsenic, molybdenum and gold using all soil samples collected by IMC and its' subsidiary company, Thane Minerals Inc. (TMI), from the Property. The sample population consists of 610 samples collected during the 2020 field program and 223 samples collected by TMI from the Cathedral Area in 2012 and submitted for analysis in 2020 as part of a sample verification program (Naas 2020). For comparison, statistical analysis using a population of only samples collected during the current work program is presented in Table 6.

Historical rock samples have noted a correlation between gold and arsenic mineralization at the Cathedral Area, so arsenic is treated as a pathfinder element.

Table 5: Statistical analysis, all soil samples

Element	Sample Pass*	No. Samples	Minimum	Maximum	Mean	Standard Deviation
Copper (ppm)	*Pass 1*	833	12.1	2230.0	196.0	215.9
	Pass 2	805	12.1	623.0	165.8	118.6
Arsenic (ppm)	*Pass 1*	833	0.8	232.0	14.8	21.1
	Pass 2	801	0.8	56.1	11.4	8.7
Molybdenum (ppm)	*Pass 1*	833	0.11	77.50	4.70	6.67
	Pass 2	799	0.11	17.70	3.62	3.00
Gold (ppm)	*Pass 1*	831	0.001	5.99	0.043	0.282
	Pass 2	825	0.001	0.566	0.025	0.046

** Pass 2 is a calculated by using the mean + 2 standard deviation from Pass 1 as the maximum allowable value.*

Table 6: Statistical analysis, 2020 soil samples

Element	Sample Pass*	No. Samples	Minimum	Maximum	Mean	Standard Deviation
Copper (ppm)	*Pass 1*	610	12.1	2230.0	206.3	228.5
	Pass 2	591	12.1	645.0	174.9	123.3
Arsenic (ppm)	*Pass 1*	610	0.8	232.0	13.7	18.1
	Pass 2	587	0.8	46.7	10.9	7.3
Molybdenum (ppm)	*Pass 1*	610	0.11	52.50	4.41	5.59
	Pass 2	582	0.11	14.80	3.41	2.71
Gold (ppm)	*Pass 1*	609	0.001	5.99	0.042	0.256
	Pass 2	604	0.001	0.538	0.026	0.044

** Pass 2 is a calculated by using the mean + 2 standard deviation from Pass 1 as the maximum allowable value.*

5.2.1 Cathedral Area

Soil samples illustrating copper, gold and arsenic concentrations at the Cathedral Area at 1:15,000 scale are presented in Figures 7, 8 and 9, respectively. Figure 10 presents multiple elements at a 1:5,000 scale.

Although the anomalous soil samples represent a bullseye appearance, the anomalies can be grouped into six broad zones. The first zone (Area A) is located to the far west of the most northerly lines (L52N to L55N, 6350E to end of lines in the west). The highest copper value of 2230 ppm Cu is returned from L53N 6325E and is bracketed on both sides with 551 ppm and 591 ppm Cu. Nearby rock sampling has returned up to 2.0% Cu and 0.265 ppm Au (sample 1286).

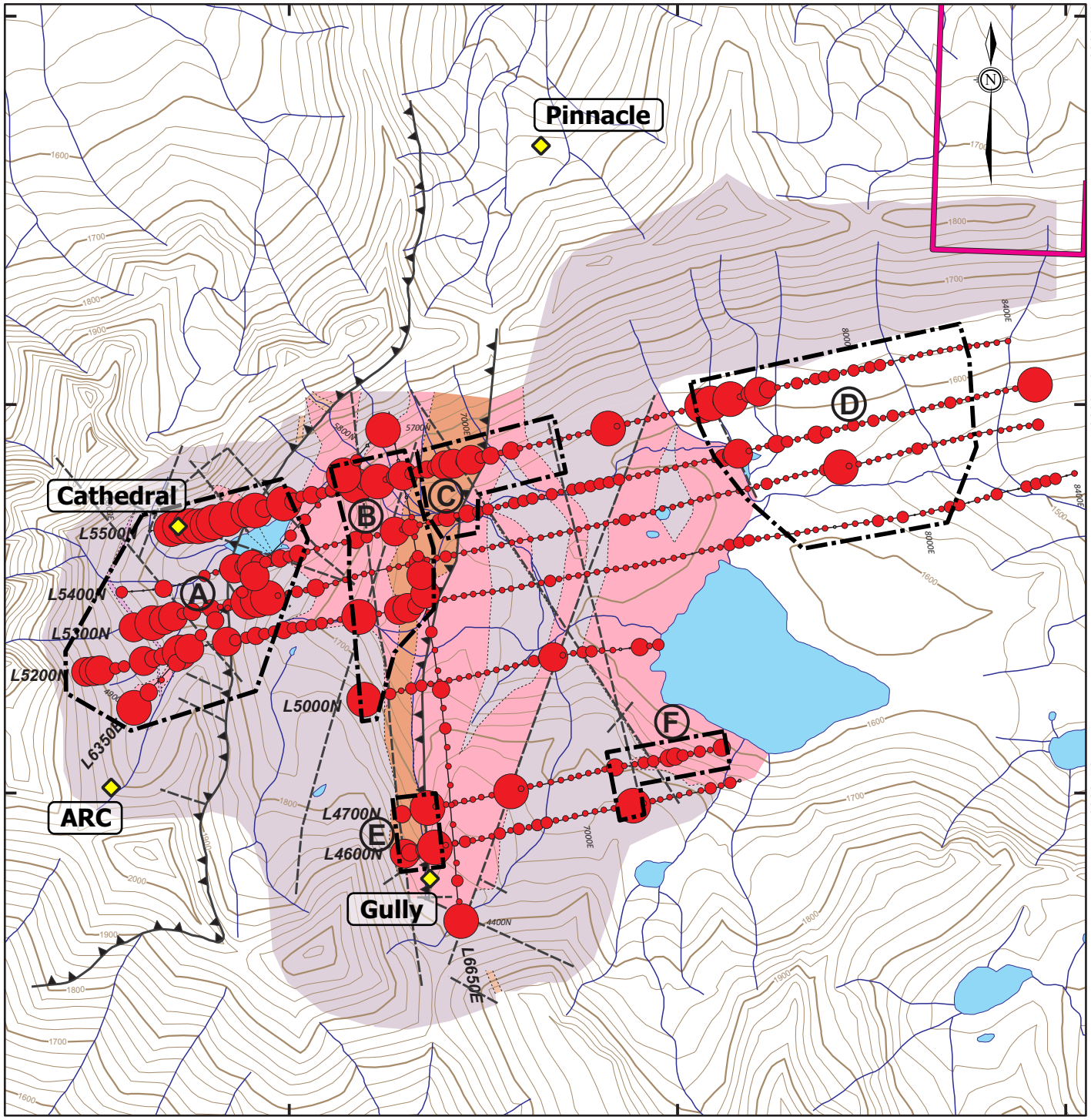
The highest gold value from the soil sampling program was returned from L52N 6075E of 5.99 ppm Au. This is located proximal to a gold-copper stockwork which has returned up to 2.52% Cu and 1.355 ppm Au (sample 2027). At L55N, along the base of the cliff where a series of north-south trending sheeted fractures and veins of chalcopyrite occur, a continuous copper soil anomaly occurs for 150 metres with values ranging from 640 ppm to 1990 ppm Cu (6150E to 6300E).

The second zone (Area B) occurs at the western end of the lower valley, at the base of the ridge that separates the upper terrace from the valley floor. This zone is narrow and extends approximately 550 metres from L55N (6625E - 6800E) to L50N (6550E) with copper and gold values up to 1915 ppm Cu (L50N 6550E) and 0.566 ppm Au (L55N 6700E). This anomaly closely matches the mineralized potassic altered quartz monzonite body that have been mapped at the Cathedral Area.

Further to the west, the third zone occurs (Area C), which lies at the base of the main south facing valley wall on L55. This zone is well defined by an arsenic anomaly from L55N 6875E to 7100E, with up to 65.8 ppm As. The Pinnacle Showing, located approximately 700 metres to the north on the other side of the hill, returned numerous samples with over limits in arsenic accompanied by high grade gold values (sample 1255: >10,000 ppm As, 13.0 g/t Au).

The largest anomalous zone (Area D) occurs at the eastern end of all the valley lines (L52N - L55N) from 7600E to 8200E and is approximately 600 metres by 500 metres in size. A significant arsenic anomaly, returning up to 65.8 ppm As (L55N 6950E), is defined along L55N and extends southward across all lines. Although the copper anomaly is not as extensive as arsenic, it is traceable from L55N to L53N with up to 645 ppm Cu (L53N 7875E). As copper decreases to the south, gold increases, with values up to 0.954 ppm Au (L53N 7625E).

The remaining two anomalous zones occur in the most southerly lines. At the Gully Showing (Area E), up to 1865 ppm Cu and 0.173 ppm Au was returned from L46N 6600E. This is a narrow zone covering both L46N and L47N. At the eastern end of L47N, a 100 metre long zone (Area F) returned up to 351 ppm Cu (L47N 7100E) and 1.26 ppm Au (L47N 7275E).



LEGEND

GEOLOGY

- Latite porphyry
- Syenite
- Quartz monzonite
- Diorite

GEOCHEMISTRY

Soil Samples

- < 165.8 ppm Cu
- 165.8 - 284.4 ppm Cu
- 284.4 - 403.0 ppm Cu
- 403.0 - 521.6 ppm Cu
- > 521.6 ppm Cu

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Survey grid with stations
- Showing location with name
- Contact defined, inferred
- Fault inferred
- Thrust fault inferred
- Soil anomaly zone with name

0 500m

NAD83 UTM Zone 10 North

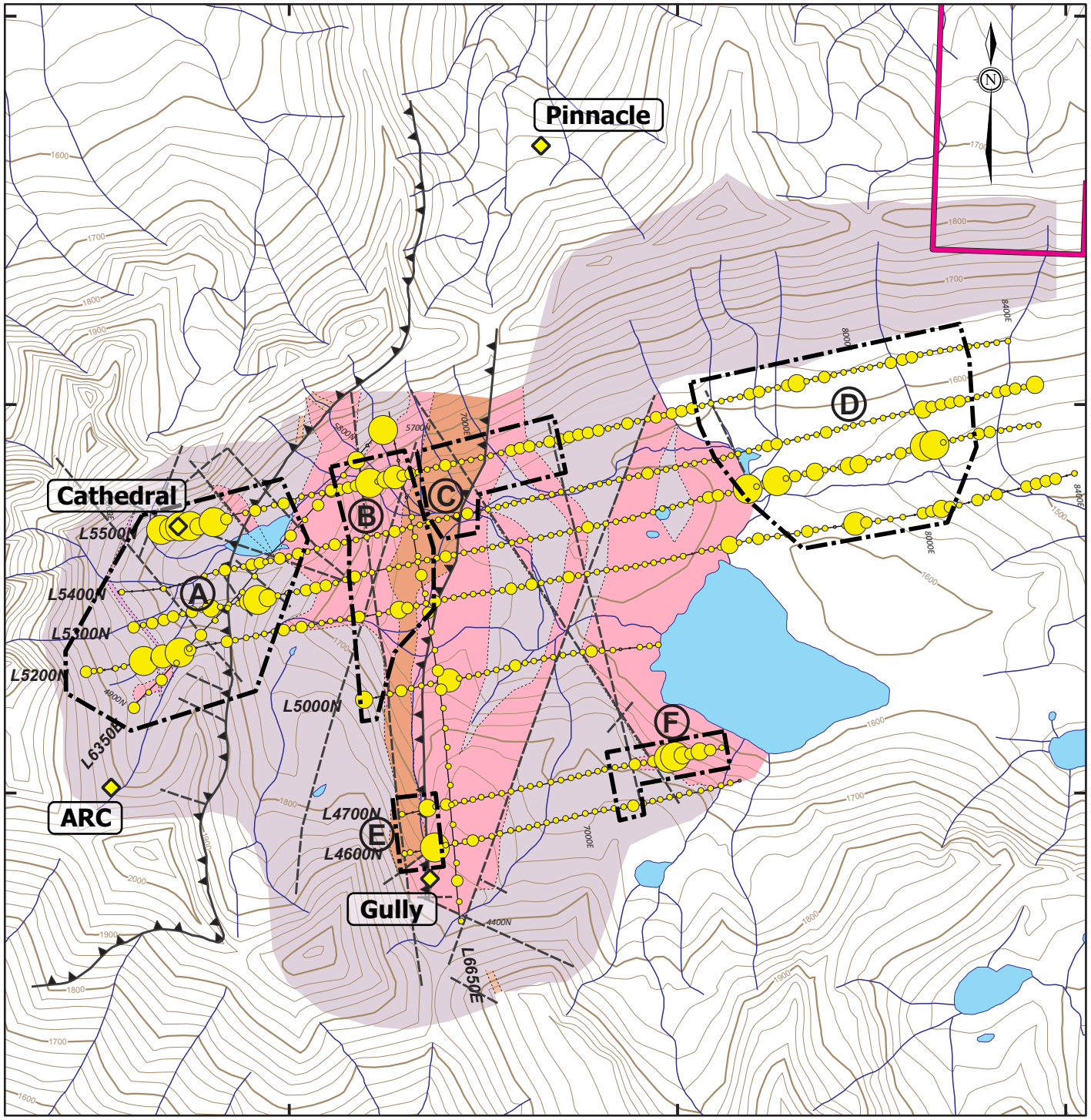
IMC INTERNATIONAL MINING CORP.

SOIL GEOCHEMISTRY
COPPER
Cathedral Area

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	7	Date:	December 2020

CME



LEGEND

GEOLOGY

- Latite porphyry
- Syenite
- Quartz monzonite
- Diorite

GEOCHEMISTRY

Soil Samples

- < 0.025 ppm Au
- 0.025 - 0.071 ppm Au
- 0.071 - 0.117 m Au
- 0.117 - 0.163 ppm Au
- > 0.163 ppm Au

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Survey grid with stations
- Showing location with name
- Contact defined, inferred
- Fault inferred
- Thrust fault inferred
- Soil anomaly zone with name

0 500m

NAD83 UTM Zone 10 North

IMC INTERNATIONAL MINING CORP.

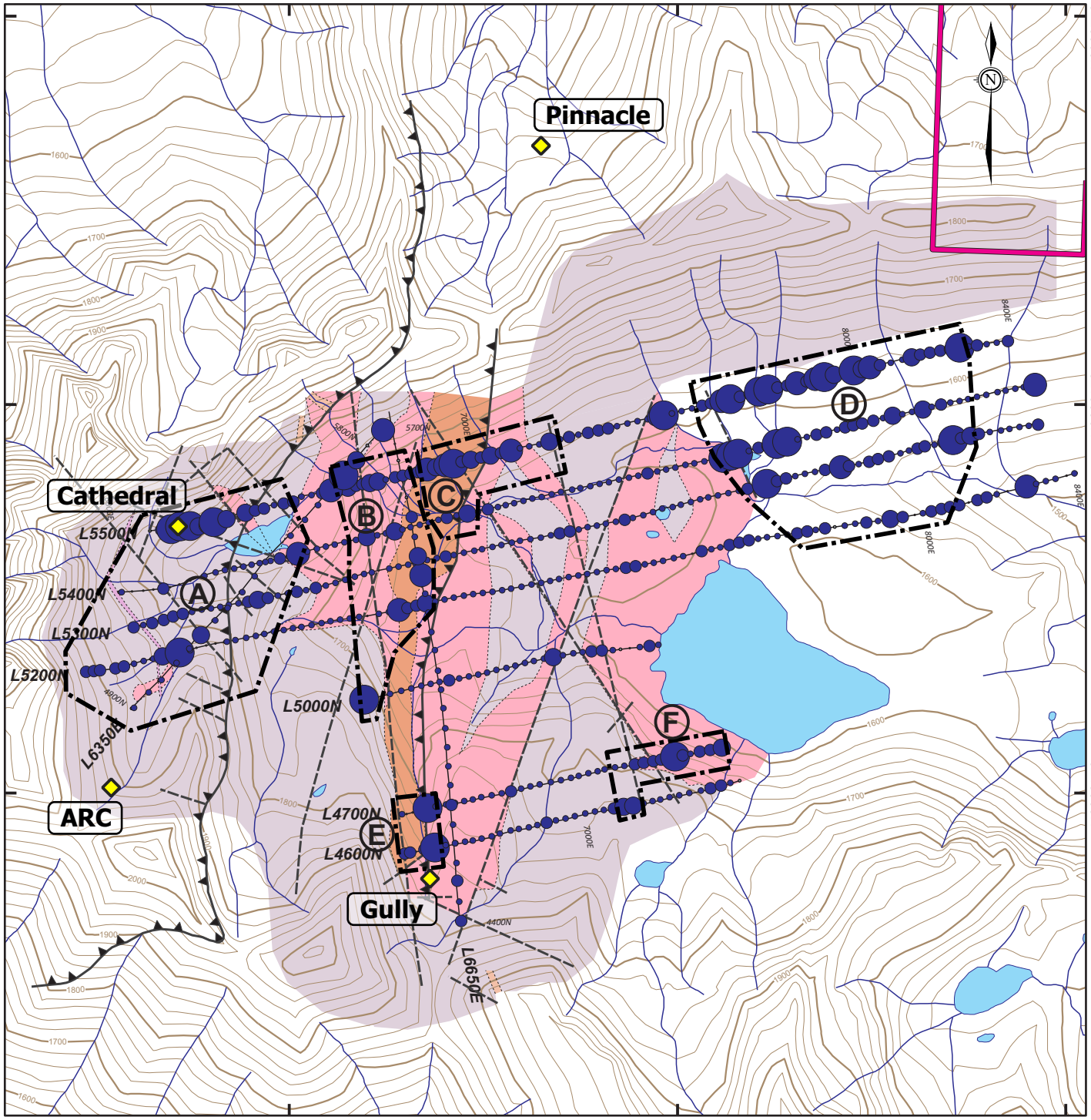
SOIL GEOCHEMISTRY
GOLD
Cathedral Area

Thane Project

Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	8	Date:	December 2020

CME



LEGEND

GEOLOGY

- Latite porphyry
- Syenite
- Quartz monzonite
- Diorite

GEOCHEMISTRY

Soil Samples

- < 11.4 ppm As
- 11.4 -11.4 ppm As
- 20.1 - 28.8 ppm As
- 28.8 - 37.5 ppm As
- >37.5 ppm As

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Survey grid with stations
- Showing location with name
- Contact defined, inferred
- Fault inferred
- Thrust fault inferred
- Soil anomaly zone with name

0 500m

NAD83 UTM Zone 10 North

IMC INTERNATIONAL MINING CORP.

SOIL GEOCHEMISTRY
ARSENIC
Cathedral Area

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	9	Date:	December 2020

CME

The highest gold value from rock sampling of the current work program was returned from this area (sample 3119: 3.02% Cu, 5.90 g/t Au).

5.2.2 Cirque Area

Soil samples illustrating copper concentrations at the Cirque Area at 1:15,000 scale is presented in Figure 11. Figure 12 presents multiple elements at a 1:5,000 scale.

No arsenic or gold anomalies were identified along the single grid line (L174N). However, anomalous levels of copper were returned from both ends of the survey line. In the north, station 5900E returned the highest copper value of 623 ppm Cu. At the southern end, the most southerly two stations returned 376 ppm and 469 ppm Cu (4550E and 4500E respectively). Approximately 100 metres and 170 metres up slope from station 4500E, rock samples returned 0.11% Cu and 0.013 g/t Au (sample 2314) and 1.5% Cu and 1.07 g/t Au (sample 2355), respectively.

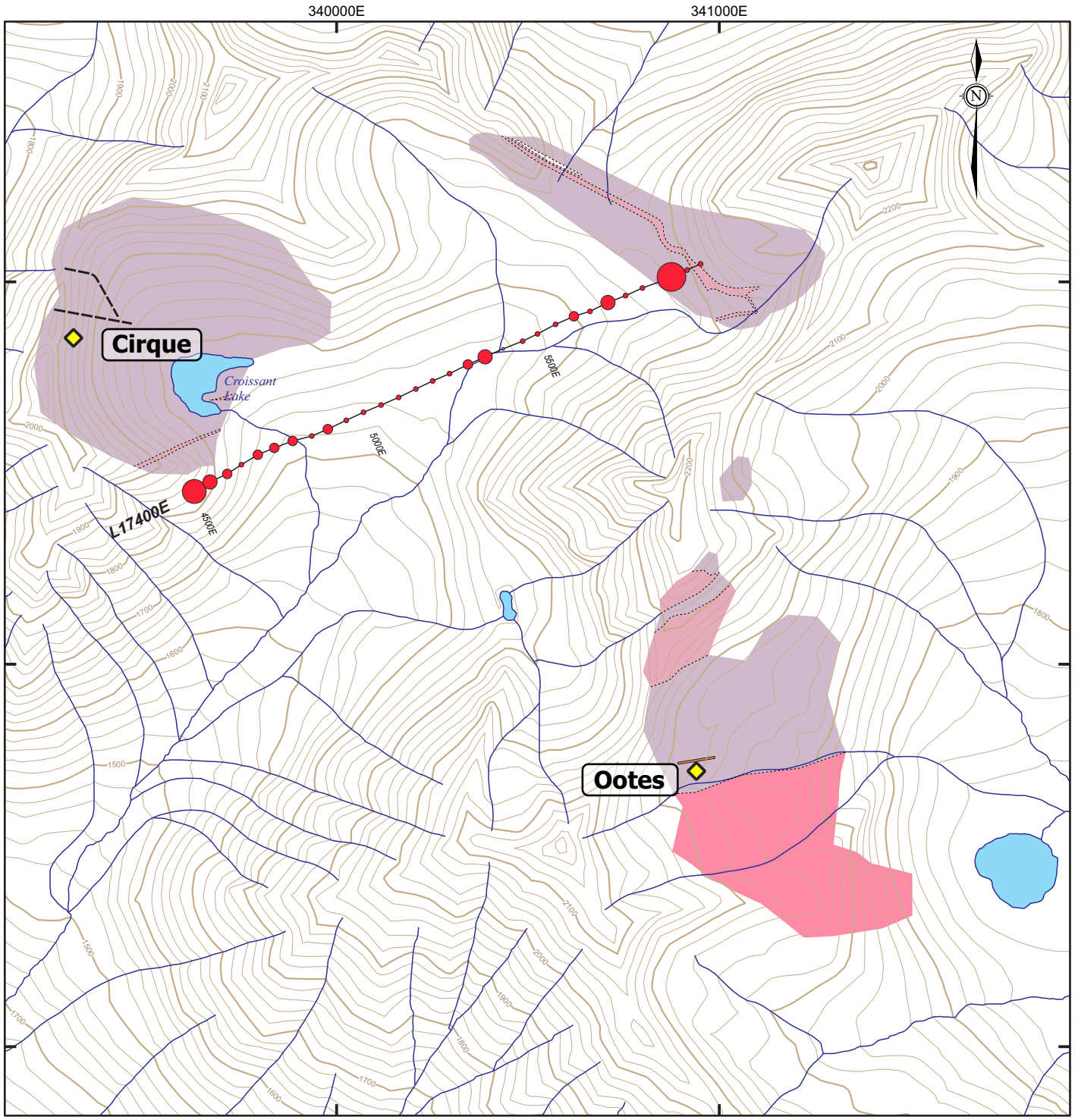
5.2.3 Mat Area

Soil samples illustrating copper concentrations at the Mat Area at 1:15,000 scale is presented in Figure 13. Figure 14 presents multiple elements at a 1:5,000 scale.

A single station high for of 397 ppm Cu was returned from L240N 5250N. Although no anomalous gold results were returned from this area, a significant arsenic anomaly was returned in the eastern part of the L240N. The second line (L239N) did not extend up to this area, so the boundaries to this anomaly are not known. Two distinct arsenic anomalies are defined from L240N from stations 5525E to 5650E (up to 58.7 ppm As) and from station 5925E to end of line 6000E (up to 70.7 ppm As). These two arsenic anomalies straddle a magnetic high that was returned from the airborne geophysical surveys by both Geotech and Geoscience BC. It is unclear what relationship this anomaly may have with the silver bearing quartz veins of the Mat Showing, which are located approximately 750 metres to the northwest. No anomalous silver values were returned from the soil lines.

5.3 GEOPHYISCAL SURVEYING

A total of 12.5 km of induced polarization (IP) surveying was undertaken at Cathedral Area (11 km) and Cirque Area (1.5 km). At Cathedral, 3.3km of surveying utilizing 25 meter a-spacing was undertaken on lines L47N, L53N and L54N. These lines were surveyed in 2019 using a 100 meter a-spacing and the tighter a-spacing was selected to obtain greater definition of the narrow structures identified in the 2019 survey. All new lines were surveyed using a 100 a-spacing, which included L50N, L52N, L6350E and L6650E. Due to the steep walls that bound the western ends of the survey lines, two cross lines were established. L6350E is located at the western ends of L52N-L55N and is oriented 040° Az. The second cross line (L6650E) was established at the western ends of L46N-L47N and is oriented at 355° Az.



LEGEND

GEOLOGY

- Aplite
- Syenite
- Granodiorite
- Quartz monzodiorite
- Diorite

GEOCHEMISTRY

Soil Samples

- < 165.8 ppm Cu
- 165.8 - 284.4 ppm Cu
- 284.4 - 403.0 ppm Cu
- 403.0 - 521.6 ppm Cu
- > 521.6 ppm Cu

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Soil and IP survey line
- Showing location with name
- Contact defined, inferred
- Fault inferred

0 500m

NAD83 UTM Zone 10 North

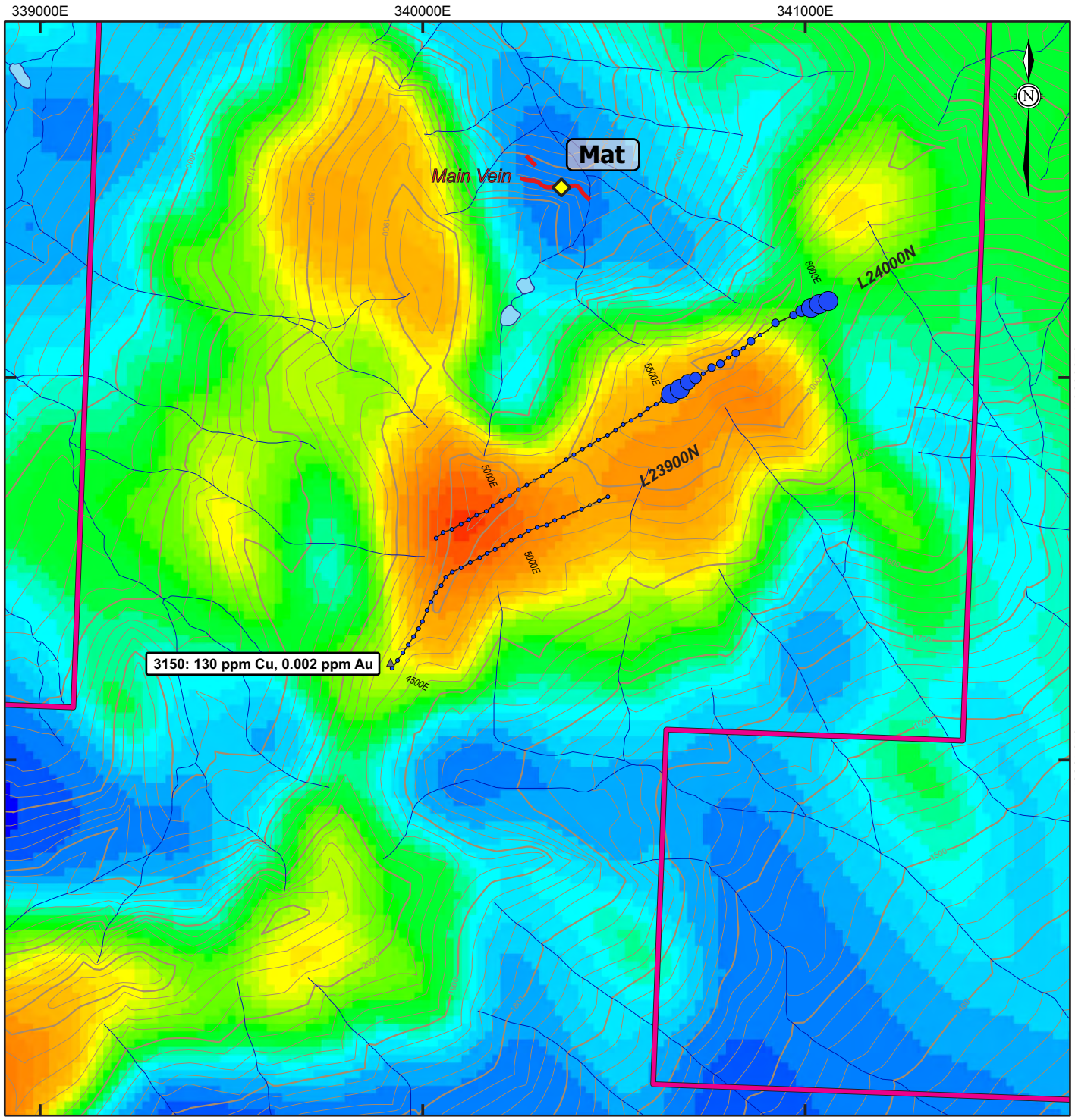
IMC INTERNATIONAL MINING CORP.

SOIL GEOCHEMISTRY
COPPER
Cirque Area

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	11	Date:	December 2020

CME



LEGEND

GEOPHYSICS

Geoscience BC - SEARCH
Total field magnetics (nT)

GEOCHEMISTRY

Soil Samples

- < 11.4 ppm As
- 11.4 -11.4 ppm As
- 20.1 - 28.8 ppm As
- 28.8 - 37.5 ppm As
- >37.5 ppm As

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Survey grid with stations
- Showing location with name
- Quartz vein, mineralized
- Rock sample location with ID and result

0 500m

NAD83 UTM Zone 10 North

IMC INTERNATIONAL MINING CORP.

GEOCHEMISTRY
Mat Area

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	13	Date:	December 2020

CME

The induced polarization survey was completed by Peter E. Walcott & Associates of Coquitlam, BC between August 6 and 22, 2020. A logistics report of this work is presented in Appendix IV and is summarized below.

The induced polarization (IP) survey was conducted using a pulse type system, the principal components of which were manufactured by Walcer Geophysics Ltd. of Enniskillen, Ontario, and by Instrumentation GDD of St. Foy, Quebec. The system consists of three units, a receiver (GDD), transmitter (Walcer) and a motor generator (Honda). The transmitter, which provides a maximum of 9.0 kw dc to the ground, obtains its power from a 20 kw 60 cps alternator driven by a Honda 24 hp gasoline engine. The cycling rate of the transmitter is 2 seconds "current-on" and 2 seconds "current-off" with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through the current electrodes C1 and C2, the primary voltages (V) appearing between any two potential electrodes, P1 through P7, during the "current-on" part of the cycle, and the apparent chargeability, (Ma) presented as a direct readout in millivolts per volt using a 200 millisecond delay and a 1000 millisecond sample window by the receiver, a digital receiver controlled by a micro-processor – the sample window is actually the total of twenty individual windows of 50 millisecond widths.

The apparent resistivity (ρa) in ohm metres is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used. The chargeability and resistivity are called apparent as they are values which that portion of the earth sampled would have if it were homogeneous. As the earth sampled is usually inhomogeneous the calculated apparent chargeability and resistivity are functions of the actual chargeability and resistivity of the rocks.

The survey was carried out using the "pole-dipole" method of surveying. In this method the current electrode, C1, and the potential electrodes, P1 through Pn+1, are moved in unison along the survey lines at a spacing of "a" (the dipole) apart, while the second current electrode, C2, is kept constant at "infinity". The distance, "na" between C1 and the nearest potential electrode generally controls the depth to be explored by the particular separation, "n", traverse.

The data is presented within the logistics report as individual pseudo section and 2D inversion plots of apparent resistivity and apparent chargeability using Geosoft Oasis Montaj at a scale of 1:2,000 and 1:10,000.

Cathedral Area Results

The 2020 induced polarization program was designed to expand on the 2019 induced polarization survey, continuing it both the north and south directions. A plan map showing the results of the survey is presented in Figure 15.

In addition to expansion the historic grid, detailed surveying utilizing a 25 m a-spacing was also undertaken on several lines to further define several discrete zones identified during the 2019, proximal to cHC. Plate 1 presents a 3D view of the 2D inversion data for all lines

surveyed during 2019 and 2020 (Walcott, A, 2020). Figure 16 presents a plan view of the surface expression of the chargeability and resistive 2D inversion data.

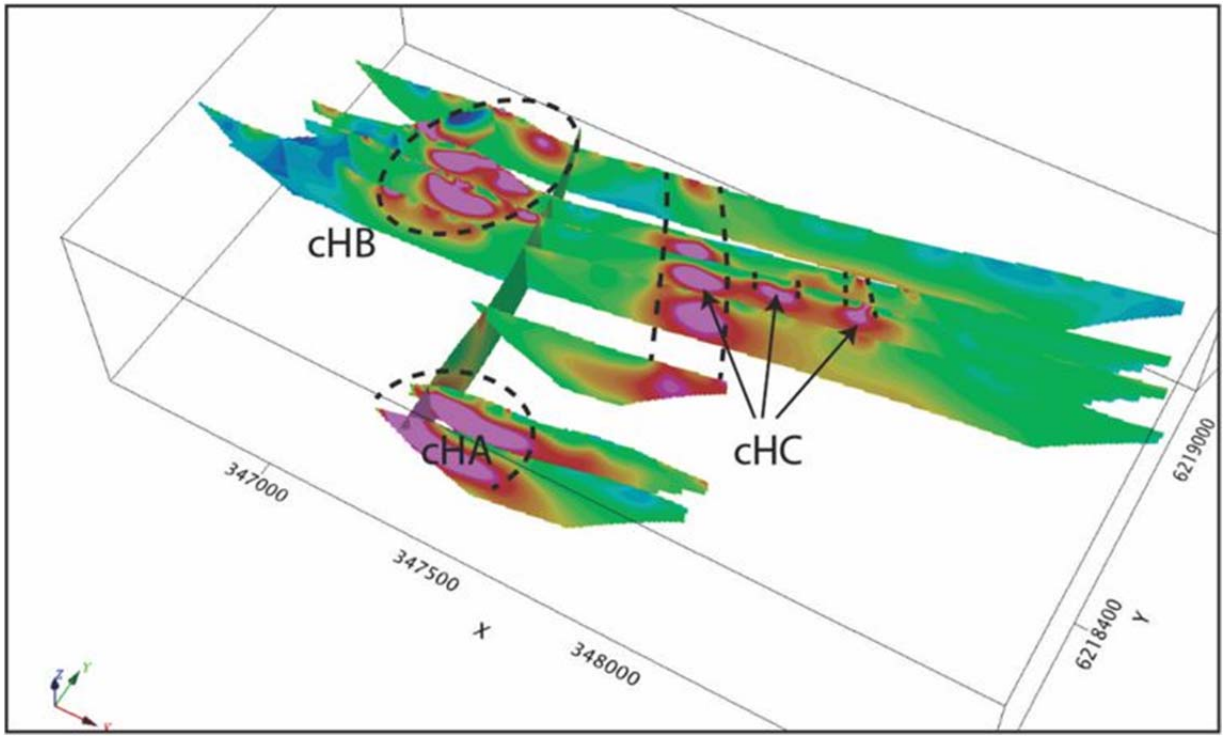


Plate 1: 3D view of 2019 and 2020 modelled Chargeability (mV/V)

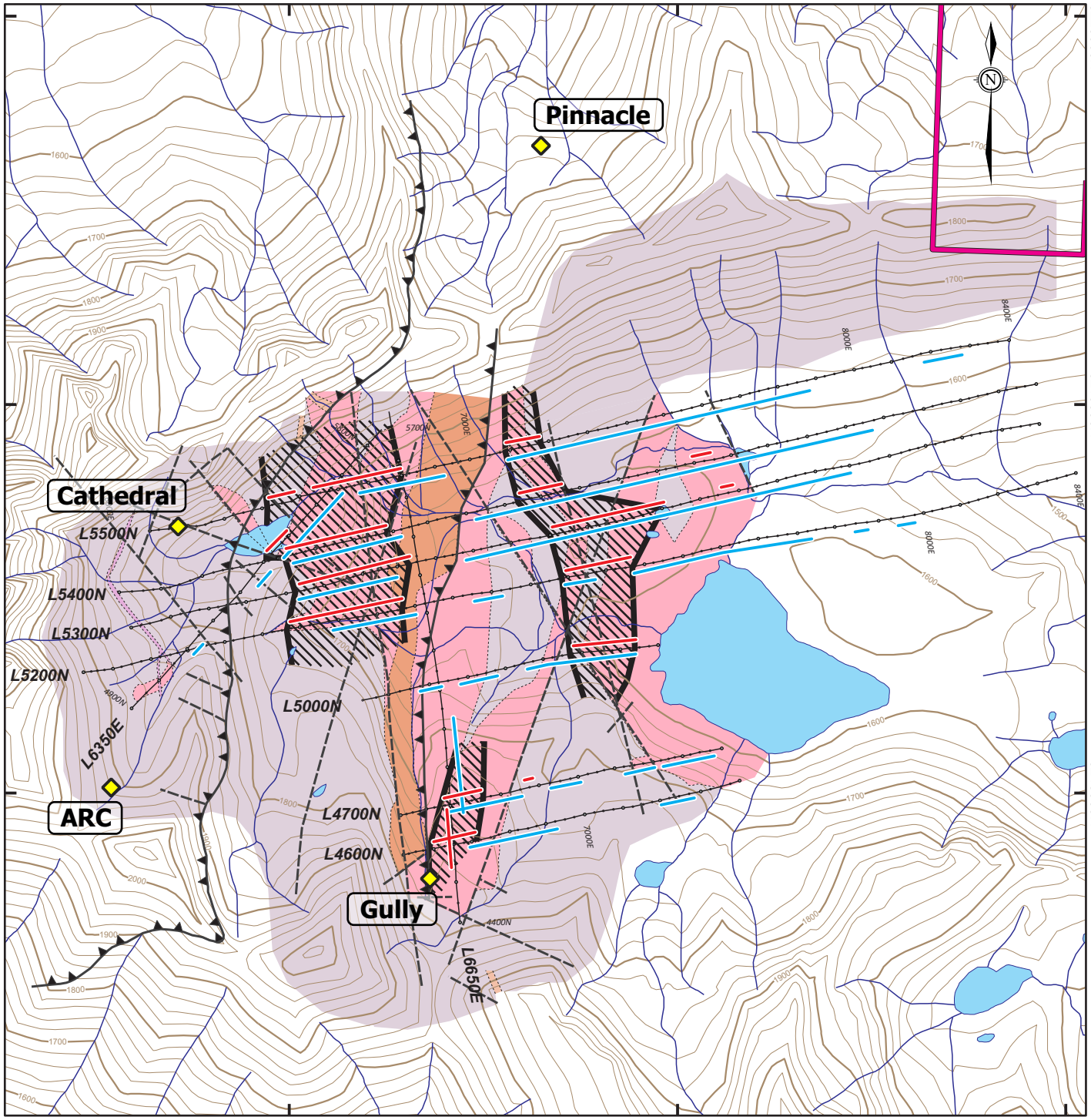
Anomaly cHA, is situated in the southern portion of the survey grid. This feature was initially identified in 2019. In 2020, the southern extent of line 6650E which was orthogonal to the historic lines also partially resolved this chargeability feature associated with a moderate resistivity. The feature however remains open to the southwest.

cHB is in the northwest corner of the main survey grid. This feature was also identified with the 2019 survey. The combined results of the 2019/2012, shows a plug like feature potentially elongated in a north-westerly orientation. The chargeability feature is associated with a discrete resistivity plug, and likely of interest.

cHC is in the north central portion of the survey area. This north-south trending feature has a strike of some 500 meters and remains open in the south. The anomaly appears to diminish going north. The feature is also associated with broad zone of elevated resistivity and is proximal to known mineralization. The axis illustrated below represents the most intense and continuous feature in what is a likely a series of discrete north south features going to the east.

Cirque Area Results

A single reconnaissance line was conducted at the Cirque Area (L174+00E), located approximately 8 kilometers to the northwest of the Cathedral Area IP survey. No significant features of interest were observed.



LEGEND

GEOLOGY

- Latite porphyry
- Syenite
- Quartz monzonite
- Diorite

GEOPHYSICS

- IP chargeability anomaly
- IP resistivity anomaly
- Anomalous chargeability zone

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Survey grid with stations
- Showing location with name
- Contact defined, inferred
- Fault inferred
- Thrust fault inferred

0 500m

NAD83 UTM Zone 10 North

IMC INTERNATIONAL MINING CORP.

Induced Polarization
Cathedral Area

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	15	Date:	December 2020

CME

5.4 PETROGRAPHIC STUDIES

Reference rock samples from the 2012 work program, held in storage at CME's field office in Vavenby BC, were reviewed, from which a representative suite of samples were submitted for petrographic description. The purpose of the study was to create a reference library to aid in geological mapping. A total of 24 samples from locations throughout the Property were selected and submitted for petrographic descriptions prior to the start of field work (Leitch, 2020b). Upon the conclusion of field work, an additional 17 samples were selected for petrographic study (Leitch, 2020a).

All samples were initially cut by rock saw at CME's field office in Vavenby, BC, with one half delivered to ALS Minerals (ALS) of Kamloops, BC for sample preparation and analysis. The other half of the sample, which remained in storage, was delivered to Vancouver Petrographics of Langley, BC for petrographic study.

Results

Location coordinates for all samples, including selected analytical results, are presented in Tables 7 with sample locations presented in Figure 16. The petrographic reports for both studies area included in Appendix V and are summarized in this Section.

Table 7: Selected results, petrographic samples

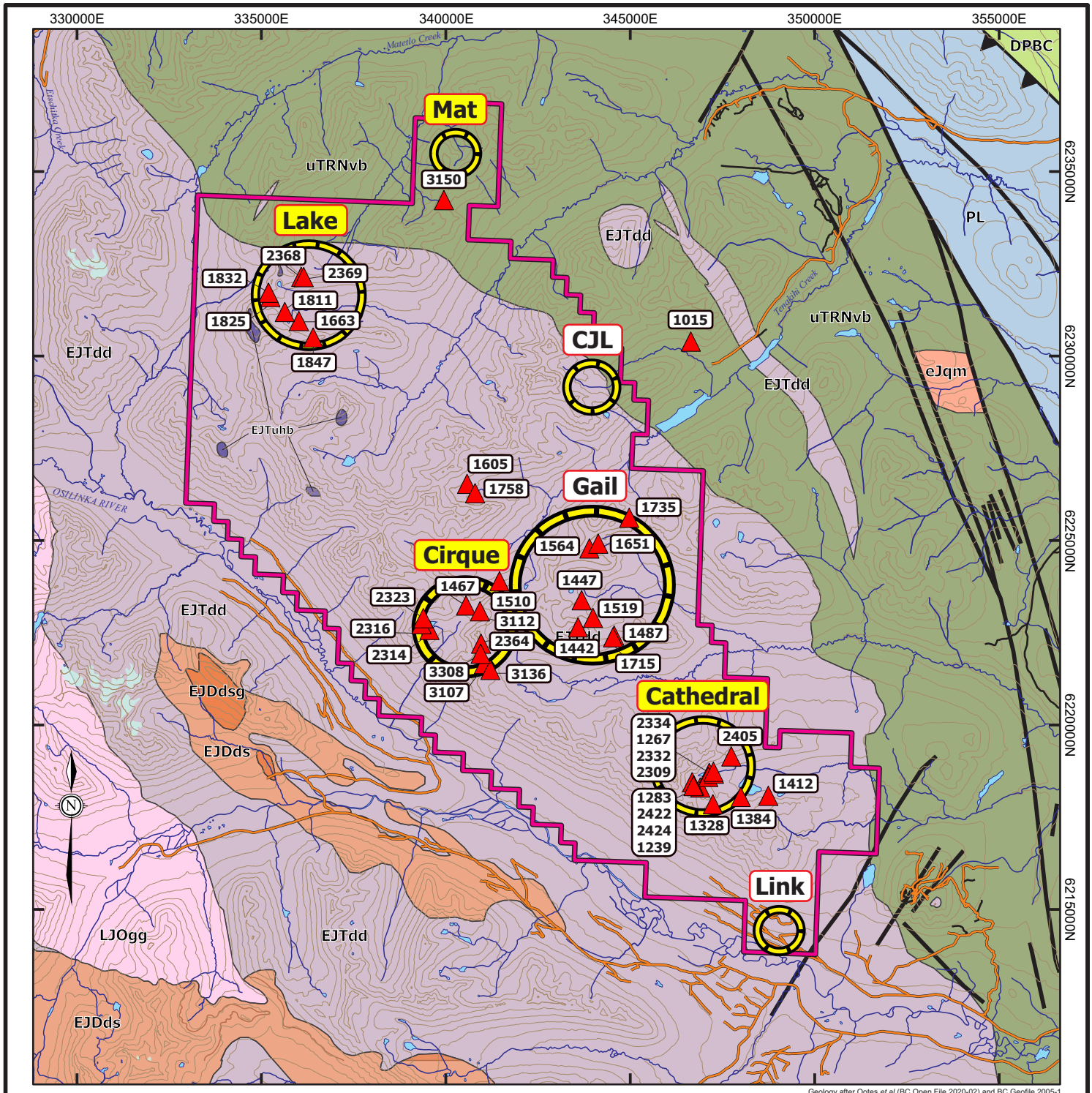
Sample	UTM		Study Area	Results			Batch
	Easting	Northing		Cu (%)	Au (ppm)	Ag (ppm)	
1015	346620	6230413	Tenakihi	0.003	0.001	0.05	Pre-Work
1239	346877	6218307	Cathedral	0.012	0.002	0.05	Pre-Work
1267	347120	6218702	Cathedral	0.011	0.001	0.08	Pre-Work
1283	346657	6218451	Cathedral	0.002	0.001	0.02	Pre-Work
1328	347219	6217853	Cathedral	0.002	0.001	0.01	Pre-Work
1384	347976	6218052	Cathedral	0.015	0.001	0.07	Pre-Work
1412	348724	6218081	Cathedral	0.013	0.002	0.09	Pre-Work
1442	343557	6222655	Gail	0.019	0.003	0.13	Pre-Work
1447	343654	6223390	Gail	0.006	0.001	0.05	Pre-Work
1467	340515	6223248	Cirque	0.016	0.009	0.11	Pre-Work
1487	344537	6222432	Gail	1.190	0.015	9.10	Pre-Work
1510	341424	6223906	Gail	0.123	0.011	0.70	Pre-Work
1519	343963	6222912	Gail	0.007	0.001	0.06	Pre-Work
1564	343866	6224796	Gail	0.002	0.001	0.05	Pre-Work
1605	340544	6226551	Gail	0.702	0.105	4.60	Pre-Work
1651	344106	6224927	Gail	2.460	0.658	11.80	Pre-Work
1663	335977	6230972	Lake	0.001	0.001	0.02	Pre-Work
1715	344508	6222385	Gail	0.016	0.007	0.10	Pre-Work
1735	344947	6225630	Gail	0.007	0.001	0.13	Pre-Work
1758	340762	6226298	Gail	0.015	0.008	0.09	Pre-Work
1811	335594	6231217	Lake	0.125	0.044	0.30	Pre-Work
1825	335203	6231625	Lake	0.045	0.010	0.30	Pre-Work
1832	335151	6231741	Lake	0.016	0.003	0.09	Pre-Work

Table 7: Selected results, petrographic samples (*cont'd*)

Sample	UTM		Study Area	Results			Batch
	Easting	Northing		Cu (%)	Au (ppm)	Ag (ppm)	
1847	336364	6230524	Lake	0.021	0.003	0.18	Pre-Work
2309	347092	6218595	Cathedral	1.910	0.024	1.07	Post-Work
2314	339523	6222586	Cirque	1.500	1.070	6.60	Post-Work
2316	339306	6222743	Cirque	2.480	0.005	0.22	Post-Work
2323	339356	6222905	Cirque	1.070	0.020	0.84	Post-Work
2332	347247	6218682	Cathedral	0.018	0.007	0.15	Post-Work
2334	347234	6218734	Cathedral	0.014	0.008	0.07	Post-Work
2364	340924	6222212	Cirque East	2.950	0.047	1.57	Post-Work
2368	336041	6232171	Lake	0.099	0.013	0.16	Post-Work
2369	336108	6232164	Lake	2.270	0.290	1.55	Post-Work
2405	347719	6219150	Cathedral	1.440	0.001	0.21	Post-Work
2422	346706	6218359	Cathedral	0.315	0.006	0.18	Post-Work
2424	346690	6218346	Cathedral	0.262	0.005	0.14	Post-Work
3107	341003	6221661	Cirque East	0.037	0.000	0.04	Post-Work
3112	340894	6223091	Cirque	0.071	0.003	0.03	Post-Work
3136	341177	6221500	Cirque East	1.310	0.001	0.28	Post-Work
3150	339916	6234253	Mat	0.135	0.002	0.16	Post-Work
3308	340912	6221938	Cirque East	1.480	0.096	12.00	Post-Work

Pre Field Work (24 samples)

This is a suite of apparently consanguineous intrusive rocks (mainly plutonic, 20 samples; minor hypabyssal, 3 samples, and one sample of aplite) that range in composition from biotite-(pyroxene)-hornblende diorite (8 samples, 1328, 1467, 1487, 1510, 1564, 1605, 1651, 1825) through monzodiorite (6 samples, 1412, 1715, 1735, 1758, 1832, 1847) and monzonite to syenite (5 samples, 1015, 1239, 1267, 1442, 1811, and 1 sample, 1384, respectively). Quartz is variably present in all of these categories (all told, in 12 samples, commonly at the threshold of definition for quartz-bearing, i.e. 3-5%, in 6 samples, but 7-15% in 5 samples, although locally partly secondary, and 20% in only one sample, the aplite). The mafic assemblage is remarkably similar in all the plutonic rocks, typically comprising pyroxene or relict pyroxene cores to amphibole (8 samples of monzodiorite to monzonite; oddly enough, not in the diorite), amphibole, and biotite. The pyroxene is typically clinopyroxene except in one sample, 1412, where possible orthopyroxene appears to occur as well. Amphibole rimming or replacing pyroxene appears to be mainly hornblende or actinolitic hornblende, itself commonly rimmed or replaced by secondary actinolite or tremolite-actinolite (in one sample, talc-sericite may be after orthopyroxene). Biotite is generally relatively coarse and primary except locally secondary (replacing amphibole at margins in 1015, 1487, especially 1510, 1825). Although the spatial relations between samples are not given, it may be significant that certain groups of samples are of similar composition (e.g., monzonite/monzodiorite from 1015-1267, 1412-1442, 1715-1758, 1832-1847; and diorite from 1467 to 1651).



Geology after Ootes *et al* (BC Open File 2020-02) and BC Geofile 2005-1
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0 5km

NAD83 UTM Zone 10 North

LEGEND

GEOLOGY

Hogem batholith

Osilinka suite

- LJOgg: Equigranular unfoliated granite

Duckling Creek suite

- EJDds: Granodiorite to Quartz diorite/monzodiorite
- EJDdsg: Biotite pyroxenite

Thane Creek suite

- EJTdd: Diorite to monzodiorite
- EJTuhb: Hornblendite

Nicola Group

- uTrNvb: Undifferentiated volcanic rocks

La Range Assemblage

- PL: volcaniclastic rocks

Big Creek Group

- DPBC: mudstone, siltstone, shale

SYMBOLS

- Fault, thrust
- Thane property
- Secondary routes
- Contour (100 metre interval)
- Watercourse
- Waterbody
- Icefield
- Gail — Prospect location with name
- Mat — 2020 Study area
- 1412 — Petrographic sample location with ID

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PETROGRAPHIC SAMPLES
Thane Property

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	CN
Scale:	1:150,000	Drawn:	TV, CN
Figure:	16	Date:	December 2020

CME

Alteration in these samples ranges from deuteric (7 samples, 1015, 1239, 1267, 1384, 1412, 1447 and 1519) to propylitic (1 sample, 1663) or propylitic/phyllic (1 sample, 1467) but is mainly transitional propylitic-potassic (15 samples, 1283, 1328, 1442, 1487, 1510, 1564, 1605, 1651, and 1715-1847 inclusive). These assemblages are characterized by, respectively, weak clay?/sericite-epidote after plagioclase ("saussuritization") and actinolite after amphibole for deuteric, the same minerals plus epidote, chlorite, calcite for propylitic, with the addition of significant sericite for propylitic-phyllic, albite, stronger epidote, actinolite, chlorite, quartz and variable secondary Kspar, local secondary biotite for the transitional propylitic-potassic (especially in samples in bold above, which correspond to the most highly mineralized samples, with Cu contents of 1.2%, 0.7% and 2.5%).

Mineralization is typically chalcopyrite (detected in 13 samples) and lesser pyrite (only 9 samples), suggestive of a chalcopyrite-rich, low total sulfide system. Sulfides are most closely related to (typically surrounded by or intergrown with) epidote and quartz, less directly with actinolite, chlorite, Kspar, albite and biotite; propylitic/sericitic alteration is peripheral. Secondary magnetite is not confirmed or suspected in any of the samples; in fact, potassic alteration appear s to be magnetite/ilmenite destructive, suggesting magnetic lows should correspond to mineralized zones. The mineralization and alteration appear typical of relatively weakly mineralized, plutonic porphyry copper systems, often subtle and mainly controlled along hairline veinlets or microfractures rather than major veins, or significant disseminations.

Post Field Work (17 samples)

Although primary lithologies are partly to largely obscured by alteration, this appears to be a suite of consanguineous intrusive rocks (mainly plutonic, 15 samples, although two of these, 2314 and 2332, are so highly altered the protolith is unknown), and minor extrusive rocks (2424, andesite, and 3150, latite-andesite crystal-lithic tuff?). The intrusive rocks range in composition from feldspar-rich clinopyroxenite/hornblendite (1 sample, 2369) to biotite-hornblende (pyroxene) diorite/gabbro (3 samples, 2323, 2422, 3308) through biotite-hornblende (pyroxene) (quartz) monzodiorite (6 samples, 2316, 2364, 2368, 2405, 3107, 3136) and biotite-hornblende (quartz) monzonite (2 samples, 2309, 2334) to granodiorite (1 sample, 3112). Quartz is variably present in many but not all of the intrusive rocks (all told, in 11 samples, below/at the threshold of definition for quartz-bearing, i.e. 3-5%, in 4 samples, but 10-15% in 5 samples, and 20% in three samples of quartz monzonite and granodiorite; but note that in two of the latter, 2314 and 2424, the quartz is largely secondary). The mafic assemblage is similar in many of the samples, typically comprising pyroxene or relict pyroxene cores to amphibole (7 samples, feldspar pyroxenite through diorite/gabbro to monzodiorite), or amphibole-lesser biotite in the more felsic rocks (6 samples, quartz monzonite to granodiorite). The pyroxene is typically clinopyroxene except in one sample, 2405, where relict possible orthopyroxene sites may occur as well. Amphibole rimming or replacing pyroxene appears to be mainly hornblende or actinolitic hornblende, itself commonly rimmed or replaced by secondary actinolite (in one sample, also after orthopyroxene?). Biotite is generally minor where primary

Alteration in these samples is mainly either transitional propylitic-potassic (12 samples, 2316, 2323, 2364, 2368, 2369, 2405, 2422, 2424, 3107, 3136, and 3150), or potassic (5 samples,

2309, 2314, 2332, 2334, 3308). These assemblages are characterized by, respectively, sericite-epidote after plagioclase ("saussuritization"), albitization/minor Kspar alteration of plagioclase, actinolite plus epidote, chlorite, carbonate after mafics, quartz and variable secondary Kspar, local secondary biotite for the transitional propylitic-potassic, grading to significant secondary Kspar, quartz, biotite (replacing mafics/more commonly along veinlets in 2309, especially 2314, 2332, and 2334, 3308)and local magnetite with actinolite-epidote-chlorite for potassic (especially in samples in bold above, which correspond to the most highly mineralized samples, with elevated chalcopyrite contents).

Mineralization is typically chalcopyrite (detected in at least trace amounts in 14 samples) and lesser pyrite (only 9 samples), rare bornite (one sample, 3308), suggestive of a chalcopyrite-rich, low total sulfide system. Sulfides are most closely related to (typically surrounded by or intergrown with) epidote, quartz and biotite, less directly with actinolite, chlorite, Kspar, albite and carbonate; sericitic alteration is peripheral or an overprint (with chlorite, carbonate). Secondary magnetite is likely in at least 7 of the samples (especially 3308; also 2332, 2422, possibly 2369, 2424, 3136, 3150), variably associated with the potassic alteration. The mineralization and alteration appear typical of relatively weakly mineralized, plutonic porphyry copper systems, often subtle and mainly controlled along veinlets or microfractures rather than major veins, or in significant disseminations.

5.5 WHOLE ROCK

Upon review of the initial samples selected for petrographic study, a total of 14 samples were found to not have whole rock analysis. Pulp material from the original sample, which was stored at CME's field office in Vavenby, BC, was retrieved and submitted to ALS Labs for whole rock analysis. Certificate of analysis is provided in Appendix IIIc

To complement the thin section study and to aid the classification of rock units, the results from the whole rock analysis were plotted on TAS diagram for plutonic rocks using ioGas software (Figure 17). The results of this work are discussed in Section 8.

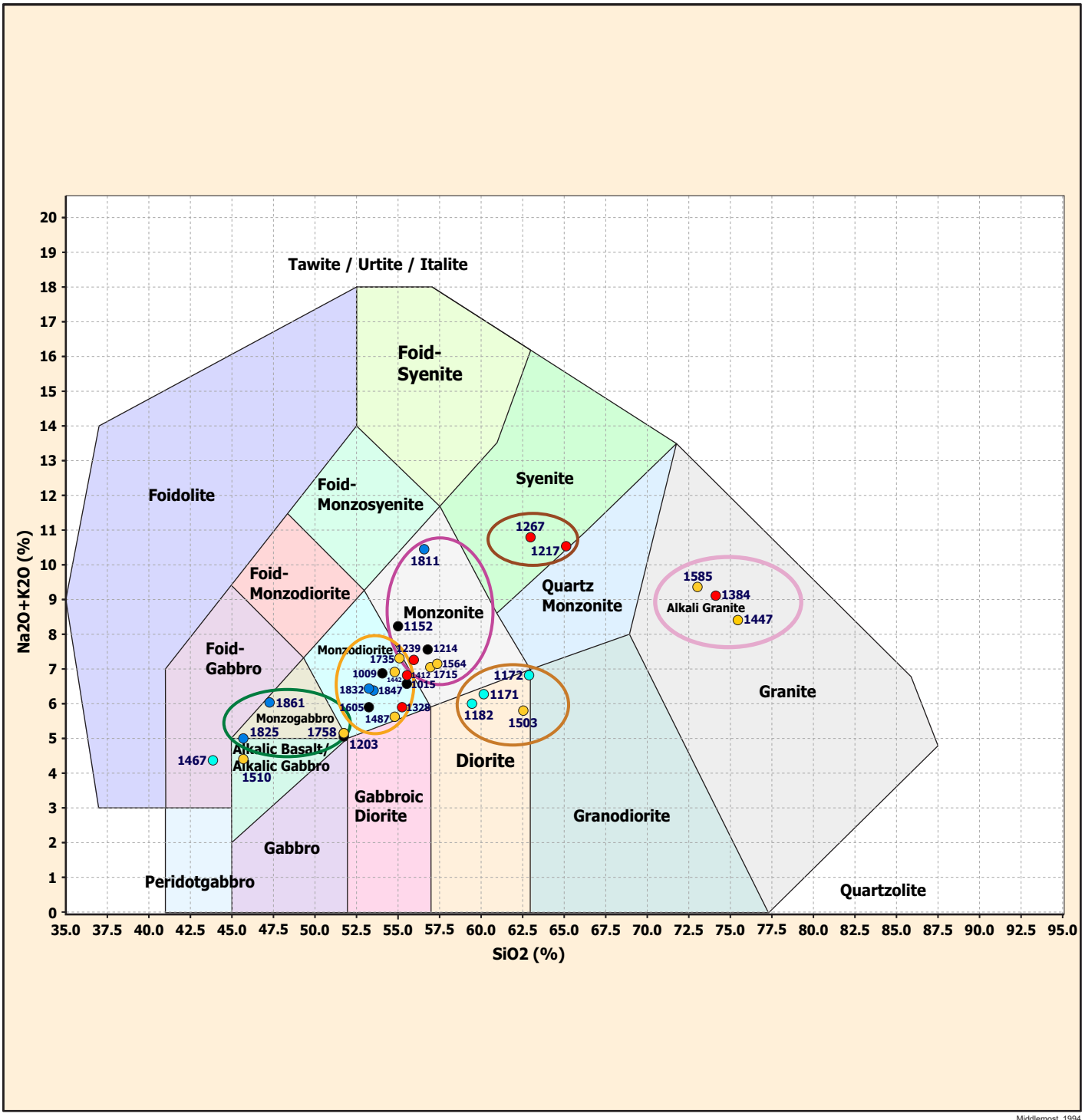
5.6 GEOLOGICAL MAPPING

Geological mapping was undertaken at the Cathedral, Cirque, and Lake Areas at a scale of 1:2,000.

5.6.1 Cathedral Area Geology

Results of the geological mapping are presented for the Cathedral Area in Figures 18 (1:15,000) and 19 (1:5,000). The geology of mapsheet M04O, which is located approximately 2.5 km northwest of the Cathedral Area, is presented in Figure 20 (1:5,000).

The Cathedral area is wholly located within the Hogem batholith. Mapping identified lithological units conducive to recent mapping completed by Ootes et. al in 2018 and 2019 to the North and West of the Thane property and include lithological units (from oldest to



Middlemost, 1994

LEGEND

SYMBOLS

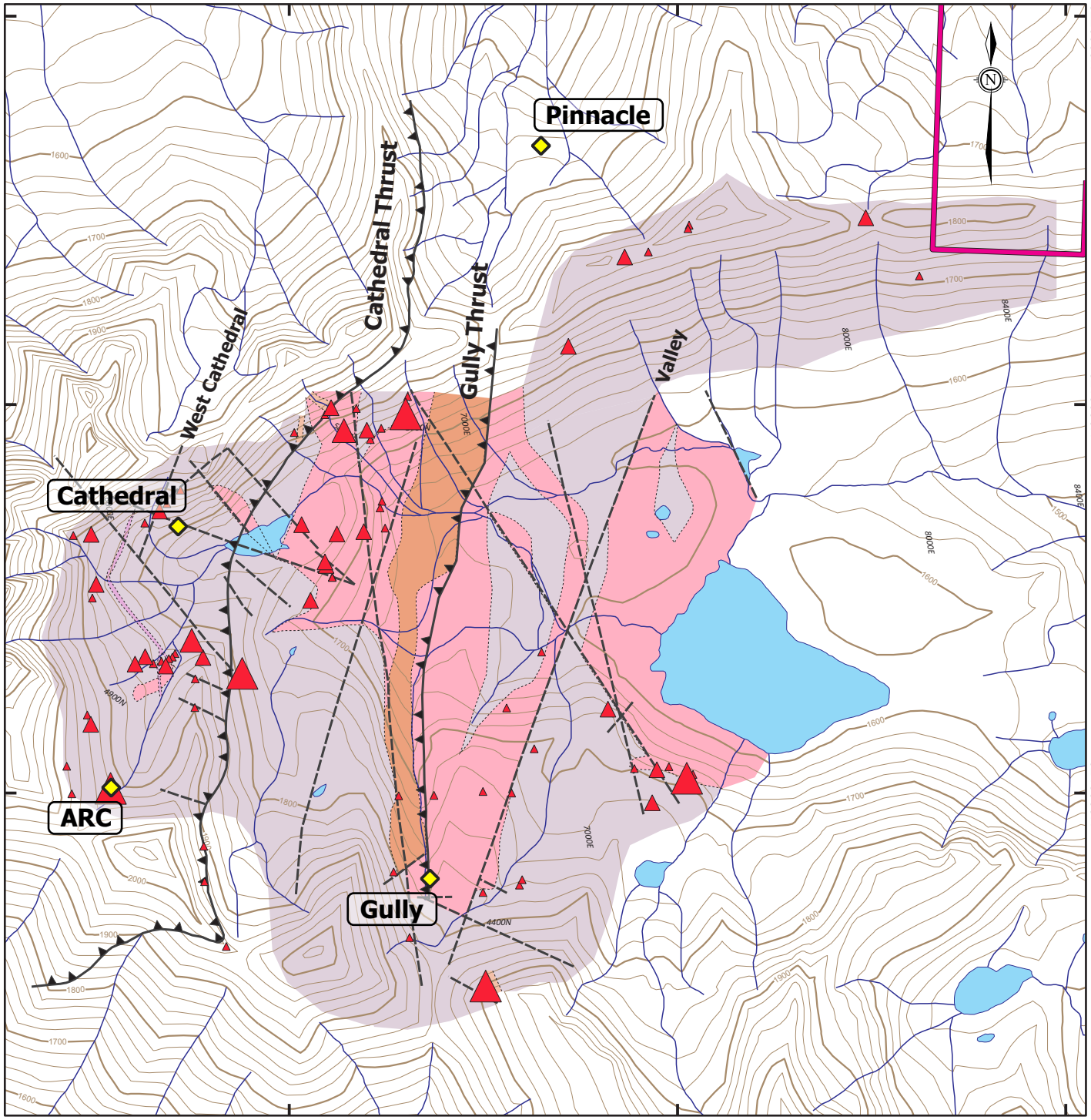
1384 Rock sample location with ID

Prospect Areas

- Cathedral
- Cirque
- Gail
- Lake
- Other

IMC INTERNATIONAL MINING CORP.			
TAS DIAGRAM PLUTONIC ROCKS Thane Property Thane Project Omineca M.D., British Columbia, Canada			
Project No:	P71	By:	PG
Scale:	*Schematic*	Drawn:	CN
Figure:	17	Date:	December 2020

CME



LEGEND

GEOLOGY

- Latite porphyry
- Syenite
- Quartz monzonite
- Diorite

GEOCHEMISTRY

Rock Samples

- < 0.10 % Cu
- 0.10 - 0.50 % Cu
- 0.50 - 1.00 % Cu
- > 1.00 % Cu

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Showing location with name
- Contact defined, inferred
- Fault inferred
- Thrust fault inferred

0 500m

NAD83 UTM Zone 10 North

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GEOLOGY & ROCK GEOCHEMISTRY COPPER

Cathedral Area

Thane Project

Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	18	Date:	December 2020

CME

youngest) within the Thane Creek, Duckling Creek, Mesilinka and Osilinka plutonic suites of rocks. Mapping continued to confirm the potential for significant alteration and mineralization related to an alkalic Cu-Au porphyry and emplacement of the syenite intrusive phase, interpreted to be of the Duckling Creek suite of rocks. Late phase K-feldspar granitic lithologies from the Mesilinki and Osilinka in addition to latite porphyry occur throughout the Cathedral Area as localized plugs and dykes that cross-cut earlier Cu-Au alkali-porphyry related alteration and associated mineralization.

Diorite to Quartz Diorite

At Cathedral Area, diorite is the dominate rock unit. It is rarely observed foliated, xenolithic bearing and unaltered. It's location within the area is of significant importance to hosting localized areas of Cu-Au porphyry related alteration and associated mineralization particularly proximal to its' contact with the quartz monzonite/quartz monzodiorite. The diorite hosts predominately patchy main stage potassic, inner to outer propylitic alteration and associated mineralization as well as localized sodic and a weakly developed alkalic lithocap.

This unit weathers dark grey-green, are equigranular and medium- to coarse grained. Proximal to areas of mineralization they typically contain moderate to intense patchy to pervasive texturally destructive alteration with variable magnetic susceptibility values. Where pervasive texturally destructive albite alteration predominate (Sodic), the diorite is buff white grey in color and absent of mineralization. Within areas containing inner to outer propylitic alteration, and increased secondary actinolite, epidote and magnetite destruction appear with disseminated, mafic replacement, stockwork and sheeted actinolite-magnetite-pyrite-chalcopyrite mineralization occur the color varies from a pale to dark greenish red. Where moderate to intense patchy to pervasive outer calc-potassic K-feldspar alteration and inner propylitic alteration overlap, typically with disseminated mafic replacement and hairline fractures of chalcopyrite and lessor pyrite they are grey-green and orange pink in color.

Small quartz diorite bodies with increased booky biotite are locally mapped within the Cathedral area; however, they frequently appear in the flanking areas of quartz monzonite, and rarely observed granodiorite intrusive phases and are likely related to hornfels.

Thin section analysis for the diorite specify felsic minerals consist of:

- 30-60% <5mm., sub- to euhedral variable albite, k-feldspar, epidote, sericite, carbonate and hematite altered and dusted laths of plagioclase;
- 3-20% <3mm., irregular, subhedral K-feldspar; and

- 0-15% <2mm., ragged, irregular sub– to anhedral, interstitial and frequently weak to moderately strained quartz.

Mafic minerals predominately consist of:

- 5-20% <5mm., sub- to euhedral variably chlorite, actinolite, biotite and carbonate altered amphibole (hornblende);

- 3-5% <3mm., sub- to euhedral variably chlorite, actinolite, sericite and carbonate altered biotite; and
- 3-5%, <4mm., sub- to euhedral variably actinolite, chlorite and carbonate corroded cores of pyroxene.

Accessory minerals include:

- 2-3%, <2mm., sub- to euhedral black to reddish orange variably hematite and sphene altered magnetite; and
- <1% stubby euhedral prisms of apatite.

In very rare cases, sub- to rounded xenoliths <20cm of dark green to black mafic volcanics and hornblendite are noted.

Contacts with later intrusive phases range from sharp to diffuse and are frequently inferred due to broad areas of talus cover that obscure surface exposure and frequent strong pervasive texturally destructive propylitic and patchy potassic alteration within the unit.

Magnetic susceptibility values of the diorite at Cathedral are a function of type and intensity of alteration rather than xenolithic abundance as observed within other prospect areas on the property. In areas where strong to intense pervasive sodic albite alteration occur, magnetite destructive alteration is noted and recorded values are as low as $0.17x10^{-3}$ SI units. In areas where main stage propylitic and inner propylitic alteration appear with disseminated, mafic replacement, stockwork and sheeted actinolite-magnetite-pyrite-chalcopyrite mineralization occur, values are noted as high as $735.60x10^{-3}$ SI units. Within areas of increased potassic alteration, dominated by K-feldspar with lessor biotite, magnetite and chlorite, magnetic susceptibility values are noted to reach $59.71x10^{-3}$ SI units.

Quartz Monzonite

The quartz monzonite occurs as a north-south trending intrusive body that outcrops predominately between the Cathedral and Gully Faults and is wholly located within the Cathedral Area. Localized surface outcrops extend east of the Gully Fault below the diorite and outcrop in the southeast above the lake in the valley and also as a moderate sized <100 meter sized body that trends to the southwest towards the ARC Showing where it pokes in and out of the talus cover. Similarly, to the diorite, it's location within the Cathedral Area is of significant importance to hosting Cu-Au porphyry related alteration and associated mineralization as it is in close proximal contact with the interpreted causative syenite intrusive that cuts it. The quartz monzonite hosts predominately overlapping main stage pervasive to patchy inner and outer calc-potassic and inner propylitic alteration typically with disseminated mafic replacement and hairline fractures of chalcopyrite and lessor pyrite as well as localized magnetite stockwork, veins and breccias.

Preliminary findings (Ootes et al., 2019) has suggested these rocks to be younger than the diorite phase of the Thane Creek suite due to a noted lack of potassic alteration and strong deformation within and older than the Duckling Creek suite as they are cut by younger K-feldspar pegmatites.

Recent geochronological age dating of the granodiorite, which the quartz monzonite is associated, places the quartz monzonite as younger than the Duckling Creek syenite within the Mesilinki suite of the Hogem batholith and as a result it is more likely many rocks, particularly those containing porphyry related alteration and mineralization and classified by thin section as quartz monzonite, may in fact be a strongly potassic altered quartz monzodiorite. A weak altered monzodiorite intrusive has been observed in localized outcrops along the Pinnacle Ridge to the north and to the south of the area.

The quartz monzonite weathers a salmon-pink to orange to light grey in color and are frequently gossanous within the Cathedral area. Where textures are preserved, they are equigranular and medium- to coarse grained. Proximal to the north-south trending syenite, the quartz monzonite contains pervasive strong to intense outer calc-potassic alteration dominated by K-feldspar+/- biotite+chlorite and localized areas of increased magnetite as mafic replacement veining and brecciation interpreted to represent a weakly developed inner calc-potassic assemblage. Mineralization within the unit is typically observed as fine-grained disseminations, often as mafic replacement, variably oxidized hairline fractures and veinlets of chalcopyrite and lessor pyrite.

Thin section analysis for the quartz monzonite specify felsic minerals consist of:

- 60-65%, pink, <3mm sized sub- to euhedral, randomly oriented, interlocking, weakly clay and hematite altered K-feldspar;
- 10-15%, <3mm sized, tabular to lath shaped, sub- to euhedral, variably sericite and locally incipiently K-feldspar altered plagioclase; and
- 10-25%, <2mm subhedral, interstitial and frequently very weakly strained quartz.

Mafic minerals include:

- 3-5%, <4mm. subhedral, weakly biotite and silica altered amphibole; and
- 1-5%, <2mm. sized subhedral, booky and weakly chlorite and epidote altered biotite.

Accessory minerals include 2-3%, <1mm sized weakly hematite altered magnetite and rare apatite.

Contacts for the quartz monzonite are rarely preserved due to structural complexity, talus cover and intensity of overlapping alteration assemblages. As a result, they are frequently inferred and appear to be in fault contact with both earlier and later intrusive phases.

Magnetic susceptibility values of the quartz monzonite are a function of type and intensity of alteration in addition to the presence of secondary magnetite. In areas where strong to intense pervasive main stage outer calc-potassic K-feldspar dominate alteration occur, recorded values are as low as 0.17×10^{-3} SI units. In areas where interpreted main stage inner calc-potassic alteration with magnetite occur, magnetic susceptibility values are, as expected high 199.28×10^{-3} SI units.

Monzonite

The monzonite at Cathedral occurs as sporadic bodies to small to be captured within the mapping campaign.

The monzonite weathers a mottled grey-pink to grey-green-in color and ranges from medium- to coarse grained and equigranular to fine- to medium grained and porphyritic. Proximal to the north-south trending syenite, the monzonite contains patchy to pervasive strong inner calc-potassic alteration dominated by K-feldspar+/-biotite+chlorite and localized areas of increased magnetite as veining and brecciation. Further from the syenite, localized outcrops contain outer calc-potassic and inner propylitic alteration dominated by K-feldspar-chlorite-actinolite-chalcopyrite and lessor albite-actinolite-hematite-epidote respectively. Mineralization within the monzonite at this stage is spotty and weakly developed.

Thin section analysis for the monzonite specify felsic minerals consist of:

- 25-40% <4mm sized sub- to euhedral variably K-feldspar, sericite, hematite, carbonate and lessor chlorite altered equant to lathy plagioclase;
- 20-50%, (predominately as groundmass) orange-pink, <3-6mm sized irregular, subhedral, equant to slightly elongate shaped and weakly sericite and carbonate altered K-feldspar; and
- 3-5%, <2mm ragged, irregular sub– to anhedral, interstitial quartz.

Mafic minerals are commonly:

- 5-15%, <3mm sized sub- to euhedral variably amphibole (actinolite), chlorite and carbonate altered pyroxene although locally 5-15% <0.5mm sub- to euhedral amphibole are also noted; and
- Variable chlorite, sericite and carbonate altered sub- to euhedral biotite 3-5% <1mm sized is only locally noted.

Accessory minerals include:

- 2-6%, <2mm sub- to euhedral, locally occurring as aggregates of black to reddish orange variably oxidized magnetite; and
- <1% <0.5mm stubby euhedral prisms of apatite.

Rarely preserved contacts have been noted cutting the diorite and indications are the monzonite trends northeast-southwest. At this stage, the monzonite bodies are interpreted to post-date quartz monzonite/quartz monzodiorite emplacement as it occurs within it and appear to pre-date the syenite intrusive phase as it contains localized inner and outer calc-potassic alteration, magnetite veining, brecciation and mineralization proximal to the north-south trending syenite.

Again, magnetic susceptibility values of the monzonite are a function of type and intensity of alteration in addition to the presence of secondary magnetite. In areas where strong to intense pervasive main stage outer calc-potassic and inner propylitic alteration dominate and or overlap recorded values are as low as $0.77x10^{-3}$ SI units. Where Increased Fe-Oxide and

carbonate alteration occur, values are as low as 0.31x10-3 SI units. In areas where interpreted main stage inner calc-potassic alteration with magnetite occur, magnetic susceptibility values increase to a high of $73.14x10^{-3}$ SI units.

Syenite

Two varieties of Syenite have been noted within the Cathedral area:

1) massive; and
2) porphyritic.

Defining and constraining the lithological boundaries between these two units relative to each other is difficult. Therefore, they are currently classified together as a single body.

Where the syenite outcrops, it separates the Gully Fault, located on its eastern margin, from alkalic alteration and associated mineralization located immediately west of its emplacement. Locally, in southern exposures of the intrusive, the fault is observed cross-cutting sub-parallel to the syenite. Northwest to southeast trending off-shoots of the syenite are also observed on surface and interpreted in the sub-surface to cut up into the diorite and quartz monzonite/quartz monzodiorite where localized potassic alteration and mineralization are noted to occur.

In outcrop the syenite weathers pink to greyish orange, typically appears as massive, rarely porphyritic, and are fine- to medium grained. Smaller dykes <5meters in width are also observed to trend southwest and have moderate southerly dips. Proximal to dike contacts, the host contains predominately K-feldspar alteration with localized actinolite, chlorite and epidote alteration with associated chalcopyrite and lessor pyrite mineralization. Post syenite emplacement veinlets noted within the syenite include epidote+/-quartz locally with K-spar alteration selvages.

Thin section analysis for the Syenite specify felsic minerals consist of :

- 65-70% K-feldspar of which <30% occur as rounded, sub- to anhedral, randomly orientated and weakly clay and hematite altered phenocrysts <3.5mm in size;
- 15-20% <2mm., sub- to euhedral, randomly oriented, tabular and variably sericite and clay altered plagioclase; and
- 3-5% <1mm., skeletal, interstitial and unstrained quartz.

Mafics minerals consist of:

- 5-7% sub-to euhedral, variably chlorite and epidote altered amphibole (hornblende); and
- 1-3% sub- to anhedral, variably chlorite and epidote altered biotite, both <2mm in size.

Accessory minerals include 1-4%, subhedral to rounded magnetite and <1% prismatic, euhedral apatite both <1mm in size. Phenocrysts are set within a K-feldspar rich groundmass.

Magnetic susceptibility readings for the Syenite are moderate to predominately low with an average of $17.20x10^{-3}$ SI units.

Megacrystic Feldspar Monzonite Porphyry

The K-Feldspar megacrystic monzonite porphyry is wholly observed in the Cathedral Area as isolated plugs and small north-south and local east west trending dykes <5meters wide proximal to the syenite. During the 2017 mapping campaign at Cathedral, the megacrystic monzonite porphyry was tentatively classified as a late Phase III intrusive within the syenite complex. The unit, along with massive syenite appear comparable to those considered Stage 3 timing within the Duckling Creek suite at the Lorraine Cu-Au deposit. Non-alkali porphyry related alteration and associated mineralization veins are noted and occur as late quartz+epidote+/-chlorite and calcium carbonate. No sulphides have been recorded within observed outcrops at this stage. As a result, the megacrystic monzonite porphyry is considered to post-date syenite emplacement.

This unit typically weathers a pale grey to pinkish orange in color and are easily identifiable due to the presence of frequent megacrystic K-feldspar phenocrysts <10cm in size that are often trachytic and define a flow texture within a moderate to strongly calcium carbonate altered aphyric groundmass. It is frequently observed highly fractured and locally faulted.

Thin section analysis for the megacrystic porphyry specify it compositionally contains approximately:

- 40-45% orange-pink K-Feldspar of which 10% occur as sub-euhedral, tabular to lath-shaped, predominately randomly oriented and often corroded K-feldspar phenocrysts up to 8cm in length. They tend to contain weak- to moderate clay and hematite altered rims and poikilitic inclusions of sericite-calcite altered plagioclase.
- Randomly oriented plagioclase <1-4 mm in size range from 40-45% and phenocrysts are strongly replaced by variable combinations of fine sericite and calcite.

Relict mafic sites in proportions of up to 10% are mainly euhedral outlines <5mm long and appear to represent variably altered combinations amphibole and biotite altered to fine-grained muscovite, chlorite, sericite and calcite. Dark rims of hematite are also noted and are likely after magnetite. The groundmass is commonly orange-pink in color and composed of very fine grained K-feldspar, strong sericite altered plagioclase and sericite-chlorite-carbonate altered mafics.

The megacrystic K-feldspar monzonite porphyry contains a low magnetic signature with an average magnetic susceptibility of $9.65\ x10^{-3}$ SI units.

Quartz Syenite, Alkali-Granite (Aplite-Pegmatitic)

These rocks occur as late crosscutting northeast-southwest trending dykes, small plugs and pegmatitc veins. The aplites in particular are locally as <1 meter gradational swarms. They are similar in all similar in composition and are noted to cut porphyry related alteration and mineralization. Mineralization within is observed as late quartz+epidote+/-chalcopyrite and

lessor pyrite veins and fractures frequently with K-feldspar halos. Aplitic varieties are observed to cross-cut quartz syenite.

The K-feldspar granites all contain a low magnetic signature with an average magnetic susceptibility of $7.80x10^{-3}$ and $7.95x10^{-3}$ SI units respectively.

5.6.2 Cathedral Area Alteration

The general divisions of alteration types made within the Cathedral Area include:

- main stage - includes all porphyry-related assemblages; and
- late stage - post-date porphyry-type mineralization and overlaps with high-level vein mineralization.

In the field, it is difficult to distinguish biotite from actinolite to accurately identify secondary albite from silicification, and to determine K-Feldspar as primary from secondary. The pervasive alteration of overlapping propylitic and potassic alteration assemblages proves difficult in assigning solid alteration halos to the system and as such the alteration model for the area is preliminary and evolving.

Alteration zones for the Cathedral Area are presented in Figure 21 (1:15,000).

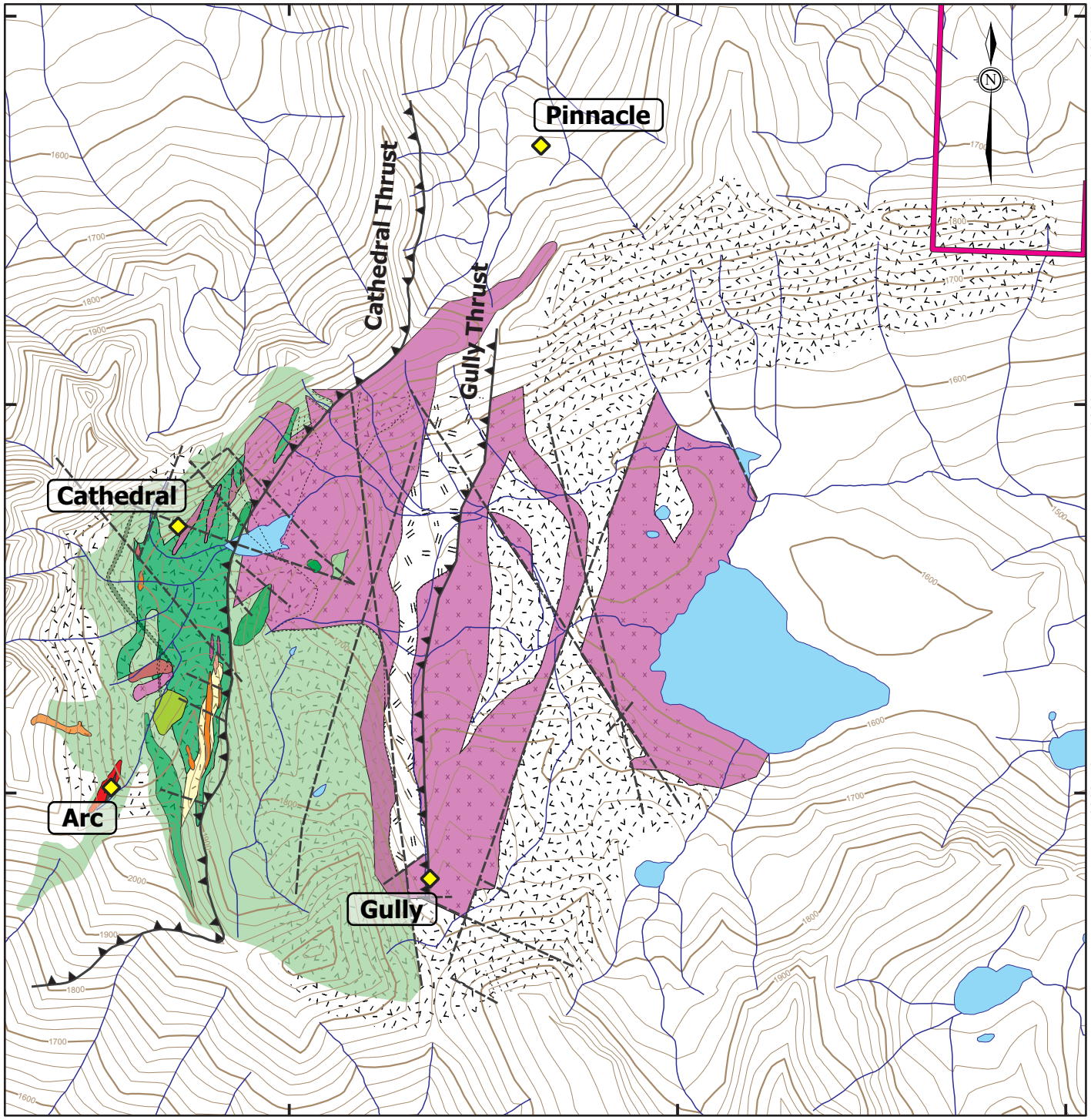
Main Stage Potassic

North-south trending main stage calc-potassic alteration overprints diorite and quartz monzonite /monzodiorite in the thrust panels between the Gully and the Cathedral thrust faults proximal to the syenite intrusion as porphyry related and seemingly contact alteration.

The inner calc-potassic alteration assemblage is approximately 100 meters wide located immediately west and marginally to the east of the syenite intrusive. Additionally, the ARC Showing, located to the southwest, may represent a portion of this assemblage, however therelationship is unclear at this time. It is dominated by pervasive texturally destructive K-feldspar +/- albite with lessor biotite, magnetite, specularite, actinolite and quartz veins, fractures, breccias and primary mafic replacement. Dominate sulphides within the assemblage are fine-grained disseminated and hairline fractures of chalcopyrite, rare bornite with lessor pyrite.

The outer calc-potassic (Sodic-Calcic) alteration overlaps the inner calc-potassic and inner propylitic alteration assemblages to the west and southwest and is approximately 200-250 meters wide. It is dominated by pervasive frequently texturally destructive to patchy K-feldspar and albite with patchy mafic replacement and fracture fill chlorite “hydrobiotite”

after biotite, actinolite and hairline fractures of quartz, sulphides and lessor epidote. Dominate sulphides within the assemblage are fine-grained disseminated and hairline fractures of chalcopyrite with lessor pyrite, rare molybdenite and pyrrhotite.



LEGEND

ALTERATION

- Propylitic (chl-epi-ab-py)
- Inner Propylitic (ab-act-epi-hm-cpy-py)
- Potassic (kf-bt-mt-act-cpy)
- Sodic (ab+/-epi+/-qz after ab)
- Alkalic lithocap (kf-ser-qz-tm)
- Magnetite (mt-qz-cpy-py)
- Epidotization (epi+/-chl)
- Sodic-Calcic (ab-act-carb-py-cpy)
- Calcic (fecb)
- Silicification

GEOLOGY

- Latite porphyry
- Syenite
- Quartz monzonite
- Diorite

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Showing location with name
- Contact defined, inferred
- Fault inferred
- Thrust fault inferred

0 500m

NAD83 UTM Zone 10 North

IMC INTERNATIONAL MINING CORP.

ALTERATION
Cathedral Area

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	21	Date:	December 2020

CME

Potassic alteration is cut by actinolite-chalcopyrite veins and it also overprints an earlier stage of pervasive albite alteration (Plates 2A and 2B). The timing of the potassic alteration appears analogous to the timing of syenite intrusions.

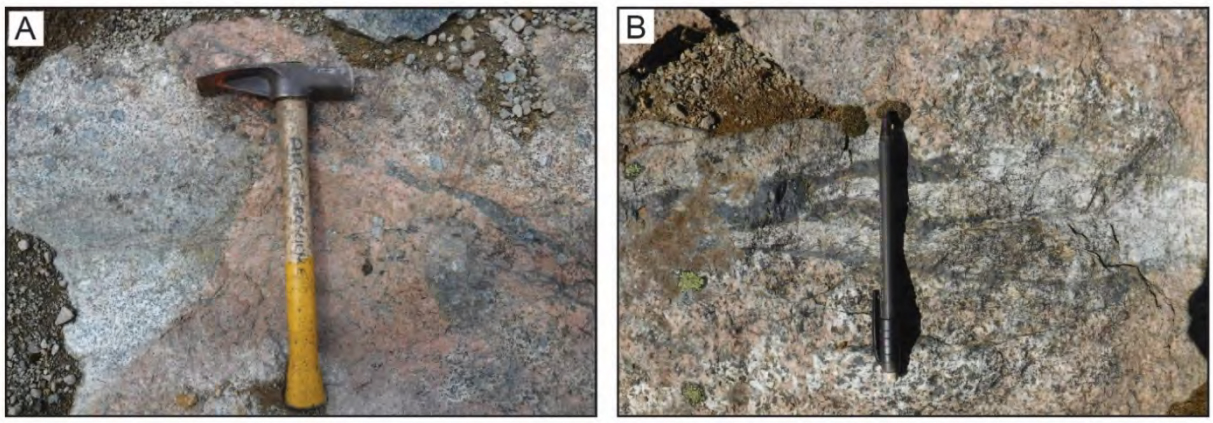


Plate 2: Main stage potassic alteration. **A)** Patchy K-feldspar alteration overprints albite, station (347092E,6218582N). **B)** Close-up of magnetite vein with albite selvage cutting patchy K-feldspar flooding, station (347092E,6218582N), Gordon et al., 2017.

Main Stage Propylitic

Main stage propylitic alteration is distributed as a north-south trending, approximately 200-250 meter wide elongate halo about the potassic alteration assemblage predominately hosted within the diorite to the west of the Cathedral Thrust. It is also noted as local patchy outcropping bodies throughout the lower elevated areas within the south and southeastern portions of the Cathedral Area predominately between the Cathedral and Gully thrusts.

Mineralogically, it includes the increased presence of actinolite, epidote, albite, chlorite, pyrite, chalcopyrite and hematite dusting of feldspar, combined with primary magnetite destruction to sphene. As the propylitic alteration is gradational with other porphyry-related alteration types, cross-cutting relationships are at this stage complex, diffuse and overlapping. However, even within the outer propylitic halo, chalcopyrite is generally more abundant than pyrite. The mineral assemblage is distinguished by the reduction of and or absence of quartz combined with the increase in sericite and calcium carbonate.

The inner propylitic alteration is inboard of the outer propylitic alteration and outboard of the outer calc-potassic assemblages as a north-south trending alteration body. The mineralogy of the assemblage is albite, actinolite, epidote, chlorite and chalcopyrite with lessor pyrite. Albite in the assemblage can range from, vein filling to meter-scale pervasive replacement due to micro-fractures. Hematite dusting of feldspar combined with primary destruction of primary magnetite to sphene also appears common within the assemblage. The inner propylitic alteration assemblage is distinguished from the outer propylitic assemblage by the presence of actinolite that is phaneritic as vein fill and may also be disseminated throughout the host rock with epidote, most commonly witin fractures and with sulphides. The abundance of sulphide minerals is highly variable and appears to correlate with stockwork and localized sheeted intensity of green-black, actinolite-chlorite which characterizes much of the vein fill (Plate

3A). Many of the actinolite-bearing stockwork zones are magnetite destructive. In some areas, magnetite is also observed in veins with actinolite-albite-chlorite-chalcopyrite (Plate 3B and 2D) and may reflect a transitional, higher temperature assemblage within the inner propylitic or be related to another hydrothermal event. Porphyry-type chalcopyrite mineralization is strongly correlated with actinolite veins (Plate 3C) however many actinolite veins are barren of grade and likely reflect the overlapping transition to outer propylitic alteration.

Outer propylitic alteration lenses are distinguished from the inner propylitic alteration by:

- increased presence of interstitial and mafic replacement chlorite and calcium carbonate;
- reduced fracture-controlled epidote+/-quartz+/-chalcopyrite; and
- continued. although weaker albite, actinolite alteration combined with destruction of primary magnetite.

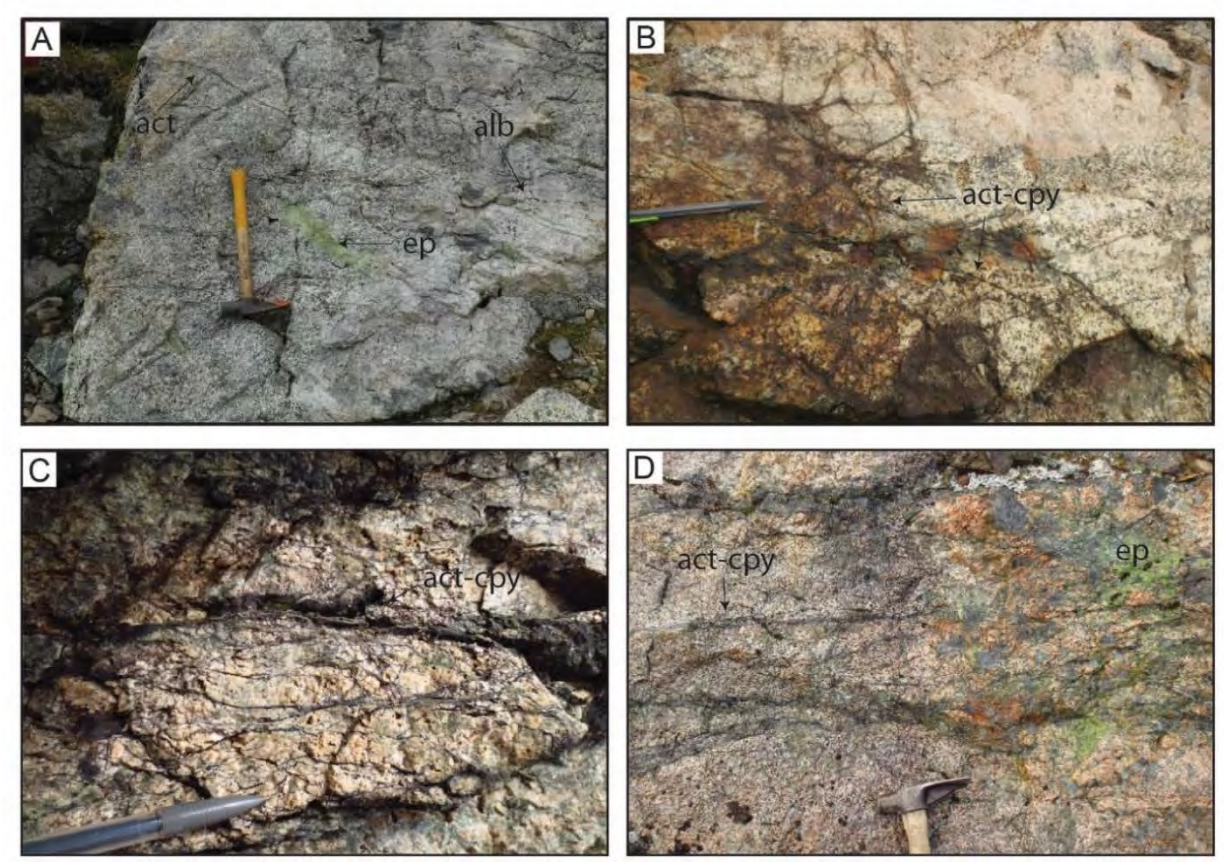


Plate 3: Field photographs of main stage propylitic alteration. **A)** Act-cpy-cl vein with albite halo cuts earlier quartz-epidote vein and mottled epidote (346618E,6218542N). . **B)** Act-alb-mag-py and cpy stockwork; (Sample 2020). **C)** Act-py-cpy stockwork with albite altered halo; (Sample 2012). **D)** Sheeted veins of act-mag-cl with albite alteration halo overprinted by mottled epidote; (346606E,6218527N).

Late Stage Sodic (Albitization)

Interpreted late stage albitization or sodic alteration outcrops in the west of the area, which defines an easterly trending body (Plate 4A). Albitization is characterized by a bleached white

colour, the complete replacement of feldspar (Plate 6B) to albite, the destruction of magnetite, the near absence of primary mafic minerals and significant presence of interstitial and fracture fill calcium carbonate.

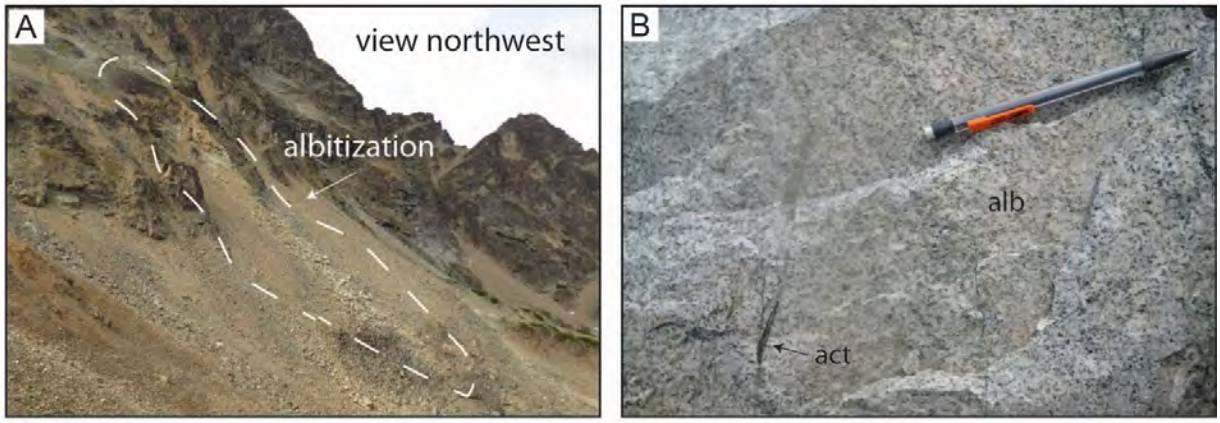


Plate 4: Field photographs of late stage alteration types. **A)** Bleached white diorite in outcrop and scree containing intense pervasive albite alteration, uphill and west of the Cathedral prospect area. **B)** Close-up of intense albitization (alb) within diorite. Complete replacement of feldspar and partial replacement of primary mafics and actinolite vein (act).

Late Stage Alkalic Lithocap

A weakly defined, narrow, 50-100 metre northeast-southwest trending assemblage represents analkalic lithocap. The alkalic lithocap characterizes a phyllic alteration assemblage observed within silica-saturated alkaline porphyry systems. The interpreted lithocap is, hosted within the higher elevations of the diorite proximal to the Cathedral Thrust and as fault bounded domains, lower within the exposed propylitic and potassic alteration assemblages.

Mineralogically, it includes the increased presence of quartz-sericite-chlorite-carbonate (mainly calcite)-pyrite+/-tourmaline that overprints earlier pervasive albite and K-feldspar alteration and associated mineralization. Within this assemblage, quartz+pyrite commonly occurs as sub-planar to anastomosing and localized semi-stockwork veinlets with sericite and chlorite. Tourmaline (<1% in abundance) is noted at several outcrops and in thin sections to occur within this assemblage as localized hairline fractures, veins and as mafic replacement. It is unclear at this stage what structural control has contributed to its location and extent. It is currently observed weakly developed and proximal to the Cathedral Thrust. For reference, refer to thin section analysis for samples 2015, 2009 and 1267.

5.6.3 Cathedral Area Mineralization

Continued mapping within the Cathedral Area confirmed copper and gold mineralization related to an alkalic porphyry style mineralization and associated alteration. Styles of mineralization include:

- stockwork and disseminated porphyry-type; and
- vein-hosted.

Stockwork and Disseminted Porphyry-Type Mineralization

Copper-gold mineralization is interpreted to be introduced during main stage potassic and propylitic alteration assemblages. Increased copper and gold grades are correlated with higher density veining, localized stockwork and sheeted veins within these porphyry alteration assemblages and consist of magnetite-actinolite-biotite-chlorite-K-feldspar-albite-quartz-epidote-chalcopyrite and pyrite (Plate 3B). Copper occurs as chalcopyrite and rare bornite. Grades greater than 0.2 % Cu are correlated with phaneritic chalcopyrite veins, hairline fractures and disseminations as vein halos and mafic replacement (Plate 5A). Results indicate gold and copper are positively correlated for porphyry-style mineralization and both are correlated with an increase in localized stockwork intensity. Elevated copper-gold values are correlated with higher temperature inner and outer calc-potassic and inner propylitic assemblages. In potassic altered rocks, copper-gold values appear to correlate with proximity to the interpreted north-south trending syenite intrusion with values as high as 1.21% Cu and up to 0.22 g/t Au.

Vein Hosted, High-Grade Mineralization

Vein-hosted mineralization (e.g., magnetite-chalcopyrite veins and quartz-chalcopyrite) contain elevated copper and gold as compared to porphyry-style mineralization and typically contain more than 1 g/t Au and 1-15% Cu restricted to vein material only. In the Gully Showing, copper-gold mineralization is restricted to narrow veins with copper to gold ratios ranging from 24:1 and 8:1. Within the Pinnacle Showing, where arsenopyrite is locally present in veins, copper to gold ratios can range from 5:1 to 2:1. Both the Pinnacle and Gully Showings contain several historical grab samples in excess of 1 g/t Au and variable concentrations of copper up to 13.9% Cu (Plate 5B).

Late Stage Magnetite-Chalcopyrite Veins

Magnetite-chalcopyrite veins and localized breccias are noted within the Cathedral Area inclusive of the ARC Showing (Plate 5B). The veins generally measure between 20-50 cm wide and have southerly strikes with moderate to steep westerly dips. They contain magnetite, chalcopyrite and lesser bornite with chlorite altered biotite in approximate ratios of 2:1:1 respectively. They are massive textured, deep green-black coloured and frequently contain a interstitial and silica alteration halos. Many of the higher-grade copper samples from the Cathedral Area are related to these veins with chalcopyrite abundance typically between 5-30%. The ARC Showing contained in excess of 4% Cu with the highest sample (sample 2007) containing 11.10% Cu, 2.77 g/t Au and 29.2 g/t Ag. The magnetite-chalcopyrite veins cut all porphyry alteration and mineralization and may reflect deeper expressions.

Late Stage Quartz-Chalcopyrite veins

Late stage quartz veins are best developed at the Pinnacle Showing (Plate 5C). Most veins at the Pinnacle Showing range from 2 mm up to 5 cm in width and have very sharp vein boundaries with no discernable alteration halo. In decreasing order, the veins are composed of quartz, carbonate, chlorite, pyrite, chalcopyrite and arsenopyrite. Many veins display open space growth with radiating columns of quartz within the cores. Many are banded with black amorphous tourmaline defining pulses of fluid precipitation. Copper grades are observed in

excess of 1% Cu and many samples exceed 1 g/t Au (Naas, 2015). The veins are observed to cut early, diffuse albite veins and patchy K-feldspar flooded diorite. Late stage quartz-epidote+/-chalcopyrite with K-feldspar alteration halos are also noted to cut mineralization within the Cathedral Area and are preliminarily interpreted to result from late Mesilinka and Osilinka alkali granitic intrusive phases that intrude into the southern area of the Cathedral Area.

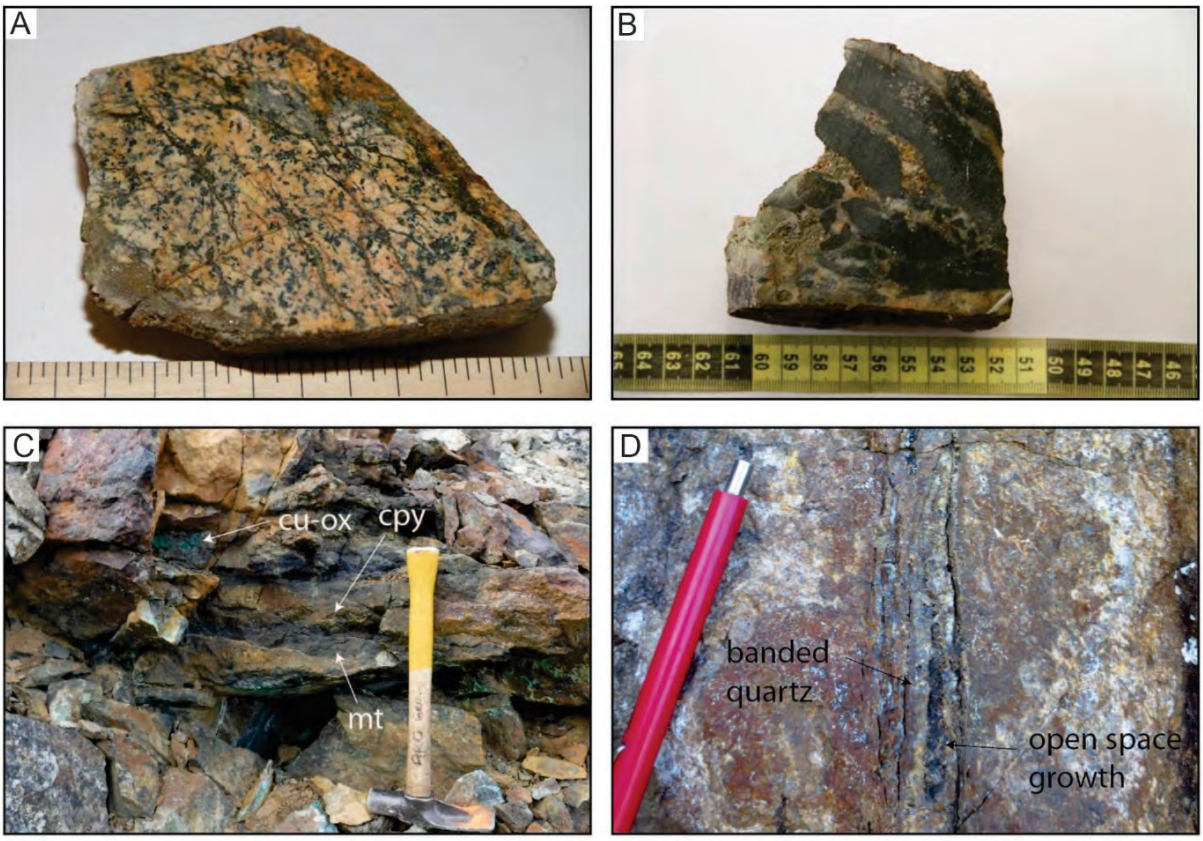


Plate 5. **A)** Hairline fractures and disseminated mafic replacement sulphides of chalcopyrite-pyrite within albite and K-feldspar altered diorite. **B)** Quartz-chalcopyrite-pyrite-arsenopyrite vein breccia (Sample #1964, 7.78 g/t Au, 2.54% Cu). **C)** Shallow west-dipping vein measures 50 cm wide and contains massive magnetite (mt) and chalcopyrite (cpy) with copper oxide on fracture planes, station (Sample #2103). **D)** In the Pinnacle zone, banded quartz and open space quartz-carbonate.

5.6.4 Cathedral Area Structure

The Cathedral Area contains a strong element of structural control. Several thrust and reverse faults trending south to southwest with moderate to steep westerly dips are noted to occur at approximately 300-325 meter intervals through the area. Analogous to the southwest trending structures, the reverse faults are characterized by cataclastic deformation zones with strong to intense chlorite alteration proximal to these structures. Localized, granular fine-to course grained pods of chalcopyrite and pyrite mineralization are noted within the structures. Current interpretations indicate they contain a predominate reverse dextral strike-slip component, (Gordon et., al, 2017). Additionally, several southeast trending dextral reverse, moderate to steeply south-southwest dipping and numerous sub-vertical, east-west trending faults,

characterized by brittle and shear deformation zones are inferred to be dextral strike-slip structures. It is unclear at this stage whether the east-west trending faults are younger than the reverse and thrust faults or if they are contemporaneous. Faults appear to cut all porphyry related alteration and mineralization.

Thrust Faults

Two regionally significant faults were identified within the area in 2017, termed as the Gully Thrust and the Cathedral Thrust (Plate 8A). The Gully Thrust traces south-southwest immediately east along the interpreted contact of the syenite intrusive and to the west of the Pinnacle Showing in the north. The Cathedral Thrust traces south-southwest and truncates significant porphyry alteration and mineralization in the hanging wall. Both thrusts appear to have local flats and ramps where steeper dips of up to 45 degrees are observed (Plate 5A and Plate 9C). The fault rock are cataclastic in texture (Plate 6B). Thrust fault parallel fracture cleavage is centimeter to meter spaced and appears to extend several tens of meters from the thrust planes. In 2017, structure contours were used to identify the fault trace in areas without outcrop or through areas of talus. Based on known thrust fault outcrop readings (Plate 8C), the contours were constructed with an average dip of 40 degrees that approximates the flats and ramps. The dip-slip of this plane is observed to be reverse and most of the strike-slip readings indicate a dextral oblique component. The thrust faults cut all porphyry related alteration and mineralization and are considered Eocene in timing.

Reverse Faults

Two additional significant parallel structures have also been interpreted to occur within the Cathedral Area. The first is located approximately 300 meters east of the Gully Thrust and is termed the Valley Fault. The other is located approximately 300 meters west of the Cathedral Thrust and is termed the West Cathedral Fault.

Several reverse faults outcrop in a structural domain between the Cathedral Thrust and the east-west trending strike-slip faults to the west (Plate 7A). Additionally, minor reverse faults are identified between the Cathedral and Gully thrusts faults. The reverse faults are characterized by 2 to 50 cm cataclastic deformation zones with reverse dip-slip kinematics (Plate 7B) and dextral strike-slip (Plate 7B and 7C). These structures strike south to southeast and dip moderately west-southwest (Plates 8A and 8B). Of the faults mapped, only two anomalous readings of sinistral strike-slip and normal dip-slip were identified (Plates 8A and 8B). Similar to the Gully and Cathedral thrusts, the reverse-dextral faults cut all mineralization and are considered Eocene in timing.

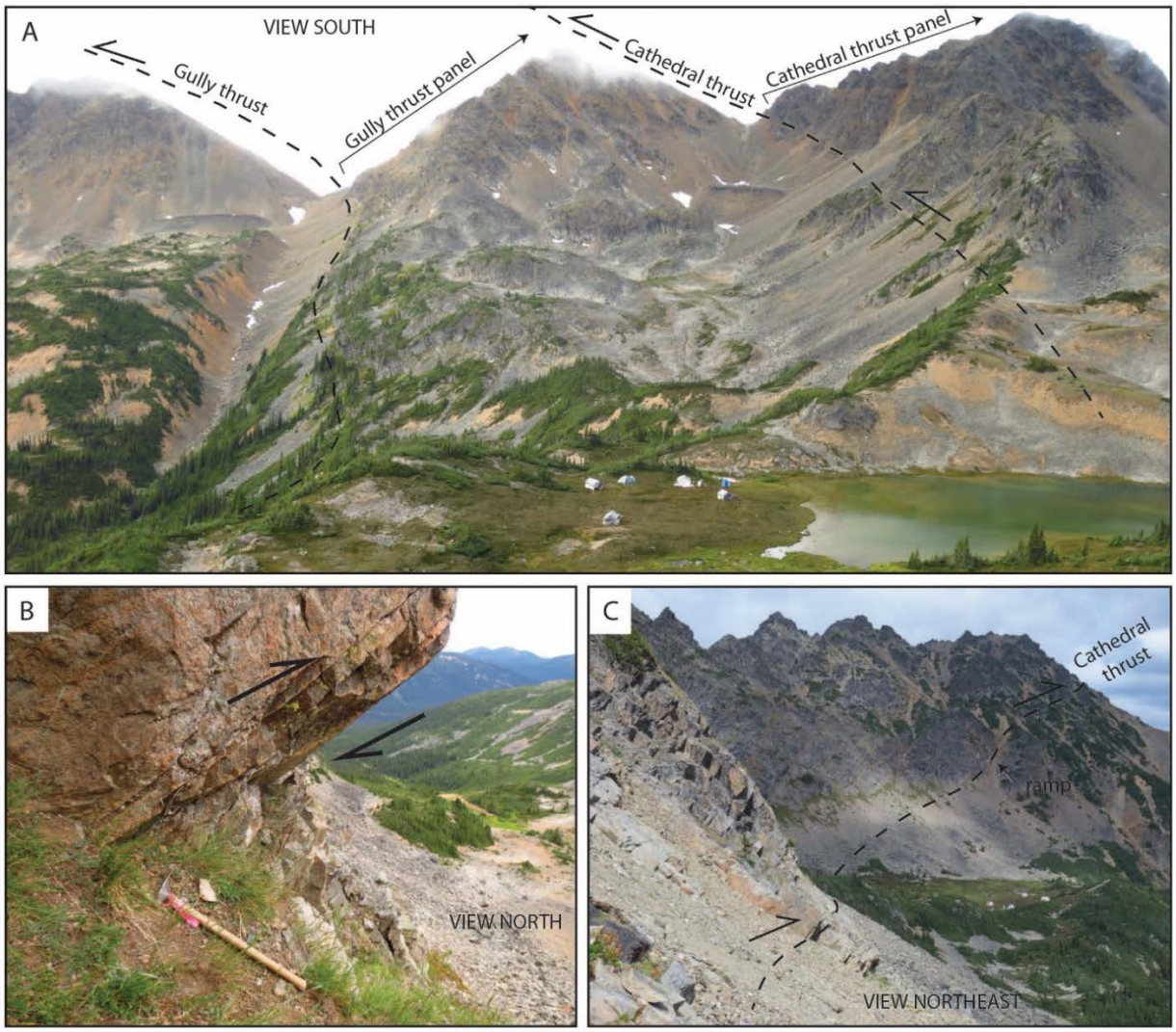


Plate 6: Field photographs of thrust faults of the Thane property. **A)** Approximate location of the sub-parallel Cathedral and Gully thrusts, view south. **B)** An outcrop of the Cathedral thrust at its northern extent, view north. **C)** Approximate location of the Cathedral thrust, view northeast.

Sub-Vertical Faults

The hanging wall of the Cathedral Thrust contains numerous sub-vertical faults that do not continue beyond the Cathedral Thrust. The faults are characterized by more than a 2 metres of brittle deformation zones and field observations of their kinematics were not possible. Fracture cleavage defines brittle deformation that extends several meters from the fault zone. The faults cut all porphyry alteration types and are inferred to be dextral strike-slip faults related to the Eocene. It is unclear at this stage whether the faults are younger than the reverse and thrust faults or if they are contemporaneous.

Hydrothermal Vein Geometry

Veins in the Gully and Cathedral thrust panels are moderately west-dipping (Plates 9A and 9B) and are predominately south-striking. Within the Gully thrust panel, veins have two

preferred geometries that cluster around 47 towards 268 and 46 towards 181 (Plate 9A). The broader spread of vein geometries from south-dipping to east-dipping in the Cathedral panel is interpreted to reflect a greater number of vein readings from stockwork regions (Plate 9B). The Pinnacle zone veins have a strong cluster that dips 41 toward 170 and a secondary cluster that does not contain sulphide minerals of 80 toward 147 (Plate 9C). Sparse vein readings taken from the Gully showing (footwall of the Gully thrust) indicate a dip of 42 towards 137 or are southwest striking and dip moderately to the southeast (Plate 9D).

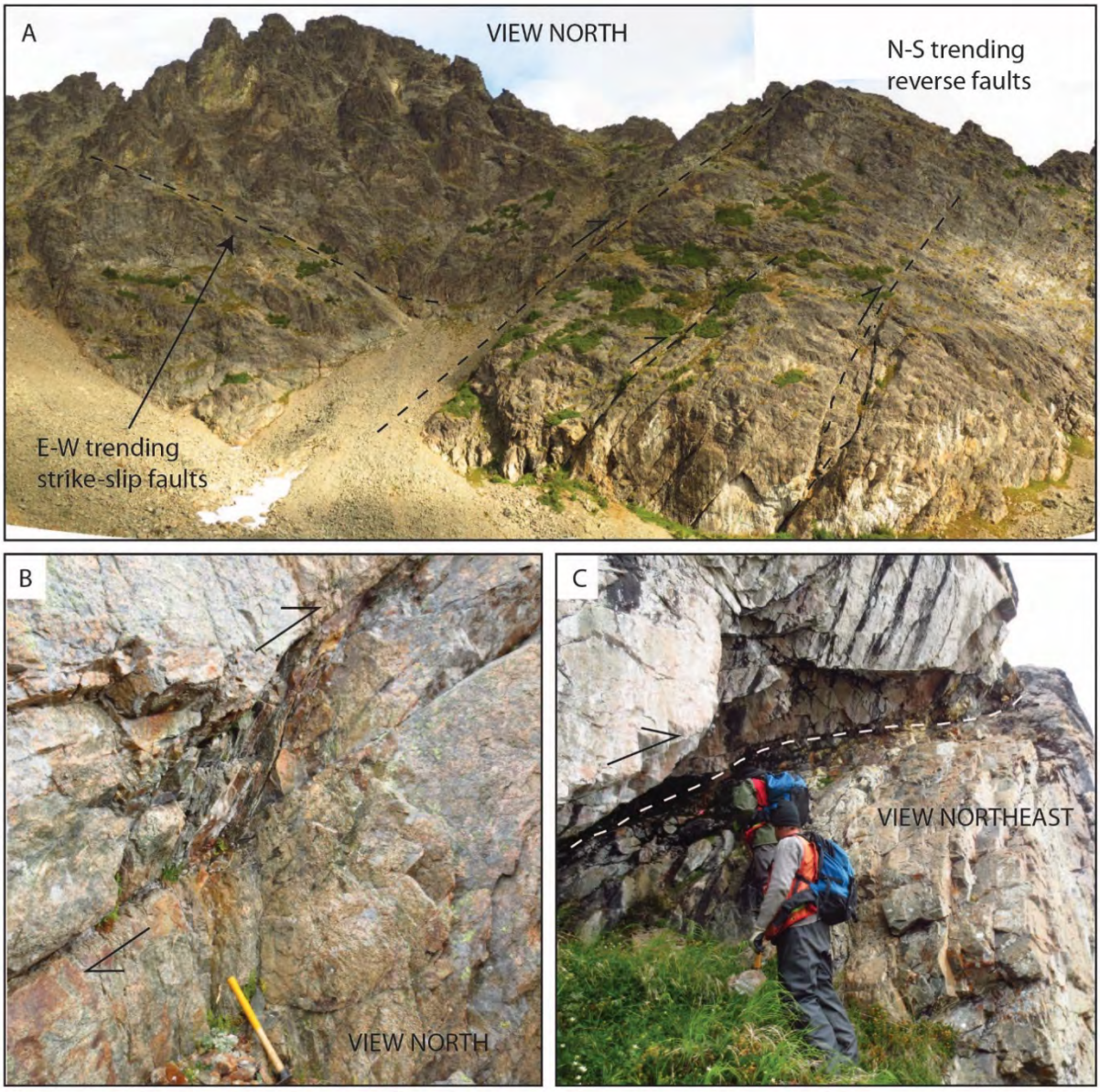


Plate 7: Field photographs of reverse and strike-slip faults in the Cathedral area. **A)** Several reverse faults outcrop on the cliff walls in the hang wall of the Cathedral thrust panel; to the west of these reverse faults is a sub-vertical, strike-slip fault, view north. **B)** Photograph of fault with a compressional jog that indicates top-up kinematics; (346820E,6218695N), view north. **C)** Trace of reverse fault is curvi-planar and fault rock is ~30 cm wide; (346820E,6218695N), view is northeast.

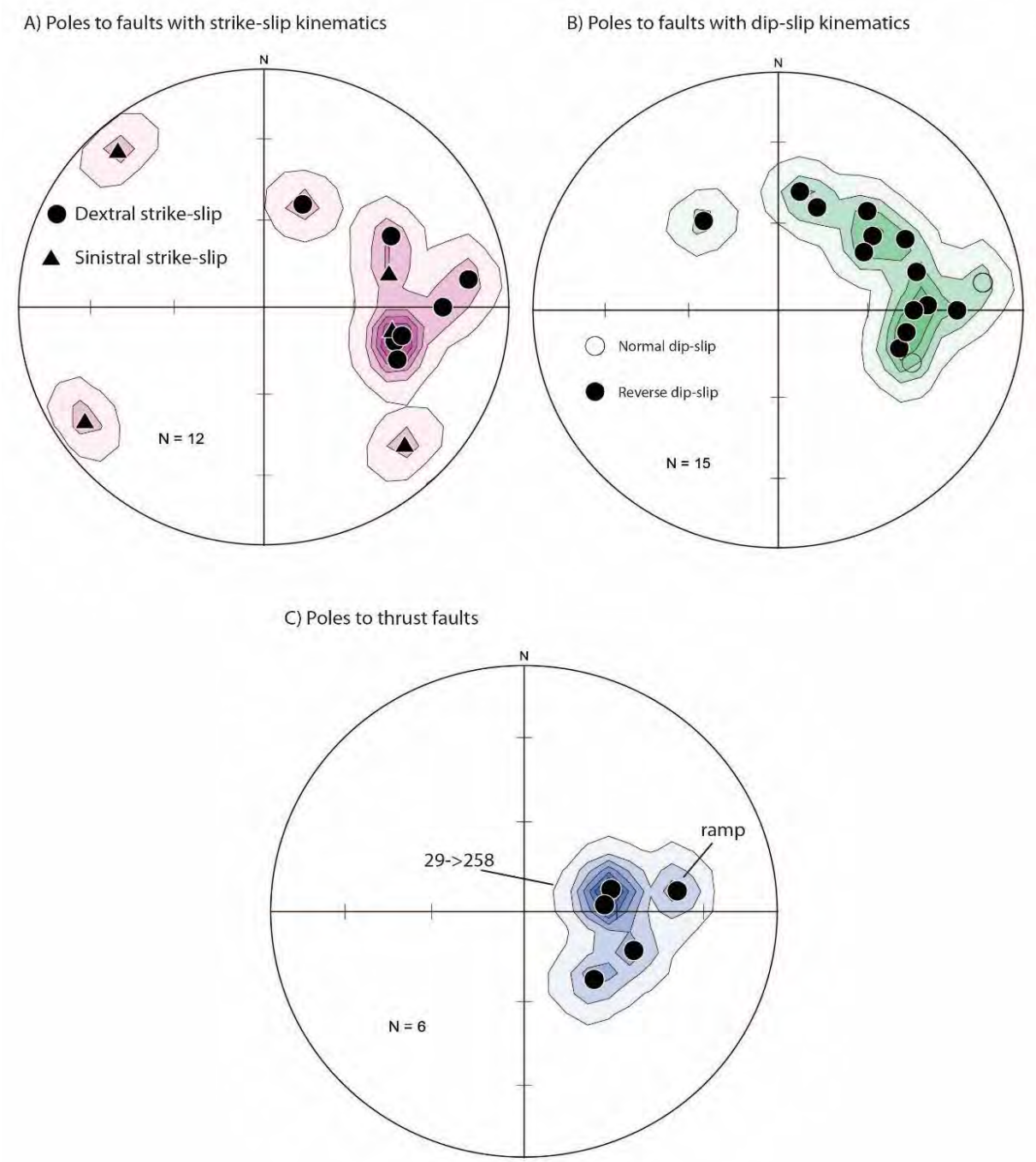


Plate 8: Stereographic projections of poles to faults with equal area lower hemisphere stereographic projections with orientations expressed in degrees. **A)** All faults with recorded strike-slip movement. **B)** All faults with recorded dip-slip kinematics. **C)** Thrust faults.

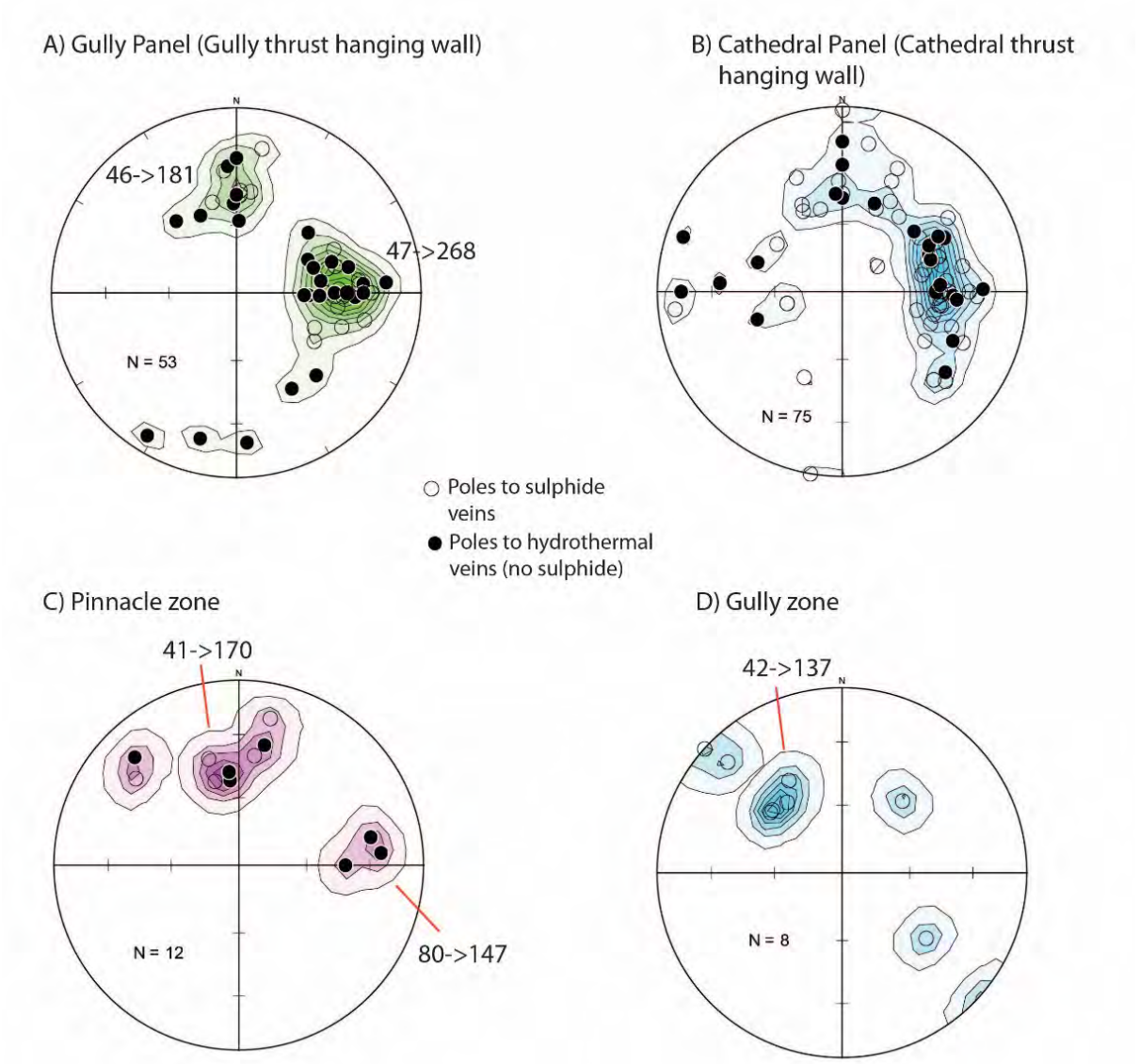
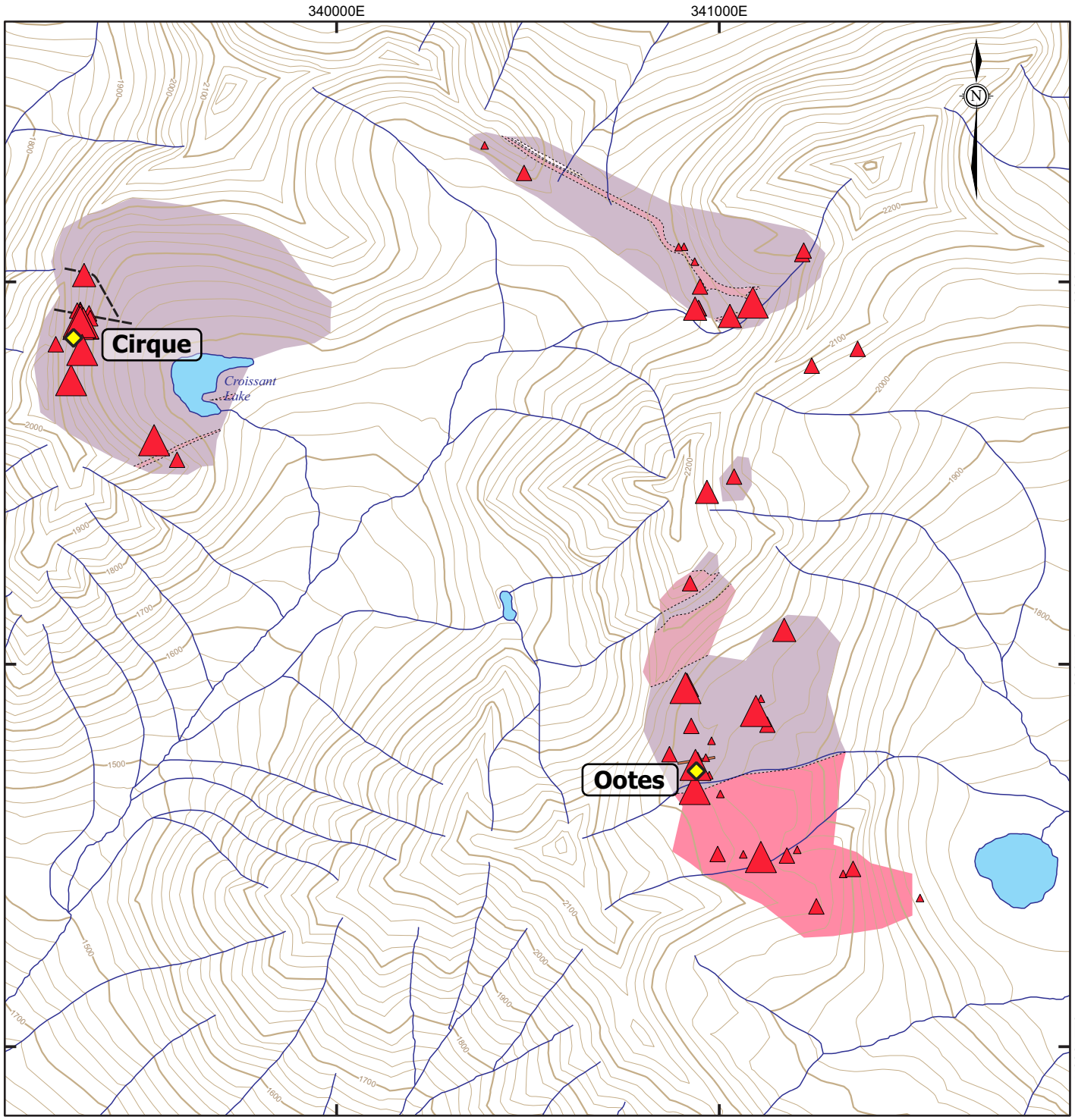


Plate 9: Stereographic projections of poles to hydrothermal veins in the Cathedral area with equal area lower hemisphere stereographic projections with orientations expressed in degrees. **A)** In the central Gully thrust panel (hanging wall of Gully thrust) hydrothermal veins have a prominent geometry with a dip of 47 toward 268 and a subordinate geometry of 46 toward 181. **B)** In the Cathedral panel (hanging wall of Cathedral thrust fault), most veins are north-south to southeast striking and moderately west-dipping. **C)** Sulphide veins in the Pinnacle zone are all eaststriking with moderate southerly dips and a second geometry that is devoid of sulphide minerals strikes south and dips steeply to the west. **D)** A subtle cluster of southwest striking, moderate south-east dipping sulphide veins in the Gully zone.

5.6.5 Cirque Area Geology

Results of the geological mapping are presented for the Cirque Area in Figures 22 (1:15,000) and 23 (1:5,000).

Like the Cathedral Area, the Cirque area is wholly located within the Hogem batholith and includes the Thane Creek and Mesilinka plutonic suite of rocks.



LEGEND

GEOLOGY

- Aplite
- Syenite
- Granodiorite
- Diorite

GEOCHEMISTRY

Rock Samples

- < 0.10 % Cu
- 0.10 - 0.50 % Cu
- 0.50 - 1.00 % Cu
- > 1.00 % Cu

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Survey grid with stations
- Showing location with name
- Contact defined, inferred
- Fault inferred

0 500m

NAD83 UTM Zone 10 North

IMC INTERNATIONAL MINING CORP.

GEOLOGY & ROCK GEOCHEMISTRY
COPPER
Cirque Area

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	22	Date:	December 2020

CME

Surface mapping was completed in the Cirque Area and at the margin of the Gail Area. Moderately foliated and often xenolithic diorite to monzodiorite lithological units within the Thane Creek suite are intruded locally by granodiorite and pegmatitic K-feldspar-quartz-hornblende dykes and veins within the Mesilinka suite.

Diorite to Quartz Diorite

At the Cirque Area, the diorite phase predominates in the northern extents of the area and ranges from fine- to medium- to coarse-grained. It is typically equigranular and moderate to strongly foliated. Foliation is typically defined by the alignment of mafic minerals biotite and amphibole. The coarse-grained varieties typically contain xenoliths of foliation parallel hornblendite that increase in size and frequency with elevation. Small quartz diorite bodies with increased secondary mafic replaced booky biotite and interstitial opalline-blue quartz are locally mapped within the Cirque Area. They frequently appear less foliated in the flanking areas of the granodiorite intrusive phase and are likely biotite hornfels of the diorite.

Field samples collected indicate the diorite weathers a medium to dark grey-green with a felsic component of:

- 30-50% <7mm., sub-euhedral, variably albite, epidote, K-feldspar sericite and silica altered plagioclase;

3-10%, <3mm., anhedral, predominately interstitial to patchy secondary K-feldspar; and

- 2-12%, <3mm., anhedral, interstitial, white to smokey grey quartz.

Mafic minerals are comprised of:

- 30-50%, <7mm., sub-euhedral, variably chlorite, epidote and hematite altered hornblende;
- 1-5%, <3mm., variably chlorite, epidote, hematite and sericite altered biotite; and
- 3-10%, <3mm., locally hematite and sphene altered magnetite.

The xenoliths within the diorite are largely dark green to black, frequently foliation parallel variably chlorite altered and strongly magnetic hornblendite that range in size from centimeter to meter scale within visited outcrops.

Two thin sections analysed within the Cirque Area were described as a potential altered and mineralized diorite and both contained strong to intense pervasive and fracture-controlled transitional alteration related to potassic and propylitic alteration assemblages (See Cirque Alteration and Mineralization).

Contacts with later intrusive phases range from sharp to diffuse and are frequently inferred due to broad areas of talus cover and faulting that obscure or obliterates surface exposure.

Magnetic susceptibility values of the diorite at Cirque are a function of type and intensity of alteration and xenolithic abundance. In areas where propylitic alteration are interpreted (defined where chlorite-albite-epidote occur as primary alteration) combined with the presence of xenoliths, recorded susceptibility values are higher and have an average magnetic

susceptibility of $22.64x10^{-3}$ SI. In areas where potassic alteration are interpreted (defined where K-feldspar-biotite-secondary magnetite occur as primary alteration) combined with the presence of xenoliths, recorded susceptibility values have an average magnetic susceptibility of $16.31x10^{-3}$ SI. Where patchy to pervasive and local fracture controlled silicification is observed, values are low with an average magnetic susceptibility of $13.23x10^{-3}$ SI. Overall, the average magnetic susceptibility of the diorite at Cirque is $19.39x10^{-3}$ SI.

Quartz Monzodiorite

The quartz monzodiorite bodies at Cirque predominate in the southern and marginally to the eastern areas towards the Gail Area.

Similarly, to the diorite phases, this unit weathers dark grey-green, and are frequently equigranular and medium- to coarse grained with a pinkish to light green hue as a result of increased primary K-feldspar and frequent patchy to fracture controlled epidote alteration of plagioclase and primary mafics.

Thin section analysis for the quartz monzodiorite specify felsic minerals consist of:

- 30-45%, <4mm., variably albite, epidote, sericite and carbonate altered, randomly oriented tabular to lath-shaped, sub-euhedral plagioclase;
- 10-15%, <3mm., weakly sericite and carbonate altered, sub-anhedral, interstitial K-feldspar; and
- 10-15%, <2mm., interstitial, sub-anhedral quartz.

Mafic minerals consist of:

- 7-10%, <3mm., variably carbonate, chlorite and epidote altered subhedral hornblende;
- 7-10%, <3mm variably carbonate, chlorite and epidote altered rarely preserved biotite; and
- 2-3% variably hematite altered subhedral magnetite.

Accessory minerals include <1% each of <1mm sphene altered ilmenite and apatite.

Quartz monzodiorite samples collected do not contain a developed foliation and have been noted to contain a significantly reduced, if any, mafic to ultra mafic xenolithic component.

No confirmed contacts have been observed between the diorite and quartz monzodiorite and as a result all contacts are at this stage inferred. South of the Ootes Showing, in the southern part of the Cirque Area, there may be a chill margin within the quartz monzodiorite that extends to the south and east for several 10's of meters, however this will need to be confirmed with further mapping.

The quartz monzodiorite has a low magnetic signature with susceptibility values that average $15.58x10^{-3}$ SI units.

Granodirorite

The granodiorite is wholly noted to occur within the Cirque Area. It is interpreted to be a <250 meter plug that separates the area of the Cirque Showing from the southern part of the Cirque Area. It is also observed as localized northwest to west trending moderate to steeply north dipping <20m dykes. Structurally controlled rafts and stoped xenoliths (<1m) of diorite are locally noted within the plug and larger dykes.

It typically weathers a light greyish green to white, is fine-to medium grained, and somewhat equigranular to plagioclase porphyritic. Locally, increased silicification and patchy potassic alteration dominated by K-felspar is observed proximal to K-feldspar-quartz pegmatitic dykes and veins that post date the granodiorite within the Mesilinka suite. Late quartz-epidote-chalcopyrite veinlets with K-feldspar alteration halos are also noted locally within the granodiorite.

Thin section analysis for the granodiorite specify felsic minerals consist of:

- 35-45%, <4mm., variably epidote, sericite and K-feldspar altered, randomly oriented tabular, sub-euhedral and groundmass bearing plagioclase;
- 20%, interstitial, within the poorly defined groundmass of K-feldspar; and
- 20%, <2mm., interstitial, sub-anhedral and also within the poorly defined groundmass of quartz.

Mafic minerals consist of:

- 5-7%, <3mm., variably chlorite and epidote altered, acicular euhedral hornblende;
- 3-5%, <3mm variably chlorite and epidote altered biotite; and
- 1-2%, <1mm., variably hematite and sphene altered subhedral magnetite.

Accessory minerals include trace apatite.

Intrusive contacts are typically observed as sharp and locally contain stoped diorite xenoliths proximal to contact margins. Silicification of the diorite proximal to granodiorite bodies is common as is an increase in secondary booky mafic replacement biotite suggestive of hornfels. The granodiorite has only been observed cross-cutting the diorite unit..

The granodiorite has a low magnetic signature with susceptibility values averaging $13.68x10^{-3}$ SI units.

5.6.6 Cirque Area Alteration

Alteration is represented by localized and broad areas of moderate to weakly developed potassic (K-feldspar-biotite-magnetite-chalcopyrite-bornite) and propylitic (albite-actinolite-chlorite-hematite-epidote-quartz-chalcopyrite+/-pyrite) assemblages. Silicification+chlorite+epidote vein halo alteration is observed on virtually all structurally controlled and or deep-seated quartz-epidote-chalcopyrite-molybdenite veins. Contact alteration, rarely containing mineralization, is also noted proximal to emplacement of late intrusive phases.

Locally developed, possibly porphyry related, potassic and propylitic alteration assemblages, are best developed immediately north and south of the Ootes Showing within the diorite and quartz monzodiorite intrusive phases respectively. Several float samples (samples 3307 and 3308) and a single sub-crop (sample 3309) were taken that contained pervasive, texturally destructive biotite-magnetite alteration with disseminated chalcopyrite-bornite mineralization and elevated copper and gold grades with much lessor molybdenite. Sample 3308 was derived from a dyke in an area above the valley that contained malachite staining on the wall of the cliff face. Thin section analysis of the sample indicated the sample appeared fairly mafic and may in fact be a mineralized biotite pyroxenite. At least one instance of an east-west trending syenite dyke was observed in the area.

To the south of the Ootes Showing, across the inferred contact with the quartz monzodiorite, patchy to pervasive albite-chlorite alteration and potential hematite stain of feldspar is observed seemingly associated with epidote+/-quartz-chalcopyrite-calcite veins and fractures. Additionally, this area contains a decrease in magnetic susceptibility within outcrops potentially representing magnetite destruction. No alkalic intrusives were noted within the area or cutting the quartz monzodiorite.

Around the Croissant Lake, localized potassic alteration is largely observed as K-feldspar with localized fracture-controlled quartz-biotite-epidote-chalcopyrite-pyrite fractures and veins that may or may not contain K-feldspar alteration halos. Within this area sulphides are loosely associated with fractures containing biotite and secondary fracture-controlled quartz-epidote veins and fractures. Localized and poorly developed albite alteration is also observed in the area (thin section sample 2316) and does not appear to be related to a propylitic assemblage. Several late pegmatitic quartz-K-feldspar dykes and veins likely contribute to the bulk of the K-feldspar alteration as contact related. Rare biotite has been observed in this area.

Contact alteration is defined by late intrusive phases of the granodiorite and pegmatitic dykes and veins. In areas proximal to where the granodiorite cuts the diorite, hornfels occurs, in addition to interstitial silicification and booky biotite replacement of primary mafics within the diorite. Localized patchy silicification and associated patchy to pervasive K-feldspar alteration occurs proximal to areas where pegmatitic quartz-K-feldspar dykes and veins are observed cross-cutting both the diorite and the granodiorite.

5.6.7 Cirque Area Mineralization

The highest copper grade was returned from sample 2319 (8.70% Cu, 1.83g/t Au and 29.8g/t Ag), located at the original Cirque Showing (also known as the malachite waterfall). This showing was located in 2010, but never sampled in outcrop. It is a pervasively silicified diorite with abundant sub-vertical northwest-southeast trending quartz-epidote-chalcopyrite-pyrite veins and fractures. Very little molybdenite is associated with this orientation of veining within the Cirque Area.

Potentially deep seated, structurally controlled, north-south trending sub-vertical quartz-epidote-chalcopyrite-molybdenite veins are observed cutting the diorite, quartz monzodiorite

and granodiorite. These veins are noticeably absent around Croissant Lake in the area of the original Cirque Showing. They appear to post-date both potassic and albite porphyry related alteration as they are noted to cut these alteration types within the area. Typically, these veins contain pinch and swell textures and range from <5mm up to 60cm in width. They are a translucent milky to grey in color and occupy or are proximal to north-south trending chloritic shear-zones. Chlorite-epidote-silica+/-sericite alteration locally with disseminated sulphides is common as vein envelopes. Mineralization is developed and extends along these structures and intermittently along them. Frequently, in areas where they intersect regional east-west foliation planes and potentially same trending shears within the diorite, they are noted to extend and marginally mineralize along this plane for several tens of centimeters. They appear to be multi-phase fluid pulses as evidenced by a range of textures from outside colloform seemingly banded textures to interior crustiform and vuggy textures. Sulphides throughout the vein width occur as coarse chunks, fine-to medium grained disseminations within the vein and within quartz enclosed, localized chlorite altered, brecciated wallrock fragments. Copper and molybdenite grades are varied. The highest sample (sample 3312) returned 5320ppm Mo. Late hairline fractures of epidote-carbonate and chalcopyrite are also noted to cross-cut these veins locally.

During the government mapping program in 2019, a single traverse was undertaken on the Property, which was an east-west traverse located in the southeastern part of the Cirque Area. A grab sample collected during the mapping program returned 0.89% Cu, 0.33 g/t Au and 11.4 g/t Ag (Ootes et al., 2019). This vein is referred to in this report as the Ootes Showing. During the current work program, the government sample was located and the vein was re-sampled (sample 3110). The 0.20 meter wide quartz vein returned 3.26% Cu, 77.8 g/t Au and 56.4 g/t Ag. A notable difference between this vein and the high-grade gold veins of the Pinnacle Showing is the absence of arsenic, with the Cirque Area sample returning 0.5 ppm As, while the quartz veins of the Pinnacle Showing return up to >10,000 ppm As.

5.6.8 Cirque Area Structure

Chloritic shear related structures are observed throughout the Cirque Area. Thin section analysis supports the theory of the area being subject to localized pervasive structural stress. Sample 2323, collected within an interpreted west trending structure in the area of Croissant Lake, contained extensively crushed/granulated and essentially now rounded-off clasts of fragments within a matrix of the same, infilled by very fine-grained chlorite-sericite and carbonate.

Thrust Related Structures

Several late south-southwest trending moderately northwest dipping (50-60°) chloritic shears are locally noted and interpreted to transect the Cirque Area. These structures are contemporaneous to the south-southwest thrust faults observed within the Cathedral Area that contain a dextral oblique component, cut all porphyry related alteration and mineralization and are considered Eocene in timing.

Reverse Related Structures

Local areas at the Cirque Area on the east side of Croissant Lake have picked up some late southeast trending west-southwest dipping chloritic shear structures potentially related to reverse related structures identified at the Cathedral Area.

West Trending Sub-Vertical Structures

West trending steeply south dipping structures are observed in the Cirque Area in the area of Croissant Lake and appear contemporaneous to the sub-vertical structures characterized by brittle deformation zones at the Cathedral Area. It is unclear at this stage whether these structures are younger than the reverse and thrust faults or if they are contemporaneous.

North Trending Vertical Structures

North trending vertical shear structures are prominent throughout the Cirque Area are not recorded in the area of Croissant Lake, where typical molybdenum values are much lower compared to other regions within the Area. These structures are interpreted to post-date all above noted structures as mineralization. They are observed to cross-cut and bleed into the regional foliation plane and proximal to west trending sub-vertical structures.

6.6.9 Lake Area Geology

Results of the geological mapping are presented for the Lake Area in Figure 24 (1:15,000) and Figure 25 (1;5,000).

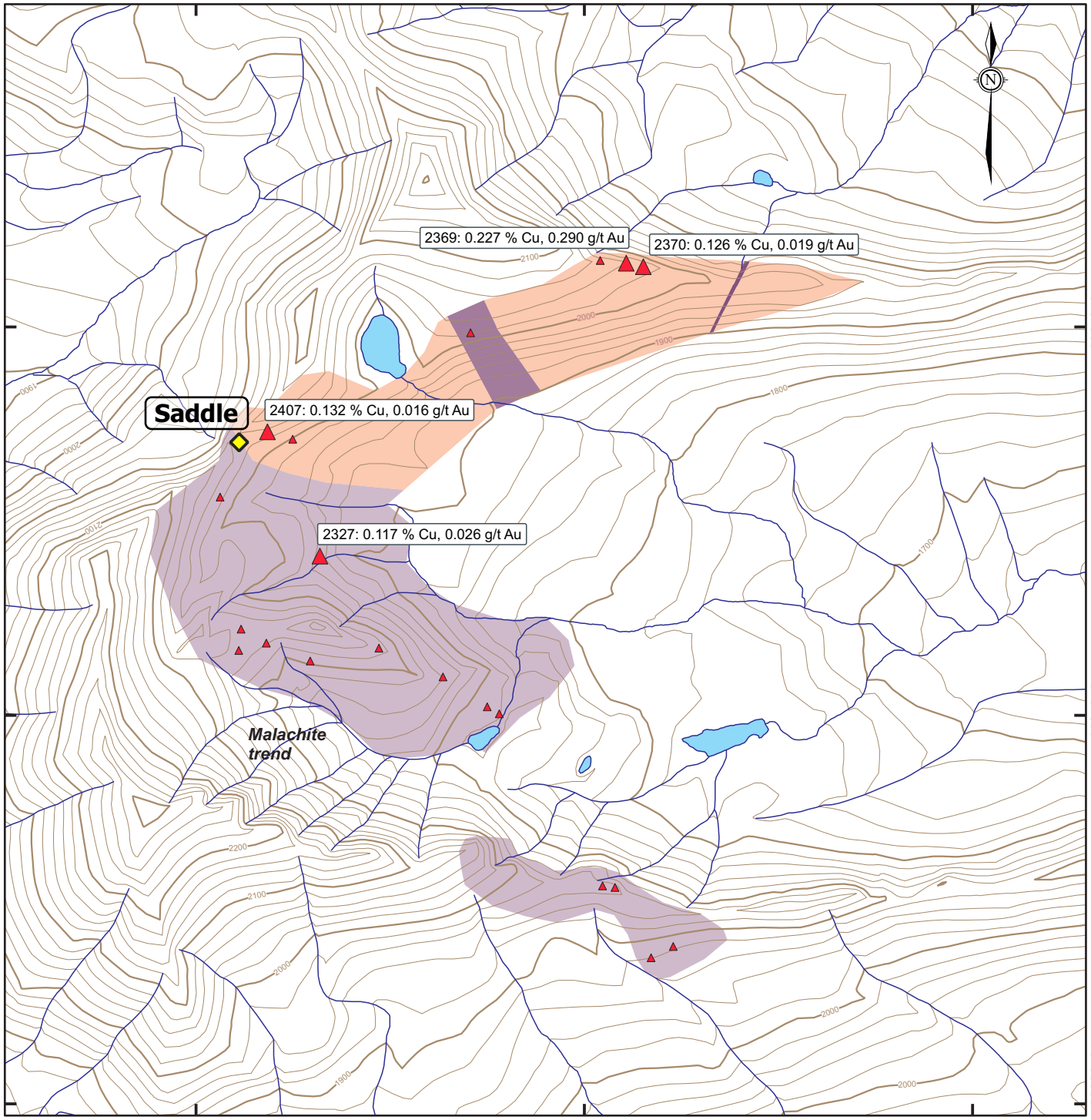
Like the Cathedral Area, the Lake Area is wholly located within the Hogem batholith and includes the Thane Creek, Duckling Creek and Mesilinka plutonic suites of rocks as well as latite porphyry from the late porphyry sheets.

Surface mapping in the Lake Area encountered hornblendite, diorite and monzodiorite lithological units intruded locally by monzodiorite, alkali granitic aplites and late plagioclase porphyritic dykes. The area is separated by an east-west trending valley that contains monzodiorite on the north side and diorite on the south. Hornblendite occurs at the head of the valley intermingled and proximal to northwest-southeast trending shears that seemingly separate the diorite and monzodiorite at the head of the valley.

Hornblendite

The hornblendite in the Lake Area is observed as small, up to several tens of meter sized pods, pendants and xenoliths, containing sharp to diffuse and locally foliated contacts scattered within and seemingly comingling with the diorite the latter evidenced by xenoliths of diorite within the hornblendite. Locally, areas contain a developed regional foliation plane however smaller scale foliation may be related to localized areas where shears cut the hornblendite.

This unit is greenish black to salt and pepper in color and weathers the same locally with a minor increase in hematite and a vuggy texture where secondary interstitial calcite has been



LEGEND

GEOLOGY

- Monzonite
- Monzodiorite
- Diorite

GEOCHEMISTRY

Rock Samples

- < 0.10 % Cu
- 0.10 - 0.50 % Cu
- 0.50 - 1.00 % Cu
- > 1.00 % Cu

SYMBOLS

- Thane property
- Secondary routes
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Survey grid with stations
- Showing location with name
- Contact defined, inferred
- Fault inferred

0 500m

NAD83 UTM Zone 10 North

IMC INTERNATIONAL MINING CORP.

GEOLOGY & ROCK GEOCHEMISTRY COPPER

Lake Area

Thane Project

Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	23	Date:	December 2020

CME

chemically dissolved. It is typically medium- to coarse grained to pegmatitic and contains a 60-70% mafic component.

Compositionally it contains:

- 50-60%, <10mm., variably chlorite and epidote altered, sub-euhedral dark green to black amphibole crystals;
- 7-10%, <5mm., variably chlorite, epidote and carbonate altered and local secondary booky biotite;
- 1-5% <3mm subhedral magnetite; and
- 0-5%, interstitial talc/serpentine likely after either olivine and or pyroxene

Felsic minerals within the hornblendite typically occur interstitially between amphibole and generally include 1-15%, variably carbonate, epidote, sericite and silica altered and or hematite stained locally ragged to elongated plagioclase.

Alteration of hornblendite is frequently observed as a result of late hydrothermal fractures of predominately quartz-epidote+/-sulphides and or late cross-cutting aplitic to pegmatitic dykes of the Mesilinka suite. Trace amounts of disseminated to blebby pyrite and chalcopyrite occur. Locally copper mineralization comprises a few percent of the rock in areas where fractures and veinlets are noted with malachite or iron rust staining on weathered surfaces.

The hornblendite contains the highest magnetic signature within the Lake area with magnetic susceptibility values averaging 40.80×10^{-3} SI.

Diorite

Diorite is typically medium to coarse grained, equigranular and moderate to strongly foliated. Hornblendite is noted to comingle with the diorite at the head of the valley proximal to where the diorite and monzodiorite are in close contact with each other.

This units weathers dark grey-green, are equigranular and medium- to coarse grained. Proximal to areas of comingling hornblendite it is darker in color with an increase in xenolithic hornblendite and frequently appear banded due to an increase in moderate to strong foliation.

Where late phase alkali granitic aplites cross-cut the diorite, an increase in patchy to pervasive silicification and K-feldspar alteration lighten the diorite to a light grey-green to pink. K-feldspar occurring as vein halos to localized quartz-epidote+/-chalcopyrite veining is also observed to increase patchy K-feldspar alteration within the diorite.

Thin section analysis for a diorite within the Lake Area specify felsic minerals consist of:

- 50-60% <6mm., subhedral, variable epidote, k-feldspar, sericite altered and banded plagioclase; and
- 1-2% interstitial quartz.

Mafic minerals consist of:

- 20-25% <3 mm., irregular, often banded, subhedral, variably actinolite and chlorite altered amphibole;
- 7-10%, <3mm., variably chlorite and epidote altered biotite; and
- 2-3% variably hematite and sphene altered magnetite.

Accessory minerals include up to 1% apatite.

Contacts with later intrusive phases are typically sharp and locally faulted.

Magnetic susceptibility values of the diorite at Lake average $41.14x10^{-3}$ SI units and are relatively high due to the presence of comingling and xenolithic abundance of hornblendite.

Monzodiorite

At the Lake Area, the monzodiorite is typically medium to coarse grained, equigranular and moderate to strongly foliated. Localized copper mineralized clinopyroxenite enclaves, up to one meter in width and four meters long, have been observed within the unit.

This unit weathers dark grey-green, however it has also been observed as a lighter mint green pink to salt and pepper in areas of increased epidote alteration and biotite hornfels respectively.

An increase in patchy K-feldspar alteration occurs as a result of localized cross cutting coarse grained pegmatitic K-feldspar-Quartz (<15cm) and late quartz-epidote+/-chalcopyrite with K-feldspar alteration halo veins and hairline fractures occur. Frequently, the latter occurs parallel to the established foliation within the unit and very fine-grained chalcopyrite+/-pyrite is disseminated on primary mafic boundaries. Where proximal to areas of biotite-magnetite hornfels, a significant increase in magnetic susceptibility is recorded.

Thin section analysis for the monzodiorite within the Lake Area specify felsic minerals consist of:

- 30-45% <15mm., sub-euhedral random orientated, banded to tabular, variable actinolite, chlorite, epidote, K-feldspar, sericite altered plagioclase;
- 15-20%, <10mm., interstitial to wooly (late magmatic), subhedral, variably hematite dusted, sericite and clay altered K-feldspar; and
- rare 0-1%, interstitial quartz.

Mafic minerals consist of:

- 15-20% <10mm., variably actinolite, chlorite, epidote sericite and talc altered clinopyroxene (augite);
- 7-10%, <3mm., variably chlorite and epidote altered biotite; and
- 2-5%, <3mm., subhedral, locally fractured variably hematite altered magnetite.

Accessory minerals include up to 1% apatite.

Contacts have frequently been noted within faulted areas and often appear diffuse resulting in inferred contacts.

Magnetic susceptibility values of the monzodiorite at Lake average $45.84x10^{-3}$ SI units and are relatively high due to the presence of localized clinopyroxenite enclaves and areas with increased biotite-magnetite hornfels proximal to cross cutting monzonite bodies.

Monzonite

Monzonite is typically medium grained, equigranular and weak to moderately foliated with a localized sub-trachytic texture proximal to contact margins. The unit has been noted to cut the monzodiorite as <100m wide bodies on the north side of the valley and is bounded by northwest trending moderately dipping brittle faults.

The unit weathers a mottled grey-pink to grey-green to Fe-oxidzed orange in color, the latter proximal to fault bounded contacts. The unit itself is typically moderate to highly fractured and friable. A weak increase in secondary patchy K-feldspar occurs as a result of late quartz-epidote-chalcopyrite hairline fractures, as seen within other units in the area when these veins are present.

Thin section analysis for a single monzonite within the Lake Area specify felsic minerals consist of approximately:

- 50%, <2mm., interlocking, randomly oriented, sub-anhedral, K-feldspar; and
- 20%, <5mm., widely scattered, variably sericite altered plagioclase.

The weakly aligned mafic mineral component consists of:

- 15%, <4mm., variably chlorite and epidote altered hornblende;
- 2%, <3mm., subhedral, variably chlorite and epidote altered biotite; and
- 2-3% <2mm., subhedral, variably sphene altered magnetite.

Accessory minerals include 1% apatite within a K-feldspar dominate groundmass.

Contacts are fault bounded, sub-trachytic, seemingly chilled where preserved and highly fractured and Fe-oxidized. An observed dyke of 3m width has sharp contacts and cross-cuts mg-cg diorite.

The magnetic signature for the monzonite in the Lake area is low with an average magnetic susceptibility of $15.31x10^{-3}$ SI units.

Alkali-Granite (Aplite to Pegmatite)

The aplite occurs as late northwest and southeast trending sub vertical dykes and local wide dyke swarms (<5m wide). The pegmatitic varieties are observed frequently as thin dyklets and or veins (<1m wide) often proximal to its aplitic counterpart. Where it cross-cuts earlier intrusive phases, an increase in K feldspar and silica alteration halos exist.

Porphyry Sheets (Latite Porphyry)

This unit occurs as northeast trending, moderately west dipping (65°) dark grey-green to brown dykes (<10m) that cross-cut the diorite on the south side of the valley.

6.6.10 Lake Area Mineralization

Apart from disseminated chalcopyrite and lessor pyrite noted within an interpreted clinopyroxenite enclave within the monzodiorite, mineralization within the area occurs predominately as localized late quartz-epidote-chalcopyrite-pyrite hairline fractures and quartz-carbonate+/-sulphide veins.

6.6.11 Lake Area Structure

The structural component at the Lake prospect is only marginally understood and mapped. Four significant structural trends have been identified, two of which appear to be major shear structures, and two that appear as late brittle structures.

Shear Structures

Northwest-southeast trend at the head of the valley that separates the diorite on the south side of the valley from the south side monzodiorite where they converge. This trend is also noted within the Cathedral Area as post mineralization southeast trending southwest dipping chlorite-sericite and silica infilled shears.

South-Southwest trending and low-moderate (30-50°) west dipping chlorite-hematite-carbonate shears. This trend is also noted within both the Cathedral and Cirque Areas. At Cathedral this trend includes the thrust faults that form post mineralization structural domains from east to west throughout the area. At the Lake Area, this trend is only noted on the south side of the valley within the diorite.

Brittle Structures

Southwest trending moderately west and east dipping (50-60°) brittle structures that appear to post date the above noted shear structures.

Northwest trending moderate east dipping (60-70°) brittle structure observed on the north side of the valley parallel to the trend of the monzonite intrusive phase.

5.7 ROCK SAMPLING

A total of 203 rock samples were collected from the Property (Table 9). Although the Gail Area was not the subject to the 2020 work program, a single sample was collected from the original Gail Showing. The Gail Showing is located approximately 2.8 km to the east of the Cirque Showing and has been grouped within the Cirque Area. Sampling details for the main

zone and mapsheet M4O of the Cathedral Area are presented separately in Table 8, but described together under the Cathedral Area results.

Table 8: Rock sample types

Study Area	Float	Grab-Outcrop	Chip-Outcrop	Total Samples
Cathedral (main)	9	70	13	92
Cathedral (M40)	2	14	0	16
Cirque	8	65	1	74
Lake	3	17	0	20
Mat	0	1	0	1
Total	**22**	**167**	**14**	**203**

Rock samples were collected from outcrop and float sources. Included within outcrop sampling, is chip sampling across specific structures. All samples were cut by rock saw at CME's field office in Vavenby, BC, with one half delivered to ALS Minerals (ALS) of North Vancouver, BC for sample preparation and analysis and the other half retained as a reference. Analysis consisted of multi-element ICP-MS and gold by fire assay with assays performed on over limits.

Results

Sample details, including location coordinates, descriptions and selected analytical results, are presented in Appendix IIc. Methodology for sample preparation and analysis is presented in sections 7.1 and 7.2, respectively. Certificates of analysis are presented in Appendices IIId.

Rock sample locations with selected geochemical results for the Cathedral Area (Main) are presented in Figures 18 (1:15,000) and 10 (1:5,000), the Cathedral Area (Mapsheet M4O) in Figure 20 (1:5,000), the Cirque Area in Figures 22 (1:5,000) and 23, the Lake Area in Figures 24 (1:15,000) and 25 (1:5,000) and the Mat Area in Figure 13 (1:15,000).

5.7.1 Cathedral Area

Of the 108 samples collected from the Cathedral Area, 13 returned greater than 0.3% Cu with 8 of these returning greater than 0.5% Cu and three returning greater than 3.0% Cu (Table 9). A total of 2 samples returned greater than 1 g/t Au.

The highest copper grade from the rock sampling program at the Cathedral Area was 5.93% Cu along with significant precious metals of 2.49g/t Au and 11.9g/t Ag (sample 2258). This sample consisted of abundant disseminated, blebby and granular chalcopyrite and lessor pyrite within a strongly sheared and potassic altered diorite.

The highest gold grade returned from the rock sampling program at the Cathedral Area was 5.09g/t Au, which also returned 3.02% Cu and 6.55g/t Ag (sample 3119). This sample contained chalcopyrite in fractures, often replacing disseminated and blebby pyrite within a pervasive chlorite altered and sheared interpreted quartz monzonite.

Another rock sample highlight includes sample 2276, which returned 4.51% Cu, 0.115 g/t Au and 13.6 g/t Ag from a gossanous float sample containing pervasive, texturally destructive chlorite alteration within a diorite with late hairline fractures and veins of quartz-chalcopyrite. The sample source has not been identified, however syenite dykes have been mapped in the area.

Chip samples are presented in Table 10. A 43 cm chip sample (sample 2255) at the Arc Showing, across the magnetite-quartz-sulphide vein, returned 3.60% Cu, 0.56 g/t Au, 7.10g/t Ag and 183.5ppm Mo. The sample is across the main part of the vein that contains semi-massive and fracture fill chlorite-magnetite-chalcopyrite-pyrite with pervasive chlorite and silica altered vein margins within the host diorite. This sample site contains several high-grade copper-gold results obtained in 2017, including sample 2007, which returned 11.10% Cu, 2.77g/t Au, 29.2g/t Ag, and 61ppm Mo and sample 2202, which returned 8.59% Cu, 1.22g/t Au, 14.15g/t Ag and 218ppm Mo (Gordon et al, 2017).

Table 9: Selected grab samples results >0.3% Cu, Cathedral Area

Sample	UTM		Results			
	Northing	Easting	Ag (ppm)	Mo (ppm)	Cu (%)	Au (ppm)
2258	6218308	346879	11.90	6.22	5.930	2.490
2267	6219481	348485	0.47	3.39	0.422	0.026
2275	6218351	346629	1.66	7.48	0.462	0.015
2276	6217503	347506	13.60	2.33	4.510	0.115
2288	6218177	346489	1.75	1.19	0.334	0.188
2291	6218332	346603	3.73	16.90	0.429	0.294
2298	6218976	347300	24.10	36.40	2.320	0.722
2305	6218060	347947	1.91	55.60	0.377	0.876
2351	6218393	346749	1.37	4.65	0.597	0.010
2417	6219921	344534	7.17	27.00	0.500	0.014
3119	6218038	348024	6.55	45.00	3.020	5.090
3145	6219927	345166	7.68	1.51	0.997	0.018
3148	6219675	345186	23.80	5.60	0.647	0.054

Table 10: Selected chip sample results, Cathedral Area

Sample	UTM		Width (m)	Results			
	Northing	Easting		Cu (%)	Au (ppm)	Ag (ppm)	Mo (ppm)
2254	6218012	346540	0.30	0.032	0.006	0.15	5.07
2255	6218012	346540	0.43	3.600	0.555	7.10	183.50
2256	6218012	346540	0.90	0.165	0.037	0.17	4.09
2263	6218780	346720	0.40	0.033	0.024	0.08	2.60
2264	6218780	346720	1.50	0.093	0.223	0.73	71.50
2265	6218780	346720	0.35	0.036	0.008	0.03	1.70
2269	6218216	347821	1.25	0.107	0.588	1.51	19.15
2278	6218974	347092	0.45	0.014	0.005	0.25	22.00
2280	6218933	347141	1.30	0.313	0.070	1.50	46.50
2281	6218933	347141	0.80	0.119	0.014	0.32	1.81
2282	6218933	347141	0.80	0.692	0.181	3.54	5.68

Table 10: Selected Chip Sample Results, Cathedral Area (*cont'd*)

Sample	UTM		Width (m)	Results			
	Easting	Northing		Cu (%)	Au (ppm)	Ag (ppm)	Mo (ppm)
2286	346493	6218502	0.60	0.067	0.269	1.11	310.00
2306	347978	6218068	1.50	0.052	3.930	3.83	51.00

5.7.2 Cirque Area

Of the 68 samples collected from the Cirque Area, 29 returned greater than 0.3% Cu with 22 of these returning greater than 0.5 % Cu and six returning greater than 3.0% Cu (Table 11). A total of 18 samples returned greater than 0.1 g/t Au, of which four were greater than 1 g/t Au. Additionally, six samples contained greater than 200 ppm Mo.

The highest copper grade returned from the Cirque Area was taken from the original Cirque Showing, which is also known as the Malachite Waterfall. Sample 2319 returned 8.70% Cu along with significant precious metals of 1.83g/t Au and 29.80g/t Ag. The sample consists of abundant disseminated and <3mm, southeast steeply dipping veins and veinlets of chalcopyrite and lessor pyrite that cut pervasive texturally destructive chlorite and epidote altered medium-to coarse grained diorite. Several other significant samples were also taken from this location and include 5.60% Cu, 2.72g/t Au and 26.0g/t Ag (sample 2321) and 3.80% Cu, 0.14g/t Au and 22.0g/t Ag (sample 2318).

Approximately 150 meters to the south of the Cirque Showing, sample 2317 returned 5.41% Cu, 0.69g/t Au, 18.45g/t Ag and 228ppm Mo. This sample contained a clearly defined chlorite-chalcopyrite-pyrite breccia that post-dates a pervasive and texturally destructive albite and epidote altered monzonite-diorite affinity host.

Approximately 2 kilometers southeast of the Cirque Showing is the Ootes Showing. This showing was discovered by the British Columbia Geological Survey during their mapping campaign of the Hogem Batholith in 2019. A chip across the 12 cm wide north-south trending sulphide vein returned 3.26% Cu, 77.8 g/t Au, 56.4g/t Ag and negligible Mo (sample 3110). The vein is largely composed of massive to colloform and vuggy textured quartz and appears multi-phase. It is pale grey to white with late fracture fill, disseminated and blebby chalcopyrite.

Several north-south trending veins, with similar textures and variable widths as the Ootes Showing, are observed approximately 1.2 kilometers to the north and approximately 1 kilometer to the east of the Showing. These veins also returned moderate to high copper-gold-molybdenum values and include: 1.92% Cu, 0.46g/t Au, 8.65g/t Ag (sample 2362), 0.532% Cu, 0.14g/t Au, 14.65g/t Ag and 454ppm Mo (sample 2366) and 0.367% Cu, 0.105g/t Au, 3.16g/t Ag and an astounding 5320ppm Mo (sample 3112).

Other rock sample highlights include 3.46% Cu, 1.50 g/t Au and 13.05 g/t Ag and 35.90ppm Mo (sample 3305) and 1.48% Cu, 0.01 g/t Au and 12.00 g/t Ag (sample 3308) both float

samples taken from moderate to strongly potassic (K-feldspar-biotite-magnetite) altered diorite.

Table 11: Selected grab samples results >0.3% Cu, Cirque Area

Sample	UTM		Results			
	Easting	Northing	Cu (%)	Au (ppm)	Ag (ppm)	Mo (ppm)
2313	339523	6222586	0.725	0.128	3.74	1.77
2314	339523	6222586	1.500	1.070	6.60	41.40
2317	339306	6222743	5.410	0.690	18.45	228.00
2318	339338	6222891	3.800	0.138	22.00	3.40
2319	339338	6222892	8.700	1.825	29.80	10.35
2320	339330	6222894	0.355	0.047	0.89	2.36
2321	339325	6222890	5.680	2.720	26.00	6.34
2324	339340	6223018	0.957	0.379	22.60	26.70
2326	340927	6221839	0.411	0.041	2.30	1.89
2361	341221	6223082	0.341	0.062	2.49	3.87
2362	341088	6222946	1.920	0.462	8.65	1.49
2363	341028	6222911	0.770	0.063	3.30	8.73
2365	341039	6222491	0.422	0.719	5.96	341.00
2366	340968	6222451	0.532	0.142	14.65	454.00
3103	341096	6221878	1.830	0.454	7.44	201.00
3109	340936	6221674	2.070	0.003	0.70	1.42
3116	340937	6222930	0.565	0.097	2.19	1.38
3133	340996	6221504	0.385	0.094	2.41	24.90
3135	341109	6221496	2.860	0.059	12.30	24.20
3140	341350	6221465	0.403	0.162	2.74	9.24
3302	339326	6222896	2.190	0.543	11.30	6.55
3303	339330	6222895	3.090	0.758	27.50	8.57
3304	339335	6222822	1.125	0.156	20.30	29.80
3305	339314	622770	3.460	1.495	13.05	35.90
3307	340908	6221929	0.910	0.024	5.49	2.91
3308	340912	6221938	1.480	0.096	12.00	0.90
3309	340916	6221946	0.517	0.297	4.81	159.00
3310	341170	6222090	0.635	0.093	1.46	1.31
3312	341362	6222825	0.367	0.105	3.16	5320.00

5.7.3 Lake Area

Of the 20 samples collected from the Lake Area, 4 returned greater than 0.1% Cu (Table 12).

The highest copper grade returned from the Lake Area returned 0.227% Cu along with precious metals of 0.29g/t Au and 1.55g/t Ag (sample 2369). The sample consists of very fine- to fine grained disseminated and hairline fractures of chalcopyrite and lessor pyrite within what has been interpreted as a biotite-magnetite clinopyroxenite enclave within the monzodiorite.

Table 12: Selected grab samples results >0.1% Cu, Lake Area

Sample	UTM		Results			
	Northing	Easting	Ag (ppm)	Mo (ppm)	Cu (%)	Au (ppm)
2327	6231410	335319	0.66	1.88	0.117	0.026
2369	6232164	336108	1.55	1.61	0.227	0.209
2370	6232155	336152	10.95	0.46	0.126	0.019
2407	6231730	335184	0.27	0.56	0.132	0.016

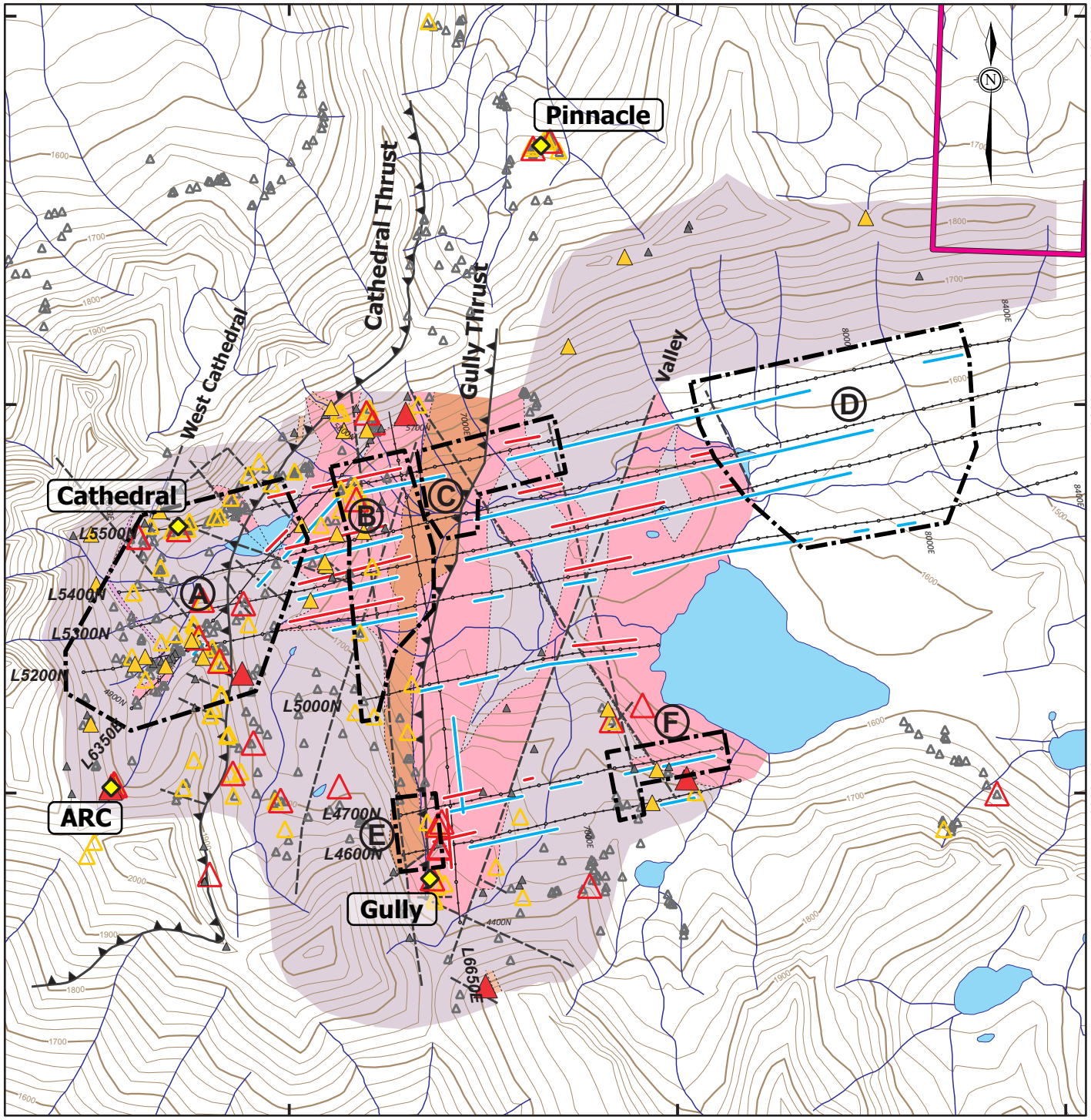
6.0 CONCLUSIONS

The Thane property is centred at latitude 56° 10’ N and longitude 125° 38’ W, approximately 180 kilometres northwest of Mackenzie and 185 kilometres north-northeast of Smithers, in the Omineca Mining Division of north-central British Columbia, Canada.

The Property is located in the highly prospective Quesnel Terrane, an accreted Mesozoic volcanic arc terrane that forms a 1,600 kilometre long, north-south trending linear belt of volcano-sedimentary rock sequences hosting coeval and post-accretionary Jurassic to Cretaceous intrusions, along the eastern margin of the Canadian Cordillera. On the Property the volcano-sedimentary units are represented by rocks of the Nicola Group, and the intrusives are represented by the Hogem Plutonic Suite. Numerous dykes, sills and small stocks are noted in both of these geological units. The Cretaceous age intrusions are commonly associated with significant alkalic porphyry copper deposits. Local examples include the Kemess South and Mt. Milligan mines, and the nearby Lorraine and Kwanika deposits.

Exploration in 2020 consisted of silt, soil and rock sampling, geological mapping and geophysical surveying covering the Cathedral, Cirque, Lake and Mat areas of the Property. The exploration program successfully determined highly prospective areas to be tested by diamond drilling at the Cathedral and Cirque Areas. In determining these drill targets, the geological model was further refined for both the Cathedral and Cirque areas. Reconnaissance soil sampling at the Mat Area returned results that warrant follow-up investigation.

Findings from the geological study indicate mineralization at the Cathedral Area is structurally controlled by a series of moderate to strongly resistive south-southwest, south-southeast west to north-northwest dipping major fault/shear structures that have cross-cut the Hogem batholith suite of plutonic rocks. Highly chargeable bodies of disseminated and fracture-controlled copper-gold mineralization appear proximal to and associated with an interpreted north-south trending moderately southeast dipping syenite porphyry. A tilted or off-set and possible hidden extension of a Cu-Au alkalic porphyry system dominated by potassic, propylitic and sodic altered diorite, quartz monzonite/quartz monzodiorite intrusive



LEGEND

GEOLOGY

- Latite porphyry
- Syenite
- Quartz monzonite
- Diorite

GEOCHEMISTRY

Rock Samples (2020)

- < 0.10 % Cu
- 0.10 - 1.00 % Cu
- >1.00 % Cu

Rock Samples (2012-2019)

- < 0.10 % Cu
- 0.10 - 1.00 % Cu
- >1.00 % Cu

GEOPHYSICS

- IP chargeability anomaly
- IP resistivity anomaly

SYMBOLS

- Thane property
- Contour (20 metre interval)
- Watercourse
- Waterbody
- Survey grid with stations
- Showing location with name
- Contact defined, inferred
- Fault inferred
- Thrust fault inferred
- Soil anomaly zone (Cu-Au-As) with name

0 500m

NAD83 UTM Zone 10 North

IMC INTERNATIONAL MINING CORP.

COMPILATION
Cathedral Area

Thane Project
Omineca M.D., British Columbia, Canada

Project No:	P71	By:	TV, CN
Scale:	1:15,000	Drawn:	TV, CN
Figure:	25	Date:	December 2020

CME

phases is interpreted for the Cathedral Area. A compilation map showing the results from the Cathedral Area is presented in Figure 25.

Similarly, the Cirque is also structurally controlled by south-southeast and east-west trending shears. Mineralization is observed to occur predominately within a series of north-south trending quartz-copper-molybdenum veins that cross-cut and marginally mineralize a regional foliation plane within medium-to coarse grained, equigranular diorite and monzodiorite phases of the Hogem batholith. Localized areas containing pervasive increased potassic alteration with associated bornite and chalcopyrite have been noted and may potentially be related to a hidden system located somewhere within the area. The average molybdenum concentrations from rock sampling at the Cirque Area are approximately five times greater than the average level from the Cathedral Area, suggesting the Cirque represents a deeper part of a porphyry system.

Respectfully Submitted,



Christopher O. Naas, *P.Geo.*

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8.0 CERTIFICATE

I, Christopher O. Naas, *P.Geo*., do hereby certify that:

1. I am a graduate in geology of Dalhousie University (*B.Sc*., 1984); and have practiced in my profession continuously since 1987;
2. Since 1987, I have been involved in mineral exploration for precious and/or base metals in Canada, United States of America, Chile, Venezuela, Ghana, Mali, Nigeria, and Democratic Republic of the Congo (Zaire); for diamonds in Venezuela; and for rare metals in Nigeria. I have also been involved in the determination of base metal and gold resources for properties in Canada and Ghana, respectively, and the valuation of properties in Canada and Equatorial Guinea.
3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (Registration Number 20082);
4. I am presently a Consulting Geologist and have been so since November 1987;
5. I am an Officer and Director of IMC International Mining Corp., a company who owns 100% of Thane Minerals Inc. and I own shares of IMC International Mining Corp. I am not independent of IMC International Mining Corp.;

Dated at Surrey, British Columbia, this 20th day of December, 2020.



Christopher O. Naas, *P.Geo.*

9.0 STATEMENT OF COSTS

Field

	Personnel	*Unit*	*Rate*		
C. Naas	(Jun 23-29, Jul 3-Aug 27, 2020)	53.75	1,000.00	53,750.00	
P. Gordon	(Jul 1-28, Aug 5-27, 2020)	53.6	900.00	48,240.00	
T. VanderWart	(Jul 13-Aug 8, Aug 16-24, 2020)	33.5	700.00	23,450.00	
E. Knight	(Jul 12-29, Aug 5-23, 2020)	37	700.00	25,900.00	
T. Bell	(Jul 13-Aug 22, 2020)	36.5	550.00	20,075.00	
S. VanderLink	(Jul 11-21, 2020)	9.5	400.00	3,800.00	
F. Cashian	(Aug 8-25, 2020)	18	400.00	7,200.00	
					182,415.00
	Equipment				
Computer & Software		55	60.00	3,300.00	
Trailer		14	60.00	840.00	
Rocksaw		2.5	50.00	125.00	
Chainsaw		1	25.00	25.00	
Magnetic Susceptibility Meter		54	20.00	1,080.00	
Internet		17	15.00	255.00	
VHF Radios		35	10.00	350.00	
					5,975.00
	Room & Board	*Unit*	*Rate*		
Room & Board		288	40.00	11,520.00	
					11,520.00
	Disbursements				
Accommodation & Food				6,967.18	
Analyses				36,905.95	
Catering and Camps				143,389.12	
Geophysics				76,275.39	
Petrography				14,460.71	
Helicopter				148,458.24	
Courier, Shipping & Postage				3,333.82	
Camp Supplies				2,199.43	
Equipment Rental				9,802.84	
Field Supplies				8,951.12	
Fuel -Truck				3,421.43	
Fuel - Helicopter				24,228.11	
Fuel - Camp				10,220.90	
Insurance				839.20	
Licenses, Fees & Permits				251.08	
Maps & Publications				973.70	

Office Supplies			2,314.07		
Reproductions & Printing			5,092.94		
Telephone, Fax & Internet			2,356.95		
Travel			2,795.47		
				503,237.67	
Subtotal					703,147.67

Office *(Report Preparation)*

Personnel	*Unit*	*Rate*			
C. Naas	9	1,000.00	9,000.00		
P. Gordon	7.4	900.00	6,660.00		
T. VanderWart	6.75	700.00	4,725.00		
				20,385.00	
Equipment					
Comptuer (incl software)	9	60.00	540.00		
				540.00	
Subtotal					20,925.00
			Total		**$724,072.67**

10.0 LIST OF SOFTWARE USED

In the preparation of this report the following software was used:

Microsoft	Word 2010
	Excel 2010
Corel	CorelDraw 2019
Adobe	Acrobat version 10
Micromine	Micromine version 13

APPENDIX I
ABBREVIATIONS AND CONVERSION FACTORS

ABBREVIATIONS

Elements		**Other**	
antimony	Sb	azimuth	Az
arsenic	As	Canadian dollar	CAD$
barium	Ba	parts per million	ppm
cadmium	Cd	no sample	NS
copper	Cu	parts per billion	ppb
gold	Au	percent	%
lead	Pb	grams per metric tonne	g/t
molybdenum	Mo	troy ounces per ton	oz/T
silver	Ag	metric tonnes per day	tpd
titanium	Ti	Gold equivalent	Eq. Au
zinc	Zn	Universal Transverse Mercator	UTM
		North American Datum 1983	NAD83
		degree/minute/second of arc	°/ ‘ / “
Minerals			
actinolite	act		
albite	ab		
anhydrite	anh		
ankerite	ank		
arsenopyrite	aspy		
biotite	bt		
bornite	bn		
carbonate	carb		
chalcopyrite	cpy		
chlorite	cl		
epidote	ep		
garnet	gnt		
gypsum	gp		
hematite	hem		
iron-carbonate	fecb		
K-feldspar	fks		
magnetite	mgt		
pyrite	py		
quartz	qz		

CONVERSION FACTORS

Length			
1 millimetre (mm)	0.03937 inches (in)	1 inch (in)	25.40 millimetre (mm)
1 centimetre (cm)	0.394 inches(in)	1 inch (in)	2.540 centimetres (cm)
1 metre (m)	3.281 feet (ft)	1 foot (ft)	0.3048 metres (m)
1 kilometre (km)	0.6214 mile (mi)	1 mile (mi)	1.609 kilometres (km)
Area			
1 sq. centimeter (cm^2)	0.1550 sq. inches (in^2)	1 sq inch (in^2)	6.452 sq. centimetres (cm^2)
1 sq. metre (m^2)	10.76 feet (ft^2)	1 foot (ft)	0.0929 sq. metres (m^2)
1 hectare (ha) (10,000 m^2)	2.471 acres	1 acre	0.4047 hectare (ha)
1 hectare (ha)	0.003861 sq. miles (m^2)	1 sq. mile (m^2)	640 acres
1 hectare (ha)	0.01 sq. kilometre (km^2)	1 sq. mile (m^2)	259.0 hectare (ha)
1 sq. kilometre (km^2)	0.3861 sq. miles (mi^2)	1 sq. mile (m^2)	2.590 sq. kilometres (km^2)
Volume			
1 cu. centimetre (cc)	0.06102 cu. inches (in^3)	1 cu. inch (in^3)	16.39 cu. centimetres (cm^3)
1 cu. metre (m^3)	1.308 cu. yards (yd^3)	1 cu. yard (yd^3)	0.7646 cu. metres (m^3)
1 cu. metre (m^3)	35.310 cu. feet (ft^3)	1 cu. foot (ft^3)	0.02832 cu. metres (m^3)
1 litre (l)	0.2642 gallons (U.S.)	1 gallon (U.S.)	3.785 litres (l)
1 litre (l)	0.2200 gallons (U.K.)	1 gallon (U.K.)	4.546 litres (l)
Weights			
1 gram (g)	0.03215 troy ounce (20dwt)	1 troy ounce (oz)	31.1034 grams (g)
1 gram (g)	0.6430 pennyweight (dwt)	1 pennyweight (dwt)	1.555 grams (g)
1 gram (g)	0.03527 oz avoirdupois	1 oz avoirdupois	28.35 grams (g)
1 kilogram (g)	2.205 lb avoirdupois	1 lb avoirdupois	0.4535 kilograms (kg)
1 tonne (t) (metric)	1.102 tons (T) (short ton)	1 ton (T) (short ton) (2000 lb)	0.9072 tonnes (t)
1 tonne (t)	0.9842 long ton	1 long ton (2240 lb)	1.016 tonnes (t)
Miscellaneous			
1 cm/second	0.01968 ft/min	1 ft/min	50.81 cm/second
1 cu. m/second	22.82 million gal/day	1 million gal/day	0.04382 m^3/second
1 cu. m/minute	264.2 gal/min	1 gal/min	0.003785 m^3/minute
1 g/cu. m	62.43 lb/ cu. ft	1 lb/cu. ft^3	0.01602 g/m^3
1 g/cu. m	0.02458 oz/cu. yd	1 oz/cu. yd	40.6817 g/m^3
1 Pascal (Pa)	0.000145 psi	1 psi	6985 Pascal
1 gram/tonne (g/t)	0.029216 troy ounce/ short ton (oz/T)	1 troy ounce/short ton (oz/T)	34.2857 grams/tonne (g/t)
1 g/t	0.583 dwt/short ton	1 dwt/short ton	1.714 g/t
1 g/t	0.653 dwt/long ton	1 dwt/long ton	1.531 g/t
1 g/t	0.0001 %		
1 g/t	1 part per million (ppm)		
1 %	10,000 part per million (ppm)		
1 part per million (ppm)	1,000 part per billion (ppb)		
1 part per billion (ppb)	0.001 part per million (ppm)		

APPENDIX II
SAMPLE DETAILS

APPENDIX II
SAMPLE DETAIL

a. Stream Sediment Samples

Appendix IIa Sill Sample Details

SAMPLE NO.	DATE	E_UTM	N_UTM	WIDTH (m)	DEPTH (cm)	SAMPLE MATERIAL	STATUS	STREAM SOURCE	STREAM ORDER	STREAM TYPE	PHYSIOGRAPHY	DRAINAGE PATTERN	CONTAMINATION
650	17-AUG-20	339631	6220023	0.8	10	sediment	routine	grnd	primary	perm	mtn-youthful	dendritic	none
651	17-AUG-20	337615	6221787	1.1	12	sediment	routine	grnd	primary	perm	mtn-youthful	dendritic	none
652	17-AUG-20	336627	6222942	0.9	9	sediment	routine	grnd	primary	perm	mtn-youthful	dendritic	none

APPENDIX II
SAMPLE DETAIL

b. Soil Samples

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
11-Aug-20	L4600N	6500E	Grab	347294	6217841	15	B	Brown	Fines/Silt	East	Talus	18.4	0.016	443.0
11-Aug-20	L4600N	6525E	Grab	347308	6217844	10	B	Brown	Fines/silt	East	Talus	14.2	0.017	393.0
11-Aug-20	L4600N	6550E	NS	347326	6217849									
11-Aug-20	L4600N	6575E	Grab	347345	6217852	10	B	Brown	Fines/Silt	East	Tallus	12.8	0.009	364.0
11-Aug-20	L4600N	6600E	Grab	347372	6217856	10	B	Brown	Fines/Silt	West	Tallus	60.3	0.173	1865.0
11-Aug-20	L4600N	6625E	Grab	347400	6217863	25	B	Brown	Fines/Silt	West	Alpine	4.6	0.013	75.9
11-Aug-20	L4600N	6650E	Grab	347425	6217868	20	B	Brown	Fines/Silt	North	Alpine	8.8	0.007	106.5
11-Aug-20	L4600N	6675E	Grab	347450	6217872	10	B	Brown	Fines/Silt	North	Alpine	5.9	0.004	204.0
11-Aug-20	L4600N	6700E	Grab	347470	6217875	10	B	Brown	Fines/Silt	East	Alpine	8.9	0.029	141.5
11-Aug-20	L4600N	6725E	Grab	347493	6217880	15	B	Brown	Fines/Silt	East	Alpine	9.9	0.003	118.0
11-Aug-20	L4600N	6750E	Grab	347519	6217886	10	B	Brown	Fines/Silt	East	Alpine	7.1	0.009	66.9
11-Aug-20	L4600N	6775E	Grab	347540	6217893	10	B	Brown	Fines/Silt	East	Alpine	11.1	0.018	256.0
11-Aug-20	L4600N	6800E	Grab	347568	6217901	20	B	Brown	Fines/Silt	East	Alpine	9.3	0.008	105.0
11-Aug-20	L4600N	6825E	Grab	347589	6217905	5	B	Brown	Fines/Silt	East	Alpine	9.8	0.012	230.0
11-Aug-20	L4600N	6850E	Grab	347615	6217909	5	B	Brown	Fines/Silt	East	Alpine	7.3	0.008	93.9
11-Aug-20	L4600N	6875E	Grab	347637	6217915	20	B	Brown	Fines/Silt	East	Alpine	10.2	0.016	169.0
11-Aug-20	L4600N	6900E	Grab	347661	6217921	20	B	Brown	Fines/Silt	East	Brush/Trees	12.5	0.007	272.0
11-Aug-20	L4600N	6925E	Grab	347685	6217927	15	B	Brown	Fines/Silt	East	Brush/Trees	9.3	0.013	122.5
11-Aug-20	L4600N	6950E	Grab	347710	6217932	20	B	Brown	Fines/Silt	East	Brush/Trees	9.9	0.011	107.0
11-Aug-20	L4600N	6975E	Grab	347734	6217938	15	B	Brown	Fines/Silt	North	Alpine	6.5	0.009	84.9
11-Aug-20	L4600N	7000E	Grab	347761	6217945	10	B	Brown	Fines/Silt	Flat-Valley	Alpine	10.3	0.008	124.5
11-Aug-20	L4600N	7025E	Grab	347786	6217950	20	B	Brown	Fines/Silt	West	Alpine	7.5	0.014	77.8
11-Aug-20	L4600N	7050E	Grab	347809	6217954	10	B	Brown	Fines/Silt	Flat-Valley	Alpine	10.6	0.010	107.5
11-Aug-20	L4600N	7075E	Grab	347835	6217958	30	B	Brown	Fines/Silt	North	Brush/Trees	12.0	0.012	109.5
11-Aug-20	L4600N	7100E	Grab	347860	6217962	20	B	Brown	Fines/Silt	North	Alpine	27.6	0.020	234.0
11-Aug-20	L4600N	7125E	Grab	347885	6217965	20	B	Brown	Fines/Silt	North	Alpine	23.6	0.040	558.0
11-Aug-20	L4600N	7150E	Grab	347912	6217971	10	B	Brown	Fines/Silt	North	Alpine	11.1	0.025	113.0
11-Aug-20	L4600N	7175E	Grab	347935	6217977	15	B	Brown	Fines/Silt	North	Alpine	10.0	0.025	150.0
11-Aug-20	L4600N	7200E	Grab	347955	6217981	10	B	Brown	Fines/Silt	North	Alpine	5.1	0.008	63.3
11-Aug-20	L4600N	7225E	Grab	347979	6217987	10	B	Brown	Fines/Silt	Flat-Open	Alpine	9.3	0.009	73.9
11-Aug-20	L4600N	7250E	Grab	348004	6217992	30	B	Brown	Fines/Silt	East	Alpine	9.2	0.003	81.4
11-Aug-20	L4600N	7275E	Grab	348030	6217998	25	B	Brown	Fines/Silt	North	Brush/Trees	3.3	0.008	30.3
11-Aug-20	L4600N	7300E	Grab	348060	6218004	25	B	Brown	Fines/Silt	North	Brush/Trees	6.2	0.005	121.0
11-Aug-20	L4600N	7325E	Grab	348085	6218010	10	B	Brown	Fines/Silt	North	Alpine	13.0	0.011	260.0
11-Aug-20	L4600N	7350E	Grab	348112	6218017	15	B	Brown	Fines/Silt	North	Alpine	11.5	0.009	140.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
11-Aug-20	L4600N	7375E	Grab	348136	6218024	25	B	Brown	Fines/Silt	North	Alpine	9.6	0.006	178.0
11-Aug-20	L4600N	7400E	NS	348160	6218032									
11-Aug-20	L4700N	6500E	Grab	347287	6217943	15	B	Brown	Fines/Silt	East	Talus	11.3	0.009	299.0
11-Aug-20	L4700N	6525E	NS	347302	6217946									
11-Aug-20	L4700N	6550E	NS	347318	6217950									
11-Aug-20	L4700N	6575E	NS	347336	6217954									
11-Aug-20	L4700N	6600E	Grab	347353	6217959	15	B	Brown	Fines/Silt	West	Talus	55.2	0.111	814.0
11-Aug-20	L4700N	6625E	Grab	347374	6217963	10	B	Brown	Fines/Silt	West	Talus	5.8	0.018	73.9
11-Aug-20	L4700N	6650E	Grab	347401	6217968	15	B	Brown	Fines/Silt	West	Talus	3.7	0.053	41.5
11-Aug-20	L4700N	6675E	Grab	347424	6217972	15	B	Brown	Fines/Silt	North	Alpine	5.2	0.007	66.8
11-Aug-20	L4700N	6700E	Grab	347448	6217977	15	B	Brown	Fines/Silt	North	Alpine	5.6	0.007	92.3
11-Aug-20	L4700N	6725E	Grab	347470	6217981	10	B	Brown	Fines/Silt	Flat-Open	Alpine	7.1	0.006	86.8
11-Aug-20	L4700N	6750E	Grab	347492	6217987	20	B	Brown	Fines/Silt	Flat-Open	Brush/Trees	2.2	0.019	44.2
11-Aug-20	L4700N	6775E	Grab	347519	6217992	20	B	Brown	Fines/Silt	East	Alpine	9.6	0.009	106.0
11-Aug-20	L4700N	6800E	Grab	347545	6217997	20	B	Brown	Fines/Silt	East	Brush/Trees	9.0	0.008	102.5
11-Aug-20	L4700N	6825E	Grab	347569	6218002	15	B	Brown	Sand	East	Alpine	12.0	0.023	545.0
11-Aug-20	L4700N	6850E	Grab	347595	6218009	5	B	Brown	Fines/Silt	East	Alpine	9.3	0.010	119.5
11-Aug-20	L4700N	6875E	Grab	347619	6218015	15	B	Brown	Fines/Silt	Flat-Open	Alpine	8.6	0.008	105.5
11-Aug-20	L4700N	6900E	Grab	347643	6218020	15	B	Brown	Fines/Silt	East	Alpine	6.3	0.000	75.5
11-Aug-20	L4700N	6925E	Grab	347672	6218026	20	B	Brown	Fines/Silt	Flat-Open	Alpine	5.6	0.010	81.4
11-Aug-20	L4700N	6950E	Grab	347698	6218031	25	B	Brown	Fines/Silt	Flat-Open	Alpine	9.7	0.017	92.7
11-Aug-20	L4700N	6975E	Grab	347724	6218037	25	B	Brown	Fines/Silt	Flat-Open	Alpine	9.4	0.017	120.0
11-Aug-20	L4700N	7000E	Grab	347744	6218042	20	B	Brown	Fines/Silt	Flat-Open	Alpine	9.1	0.008	87.9
11-Aug-20	L4700N	7025E	Grab	347769	6218049	5	B	Brown	Fines/Silt	Flat-Open	Alpine	8.8	0.012	86.1
11-Aug-20	L4700N	7050E	Grab	347793	6218054	10	B	Brown	Fines/Silt	North	Alpine	4.0	0.007	62.0
11-Aug-20	L4700N	7075E	Grab	347811	6218059	10	B	Brown	Fines/Silt	North	Alpine	5.9	0.008	69.0
11-Aug-20	L4700N	7100E	Grab	347838	6218064	20	B	Brown	Fines/Silt	North	Brush/Trees	8.5	0.011	351.0
11-Aug-20	L4700N	7125E	Grab	347862	6218068	15	B	Brown	Fines/Silt	North	Brush/Trees	4.9	0.008	112.5
11-Aug-20	L4700N	7150E	Grab	347889	6218072	10	B	Brown	Fines/Silt	North	Talus	17.8	0.033	152.5
11-Aug-20	L4700N	7175E	Grab	347912	6218076	10	B	Brown	Fines/Silt	North	Talus	13.7	0.012	205.0
11-Aug-20	L4700N	7200E	Grab	347937	6218080	5	B	Brown	Fines/Silt	North	Talus	19.0	0.062	225.0
11-Aug-20	L4700N	7225E	Grab	347957	6218084	15	B	Brown	Fines/Silt	North	Talus	12.0	0.030	147.5
11-Aug-20	L4700N	7250E	Grab	347977	6218088	25	B	Brown	Fines/Silt	North	Talus	16.6	0.386	296.0
11-Aug-20	L4700N	7275E	Grab	347993	6218092	10	B	Brown	Fines/Silt	North	Talus	45.7	1.260	347.0
11-Aug-20	L4700N	7300E	Grab	348013	6218095	10	B	Brown	Fines/Silt	North	Brush/Trees	18.9	0.086	246.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
11-Aug-20	L4700N	7325E	Grab	348033	6218099	10	B	Brown	Fines/Silt	North	Talus	11.1	0.063	143.0
11-Aug-20	L4700N	7350E	Grab	348057	6218105	10	B	Brown	Fines/Silt	North	Brush/Trees	13.0	0.073	279.0
11-Aug-20	L4700N	7375E	Grab	348084	6218109	25	B	Brown	Fines/Silt	North	Brush/Trees	17.5	0.030	151.0
11-Aug-20	L4700N	7400E	Grab	348114	6218115	15	B	Brown	Fines/Silt	North	Brush/Trees	21.0	0.016	306.0
12-Aug-20	L5000N	6550E	Grab	347189	6218239	5	b	Brown	Sand	East	Talus	168.5	0.074	1915.0
12-Aug-20	L5000N	6575E	NS	347224	6218246									
12-Aug-20	L5000N	6600E	Grab	347256	6218254	10	B	Brown	Sand	East	Brush/Trees	9.5	0.015	224.0
12-Aug-20	L5000N	6625E	Grab	347285	6218262	20	B	Brown	Fines/Silt	East	Brush/Trees	8.5	0.036	162.5
12-Aug-20	L5000N	6650E	Grab	347311	6218268	5	B	Brown	Fines/Silt	East	Brush/Trees	10.5	0.009	232.0
12-Aug-20	L5000N	6675E	Grab	347337	6218275	5	B	Brown	Fines/Silt	north	Alpine	9.0	0.017	176.0
12-Aug-20	L5000N	6700E	Grab	347361	6218280	30	B	Brown	Fines/Silt	North	Brush/Trees	8.1	0.009	93.5
12-Aug-20	L5000N	6725E	Grab	347384	6218285	45	B	Brown	Fines/Silt	Flat-Open	Brush/Trees	6.4	0.003	69.1
12-Aug-20	L5000N	6750E	Grab	347409	6218289	10	B	Brown	Fines/Silt	Flat-Open	Brush/Trees	12.8	0.133	98.2
12-Aug-20	L5000N	6775E	Grab	347435	6218294	30	B	Brown	Fines/Silt	East	Brush/Trees	8.4	0.012	68.1
12-Aug-20	L5000N	6800E	Grab	347460	6218299	15	B	Brown	Sand	East	Brush/Trees	7.7	0.006	131.0
12-Aug-20	L5000N	6825E	Grab	347484	6218304	10	B	Brown	Fines/Silt	East	Brush/Trees	9.2	0.011	122.0
12-Aug-20	L5000N	6850E	Grab	347507	6218309	30	B	Brown	Fines/Silt	East	Brush/Trees	7.7	0.004	87.7
12-Aug-20	L5000N	6875E	Grab	347531	6218316	10	B	Brown	Fines/Silt	South	Brush/Trees	7.5	0.004	66.5
12-Aug-20	L5000N	6900E	Grab	347557	6218321	25	B	Brown	Fines/Silt	East	Brush/Trees	5.4	0.005	76.3
12-Aug-20	L5000N	6925E	Grab	347580	6218327	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.5	0.044	107.0
12-Aug-20	L5000N	6950E	Grab	347605	6218334	25	B	Brown	Fines/Silt	Flat-Open	Grass	9.4	0.011	154.0
12-Aug-20	L5000N	6975E	Grab	347628	6218339	25	B	Brown	Fines/Silt	Flat-Open	Grass	10.7	0.014	206.0
12-Aug-20	L5000N	7000E	Grab	347654	6218345	25	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	10.2	0.010	231.0
12-Aug-20	L5000N	7025E	Grab	347678	6218349	25	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	22.2	0.023	512.0
12-Aug-20	L5000N	7050E	Grab	347703	6218354	25	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	9.0	0.011	106.5
12-Aug-20	L5000N	7075E	Grab	347730	6218359	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.5	0.013	144.0
12-Aug-20	L5000N	7100E	Grab	347754	6218362	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	8.5	0.008	216.0
12-Aug-20	L5000N	7125E	Grab	347777	6218364	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	12.8	0.028	276.0
12-Aug-20	L5000N	7150E	Grab	347804	6218366	15	B	Brown	Fines/Silt	East	Brush/Trees	13.1	0.008	165.5
12-Aug-20	L5000N	7175E	Grab	347832	6218367	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	9.1	0.010	146.5
12-Aug-20	L5000N	7200E	NS	347853	6218370									
12-Aug-20	L5000N	7225E	NS	347877	6218373									
12-Aug-20	L5000N	7250E	Grab	347902	6218375	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	11.4	0.020	341.0
12-Aug-20	L5000N	7275E	Grab	347927	6218378	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	18.8	0.020	109.5
12-Aug-20	L5000N	7300E	Grab	347950	6218381	25	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	10.1	0.019	274.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
31-Jul-20	L5200N	5800E	Grab	346470	6218311	5	C	Brown	Fines/Rocks	East	Talus	12.7	0.026	516.0
31-Jul-20	L5200N	5825E	Grab	346490	6218313	5	B	Brown	Fines/Silt	East	Alpine	14.2	0.019	521.0
31-Jul-20	L5200N	5850E	Grab	346506	6218315	5	B	Brown	Fines/Silt	East	Talus	13.2	0.013	417.0
31-Jul-20	L5200N	5875E	NS	346524	6218317									
31-Jul-20	L5200N	5900E	Grab	346546	6218320	10	B	Brown	Fines/Silt	East	Alpine	12.5	0.021	226.0
31-Jul-20	L5200N	5925E	Grab	346568	6218325	10	B	Brown	Fines/Silt	East	Alpine	12.4	0.024	251.0
31-Jul-20	L5200N	5950E	Grab	346594	6218332	15	B	Brown	Fines/Silt	East	Alpine	6.7	0.008	134.5
31-Jul-20	L5200N	5975E	Grab	346619	6218339	15	B	Brown	Fines/Silt	East	Alpine	10.5	0.430	496.0
31-Jul-20	L5200N	6000E	Grab	346644	6218345	10	B	Brown	Fines/Silt	East	Alpine	10.8	0.022	304.0
31-Jul-20	L5200N	6025E	Grab	346668	6218351	5	B	Brown	Fines/Silt	East	Alpine	25.2	0.125	383.0
31-Jul-20	L5200N	6050E	NS	346694	6218356									
31-Jul-20	L5200N	6075E	Grab	346712	6218361	5	B	Brown	Fines/Rocks	East	Talus	100.0	5.990	1290.0
31-Jul-20	L5200N	6100E	Grab	346739	6218367	5	B	Brown	Fines/Silt	East	Alpine	6.4	0.027	170.0
31-Jul-20	L5200N	6125E	NS	346761	6218374									
31-Jul-20	L5200N	6150E	NS	346786	6218380									
31-Jul-20	L5200N	6175E	NS	346810	6218385									
31-Jul-20	L5200N	6200E	Grab	346834	6218389	10	B	Brown	Fines/Silt	East	Alpine	8.9	0.046	470.0
31-Jul-20	L5200N	6225E	Grab	346856	6218393	10	B	Brown	Fines/Silt	East	Brush/Trees	7.3	0.012	186.5
31-Jul-20	L5200N	6250E	Grab	346884	6218399	20	B	Brown	Fines/Silt	East	Brush/Trees	8.2	0.012	211.0
31-Jul-20	L5200N	6275E	Grab	346909	6218404	20	B	Brown	Fines/Silt	East	Alpine	10.8	0.017	347.0
31-Jul-20	L5200N	6300E	Grab	346931	6218409	15	B	Brown	Fines/Silt	East	Alpine	9.9	0.014	281.0
31-Jul-20	L5200N	6325E	Grab	346956	6218415	15	B	Brown	Fines/Silt	East	Alpine	7.8	0.023	206.0
31-Jul-20	L5200N	6350E	Grab	346981	6218419	10	B	Brown	Fines/Silt	East	Alpine	10.6	0.032	304.0
31-Jul-20	L5200N	6375E	Grab	347005	6218424	15	B	Brown	Fines/Silt	East	Alpine	8.5	0.009	232.0
31-Jul-20	L5200N	6400E	Grab	347027	6218427	15	B	Brown	Fines/Silt	East	Brush/Trees	10.1	0.026	272.0
31-Jul-20	L5200N	6425E	Grab	347053	6218432	10	B	Brown	Fines/Silt	East	Alpine	10.8	0.023	283.0
31-Jul-20	L5200N	6450E	Grab	347079	6218437	15	B	Brown	Fines/Silt	East	Brush/Trees	8.0	0.018	196.0
31-Jul-20	L5200N	6475E	Grab	347102	6218442	15	B	Brown	Fines/Silt	East	Brush/Trees	9.2	0.024	162.5
31-Jul-20	L5200N	6500E	Grab	347127	6218446	20	B	Brown	Fines/Silt	East	Brush/Trees	9.9	0.016	109.0
31-Jul-20	L5200N	6525E	Grab	347152	6218449	15	B	Brown	Fines/Silt	East	Brush/Trees	5.4	0.016	67.1
31-Jul-20	L5200N	6550E	Grab	347176	6218453	20	B	Brown	Fines/Silt	East	Brush/Trees	10.6	0.031	921.0
31-Jul-20	L5200N	6575E	NS	347201	6218456									
31-Jul-20	L5200N	6600E	Grab	347227	6218461	15	B	Brown	Fines/Silt	East	Brush/Trees	6.6	0.009	78.8
31-Jul-20	L5200N	6625E	Grab	347253	6218466	20	B	Brown	Fines/Silt	East	Brush/Trees	3.9	0.012	71.8
31-Jul-20	L5200N	6650E	Grab	347279	6218471	15	B	Brown	Fines/Silt	East	Brush/Trees	32.4	0.079	492.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
31-Jul-20	L5200N	6675E	Grab	347301	6218476	10	B	Brown	Fines/Silt	East	Brush/Trees	18.7	0.036	450.0
31-Jul-20	L5200N	6700E	Grab	347324	6218482	15	B	Brown	Fines/Silt	East	Brush/Trees	16.2	0.018	303.0
31-Jul-20	L5200N	6725E	Grab	347349	6218488	10	B	Brown	Fines/Silt	East	Brush/Trees	21.5	0.008	102.5
31-Jul-20	L5200N	6750E	Grab	347373	6218493	20	B	Brown	Fines/Silt	Flat-Open	Grass	8.1	0.031	126.0
31-Jul-20	L5200N	6775E	Grab	347397	6218498	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	4.5	0.011	34.1
31-Jul-20	L5200N	6800E	Grab	347421	6218503	20	B	Brown	Fines/Silt	Flat-Open	Brush/Trees	4.6	0.003	51.9
31-Jul-20	L5200N	6825E	Grab	347447	6218508	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	6.1	0.007	66.4
31-Jul-20	L5200N	6850E	Grab	347471	6218512	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	2.9	0.007	33.3
31-Jul-20	L5200N	6875E	Grab	347496	6218515	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	10.1	0.006	86.9
31-Jul-20	L5200N	6900E	Grab	347521	6218518	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.5	0.007	47.2
31-Jul-20	L5200N	6925E	Grab	347546	6218522	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.8	0.012	68.8
31-Jul-20	L5200N	6950E	Grab	347569	6218526	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	8.0	0.033	88.8
31-Jul-20	L5200N	6975E	Grab	347596	6218531	10	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	8.3	0.015	50.7
31-Jul-20	L5200N	7000E	Grab	347622	6218537	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	5.8	0.050	64.4
31-Jul-20	L5200N	7025E	Grab	347647	6218541	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	5.9	0.008	163.0
31-Jul-20	L5200N	7050E	Grab	347670	6218546	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	11.0	0.009	204.0
31-Jul-20	L5200N	7075E	Grab	347693	6218551	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	5.2	0.010	128.0
31-Jul-20	L5200N	7100E	Grab	347718	6218556	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.9	0.041	130.0
31-Jul-20	L5200N	7125E	Grab	347743	6218560	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	10.6	0.009	165.0
31-Jul-20	L5200N	7150E	Grab	347766	6218564	10	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	9.5	0.010	156.5
31-Jul-20	L5200N	7175E	Grab	347791	6218569	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	5.4	0.006	64.9
31-Jul-20	L5200N	7200E	Grab	347816	6218574	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	9.5	0.007	90.4
31-Jul-20	L5200N	7225E	Grab	347840	6218577	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	4.8	0.011	36.5
31-Jul-20	L5200N	7250E	Grab	347866	6218580	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	14.6	0.009	120.5
31-Jul-20	L5200N	7275E	Grab	347891	6218584	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	17.7	0.013	124.5
31-Jul-20	L5200N	7300E	Grab	347915	6218589	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	9.2	0.010	142.0
31-Jul-20	L5200N	7325E	Grab	347938	6218593	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	9.3	0.004	86.2
31-Jul-20	L5200N	7350E	Grab	347962	6218598	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	2.3	0.010	94.5
31-Jul-20	L5200N	7375E	Grab	347990	6218605	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.4	0.006	50.0
31-Jul-20	L5200N	7400E	Grab	348014	6218610	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	9.8	0.006	35.7
31-Jul-20	L5200N	7425E	NS	348038	6218616									
31-Jul-20	L5200N	7450E	Grab	348062	6218623	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	14.8	0.022	105.5
31-Jul-20	L5200N	7475E	Grab	348087	6218628	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	8.3	0.007	136.5
31-Jul-20	L5200N	7500E	Grab	348110	6218633	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.8	0.005	67.8
31-Jul-20	L5200N	7525E	Grab	348134	6218639	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	15.2	0.077	223.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
31-Jul-20	L5200N	7550E	Grab	348159	6218645	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	11.8	0.024	178.0
31-Jul-20	L5200N	7575E	Grab	348184	6218651	15	B	Brown	Fines/Silt	East	Brush/Trees	12.4	0.008	166.0
31-Jul-20	L5200N	7600E	Grab	348208	6218655	15	B	Brown	Fines/Silt	East	Brush/Trees	6.1	0.064	65.5
31-Jul-20	L5200N	7625E	Grab	348231	6218659	20	B	Brown	Fines/Silt	East	Brush/Trees	6.7	0.007	94.7
31-Jul-20	L5200N	7650E	Grab	348258	6218662	15	B	Brown	Fines/Silt	East	Brush/Trees	5.1	0.011	51.7
31-Jul-20	L5200N	7675E	Grab	348283	6218666	20	B	Brown	Fines/Silt	East	Brush/Trees	9.4	0.006	61.0
31-Jul-20	L5200N	7700E	Grab	348309	6218669	20	B	Brown	Fines/Silt	East	Brush/Trees	18.3	0.018	75.3
31-Jul-20	L5200N	7725E	Grab	348335	6218674	20	B	Brown	Fines/Silt	East	Brush/Trees	13.5	0.031	62.6
31-Jul-20	L5200N	7750E	Grab	348357	6218678	20	B	Brown	Fines/Silt	East	Brush/Trees	6.5	0.011	53.1
31-Jul-20	L5200N	7775E	Grab	348381	6218682	15	B	Brown	Fines/Silt	East	Brush/Trees	13.0	0.010	76.3
31-Jul-20	L5200N	7800E	NS	348405	6218685									
31-Jul-20	L5200N	7825E	Grab	348432	6218689	25	B	Brown	Fines/Silt	East	Brush/Trees	11.4	0.015	40.5
31-Jul-20	L5200N	7850E	Grab	348459	6218694	25	B	Brown	Fines/Silt	East	Brush/Trees	8.9	0.123	46.6
31-Jul-20	L5200N	7875E	Grab	348488	6218697	20	B	Brown	Fines/Silt	East	Brush/Trees	11.6	0.035	62.2
31-Jul-20	L5200N	7900E	Grab	348518	6218701	20	B	Brown	Fines/Silt	East	Brush/Trees	11.1	0.015	183.5
31-Jul-20	L5200N	7925E	Grab	348550	6218706	20	B	Brown	Fines/Silt	East	Brush/Trees	25.6	0.017	109.0
31-Jul-20	L5200N	7950E	Grab	348582	6218711	15	B	Brown	Fines/Silt	East	Brush/Trees	13.1	0.007	177.0
31-Jul-20	L5200N	7975E	NS	348611	6218716									
31-Jul-20	L5200N	8000E	Grab	348634	6218721	20	B	Brown	Fines/Silt	East	Brush/Trees	9.2	0.028	73.1
31-Jul-20	L5200N	8025E	Grab	348656	6218726	20	B	Brown	Fines/Silt	East	Brush/Trees	15.7	0.042	137.5
31-Jul-20	L5200N	8050E	Grab	348682	6218732	20	B	Brown	Fines/Silt	East	Brush/Trees	13.2	0.114	107.5
31-Jul-20	L5200N	8075E	Grab	348704	6218737	35	B	Brown	Fines/Silt	East	Brush/Trees	16.7	0.028	231.0
31-Jul-20	L5200N	8100E	Grab	348728	6218742	25	B	Brown	Fines/Silt	East	Brush/Trees	16.4	0.025	284.0
31-Jul-20	L5200N	8125E	NS	348750	6218748									
31-Jul-20	L5200N	8150E	Grab	348775	6218755	15	B	Brown	Fines/Silt	East	Brush/Trees	13.7	0.064	118.5
31-Jul-20	L5200N	8175E	Grab	348799	6218762	25	B	Brown	Fines/Silt	East	Brush/Trees	13.0	0.015	91.9
31-Jul-20	L5200N	8200E	Grab	348825	6218770	15	B	Brown	Fines/Silt	East	Brush/Trees	8.1	0.032	193.5
31-Jul-20	L5200N	8225E	NS	348850	6218777									
31-Jul-20	L5200N	8250E	NS	348878	6218783									
31-Jul-20	L5200N	8275E	Grab	348902	6218790	30	B	Brown	Fines/Silt	South	Brush/Trees	29.5	0.036	240.0
31-Jul-20	L5200N	8300E	Grab	348927	6218797	25	B	Brown	Fines/Silt	South	Brush/Trees	11.2	0.054	204.0
31-Jul-20	L5200N	8325E	Grab	348952	6218804	20	B	Brown	Fines/Silt	South	Brush/Trees	7.5	0.050	173.0
31-Jul-20	L5200N	8350E	Grab	348977	6218810	35	B	Brown	Fines/Silt	South	Brush/Trees	11.2	0.063	187.5
31-Jul-20	L5200N	8375E	NS	349002	6218817									
31-Jul-20	L5200N	8400E	Grab	349026	6218824	20	B	Brown	Fines/Silt	East	Brush/Trees	8.0	0.015	156.5

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
21-Jul-20	L5300N	6000E	Grab	346593	6218426	15	B	Brown	Fines/Silt	East	Alpine	12.3	0.036	490.0
21-Jul-20	L5300N	6025E	Grab	346618	6218432	20	B	Brown	Fines/Silt	East	Alpine	9.8	0.015	252.0
21-Jul-20	L5300N	6050E	Grab	346641	6218437	15	B	Brown	Fines/Silt	East	Alpine	14.3	0.065	567.0
21-Jul-20	L5300N	6075E	Grab	346671	6218445	5	B	Brown	Fines/Silt	East	Alpine	11.8	0.037	411.0
21-Jul-20	L5300N	6100E	Grab	346695	6218454	5	B	Brown	Fines/Silt	East	Alpine	12.7	0.032	455.0
21-Jul-20	L5300N	6125E	Grab	346720	6218461	5	B	Brown	Fines/Silt	East	Alpine	11.5	0.018	243.0
21-Jul-20	L5300N	6150E	Grab	346744	6218466	15	B	Brown	Fines/Silt	East	Alpine	9.0	0.030	324.0
21-Jul-20	L5300N	6175E	Grab	346769	6218472	10	B	Brown	Fines/Silt	East	Alpine	3.2	0.011	63.6
21-Jul-20	L5300N	6200E	Grab	346793	6218475	15	B	Brown	Fines/Silt	East	Alpine	11.0	0.081	297.0
21-Jul-20	L5300N	6225E	Grab	346817	6218479	10	B	Brown	Fines/Silt	East	Alpine	5.5	0.021	164.5
21-Jul-20	L5300N	6250E	Grab	346839	6218484	15	B	Brown	Fines/Silt	East	Alpine	6.4	0.012	227.0
21-Jul-20	L5300N	6275E	Grab	346864	6218488	10	B	Brown	Fines/Silt	North	Alpine	9.9	0.023	262.0
21-Jul-20	L5300N	6300E	Grab	346889	6218492	10	B	Brown	Fines/Silt	North	Alpine	15.3	0.080	591.0
21-Jul-20	L5300N	6325E	Grab	346914	6218497	10	B	Brown	Fines/Silt	North	Alpine	22.6	0.351	2230.0
21-Jul-20	L5300N	6350E	Grab	346940	6218502	10	B	Brown	Fines/Silt	East	Brush/Trees	16.1	0.112	551.0
21-Jul-20	L5300N	6375E	Grab	346966	6218508	15	B	Brown	Fines/Silt	East	Brush/Trees	3.3	0.012	99.0
21-Jul-20	L5300N	6400E	Grab	346992	6218514	10	B	Brown	Fines/Silt	East	Brush/Trees	10.8	0.013	147.5
21-Jul-20	L5300N	6425E	Grab	347015	6218518	20	B	Brown	Fines/Silt	South	Brush/Trees	14.0	0.016	230.0
21-Jul-20	L5300N	6450E	Grab	347039	6218522	25	B	Brown	Fines/Silt	East	Brush/Trees	8.2	0.035	117.0
21-Jul-20	L5300N	6475E	Grab	347064	6218528	10	B	Brown	Fines/Silt	East	Brush/Trees	14.4	0.031	307.0
21-Jul-20	L5300N	6500E	Grab	347090	6218534	20	B	Brown	Fines/Silt	East	Brush/Trees	11.2	0.033	115.0
21-Jul-20	L5300N	6525E	Grab	347115	6218541	20	B	Brown	Fines/Silt	East	Brush/Trees	6.6	0.022	79.6
21-Jul-20	L5300N	6550E	Grab	347140	6218549	20	B	Brown	Fines/Silt	East	Brush/Trees	4.1	0.010	34.0
21-Jul-20	L5300N	6575E	Grab	347165	6218557	20	B	Brown	Fines/Silt	East	Brush/Trees	4.3	0.029	28.7
21-Jul-20	L5300N	6600E	Grab	347189	6218564	15	B	Brown	Fines/Silt	East	Brush/Trees	9.0	0.021	95.6
21-Jul-20	L5300N	6625E	Grab	347209	6218568	20	B	Brown	Fines/Silt	East	Brush/Trees	9.5	0.024	119.0
21-Jul-20	L5300N	6650E	NS	347230	6218573									
21-Jul-20	L5300N	6675E	Grab	347254	6218578	20	B	Brown	Fines/Silt	East	Talus	10.4	0.013	119.0
21-Jul-20	L5300N	6700E	Grab	347278	6218583	20	B	Brown	Fines/Silt	East	Brush/Trees	6.3	0.007	76.1
21-Jul-20	L5300N	6725E	Grab	347303	6218588	20	B	Brown	Fines/Silt	East	Brush/Trees	5.2	0.008	69.8
21-Jul-20	L5300N	6750E	Grab	347328	6218595	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	18.8	0.025	356.0
21-Jul-20	L5300N	6775E	Grab	347352	6218600	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	6.8	0.004	56.6
21-Jul-20	L5300N	6800E	Grab	347377	6218605	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	6.3	0.017	71.8
21-Jul-20	L5300N	6825E	Grab	347400	6218609	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	13.8	0.064	167.0
21-Jul-20	L5300N	6850E	Grab	347421	6218613	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	4.4	0.005	44.9

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
21-Jul-20	L5300N	6875E	Grab	347447	6218619	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	4.2	0.005	44.7
21-Jul-20	L5300N	6900E	Grab	347474	6218624	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	5.5	0.019	77.7
21-Jul-20	L5300N	6925E	Grab	347494	6218628	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	3.9	0.011	90.9
21-Jul-20	L5300N	6950E	Grab	347521	6218634	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.3	0.007	111.0
21-Jul-20	L5300N	6975E	Grab	347544	6218639	20	B	Brown	Fines/Silt	East	Brush/Trees	11.3	0.009	129.5
21-Jul-20	L5300N	7000E	Grab	347571	6218645	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	6.7	0.014	72.7
21-Jul-20	L5300N	7025E	Grab	347592	6218650	20	B	Brown	Fines/Silt	South	Brush/Trees	9.2	0.008	89.2
21-Jul-20	L5300N	7050E	Grab	347619	6218654	20	B	Brown	Fines/Silt	South	Brush/Trees	10.2	0.009	146.0
21-Jul-20	L5300N	7075E	Grab	347646	6218658	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	6.6	0.011	67.6
21-Jul-20	L5300N	7100E	Grab	347672	6218664	20	B	Brown	Fines/Silt	Flat-Open	Brush/Trees	9.9	0.006	129.0
21-Jul-20	L5300N	7125E	Grab	347695	6218669	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	12.2	0.008	140.0
21-Jul-20	L5300N	7150E	Grab	347721	6218674	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	12.7	0.006	92.6
21-Jul-20	L5300N	7175E	Grab	347744	6218679	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	8.2	0.016	107.0
21-Jul-20	L5300N	7200E	Grab	347767	6218685	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	6.6	0.066	150.5
21-Jul-20	L5300N	7225E	Grab	347791	6218689	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	6.7	0.010	53.3
21-Jul-20	L5300N	7250E	Grab	347814	6218694	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.3	0.011	141.5
21-Jul-20	L5300N	7275E	Grab	347840	6218699	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	8.7	0.005	130.5
21-Jul-20	L5300N	7300E	Grab	347863	6218704	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	14.0	0.013	235.0
21-Jul-20	L5300N	7325E	Grab	347884	6218709	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	10.3	0.013	165.0
21-Jul-20	L5300N	7350E	Grab	347911	6218716	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	8.5	0.010	112.5
21-Jul-20	L5300N	7375E	Grab	347936	6218724	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	10.6	0.015	154.5
21-Jul-20	L5300N	7400E	Grab	347960	6218733	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	3.6	0.007	43.3
21-Jul-20	L5300N	7425E	Grab	347987	6218737	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	2.3	0.015	84.1
21-Jul-20	L5300N	7450E	Grab	348008	6218743	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	5.2	0.013	85.7
21-Jul-20	L5300N	7475E	Grab	348034	6218750	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	8.4	0.014	134.5
21-Jul-20	L5300N	7500E	Grab	348058	6218757	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.6	0.011	72.0
21-Jul-20	L5300N	7525E	Grab	348079	6218762	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	3.8	0.027	53.9
21-Jul-20	L5300N	7550E	Grab	348104	6218767	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.1	0.048	77.9
21-Jul-20	L5300N	7575E	Grab	348131	6218773	20	B	Brown	Fines/Silt	Flat-Open	Grass	5.6	0.020	56.2
21-Jul-20	L5300N	7600E	Grab	348158	6218779	15	B	Brown	Fines/Silt	Flat-Open	Grass	5.9	0.013	147.0
21-Jul-20	L5300N	7625E	Grab	348181	6218784	10	B	Brown	Fines/Silt	flat-open	Grass	18.8	0.954	46.0
21-Jul-20	L5300N	7650E	Grab	348204	6218790	10	B	Brown	Fines/Silt	flat-valley	Brush/Trees	6.4	0.021	57.0
21-Jul-20	L5300N	7675E	Grab	348230	6218797	15	B	Brown	Fines/Silt	Flat-Open	Grass	52.1	0.031	234.0
21-Jul-20	L5300N	7700E	Grab	348257	6218804	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	19.1	0.200	135.0
21-Jul-20	L5300N	7725E	Grab	348280	6218811	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	15.5	0.013	117.5

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
21-Jul-20	L5300N	7750E	Grab	348304	6218817	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	10.4	0.039	131.0
21-Jul-20	L5300N	7775E	Grab	348329	6218823	20	B	Brown	Fines/Silt	East	Brush/Trees	11.3	0.020	44.7
21-Jul-20	L5300N	7800E	Grab	348355	6218828	20	B	Brown	Fines/Silt	East	Brush/Trees	5.5	0.098	32.7
21-Jul-20	L5300N	7825E	Grab	348381	6218833	15	B	Brown	Fines/Silt	East	Brush/Trees	13.5	0.015	221.0
21-Jul-20	L5300N	7850E	Grab	348402	6218836	15	B	Brown	Fines/Silt	East	Brush/Trees	10.1	0.021	42.3
21-Jul-20	L5300N	7875E	Grab	348422	6218840	20	B	Brown	Fines/Silt	East	Grass	33.6	0.018	645.0
21-Jul-20	L5300N	7900E	Grab	348443	6218843	15	B	Brown	Fines/Silt	East	Brush/Trees	15.9	0.091	158.5
21-Jul-20	L5300N	7925E	Grab	348468	6218848	20	B	Brown	Fines/Silt	East	Brush/Trees	10.8	0.075	103.5
21-Jul-20	L5300N	7950E	Grab	348495	6218854	20	B	Brown	Fines/Silt	East	Brush/Trees	15.7	0.017	76.7
21-Jul-20	L5300N	7975E	Grab	348518	6218861	20	B	Brown	Fines/Silt	South	Brush/Trees	17.9	0.016	119.0
21-Jul-20	L5300N	8000E	Grab	348546	6218868	15	B	Brown	Fines/Silt	South	Brush/Trees	15.6	0.020	159.0
21-Jul-20	L5300N	8025E	Grab	348576	6218876	20	B	Brown	Fines/Silt	South	Brush/Trees	2.7	0.041	15.1
21-Jul-20	L5300N	8050E	Grab	348598	6218883	20	B	Brown	Fines/Silt	South	Brush/Trees	8.0	0.015	106.5
21-Jul-20	L5300N	8075E	Grab	348620	6218888	15	B	Brown	Fines/Silt	South	Brush/Trees	14.9	0.013	167.5
17-Jul-20	L5300N	8100E	Grab	348639	6218894	20	B	Brown	Fines/Silt	South	Brush/Trees	16.1	0.538	118.0
17-Jul-20	L5300N	8125E	Grab	348664	6218898	15	B	Brown	Fines/Silt	South	Brush/Trees	9.3	0.171	103.0
17-Jul-20	L5300N	8150E	Grab	348687	6218904	15	B	Brown	Fines/Silt	South	Brush/Trees	14.1	0.011	109.0
17-Jul-20	L5300N	8175E	Grab	348712	6218910	20	B	Brown	Fines/Silt	South	Brush/Trees	46.7	0.022	134.5
17-Jul-20	L5300N	8200E	Grab	348733	6218915	25	B	Brown	Fines/Silt	South	Brush/Trees	14.9	0.015	111.5
17-Jul-20	L5300N	8225E	Grab	348757	6218921	20	B	Brown	Fines/Silt	South	Brush/Trees	22.6	0.010	126.5
17-Jul-20	L5300N	8250E	Grab	348779	6218926	20	B	Brown	Fines/Silt	East	Brush/Trees	12.0	0.047	117.0
17-Jul-20	L5300N	8275E	Grab	348807	6218931	20	B	Brown	Fines/Silt	East	Brush/Trees	10.7	0.064	159.0
17-Jul-20	L5300N	8300E	Grab	348836	6218935	20	B	Brown	Fines/Silt	East	Brush/Trees	4.5	0.011	52.9
17-Jul-20	L5300N	8325E	Grab	348858	6218939	20	B	Brown	Fines/Silt	East	Brush/Trees	4.2	0.013	53.8
17-Jul-20	L5300N	8350E	Grab	348884	6218944	15	B	Brown	Fines/Silt	East	Brush/Trees	8.4	0.011	146.5
17-Jul-20	L5300N	8375E	Grab	348908	6218947	20	B	Brown	Fines/Silt	East	Brush/Trees	5.4	0.010	91.0
17-Jul-20	L5300N	8400E	Grab	348932	6218950	20	B	Brown	Fines/Rocks	East	Brush/Trees	14.6	0.023	178.0
19-Jul-20	L5400N	6000E	Grab	346562	6218517	5	B	Brown	fines/silt	East	Talus	10.8	0.017	185.0
19-Jul-20	L5400N	6025E	NS	346595	6218519									
19-Jul-20	L5400N	6050E	NS	346624	6218521									
19-Jul-20	L5400N	6075E	NS	346650	6218524									
19-Jul-20	L5400N	6100E	Grab	346670	6218526	5	B	Brown	fines/silt	East	Talus	14.7	0.024	399.0
19-Jul-20	L5400N	6125E	NS	346693	6218530									
19-Jul-20	L5400N	6150E	NS	346717	6218537									
19-Jul-20	L5400N	6175E	NS	346745	6218547									

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
19-Jul-20	L5400N	6200E	Grab	346776	6218559	10	B	Brown	fines/silt	West	Alpine	5.8	0.014	170.0
19-Jul-20	L5400N	6225E	Grab	346805	6218568	10	B	Brown	fines/silt	West	Alpine	5.4	0.013	130.0
19-Jul-20	L5400N	6250E	Grab	346829	6218574	15	B	Brown	fines/silt	West	Alpine	8.3	0.039	256.0
19-Jul-20	L5400N	6275E	Grab	346853	6218578	15	B	Brown	fines/silt	North	Alpine	8.9	0.021	429.0
19-Jul-20	L5400N	6300E	Grab	346877	6218583	15	B	Brown	fines/silt	North	Alpine	8.5	0.025	380.0
19-Jul-20	L5400N	6325E	Grab	346898	6218588	15	B	Brown	fines/silt	North	Tallus	10.9	0.068	427.0
19-Jul-20	L5400N	6350E	Grab	346919	6218592	10	B	Brown	fines/silt	North	Alpine	8.4	0.027	335.0
19-Jul-20	L5400N	6375E	Grab	346947	6218598	10	B	Brown	fines/silt	North	Tallus	7.3	0.016	187.0
19-Jul-20	L5400N	6400E	Grab	346971	6218604	10	B	Brown	fines/silt	North	Alpine	15.4	0.058	293.0
19-Jul-20	L5400N	6425E	Grab	346994	6218609	10	B	Brown	fines/silt	North	Alpine	9.4	0.016	218.0
19-Jul-20	L5400N	6450E	Grab	347018	6218616	10	B	Brown	fines/silt	Flat-Open	Alpine	31.8	0.045	321.0
18-Jul-20	L5400N	6475E	Grab	347042	6218622	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	8.9	0.021	158.5
18-Jul-20	L5400N	6500E	Grab	347067	6218629	10	B	Brown	fines/silt	South	Brush/Trees	1.1	0.008	12.9
18-Jul-20	L5400N	6525E	Grab	347090	6218635	10	B	Brown	fines/silt	South	Brush/Trees	5.7	0.023	46.9
18-Jul-20	L5400N	6550E	Grab	347113	6218640	10	B	Brown	fines/silt	South	Brush/Trees	9.1	0.049	136.5
18-Jul-20	L5400N	6575E	Grab	347138	6218646	10	B	Brown	fines/silt	South	Brush/Trees	4.4	0.012	51.9
17-Jul-20	L5400N	6600E	Grab	347168	6218652	10	B	Brown	fines/silt	East	Brush/Trees	8.7	0.013	342.0
17-Jul-20	L5400N	6625E	Grab	347196	6218659	10	B	Brown	fines/silt	East	Brush/Trees	28.2	0.011	275.0
17-Jul-20	L5400N	6650E	Grab	347223	6218664	20	B	Brown	fines/silt	East	Brush/Trees	3.5	0.015	55.7
17-Jul-20	L5400N	6675E	Grab	347245	6218669	15	B	Brown	fines/silt	East	Brush/Trees	7.0	0.021	47.3
17-Jul-20	L5400N	6700E	Grab	347268	6218674	10	B	Brown	fines/silt	East	Brush/Trees	20.8	0.038	475.0
17-Jul-20	L5400N	6725E	Grab	347288	6218679	15	B	Brown	fines/silt	East	Brush/Trees	8.8	0.025	160.5
17-Jul-20	L5400N	6750E	Grab	347309	6218685	22	B	Brown	fines/silt	East	Brush/Trees	3.8	0.009	328.0
17-Jul-20	L5400N	6775E	Grab	347333	6218691	10	B	Brown	fines/silt	Flat-Valley	Brush/Trees	6.2	0.005	113.5
17-Jul-20	L5400N	6800E	Grab	347356	6218697	15	B	Brown	fines/silt	Flat-Valley	Grass	4.5	0.007	90.6
17-Jul-20	L5400N	6825E	Grab	347381	6218704	10	B	Brown	fines/silt	Flat-Valley	Brush/Trees	6.8	0.009	215.0
17-Jul-20	L5400N	6850E	Grab	347403	6218709	15	B	Brown	fines/silt	Flat-Valley	Brush/Trees	16.5	0.012	306.0
17-Jul-20	L5400N	6875E	Grab	347428	6218715	15	B	Brown	fines/silt	Flat-Valley	Grass	7.6	0.016	72.7
17-Jul-20	L5400N	6900E	Grab	347456	6218720	15	B	Brown	fines/silt	Flat-Valley	Grass	21.5	0.028	386.0
17-Jul-20	L5400N	6925E	Grab	347484	6218725	10	B	Brown	fines/silt	Flat-Valley	Grass	9.5	0.011	220.0
17-Jul-20	L5400N	6950E	Grab	347509	6218731	20	B	Brown	fines/silt	Flat-Valley	Grass	12.1	0.015	185.0
17-Jul-20	L5400N	6975E	Grab	347535	6218737	20	B	Brown	fines/silt	Flat-Valley	Grass	5.6	0.012	105.0
17-Jul-20	L5400N	7000E	Grab	347555	6218742	20	B	Brown	fines/silt	Flat-Valley	Grass	6.7	0.019	77.8
17-Jul-20	L5400N	7025E	Grab	347577	6218747	20	B	Brown	fines/silt	Flat-Valley	Brush/Trees	5.5	0.015	198.0
17-Jul-20	L5400N	7050E	Grab	347601	6218753	20	B	Brown	fines/silt	Flat-Valley	Grass	6.4	0.016	200.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
17-Jul-20	L5400N	7075E	Grab	347624	6218759	20	B	Brown	fines/silt	Flat-Valley	Grass	6.5	0.018	172.0
17-Jul-20	L5400N	7100E	Grab	347648	6218763	10	B	Brown	fines/silt	Flat-Open	Swamp	8.0	0.013	165.0
17-Jul-20	L5400N	7125E	Grab	347674	6218770	10	B	Brown	fines/silt	Flat-Open	Swamp	7.0	0.010	267.0
17-Jul-20	L5400N	7150E	Grab	347698	6218776	10	B	Brown	fines/silt	Flat-Open	Swamp	5.0	0.010	74.8
17-Jul-20	L5400N	7175E	Grab	347727	6218782	10	B	Brown	fines/silt	Flat-Open	Swamp	4.9	0.012	204.0
17-Jul-20	L5400N	7200E	Grab	347748	6218786	10	B	Brown	fines/silt	Flat-Open	Brush/Trees	5.1	0.008	244.0
17-Jul-20	L5400N	7225E	Grab	347774	6218791	15	B	Brown	fines/silt	Flat-Open	Swamp	6.0	0.015	244.0
17-Jul-20	L5400N	7250E	Grab	347798	6218797	10	B	Brown	fines/silt	Flat-Open	Swamp	5.7	0.013	168.5
17-Jul-20	L5400N	7275E	Grab	347822	6218801	15	B	Brown	fines/silt	Flat-Open	Swamp	7.5	0.017	205.0
17-Jul-20	L5400N	7300E	Grab	347848	6218808	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	9.2	0.015	213.0
17-Jul-20	L5400N	7325E	Grab	347874	6218813	15	B	Brown	finesRocks	Flat-Open	Brush/Trees	3.9	0.019	127.0
17-Jul-20	L5400N	7350E	Grab	347898	6218818	10	B	Brown	fines/silt	Flat-Open	Brush/Trees	5.0	0.013	77.2
17-Jul-20	L5400N	7375E	Grab	347922	6218824	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	11.7	0.028	97.1
17-Jul-20	L5400N	7400E	Grab	347947	6218829	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	8.9	0.020	157.5
17-Jul-20	L5400N	7425E	Grab	347970	6218834	10	B	Brown	fines/silt	Flat-Open	Brush/Trees	1.8	0.012	31.3
17-Jul-20	L5400N	7450E	Grab	347994	6218839	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	5.6	0.016	121.5
17-Jul-20	L5400N	7475E	Grab	348020	6218846	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	9.0	0.008	113.0
17-Jul-20	L5400N	7500E	Grab	348043	6218850	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	2.2	0.010	48.5
17-Jul-20	L5400N	7525E	Grab	348069	6218855	10	B	Brown	fines/silt	Flat-Open	Brush/Trees	11.0	0.007	118.5
17-Jul-20	L5400N	7550E	Grab	348095	6218859	10	B	Brown	fines/silt	Flat-Open	Brush/Trees	4.8	0.011	74.8
17-Jul-20	L5400N	7575E	Grab	348118	6218864	10	B	Brown	fines/silt	Flat-Open	Swamp	107.5	0.009	298.0
17-Jul-20	L5400N	7600E	Grab	348138	6218870	10	B	Brown	fines/silt	Flat-Open	Swamp	65.5	0.010	309.0
17-Jul-20	L5400N	7625E	Grab	348156	6218875	10	B	Brown	fines/silt	Flat-Open	Swamp	75.5	0.011	509.0
17-Jul-20	L5400N	7650E	Grab	348184	6218882	10	B	Brown	fines/silt	Flat-Open	Brush/Trees	10.0	0.008	84.4
17-Jul-20	L5400N	7675E	Grab	348209	6218890	5	B	Brown	fines/silt	Flat-Open	Brush/Trees	19.1	0.007	61.3
17-Jul-20	L5400N	7700E	Grab	348232	6218895	10	B	Brown	fines/silt	Flat-Open	Brush/Trees	18.6	0.026	81.2
17-Jul-20	L5400N	7725E	Grab	348256	6218900	10	B	Brown	fines/silt	Flat-Open	Brush/Trees	79.0	0.026	384.0
17-Jul-20	L5400N	7750E	Grab	348283	6218906	10	B	Brown	fines/silt	Flat-Open	Brush/Trees	51.4	0.012	253.0
17-Jul-20	L5400N	7775E	Grab	348310	6218912	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	9.5	0.013	61.6
17-Jul-20	L5400N	7800E	Grab	348334	6218918	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	11.4	0.015	91.7
17-Jul-20	L5400N	7825E	Grab	348359	6218924	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	13.8	0.010	297.0
17-Jul-20	L5400N	7850E	Grab	348384	6218930	15	B	Brown	fines/silt	Flat-Open	Brush/Trees	16.3	0.028	204.0
17-Jul-20	L5400N	7875E	Grab	348412	6218937	20	B	Brown	fines/silt	South	Brush/Trees	11.2	0.023	89.4
17-Jul-20	L5400N	7900E	Grab	348433	6218943	15	B	Brown	fines/silt	South	Brush/Trees	14.2	0.022	98.7
17-Jul-20	L5400N	7925E	Grab	348454	6218948	15	B	Brown	fines/silt	South	Brush/Trees	15.9	0.015	260.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
17-Jul-20	L5400N	7950E	Grab	348477	6218953	10	B	Brown	fines/silt	South	Brush/Trees	13.2	0.020	87.5
17-Jul-20	L5400N	7975E	Grab	348506	6218960	10	B	Brown	fines/silt	South	Brush/Trees	15.1	0.011	243.0
17-Jul-20	L5400N	8000E	Grab	348531	6218967	10	B	Brown	fines/silt	South	Brush/Trees	8.8	0.014	121.0
17-Jul-20	L5400N	8025E	Grab	348556	6218973	15	B	Brown	fines/silt	South	Brush/Trees	22.4	0.005	238.0
17-Jul-20	L5400N	8050E	Grab	348581	6218977	15	B	Brown	fines/silt	South	Brush/Trees	7.5	0.014	101.0
17-Jul-20	L5400N	8075E	Grab	348606	6218983	15	B	Brown	fines/silt	South	Brush/Trees	7.3	0.019	101.5
17-Jul-20	L5400N	8100E	Grab	348634	6218989	20	B	Brown	fines/silt	South	Brush/Trees	25.2	0.110	159.0
17-Jul-20	L5400N	8125E	Grab	348657	6218996	15	B	Brown	finesRocks	South	Brush/Trees	7.8	0.031	84.3
17-Jul-20	L5400N	8150E	Grab	348681	6219002	15	B	Brown	finesRocks	South	Brush/Trees	18.7	0.047	136.5
17-Jul-20	L5400N	8175E	Grab	348705	6219007	10	B	Brown	finesRocks	South	Brush/Trees	9.5	0.042	176.5
17-Jul-20	L5400N	8200E	Grab	348729	6219011	15	B	Brown	finesRocks	South	Brush/Trees	5.8	0.039	44.2
17-Jul-20	L5400N	8225E	Grab	348751	6219016	15	B	Brown	finesRocks	South	Brush/Trees	5.3	0.022	65.4
17-Jul-20	L5400N	8250E	Grab	348774	6219022	15	B	Brown	finesRocks	South	Brush/Trees	7.2	0.009	54.7
17-Jul-20	L5400N	8275E	Grab	348798	6219027	20	B	Brown	finesRocks	South	Brush/Trees	1.6	0.015	17.8
17-Jul-20	L5400N	8300E	Grab	348827	6219034	20	B	Brown	finesRocks	South	Brush/Trees	6.7	0.036	40.0
17-Jul-20	L5400N	8325E	Grab	348848	6219038	15	B	Brown	finesRocks	South	Brush/Trees	6.9	0.053	93.6
17-Jul-20	L5400N	8350E	Grab	348873	6219043	15	B	Brown	finesRocks	South	Brush/Trees	6.5	0.047	80.3
17-Jul-20	L5400N	8375E	Grab	348895	6219047	20	B	Brown	finesSilts	South	Brush/Trees	10.9	0.007	72.6
17-Jul-20	L5400N	8400E	Grab	348924	6219053	20	B	Brown	finesRocks	South	Brush/Trees	30.4	0.101	767.0
14-Jul-20	L5500N	6100E	NS	346641	6218675									
14-Jul-20	L5500N	6125E	Grab	346664	6218678	5	B	Brown	Fines/Silt	East	Alpine	12.8	0.281	63.6
14-Jul-20	L5500N	6150E	Grab	346690	6218680	20	B	Brown	Fines/Silt	East	Alpine	61.7	0.139	1190.0
14-Jul-20	L5500N	6175E	Grab	346713	6218687	10	B	Brown	Fines/Silt	East	Alpine	232.0	0.825	1990.0
14-Jul-20	L5500N	6200E	Grab	346739	6218688	15	B	Brown	Fines/Silt	East	Alpine	70.9	0.207	766.0
14-Jul-20	L5500N	6225E	Grab	346761	6218687	10	B	Brown	Fines/Silt	East	Alpine	28.8	0.097	865.0
14-Jul-20	L5500N	6250E	Grab	346784	6218691	25	B	Brown	Fines/Silt	East	Alpine	22.4	0.043	640.0
14-Jul-20	L5500N	6275E	Grab	346800	6218698	20	B	Brown	Fines/Rocks	East	Alpine	88.2	0.190	1430.0
14-Jul-20	L5500N	6300E	Grab	346833	6218706	5	B	Brown	Fines/Rocks	East	Alpine	25.9	0.047	771.0
14-Jul-20	L5500N	6325E	NS	346856	6218716									
14-Jul-20	L5500N	6350E	Grab	346882	6218722	5	B	Brown	Fines/Silt	East	Alpine	21.6	0.025	472.0
14-Jul-20	L5500N	6375E	Grab	346907	6218728	5	B	Brown	Fines/Silt	East	Alpine	15.6	0.026	795.0
14-Jul-20	L5500N	6400E	Grab	346930	6218733	10	B	Brown	Fines/Rocks	East	Alpine	15.4	0.015	285.0
14-Jul-20	L5500N	6425E	Grab	346956	6218742	15	B	Brown	Fines/Silt	East	Alpine	8.7	0.015	146.0
14-Jul-20	L5500N	6450E	Grab	346981	6218746	10	B	Brown	Fines/Silt	East	Alpine	16.6	0.040	638.0
14-Jul-20	L5500N	6475E	Grab	347006	6218751	15	B	Brown	Fines/Silt	Flat-Open	Alpine	14.8	0.019	299.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
14-Jul-20	L5500N	6500E	Grab	347027	6218764	10	B	Brown	Fines/Silt	Flat-Open	Alpine	10.9	0.024	271.0
15-Jul-20	L5500N	6525E	Grab	347053	6218768	15	B	Brown	Fines/Silt	Flat-Open	Alpine	10.7	0.022	324.0
15-Jul-20	L5500N	6550E	Grab	347080	6218773	15	B	Brown	Fines/Silt	Flat-Open	Alpine	14.7	0.023	244.0
15-Jul-20	L5500N	6575E	Grab	347104	6218777	15	B	Brown	Fines/Silt	Flat-Open	Alpine	22.3	0.034	284.0
15-Jul-20	L5500N	6600E	Grab	347126	6218782	15	B	Brown	Fines/Silt	East	Alpine	15.2	0.060	191.5
15-Jul-20	L5500N	6625E	Grab	347147	6218787	15	B	Brown	Fines/Silt	East	Alpine	20.4	0.052	300.0
15-Jul-20	L5500N	6650E	Grab	347168	6218792	20	B	Brown	Fines/Silt	East	Alpine	15.8	0.026	836.0
15-Jul-20	L5500N	6675E	Grab	347185	6218796	20	B	Brown	Fines/Silt	East	Brush/Trees	16.4	0.047	191.0
15-Jul-20	L5500N	6700E	Grab	347204	6218799	15	B	Brown	Fines/Silt	East	Brush/Trees	25.8	0.566	375.0
15-Jul-20	L5500N	6725E	Grab	347224	6218803	15	B	Brown	Fines/Silt	East	Brush/Trees	20.6	0.023	986.0
15-Jul-20	L5500N	6750E	Grab	347245	6218808	15	B	Brown	Fines/Silt	East	Brush/Trees	10.9	0.080	110.5
15-Jul-20	L5500N	6775E	Grab	347269	6218814	5	B	Brown	Fines/Silt	East	Brush/Trees	14.7	0.138	312.0
15-Jul-20	L5500N	6800E	Grab	347289	6218818	5	B	Brown	Fines/Silt	South	Brush/Trees	19.3	0.028	443.0
14-Jul-20	L5500N	6825E	Grab	347309	6218823	5	B	Brown	Fines/Silt	South	Brush/Trees	15.5	0.035	173.5
14-Jul-20	L5500N	6850E	Grab	347328	6218827	10	B	Brown	Fines/Silt	South	Brush/Trees	12.5	0.018	267.0
14-Jul-20	L5500N	6875E	Grab	347352	6218834	10	B	Brown	Fines/Silt	South	Brush/Trees	32.5	0.015	300.0
14-Jul-20	L5500N	6900E	Grab	347375	6218840	10	B	Brown	Fines/Silt	South	Brush/Trees	26.4	0.022	400.0
14-Jul-20	L5500N	6925E	Grab	347399	6218845	10	B	Brown	Fines/Silt	South	Brush/Trees	36.6	0.030	416.0
14-Jul-20	L5500N	6950E	Grab	347420	6218849	5	B	Brown	Fines/Silt	South	Brush/Trees	65.8	0.013	449.0
14-Jul-20	L5500N	6975E	Grab	347441	6218854	20	B	Brown	Fines/Silt	South	Brush/Trees	16.4	0.023	260.0
14-Jul-20	L5500N	7000E	Grab	347465	6218859	5	B	Brown	Fines/Silt	South	Brush/Trees	22.7	0.010	436.0
14-Jul-20	L5500N	7025E	Grab	347491	6218865	15	B	Brown	Fines/Silt	South	Brush/Trees	11.7	0.015	188.0
14-Jul-20	L5500N	7050E	Grab	347516	6218870	10	B	Brown	Fines/Silt	South	Brush/Trees	20.7	0.012	316.0
14-Jul-20	L5500N	7075E	Grab	347543	6218877	15	B	Brown	Fines/Silt	South	Brush/Trees	12.1	0.022	98.8
14-Jul-20	L5500N	7100E	Grab	347569	6218883	10	B	Brown	Fines/Silt	South	Brush/Trees	33.2	0.053	360.0
14-Jul-20	L5500N	7125E	Grab	347592	6218889	5	B	Brown	Fines/Silt	South	Brush/Trees	10.2	0.029	110.5
14-Jul-20	L5500N	7150E	Grab	347616	6218894	10	B	Brown	Fines/Silt	South	Brush/Trees	6.2	0.038	44.2
14-Jul-20	L5500N	7175E	Grab	347642	6218899	10	B	Brown	Fines/Rocks	South	Brush/Trees	11.0	0.021	87.2
14-Jul-20	L5500N	7200E	Grab	347668	6218906	10	B	Brown	Fines/Rocks	South	Brush/Trees	26.2	0.030	126.0
14-Jul-20	L5500N	7225E	Grab	347696	6218912	20	B	Brown	Fines/Rocks	South	Brush/Trees	8.9	0.050	65.7
14-Jul-20	L5500N	7250E	Grab	347719	6218918	10	B	Brown	Fines/Rocks	South	Brush/Trees	15.8	0.028	129.5
14-Jul-20	L5500N	7275E	Grab	347743	6218924	15	B	Brown	Fines/Rocks	South	Brush/Trees	6.3	0.037	80.7
14-Jul-20	L5500N	7300E	Grab	347768	6218929	15	B	Brown	Fines/Rocks	South	Brush/Trees	14.7	0.036	86.7
14-Jul-20	L5500N	7325E	Grab	347795	6218935	20	B	Brown	Fines/Rocks	South	Brush/Trees	16.2	0.028	98.8
14-Jul-20	L5500N	7350E	Grab	347820	6218940	15	B	Grey	Fines/Rocks	South	Brush/Trees	16.4	0.014	1250.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
14-Jul-20	L5500N	7375E	Grab	347843	6218946	15	B	Brown	Fines/Rocks	South	Brush/Trees	7.1	0.013	95.3
14-Jul-20	L5500N	7400E	Grab	347870	6218953	10	B	Grey	Fines/Rocks	South	Brush/Trees	6.2	0.028	41.2
14-Jul-20	L5500N	7425E	Grab	347896	6218959	20	B	Brown	Fines/Rocks	South	Brush/Trees	11.4	0.019	77.6
14-Jul-20	L5500N	7450E	Grab	347922	6218964	10	B	Brown	Fines/Rocks	South	Brush/Trees	8.4	0.015	92.8
14-Jul-20	L5500N	7475E	Grab	347944	6218969	20	B	Brown	Fines/Rocks	South	Brush/Trees	20.4	0.047	113.5
14-Jul-20	L5500N	7500E	Grab	347964	6218974	20	B	Brown	Fines/Rocks	South	Brush/Trees	64.6	0.014	157.0
14-Jul-20	L5500N	7525E	Grab	347985	6218979	15	B	Brown	Fines/Rocks	South	Brush/Trees	2.0	0.026	28.9
16-Jul-20	L5500N	7550E	Grab	348010	6218985	10	B	Brown	Fines/Rocks	South	Brush/Trees	9.6	0.054	59.8
16-Jul-20	L5500N	7575E	Grab	348037	6218992	10	B	Brown	Fines/Silt	South	Brush/Trees	1.1	0.031	12.1
16-Jul-20	L5500N	7600E	Grab	348063	6218999	10	B	Brown	Fines/Silt	South	Brush/Trees	18.7	0.015	605.0
16-Jul-20	L5500N	7625E	Grab	348086	6219005	5	B	Brown	Fines/Silt	South	Brush/Trees	19.1	0.018	622.0
16-Jul-20	L5500N	7650E	Grab	348113	6219011	15	B	Brown	Fines/Silt	South	Brush/Trees	33.0	0.009	347.0
16-Jul-20	L5500N	7675E	Grab	348136	6219016	10	B	Brown	Fines/Silt	South	Brush/Trees	41.7	0.016	895.0
16-Jul-20	L5500N	7700E	Grab	348161	6219022	10	B	Brown	Fines/Rocks	South	Brush/Trees	13.9	0.025	75.5
16-Jul-20	L5500N	7725E	Grab	348186	6219029	15	B	Brown	Fines/Rocks	South	Brush/Trees	16.5	0.058	285.0
16-Jul-20	L5500N	7750E	Grab	348210	6219035	10	B	Brown	Fines/Rocks	South	Brush/Trees	65.1	0.042	433.0
16-Jul-20	L5500N	7775E	Grab	348234	6219041	15	B	Brown	Fines/Silt	South	Brush/Trees	167.0	0.018	297.0
16-Jul-20	L5500N	7800E	Grab	348258	6219046	30	B	Brown	Fines/Rocks	South	Brush/Trees	17.9	0.013	41.7
16-Jul-20	L5500N	7825E	Grab	348283	6219051	10	B	Brown	Fines/Rocks	South	Brush/Trees	17.3	0.029	106.0
16-Jul-20	L5500N	7850E	Grab	348308	6219057	15	B	Brown	Fines/Rocks	South	Brush/Trees	29.1	0.085	278.0
16-Jul-20	L5500N	7875E	Grab	348333	6219062	20	B	Brown	Fines/Rocks	South	Brush/Trees	15.9	0.015	157.0
16-Jul-20	L5500N	7900E	Grab	348356	6219068	15	B	Brown	Fines/Rocks	South	Brush/Trees	30.8	0.017	169.5
16-Jul-20	L5500N	7925E	Grab	348379	6219073	15	B	Brown	Fines/Rocks	South	Brush/Trees	95.5	0.036	182.0
16-Jul-20	L5500N	7950E	Grab	348404	6219079	20	B	Brown	Fines/Rocks	South	Brush/Trees	23.9	0.013	243.0
16-Jul-20	L5500N	7975E	Grab	348429	6219085	15	B	Brown	Fines/Rocks	South	Brush/Trees	7.2	0.023	61.1
16-Jul-20	L5500N	8000E	Grab	348455	6219090	15	B	Brown	Fines/Rocks	South	Brush/Trees	37.9	0.018	177.0
16-Jul-20	L5500N	8025E	Grab	348476	6219094	20	B	Brown	Fines/Rocks	South	Brush/Trees	22.6	0.020	127.0
16-Jul-20	L5500N	8050E	Grab	348497	6219098	25	B	Brown	Fines/Rocks	South	Brush/Trees	30.7	0.020	207.0
16-Jul-20	L5500N	8075E	Grab	348523	6219104	25	B	Brown	Fines/Rocks	South	Brush/Trees	19.8	0.007	202.0
16-Jul-20	L5500N	8100E	Grab	348551	6219110	20	B	Brown	Fines/Rocks	South	Brush/Trees	10.6	0.067	97.2
14-Jul-20	L5500N	8125E	Grab	348581	6219118	20	B	Brown	Fines/Silt	South	Brush/Trees	4.4	0.026	40.0
14-Jul-20	L5500N	8150E	Grab	348605	6219124	20	B	Brown	Fines/Rocks	South	Brush/Trees	22.9	0.070	78.3
14-Jul-20	L5500N	8175E	Grab	348627	6219131	10	B	Brown	Fines/Silt	South	Brush/Trees	19.1	0.019	89.6
14-Jul-20	L5500N	8200E	Grab	348652	6219136	15	B	Brown	Fines/Rocks	South	Brush/Trees	19.8	0.007	86.6
14-Jul-20	L5500N	8225E	Grab	348679	6219141	15	B	Brown	Fines/Rocks	South	Brush/Trees	15.8	0.014	119.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
14-Jul-20	L5500N	8250E	Grab	348704	6219145	15	B	Brown	Fines/Rocks	South	Brush/Trees	16.4	0.008	72.7
14-Jul-20	L5500N	8275E	Grab	348729	6219149	20	B	Brown	Fines/Rocks	South	Brush/Trees	38.7	0.004	108.5
14-Jul-20	L5500N	8300E	Grab	348753	6219152	15	B	Brown	Fines/Rocks	South	Brush/Trees	10.3	0.006	63.4
14-Jul-20	L5500N	8325E	Grab	348774	6219155	15	B	Brown	Fines/Rocks	South	Brush/Trees	12.7	0.005	63.8
14-Jul-20	L5500N	8350E	Grab	348799	6219158	15	B	Brown	Fines/Rocks	South	Brush/Trees	10.3	0.005	61.2
14-Jul-20	L5500N	8375E	Grab	348825	6219162	15	B	Brown	Fines/Rocks	South	Brush/Trees	10.6	0.002	64.8
14-Jul-20	L5500N	8400E	Grab	348854	6219166	15	B	Brown	Fines/Rocks	South	Brush/Trees	13.4	0.004	80.7
05-Aug-20	L6350E	4900N	Grab	346594	6218218	10	B	Brown	Fines/Silt	South	Alpine	10.1	0.029	575.0
05-Aug-20	L6350E	4950N	Grab	346632	6218258	15	B	Brown	Fines/Silt	South	Alpine	8.7	0.009	291.0
05-Aug-20	L6350E	5000N	Grab	346665	6218290	15	B	Brown	Fines/Silt	South	Alpine	8.6	0.034	156.5
05-Aug-20	L6350E	5050N	Grab	346704	6218334	5	B	Brown	Fines/Silt	East	Alpine	10.3	0.017	293.0
05-Aug-20	L6350E	5100N	Grab	346737	6218371	15	B	Brown	Fines/Silt	East	Alpine	8.4	0.013	457.0
05-Aug-20	L6350E	5150N	Grab	346767	6218406	5	B	Brown	Fines/Silt	East	Alpine	26.7	0.027	267.0
05-Aug-20	L6350E	5200N	Grab	346804	6218444	15	B	Brown	Fines/Silt	East	Alpine	9.8	0.015	356.0
05-Aug-20	L6350E	5250N	Grab	346836	6218476	15	B	Brown	Fines/Silt	East	Alpine	6.4	0.005	161.5
05-Aug-20	L6350E	5300N	Grab	346874	6218517	10	B	Brown	Fines/Silt	East	Alpine	10.1	0.024	173.5
05-Aug-20	L6350E	5350N	Grab	346906	6218558	10	B	Brown	Fines/Silt	East	Alpine	9.1	0.023	409.0
05-Aug-20	L6350E	5400N	Grab	346934	6218595	10	B	Brown	Fines/Silt	East	Alpine	8.2	0.017	238.0
05-Aug-20	L6350E	5450N	NS											
05-Aug-20	L6350E	5500N	Grab	346999	6218663	10	B	Brown	Fines/Silt	East	Alpine	8.3	0.053	236.0
05-Aug-20	L6350E	5550N	Grab	347036	6218704	20	B	Brown	Fines/Silt	Flat-Valley	Alpine	10.0	0.024	202.0
05-Aug-20	L6350E	5600N	Grab	347070	6218742	15	B	Brown	Fines/Silt	Flat-Valley	Alpine	9.2	0.037	97.2
05-Aug-20	L6350E	5650N	Grab	347103	6218780	15	B	Brown	Fines/Silt	East	Alpine	32.2	0.029	202.0
05-Aug-20	L6350E	5700N	Grab	347136	6218819	20	B	Brown	Fines/Silt	East	Brush/Trees	38.2	0.018	900.0
05-Aug-20	L6350E	5750N	Grab	347169	6218858	20	B	Brown	Fines/Silt	East	Brush/Trees	28.5	0.075	234.0
05-Aug-20	L6350E	5800N	NS	347201	6218895									
06-Aug-20	L6650E	4400N	Grab	347440	6217667	10	B	Brown	Fines/Silt	North	Talus	17.8	0.012	572.0
06-Aug-20	L6650E	4450N	Grab	347435	6217717	15	B	Brown	Fines/Silt	North	Alpine	8.8	0.008	154.5
06-Aug-20	L6650E	4500N	Grab	347430	6217771	15	B	Brown	Fines/Silt	North	Alpine	12.0	0.029	178.0
06-Aug-20	L6650E	4550N	Grab	347428	6217817	15	B	Brown	Fines/Silt	North	Alpine	9.5	0.010	152.5
06-Aug-20	L6650E	4600N	Grab	347424	6217868	15	B	Brown	Fines/Silt	North	Alpine	7.3	0.002	84.2
06-Aug-20	L6650E	4650N	Grab	347419	6217916	20	B	Brown	Fines/Silt	North	Alpine	8.1	0.004	119.5
06-Aug-20	L6650E	4700N	Grab	347415	6217967	15	B	Brown	Fines/Silt	North	Alpine	12.8	0.004	147.5
06-Aug-20	L6650E	4750N	Grab	347412	6218018	10	B	Brown	Fines/Silt	North	Alpine	9.8	0.010	133.0
06-Aug-20	L6650E	4800N	Grab	347407	6218067	10	B	Brown	Fines/Silt	North	Brush/Trees	9.5	0.001	102.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
06-Aug-20	L6650E	4850N	Grab	347404	6218116	25	B	Brown	Fines/Silt	North	Brush/Trees	6.9	0.002	102.0
06-Aug-20	L6650E	4900N	Grab	347399	6218165	15	B	Brown	Fines/Silt	North	Brush/Trees	8.3	0.013	252.0
06-Aug-20	L6650E	4950N	Grab	347394	6218217	15	B	Brown	Fines/Silt	North	Brush/Trees	7.1	0.007	154.0
06-Aug-20	L6650E	5000N	Grab	347388	6218265	15	B	Brown	Fines/Silt	North	Brush/Trees	10.6	0.033	332.0
06-Aug-20	L6650E	5050N	Grab	347380	6218314	10	B	Brown	Fines/Silt	North	Brush/Trees	8.5	0.029	81.5
06-Aug-20	L6650E	5100N	Grab	347372	6218367	15	B	Brown	Fines/Silt	North	Alpine	11.0	0.012	128.5
06-Aug-20	L6650E	5150N	Grab	347363	6218414	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	10.6	0.010	169.0
06-Aug-20	L6650E	5200N	Grab	347355	6218464	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	8.9	0.058	78.0
06-Aug-20	L6650E	5250N	Grab	347347	6218513	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	11.2	0.023	485.0
06-Aug-20	L6650E	5300N	Grab	347337	6218561	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	29.3	0.044	417.0
06-Aug-20	L6650E	5350N	Grab	347328	6218610	15	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	20.7	0.014	189.5
06-Aug-20	L6650E	5400N	Grab	347320	6218660	10	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	7.5	0.017	98.0
06-Aug-20	L6650E	5450N	Grab	347312	6218711	20	B	Brown	Fines/Silt	Flat-Valley	Brush/Trees	12.2	0.016	155.5
06-Aug-20	L6650E	5500N	NS	347302	6218761									
06-Aug-20	L6650E	5550N	NS	347290	6218807									
06-Aug-20	L6650E	5600N	NS	347281	6218856									
06-Aug-20	L6650E	5650N	NS	347272	6218899									
06-Aug-20	L6650E	5700N	NS	347264	6218941									
05-Aug-20	L6350E	5850N	Grab	347238	6218936	15	B	Brown	Fines/Silt	East	Brush/Trees	31.6	0.177	570.0
13-Aug-20	17400N	4500E	Grab	339628	6222452	5	B	Brown	Fines/Silt	South	Alpine	1.0	0.015	469.0
13-Aug-20	17400N	4550E	Grab	339669	6222477	10	B	Brown	Fines/Silt	South	Alpine	1.1	0.013	376.0
13-Aug-20	17400N	4600E	Grab	339714	6222498	15	B	Brown	Fines/Silt	South	Brush/Trees	1.2	0.011	277.0
13-Aug-20	17400N	4650E	Grab	339751	6222522	10	B	Brown	Fines/Silt	South	Brush/Trees	1.5	0.011	151.0
13-Aug-20	17400N	4700E	Grab	339794	6222548	10	B	Brown	Fines/Silt	South	Brush/Trees	1.7	0.009	236.0
13-Aug-20	17400N	4750E	Grab	339837	6222566	5	B	Brown	Fines/Silt	South	Brush/Trees	2.2	0.010	181.0
13-Aug-20	17400N	4800E	Grab	339885	6222584	15	B	Brown	Fines/Silt	South	Brush/Trees	1.6	0.008	188.0
13-Aug-20	17400N	4850E	Grab	339935	6222597	25	B	Brown	Fines/Silt	South	Brush/Trees	1.2	0.007	61.2
13-Aug-20	17400N	4900E	Grab	339977	6222615	10	B	Brown	Fines/Silt	South	Talus	1.4	0.013	182.0
13-Aug-20	17400N	4950E	Grab	340025	6222638	30	B	Brown	Fines/Silt	South	Talus	0.8	0.007	74.5
13-Aug-20	17400N	5000E	Grab	340070	6222659	10	B	Brown	Fines/Silt	West	Tallus	1.3	0.006	81.6
13-Aug-20	17400N	5050E	Grab	340116	6222678	35	B	Brown	Fines/Silt	South	Alpine	1.8	0.007	104.0
13-Aug-20	17400N	5100E	Grab	340162	6222698	10	B	Brown	Fines/Silt	South	Alpine	1.4	0.008	58.3
13-Aug-20	17400N	5150E	Grab	340207	6222720	20	B	Brown	Fines/Silt	South	Alpine	1.3	0.013	53.4
13-Aug-20	17400N	5200E	Grab	340251	6222741	45	B	Brown	Fines/Silt	Flat-Open	Alpine	2.2	0.007	124.5
13-Aug-20	17400N	5250E	Grab	340295	6222760	15	B	Brown	Fines/Silt	Flat-Open	Alpine	1.0	0.012	68.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
13-Aug-20	17400N	5300E	Grab	340343	6222784	10	B	Brown	Fines/Silt	Flat-Open	Alpine	1.6	0.007	171.5
13-Aug-20	17400N	5350E	Grab	340388	6222804	15	B	Brown	Fines/Silt	Flat-Open	Alpine	3.0	0.015	309.0
13-Aug-20	17400N	5400E	NS	340435	6222825									
13-Aug-20	17400N	5450E	Grab	340486	6222845	30	B	Brown	Fines/Silt	West	Alpine	1.3	0.009	133.5
13-Aug-20	17400N	5500E	Grab	340525	6222864	10	B	Brown	Fines/Silt	West	Alpine	1.5	0.009	114.5
13-Aug-20	17400N	5550E	Grab	340572	6222889	25	B	Brown	Fines/Silt	West	Alpine	1.6	0.009	146.0
13-Aug-20	17400N	5600E	Grab	340620	6222910	15	B	Brown	Fines/Silt	West	Talus	3.5	0.009	251.0
13-Aug-20	17400N	5650E	Grab	340662	6222923	10	B	Brown	Fines/Silt	West	Talus	1.1	0.005	73.3
13-Aug-20	17400N	5700E	Grab	340709	6222946	5	B	Brown	Fines/Silt	West	Talus	1.5	0.007	309.0
13-Aug-20	17400N	5750E	Grab	340755	6222964	5	B	Brown	Fines/Silt	West	Talus	1.4	0.009	130.0
13-Aug-20	17400N	5800E	Grab	340799	6222984	10	B	Brown	Fines/Silt	West	Talus	1.7	0.005	87.5
13-Aug-20	17400N	5850E	NS	340843	6223000									
13-Aug-20	17400N	5900E	Grab	340875	6223013	5	B	Brown	Sand	West	Alpine	2.8	0.015	623.0
13-Aug-20	17400N	5950E	Grab	340916	6223031	15	B	Brown	Sand	West	Alpine	2.0	0.005	69.6
13-Aug-20	17400N	6000E	Grab	340951	6223047	15	B	Brown	Sand	West	Alpine	3.3	0.012	94.9
19-Aug-20	23900N	4500E	Grab	339920	6234240	20	B	Brown	Fines/Silt	East	Alpine	7.3	0.011	368.0
19-Aug-20	23900N	4525E	Grab	339934	6234260	20	B	Brown	Fines/Silt	East	Alpine	6.0	0.010	203.0
19-Aug-20	23900N	4550E	Grab	339948	6234280	15	B	Brown	Fines/Silt	East	Alpine	6.3	0.015	184.5
19-Aug-20	23900N	4575E	Grab	339962	6234301	15	B	Brown	Fines/Silt	East	Alpine	6.5	0.021	248.0
19-Aug-20	23900N	4600E	Grab	339976	6234322	10	B	Brown	Fines/Silt	Flat-Open	Alpine	8.0	0.014	207.0
19-Aug-20	23900N	4625E	Grab	339989	6234343	15	B	Brown	Fines/Silt	Flat-Open	Alpine	5.4	0.009	155.5
19-Aug-20	23900N	4650E	Grab	339999	6234362	10	B	Brown	Fines/Silt	West	Talus	4.5	0.007	158.5
19-Aug-20	23900N	4675E	Grab	340011	6234391	10	B	Brown	Fines/Silt	Flat-Open	Alpine	6.8	0.011	175.0
19-Aug-20	23900N	4700E	Grab	340021	6234413	10	B	Brown	Fines/Silt	Flat-Open	Alpine	4.3	0.055	145.5
19-Aug-20	23900N	4725E	Grab	340034	6234438	15	B	Brown	Fines/Silt	West	Alpine	4.4	0.025	180.5
19-Aug-20	23900N	4750E	Grab	340048	6234456	5	B	Brown	Fines/Silt	West	Alpine	3.7	0.020	144.0
19-Aug-20	23900N	4775E	Grab	340060	6234478	10	B	Brown	Fines/Silt	Flat-Open	Alpine	3.9	0.025	192.5
19-Aug-20	23900N	4800E	Grab	340077	6234491	25	B	Brown	Fines/Silt	East	Alpine	3.7	0.025	160.0
19-Aug-20	23900N	4825E	Grab	340100	6234502	15	B	Brown	Fines/Silt	East	Alpine	5.4	0.017	186.5
19-Aug-20	23900N	4850E	Grab	340124	6234516	20	B	Brown	Fines/Silt	East	Alpine	4.0	0.013	120.0
19-Aug-20	23900N	4875E	Grab	340149	6234529	15	B	Brown	Fines/Silt	East	Alpine	3.9	0.004	113.5
19-Aug-20	23900N	4900E	Grab	340168	6234540	10	B	Brown	Fines/Silt	East	Alpine	4.6	0.004	130.0
19-Aug-20	23900N	4925E	Grab	340189	6234550	25	B	Brown	Fines/Silt	East	Alpine	4.3	0.008	101.0
19-Aug-20	23900N	4950E	Grab	340211	6234562	25	B	Brown	Fines/Silt	East	Alpine	4.3	0.041	166.0
19-Aug-20	23900N	4975E	Grab	340231	6234574	20	B	Brown	Fines/Silt	West	Alpine	5.2	0.008	142.0

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
19-Aug-20	23900N	5000E	Grab	340255	6234585	20	B	Brown	Fines/Silt	South	Alpine	5.5	0.007	79.0
19-Aug-20	23900N	5025E	Grab	340276	6234599	10	B	Brown	Fines/Silt	South	Alpine	7.0	0.005	100.0
19-Aug-20	23900N	5050E	Grab	340299	6234608	25	B	Brown	Fines/Silt	South	Alpine	5.3	0.004	55.8
19-Aug-20	23900N	5075E	Grab	340324	6234614	15	B	Brown	Fines/Silt	South	Alpine	7.5	0.009	69.4
19-Aug-20	23900N	5100E	Grab	340345	6234626	15	B	Brown	Fines/Silt	South	Alpine	7.9	0.005	67.8
19-Aug-20	23900N	5125E	Grab	340368	6234635	40	B	Brown	Fines/Silt	South	Alpine	5.7	0.007	95.5
19-Aug-20	23900N	5150E	NS	340393	6234647									
19-Aug-20	23900N	5175E	Grab	340415	6234655	15	B	Brown	Fines/Silt	West	Alpine	5.8	0.003	77.0
19-Aug-20	23900N	5200E	NS	340437	6234667									
19-Aug-20	23900N	5225E	Grab	340461	6234678	10	B	Brown	Fines/Rocks	West	Alpine	5.4	0.003	103.5
19-Aug-20	23900N	5250E	Grab	340484	6234688	10	B	Brown	Fines/Silt	West	Alpine	4.9	0.007	59.7
16-Aug-20	24000N	4800E	Grab	340035	6234580	10	B	Brown	Fines/Silt	West	Talus	2.7	0.005	239.0
16-Aug-20	24000N	4825E	Grab	340053	6234595	10	B	Brown	Fines/Silt	West	Talus	8.6	0.005	210.0
16-Aug-20	24000N	4850E	Grab	340076	6234603	10	B	Brown	Fines/Silt	West	Talus	1.9	0.005	154.5
16-Aug-20	24000N	4875E	Grab	340100	6234616	10	B	Brown	Fines/Silt	Flat-Open	Alpine	4.1	0.011	185.0
16-Aug-20	24000N	4900E	Grab	340120	6234628	15	B	Brown	Fines/Silt	South	Alpine	4.1	0.006	162.0
16-Aug-20	24000N	4925E	Grab	340141	6234640	10	B	Brown	Fines/Silt	South	Alpine	3.8	0.017	132.5
16-Aug-20	24000N	4950E	Grab	340166	6234650	5	B	Brown	Fines/Silt	South	Alpine	3.9	0.007	140.0
16-Aug-20	24000N	4975E	Grab	340184	6234665	10	B	Brown	Fines/Silt	South	Alpine	3.7	0.005	128.0
16-Aug-20	24000N	5000E	Grab	340205	6234678	15	B	Brown	Fines/Silt	South	Talus	3.9	0.007	152.5
16-Aug-20	24000N	5025E	Grab	340227	6234691	5	B	Brown	Fines/Silt	South	Talus	3.8	0.008	198.0
16-Aug-20	24000N	5050E	Grab	340250	6234707	10	B	Brown	Fines/Silt	South	Talus	5.5	0.011	135.5
16-Aug-20	24000N	5075E	Grab	340272	6234719	10	B	Brown	Fines/Silt	South	Alpine	4.9	0.005	110.0
16-Aug-20	24000N	5100E	NS	340292	6234730									
17-Aug-20	24000N	5125E	Grab	340313	6234742	10	B	Brown	Fines/Silt	Flat-Open	Alpine	6.6	0.005	87.5
17-Aug-20	24000N	5150E	Grab	340333	6234756	10	B	Brown	Fines/Silt	West	Alpine	6.8	0.008	131.5
17-Aug-20	24000N	5175E	NS	340353	6234770									
17-Aug-20	24000N	5200E	Grab	340375	6234785	5	B	Brown	Fines/Silt	West	Talus	4.7	0.006	234.0
17-Aug-20	24000N	5225E	Grab	340395	6234798	10	B	Brown	Fines/Silt	West	Alpine	6.7	0.005	189.5
17-Aug-20	24000N	5250E	Grab	340417	6234812	20	B	Brown	Fines/Silt	West	Alpine	6.0	0.004	397.0
17-Aug-20	24000N	5275E	Grab	340437	6234823	15	B	Brown	Fines/Silt	West	Alpine	5.6	0.009	168.5
17-Aug-20	24000N	5300E	Grab	340459	6234837	20	B	Brown	Fines/Silt	West	Alpine	4.4	0.003	101.0
17-Aug-20	24000N	5325E	Grab	340483	6234849	15	B	Brown	Fines/Silt	West	Alpine	4.4	0.003	93.5
17-Aug-20	24000N	5350E	Grab	340504	6234862	7	B	Brown	Fines/Silt	West	Alpine	4.9	0.014	242.0
17-Aug-20	24000N	5375E	Grab	340524	6234877	10	B	Brown	Fines/Silt	West	Alpine	5.1	0.004	74.1

Appendix IIb Soil Sample Details

DATE	LINE	STATION	SAMPLE TYPE	E_UTM	N_UTM	DEPTH (cm)	HORIZON	COLOUR	MATERIAL	SLOPE	SITE	As (ppm)	Au (ppm)	Cu (ppm)
17-Aug-20	24000N	5400E	Grab	340545	6234888	25	B	Brown	Fines/Silt	West	Alpine	5.2	0.002	97.4
17-Aug-20	24000N	5425E	Grab	340568	6234902	20	B	Brown	Fines/Silt	West	Alpine	2.7	0.002	192.5
17-Aug-20	24000N	5450E	Grab	340588	6234918	20	B	Brown	Fines/Silt	West	Alpine	6.1	0.002	172.5
17-Aug-20	24000N	5475E	Grab	340610	6234930	15	B	Brown	Fines/Silt	West	Alpine	6.5	0.003	149.5
17-Aug-20	24000N	5500E	Grab	340632	6234944	15	B	Brown	Fines/Silt	West	Talus	12.1	0.007	172.0
17-Aug-20	24000N	5525E	Grab	340649	6234957	15	B	Brown	Sand	West	Talus	38.1	0.011	158.5
17-Aug-20	24000N	5550E	Grab	340672	6234970	25	B	Brown	Fines/Silt	West	Talus	58.7	0.011	185.0
17-Aug-20	24000N	5575E	Grab	340693	6234988	15	B	Brown	Fines/Silt	South	Talus	29.3	0.010	167.0
17-Aug-20	24000N	5600E	Grab	340713	6234999	25	B	Brown	Sand	South	Talus	22.4	0.010	182.0
17-Aug-20	24000N	5625E	Grab	340733	6235010	10	B	Brown	Fines/Silt	South	Alpine	10.6	0.004	108.5
17-Aug-20	24000N	5650E	Grab	340755	6235026	5	B	Brown	Fines/Silt	South	Alpine	19.5	0.015	113.5
17-Aug-20	24000N	5675E	Grab	340778	6235036	15	B	Brown	Fines/Silt	East	Alpine	12.5	0.004	94.7
17-Aug-20	24000N	5700E	Grab	340799	6235052	20	B	Brown	Fines/Silt	East	Alpine	6.9	0.003	80.0
17-Aug-20	24000N	5725E	Grab	340818	6235064	5	B	Brown	Fines/Silt	East	Talus	12.3	0.011	129.5
17-Aug-20	24000N	5750E	Grab	340838	6235077	15	B	Brown	Fines/Silt	East	Talus	10.7	0.007	112.5
17-Aug-20	24000N	5775E	Grab	340858	6235095	15	B	Brown	Fines/Silt	East	Talus	12.9	0.012	211.0
17-Aug-20	24000N	5800E	Grab	340882	6235111	10	C	Brown	Fines/Rocks	East	Talus	7.8	0.013	135.0
17-Aug-20	24000N	5825E	NS	340902	6235123									
17-Aug-20	24000N	5850E	Grab	340922	6235143	20	B	Brown	Fines/Silt	East	Talus	13.8	0.028	181.0
17-Aug-20	24000N	5875E	NS	340946	6235152									
17-Aug-20	24000N	5900E	Grab	340969	6235163	25	B	Brown	Fines/Silt	East	Alpine	17.1	0.013	126.0
17-Aug-20	24000N	5925E	Grab	340990	6235174	10	B	Brown	Fines/Rocks	East	Talus	26.0	0.045	153.0
17-Aug-20	24000N	5950E	Grab	341015	6235182	5	C	Brown	Fines/Rocks	East	Talus	54.6	0.025	184.0
17-Aug-20	24000N	5975E	Grab	341036	6235192	5	C	Brown	Fines/Rocks	East	Talus	70.7	0.015	252.0
17-Aug-20	24000N	6000E	Grab	341060	6235200	10	C	Grey	Fines/Rocks	East	Talus	65.1	0.020	225.0

APPENDIX II
SAMPLE DETAIL

c. Rock Samples

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
14-Jul-20	2251	347095	6218586	Grab		Diorite	Relict mg-cg textures representative of diorite through pervasive k-spar+ser altrd lathe like plag. All mafics appear to be altrd to variable chl+ser potentially after bt? and dissem, blebby Cpy+Py. All primary mt replaced by sphene, hematite and locally Fe-oxidized py+/-cpy.	0.217	K-spar	4	Pervasive	Chl	3	Mafic selective_FF	Ser	3	Plag Selective	Py	2.0	dissem_FF	Cpy	1.0	dissem_FF			
14-Jul-20	2252	347093	6218593	Grab		Breccia	Basically a semi-consolidated polylithic, limonitic ferricrete conglomeritic breccia. Contains sub-rounded to sub-angular, unmineralized, fine sand to medium sized pebble fragments of variable K-spar, Albite, Sericite, Act and Epi altered diorite within a dark brownish red gossonous wkly cemented matrix. Breccia contact is sharp w/ patchy K-spar+Ser+Chl altrd diorite. No sulphides noted w/n altrd host and or breccia.	17.310	K-spar	3	Patchy	Ser	3	Patchy	FeOx	3	Pervasive									
15-Jul-20	2253	346778	6218349	Grab		Vein	Massive cream colored to pale green qtz vein. Vein contains pervasive intense chl altrd seemingly sheared margins in addition to chl altrd fractures and blobs w/n vein. Cacb hairline Fe-oxidized fractures post date veining and potential shearing are infilled w/ vfg-cg, blebby and likely remobilized cpy.	0.383	Chl	3	Vein halo_FF	FeOx	3	Patchy_FF	Cacb	3	Patchy_FF	Cpy	1.0	dissem_BB_FF	Py	0.5	dissem_BB_FF	Vein		48

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
15-Jul-20	2254	346540	6218012	Chip	0.30	Diorite	Primary textures appear as silicified and mod chl fractured and sheared felsics elongated into a foliation plane that are sub-rounded and frequently embayed. All mafics chl altrd and foliated into foliation as is primary mt altrd to hem and potentially sphene? Late Cacb fractures noted to x-cut perpendicular to and bleed into foliation and contain remobilized fg-mg dissem and blebs of cpy+/-py. Host interpreted as diorite.	8.890	Silica	4	Pervasive	Chl	4	Pervasive	Cacb	3	Interstitial_FF	Cpy	0.3	dissem_FF	Py	0.1	dissem_FF			
15-Jul-20	2255	346540	6218012	Chip	0.43	Diorite	Similar to sample 2254 w/ respect to shear textures and silicification, however a decrease in chl altrn and increase in patchy to pervasive epi altrn noted. Significant increase in Mt noted as vfg-fg disseminations replacing mafics and interstitally w/n pervasive epi altrn. Cpy+Py occurs on margins of pervasive to patchy epi as course disseminated blebs seemingly replacing mt.	158.160	Silica	4	Pervasive	Epi	3	Pervasive_FF	Cacb	3	Interstitial_FF	Cpy	4.0	dissem_BB	Py	2.0	dissem_BB	Vein	210	39
15-Jul-20	2256	346540	6218012	Chip	0.90	Diorite	Mg-cg alb+chl+silica+cacb altrd diorite w/ well preserved shear development textures. Diorite appears to contain pervasive texturally destructive alb altrn possible associated w/ hairline fractures and mafic replacement of chl after Act that are disjointed, off-set and seemingly smeared into foliation development. All mafics chl+cacb altrd and foliated and all	37.420	Alb	4	Pervasive	Chl	3	Mafic selective_FF	Cacb	3	Interstitial_FF	Cpy	0.1	dissem	Py	0.1	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							primary mt altrd to sphene. Wk-mod silica wash over earlier alb w/ Fe-stain. Interstitial, FF and mafic replacement Cacb throughout as latest fluid phase. No sulphides noted w/n off-cut sample.																			
16-Jul-20	2257	346838	6217605	Grab		Vein	Sheared qtz-fecb-cacb vein with locallized vfg dissem cpy+py. Vein has been sheared as evidenced by augen and boudinaged deformation textures w/ later infill and fractures of fecb and cacb. Strg Fe-stain and carbonate altrn. Sulphides predominately noted w/n deformed qtz as vfg disseminations.	0.172	Cacb	3	Pervasive	Fecb	3	Pervasive	FeOx	3	Pervasive	Py	0.5	dissem	Cpy	0.1	dissem	Vein	185	70
17-Jul-20	2258	346879	6218308	Grab		Diorite	Virtually no primary textures remain w/n strgly sheared and pervasive chl, silica and K-spar altrd host. Silica and K-spar altrn are pervasive however fg-cg patches possibly after primary felsics are elongated, sub-rounded and frequently embayed. Chl is pervasive throughout (possibly after bt?) and interstital w/n silica and K-spar. Abundant vfg-vcg dissem and blebby, granular Py+Cpy occur w/n. Cpy and lessor py frequently contains fg-mg somewhat booky bt and vfg dissem mt on the margins.	13.080	K-spar	4	Pervasive	Chl	4	Pervasive	Bt	2	Patchy	Cpy	7.0	dissem_BB	Py	5.0	dissem_BB	Joint	185	35

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
17-Jul-20	2259	346779	6217863	Grab		Shear	No primary textures remain at all due to pervasive silica+ser altrn overprinted by interstitial and FF Cacb. Abundance of ser possibly indicative of previous chl altrd shearing and or alb and or K-spar altrd to silica but uncertain. Shear textures possible as noted by sub-ronded to rarely preserved embayments of silica altrd felsics.	0.677	Ser	5	pervasive	Cacb	4	Interstitial_FF	Silica	3	Patchy	Cpy	0.3	dissem	Py	0.1	dissem			
17-Jul-20	2260	346782	6217772	Grab		Qtz Monzonite	Originally tagged as a vein w/n diorite, however preserved textures w/n off-cut appear representative of a fg-mg, strgly silica+ser altrd and Fe-stained Qtz Monzonite w/ late hairline fractures and interstital Cacb. Primary qtz (10-12%) is skeletal and fractured. All primary felsics and mafics variably silca and ser altrd and mt variably oxidized and altrd to hem+/-sphene.	0.208	Silica	4	FF	Ser	3	Pervasive	Cacb	3	Interstitial_FF							Joint	190	50
18-Jul-20	2261	346666	6218725	Grab		Diorite	Preserved mg-cg diorite textures, however appears to contain mod K-spar and wk ser altrn of plag. Mafics are chl+/-ser altrd. Both contain diffuse altrd boundaries and a wk silica overprint? In off-cut sample all Mt altrd to sphene and only rare dissem py noted.	0.254	K-spar	3	Plag selective	Chl	3	Mafic selective	Silica	2	Pervasive	Py	1.0	dissem_FF	Cpy	0.1	dissem	Joint	160	47

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
18-Jul-20	2262	346685	6218745	Grab		Diorite	Locally preserved mg-cg diorite textures, however appears to contain mod K-spar and wk ser altrn of plag. Mafics are chl+/-ser altrd. Both contain diffuse altrd boundaries and a wk silica overprint? Sample also contains development of shear textures. Late variably Fe-oxidized FF and dissem Py x-cuts preserved diorite and shear related textures.	19.380	K-spar	3	Plag selective	Chl	3	Mafic selective	FeOx	2	Patchy_FF	Py	2.0	dissem_FF	Cpy	0.1	dissem_FF			
18-Jul-20	2263	346719	6218780	Chip	0.40	Diorite	Mg-Cg diorite, almost looks like it could be a Monzodiorite as a result of what appears to be increased primary K-spar, however ser altrn of other plag w/ same size and habit indicates patchy K-spar and ser altrn of felsics. Mafics altrd to chl+ser and rare bt and hem after vfg dissem sulphides w/n. Hairline discontinuous pyritc fractures noted locally wkly altrd to hem.	19.680	K-spar	2	Patchy	Ser	2	Patchy	Chl	3	Mafic selective	Py	0.5	dissem_FF				Joint	175	40
18-Jul-20	2264	346719	6218780	Chip	1.50	Diorite	Locallized magnetite vein brecciation and fracture fill x-cuts rarely preserved seemingly pervasive K-spar altrd and Fe-stained diorite. Locallized shearing w/ abundant vfg dissem mt also noted in one off-cut sample. wk-mod Fe-oxidized pyritic fractures appear to cut and bleed into mt fractures and vein breccias possibly replacing some mt, however are not noted to cut shear textures. Rather Py>>Cpy occur as fg-cg granular dissem blebs.	59.710	K-spar	4	Pervasive	FeOx	3	Patchy_FF	Mt	3	dissem_FF	Py	3.0	dissem_FF	Cpy	0.3	dissem	Joint	185	50

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
18-Jul-20	2265	346719	6218780	Chip	0.35	Diorite	Mg-Cg diorite, virtually identicle to sample 2263. No sulphide fractures or disseminations noted w/n off-cut sample. Locallized hairline fractures of epi.	7.541	K-spar	2	Patchy	Ser	2	Patchy	Chl	3	Mafic selective									
20-Jul-20	2266	349322	6219494	Subcrop		Shear	Pervasive chl throughout w/ no remaining primary textures and rare rounded and embayed plag and likely vein qtz? Interstitial silica and mt noted in addititon to blobs of fe-stain on silicified mg fragments. Fe-oxidized fractures noted to cut strgly defined shear. shear interpreted to cut diorite.	2.467	Chl	4	Pervasive	Silica	3	interstitial	FeOx	2	Patchy	Py	2.0	dissem_FF	Cpy	0.1	dissem_FF	Joint	245	65
20-Jul-20	2267	348485	6219481	Float		Diorite	Similar to sample 2266; with increased texturally destructive chlorite altrn. Most Mt appears to be altrd to pinkish sphene? Fg dissem mal replacing fg dissem and oxidized Cpy.	0.700	Chl	4	Pervasive	FeOx	2	patchy		0		Cpy	0.5	dissem	Py	1	dissem	Fault	160	na
22-Jul-20	2268	347559	6218218	Grab		Monzonite	Difficult to ascertain if host is Diorite? What remains of primary plag and mafic x-stals locally appear to be Cg enough to be diorite however most are strg-intensely altrd by K-spar+Ser. Mafics however appear to fine grained and lacking modal percentage wise. All mafics appear to be acicular and chl/act+mt altrd respectively. Appears to contain ~50% K-spar+ser altrd plag, <2% qtz; and ~20% mt+/-chl/Bt altrd primary hornblende. Primary host likely a K-spar altrd Monzonite or possible Tonalite?	73.154	K-spar	4	pervasive	Mt	3	Mafic selective_FF	Ser	3	Plag selective							Vein		45

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
22-Jul-20	2269	347821	6218215	Chip	1.25	Diorite	Highly chlorite, silica and Fe-oxidized. Virtually all primary crystals have been texturally destroyed and or altered. Some Py appears to be secondary possibly w/n a shear environment occurring as fg subhedra. Disrupted fg dissem Py+Cpy appears associated w/ silica	2.250	Chl	4	pervasive	Silica	3	Patchy	FeOx	3	Sulphide selective	Py	3.0	dissem_Box work	Cpy	0.5	dissem	Vein	160	36
22-Jul-20	2270	348016	6218049	Grab		Qtz Syenite	Fg-mg, equigranular contains ~ 60-70% Kspar, 10-20% sub-rounded to sub-angular qtz, 10-20% mafics. Primary Mt has been altrd to hem. Most mafics appear altrd to a combination of chl/act +cacb and replced locally by vfg dissem Cpy+/-Py. Thin locally Fe-oxidized and discontinuous fractures of sulphides noted.	0.823	Chl	2	Mafic Selective	FeOx	2	Mt selective	CaCb	1	FF	Cpy	0.5	dissem_FF	Py	0.3	dissem_ FF			
23-Jul-20	2271	347373	6217994	Grab		Qtz Monzonite	Host contains pervasive and texturally destructive K-spar overprinted with pervasive silicification as a result of abundant hairline fractures of silica infilled locally w/ Cacb. What remains of relict textures appear mg at minimum and locally some primary qtz remains. Virtually no primary fldspar and or mafic crystals remain. Unit contains local Act+/-Mt veining and all mafic sites replaced by a combination of chl+mt+ser+cacb and locally dissem Py+/-cpy.	1.200	K-spar	5	pervasive	Silica	3	Pervasive_FF	CaCb	2	FF	Py	0.3	dissem	Cpy	0.1	dissem	Vein	184	48

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
23-Jul-20	2272	347498	6217744	Grab		Diorite	Appears to contain underlying Kspar possibly Fe-stain? alteration of plag. Mafics presumably primary hornblende contain strg chl+ser+cacb altrn and what appears to be secondary Py growth amid crystal disruption and breakdown likely as a result of micro-shearing? Primary Mt frequently noted to contain pink sphene on the margins and locally w/n.	9.000	Cacb	3	Mafic Selective	Chl	3	Mafic selective_FF	FeOx	3	patchy	Py	1.0	dissem						
23-Jul-20	2273	347593	6217762	Grab		Latite porphyry	Contains ~ 15-20% fg-mg wkly sericite altrd subhedral tabular to lathe like plag phenocrysts and fg possibly chl altrd acicular amphibole and or bt. w/n an aphyric dark grey grndmass. Abundant vfg-fg dissem py and pyhrrotite noted possibly replacing primary Mt?	5.000	Ser	3	Plag selective	Chl	3	pervasive	FeOx	3	Sulphide selective	Py	5.0	dissem	Pyrro	2	dissem	Conta ct	170	43
23-Jul-20	2274	347600	6217776	Grab		Diorite	Host: Contains ~ 40-50% Fe-stain possibly minor K-spar altrd plag, 30-40% mod chl/act+cacb altrd amphibole and <2% interstitial qtz likely predominately secondary? Vein cross-cutting is locally vuggy and composed of Qtz+Py+Cpy and w/ late Cacb infill. Hairline fractures of Cacb noted thru/ot and x-cut qtz+sulphide vein.	2.810	Chl	4	Pervasive_Vein halo	Cacb	3	Selective_FF	FeOx	2	Patchy	Py	5.0	dissem_Vein	Cpy	0.3	Vein			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
24-Jul-20	2275	346628	6218351	Grab		Vein	Epidote-carbonate-quartz-sulphide vein.Hosted in wk patchy albite altered and strgly sheared diorite. Fg dissem cpy+/-py+/-bn noted w/n patchy alb+act+silica altrd diorite, however bulk of sulphides appear to be remobilized w/n late Cacb vein that cuts pervasive and ff epi. Sulphides are wkly oxidized on the margin and as such bn may not be present?	21.933	Epi	4	Pervasive_FF	Cacb	3	FF	Alb	2	Patchy	Cpy	2.0	dissem_BB	Py	1	dissem_Vein	Vein	140	47
25-Jul-20	2276	347505	6217503	Float		Diorite	Pervasive and texturally destructive chl/act and silica altred diorite w/ a x-cutting Qtz+cpy vein. Cpy noted as cg and chunky w/n vein and as vfg dissem and frequently discontinuous hairline fractures w/ minor oxidized py.	0.279	Chl	5	pervasive	Silica	3	patchy	Feox	2	Sulphide selective	Cpy	10.0	Chunky_FF	Py	2.0	dissem_FF			
27-Jul-20	2277	347012	6218927	Grab		Syenite	Originally tagged as a Qtz. Syenite however does not contain near enough primary qtz (<3%) in off-cut. K-spar appears primary w/ combined w/ Fe-stain of what appears to be relict fg-mg primary lathe like to tabular plag. Virtually all primary mafics contain diffuse boundaries and have been replaced by predominately chl w/ lessor ser+cacb. Host is likely a Syenite dyke? vfg-fg dissem cpy+/-py noted locally thru/ot w/n altrd mafic sites. All vfg-dissem mt appears to be altrd to sphene?	0.293	Chl	4	Mafic replacement	Ser	2	Mafic replacement		0		Cpy	0.5	dissem	Py	0.5	dissem	Joint	210	60

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
27-Jul-20	2278	347091	6218973	Chip	0.45	Monzonite	**No off-cut sample.** Hosted in altered diorite or monzonite. Grain size w/n photograph somewhat looks like a strg K-spar altrd diorite however fracuture pattern more similar to Syenite? Difficult to accurately gauge host?	0.348	FeOx	4	pervasive	Cacb	1	FF		0		Py	0.1	dissem_FF				Joint	185	54
27-Jul-20	2279	347108	6218991	Grab		Diorite	Mod -strg FeOx altrd and fractured translucent to milky qtz vein hosted w/n mod-strg silicified and possibly patchy k-spar and epi altrd diorite. Sulphides are dominately vfg-mg py and much lessor cpy as dissem and hairline fractures that appear to post date and brecciate the vein and altrd host.	0.430	silica	4	pervasive	k-spar	3	patchy	Epi	2	patchy	Py	10.0	dissem_FF	Cpy	0.5	dissem	Joint	198	58
29-Jul-20	2280	347141	6218933	Chip	1.30	Diorite	Appears to be a mod-strgly K-spar+ser+bt+/-silica altrd mg-cg diorite. Rare relict lathe like plag noted locally however most felsics are diffusely altrd and rarely are grain boundaries identifiable through k-spar and possible overprinted silica. Patchy ser altrn also noted on feldspar. All mafics are variable altrd to what looks like bt and chl. primary mt has been completely replaces by hem and sphene. Silphides were noted are vfg-fg dissem w/n mafic sites and frequently oxidized.	3.360	k-spar	4	pervasive	Bt	3	mafic selective	Ser	2	Felsic selective	Cpy	0.3	dissem	Py	0.5	dissem			
29-Jul-20	2281	347141	6218933	Chip	0.80	Monzonite	No Off-cut Sample			0			0			0										
29-Jul-20	2282	347141	6218933	Chip	0.80	Monzonite	No Off-cut Sample			0			0			0		Cpy	1.0	dissem	Py	1	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
29-Jul-20	2283	346757	6218293	Grab		Diorite	Mg-cg diorite. Contains wk-mod patchy k-spar and silica altrn, the latter as a result of locallized hairline fractures and veins of qtz+/-epi. Most primary plag contains variable sausseritization (ser+epi) where patchy k-spar+/-Fe-stain reduced. Mafics are all variably altrd to chl/act +cacb due to discontinuous hairline fractures of act/chl x-cut by late cacb. Mt wkly altrd to hem and rarely sphene. No sulphides noted in off-cut.	13.473	Chl	3	Mafic replacement_FF	K-spar	2	Patchy	Silica	2	Patchy_Vein halo	Py	1.0	dissem				Fault	250	87
29-Jul-20	2284	346756	6218220	Grab		Vein	Series of Silica+Fe-carb altered rock, dark green friable. Strong silicification as a result of hairline fractures of discontionuous and disrupted qtz and pervasive late cacb altrn of interpreted host diorite? Primary textures only noted as pervasively replaced ser altrd plag? All mt replaced by hematite, no sulphieds noted.	0.268	Cacb	4	pervasive	Silica	4	Pervasive_Vein	Ser	3	Selective							Vein	122	82
30-Jul-20	2285	346503	6218536	Float		Diorite	Mg-cg diorite. Contains pervasive albite and patchy epi altrn proximal to what appear to be act+mt altrd to chl and wk hem post alb altrn veins and hairline fractures. Sulpides of cpy+py are noted w/n act veins as fg-cg dissem and blebs. Minor discontinuos fractures of qtz also noted and appear to post date alb and may be associated w/ patchy epi?	52.840	Alb	4	pervasive	Act	4	Mafic selective_Vein	Epi	2	Patchy	Cpy	1.0	dissem_FF	Py	1	dissem_FF			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
30-Jul-20	2286	346493	6218502	Chip	0.60	Diorite	Off cut contains patchy Fe-Ox +/- epi altrd diorite that is brecciated by hairline discontinuous act/chl+ sulphides that appear to x-cut early hairline often wispy silica. Primary feldspar appear to contain shear related textures. all mafics disruped and replaced by act/chl and fg dissem sulphides. Sulphides are variably oxidized and are domiantely py. Small off-cut section of what appears to be sheared act+mt+epi altrd latite porphyry also noted.	147.635	Act	4	Mafic replacement_FF	Silica	3	FF	Epi	2	Patchy	Cpy	0.5	dissem	Py	2.0	dissem	Vein	180	55
30-Jul-20	2287	346479	6218200	Grab		Diorite	Coarse grained, equigranular w/ patchy k-spar and saussaritized (ser+epi) altrd feldspr. Most mafics variably sltrd to chl and mt is wkly hem altrd and causes Fe-stain. Abundant hairline fractures of epi+/-sulphides thru/ot w/ late cacb infill.	54.790	K-spar	3	Patchy	Epi	3	Felsic selective_FF	Ser	3	Felsic selective	Py	0.5	dissem_FF	Cpy	0.1	dissem_FF			
30-Jul-20	2288	346489	6218176	Float		Shear	All textures completely obliterated and sample is now basically composed of dark green blobs of chl+silica and some vfg acicular crystal. Interstitial hem likely after mt thru/ot as is cacb. Py frequently forms as mg-cg often fractured and embayed secondary growths that are sub-cubic and as vfg-fg wisps locally w/ cpy. Likely derived w/n or proximal to shear zone.	24.802	Cacb	4	Interstitial	Chl	4	Pervasive	Hem	4	Interstitial	Py	2.0	dissem_BB	Cpy	0.7	dissem			

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
30-Jul-20	2289	346440	6217998	Grab		Qtz Monzonite	Fg-mg, and judging by the amount of ser altrd plag still noted w/n the host and what appears to be interstitial skeletal looking qtz. (10-15%) unit is likely a strg-k-spar altrd qtz monzonite. K-spar is most likely predominately secondary although difficult to be certian and pervasive. Qtz is as mentioned above, however some is definately secondary. Hairline fracture fill epi noted locally w/ monor qttz and late cacb infill. All mafics appear to be predominately chl+/- epi and cacb altrd bt w/ some minor amphibole.	20.110	K-spar	4	pervasive	Epi	2	Replacement_FF	Cacb	3	Mafic replacement_FF	Py	0.5	dissem	Cpy	0.1				
30-Jul-20	2291	346603	6218332	Grab		Diorite	Appears to be a medium-grained diorite however lith has been strongly K-spar and saussauritized (Ser+Epi altrd) on felsics and chl/act+ser+cacb altrn on mafics both of which render diffuse crystal edges. Fe-stain appears to post date k-spar and secondary Mt is noted w/n altrd mafics. Additionally both epi hairline fractures and rare cpy+py fractures are noted. Local vfg dissem Py+Cpy observed.		K-spar	3	Felsic selective	Epi	2	Felsic selective_FF	Ser	2	Felsic selective	Py	0.5	dissem_FF	Cpy	0.3	dissem_FF			
31-Jul-20	2292	347269	6217797	Grab		Shear	Strong silicification as a result of hairline fractures of discontionuous and disrupted qtz and pervasive late cacb altrn of interpreted host qtz. monzonite. Locally, preserved primary textures appear to be fg-mg. Rarely is feldspar preserved rather interstital skeletal,	38.260	Cacb	5	pervasive	Silica	3	Patchy_Vein halo	FeOx	2	pervasive									

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							wavey and mod-fractured qtz similiar to that w/n a qtz monzonite remains w/ surprisingly rare bt/act/all? and variable oxidized and or hem and sphene altrd fg mt.																			
3-Aug-20	2293	347499	6218004	Grab		Qtz Monzonite	Originally tagged as a fg-mg Qtz Syenite. However k-spar is likely secondary? Composed of ~ 60-70% K-spar, 10-20% qtz, 2-3% Mt and 5-7% strg-intensely ser+chl altrd mafics of unknown type. Py is noted to occur as fg-mg dissem blebs w/n and proximal to hairline fractures and veinlets of late qtz.	4.640	FeOx	3	Py selective_FF	Ser	3	Mafic selective	Chl	2	Mafic selective	Py	1.0	FF						
2-Aug-20	2294	346682	6218327	Grab		Diorite	diorit has been mod-strgly silicified as a result of a medium grey Fe-oxidized Qtz vein and associated hairline qtz fractures. Vfg dissem py+/-cpy are noted proximal to and w/n secondary qtz and chl+hem altrd mafic sites.	0.760	Silica	3	Interstitial_Vein halo	Chl	2	Mafic selective	Epi	1	Patchy_FF	Cpy	0.5	dissem	Py	0.5	dissem	Vein	165	63
3-Aug-20	2295	347209	6218909	Grab		Monzonite	Lith originally tagged as a syenite, however most likely a pervasive and frequently texturally destructive k-spar +/- ser altrn w/ Fe-oxide overprint altrd Monzonite. Relict ser altrd plag textures locally preserved and appear as fine-medium grained. Virtually all mafics are either gone or replaced by chl/act+/-mt. Late Act+mt (the former altrd to chl) veins and fractures noted thru/out and are	0.771	K-spar	4	pervasive	Act	3	Mafic replacement _Vein	Chl	3	Act replacement	Py	1.0	dissem_BB						

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							predominately sheet like in nature locally containing fg-mg blebbing growths of Py.																			
4-Aug-20	2296	347236	6218939	Grab		Qtz Monzonite	Again, lith tagged as a syenite however as with sample 2295 it is likely a strgly K-spar altrd qtz monzonite as presence of some larger tabular to lath like ser and k-spar altrd plag are noted thru/ot. Presence of skeletal primary qtz also observed ~7-10%. All primary mafics (seemingly Bt) altrd to chl/act+/-cacb. and most primary mt 3-5% appears to be relatively unaltred. Locallized mafic sites contian dissem py+cpy.	27.530	K-spar	4	pervasive	Act	3	Mafic replacement _Vein	Chl	3	Act replacement	Cpy	0.3	dissem	Py	0.3	dissem	Fault	325	55
4-Aug-20	2297	347304	6219020	Float		Diorite	Very dark greenish and rusty coloured diorite containing what is likely chl possibly act? replacement of primary mafics that have subsequently been strgly altrd to chl. Virtually all Mt has been replaced by sphene and the underlying altration on primary felsics appears to be Fe-stained albite? Abundant fe-oxidized fractures thru/ot rarely contain observable py, however local fg-cg blebs of pyrite are noted w/n locallized qtz veinlets. Unit may be undergoing some	0.491	Chl	4	Mafic selective	Alb	2	pervasive	FeOx	4	Patchy_FF	Py	1.0	dissem_BB_FF						

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							cataclasis and chl+py replacement?																			
4-Aug-20	2298	347300	6218976	Float		Diorite	Rarely observed primary textures w/n pervsive chl and patchy silicification are suggestive of a Cg diorite however extremely difficult to be certain. Mod-strgly oxidized fg-cg blebby sulphides thru/ot however appear to be more associated w/ patchy silica rather than chl also w/ sulphides however potentially as a selvage to silica? Host likely proximal to a shear.	0.038	Silica	4	Patchy	Chl	5	pervasive	FeOx	3	Sulphide selective	Cpy	7.0	dissem_BB	Py	3.0	dissem_BB			
4-Aug-20	2299	347200	6218933	Subcrop		Magnetite breccia	Dark green to black matrix composed of vfg-fg magnetite+chl +/- vfg specularite and hematite. Breccia advances from 1-5 mm somewhat sheeted mt veins locally w/ blebby cpy to crackle breccia and to full matrix supported breccia of the host Qtz Monzonite with very little to no sulphides. Breccia fragments consist of strg K-spar altrd fldspar crystal fragments and host.	161.220	Chl	4	Mafic replacement_Interstitial	Mt	4	Mafic selective_Interstitial	K-spar	4	Patchy	Cpy	0.3	dissem_BB	Py	1.0	dissem			

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
4-Aug-20	2300	347172	6218989	Grab		Diorite	Pervasive to patchy K-spar+Ser altrn of mg-cg plag thru/ot. Relict preserved feldspar and chl/act+mt altrd mafics are suggestive of a diorite. Sample contains abundant hairline discontinuous Act/chl+mt fracture fill thru/ot. No sulphides noted w/n the offcut sample.	48.880	K-spar	4	Patchy	Chl	3	Mafic selective_FF	Ser	2	Plag selective	Cpy	3.0	dissem						
15-Jul-20	2301	346427	6218069	Grab		Diorite	Pervasive, texturally destructive Alb+Act with post Mt altrn of diorite. All primary feldspar completely replaced by alb and all mafics replaced by act then variable mt. Local act veinlets noted and sample has been x-cut by 11mm mt vein. Oxidized hairline fractures and a single mg-cg blebby py vein post date are noted to x-cut and run parallel to mt vein. Strg Fe-stain observed.	735.600	Alb	5	Pervasive	Act	3	Mafic selective_FF	Mt	3	Mafic replacement_FF	Py	3.0	dissem_FF						
18-Jul-20	2302	346628	6218695	Grab		Monzonite	Rarely preserved fg-mg ser altrd plag. Host is likely a monzonite contains stockwork Act+/-Mt that locally micro-brecciates and replaces primary mafics. Wk Alb altrn selvages noted proximal to Act fractures. Py+Cpy fracture fill and fg-cg disseminations and blebs appears to post date Act+/-Mt and locally replace mt. Bt replaced by amph>chl. Dominant pink colour to rock.	10.264	Act	4	Mafic replacement_FF	Mt	2	Mafic replacement_FF	Alb	2	Vein halo	Py	5.0	dissem_BB_FF	Cpy	0.5	dissem_BB_FF	Vein	180	86

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
20-Jul-20	2303	348623	6219331	Grab		Spec. Breccia	Lith unrecognizable as a result of underlying interpreted pervasive texturally destructive K-spar alteration overprinted by strg to intense Fe-stain. Previous description notes "Same as prev lith" to Ek-013 and notes mag+specularite x-cut and altr diorite. Sample is of either a vein and or massive specularite breccia. No sulphides and or magnetite noted w/n offcut sample.	3.170	K-spar	4	pervasive	Mt	4	Patchy	Feox	4	pervasive	Spec	20.0	Vein	Py	2.0	Vein	Vein	194	30
22-Jul-20	2304	347935	6217975	Grab		Diorite	Pervasive texturally destructive silicification and chl/act+mt altrn noted thru/ot sheared host. Limoite and goethite associated with sub-rounded fg-mg Py +/- Cpy pods, lenses and fracture fill sulphides. Local silica veining and or flooding appear to post date shearing.	2.890	Chl	4	pervasive	Silica	4	patchy	Feox	3	Sulphide selective_FF	Py	5.0	dissem_FF	Cpy	0.3	dissem	Vein	170	82
22-Jul-20	2305	347947	6218060	Grab		Shear	Off cut rep sample shows dark green complete pervasive chl+/-mt replacement w/ patchy silica of host and local qtz vuggy vein. Pyrite occurs as cg to pegmatitic chain of grain lenses frequently w/ fg-cg blebs of cpy w/n interstital vuggy greyish variably oxidized qtz (vein?). Again this sample is likely proximal to some type of shearing in the area of collection. Off-cut station rep sample is a strg k-spar altrd Diorite 40% plag (ser altered), 40% K-spar, 20% mafics (chl after bt). F'spars equigranular, subhedral to 3 mm.	2.190	Chl	5	pervasive	Silica	3	Patchy_Vein	Feox	3	Sulphide selective	Py	3.0	dissem_BB	Cpy	0.5	dissem_Vein	Contact	142	45

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
22-Jul-20	2306	347978	6218068	Chip	1.50	Diorite	No preserved primary textures noted w/n intensely chl and seemingly Mt altrd mafic sites appear to be at minimum mg and possibly representative of a diorite? All felsics are completely altrd to what appears to be variable chl+ser +/- vfg musc and minor clay and appear to contain locally preserved augen shapes and embayments potentially representative of shearing?. Mt presumably secondary in this case is wkly hem altrd and there is an abundance of anastamosing FeOx fractures noted thru/ot often encompasing elongating felsics. Sulphides are rarely noted but where present occur as vfg-fg disseminations.	6.370	Chl	4	pervasive	Ser	4	pervasive	FeOx	3	FF	Py	0.1	dissem				Fault	187	58
23-Jul-20	2307	347282	6217993	Rep		Monzonite	Dominant lith along West side of the Gully prospect area appears to be either qtz. Syenite or K-spar altrd (Qtz) Monzonite though the unit is variable in composition wrt k-spar, plag, & qtz the latter possibly secondary. Host contains pervasive texturally destructive K-spar overprinted by Actinolite+/-magnetite fracture fill and flooding and Fe-staining. Some possible fg-mg, equigranular qtz syenite noted as primary qtz is ~15-20%. Fg-mg blebs of mt appear to be secondary. All mafics are altrd and or replaced by wkly chl altrd act and mt. minor	26.630	Act	4	Mafic replacement_FF	K-spar	4	Pervasive	Chl	2	Mafic selective	Py	0.1	dissem_Vein				Contact	230	85

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							late Cacb fracture fill and interstital.																			
25-Jul-20	2308	347310	6217628	Grab		Latite Porphyry	Phenocryst of plag and amph/augite? (<3mm) are somewhat equigranular. Notable twinning of plag common. Contains ~ 15-20% wk-mod ser+epi altrd subhedral plag, 7-10%, relict chl+act? altrd mafics w/n a dark grey green aphanitic grndmass. Lith almost appears more as a mafic dyke however texturally and compositionally similiar to Latites noted on the property. Localized hairline qtz fractures noted. Contains considerable increase in vfg-fg dissem mag unlike most Latites and is likely due to secondary altrn? Have adjusted previous station to match this sample due to following comments " same as prev stn."	32.687	chl	3	Pervasive	Ser	2	Plag selective	Silica	2	Patchy_FF	Py	0.1	dissem				Dyke	142	50

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27-Jul-20	2309	347092	6218595	Grab		Monzonite	**Thin Section** - Inconclusive for lithology due to intense pervasive K-spar altrn and is basically "Syenitic". Lith tagged in the field as a syenite, however possibilty of a strg pervasive K-spar altrd monzonite also noted and confirmed in thin section analysis. Relict primary grain size appears fg-mg with what appears to be k-spar altrd lathe like plag but difficult to be certain. All mafics completely replaced by a combination of chl-cacb (after secondary Bt) and fg dissem sulphides. Abundant chl+/-qtz+py+/-cpy hairline fractures x-cut pervasive K-spar altrn. "Same as prev stn" comment is suggestive of Diorite however not the case in this sample!		K-spar	4	pervasive	Chl	2	Mafic selective_FF	Ser	2	mafic selective	Py	2.0	dissem_FF	Cpy	1.0	dissem_FF			
27-Jul-20	2310	347123	6218667	Float		Qtz Monzonite	Hbl syenite. Equigranular, fine to med gr. 60% K-spar, interstitial, to 2 m. 25% mafics, chl after hbl>bt. 15% plag, subhedral to interstitial. Off-cut of sample contains interesting altrn assemblage that appears to be qtz+py overprint on pervasive K-spar. Additionally, semi-massive mt vein bx noted that has been x-cut and locally replaced by Py. Primary Lith textures obliterated, however some possible primary qtz remains but difficult to be sure?	199.284	Silica	4	Pervasive	K-Spar	2	Patchy		0		Py	15.0	dissem_Vein	Cpy	1.0	Vein	Vein	168	30

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
27-Jul-20	2312	347192	6218673	Grab		Qtz Monzonite	Off-cut sample contains pervasive texturally destructive act/chl altrn thru/ot that appears to overprint either an earlier phase of alb or silica? Patchy secondary Mt noted proximal to act/chl that locally appears to be altering to Hematite and fg specular hematite. Same as prev stns.	2.487	Chl	4	pervasive	Alb	3	patchy	Hem	3	Mt selective	Py	5.0	dissem_Vein	Spec	1.0	dissem_ Vein	Vein	150	40
10-Aug-20	2313	339523	6222586	Grab		Diorite	Off-cut sample shows mg-cg diorite wkly sheared and cut by interstital epi+qtz vein that appears to overprint pervasive texturally destructive k-spar altrn? No sulphides noted.	0.978	K-spar	4	pervasive	Silica	4	pervasive	Epi	3	Interstitial	Py	1	Vein						
10-Aug-20	2314	339523	6222586	Grab		Diorite	**Thin Section** - Indicated inconclusive protolith due to intensity of fracturing, veining and Alb+K-spar+Silica alteration. Off-cut sample shows relict mg-cg diorite containing pervasive often texturally destructive Alb+ silica altrn cross-cut by late cpy+py+/-mo fractures and veins. Py+Cpy closely related to silica and bt. Most Mo noted as vfg darker disseminations proximal to cpy. Bt altrn moderately overprinted by chl appears interstital however more likely replaces what remains of mafic sites. Some possible underlying K-spar altrn noted however most likely Fe-stain on pervasive silica.	0.978	Silica	5	Pervasive_FF	Alb	4	Pervasive	Bt	3	Mafic replacement_ FF	Cpy	3.0	dissem_FF	Py	3.0	dissem_ FF	Vein	35	80

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
10-Aug-20	2315	339316	6222717	Grab		Diorite	Off-cut of sample shows mg-cg diorite undergoing development of shear textures indicated by crystal deformation, fracturing and embayments advancing into full on crystal grinding and reduction into texturally destructive and pervasive chl altrd shearing w/ secondary granular sub-cubic pyrite growth that contains moderate oxidation.	21.520	Chl	4	Mafic replacement_Interstitial	FeOx	3	Patchy_FF_Sulphide selective		0		Py	1.0	dissem_FF				Shear	90	80
10-Aug-20	2316	339306	6222743	Grab		Diorite	**Thin Section** - Lithology somewhat inconclusive as a fg-mg Diorite or possibly Monzonite dyke. Contains abundant interstitial cryptocrystalline Alb and minor Fecb? the former appears secondary and likely related to locallized 2mm sized veinlets and potential hairline fractures of epi? Contains sub-anhedral variably epi altrd plag (~35-40%) interlocked w/ wk-mod silicifed and fractured k-spar (~25-30%) all <2mm. Mafics predominately appear to be epi+chl+ser altred often acicular amphibole and wispy bt both amounting to 10-15%. Most mt ~2-3% appears to be altrd to sphene. No sulphides noted within off-cut sample.		Alb	3	Pervasive	Epi	3	Patchy_Mafic replacement_FF	K-spar	2	Patchy_Vein halo							Dyke	327	90
10-Aug-20	2317	339306	6222743	Grab		Qtz Sulphide Vein	Off-cut of sample clearly indicates a chl+cpy>py (sulphide) breccia that brecciates a pervasive texturally destructive silicified rarely relict fg-mg host, likely the (qtz) monzonite as	0.140	Silica	5	pervasive	Chl	3	Interstitial_FF	FeOx	2	Sulphide selective_FF	Cpy	4.0	dissem_FF	Py	2.0	dissem_FF	Vein	327	90

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							described in sample 2316.																			
10-Aug-20	2318	339338	6222891	Grab		Semi-Massive Sulphide	Off-cut is of semi-massive to massive sulphide (Cpy>Py) with interstital and vuggy epi that x-cuts mg-cg predominately chl and epi altrd diorite.	33.100	Epi	4	Interstitial_Vein	Chl	3	Interstitial_Mafic selective	FeOx	3	Interstitial_FF	Cpy	30.0	Vein	Py	15.0	Vein	Vein	110	80
10-Aug-20	2319	339338	6222892	Grab		Diorite	Off-cut is similar to sample 2318 however this sample is not semi-massive rather it contains <3mm sized veins and veinlets of cpy that cuts pervasive texturally destructive epi altrd mg-cg diorite.	0.552	Epi	4	pervasive	Chl	3	Interstitial_Mafic replacement	FeOx	2	Interstitial_FF	Cpy	4.0	Vein	Py	1.0	Vein			
10-Aug-20	2320	339330	6222894	Grab		Diorite	Mg-Cg moderately foliated Hbl-phyric diorite. Foliation predominately defined by alignment of mafics. Contains patchy epi altrn proximal to hairline fractures and veins of Epi. Variably oxidized cpy noted dissem within and proximal to epi patchy altrn and veining.	11.750	Epi	3	Patchy_FF	Chl	2	mafic selective	FeOx	1	Sulphide selective	Cpy	0.7	dissem_FF						
10-Aug-20	2321	339325	6222890	Grab		Diorite	Off-cut is similar to sample 2319, however this sample contains almost an even amount of cpy+py w/n a 30mm true width vein that x-cuts moderately sheared and chl+ser+silica alterd diorite. Vein contains interstital epi that predates x-cutting sulphides. Sulphides are also noted as hairline fracture fill and vfg-fg disseminations w/n the altrd and sheared host albeit commonly fe-oxidized and hematitic.	0.423	Silica	3	Patchy	Epi	3	Interstitial_Vein	Chl	3	pervasive	Py	10.0	Vein	Cpy	10.0	Vein			

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
11-Aug-20	2322	339353	6222918	Float		Diorite	Relict textures define at minimum a fg-mg diorite however most likely mg-cg. Appears to contain patchy silicification or possibly albite? that was likely pervasive at one point however is not overprinted w/ chl+ser that is further texturally destructive. Hematite and sphene likely after primary mt, appear to be elongated into a developing foliation and the latter almost appears as discontinuous fractures. There is a surprising amount of vfg cpy disseminated throughout the off-cut sample and it is likely underestimated and is frequently hidden w/n the hematite. I did not notice any pyrite and I did see a spec of Mo.	43.390	Silica	3	Patchy	Chl	3	Patchy	Hem	2	Wispy	Cpy	2.0	dissem	Mo	2.0	dissem	Fault	100	85
11-Aug-20	2323	339356	6222905	Grab		Shear	3		Chl	3	Interstitial_Mafic replacement	Cacb	2	Interstitial	Ser	1	Interstitial	Py	0.5	dissem	Cpy	0.1	dissem			
13-Aug-20	2324	339340	6223018	Grab		Diorite	Strgly chl+epi altrd mg-cg diorite. Relict plag contains diffuse outlines however mostly just felsic looking blobs. All mafics are chl+ser+epi altrd masses possibly w/ some act. Pervasive, late epi veining cuts host and often contains strgly Fe-oxidized cpy dissem blebs however, a course cpy vein is noted w/n the center of the pervasive epi altrd area.	0.889	Epi	3	Pervasive_FF	Chl	3	Mafic selective	Ser	1	Mafic selective	Py	2.0	Vein	Cpy	2.0	Vein	Vein	30	85

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14-Aug-20	2325	340944	6221760	Grab		Diorite	Originally tagged as a mafic dyke. Relict textures appear to indicate host was likely a fg-mg epi altrd diorite however difficult to be certain due to pervasive altrn and likely shear development. What remains contains pervasive vfg chl+ser and epi the latter appears as interstital fractured, altrd embayments. Secondary granular frequently sub-rounded, embayed, concretions of py noted thru/ot as fg-cg dissem and blebs. Sort of looks like Tom showing?	1.905	Chl	4	pervasive	Ser	3	pervasive	Epi	2	Interstitial	Py	3.0	dissem	Cpy	0.1	dissem			
14-Aug-20	2326	340927	6221839	Grab		Granodiorite	Relict textures through pervasive silicification appear to be fg-mg and contain what appear to be subhedral to rounded primary qtz. Sulphides are frequently strgly Fe-oxidized and occur as locally preserved blebby masses and hariline fractures cutting silicification. Late Cacb appears to be remobilizing some of the Cpy. Lens of tonalite 5x5 m in hbl-drt. 15% hrnblnd (allanite?), strong chl rep, up tp 3 mm. 50% plag, wht, frequently euhedral, to 2 mm. 35% qtz, lt gry, interstitial. Intrudes into hbl-drt.	10.530	Silica	4	Pervasive	FeOx	3	Sulphide selective_FF	Cacb	2	Interstitial_FF	Cpy	2.0	dissem_BB_FF	Py	1.0	dissem_FF	Vein	362	80

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
16-Aug-20	2327	335319	6231410	Float		Granite	Float sample and could have been a Th**in Section Candidate.** Pinkish-white, pervasive mod-strg silicifation, not aplitic, fg-mg and fairly equigranular. Contains abundant k-spar, plag and qtz. And very little mafics (<5%). No obvious macro-oscillatory zoning or corroded cores of plag noted and may not have been preserved through silicification. Likely an Osilinka equigranular granite (KHgg) rather than those in the Mesilinka suite due to lack of mafics no clearly defined foliation defined by aligned pheno's and isn't porphyrytic? Contains epi+vfg cpy fractures w/ albite altrd halos and locallized Fe-oxidized cpy+/-py disseminations and fractures.	1.016	Silica	3	Pervasive_FF	Alb	2	Vein halo	Epi	2	FF	Cpy	0.5	dissem_FF	Cpy	0.1	dissem_FF			
17-Aug-20	2328	335781	6231004	Grab		Diorite	Pervasive hem and Cacb altrn with late anastamosing epi and Fe-oxidized fractures within host. No definitive primary textures noted in off-cut. No sulphides noted. Coarse grained, hbl-phyric. 50% hbl>bt, strong chl alt, euhedral to 4 mm. Plag subhedral to interstitial, wht. Mod mag. Red hem on some fx.	9.000	Hem	4	pervasive	FeOx	4	pervasive	Cacb	3	Interstitial_FF							Vein	262	18
17-Aug-20	2329	335750	6231022	Grab		Latite Porphyry	Contains ~ 15-20% fg-mg wkly sericite and epi altrd subhedral tabular to lathe like plag phenocrysts and fg possibly chl altrd acicular amphibole w/n an aphyric dark grey green grndmass. Vfg-fg dissem py	3.000	ser	2	plag selective	Epi	2	plag selective	Chl	2	Mafic selective_Groundmass	Py	0.5	dissem				Dyke	330	85

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							noted.																			
17-Aug-20	2330	335636	6231099	Grab		Diorite	Mg-cg with abundant mafic component (~30-40%) consisting of Hbl+Pyx+bt. Some Bt appears to be secondary fg-mg books replacing possibly amph altrd Pyx? Epi is fg and patchy thru/ot replacing both mafics and plag on margins and interstitally w/n mafics and appears to be as a result of thin discontinuous hairline fractures. Originally tagged as a qtz diorite however qtz component appears to be <5%. Plag is tabular to lath-like (40-50%), cream to wht, euhedral (to 3 mm) and Primary Mt is fg-mg disem thru/ot (5-7%). Rare dissem cpy noted.	47.000	Bt	3	Mafic replacement	Chl	3	Mafic replacement	Epi	2	Interstitial_FF	Cpy	0.1	dissem				Vein	190	50
17-Aug-20	2331	335471	6231173	Subcrop		Alkali-Granite (Aplite)	Originally tagged as a Cg hblnd bearing diorite??? Equigranular and contains ~ 50-60% k-spar, 20-25% qtz and 5-10% ser+/-cly? altrd plag, 5-10% chl altrd and Fe-oxidized sulphide replaced mafics likely fg bt and acicular amphibole and minor mt. Not overly aplitic. Appears to contain some minor secondary k-spar and thin hairline fractures of possibly act+/- sulphides?	60.000	k-spar	1	Patchy	Chl	1	mafic selective	Ser	1	Plag selective	Py	0.1	dissem	Cpy	0.1	dissem	Dyke	74	85

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19-Aug-20	2332	347247	6218682	Grab		Diorite	**Thin Section** - Indicates protolith unresloved, however abundance of Alb altrn suggestive of likely Diorite with pinkish hue due to patchy K-spar and hem stain on Alb as halos to Bt and Mt FF? Originally tagged as a Syenite, however some relict ser altrd patches may reflect original plag component and lith may be a Monzonite? Otherwise host is completely obliterated by pervasive texturally destructive altrn. Veinlets and hairline fractures of mt+chl+/-bt locally x-cut and micro-brecciate k-spar altrd host, most mt occurs as vfg-fg disseminations and dark patches. Frequently Fe-oxidized Py+chl veins noted to potentially post date pervasive k-spar and mt veinlets?	24.187	Alb	4	pervasive	K-spar	2	Patchy_Vein halo	Bt	1	FF_Patchy	Py	0.5	Mafic replacement _FF				Vein	180	50
19-Aug-20	2333	347239	6218751	Grab		Syenite	fg-mg and compositionally looks pretty darn to close to a qtz Syenite as qtz componenet 7-10% possibly secondary. Overall unit is fg-mg and ser altrn of mg plag commonly noted and all primary bt wk-mod altrd to chl.	23.400	Ser	2	Plag selective	Chl	2	Mafic selective_FF	Epi	1	Veinlet	Cpy	1.0	Veinlet	Py	1.0	Veinlet	Vein	200	50

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19-Aug-20	2334	347234	6218734	Grab		Qtz Monzonite	**Thin Section** - Confirmed as an intense pervasively K-spar altrd Qtz. Monzonite however assay and thin section results have no Cpy? Originally tagged as a Syenite however contains what appears to be primary qtz component at ~10-12%. Appears to contain a significant amount of primary K-spar, however secondary K-spar is pervasive and it is possible the original host may have been a qtz monzonite. All mafics altrd to chl+/-ser possibly after Bt? and locally contain vfg dissem cpy (<0.5%), no pyrite noted in off-cut.Chl+/-Mt FF noted within local micro-breccia textures.		K-spar	3	Pervasive	Chl	2	Mafic selective_FF	Mt	2	dissem_FF	Py	2.0	dissem_FF	Cpy	0.1	dissem	Vein	180	20
24-Jul-20	2351	346749	6218393	Grab		Vein	CaCb +/- Qtz vein w/ pervisive intense chl altrn within structure. Vein contains fg-cg blebby, dissem, remobilized and oxidized Py and Cpy on weathered surface.	0.497	CaCb	4	Interstitial	Chl	3	Interstitial_Vein halo	FeOx	2	FF	Cpy	2.0	BB	Py	1.0	BB	fault	180	70
27-Jul-20	2352	347055	6218496	Grab		Syenite	Course grained syenite dykelet. K-spar and chlorite altrd hrnblnd up to 12mm in size are fractured and micro-brcciated by thin factures of qtz and epidote w/ minor actinolite.	0.079	Silica	3	Patchy_FF	Epi	2	FF	Act	3	Mafic selective_FF	Cpy	1.0	dissem_FF	Py	1.0	dissem_FF	Vein	190	60
27-Jul-20	2353	347111	6218556	Grab		Syenite	fg-mg, equigranular contains ~50-60% seemingly silica altrd K-spar, 10-15% variably ser altrd plag, 7-10% chl/act altrd mafics (Bt+hrnblnd), <5% interstitial somewhat skeletal qtz., and 1-2% hem altrd Mt. Trace discontinuous ff Cpy noted.	11.400	K-Spar	2	Patchy	Silica	2	Patchy	Act	1	Patchy	Cpy	0.1	dissem						

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27-Jul-20	2354	347111	6218555	Grab		Breccia	Basically a semi-consolidated polylithic, limonitic ferricrete conglomeritic breccia. Contains sub-rounded to sub-angular, unmineralized, fine sand to medium sized pebble fragments of syenite, variable K-spar, albite Act and Epi altered diorite and Qtz. Monzonite within a dark brownish red gossonous wkly cemented matrix.	14.800	Hem	5	pervasive	K-spar	4	selective	Alb	4	Selective							Contact	176	48
9-Aug-20	2355	339583	6222535			Diorite	Diorite is dark grey-green, CG and contains a weak to moderate foliation predominately defined by alignment of amphibole. It contains ~ 30-40% wk chlorite and epi altrd amphibole, 30-40% wk patchy K-spar, wk-mod patchy epi and silica altrd plag , 3-5% Mt and 2-3% qtz. Locallized py and cpy noted w/n and on margins of Hrnblnd sites and appears to be associated w/ either patchy K-spar or epi+/-qtz ff and associated altrn?	20.73	Epi	3	Replacement_Vein halo	k-spar	2	Patchy_Vein halo	Silica	1	Patchy_Vein halo	Cpy	0.1	dissem_FF	Py	0.3	dissem_FF	Vein	280	62
10-Aug-20	2356	340936	6223053	Grab		Diorite	Mg-cg, foliated with patchy K-spar and Epi altrn and mafic selective chl altrn. Noticeable increase in Bt that somewhat appears to be secondary however also noted as poikiolitic w/n primary Hrnblnd.	30.53	k-spar	2	Patchy	Chl	2	Mafic selective_Vein halo	Epi	2	Patchy_FF	Cpy	0.3	dissem				Vein	20	72

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11-Aug-20	2357	340490	6223285	Grab		Vein	Host is mg-cg moderately foliated diorite w/ a cross cutting qtz+epi vein. Magnetic signature of diorite is low as evidenced by reduce mag susc, increased Fe-Ox and increased patchy to pervasive epi within unit. Increase in Hrnblndite xenoliths noted <50cm. vfg-fg dissemination of cpy noted w/n localized pervasive silica+epi altrn of host diorite.	2.8	Epi	3	Patchy_Vein halo	FeOx	4	pervasive	Silica	3	Patchy_Vein halo	Cpy	0.5	dissem	Chlc	0.7	Secondary	Vein	30	88
11-Aug-20	2358	340387	6223357	Grab		Diorite	Highly fractured, chl and cacb altrd mg-cg diorite. Most chl altrd mafics contain strg cacb replacement.	0.294	Cacb	4	Pervasive	FeOx	4	Pervasive	Chl	3	Mafic selective_FF	Cpy	0.1	ff	Py	0.3	ff			
13-Aug-20	2359	341217	6223073	Grab		Diorite	mg-cg, containing moderate patchy k-spar and wk-mod epi and FF altrn w/n locally strongly foliation diorite. Timing of altrn and fluids fairly clear in this sample. Patchy K-spar likely as a result of pegmatitic K-spar+qtz veins is cut by milky qtz which is subsequently x-cut by epi+/-qtz+/-cpy.	2.54	K-spar	3	Patchy	Epi	2	Patchy_FF	Chl	3	Mafic selective _Vein halo	Cpy	0.7	dissem_BB	Py	0.5	dissem_BB	Vein	2	90
13-Aug-20	2361	341221	6223082	Grab		Qtz Sulphide Vein	As PG-055 and sample #2359. **2360 is a control sample.**	0.371	K-spar	3	Patchy	Epi	3	FF	Silica	3	Vein halo	Cpy	0.7	dissem_BB	Py	0.5	dissem_BB			
13-Aug-20	2362	341088	6222946	Grab		Qtz Sulphide Vein	Vein is similar in texture, trend and mineralization style as at the Ootes vein showing to the south. Vein noted to pinch (<2mm) and swell (10cm) through O/C and bleed into chl fracture/shear plane and swell (5cm) w/n it before pinching off again w/n foliation plane and head back on the N-S (002) trend. Cpy noted to post date vein as it fracturesw/n vein. Virtually all Cpy is	0.255	Chl	3	Mafic selective_foliation parallel	FeOx	3	Pervasive	Hem	1	Mafic selective_Foliation parallel	Cpy	3.0	dissem_FF	Bn	0.7	dissem_FF	Vein	358	88

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							rimmed by vfg-fg Bornite.																			
13-Aug-20	2363	341028	6222911	Grab		Diorite	Mg-Cg, moderatly foliated diorite that appears to be partially brecciated by strg epi and silica. All mafics have been disrupted and chl altrd. mod clay altrn predominately of felsics also noted.	0.477	Epi	4	pervasive	Chl	3	Mafic selective	Cly	3	Fldspar selective	Cpy	2.0	dissem_BB	Py	2.0	dissem_BB	Vein	150	80
14-Aug-20	2364	340924	6222212	Grab		Granodiorite	**Thin Section** - Suggestive of a Qtz Monzodiorite however texturally very similiar to sample 3112 confirmed as a Granodiorite. Tagged in the field as a Tonalite. Fg-mg, contains ~ 30-40% mod ser and wk epi altrd fldspr, 20-30% qtz and 10-20% mod chl and ser altrd mafics. No mt noted on off-cut sample and is likely replaced by cpy+/-py that have been subsequently oxidized. Abundant hairline fractures of qtz+epi+sulphides noted as well as minor hairline discontinuous chl fractures?	23.21	Chl	2	Mafic selective	Silica	2	Interstitial_FF	Epi	1	Patchy_FF	Cpy	1.0	dissem_FF	Py	1.0	dissem_FF	Vein	150	60
14-Aug-20	2365	341039	6222491	Grab		Diorite	Pervsive chl altred diorite proximal to tonalite contact. Virtually all primary textures destroyed and mineralization is noted as vfg-cg blebs w/n the altered host and as cg blebs likely remobilized w/n weathered out Cacb in vuggy qtz.	2.037	Chl	4	pervasive	Epi	3	patchy	Silica	2	Patchy	Py	5.0	dissem_BB	Cpy	2.0	dissem_BB			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
14-Aug-20	2366	340968	6222451	Grab		Qtz Vein	Massive, Fe-stained vuggy qtz vein with mg-cg, blebby Py+/-Cpy within center of vuggy vein. Sulphides appear to post date vein.	0.181		0			0			0		Py	1.0	BB	Cpy	0.5	dissem	Vein	2	90
16-Aug-20	2367	335707	6231985	Grab		Monzonite	Monzonite as desribed at PG-067 containing epi veining and hairline fractures <10mm thru/ot.	3.33	Epi	3	Interstitial_FF	K-spar	1	Patchy	Chl	3	Mafic selective	Py	0.1	dissem				Vein	140	90
16-Aug-20	2368	336041	6232171	Rep		Monzodiorite	**Thin Section** - Confirmed as a Monzodiorite. Mg-cg non-foliated monzodiorite w/ patchy k-spar and epi altrn as a result of locallized K-spar and epi hairline ff and veining. Contains ~ 30-40% saussaritized (epi+ser) altrd plag, 20-30% k-spar, 7-10% mt and 15-20% pyx? Rare dissem cpy and py.	93.71	Ser	2	Plag selective	Act	2	Mafic selective	Epi	1	Patchy	Py	0.1	dissem	Cpy	0.1	dissem			
16-Aug-20	2369	336108	6232164			Pyroxenite	**Thin Section** - Confirms Pyroxenite protolith. Tagged in the field as a Hornblendite. Mg-Cg dark green to black moderately act altrd pyx and amphibole 50-60%, and magnetite 3-5% with what appears to be secondary interstital fldspr+/-qtz 7-10%. Vfg-fg cpy+/-py noted dissem interstitially as a result of thin hairline Fe-oxidized sulphide fractures.	108.37	Act	2	Mafic selective	Ser	1	Plag selective	Epi	1	Interstitial	Cpy	1.0	dissem	Py	1.0	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
16-Aug-20	2370	336152	6232155			Qtz Vein	Milky white and orange 25-35cm qtz+carb vein. Early milky qtz veining contains a comb to semi-zonal pattern indicative of a non-boiling environment. Cacb post dates, locally brecciates vein, infills space between qtz x-stals and carries remobilized cpy+py as all sulphides are dissem w/n Cacb.	0.281	Cacb	4	Pervasive_FF	Ser	3	selective	Chl	2	vein halo	Cpy	0.1	dissem	Py	0.3	dissem	Vein	220	40
17-Aug-20	2371	336047	6230561	Grab		Diorite	Mg-cg pinkish green w/ mod-strg K-spar and chl altrn. No foliation noted and appears to contain slight increase in qtz. And may be a qtz diorite. Vfg dissem cpy noted generally along mafic grain boundaries and noted proximal to thin discontinuous hairline fractures of act/chl.	23.25	k-spar	2	Patchy	Act	2	Mafic selective_FF	Epi	1	patchy	Cpy	0.5	dissem_FF						
17-Aug-20	2372	336079	6230557	Grab		Diorite	Wkly foliated, mg-cg, with patchy k-spar as a result of proximal cg k-spar+qtz veins. Hairline fractures and veinlets of cpy locally w/ actinolite x-cut both the diorite and the CG k-spar+qtz veining.	26.32	k-spar	3	Patchy	Act	2	Mafic selective_FF	Epi	2	Patchy	Cpy	0.7	FF						
17-Aug-20	2373	336229	6230405	Grab		Qtz Vein	Vuggy qtz+epi vein x-cuts and silicifies host mg-cg diorite. Vein contains dark green chl+/-act selvage and bx'd host fragments of diorite. Epi post dates qtz and cacb post dates and infills epi.	1.17	silica	4	pervasive	Epi	3	Vein halo	Chl	3	vein halo	Cpy	0.3	BB				Vein	340	88
17-Aug-20	2374	336172	6230376	Grab		Qtz Vein	Gossonous, hematitic qtz vein x-cuts mod pervasive k-spar altrd diorite. Vugs internally w/n center of vein contain fg-cg often cubic strongly fe-oxidized pyrite. No cpy noted w/n vein however vfg-fg cpy+py observed dissem on the vein margin w/n chl altrd dioritic host	0.191	k-spar	3	pervasive	Silica	3	patchy	Epi	3	Interstitial	Py	7.0	dissem_BB	Cpy	0.3	dissem	Vein	300	22

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							containing a Mag Susc. reading of 9.075.																			
5-Aug-20	2401	346490	6218666	Grab		Diorite	Mg-cg diorite x-cut by mt-epi-qtz vein with later pyritic core.	15.051	FeOx	3	Patchy_FF	Chl	3	mafic selective	Ser	2	patchy	Py	2.0	dissem_Vein	Cpy	0.1	dissem	Vein	200	54
5-Aug-20	2402	346444	6218662	Grab		Diorite	Mg-cg diorite, virtually all mafics contain strg act/chl altrn potentially as a result of late act+mt+/-py fracturing that locally micro-brecciates diorite host. Potential underlying alb altrn is patchy. Late semi-stockwork py+/-cpy fractures often Fe-oxidized noted to x-cut act+mt+py.	79.350	Act	3	Mafic selective_FF	Alb	3	Patchy	FeOx	3	Patchy_FF	Py	2.0	dissem_FF	Cpy	0.3	dissem_FF			
5-Aug-20	2403	346649	6218332	Grab		Diorite	Mg-cg diorite seemingly containing pervasive locally texturally destructive alb (possibly silica?) altrn. w/ semi-stockwork act altrd to chl fractures. All mt has been replaced by Fe-oxide and minor hematite.Host contains pervasive Fe-stain. Late anastamosing hairline fractures of Cacb thru/ot. Dilational zone in joint/fracture? No sulphides noted in off-cut.	1.100	Alb	4	pervasive	Act	3	Mafic selective_FF	Cacb	2	Patchy_FF								

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
5-Aug-20	2404	346671	6218338	Grab		Diorite	Virtually no primary textures remain other than the odd cg chl+act altered amphibole. All mafics virtually destroyed and appear sheared out into chl+act+/-mt blobs with secondary granular locally cubic py. All felsics appear as pale pinkish-white alb and Fe-stained masses. Veinlets and stringers of act+mt+/-cpy noted thru/ot are x-cut by hairline often discontinuous and offset fracs of epi. It appears a later fe-oxidized fracture set locally w/ some py cut both.	18.390	Alb	4	Felsic selective	Act	3	mafic selective_FF	Epi	3	Patchy_FF	Py	2.0	dissem_BB_FF	Cpy	0.5	dissem_FF			
6-Aug-20	2405	347719	6219150	Grab		Monzodiorite	**Thin Section** - Thin section suggests Monzonite/Monzodiorite affinity w/ K-spar and amphibole component suggestive of late magmatic of which seperates it from possible Monzodiorites of the Duckling Creek Suite . Tagged as Diorite in the field. Some well preserved Pyx noted locally. Minor wk K-spar noted as a result of proximal K-spar veining and or syenite dyklets noted in O/C. Moderate hairline epi fractures noted and appear to contain a wk k-spar altrn selvage that produces a patchy k-spar altrn appearance. Mt and some primary mafics are variably hem altrd along x-stal lattice planes. Chl+/-ser and cacb the latter due to hairline fractures are variable on all mafics however moderate at most. Felsics are variably ser+cacb altrd	36.180	Act	2	Mafic selective	K-spar	1	Patchy	Chl	1	Mafic selective							Joint	0	57

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							and locally appear to contain minor Fe-staining. No sulphies noted in sample.																			
17-Aug-20	2406	335249	6231710	Grab		Monzodiorite	Interpreted as CG hornblende phyric monzodiorite with a 20-30cm thick zone of replacement(?) silica carrying minor disseminated pyrite (<1%), however vfg disseminations of Py are noted w/n altr hblnd. fracture-infill epidote locally and host is vuggy and pitted as a result of interstitial and hairline fractures of Cacb. All primary hblnd is altered to chl/act +/- cacb and frequently secondary bt is noted on the rims. Mt also contains variable sphene altrn. Possibly a silica-healed fault?	35.480	Chl	3	Mafic selective	Bt	2	Mafic selective	Cacb	3	Interstitial_FF	Py	1.0	dissem				Vein	258	24

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
17-Aug-20	2407	335183	6231730	Grab		Qtz Vein	White, tabular and elongated bull quartz vein within Kspar dominant vein and includes small pod of rusty, malichite stained and epidote altrd wallrock? Cg blebs of Cpy noted noted w/n the vein. Mineralization frequently appears to occur as Fe-Oxidized fractures and preserved mineralized pods that post date qtz vein. Vein is hosted within hornblende phyric diorite, w/ weak Kspar altern in vicinity.	0.035	Epi	3	FF	FeOx	2	FF		0		Cpy	1.0	Patchy_FF				Vein	290	72
17-Aug-20	2408	335061	6231561	Float		Hornblendite	Dark green, coarse-grained amphibole-dominant with lesser interstitial ser+/-silica altrd plag that both define a mod-strgly foliation. Amphiboles (hornblende or actinolite) are very chlorite altered, and some interstitial books of bt are likely secondary as deformation would have obliterated primary. Felsdpars are somewhat ragged and elongated into the foliation plane. Light Fe-ox wash over exposed surface and the host contains considerable epi+qtz fractures throughout. Cpy and lessor Py is noted as vfg-mg dissem and blebs often proximal to epi, however it is not clear if associated? Deformation may be a result of shearing w/n the area?	14.720	Epi	3	FF	Chl	3	Mafic selective	Ser	3	Felsic selective	Cpy	0.7	dissem_BB	Py	0.5	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
17-Aug-20	2409	335116	6231221	Grab		Hornblendite	Cg wkly chl altrd hornblendite cross-cut by what appears to be a mg-cg feldspar + qtz dominate lithology or more likely a mg-cg wkly Fe-stained K-spar+Qtz vein w/ minor interstital Cacb. Hornblenite contains no foliation and or deformation and appears to be composed solely of subtle to wk epi altrd hornblende and vfg-fg magentite. No sulphides noted w/n either.	24.580	Chl	2	pervasive	Epi	2	interstitial	Cacb	1	Interstitial							Dyke	145	71
17-Aug-20	2410	335109	6231167	Grab		Alkali-Granite (Aplite)	Fg-mg aplitic textured (sugary). Composed of 50-60% pale pinkish-white K-spar, 20-30% translucent quartz, 5-7% mafics of thin wispy biotite and acicular amphibole, 1-2% mt and 1% variably oxidized py. Epi is noted to x-cut by and locally brecciate host and appears to contain a 3-10mm K-spar alteration halo.	3.471	K-spar	3	Vein halo	Epi	2	FF		0		Py	1.0	boxwork_dissem				Dyke	245	81
17-Aug-20	2411	335181	6231185	Float		Qtz vein	Qtz vein that x-cuts what appears to be sheared and or deformed diorite. Most mafics w/n diorite texturally destroyed and replaced by variable chl+hem+cacb. All feldspar are silicified, variably ser altrd and highly fractured w/ cacb infill. Granular, cubic pyrite noted and appears as secondary and locally deformed growths possibly related to a local shear? Rare vfg cpy noted and appears remobilized w/ cacb.	1.236	silica	3	Felsic selective	Chl	3	Mafic selective	Cacb	3	Pervasive_FF	Py	2.0	dissem	Cpy	0.1	FF	Vein	230	30

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
17-Aug-20	2413	335293	6231140	Grab		Diorite	Highly fractured and moderately altered mg-cg diorite. Main fractures are of 2 types: Epi and later Fe-oxide (sulphides?) Possible hairline silica fractures also noted to pre-date epi? Fe-oxie fractures are anasamosing thru/ot basically forming a crackle breccia. All primary mafics altrd to chl+hem and felsics altrd to silica+ser and fe-stained. Virtually no mt remains and no sulphides noted.	1.277	FeOx	3	Patchy_FF	Chl	3	Mafic selective	Epi	2	Patchy_FF									
18-Aug-20	2414	344586	6219972	Grab		Diorite	Mg-cg diorite w/ patchy to pervasive k-spar and silica altrn w/ post altrn Fe-staining. Most mafics altrd to chl+ser and feldspar is lathe-like to tabular altred to silica+/-k-spar+/-ser. Silicification appears to pre-date K-spar the latter of which appears related to epi+/-silica hairline fractures and veins. Py noted as vfg-fg dissem seemingly replacing mafic sites and often contain hem altrd rims. rare cpy noted also and some sulphides appear to occur as discontinuous fractures.	0.460	Silica	3	pervasive	K-spar	3	Pervasive_Vein halo	Epi	2	Patchy_FF	Py	0.5	dissem_FF	Cpy	0.1	dissem	Joint	170	23
18-Aug-20	2415	344559	6219970	Grab		Qtz-Carb Breccia	Quartz-Cacb breccia or disrupted veins within a sheared joint structure. No pyrite visible but likely oxidized to the limonite. Appears to be multiple quartz vein generations with some larger bull quartz present and smaller open-space filling style. All primary textures silicified and locally only silicifed and carb altered lathe-like feldpsar and light grey	0.274	Silica	5	pervasive	Cacb	3	Interstitial_FF		0										

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							mafic silicified blobs are preserved. Cacb fractures and sheeted veins post date silicification. No sulphides noted.																			
18-Aug-20	2416	344560	6219997	Grab		Qtz-Carb Breccia	As sample 2415 with minor patchy pale green sericite pods. No sulphides noted.	0.047	Silica	5	pervasive	Cacb	3	Interstitial_FF	Ser	2	Interstitial							Breccia	190	35
18-Aug-20	2417	344533	6219920	Grab		Qtz Vein	Cryptocrystalline, massive patchy Fe-stained and fractured qtz vein. Fe-oxidized and somewhat hematitic fractures locally contain preserved cpy, however most cpy noted as fg-cg blebs potentially as infill to vugs and or replacing host fragments w/n the vein?	0.063	FeOx	3	Patchy_FF	Hem	2	Patchy_FF		0		Cpy	2.0	BB_FF				Vein	157	28
18-Aug-20	2418	344535	6219926	Grab		Diorite	Fg-mg diorite. All primary crystals have been mod-strgly chl+py fractured and contain locallized embayments and minor disjointed and rotational textures. Fractures surround all grain boundaries and appear to be mod ser altrd possibly as a result of late silica? Interstital epi also noted. Host may be located proximal to shearing? Py dominate, very little cpy noted in off-cut.	4.240	Chl	3	Interstitial_FF	Silica	2	Interstitial_FF	Ser	1	Replacement	Py	5.0	dissem_FF	Cpy	0.3	dissem	Vein	240	47

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
18-Aug-20	2419	344434	6219789	Float		Diorite	Mg-cg diorite. Appears to contain patchy underlying k-spar altrn overprinted by epi that occurs interstitially as a result of abundant hairline fractures and veinlets. All mafics have been altrd to chl possibly after bt as the latter is locally noted to remain and cacb resulting in a pitted texture. Primary mt appear to have been replaced by a combination of sphene-hematite and or vfg-fg cpy. Cpu appears associated w/ epi+qtz ff.	50.885	Epi	3	Pervasive_FF	K-spar	3	patchy	Chl	3	Mafic selective	Cpy	0.5	dissem	Chlc	0.5	Secondary			
18-Aug-20	2420	344441	6219720	Grab		Qtz Sulphide Vein	Massive Fe-stained and fractured milky qtz+sulphide vein. Sulphides are dominated be wk-mod Fe-oxidized py w/ much lessor cpy both occuring as fg-cg blebs, disseminations and late fractures. Vein halo contains pervasive chl altrn.	0.589	Chl	4	Vein halo	FeOx	2	Patchy_FF		0		Py	15.0	dissem_BB_FF	Cpy	1.0	dissem_BB			
18-Aug-20	2421	344450	6219602	Subcrop		Qtz Vein	Amorphous milky qtz vein w/ moderate Fe-stain as a result of late cpy+/-py fracturing. Dissem and blebby Cpy noted x-cutting the vein.	0.033	FeOx	2	Patchy_FF		0			0		Cpy	0.5	BB_FF						
19-Aug-20	2422	346706	6218359	Grab		Diorite	**Thin Section** - Confirmed as an albitized Diorite/Gabbro. Tagged as a diorite in the field. Mg-cg diorite. Appears to contain pervasive underlying alb altrn possibly related to Chl+/-mt veinlets and hairline fractures. Chl+mt appears to alter virtually all mafics along w/ Cacb the latter as a result of abundant anastamosing hairline fractures thru/ot. Py+/-	57.340	Alb	4	Felsic selective	Cacb	4	Pervasive_FF	Chl	3	Mafic selective_FF	Py	3.0	dissem_FF	Cpy	0.1	dissem_FF	Joint	160	31

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							Cpy noted w/n and proximal to Chl+mt veins often appearing to post date but not certain?																			
19-Aug-20	2423	346698	6218350	Grab		Diorite	Mg-cg diorite. Appears to contain pervasive underlying alb altrn and strg Fe-stain possibly related to magnetite destruction. Primary Mt also appears to be altrd to sphene and locally hem. Most mafics altrd to act and replaced in part by alb, hem and vfg-fg dissem cpy+py. Sulphides also occur as disseminated veinlets and frequently discontinuous hairline fractures.	0.333	Alb	4	pervasive	Act	3	Mafic selective_FF	FeOx	3	pervasive	Py	3.0	dissem_FF	Cpy	1.0	dissem_FF			
19-Aug-20	2424	346689	6218346	Grab		Latite Porphyry	**Thin Section** - Indicates potential for possible Andesite rather than Latite however Alb altrn likely completely replaced possible K-spar dominate groundmass. Begs the question of altrn, mineralization and lithological timing for latite porphyry as they are considered late and as a result may in fact be an Andesite? Relict fg-mg textures indicative of an albite altrd plagioclase bearing Latite Porphyry. No cg primary crystals noted at all and groundmass albeit strgly altered appears to have been aphanitic. Abundant discontinuous hairline	10.640	Alb	4	pervasive	Silica	2	FF	Epi	2	Interstitial_FF	Py	2.0	dissem_FF	Cpy	0.1	dissem_FF	Breccia	250	74

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							act+mt fractures and likely noted to replace primary mafics. Abundant late Fe-stained epi fractures throughout locally containing vfg dissem cpy and py.																				
19-Aug-20	2425	346769	6218339	Grab		Diorite	Mg-cg diorite w/ pervasive Alb altrn and mafic selective Act+chl altrd. Minor discontinuous act FF. All Mt replaced by sphene. Most sulphides noted as vfg-fg dissem w/n altrd mafics.	0.174	Alb	4	pervasive	Act	3	Mafic selective_FF	Cacb	3	Mafic selective_FF	Cpy	0.5	dissem	Py	0.3	dissem	Joint	325	55
9-Aug-20	3101	341109	6221910	Grab		Diorite	Pervasive strg chl throughout however mg-cg chl fractured lathe like feldspr locally preserved. All mafic amphible appear completely replaced. Locallized epi FF noted and epi is frequently interstital. Vfg-mg dissem and blebby py and cpy occur frequently w/n altrd mafics and proximal to sulphide hairline fractures.	37.07	Chl	4	Pervasive	Epi	3	Interstitial_FF	Ser	2	Interstitial	Py	1.0	dissem	Cpy	0.5	dissem			
9-Aug-20	3102	341126	6221842	Grab		Qtz Vein	Seemingly barren milky white to pale grey qtz vein that x-cuts and stopes host fragments of what appears to be pervasive k-spar altrd monzonite/qtz monzonite. No sulphides noted w/n	0.129	K-spar	4	Pervasive	Chl	3	Mafic selective	Silica	3	patchy	Py	1.0	FF				Vein	355	90

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							either vein and k-spar altrd host. Recorded altrn is reflecting altrd host.																			
9-Aug-20	3103	341096	6221878	Chip	1.20	Shear	Relict shear textures possibly after a mg-cg diorite are strgly chl altrd elongated mafics and rarely preserved seemingly silicified felsics, however extremly difficult to be certian. Contains abundant Fe-oxidized dissem, blebby and FF cpy>py thru/ot that appears to post date silicification shearing and chl altrn.	1.674	Chl	4	Pervasive	Silica	3	Patchy	FeOx	3	Sulphide selective_FF	Cpy	4.0	dissem_FF	Py	2.0	dissem_ FF	Shear	333	90
9-Aug-20	3104	340980	6221800	Grab		Diorite	Mg-Cg, moderate to strongly foliated diorite. Contains ~40-50% lathe-like cream colored plag, ~30-40% mafics of wkly chl altrd amphibole and patchy chl and ser altrd bt, ~2-3% qtz, and 1-2% Mt. No sulphides noted on off-cut.	22.7	Chl	2	Mafic selective	Ser	2	Pervasive	FeOx	1	FF	Cpy	0.5	Veinlet	Py	0.5	Veinlet			
9-Aug-20	3105	340965	6221756	Grab		Qtz Diorite	Mg-cg potentially a qtz diorite judging by what appears to be interstitial possibly skeletal qtz. Abundant patchy K-spar thru/ot as a result of what appears to be a cg K-spar+qtz vein that cross-cuts the host. It's presence may also be responsible for the interstitial qtz. Late hairline fractures of epi cross-cut both the diorite and the cg K-spar+qtz vein and introduces patchy epi throughout the host. Contains 35% mafics (bt>>hbl), 1-4 mm. 10-12% qtz, interstitial, 1-2 mm, lt gry. 50% plag wht to cream, to 4	14.42	K-spar	3	Patchy	Epi	3	Pervasive_FF	Chl	2	Mafic selective	Py	0.5	dissem						

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							mm, anhedral. 10% K-spar, interstitial, anhedral, 1-3mm (***may be secondary*). Bt-phyric, coarse grained.																				
9-Aug-20	3106	340974	6221710	Grab		Granodiorite	Fg-mg, whiteish grey w/ patchy pink due to patchy k-spar altrn. Equigranular, Contains ~ 40-50% wk ser and k-spar altrd locally zoned plag, 20-30% sub-rounded qtz, 5-10% mod-strg, wispy, chl altrd bt and 5-7% acicular allanite. No sulphides noted on off-cut.	4.744	k-spar	2	Patchy	Ser	2	plag selective	Chl	2	mafic selective									
9-Aug-20	3107	341003	6221661	Grab		Qtz Monzodiorite	**Thin Section** - Confirmed as a fg-mg Quartz monzodiorite. Tagged in the field as a Diorite. Fg-mg, equigranular. Contains ~40-50% variably ser and epi altrd plag, 10-20% wkly chl and mod ser and epi altrd bt, 10-15% chl, epi and cacb altrd amphibole, ~3-5% qtz and 3-5% fg dissem mt. Abundant hairline Cacb+/-K-spar FF thru/ot.	27.95	Chl	2	Mafic Selective	Ser	1	Plag selective	Cacb	1	Interstitial	Py	0.1	dissem	Cpy	0.1	dissem			
9-Aug-20	3109	340936	6221674	Grab		Diorite	Pervasive chl and epi altrn the latter as a result of veining noted w/n mg-cg diorite. Frequent textural destruction as a result of both. No sulphides noted w/n the off-cut sample and mal noted w/n fractures with	0.342	Epi	4	Pervasive	Chl	4	Pervasive	Cacb	2	Patchy_FF							Dyke	13	90

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							Cacb and is likely due to remobilized cpy?																			
9-Aug-20	3110	340938	6221737	Chip	0.12	Qtz Sulphide Vein	Massive pale grey to white Qtz vein contains late fracture fill, blebby and oxidized cpy thru/ot. Cacb altrn locally as hairline fractures and w/n vugs.	0.037	FeOx	3	Sulphied selective_FF	Cacb	2	Patchy_FF		0		Cpy	7.0	dissem_BB_FF				Vein	3	90
10-Aug-20	3111	340908	6223092	Grab		Qtz Diorite	Possibly some silicification? Primary qtz component ~5-7%. Most fldspr 30-40% contain mod k-spar and epi altrn. All mafics 40-50% contain strg chl and mod epi altrn and are basically blobs. Abundant hairline fractures and veinlets of epi up to 3mm noted and post date discontinuous hairline fractures of chl/act. with hairlines of chl. Vfg cpy noted dissem w/n altrd mafic and local epi fractures. Fe-oxidation w/n epi could represent sulphides?	2.868	Epi	3	Pervasive	Chl	3	Mafic selective_FF	K-Spar	3	Patchy	Cpy	0.1	Dissem				Vein	340	80
10-Aug-20	3112	340894	6223091	Grab		Granodiorite	**Thin Section** - Confirmed as a Granodiorite. Tagged in the field as a Tonalite. Appears relatively unaltered. Contains ~7-10% acicular amphibole or potentially (allanite?) . 40-45% plagioclase and 30-40% translucent sub-rounded qtz locally as eyes, 2-3% mt and 1-2% chl altrd bt. No sulphides noted. Need to check geochem analysis for increases in REE's (Ce,La,Nd,Y) with respect to other lithologies as allanite w/n Tonalite typically	9.166	Chl	1	Mafic selective	Ser	1	Plag selective	Epi	1	Patchy_FF							Contact	264	42

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							contains up to 20% rare-earth elements.																			
10-Aug-20	3113	340950	6222988	Grab		Diorite	Coarse grained hbl-drt, moderate foliation, mod mag. 55% hbl>>bt, chl altered, to 1 cm. Plag hwt, euhedral laths to interstitial, to 1 cm, mod epi alt. Minor (1-5%) interstitial lt gry qtz (?). Cut by epidote vein and hairline fractures that result in patchy epi altrn of both plag and mafics.	58.24	Epi	2	Patchy_FF	K-Spar	1	Patchy	Chl	2	Mafic selective	Cpy	0.3	dissem	Py	1.0	BB	Vein	260	90
10-Aug-20	3114	340947	6222931	Grab		Diorite	Mg-cg diorite contains epi+late cacb infill veins. Several epi veins noted and host contains patchy pervasive and texturally destructive silicification that predates epi fractures and veins. Cpy is noted dissem on the margins and w/n epi and frequently oxidized however it appears it may have been remobilized w/ late Cacb.	0.066	Epi	3	Patchy_FF	Silica	3	Patchy	Cacb	3	FF	Cpy	0.5	dissem_FF	Py	0.5	dissem_ FF	Vein	5	80
10-Aug-20	3115	340946	6222932	Grab		Diorite	Mg-cg hbl-diorite. ~50% ragged chl and fractured epi altrd hbl up to 2 cm agglomerates. 35% interstitial wht plag. Abundant hairline epi fracturing thru/ot frequentlu containing post Cacb infill. Fg dissem often oxidized w/n altrd mafics and	4.246	Chl	3	Mafic selective	Epi	2	Pervasive_FF	Cacb	2	Patchy_FF	Cpy	0.5	dissem	Py	0.1	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							possibly remobilized w/ Cacb?																			
10-Aug-20	3116	340937	6222930	Float		Diorite	Fg-mg diorite. Interstital silica gives the appearance of a tonalite however mafic component seems high. All mafics have been variably replaced by chl possibly after bt? and sulphides. Patchy K-spar and silicification along w/ epi the former likely as a result of K-spar+qtz veins likely proximal to source? the latter noted variably w/n mafics and appears to be associated w/ hairline and veinlets. Not certain if this is also responsible for abundance of disseminated sulphides? Patchy FeOx noted on sulphides.Well mineralized sample!	0.066	Chl	4	Pervasive	Silica	3	Patchy_FF	Epi	3	Patchy_FF	Cpy	3.0	dissem	Py	3.0	dissem_BB			
10-Aug-20	3117	340938	6222928	Grab		Diorite	Mg-Cg diorite contains ~30% mod-strgly chl and bt altrd hrnblnd with local wisps of epi altrn. 50-60% mod ser, silica altrd and Fe-stained plag. Qtz is noted interstitially and with Fe-stain increases proximal to qtz veining. Qtz veins are strgly Fe-stained and contain late Fe-oxide +/-sulphide fracturing. Sulphides (py+cpy+mo) are predominately vfg-cg frequently oxidized disseminations along qtz vein boundaries w/n silicification, blebs w/n qtz. and rarely w/n chl+bt altrd mafic phenocrysts.	5.035	silica	3	Pervasive_Vein halo	FeOx	3	FF	Chl	2	Mafic selective	Py	0.5	dissem_FF	Cpy	0.3	dissem_FF	Vein	360	90

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
11-Aug-20	3118	347889	6218063	Grab		Shear	Dark green, w/ pervasive texturally destructive chl altrn likely related to shearing. Pyrite occurs w/n as fg-cg moderately developed granular cubes that are frequently fractured and oxidized. Vfg often wispy pink sphene noted w/n. Developed foliation fabric, slickenslides and granular pyritic growths indicative of pervasive intense shearing of host (diorite?) rather than a mafic dyke.	1.455	Chl	5	Pervasive	FeOx	2	Sulphide selective	Ser	2	Pervasive	Py	2.0	dissem	Cpy	0.1	dissem	Shear	166	80
11-Aug-20	3119	348024	6218038	Grab		Shear	Very similar to Sample 3118 whereby host (diorite?) is texturally destroyed by shearing and pervisve, intense chl altrn. Interstital silica likely as a result of destruction of primary felsic minerals. Late frequently Fe-oxidized sulphide hairline fractures are noted locally and appear to be cpy dominate. Cpy appears to replace granular, sub-cubic, secondary chain of grain py growths where fractures intersect.	0.376	Chl	5	Pervasive	FeOx	2	Sulphide selective_FF	Ser	3	Pervasive	Py	7.0	dissem	Cpy	2.0	dissem_ FF	Dyke	166	80
11-Aug-20	3120	348030	6218038	Grab		Shear	Some possible relict diorite textures but difficult to be certain as a result of well developed intense chloritic shearing and pods of intense silicification. As with sample 3118 and 3119, Py occurs w/n as mg-cg moderately developed granular cubes that are frequently fractured and oxidized. No Cpy noted in off-cut sample.	0.857	Chl	4	pervasive	Silica	4	Patchy	FeOx	2	Sulphide selective_FF	Py	2.0	Vein	Cpy	0.5	Vein	Vein	170	85

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
11-Aug-20	3121	348036	6218045	Grab		Qtz Syenite	Judging by the amount of what appears to be fg-mg primary moderately Fe-stained and fractured sub-angular to sub-rounded qtz locally as rounded eyes ~20-30%, this unit is a Qtz Syenite. this is sample is very similar to sample 2270. K-spar looks secondary and its possible qtz syenites may be altred Tonalites. Virtually all primary plag 50-60% is mod-strgly ser altrd, Fe-stained and fractured and all mafics have been replaced by ser+/-chl and likely secondary growths of granular sub-cubic py. Locallized hairline fractures and veinlets of qtz+/-Cacb noted. Unit likely located proximal to a shear judging by habit of pyrite, increased Fe-oxide fracturing and silicification?	1.487	ser	4	pervasive	Silica	3	interstitial	FeOx	3	Pervasive_FF	Py	2.0	dissem						
11-Aug-20	3122	348040	6218048	Grab		Shear	Some possible relict diorite textures predominately defined as strg chl altrd amphibole, but difficult to be certain as a result of well developed intense chloritic altrn and shearing with pods of interstitial silicification possibly after relict <4mm plag. As with sample 3118, 3119 and 3120, Py occurs w/n as mg-cg moderately developed granular cubes that are frequently fractured and oxidized. All mt altrd to pink often wispy dislocated sphene. No Cpy noted in off-cut sample.	1.449	Chl	4	pervasive	Silica	3	interstitial	Ser	3	pervasive	Py	3.0	dissem	Cpy	0.3	dissem	Dyke	170	80

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
12-Aug-20	3123	347631	6218114	Float		Diorite	Unit is a mg-cg diorite composed of ~ 50-60% tabular to lathe-like variably ser+k-spar+epi altrd plag, 20-30% chl+/- ser altrd mafics (bt and hbl), up to 3 mm and 5-7% locally hem altrd mt. K-spr in sample is patchy and secondary as it is noted as a halo to linear, often discontinuous hairline epi fractures. Additionally, there appears to be discontinuous bt+/-chl hairline fractures that are perpendicular to epi, howver timing can not be identified due to such small fractures. Cpy occurs as vfg-fg dissem often on the margins of mafics and appear related to epi fractures.	19.310	ser	3	Plag selective	K-spar	2	Patchy_Vein halo	Epi	2	Plag selective_FF	Cpy	0.5	dissem	Py	0.1	dissem			
12-Aug-20	3124	347573	6218000	Grab		Diorite	Defined mg-cg dioritic textures remain, however development of shearing noted as disrupted, broken and strngly altrd primary crystals observed. All mafics as blobs altrd to chl+/-ser and minor hem. Feldspar contain blurred margins and are frequently broken and fractured w/ chl infill that appears to post date earlier wk-mod k-spar and ser. Definate Fe-stain also noted and primary mt contains variable sphene altrn. Py+Cpy noted as vfg-fg dissem often w/n altrd mafics however locallized discontinuous sulphide fractures are noted proximal to areas of disseminations.	19.630	Chl	3	Mafic selective_FF	K-spar	3	Patchy	Ser	2	Pervasive	Py	0.5	dissem_FF	Cpy	0.3	dissem_FF			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
13-Aug-20	3126	339330	6222927	Grab		Diorite	Mg-Cg grained wkly foliated diorite. Contains several pulses of epi veining and fracturing w/n. Earlier phase appears to be noted as epi+cpy+py w/ an albite altrn halo later altrd to ser. Second phase appears to be barren epi+qtz with a silica altrn halo that off-sets phase 1. Third phase is hairline fractures of qtz+cacb. Defined mag susc reduction noted and evidenced by wk patchy Fe-stain and Hem within wkly chl altrd mafics possibly indicative of alb altrn and mag destuction.	6.436	Epi	3	Patchy_FF	Alb	2	Vein Halo	Silica	2	Patchy_Vein halo	Cpy	0.5	FF	Py	0.5	FF	Fault	100	70
13-Aug-20	3127	339322	6222925	Grab		Diorite	Absence of primary qtz indicates this is not a tonalite and off-cut shows no evidence of a contact? Rarely preserved textures indicate host was fg-mg rather than cg and composed predominately of feldspar. Some relict mafics noted however primary textures destroyed and replaced by a combination of bt-chl-ser-epi-sulphides. Host was likely a fg-mg diorite that has been alterd primarily to K-spar+ser, overprinted by ff derived epi and later ff derived silica. Sulphides occur as fe-oxidized, hem altrd, disrupted, granular, sub-cubic shaped likely originaly secondary growth py locally replaced by cpy and possible aspy?	0.122	K-spar	4	pervasive	Silica	3	Pervasive_FF	Epi	3	Patchy_FF	Py	2.0	dissem	Cpy	0.5	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
13-Aug-20	3128	339338	6222837	Grab		Diorite	Mg-cg, strgly foliated hbl-phyric diorite contains ~30-40% mod chl altrd hnblnd, 5-10% bt possibly secondary? ~40% mod silicified and wkly epi altrd plag and 5-10% vfg-fg dissem mt. Silicification occurs as a result of locallized Fe-stained massive qtz vein containing cg granular pyrite blebs.	34.48	Silica	3	Pervasive	Chl	2	Mafic replacement	Epi	1	plag selective	Py	0.5	BB							
13-Aug-20	3129	339331	6222831	Grab		Shear	Strong deformation and pervasive strg chl and interstitial epi+ser altrn thru/ot. Rarely preserved mafic chl altrd crystals are mg and indicative of a dioritic host. Virtually all preserved mg-cg felsic minerals are rounded, disjointed and or embayed. Py noted locally as fg dissem and frequently contain fe-oxidiation and hem altrd margins. Noted abscence of secondary granular to cubic pyrite often observed w/n shears.	37.62	Chl	3	pervasive	Epi	3	Interstitial_FF	Ser	3	Interstitial	Py	0.5	dissem							
13-Aug-20	3130	339266	6222837	Grab		Diorite	Coarse grained hbl-phyric drt. 50% hbl>>bt, minor chl+epi replacement. Hbl relaitively fresh, up to 0.5 cm, often euhedral. 50% plag, wht, anhedral. Minor foliation defined by alignment of mafics. Abundant hairline chl veinlets, parallel. Strong mag. One qtz+Cacb veinlet, 2 mm wide, rimmed by epi and chl. Jogs from one veinlet to another, likely a dilational structure. Vfg-fg cpy noted predominately dissem w/n mafics and appears to be associated w/ epi?	11.79	Epi	2	Patchy	Chl	2	mafic replacement	Cacb	1	Patchy_FF	Cpy	0.3	dissem	Py	0.3	FF				

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
13-Aug-20	3131	339330	6222923	Grab		Diorite	Mg-cg diorate with mod chl and wk cacb altrd hornblende ranging from 2- 5mm in size. Defined foliation by alignment of mafics is noted often where breakage occurs. Strong slickenslides on foliation planes.Unit contains mod silicification as a result of Qtz and epi hairline fractures. Vfg-fg mod oxidized cpy noted dissem w/n and may also be as hairline discontinuous fracs?	14.58	Silica	3	Pervasive_FF	Epi	2	Patchy_FF	Cacb	1	Patchy_FF	Cpy	0.5	dissem_FF				Fault	100	70
14-Aug-20	3132	340936	6221676	Grab		Diorite	Judging by grain size this is likely a pervasive and texturally destructive epi and chl altrd fg-mg diorite. Complete chl replacement of primary mafics and complete epidote replacement of primary plag. Epi veinlets appear sheeted (<5mm) x-cut the sample and locally contain strgy oxidized granular blebs of dissem cpy. **This sample may represent transitional zone of inner to outer propylitic altrn? especially w/n the fg-mg diorite where high grade cpy mineralization has been noted locally w/n the Cirque area.**	3.909	Epi	5	Pervasive_FF	Chl	5	Mafic Selective		0		Cpy	0.3	dissem						
14-Aug-20	3133	340996	6221504	Grab		Diorite	Similar fg-mg diorite as in Sample 3132, however appears to contain underlying patchy to pervasive texturally destructive silicification. Slight increase in cpy.	4.805	Silica	4	Patchy	Epi	4	Pervasive_FF	Chl	4	Mafic Selective	Cpy	0.5	dissem						

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
14-Aug-20	3134	341063	6221503	Grab		Diorite	Sample clearly shows a contact between fg-mg and mg-cg diorites. Locally the contact is diffuse and contains silicification however cut-off crystals of cg plag and mafics are evident. Fg-mg diorite contains entrainment of cg diorite crystals. Late epi+/_silica hairline fractures x-cut both and altr both felsic and mafic primary minerals but is more prevelent interstially w/n the finer grained variety. Vfg frequently oxidized and mal altrd cpy noted dissem w/n both units and appears associated w/ epi?	54.48	Epi	3	Pervasive_FF	Chl	2	Mafic selective	Silica	2	Patchy	Cpy	0.7	dissem_FF	Py	0.1	dissem			
14-Aug-20	3135	341109	6221496	Grab		Shear	Pervasive texturally destructive chl altrn with interstitial and blebby frequently weathered and vuggy Cacb w/n a shear. What remains of felsic component are fe-stained and embayed crystals. Cpy+/-py noted as vfg-fg dissem that are strgly oxidized to geothite, rare hematite and mal and also appear somewhat deformed but may be remobilized w/ Cacb?	1.017	Chl	5	Pervasive	FeOx	3	Sulphide selective	Cacb	2	Interstitial_BB	Cpy	1.0	dissem	Py	0.1	dissem			
14-Aug-20	3136	341177	6221500	Grab		Qtz Monzodiorite	**Thin Section** - Confirmed Qtz Monzodiorite protolith.Tagged in the field as a Diorite. Relict primary textures appear to represent fg-mg diorite however pervasive alb) altrn makes it difficult to be certain. All felsics are diffuse and altrd with wk epi overprint and all mafics are chl+epi+cacb+/-ser altrd. Late epi +cacb hairline fractures appear to post date	3.202	Alb	3	Pervasive	Cacb	2	Interstitial_FF	Epi	1	FF	Cpy	0.5	dissem_FF	Py	0.3	dissem_FF			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							Alb. Cacb is noted as fractures and interstitially often altering mafics. Cpy is note as vfg-fg dissem w/n and may occur as remobilization w/ Cacb?																			
14-Aug-20	3137	341204	6221515	Grab		Diorite	Mg-cg diorite. Mod-strg silica/alb altrn is overprinted by patchy k-spar and Fe-stain. All mafics altrd to chl gives unit a diffuse crystal textured appearence. All mt has been altrd to sphene. Hairline fracture fill Cacb noted throu/ot. Cpy occurs as vfg-mg dissem and blebs frequently w/n mafics and contain oxidized margins. Again, cpy may be related to Cacb as remobilization?	0.125	Silica	3	Plag selective	Chl	3	Mafic selective	Cacb	3	Interstitial_FF	Cpy	1.0	dissem						
14-Aug-20	3138	341254	6221367	Grab		Diorite	Similar to sample 3137, Noticeable marginal decrease in silica/alb, Cacb, epi and mineralization. Cpy may occur as a result of discontinuous hairline fractures?	1.198	Silica	3	Plag selective	Chl	4	Mafic selective	Epi	3	Patchy_FF	Cpy	0.5	dissem_FF						
14-Aug-20	3139	341324	6221452	Grab		Qtz Diorite	Mg-cg and Qtz-Bt dominate diorite. Contains ~30-40% wk-mod, patchy, chl+ser altrd bt, 5-7% wk, chl altrd hrblnd, 10-12% qtz, 30-40% wkly epi altrd and Fe-stained plag and 1-3% mt. Some possible silicification and may increase qtz content? Cpy+py noted as vfg-fg frequently oxidized dissem blebs w/n and on the margins of	17.02	Epi	2	Patchy	Ser	2	Patchy	Chl	2	Mafic selective	Cpy	0.5	dissem	Py	0.5	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							mafics and locally felsics and possibbly occur as hairline discontinuous fractures?																			
14-Aug-20	3140	341350	6221465	Grab		Diorite	Mg-Cg, with patchy wk-mod k-spar altrn and Fe-stain on felsics and what appears to be mod bt followed by mod-strg chl altrn of mafics. Appears relatively equigranular and most primary mt has been altrd to Fe-Ox and minor Hem. Locallized patches of vfg-fg dissem cpy+py noted frequently oxidized, replacing both mt and mafics containing mal and appear to be related to hairline fracture fill.	18.98	Bt	3	Mafic replacement	Chl	3	Mafic replacement	Ser	3	Replacement	Cpy	1.0	dissem	Py	2.0	dissem			
14-Aug-20	3141	341525	6221389	Grab		Diorite	Strong to intense ser+chl alterd and sheared rock, protolith texturally destroyed as a result of altrn and shearing, diorite host noted proximal to shear contains development of shear textures disrupting crystal structure and contains late cacb infill along these planes. Sample taken w/n what appears to be a sheared gully. Some unaltered qtz eyes, 1-2 mm, gry, looks like mafics (bt?) have been completey altered, interstitial plag altering to ser? Wk fizz w/n strgly altred and sheared portion of the sample stronger w/n shear deveopment	0.46	Alb	2	Pervasive	Ser	2	Pervasive	Chl	2	Replacement									

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							sample with preserved textures and an increased mag susc. of (7.942.). Possibly highly sheared rock, almost looks serpentinized.																			
08/18/20	3142	345047	6219951	Grab		Diorite	Coarse grained, equigranular. 50% mafics, hbl>>bt, up to 4 mm, chl replaced, hbl euhedral. Plag 45%, subhedral to 3 mm. Qtz 5%, lt gry, interstitial. Contains wk-mod patchy K-spar altrn and wk Fe-stain locally. Hairline FF epi+/-qtz noted to contain locallized vfg-fg cpy dissem proximal to fractures frequently on the margins of chl altrd hbl.	14.000	Epi	2	FF	FeOx	2	FF	Chl	2	Replacement	Py	0.5	dissem_FF	Cpy	0.1	dissem_FF	Joint	298	40
08/18/20	3143	345101	6219989	Grab		Diorite	Coarse-grained, hbl-phyric.	0.300	FeOx	3	Veinlet	Chl	2	Mafic selective	K-spar	1	Veinlet	Py	0.5	Veinlet	Cpy	0.5	Veinlet	Vein	80	64
08/18/20	3144	345149	6219949	Grab		Diorite	Off cut sample is mg-cg, w/ strg chl altrn of mafics and mod-strg k-spar that appears to be a halo to what possibly was bt filled fractures now completely replaced by chl. Hairline epi+/-qtz and sulphides fractures frequently discontinuous noted to post date and utilize	20.000	Epi	2	Patchy_FF	K-Spar	2	Patchy_Vein halo	Chl	3	mafic selective	Py	1.0	FF	Cpy	0.3	FF	Vein	150	40

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							chl altrd bt fractures and veinlets.																			
18-Aug-20	3145	345166	6219927	Float		Qtz Vein	Mod Fe-stained qtz vein w/ chunky, dissem and fracture fill Cpy w/n. Margins of vein contain silicified and what appears to be k-spar altrd host brecciated by what may be chl altrd bt. Minor dissem cpy noted w/n vein margin possibly as a result of remobilization w/ minor cacb.	0.520	Silica	3	Vein halo	Chl	3	Vein halo	Cacb	2	Vein halo	Cpy	3.0	chunky_FF	Py	1.0	dissem			
18-Aug-20	3146	345192	6219884	Grab		Diorite	Med grained, diorite that appears to be moderately silicified. Contains ~ 20-30% mafics, hbl howver many contain what appear to be altrd pyx cores, to 4 mm, ~ 30-40% plag, and <5% qtz. Rock very hard to break. Fg dissem py noted w/n FeO alt hairline frequently discontinuous fractures and veinlets as well as dissem w/n chl altrd mafics.	12.000	Silica	3	Pervasive	K-Spar	2	Patchy	Epi	2	patchy	Py	1.0	dissem	Cpy	0.5	dissem	Joint	270	85

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
18-Aug-20	3147	345177	6219672	Grab		Diorite	Fine to medium grained, equigranular, and strgly silicified. Relict textures appear to contain abundant lathe like plag and possibly primary amphibole the latter completely replaced by silica+chl+ser and later Bt+sulphides. Bt is definately secondary and replaces primary altrd mafics and is interstital to silicification w/ vfg-fg dissem cpy+py. Unit doesn't appear to contain enough primary qtz to be classified as a Tonalite so diorite classification given. Fine bt, 45%, completely replaced by chl, ser. 30% plag, 25% qtz, interstitial with each other.	0.470	Silica	4	Pervasive	Bt	2	interstitial	Chl	2	Mafic replacement	Py	3.0	dissem	Cpy	1.0	dissem			
18-Aug-20	3148	345186	6219675	Grab		Qtz Vein	Likely in place of sample 3145. This sample reeks of sulphides! Lenses of py>>cpy, 1 cm wide, within qtz vein, with FeO hairline veinlets. Stringers likely dilational structures.	0.007		0			0			0		Py	10.0	Vein	Cpy	1.0	Vein			
18-Aug-20	3149	345193	6219671	Grab		Diorite	Highly FeO and silicified w/ locallized chl(after bt) altrd and slightly sheared vein breccia textures. Sampled proximal to qtz vein, so it may be part of vein alteration halo. No primary textures appear preserved w/n off-cut.	0.709	silica	5	Pervasive	Chl	3	Patchy	Epi	2	Patchy_FF	Py	5.0	dissem_FF	Cpy	0.5	dissem_FF			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
19-Aug-20	3150	339916	6234253	Grab		Crystal-lithic Breccia	**Thin Section** - Indicative of a mafic-crystal-lithic breccia? Tagged in the field as an Augite phyric volcanic. Mod to strgly chloritic and hard as hell. Appears to contain a serpentinized xenolithic basalt fragmental componenet? as well as a wk-mod epi altrd sub-rounded translucent mineral (analcime?) w/n xenos. heterogenous aphanitic groundmass. Augite phenos euhedral, to 4mm, 20-30% of rock and ~1-2% fg dissem mt.	14.88	Act	3	Mafic selective	Chl	1	Interstitial	Epi	1	Patchy	Py	0.1	dissem						
20-Aug-20	3301	347650	6218363	Float		Diorite	Relict mg-cg diorite textures noted w/n strong mafic selective Chl and patchy epi altrn, marginal shear textures noted and hairline chloritc fractures may be derived proximal to a chloritic shear. Hairline epi+silica fractures noted and locally cause patchy pervasive epi altrn. These fractures appear to x-cut foliation // chl fractures. Py and lessor Cpy dissem w/n both altrd mafics and locally w/n pervasive epi altrd areas. Blebby Py fractures and veinlets also noted.	33.75	Chl	3	Mafic selective	Epi	3	Patchy_FF	Silica	2	patchy	Py	15.0	dissem	Cpy	0.5	dissem			
20-Aug-20	3302	339326	6222896	Float		Diorite	Relict fg-mg diorite textures observed w/n strng ser, wk cly and mod epi and Fe-ox altrn. Weathered surface is strgly gossanous with patchy malichite. Cpy+py is noted as vfg-mg disseminations and blebs and one bleb of moly noted. Hairline ffl qtz+epi noted cutting the sample and	0.246	Chl	4	Pervasive	Epi	3	Patchy_FF	Silica	3	Patchy	Py	3.0	dissem	Cpy	0.7	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							frequently contain dissem Cpy.																			
20-Aug-20	3303	339330	6222895	Float		Diorite	Relict mg-cg diorite textures observed w/ strng ser, epi, silica and Fe-ox altrn. Weathered surface is strgly gossanous with patchy malichite. Cpy+py is noted as vfg-fg disseminations and minor blebby py. Hairline ffl and veinlets of py noted cutting the sample.	0.495	Epi	4	pervasive	Chl	3	mafic selective	Silica	2	patchy	Py	7.0	dissem_FF	Cpy	1.0	dissem_FF			
20-Aug-20	3304	339335	6222822	Float		Vein	Originally tagged as a breccia as initally appeared very similar to ferricrete breccia near camp at Cathedral however, upon review of off-cut this sample is an epi+qtz vuggy vein containing rare chl altrd diorite host and milky qtz fragments w/ abundant dissem and blebby Cpy>Py w/ interstitial epi and silica. Sulphides are mod to strg oxidized py+cpy+ga.	0.095	Epi	5	Interstitial	Silica	4	Interstitial	Chl	3	BB	Cpy	2.0	dissem	Py	1.0	dissem			
20-Aug-20	3305	339314	6222770	Float		Diorite	Relict textures contain what appear to be mg-cg diorite. Altrn appears to be dominated by pervasive and variably chl after bt and patchy pervasive silica both of which commonly are texturally destructive. Abundant fg-mg dissem and blebby sulphides thru/ot as well as thin sulphide veinlets. Strong Gossan.	7.629	Bt	5	pervasive	Silica	4	pervasive	Chl	4	pervasive	Cpy	5.0	dissem_BB	Py	2.0	dissem_BB			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
20-Aug-20	3306	340870	6221765	Grab		Vein	Late cacb+/-qtz vein that has wk chl vein bx'ation on the margin. Remobilized cpy dissem as fg-mg blebs proximal to and w/n chl fractures and w/n the cacb vein.	0.211	Chl	2	FF	Cacb	4	Pervasive		0		Cpy	0.3	dissem_BB				Vein	15	85
20-Aug-20	3307	340908	6221929	Float		Diorite	Some possible fg-mg dioritic textures (predominately plag) remain, however all contain strg pale green chl+ser altrn. All mafics have been altered to fg-mg booky biotite that has been further altrd to variable wk-mod chl. Cpy dissem thru/ot.	18.73	Bt	4	Pervasive	Ser	4	pervasive	Chl	4	pervasive	Cpy	3.0	dissem	Py	1.0	dissem			
20-Aug-20	3308	340912	6221938	Float		Diorite	**Thin Section** - Confirmed as a Diorite. Rare mg-cg dioritic textures (predominately lathe-like plag) remain, however virtually all primary textures obliterated. Dominate altrn at this stage appears to be intense green chl+ser possibly after pervasive bt as frequently fg-mg booky biotite variablely altrd to chl remains. Dissem fg-mg and blebby mt also noted and appears to contain an increased mag susceptibility however not certain if primary at this point. Dissem sulphides dominated by Bn+Cpy dissem and as cg blebs noted thru/ot. Need to track source for this sample if possible.	41.86	Chl	3	Mafic selective	Cacb	3	Mafic selective	Bt	2	Mafic selective	Bn	2.0	dissem_BB	Cpy	2.0	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
20-Aug-20	3309	340916	6221946	Subcrop		Diorite	Relict mg-cg diorite textures defined by fe-stained plag observed. All mafics and 80% of fldspr have been oblitered and altred to strng-intense chl and variable vfg ser/musc. Minor shear textures noted. Weathered surface is strgly gossanous with patchy malichite. Cpy+py is noted as vfg-fg disseminations and fe-oxidized hairline ffl and veinlets locally w/ secondary silica.	23.63	Chl	5	pervasive	FeOx	4	Pervasive	Ser	3	patchy	Cpy	0.5	dissem_FF	Py	0.5	dissem_FF	Shear	270	90
20-Aug-20	3310	341170	6222090	Float		Diorite	Relict mg-cg diorite textures observed w/ strng chl likely after bt altrn as minor bt noted to remain. Mod Fe-ox altrn noted predominately on sulphides and stain on relict plag. Patchy malichite. Cpy+py is vfg-mg disseminations and blebs. Mag susc slightly higher than average for diorite.	51.16	Chl	4	pervasive	Bt	3	pervasive	Ser	3	Selective	Cpy	1.5	dissem_BB	Py	3.0	dissem_BB			
20-Aug-20	3311	341242	6222781	Grab		Diorite	Preserved mg-cg diorite textures w/ wk-mod patchy silica+epi and subtle chloritized plagiolclase. Hornblend virtually rerplaced by chlorite and sample is strongly gossanous. Chlorite/ actinolite fracturing noted however most sulphides apear to be derived from hairline fractures and a vuggy qtz+epi oxidized sulphide and cacb veins and fractures that completely brecciate, alter and replace host. Fg-mg dissem and blebby sulphides wkly disseminated thru/ot w/ increases proximal to above noted vein.	0.508	Chl	3	Mafic selective	Epi	3	Patchy_FF	Silica	3	Patchy_FF	Py	3.0	dissem_FF	Cpy	0.5	dissem_FF	fault	48	78

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
20-Aug-20	3312	341362	6222825	Grab		Qtz Vein	Milky greyish qtz vein w/ blebby and dissem py+cpy+mo that often replaces entrained chl altrd host fragments and on the margins of the vein w/n what appears to be a silicified rock and crystal fragment breccia similar to sample 3304. Sulphides also noted w/n the vein itself as dissem blebs. Appears to be multi-phase fluids as qtz+epi x-cuts and brecciates (3304) milky vein. Vein x-cuts and moderately silicifies and brecciates mg-cg diorite.	0.166	Chl	3	Patchy_FF	Silica	3	Vein halo	Ser	2	Patchy	Py	3.0	dissem_BB	Cpy	1.0	dissem_BB	Vein	22	20
20-Aug-20	3314	348030	6219462			Diorite	Strong oxidized and Cacb altered mg-cg diorite, no sulphides noted some potential vfg dissem musc possibly specularite?	0.258	FeOx	4	pervasive	Cacb	3	pervasive	Chl	3	mafic selective							Vein	150	80
20-Aug-20	3315	348027	6219453			Diorite	Strong oxidized and Cacb altered mg-cg diorite, no sulphides noted some potential vfg dissem musc possibly specularite?	0.0316	FeOx	4	pervasive	Cacb	3	pervasive	Chl	4	mafic selective							Vein	160	90
20-Aug-20	3316	347925	6219393	Grab		Diorite	Wkly preserved mg-cg diorite textures w/ wk-mod silicification and vuggy textures noted. Amphibole appears strgly chloritized and plagiolclase is epi+/-ser altrd and Fe-stained. Hornblend virtually rerplaced by chlorite and sample is strongly gossanous. Chlorite/ actinolite fracturing noted however most sulphides apear to be derived from hairline fractures and a vuggy qtz+oxidized sulphide and cacb vein. Fg-mg dissem and blebby sulphides wkly disseminated thru/ot and appear as disrupted secondary growths and or blebs	0.278	Epi	3	Patchy	Silica	3	Patchy	Feox	4	pervasive	Py	2.0	dissem	Cpy	0.7	dissem	Vein	155	90

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
							and sample is likely derived proximal to a shear?																			
20-Aug-20	3317	347864	6219380	Grab	2.00	Breccia	Extremely gossonous, clay altrd, gougey and friable. Some relict plag+/-qtz remain however host lithology unrecognizable. Off-cut clearly indicates this is a breccia. Minor dissem and bb oxidized py+/-cpy and possibly oxidized aspy noted. Sample is a grab over 2m within fault zone on the ridge above the Pinnicle prospect.	0.251	FeOx	5	pervasive	Cly	4	pervasive	Ser	3	Felsic selective	Py	2.0	dissem_BB	Cpy	0.5	dissem_ BB	fault	160	
20-Aug-20	3351	347029	6218688	Grab		Latite Porphyry	Green-grey, medium grained, porphyritic intrusive, possibly a likely a latite porphyry possibley a monzodiorite. Contains ~10-20% 2-4 mm of wkly ser altrd plagioclase phenos, and 5-10% strg chl altrd mafics (biotite?) w/n a dark grey green aphanitic grndmass. Sample is cut by a 1cm quartz vein; but not distinct. Dissem pyrite 3% in main host commonly along margins of plagiclase and minor patchy dissem Cpy noted on surface with quartz vein.	0.530	Ser	2	Pervasive	Chl	3	Pervasive		0		Py	1.0	dissem	Cpy	0.3	dissem			

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Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
20-Aug-20	3352	347029	6218688	Grab		Qtz Vein	Milky to strongly Fe-stain and moderately fractured qtz vein. Fractures commonly are Fe-oxidized and filled w/ minor Cacb and vfg-mg locally blebby Py and Cpy. Wall rock appears to be moderately silicified and chl altrd latite porphyry containing patchy fine-grained.	0.238	silica	2	Patchy		0			0		Py	1.0	dissem_FF	Cpy	0.5	dissem_FF			
20-Aug-20	3353	347029	6218688	Grab		Alkali-Granite (Aplite)	Fine-medium grained quartz alkali feldspar granite, likely an aplitic dyke. Definately K-spar rich with sugary interstitial quartz texture, however some silica is definately secondary due to the presence of late veinlets of silica noted causing patchy strongsilicification. Wispy mafics - likely amphibole as some are acicular crystals, possiblt bt on edge? Vfg dissem Py and Cpy noted issem w/n host and late qtz veinlets.	0.140	silica	3	pervasive	Ser	2	selective		0		Py	0.1	dissem	Cpy	0.1	dissem			
20-Aug-20	3354	347032	6218691	Grab		Qtz Vein	Massive milky quartz vein with localized patchy vfg cpy dissim // to and w/n fractures is likely remobilized as it appears related to late Cacb fracture fill.	0.004	Cacb	2	FF		0			0		Cpy	0.5	dissem_FF						
20-Aug-20	3355	342272	6223352	Grab		Diorite	Coarse-grained biotite altered hornblende possible Pyx phyric diorite. Some larger biotite books possibley from altrn? contain a combination of wispy semi-augen shaped sericite, clay and chl altrn possibley along a wkly defined foliation? ~1% cpy associated with mafics, along a what may be micro-fracture plaines that are perpendicular to wispy foliation.	3.756	Bt	3	Mafic selective	Chl	3	Mafic selective	Ser	2	Mafic selective	Cpy	0.3	dissem	Py	0.3	dissem			

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
20-Aug-20	3356	342284	6223066	Grab		Diorite	Coarse-grained biotite altered hornblende possible Pyx phyric diorite. Same unit and textures noted as w/n sample 3355 however w/ much less altrn and at this point Bt looks primary. Presence of patchy k-spar+epi altrn noted along what appear to be micro-fractures of silica+epi w/ k-spar selvages? Minor Fe-stain due to slight destruction of Mt.	23.950	K-spar	2	Patchy_Vein halo	Epi	2	Patchy_FF	Chl	2	mafic selective	Cpy	0.3	dissem						
20-Aug-20	3357	342311	6222934	Grab		Qtz Vein	Strgly Fe-stained, massive, moderate to highly fractured qtz vein. Vein Includes locallized pervasively chl and ser altrd diorite wallrock. All sulphides w/n fractures are altred to FeOx however locallized vfg silver mineral is present on cut surface a may represent either moly or specularite? Altrn recorded is for entrained and patchy areas of host diorite only.	0.023	Chl	4	pervasive	Ser	3	pervasive		0		Cpy	0.5	dissem_FF	Mo	0.3	dissem			
20-Aug-20	3358	342184	6222654	Grab		Diorite	Coarse-grained biotite altered hornblende possible Pyx phyric diorite. Same unit and textures noted as w/n sample 3355 and 3356. Altrn here appear restricted to mafics of bt and amphibole as patchy ser+chl+/- locallized epi. Vfg-fg dissem cpy noted frequently as poikiolitic w/n both altrd and unaltrd bt.	33.690	Chl	3	Mafic selective	Ser	2	Mafic selective	Epi	2	Mafic selective	Cpy	0.3	dissem						

Appendix IIc Rock Sample Details

Date	Sample ID	E_UTM	N_UTM	Type	Width (m)	Lith.	Lith. Comments	Mag Sus	Alt1	Int	Style	Alt2	Int	Style	Alt3	Int	Style	Sulp 1	%	Style	Sulp 2	%	Style	Struct	Strike	Dip
20-Aug-20	3359	342220	6222665	Grab		Diorite	Coarse-grained biotite altered hornblende possible Pyx phyric diorite. Noticable foliation plane noted defined by primary mafics, however appears to be same unit and textures noted as w/n sample 3355, 3356 and 3358. Increase in altrn thru/ot and most felsics contain somewhat diffuse boundaries likelt as a result of discontinuous hairline fractures of qtz+/-epi. Epi specifically has been noted to appear as wisps w/n bt. Some dissem sulphides noted again as poikiolitic w/n bt.	36.330	Epi	3	Patchy_Mafic selective	Chl	3	mafic selective	Silica	3	patchy	Cpy	0.3	dissem						
20-Aug-20	3360	342248	6222654	Grab		Diorite	Moderately foliated bt+hornblende phyric diorite; defined predminately by alignment of mafics, however, plagioclase appears to contain abundant micro-fractures as potentially remobilized into foliation planes. Weak-moderate chl altrn of mafics, rare muscovite. Fe-oxidized micro-fractures noted thru/ot and appear semi-parallel to defined foliation. Cpy is locally noted as vfg-mg disseminations and blebs along these fractures frequently on the margins of altrd mafic sites.	32.110	Chl	3	Mafic selective	Ser	3	Mafic selective	Epi	2	Patchy_Mafic selective	Cpy	0.3	dissem_FF						

APPENDIX III
CERTIFICATES OF ANALYSIS

APPENDIX III
CERTIFCATES OF ANALYSIS

a. Stream Sediment Samples

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 27-OCT-2020
Account: CMECON

CERTIFICATE VA20201531

Project: Cathedral

P.O. No.: P71-28AUG20-3

This report is for 3 Sediment samples submitted to our lab in Vancouver, BC, Canada on 11-SEP-2020.

The following have access to data associated with this certificate:

C. NAAS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
SCR-41	Screen to -180um and save both

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:



Saa Traxler, General Manager, North Vancouver

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SURREY BC V3Z 6R3

Finalized Date: 27-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201531

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
650		4.04	0.015	0.07	1.83	1.2	<0.02	<10	740	0.35	0.09	0.98	0.08	21.8	14.9	7
651		3.70	0.011	0.10	2.04	1.1	<0.02	<10	180	0.31	0.14	1.19	0.11	21.4	19.2	7
652		3.08	0.010	0.22	2.70	1.4	<0.02	<10	520	0.46	0.14	1.41	0.21	18.30	24.0	9

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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201531

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
650		0.62	90.2	3.74	6.04	0.07	0.03	<0.01	0.011	0.09	11.0	13.5	0.86	671	0.70	0.01
651		1.38	152.5	5.78	7.40	0.10	0.02	0.02	0.009	0.19	10.5	14.0	1.07	656	2.05	0.01
652		3.44	213	5.47	9.16	0.07	0.02	0.03	0.016	0.25	8.9	16.0	1.33	1260	3.57	0.02

***** See Appendix Page for comments regarding this certificate *****

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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201531

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
650		0.66	5.3	2250	3.0	5.3	0.001	0.01	0.12	3.9	0.6	0.2	153.0	<0.01	0.07	1.9
651		0.65	7.0	2790	5.0	15.0	0.001	0.02	0.08	3.9	0.4	0.2	105.0	<0.01	0.10	1.8
652		0.90	9.7	2230	6.2	29.6	0.001	0.03	0.12	5.3	0.8	0.3	138.5	<0.01	0.06	0.7

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 27-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201531

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
650		0.058	0.02	1.67	108	0.18	9.31	45	<0.5
651		0.123	0.06	1.60	243	1.40	9.65	62	<0.5
652		0.144	0.06	2.91	194	0.53	10.70	104	<0.5

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Finalized Date: 27-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201531

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	LOG-21	ME-MS41	SCR-41
WEI-21			

APPENDIX III
CERTIFCATES OF ANALYSIS

b. Soil Samples

ALS Canada Ltd.
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Phone: +1 604 984 0221 Fax: +1 604 984 0218
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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

CERTIFICATE VA20201526

Project: Cathedral

P.O. No.: P71-28AUG20-1-A

This report is for 200 Soil samples submitted to our lab in Vancouver, BC, Canada on 11-SEP-2020.

The following have access to data associated with this certificate:

C. NAAS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
LOG-23	Pulp Login - Rcvd with Barcode
SCR-41	Screen to -180um and save both
HOM-01	Homogenize by light pulverizing

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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To: **CME CONSULTANTS INC**
PO BOX 38099
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SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	Au-ICP21 Au Check ppm 0.001	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1
L17400N 4500E		0.42	0.015		0.16	3.04	1.0	<0.02	<10	640	0.50	0.04	1.34	0.10	33.7	22.6
L17400N 4550E		0.42	0.013		0.15	3.07	1.1	<0.02	<10	480	0.52	0.04	1.04	0.08	26.9	20.5
L17400N 4600E		0.38	0.011		0.07	3.53	1.2	<0.02	<10	450	0.70	0.05	0.90	0.10	29.9	18.7
L17400N 4650E		0.46	0.011		0.11	2.88	1.5	<0.02	<10	240	0.36	0.07	0.62	0.14	17.75	15.5
L17400N 4700E		0.40	0.009		0.30	2.78	1.7	<0.02	<10	200	0.58	0.08	0.82	0.18	24.6	16.9
L17400N 4750E		0.14	0.010		0.22	2.46	2.2	<0.02	<10	230	0.50	0.11	0.89	0.14	15.60	15.1
L17400N 4800E		0.40	0.008		0.12	2.60	1.6	<0.02	<10	340	0.46	0.08	0.98	0.14	18.05	17.5
L17400N 4850E		0.32	0.007		0.11	2.80	1.2	<0.02	<10	120	0.23	0.08	0.20	0.11	7.86	8.1
L17400N 4900E		0.30	0.013		0.09	3.72	1.4	<0.02	<10	230	0.42	0.04	0.80	0.09	21.3	15.8
L17400N 4950E		0.38	0.007		0.27	2.54	0.8	<0.02	<10	100	0.38	0.07	0.44	0.11	13.35	10.3
L17400N 5000E		0.36	0.006		0.05	2.19	1.3	<0.02	<10	100	0.40	0.08	0.73	0.08	17.95	11.0
L17400N 5050E		0.38	0.007		0.21	3.04	1.8	<0.02	<10	110	0.35	0.08	0.41	0.10	13.80	10.8
L17400N 5100E		0.26	0.008		0.09	2.39	1.4	<0.02	<10	130	0.29	0.05	0.46	0.08	12.75	8.5
L17400N 5150E		0.30	0.013		0.22	2.27	1.3	<0.02	<10	110	0.25	0.10	0.28	0.07	9.40	8.9
L17400N 5200E		0.34	0.007		0.14	3.54	2.2	<0.02	<10	160	0.51	0.12	0.45	0.12	18.60	10.4
L17400N 5250E		0.28	0.012		0.04	2.06	1.0	<0.02	<10	150	0.32	0.04	0.62	0.11	17.95	9.1
L17400N 5300E		0.32	0.007		0.04	2.56	1.6	<0.02	<10	180	0.48	0.04	0.89	0.06	20.7	14.4
L17400N 5350E		0.54	0.015		0.13	3.28	3.0	<0.02	<10	360	0.73	0.13	0.84	0.16	18.15	20.6
L17400N 5450E		0.34	0.009		0.10	2.89	1.3	<0.02	<10	200	0.38	0.05	0.71	0.10	16.40	13.7
L17400N 5500E		0.26	0.009		0.13	2.61	1.5	<0.02	<10	130	0.29	0.07	0.38	0.08	11.30	10.8
L17400N 5550E		0.38	0.009		0.13	2.69	1.6	<0.02	<10	90	0.41	0.02	0.68	0.07	19.30	11.8
L17400N 5600E		0.28	0.009		0.05	2.67	3.5	<0.02	<10	70	0.45	0.04	0.63	0.11	17.90	13.3
L17400N 5650E		0.28	0.005		0.17	2.97	1.1	<0.02	<10	160	0.44	0.03	0.49	0.10	12.25	8.8
L17400N 5700E		0.48	0.007		0.11	2.93	1.5	<0.02	<10	210	0.61	0.05	0.72	0.11	18.80	18.7
L17400N 5750E		0.36	0.009		0.09	3.36	1.4	<0.02	<10	230	0.52	0.14	0.39	0.08	10.40	17.1
L17400N 5800E		0.24	0.005		0.17	2.92	1.7	<0.02	<10	190	0.43	0.11	0.44	0.14	12.95	10.8
L17400N 5900E		0.40	0.015		0.10	3.14	2.8	<0.02	<10	180	0.68	0.07	0.99	0.13	25.8	20.7
L17400N 5950E		0.30	0.005		0.11	2.31	2.0	<0.02	<10	190	0.53	0.11	0.42	0.34	13.55	6.1
L17400N 6000E		0.34	0.012		0.21	2.67	3.3	<0.02	<10	180	0.73	0.13	0.44	0.18	15.30	33.0
L23900N 4500E		0.74	0.011		0.19	3.50	7.3	<0.02	<10	90	0.58	0.21	0.66	0.14	7.17	44.2
L23900N 4525E		0.42	0.010		0.06	2.69	6.0	<0.02	<10	100	0.40	0.25	0.33	0.23	16.65	23.9
L23900N 4550E		0.58	0.015		0.07	3.16	6.3	<0.02	<10	120	0.44	0.26	0.39	0.48	14.85	30.9
L23900N 4575E		0.50	0.021		0.12	3.12	6.5	<0.02	<10	140	0.55	0.17	0.52	0.26	15.10	30.5
L23900N 4600E		0.48	0.014		0.08	3.48	8.0	<0.02	<10	150	0.51	0.42	0.75	0.26	8.51	36.7
L23900N 4625E		0.46	0.009		0.09	2.36	5.4	<0.02	<10	130	0.41	0.14	0.41	0.14	18.35	23.4
L23900N 4650E		0.54	0.007		0.08	2.04	4.5	<0.02	<10	100	0.41	0.14	0.45	0.14	21.1	22.0
L23900N 4675E		0.56	0.011		0.18	3.44	6.8	<0.02	<10	130	0.45	0.39	0.54	0.33	9.30	36.9
L23900N 4700E		0.40	0.055		0.16	2.91	4.3	<0.02	<10	130	0.38	0.46	0.51	0.18	8.34	29.8
L23900N 4725E		0.62	0.025		0.38	2.38	4.4	0.02	<10	170	0.44	0.06	0.95	0.32	9.08	48.6
L23900N 4750E		0.54	0.020		0.07	2.94	3.7	<0.02	<10	110	0.38	4.16	0.50	0.17	9.80	31.7

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SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
L17400N 4500E		10	1.22	469	5.55	8.35	0.11	0.02	0.02	0.019	0.18	14.3	15.3	1.44	810	0.46
L17400N 4550E		10	1.01	376	4.95	8.04	0.08	<0.02	0.02	0.017	0.12	12.6	15.2	1.36	942	0.60
L17400N 4600E		10	1.19	277	5.24	8.96	0.08	0.02	0.02	0.021	0.15	12.3	17.3	1.33	1140	0.55
L17400N 4650E		11	0.93	151.0	4.52	8.44	0.07	<0.02	0.04	0.015	0.06	8.2	12.7	0.92	480	1.52
L17400N 4700E		12	1.05	236	4.84	7.79	0.08	0.02	0.05	0.017	0.07	9.4	15.5	0.95	629	1.94
L17400N 4750E		11	1.36	181.0	3.87	11.90	0.06	<0.02	0.04	0.018	0.09	7.8	13.1	0.84	676	5.11
L17400N 4800E		11	1.13	188.0	4.07	9.64	0.07	0.02	0.02	0.017	0.10	9.1	16.1	1.15	694	2.03
L17400N 4850E		13	0.58	61.2	4.93	9.03	0.06	<0.02	0.08	0.017	0.04	3.9	8.2	0.54	244	1.40
L17400N 4900E		12	0.85	182.0	5.16	8.77	0.09	0.03	0.04	0.017	0.08	10.4	15.1	1.22	568	0.63
L17400N 4950E		9	0.81	74.5	2.91	9.63	0.06	<0.02	0.03	0.012	0.03	6.7	11.1	0.78	346	2.77
L17400N 5000E		10	1.12	81.6	3.23	8.16	0.06	<0.02	0.02	0.014	0.05	9.6	14.1	0.82	396	2.87
L17400N 5050E		11	0.81	104.0	3.54	8.39	0.07	<0.02	0.05	0.017	0.04	6.9	10.0	0.69	343	0.92
L17400N 5100E		8	0.83	58.3	3.50	7.54	0.07	<0.02	0.03	0.015	0.03	6.5	8.6	0.64	331	1.03
L17400N 5150E		10	0.97	53.4	3.10	7.63	0.05	<0.02	0.04	0.013	0.04	4.4	6.9	0.56	399	1.00
L17400N 5200E		14	0.80	124.5	3.56	8.04	0.06	<0.02	0.07	0.019	0.04	9.4	12.5	0.75	440	3.46
L17400N 5250E		9	0.51	68.0	3.38	6.41	0.06	0.02	0.03	0.016	0.03	9.1	8.8	0.61	361	2.79
L17400N 5300E		10	0.90	171.5	3.85	7.44	0.07	0.02	0.02	0.013	0.04	10.1	12.8	1.09	546	1.65
L17400N 5350E		13	3.44	309	4.29	10.75	0.07	0.02	0.04	0.023	0.10	9.6	21.0	1.26	926	2.67
L17400N 5450E		12	0.71	133.5	4.07	7.41	0.07	0.02	0.04	0.014	0.04	8.2	13.2	1.15	531	0.67
L17400N 5500E		12	1.15	114.5	3.71	9.13	0.06	<0.02	0.03	0.013	0.08	5.0	11.6	0.95	429	1.46
L17400N 5550E		11	0.93	146.0	4.51	7.24	0.09	<0.02	0.03	0.010	0.07	9.5	11.0	0.81	399	2.93
L17400N 5600E		12	0.95	251	4.22	8.42	0.07	<0.02	0.03	0.011	0.05	8.9	13.5	1.02	495	4.25
L17400N 5650E		11	0.71	73.3	3.37	7.19	0.06	<0.02	0.05	0.009	0.06	6.3	11.4	0.81	415	1.12
L17400N 5700E		19	1.36	309	4.06	7.82	0.09	0.02	0.02	0.011	0.13	8.8	15.8	1.35	728	2.04
L17400N 5750E		19	1.00	130.0	4.57	9.87	0.06	<0.02	0.06	0.011	0.09	4.7	12.5	0.95	878	3.58
L17400N 5800E		16	1.19	87.5	3.51	9.21	0.06	<0.02	0.04	0.012	0.06	6.0	9.9	0.83	764	2.17
L17400N 5900E		12	1.58	623	4.84	8.83	0.10	0.02	0.03	0.017	0.15	13.1	15.4	1.07	877	3.81
L17400N 5950E		12	0.82	69.6	2.53	8.69	0.05	<0.02	0.06	0.014	0.07	5.5	9.7	0.44	429	4.39
L17400N 6000E		10	2.00	94.9	5.00	12.65	0.08	<0.02	0.10	0.018	0.08	7.0	10.0	0.66	3660	8.10
L23900N 4500E		131	3.18	368	5.60	8.68	0.09	<0.02	0.02	0.030	0.03	2.5	29.1	2.90	2090	0.47
L23900N 4525E		142	1.86	203	4.64	6.50	0.07	<0.02	0.01	0.033	0.03	6.4	18.6	1.56	924	0.62
L23900N 4550E		183	2.66	184.5	5.64	8.15	0.08	<0.02	0.01	0.034	0.04	5.9	24.6	2.13	2120	0.57
L23900N 4575E		190	2.34	248	5.11	7.39	0.08	0.02	0.02	0.031	0.03	5.4	23.1	2.28	2010	0.51
L23900N 4600E		251	2.60	207	6.84	8.76	0.10	0.05	0.01	0.053	0.03	3.3	24.6	3.07	2230	0.34
L23900N 4625E		161	1.80	155.5	4.07	5.82	0.07	0.03	0.01	0.021	0.05	7.7	20.1	1.86	1060	0.59
L23900N 4650E		147	1.85	158.5	3.99	5.54	0.10	0.06	0.02	0.019	0.04	9.4	19.6	1.78	931	0.54
L23900N 4675E		253	2.85	175.0	6.18	8.95	0.09	<0.02	0.02	0.042	0.05	3.1	24.2	2.74	1780	0.44
L23900N 4700E		240	3.16	145.5	5.70	8.03	0.07	<0.02	0.02	0.031	0.05	3.5	23.1	2.41	1850	0.48
L23900N 4725E		220	6.09	180.5	7.74	6.15	0.14	0.05	0.01	0.047	0.12	3.4	17.0	3.44	3500	0.21
L23900N 4750E		253	3.31	144.0	5.45	7.77	0.08	<0.02	0.01	0.028	0.05	4.0	22.1	2.70	1510	0.36

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
L17400N 4500E		0.02	0.50	9.4	3950	2.9	13.6	<0.001	0.03	0.06	5.0	0.2	0.2	360	<0.01	0.04
L17400N 4550E		0.02	0.37	8.2	2980	2.8	13.5	<0.001	0.07	0.06	2.9	0.2	0.2	240	<0.01	0.04
L17400N 4600E		0.01	0.75	7.6	2770	4.2	14.5	<0.001	0.03	0.06	3.8	0.3	0.4	333	0.01	0.03
L17400N 4650E		0.02	0.72	7.4	2100	4.2	7.6	<0.001	0.05	0.08	2.0	0.7	0.3	137.0	<0.01	0.05
L17400N 4700E		0.02	0.82	8.9	2830	4.7	7.6	<0.001	0.07	0.11	1.5	0.4	0.3	113.5	0.01	0.05
L17400N 4750E		0.02	0.54	7.4	2470	6.1	11.8	0.003	0.13	0.13	1.7	1.2	0.3	110.5	<0.01	0.05
L17400N 4800E		0.02	0.80	8.4	1990	5.2	11.3	<0.001	0.06	0.09	3.2	0.6	0.3	121.0	<0.01	0.04
L17400N 4850E		0.01	1.22	6.1	2140	4.7	4.7	<0.001	0.07	0.09	1.5	0.6	0.3	59.6	<0.01	0.03
L17400N 4900E		0.02	1.03	8.6	2960	4.7	6.1	<0.001	0.03	0.07	4.1	0.7	0.2	98.6	0.01	0.04
L17400N 4950E		0.01	2.04	5.9	1230	4.2	4.4	<0.001	0.04	0.07	1.8	0.5	0.6	63.6	<0.01	0.03
L17400N 5000E		0.02	0.66	6.8	2250	4.7	8.6	<0.001	0.05	0.08	2.0	0.3	0.3	68.6	<0.01	0.03
L17400N 5050E		0.01	0.88	6.3	1730	4.5	4.3	<0.001	0.05	0.10	1.4	0.7	0.4	59.0	0.01	0.04
L17400N 5100E		0.01	0.56	4.7	1710	4.2	5.4	<0.001	0.06	0.08	1.7	0.8	0.3	55.7	<0.01	0.03
L17400N 5150E		0.01	0.39	5.8	1210	4.5	8.3	<0.001	0.06	0.12	0.9	0.4	0.4	61.6	<0.01	0.03
L17400N 5200E		0.01	1.64	8.3	1530	5.6	5.0	<0.001	0.05	0.15	1.9	0.8	0.5	71.8	0.01	0.04
L17400N 5250E		0.01	1.33	4.5	2060	3.5	3.7	<0.001	0.04	0.09	1.7	0.4	0.4	55.3	0.01	0.03
L17400N 5300E		0.02	0.73	7.2	2390	3.9	4.4	<0.001	0.04	0.07	3.0	0.2	0.2	104.5	<0.01	0.03
L17400N 5350E		0.02	0.55	10.1	1940	9.1	13.5	<0.001	0.09	0.15	2.8	1.0	0.4	132.5	<0.01	0.05
L17400N 5450E		0.02	0.82	7.1	2010	4.0	4.3	<0.001	0.03	0.07	3.3	0.4	0.3	94.6	0.01	0.04
L17400N 5500E		0.01	0.72	6.6	1610	5.0	9.6	<0.001	0.05	0.09	1.9	0.2	0.4	89.8	<0.01	0.03
L17400N 5550E		0.01	0.93	5.2	2540	2.9	5.7	<0.001	0.04	<0.05	2.2	0.6	0.2	50.0	<0.01	0.03
L17400N 5600E		0.01	0.89	6.5	2120	3.7	4.7	<0.001	0.05	0.06	2.4	1.0	0.2	58.0	<0.01	0.05
L17400N 5650E		0.01	1.07	5.3	1550	3.7	6.4	<0.001	0.04	0.06	2.0	0.5	0.2	71.4	<0.01	0.02
L17400N 5700E		0.01	1.00	13.5	1680	4.9	12.4	<0.001	0.02	0.07	4.3	0.3	0.2	110.5	<0.01	0.04
L17400N 5750E		0.02	0.96	11.2	1300	4.9	12.6	<0.001	0.08	0.10	1.6	0.6	0.3	108.5	<0.01	0.09
L17400N 5800E		0.02	0.56	7.0	1460	5.8	11.2	<0.001	0.06	0.11	1.4	0.6	0.4	147.0	<0.01	0.07
L17400N 5900E		0.02	1.19	9.2	2860	6.0	14.8	<0.001	0.05	0.09	3.4	0.9	0.3	180.5	0.01	0.09
L17400N 5950E		0.01	1.29	6.7	890	8.7	6.8	<0.001	0.09	0.13	1.1	0.4	0.4	134.0	0.01	0.07
L17400N 6000E		0.02	0.83	6.4	2040	9.9	13.3	<0.001	0.24	0.17	1.2	0.7	0.5	202	<0.01	0.07
L23900N 4500E		0.01	0.12	69.1	1000	10.2	4.2	<0.001	0.03	0.40	11.4	0.5	0.3	113.5	<0.01	0.09
L23900N 4525E		0.01	0.44	55.1	650	6.0	4.7	<0.001	0.03	0.37	5.7	0.3	0.3	47.9	<0.01	0.04
L23900N 4550E		0.01	0.24	62.5	890	6.9	7.7	<0.001	0.03	0.37	11.8	0.2	0.3	52.1	<0.01	0.05
L23900N 4575E		0.01	0.27	65.1	810	6.4	4.5	<0.001	0.03	0.44	12.5	0.3	0.3	58.8	<0.01	0.14
L23900N 4600E		0.01	0.37	84.6	790	7.0	3.3	<0.001	0.01	0.33	17.6	0.3	0.4	62.9	<0.01	0.06
L23900N 4625E		0.01	0.49	59.8	720	5.9	5.3	<0.001	0.03	0.30	7.7	<0.2	0.2	41.3	<0.01	0.03
L23900N 4650E		0.01	0.64	54.4	710	5.1	5.1	<0.001	0.01	0.35	8.7	0.3	0.3	40.6	<0.01	0.02
L23900N 4675E		0.01	0.33	83.4	670	16.8	6.9	<0.001	0.03	0.29	12.5	0.2	0.3	49.8	<0.01	0.06
L23900N 4700E		0.01	0.24	69.5	1190	74.8	8.7	<0.001	0.08	0.28	7.0	0.3	0.3	43.9	<0.01	0.13
L23900N 4725E		0.01	<0.05	115.0	910	7.2	7.2	<0.001	0.01	0.47	38.9	0.2	0.2	31.7	<0.01	0.03
L23900N 4750E		0.01	0.26	76.9	750	11.3	7.5	<0.001	0.03	0.24	11.7	0.3	0.3	41.6	<0.01	0.05

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L17400N 4500E		1.1	0.133	0.04	0.71	181	0.20	12.60	60	<0.5
L17400N 4550E		0.2	0.083	0.05	0.69	159	0.16	10.65	63	<0.5
L17400N 4600E		0.3	0.053	0.05	0.80	155	0.16	11.05	69	<0.5
L17400N 4650E		0.2	0.075	0.03	0.65	142	0.27	6.02	51	<0.5
L17400N 4700E		<0.2	0.056	0.04	1.05	144	0.27	7.65	60	<0.5
L17400N 4750E		0.2	0.042	0.04	8.47	142	0.60	7.51	49	<0.5
L17400N 4800E		0.4	0.066	0.04	2.77	113	0.39	8.33	61	<0.5
L17400N 4850E		<0.2	0.076	0.02	0.64	117	0.27	2.07	37	<0.5
L17400N 4900E		0.9	0.129	0.03	0.69	153	0.26	8.06	58	0.5
L17400N 4950E		0.2	0.101	0.02	0.72	86	0.19	3.91	45	<0.5
L17400N 5000E		0.2	0.095	0.04	1.68	107	0.20	7.35	49	<0.5
L17400N 5050E		<0.2	0.056	0.03	0.80	99	0.20	4.38	40	<0.5
L17400N 5100E		<0.2	0.060	0.03	0.68	112	0.18	4.76	36	<0.5
L17400N 5150E		<0.2	0.045	0.05	0.52	96	0.16	2.67	39	<0.5
L17400N 5200E		0.2	0.070	0.04	1.04	104	0.26	6.15	46	0.5
L17400N 5250E		0.2	0.055	0.03	1.40	106	0.22	6.65	37	<0.5
L17400N 5300E		0.4	0.086	0.03	1.77	114	0.23	8.97	53	<0.5
L17400N 5350E		0.2	0.046	0.06	5.08	124	0.36	10.60	89	<0.5
L17400N 5450E		0.3	0.100	0.03	0.65	115	0.20	6.84	54	<0.5
L17400N 5500E		<0.2	0.093	0.04	0.67	112	0.17	3.68	53	<0.5
L17400N 5550E		0.6	0.100	0.02	0.99	146	0.22	7.64	43	<0.5
L17400N 5600E		0.5	0.097	0.04	3.11	127	0.30	6.77	52	<0.5
L17400N 5650E		0.5	0.085	0.04	0.67	90	0.26	3.80	47	<0.5
L17400N 5700E		1.6	0.127	0.05	0.78	106	0.24	6.47	67	<0.5
L17400N 5750E		<0.2	0.077	0.05	0.71	117	0.36	3.50	54	<0.5
L17400N 5800E		<0.2	0.064	0.07	1.28	97	0.18	3.62	55	<0.5
L17400N 5900E		0.9	0.169	0.06	2.18	152	0.37	10.25	80	0.5
L17400N 5950E		0.2	0.055	0.04	1.40	72	0.31	2.11	36	<0.5
L17400N 6000E		0.2	0.078	0.05	2.98	181	0.47	4.52	51	<0.5
L23900N 4500E		0.3	0.082	0.04	0.25	126	0.51	5.44	94	<0.5
L23900N 4525E		0.3	0.071	0.05	0.39	104	0.33	4.91	78	<0.5
L23900N 4550E		0.5	0.080	0.06	0.33	132	0.37	5.09	133	<0.5
L23900N 4575E		0.5	0.079	0.05	0.33	113	0.43	6.64	100	<0.5
L23900N 4600E		0.6	0.085	0.03	0.25	133	0.58	7.94	156	1.4
L23900N 4625E		1.0	0.071	0.06	0.57	88	0.36	5.64	70	1.0
L23900N 4650E		1.9	0.079	0.05	0.52	86	0.36	6.50	67	2.9
L23900N 4675E		0.4	0.093	0.06	0.26	142	0.50	3.33	129	<0.5
L23900N 4700E		<0.2	0.049	0.05	0.26	141	0.49	4.94	108	<0.5
L23900N 4725E		0.5	0.040	0.04	0.19	173	0.26	13.95	118	1.6
L23900N 4750E		0.3	0.091	0.05	0.24	132	0.36	5.02	103	<0.5

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	Au-ICP21 Au Check ppm 0.001	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1
L23900N 4775E		0.46	0.025		0.13	3.31	3.9	0.11	<10	120	0.45	0.14	0.58	0.17	9.10	33.2
L23900N 4800E		0.56	0.025		0.12	3.39	3.7	<0.02	<10	120	0.43	0.15	0.44	0.34	8.19	32.9
L23900N 4825E		0.52	0.017		0.13	3.32	5.4	0.02	<10	110	0.49	0.19	0.48	0.23	9.99	34.0
L23900N 4850E		0.46	0.013		0.10	3.28	4.0	<0.02	<10	130	0.44	0.19	0.37	0.24	7.29	31.4
L23900N 4875E		0.44	0.004		0.28	0.80	3.9	<0.02	10	340	0.41	0.18	1.80	0.54	10.20	51.1
L23900N 4900E		0.52	0.004		0.16	1.53	4.6	<0.02	<10	330	0.34	0.12	1.46	0.38	6.62	50.8
L23900N 4925E		0.44	0.008		0.10	2.58	4.3	<0.02	<10	220	0.40	0.21	0.48	0.58	7.88	38.0
L23900N 4950E		0.62	0.041		0.10	3.30	4.3	<0.02	<10	100	0.41	0.22	0.43	0.23	5.32	29.8
L23900N 4975E		0.52	0.008		0.10	2.90	5.2	<0.02	<10	120	0.42	0.21	0.41	0.25	11.25	25.9
L23900N 5000E		0.40	0.007		0.13	2.24	5.5	<0.02	<10	80	0.33	0.13	0.43	0.28	19.75	18.3
L23900N 5025E		0.42	0.005		0.08	2.42	7.0	<0.02	<10	90	0.42	0.13	0.38	0.28	15.25	24.4
L23900N 5050E		0.52	0.004		0.11	2.00	5.3	<0.02	<10	130	0.28	0.13	0.52	0.22	18.35	14.0
L23900N 5075E		0.50	0.009		0.17	2.90	7.5	0.10	<10	170	0.50	0.23	0.37	0.41	10.35	30.3
L23900N 5100E		0.52	0.005		0.14	2.84	7.9	<0.02	<10	190	0.47	0.22	0.48	0.39	13.95	24.9
L23900N 5125E		0.68	0.007		0.07	3.00	5.7	<0.02	<10	250	0.45	0.18	0.64	0.37	9.70	28.5
L23900N 5175E		0.44	0.003		0.07	2.48	5.8	<0.02	<10	120	0.44	0.20	0.37	0.37	19.60	19.9
L23900N 5225E		0.64	0.003		0.09	3.10	5.4	<0.02	<10	190	0.56	0.12	0.56	0.39	13.45	31.4
L23900N 5250E		0.66	0.007		0.15	2.72	4.9	<0.02	<10	130	0.38	0.16	0.34	0.25	8.57	20.1
L23900N 5275E		0.08	0.284		3.13	1.28	26.8	0.37	<10	100	0.43	3.96	0.96	2.12	42.8	18.3
L24000N 4800E		0.66	0.005		0.18	3.32	2.7	<0.02	<10	260	0.31	0.03	1.33	0.10	2.65	42.9
L24000N 4825E		0.58	0.005		0.34	2.64	8.6	<0.02	<10	200	0.29	0.17	2.25	0.10	2.50	45.7
L24000N 4850E		0.52	0.005		0.28	2.92	1.9	<0.02	<10	60	0.37	0.09	1.27	0.06	2.23	37.8
L24000N 4875E		0.46	0.011		0.26	3.29	4.1	<0.02	<10	110	0.44	1.41	0.54	0.08	7.11	32.4
L24000N 4900E		0.54	0.006		0.15	2.76	4.1	<0.02	<10	120	0.36	0.41	0.68	0.20	5.69	38.6
L24000N 4925E		0.52	0.017		0.12	2.93	3.8	<0.02	<10	150	0.39	0.35	0.53	0.18	5.93	37.3
L24000N 4950E		0.44	0.007		0.08	2.88	3.9	<0.02	<10	120	0.39	0.24	0.48	0.29	10.20	32.7
L24000N 4975E		0.38	0.005		0.10	2.88	3.7	<0.02	<10	130	0.39	0.26	0.52	0.37	6.26	37.6
L24000N 5000E		0.40	0.007		0.13	3.10	3.9	<0.02	<10	140	0.36	0.23	0.57	0.25	6.38	36.2
L24000N 5025E		0.46	0.008		0.09	2.95	3.8	<0.02	<10	120	0.45	0.15	0.51	0.27	9.38	30.7
L24000N 5050E		0.40	0.011		0.09	2.41	5.5	0.03	<10	110	0.39	0.17	0.54	0.22	14.25	27.6
L24000N 5075E		0.28	0.005		0.10	2.75	4.9	<0.02	<10	170	0.39	0.13	0.77	0.28	5.24	30.5
L24000N 5125E		0.40	0.005		0.09	3.04	6.6	<0.02	<10	110	0.41	0.20	0.33	0.30	8.30	28.9
L24000N 5150E		0.54	0.008		0.08	3.10	6.8	<0.02	<10	130	0.57	0.23	0.39	0.21	11.45	37.6
L24000N 5200E		0.42	0.006		0.06	3.12	4.7	<0.02	<10	70	0.45	0.42	0.58	0.16	11.70	33.2
L24000N 5225E		0.54	0.005		0.11	2.87	6.7	<0.02	<10	80	0.50	0.11	0.55	0.22	18.70	29.3
L24000N 5250E		0.62	0.004		0.17	3.00	6.0	<0.02	<10	60	0.44	0.32	0.76	1.10	11.15	40.0
L24000N 5275E		0.38	0.009		0.09	3.06	5.6	<0.02	<10	80	0.52	0.16	0.57	0.35	17.15	33.0
L24000N 5300E		0.54	0.003		0.10	2.76	4.4	<0.02	<10	110	0.46	0.12	0.68	0.24	11.85	29.1
L24000N 5325E		0.34	0.003		0.06	2.68	4.4	<0.02	<10	80	0.45	0.12	0.30	0.21	19.25	19.1
L24000N 5350E		0.56	0.014		0.10	2.70	4.9	<0.02	<10	80	0.52	0.09	0.59	0.22	13.75	28.2

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
L23900N 4775E		284	3.54	192.5	5.80	8.28	0.10	0.02	0.01	0.030	0.05	3.2	23.9	3.34	1580	0.28
L23900N 4800E		269	3.92	160.0	5.77	8.82	0.08	<0.02	0.01	0.032	0.05	3.3	26.0	2.97	1540	0.33
L23900N 4825E		264	3.31	186.5	5.63	8.32	0.09	0.02	0.02	0.034	0.05	4.5	23.6	3.00	1670	0.39
L23900N 4850E		253	4.28	120.0	5.84	8.42	0.07	<0.02	0.03	0.036	0.05	2.9	18.9	2.27	2530	0.48
L23900N 4875E		29	8.87	113.5	9.16	1.46	0.11	0.03	0.02	0.073	0.13	3.8	2.4	0.83	3170	0.19
L23900N 4900E		103	7.16	130.0	9.13	3.30	0.09	0.02	0.02	0.054	0.13	2.6	8.3	1.55	3000	0.34
L23900N 4925E		197	4.55	101.0	6.35	6.78	0.06	<0.02	0.01	0.034	0.08	2.9	17.9	1.94	2450	0.54
L23900N 4950E		241	4.64	166.0	5.72	7.83	0.07	<0.02	0.02	0.032	0.06	2.6	23.5	2.75	1090	0.38
L23900N 4975E		194	4.06	142.0	5.08	7.27	0.07	<0.02	0.03	0.030	0.06	4.8	22.2	2.19	960	0.55
L23900N 5000E		119	1.43	79.0	3.94	5.40	0.07	0.02	0.01	0.020	0.05	9.0	19.8	1.39	572	0.73
L23900N 5025E		145	2.50	100.0	4.68	5.70	0.08	<0.02	0.03	0.026	0.06	6.6	18.8	1.62	976	0.71
L23900N 5050E		110	1.68	55.8	4.01	5.53	0.07	<0.02	0.05	0.022	0.05	8.6	22.2	1.03	592	0.83
L23900N 5075E		191	2.91	69.4	5.84	8.78	0.06	<0.02	0.03	0.038	0.07	4.4	25.0	1.79	2320	0.77
L23900N 5100E		171	2.94	67.8	6.00	10.35	0.07	<0.02	0.03	0.037	0.06	5.0	24.1	1.65	1770	0.90
L23900N 5125E		203	2.71	95.5	6.12	8.73	0.07	<0.02	0.03	0.037	0.05	3.1	29.6	2.21	1800	0.61
L23900N 5175E		124	2.05	77.0	4.15	6.39	0.07	<0.02	0.03	0.025	0.04	8.8	22.5	1.38	977	0.83
L23900N 5225E		140	2.35	103.5	5.33	8.52	0.08	0.02	0.03	0.031	0.05	4.8	21.2	1.74	2540	0.62
L23900N 5250E		121	2.53	59.7	4.84	7.37	0.06	0.02	0.06	0.027	0.07	3.6	14.4	1.10	1820	0.82
L23900N 5275E		64	2.11	2690	3.44	3.88	0.10	0.13	0.06	0.096	0.53	24.1	5.8	0.64	201	210
L24000N 4800E		298	6.22	239	5.63	8.79	0.17	0.08	0.01	0.017	0.31	1.0	27.2	4.35	1380	0.26
L24000N 4825E		267	5.50	210	6.11	6.70	0.13	0.05	0.01	0.020	0.20	1.0	18.4	3.93	1620	0.15
L24000N 4850E		398	3.22	154.5	5.43	7.11	0.13	0.13	<0.01	0.024	0.07	0.6	18.1	4.75	1040	0.11
L24000N 4875E		272	5.12	185.0	5.73	8.44	0.09	<0.02	0.02	0.031	0.06	3.2	24.4	3.04	768	0.22
L24000N 4900E		281	4.03	162.0	5.45	7.49	0.09	0.04	0.01	0.026	0.09	2.5	24.3	2.99	1180	0.21
L24000N 4925E		284	5.19	132.5	5.56	7.78	0.07	<0.02	0.03	0.028	0.06	2.5	23.7	2.65	1290	0.29
L24000N 4950E		220	4.28	140.0	5.28	7.47	0.06	0.02	0.03	0.027	0.08	3.8	24.5	2.33	1270	0.39
L24000N 4975E		252	4.63	128.0	5.47	7.46	0.06	<0.02	0.02	0.026	0.08	2.5	24.1	2.57	1640	0.36
L24000N 5000E		243	5.41	152.5	5.66	7.83	0.07	<0.02	0.02	0.031	0.07	2.9	25.0	2.75	1410	0.43
L24000N 5025E		199	4.53	198.0	5.16	7.82	0.07	<0.02	0.03	0.030	0.06	3.9	24.3	2.30	1340	0.43
L24000N 5050E		179	2.88	135.5	4.91	6.26	0.07	0.03	0.02	0.031	0.08	5.3	20.4	1.95	977	0.53
L24000N 5075E		157	11.05	110.0	5.87	7.66	0.06	0.02	0.04	0.032	0.13	2.2	19.7	2.10	1100	0.53
L24000N 5125E		195	3.27	87.5	5.30	8.16	0.06	0.02	0.04	0.031	0.07	3.5	24.7	1.87	1420	0.62
L24000N 5150E		181	2.79	131.5	5.49	8.35	0.07	<0.02	0.04	0.034	0.04	4.3	24.7	2.17	2300	0.65
L24000N 5200E		189	3.83	234	5.32	8.48	0.10	0.03	0.03	0.025	0.05	4.8	28.6	3.08	2620	0.46
L24000N 5225E		155	2.81	189.5	4.83	7.58	0.07	0.03	0.03	0.028	0.03	7.5	26.7	2.14	1760	0.64
L24000N 5250E		172	2.18	397	5.24	7.66	0.08	0.03	0.02	0.028	0.02	4.0	24.9	2.83	2740	0.55
L24000N 5275E		152	3.00	168.5	5.45	8.46	0.07	0.03	0.03	0.031	0.04	6.3	25.8	2.16	2200	0.60
L24000N 5300E		137	3.81	101.0	5.60	8.50	0.06	0.02	0.04	0.030	0.05	4.6	23.4	1.70	1790	0.62
L24000N 5325E		101	2.23	93.5	4.22	6.90	0.06	0.02	0.08	0.025	0.06	7.9	19.9	1.32	735	0.71
L24000N 5350E		132	2.36	242	5.13	7.50	0.08	0.02	0.03	0.027	0.05	6.1	20.8	1.98	1170	0.52

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SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
L23900N 4775E		0.02	0.36	89.1	720	9.3	6.3	<0.001	0.03	0.20	14.0	0.4	0.3	49.1	<0.01	0.07
L23900N 4800E		0.02	0.37	85.5	990	10.9	9.5	<0.001	0.05	0.22	10.8	0.2	0.3	42.5	<0.01	0.08
L23900N 4825E		0.01	0.51	86.9	680	9.1	6.2	<0.001	0.03	0.23	13.1	0.3	0.4	47.9	<0.01	0.07
L23900N 4850E		0.02	0.18	67.2	1290	11.5	7.8	<0.001	0.10	0.23	6.2	0.4	0.3	41.9	<0.01	0.06
L23900N 4875E		0.01	<0.05	57.2	1210	8.0	9.5	<0.001	0.01	0.58	34.4	0.2	<0.2	27.0	<0.01	0.03
L23900N 4900E		0.01	0.09	62.5	1160	8.9	10.5	<0.001	0.02	0.43	29.3	<0.2	<0.2	35.0	<0.01	0.04
L23900N 4925E		0.01	0.17	62.2	1200	10.7	16.3	<0.001	0.05	0.28	8.0	0.3	0.2	39.6	<0.01	0.04
L23900N 4950E		0.02	0.21	80.1	910	7.7	10.3	<0.001	0.05	0.25	11.9	0.2	0.2	41.4	<0.01	0.04
L23900N 4975E		0.02	0.27	68.0	1020	9.4	9.8	<0.001	0.06	0.32	8.3	0.2	0.3	41.1	<0.01	0.05
L23900N 5000E		0.02	0.43	43.5	800	6.9	5.8	<0.001	0.03	0.39	5.0	0.4	0.2	33.8	<0.01	0.03
L23900N 5025E		0.01	0.32	48.8	850	8.0	8.3	<0.001	0.04	0.74	6.2	0.3	0.2	35.1	<0.01	0.05
L23900N 5050E		0.01	0.28	31.9	1090	5.9	9.6	<0.001	0.08	0.38	2.2	0.3	0.3	38.5	<0.01	0.03
L23900N 5075E		0.01	0.80	53.1	1650	11.7	15.5	<0.001	0.11	0.35	3.4	0.3	0.6	41.1	<0.01	0.04
L23900N 5100E		0.02	2.10	47.2	1250	10.4	11.2	<0.001	0.10	0.40	3.6	0.4	1.0	47.5	<0.01	0.05
L23900N 5125E		0.01	0.44	57.3	1500	8.3	7.8	<0.001	0.08	0.30	3.7	0.4	0.4	55.9	<0.01	0.04
L23900N 5175E		0.01	0.28	45.9	1190	7.4	7.1	<0.001	0.07	0.37	2.0	0.3	0.3	36.0	<0.01	0.03
L23900N 5225E		0.01	0.38	46.7	1920	9.5	10.3	<0.001	0.11	0.26	5.9	0.4	0.3	52.8	<0.01	0.04
L23900N 5250E		0.02	0.52	30.7	1780	7.4	14.5	<0.001	0.14	0.27	3.1	0.7	0.4	37.6	<0.01	0.04
L23900N 5275E		0.03	0.17	8.7	560	45.8	36.3	0.040	2.08	6.79	5.3	2.9	1.3	51.2	<0.01	0.32
L24000N 4800E		0.02	0.05	134.0	760	2.8	20.5	<0.001	0.01	0.12	15.6	<0.2	0.2	62.7	<0.01	0.01
L24000N 4825E		0.02	0.05	133.0	840	3.0	12.6	<0.001	0.01	0.16	18.2	<0.2	<0.2	57.1	<0.01	0.01
L24000N 4850E		0.01	<0.05	120.5	640	2.5	3.7	<0.001	<0.01	0.20	27.8	0.2	0.2	65.1	<0.01	0.01
L24000N 4875E		0.02	0.30	90.7	620	6.7	8.7	<0.001	0.03	0.26	16.6	0.2	0.3	40.1	<0.01	0.01
L24000N 4900E		0.02	0.13	106.5	830	6.8	8.8	<0.001	0.02	0.27	18.8	<0.2	0.2	41.2	<0.01	0.02
L24000N 4925E		0.02	0.18	95.3	800	6.7	9.8	<0.001	0.05	0.28	12.2	0.2	0.2	38.7	<0.01	0.03
L24000N 4950E		0.02	0.38	77.9	870	24.3	11.7	<0.001	0.05	0.28	10.8	0.2	0.3	38.5	<0.01	0.04
L24000N 4975E		0.02	0.20	86.8	940	8.7	13.4	<0.001	0.05	0.27	10.0	<0.2	0.2	40.6	<0.01	0.03
L24000N 5000E		0.02	0.19	93.3	970	8.0	11.9	<0.001	0.04	0.25	13.9	0.2	0.2	42.9	<0.01	0.03
L24000N 5025E		0.02	0.33	72.0	1070	7.3	9.8	<0.001	0.05	0.30	11.6	<0.2	0.3	51.3	<0.01	0.04
L24000N 5050E		0.02	0.68	64.4	830	7.0	8.9	<0.001	0.03	0.47	12.4	<0.2	0.3	41.6	<0.01	0.03
L24000N 5075E		0.02	0.66	71.9	1070	9.0	22.0	<0.001	0.08	0.43	9.5	0.2	0.3	43.8	<0.01	0.03
L24000N 5125E		0.02	0.63	60.4	1040	10.4	11.3	<0.001	0.09	0.37	4.6	0.4	0.4	43.5	<0.01	0.04
L24000N 5150E		0.02	0.34	60.9	1650	11.0	7.3	<0.001	0.11	0.35	6.7	0.3	0.3	53.7	<0.01	0.05
L24000N 5200E		0.02	0.35	76.4	800	9.5	4.0	<0.001	0.05	0.31	13.3	<0.2	0.3	71.7	<0.01	0.02
L24000N 5225E		0.02	0.40	55.5	890	7.7	4.5	<0.001	0.06	0.40	10.6	0.2	0.3	62.6	<0.01	0.02
L24000N 5250E		0.02	0.33	55.9	750	14.1	2.8	<0.001	0.05	0.38	11.7	0.2	0.2	105.5	<0.01	0.03
L24000N 5275E		0.02	0.39	53.7	780	11.5	5.8	<0.001	0.05	0.30	11.4	0.2	0.3	64.0	<0.01	0.02
L24000N 5300E		0.02	0.41	43.0	1540	9.3	7.7	<0.001	0.09	0.28	5.6	0.2	0.3	49.9	<0.01	0.04
L24000N 5325E		0.02	0.58	39.0	980	7.7	7.1	<0.001	0.09	0.30	4.4	0.4	0.3	34.8	<0.01	0.03
L24000N 5350E		0.02	0.32	53.9	880	5.9	6.6	<0.001	0.04	0.28	13.6	0.4	0.3	49.9	<0.01	0.03

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Finalized Date: 29-OCT-2020
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CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L23900N 4775E		0.2	0.094	0.03	0.25	134	0.42	7.10	105	0.6
L23900N 4800E		<0.2	0.083	0.04	0.33	142	0.33	6.23	126	<0.5
L23900N 4825E		0.2	0.100	0.04	0.32	135	0.39	7.70	101	0.5
L23900N 4850E		<0.2	0.062	0.06	0.35	156	0.26	5.30	108	<0.5
L23900N 4875E		0.4	<0.005	0.13	0.28	151	0.49	14.20	205	0.6
L23900N 4900E		0.3	0.024	0.08	0.14	164	0.69	10.15	216	<0.5
L23900N 4925E		<0.2	0.047	0.07	0.25	149	0.32	4.94	179	<0.5
L23900N 4950E		<0.2	0.076	0.06	0.30	140	0.30	5.35	118	<0.5
L23900N 4975E		<0.2	0.061	0.08	0.34	126	0.28	5.79	113	<0.5
L23900N 5000E		0.8	0.084	0.07	0.45	94	0.25	3.94	74	0.6
L23900N 5025E		0.4	0.070	0.08	0.50	108	0.33	4.08	93	<0.5
L23900N 5050E		<0.2	0.047	0.05	0.41	100	0.23	2.97	86	<0.5
L23900N 5075E		<0.2	0.060	0.05	0.48	153	0.29	3.54	147	<0.5
L23900N 5100E		<0.2	0.078	0.06	0.42	153	0.36	3.55	130	0.6
L23900N 5125E		<0.2	0.045	0.06	0.26	164	0.24	3.19	148	<0.5
L23900N 5175E		<0.2	0.040	0.07	0.55	100	0.17	3.69	100	<0.5
L23900N 5225E		0.2	0.094	0.06	0.44	154	0.20	5.54	97	0.5
L23900N 5250E		<0.2	0.093	0.06	0.47	150	0.16	3.81	95	0.8
L23900N 5275E		12.7	0.045	0.38	5.34	42	3.89	9.70	296	3.6
L24000N 4800E		0.3	0.140	0.05	0.10	122	0.18	4.70	82	2.3
L24000N 4825E		0.2	0.110	0.05	0.09	138	0.16	6.78	82	1.4
L24000N 4850E		0.2	0.106	<0.02	0.11	123	0.11	5.87	65	3.9
L24000N 4875E		0.2	0.079	0.05	0.26	139	0.27	7.19	98	<0.5
L24000N 4900E		0.6	0.110	0.05	0.21	129	0.24	6.61	93	1.4
L24000N 4925E		<0.2	0.069	0.08	0.21	140	0.24	6.15	103	<0.5
L24000N 4950E		0.3	0.098	0.06	0.25	135	0.24	4.18	115	0.5
L24000N 4975E		<0.2	0.080	0.06	0.24	137	0.27	4.57	122	<0.5
L24000N 5000E		0.2	0.071	0.09	0.23	141	0.29	5.70	122	<0.5
L24000N 5025E		0.2	0.092	0.06	0.29	137	0.27	6.25	103	<0.5
L24000N 5050E		0.9	0.090	0.06	0.43	118	0.34	5.56	91	1.3
L24000N 5075E		0.2	0.066	0.14	0.25	149	0.38	3.76	114	0.6
L24000N 5125E		<0.2	0.116	0.07	0.38	141	0.23	4.13	130	0.9
L24000N 5150E		<0.2	0.074	0.07	0.36	149	0.24	6.23	111	<0.5
L24000N 5200E		0.5	0.135	0.05	0.35	133	0.28	7.15	133	1.0
L24000N 5225E		0.8	0.112	0.05	0.38	126	0.26	6.43	133	0.8
L24000N 5250E		0.4	0.145	0.03	0.28	141	0.25	4.60	475	1.0
L24000N 5275E		0.7	0.145	0.06	0.37	148	0.27	5.71	137	1.1
L24000N 5300E		0.2	0.115	0.06	0.35	163	0.19	3.97	116	0.9
L24000N 5325E		0.2	0.099	0.07	0.46	111	0.15	4.65	80	1.1
L24000N 5350E		0.5	0.131	0.05	0.38	135	0.22	7.68	96	0.9

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	Au-ICP21 Au Check ppm 0.001	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1
L24000N 5375E		0.42	0.004		0.09	2.42	5.1	<0.02	<10	130	0.34	0.13	0.46	0.31	14.75	23.7
L24000N 5400E		0.42	0.002		0.06	2.55	5.2	<0.02	<10	80	0.39	0.09	0.53	0.22	16.70	25.1
L24000N 5425E		0.44	0.002		0.04	3.61	2.7	<0.02	<10	70	0.39	0.01	0.92	0.17	4.40	46.4
L24000N 5450E		0.46	0.002		0.09	2.74	6.1	<0.02	<10	90	0.52	0.07	0.82	0.16	4.93	37.8
L24000N 5475E		0.56	0.003		0.07	2.89	6.5	<0.02	<10	120	0.42	0.08	0.49	0.19	6.63	34.1
L24000N 5500E		0.50	0.007		0.14	3.28	12.1	<0.02	<10	210	0.47	0.16	0.81	0.12	11.75	34.4
L24000N 5525E		0.66	0.011		0.15	3.77	38.1	<0.02	<10	100	0.49	0.58	0.17	0.16	25.3	44.0
L24000N 5550E		0.38	0.011		0.23	4.35	58.7	<0.02	<10	80	0.60	0.48	0.33	0.26	19.75	77.5
L24000N 5575E		0.86	0.010		0.24	3.90	29.3	<0.02	<10	100	0.54	0.39	0.29	0.22	19.75	48.2
L24000N 5600E		0.58	0.010		0.29	4.56	22.4	<0.02	<10	180	0.48	0.44	0.55	0.17	16.05	41.7
L24000N 5625E		0.40	0.004		0.06	3.55	10.6	<0.02	<10	130	0.43	0.20	0.42	0.18	17.20	26.4
L24000N 5650E		0.46	0.015		0.05	3.09	19.5	<0.02	<10	170	0.46	0.29	0.35	0.14	22.5	38.5
L24000N 5675E		0.38	0.004		0.06	3.87	12.5	<0.02	<10	150	0.56	0.15	1.29	0.14	21.5	23.9
L24000N 5700E		0.42	0.003		0.07	3.47	6.9	<0.02	<10	210	0.47	0.12	0.59	0.13	19.65	33.7
L24000N 5725E		0.44	0.011		0.10	3.96	12.3	<0.02	<10	190	0.54	0.24	0.92	0.20	11.45	28.5
L24000N 5750E		0.52	0.007		0.04	3.36	10.7	<0.02	<10	170	0.55	0.17	0.51	0.19	22.8	23.2
L24000N 5775E		0.52	0.012		0.08	4.02	12.9	<0.02	<10	190	0.65	0.23	0.71	0.24	17.25	24.8
L24000N 5800E		0.58	0.013		0.11	4.35	7.8	<0.02	<10	270	0.47	0.15	1.00	0.14	14.45	29.7
L24000N 5850E		0.52	0.028		0.13	3.67	13.8	<0.02	<10	150	0.71	0.22	0.64	0.30	23.7	24.6
L24000N 5900E		0.54	0.013		0.10	3.23	17.1	<0.02	<10	140	0.66	0.28	0.49	0.34	27.8	24.6
L24000N 5925E		0.48	0.045		0.08	3.39	26.0	<0.02	<10	130	0.51	0.17	0.38	0.39	25.4	35.3
L24000N 5950E		0.54	0.025		0.15	4.69	54.6	<0.02	<10	320	0.54	0.18	0.97	0.37	20.2	57.5
L24000N 5975E		0.54	0.015		0.27	5.08	70.7	0.02	<10	230	0.59	0.25	0.90	0.40	19.75	58.2
L24000N 6000E		0.46	0.020		0.18	3.85	65.1	<0.02	<10	140	0.54	0.46	0.75	0.36	24.0	44.9
L4600N 6500E		0.50	0.016		0.20	2.21	18.4	<0.02	<10	330	1.28	0.17	0.67	0.25	71.3	30.0
L4600N 6525E		0.58	0.017		0.19	2.19	14.2	0.17	<10	330	1.19	0.15	0.66	0.14	56.5	25.7
L4600N 6575E		0.40	0.009		0.18	2.25	12.8	<0.02	<10	480	1.41	0.12	0.76	0.21	80.0	42.8
L4600N 6600E		0.42	0.173		0.80	2.70	60.3	0.17	<10	290	1.57	1.00	0.23	0.13	87.1	159.0
L4600N 6625E		0.26	0.013		0.33	1.73	4.6	<0.02	<10	120	0.46	0.11	0.07	0.20	12.75	8.7
L4600N 6650E		0.30	0.007		0.33	2.83	8.8	<0.02	<10	90	0.51	0.10	0.12	0.08	17.45	10.3
L4600N 6675E		0.32	0.004		0.03	2.18	5.9	<0.02	<10	40	0.60	0.07	0.52	0.06	43.9	17.4
L4600N 6700E		0.40	0.029		0.14	2.74	8.9	<0.02	<10	90	0.49	0.11	0.09	0.08	14.90	11.7
L4600N 6725E		0.42	0.003		0.22	2.68	9.9	<0.02	<10	100	0.62	0.09	0.23	0.09	18.10	11.4
L4600N 6750E		0.32	0.009		0.19	2.00	7.1	<0.02	<10	80	0.33	0.10	0.08	0.06	11.85	10.0
L4600N 6775E		0.38	0.018		0.14	2.44	11.1	<0.02	<10	120	0.71	0.12	0.40	0.10	33.1	21.7
L4600N 6800E		0.32	0.008		0.33	2.33	9.3	<0.02	<10	80	0.50	0.08	0.24	0.07	19.30	12.8
L4600N 6825E		0.42	0.012		0.07	1.74	9.8	<0.02	<10	110	0.77	0.07	0.58	0.24	50.9	23.6
L4600N 6850E		0.32	0.008		0.16	2.18	7.3	<0.02	<10	70	0.33	0.11	0.19	0.06	17.45	11.0
L4600N 6875E		0.26	0.016		0.29	2.30	10.2	<0.02	<10	130	0.85	0.09	0.45	0.18	30.6	17.0
L4600N 6900E		0.16	0.007		0.06	3.51	12.5	<0.02	<10	450	1.44	0.24	0.46	0.11	28.7	17.6

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
L24000N 5375E		110	3.56	74.1	5.12	8.15	0.06	0.02	0.04	0.026	0.06	6.1	19.4	1.15	1640	0.85
L24000N 5400E		104	3.23	97.4	5.20	7.82	0.07	0.02	0.03	0.029	0.05	6.4	24.0	1.64	965	0.69
L24000N 5425E		179	2.72	192.5	6.54	9.94	0.18	0.14	0.01	0.016	0.10	2.2	32.8	4.50	1550	0.15
L24000N 5450E		245	2.43	172.5	5.29	8.23	0.08	0.02	0.03	0.026	0.03	1.8	25.0	2.71	1890	0.54
L24000N 5475E		200	1.50	149.5	5.11	8.20	0.06	0.02	0.03	0.026	0.04	2.5	22.6	2.38	1540	0.42
L24000N 5500E		161	1.41	172.0	5.41	8.79	0.08	0.03	0.03	0.025	0.06	5.6	24.9	3.07	1570	0.67
L24000N 5525E		46	1.62	158.5	8.07	9.13	0.10	0.03	0.05	0.030	0.05	9.6	22.3	1.25	1340	2.29
L24000N 5550E		72	1.91	185.0	8.80	10.85	0.10	0.02	0.03	0.032	0.04	7.1	25.5	1.57	1700	2.33
L24000N 5575E		58	1.72	167.0	6.82	9.49	0.08	0.02	0.02	0.029	0.05	8.1	20.6	1.16	1460	2.38
L24000N 5600E		44	1.31	182.0	10.25	10.05	0.12	0.04	0.06	0.025	0.10	5.2	15.3	1.11	1340	3.21
L24000N 5625E		75	1.23	108.5	4.42	7.85	0.06	0.02	0.04	0.025	0.04	6.8	18.4	1.16	849	1.34
L24000N 5650E		33	2.26	113.5	4.80	7.09	0.08	0.03	0.06	0.028	0.05	9.8	17.6	0.93	1540	1.40
L24000N 5675E		23	1.98	94.7	3.23	8.04	0.07	0.02	0.02	0.023	0.05	6.8	15.8	1.12	1180	0.83
L24000N 5700E		19	3.63	80.0	5.09	9.51	0.07	0.02	0.02	0.031	0.10	6.6	15.2	1.73	827	0.72
L24000N 5725E		25	2.18	129.5	4.34	8.65	0.05	<0.02	0.05	0.024	0.07	4.4	16.6	1.06	1400	0.90
L24000N 5750E		31	2.08	112.5	4.36	7.63	0.07	0.06	0.02	0.026	0.06	9.6	18.7	1.19	930	0.98
L24000N 5775E		38	3.01	211	4.51	9.00	0.06	0.03	0.04	0.028	0.05	7.1	19.0	1.21	1090	0.99
L24000N 5800E		30	2.58	135.0	4.19	9.80	0.07	0.03	0.03	0.026	0.04	4.9	17.0	1.13	2080	0.40
L24000N 5850E		42	2.25	181.0	4.24	8.75	0.09	0.06	0.03	0.025	0.06	10.8	19.7	1.13	970	1.13
L24000N 5900E		45	1.57	126.0	4.05	8.71	0.10	0.05	0.04	0.025	0.06	13.1	19.3	1.07	861	1.02
L24000N 5925E		118	1.58	153.0	4.45	8.90	0.09	0.05	0.03	0.038	0.05	11.1	25.9	1.56	833	0.97
L24000N 5950E		59	4.20	184.0	5.00	11.75	0.09	0.04	0.04	0.045	0.11	7.0	24.8	1.44	1390	0.90
L24000N 5975E		42	3.82	252	5.02	12.65	0.10	0.05	0.02	0.037	0.12	7.7	22.5	1.20	1630	1.51
L24000N 6000E		51	2.54	225	4.99	10.50	0.10	0.07	0.02	0.031	0.09	11.1	23.2	1.27	1020	1.16
L4600N 6500E		4	3.51	443	5.81	8.39	0.14	0.05	0.03	0.051	0.10	32.3	23.2	1.00	1470	4.28
L4600N 6525E		4	3.35	393	5.68	8.10	0.12	0.04	0.04	0.046	0.10	27.4	22.5	1.00	1160	3.64
L4600N 6575E		3	4.19	364	6.41	8.53	0.15	0.04	0.03	0.050	0.10	33.2	20.0	0.99	1940	2.84
L4600N 6600E		2	5.59	1865	16.70	12.50	0.20	0.06	0.10	0.087	0.18	40.6	15.9	0.89	2120	29.2
L4600N 6625E		4	2.25	75.9	3.11	6.80	0.05	<0.02	0.05	0.022	0.04	5.7	7.6	0.16	617	1.58
L4600N 6650E		5	2.24	106.5	4.69	9.07	0.06	0.02	0.05	0.030	0.03	7.2	11.2	0.37	340	2.01
L4600N 6675E		6	2.08	204	5.04	7.01	0.09	0.03	0.03	0.069	0.04	18.1	8.1	0.40	985	1.41
L4600N 6700E		5	2.48	141.5	5.07	8.87	0.07	0.03	0.05	0.033	0.05	6.4	6.3	0.27	428	2.19
L4600N 6725E		3	2.53	118.0	5.39	7.83	0.06	0.03	0.05	0.033	0.04	8.3	10.1	0.36	406	2.16
L4600N 6750E		5	1.84	66.9	3.94	10.55	0.05	<0.02	0.03	0.019	0.03	5.3	5.2	0.29	244	1.84
L4600N 6775E		5	2.77	256	4.82	7.42	0.08	0.03	0.03	0.029	0.06	13.7	15.6	0.67	1000	1.99
L4600N 6800E		4	1.62	105.0	4.85	9.12	0.07	<0.02	0.06	0.026	0.04	8.7	11.1	0.42	262	1.75
L4600N 6825E		4	1.91	230	4.75	5.47	0.11	0.02	0.02	0.024	0.07	17.8	12.9	0.60	1180	1.90
L4600N 6850E		5	1.87	93.9	4.54	8.57	0.07	<0.02	0.02	0.026	0.04	7.1	11.3	0.42	432	1.81
L4600N 6875E		4	2.32	169.0	4.68	6.96	0.08	0.02	0.03	0.032	0.05	12.7	14.1	0.49	707	2.10
L4600N 6900E		5	7.27	272	5.92	11.05	0.10	0.10	0.03	0.057	0.09	18.7	26.8	0.90	861	2.74

***** See Appendix Page for comments regarding this certificate *****

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SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
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CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
L24000N 5375E		0.02	0.49	34.0	1090	7.2	12.6	<0.001	0.08	0.30	5.5	0.2	0.4	44.8	<0.01	0.04
L24000N 5400E		0.02	0.40	40.5	850	6.4	7.0	<0.001	0.05	0.28	6.8	<0.2	0.3	34.4	<0.01	0.02
L24000N 5425E		0.02	0.16	110.5	700	3.1	4.9	<0.001	0.02	0.22	21.2	<0.2	0.2	42.8	<0.01	0.01
L24000N 5450E		0.02	0.17	74.8	1470	3.9	4.6	<0.001	0.10	0.44	8.3	<0.2	0.2	91.8	<0.01	0.03
L24000N 5475E		0.02	0.21	70.6	1270	5.3	4.7	<0.001	0.10	0.39	7.8	<0.2	0.2	67.8	<0.01	0.07
L24000N 5500E		0.02	0.25	65.6	970	7.1	4.8	<0.001	0.06	0.49	14.9	0.5	0.3	80.2	<0.01	0.17
L24000N 5525E		0.02	0.46	38.1	1550	10.4	4.5	<0.001	0.13	0.79	12.5	1.9	0.3	46.4	<0.01	1.03
L24000N 5550E		0.02	0.30	90.3	1530	10.6	3.8	<0.001	0.10	0.77	10.9	2.2	0.3	61.1	<0.01	0.90
L24000N 5575E		0.02	0.52	44.0	1670	10.6	5.5	<0.001	0.12	0.86	9.2	2.4	0.3	65.7	0.01	0.56
L24000N 5600E		0.04	0.42	27.3	2510	9.4	4.6	<0.001	0.23	0.40	11.5	5.6	0.3	149.0	<0.01	0.32
L24000N 5625E		0.02	0.45	43.4	830	7.0	4.9	<0.001	0.07	0.39	5.2	0.7	0.3	90.1	0.01	0.11
L24000N 5650E		0.02	0.54	25.1	620	8.1	4.1	0.001	0.04	0.35	6.7	1.4	0.3	147.5	0.01	0.11
L24000N 5675E		0.02	0.65	20.0	740	6.1	4.4	<0.001	0.05	0.38	5.1	0.3	0.3	100.5	0.01	0.06
L24000N 5700E		0.03	1.04	17.9	940	4.0	6.9	<0.001	0.05	0.19	8.1	0.4	0.4	93.7	0.01	0.06
L24000N 5725E		0.02	0.50	17.4	1250	5.4	5.6	<0.001	0.11	0.30	2.9	0.4	0.3	199.0	0.01	0.09
L24000N 5750E		0.02	1.31	23.8	910	5.9	5.9	<0.001	0.04	0.37	5.8	0.4	0.4	96.7	0.03	0.05
L24000N 5775E		0.03	0.79	25.9	1090	5.9	5.6	<0.001	0.08	0.33	5.2	0.7	0.4	148.0	0.01	0.09
L24000N 5800E		0.02	0.41	17.6	680	4.4	3.5	<0.001	0.04	0.26	11.9	0.3	0.3	125.5	0.01	0.05
L24000N 5850E		0.02	1.12	30.8	1190	7.7	5.9	<0.001	0.05	0.37	6.5	0.7	0.4	120.5	0.02	0.09
L24000N 5900E		0.02	1.31	34.6	1250	7.9	6.2	<0.001	0.05	0.40	6.2	0.6	0.4	113.5	0.01	0.08
L24000N 5925E		0.02	0.89	100.0	750	8.0	4.7	<0.001	0.05	0.53	7.7	0.5	0.4	69.8	0.01	0.07
L24000N 5950E		0.02	0.59	44.8	1100	7.2	6.4	<0.001	0.05	0.38	13.8	0.6	0.4	1005	0.01	0.07
L24000N 5975E		0.03	0.70	38.9	1530	11.1	8.4	<0.001	0.06	0.44	12.3	0.7	0.5	476	<0.01	0.09
L24000N 6000E		0.03	0.74	38.1	1270	8.6	6.6	<0.001	0.05	0.43	10.2	0.7	0.4	130.5	0.01	0.11
L4600N 6500E		0.01	0.56	6.8	2310	15.5	15.2	<0.001	0.05	0.33	9.8	<0.2	0.5	51.9	0.01	0.05
L4600N 6525E		0.01	0.57	6.6	2340	12.6	15.7	<0.001	0.05	0.33	9.1	0.3	0.6	52.5	<0.01	0.04
L4600N 6575E		0.01	0.51	7.1	2440	11.7	16.2	<0.001	0.04	0.44	13.1	0.6	0.6	90.9	0.01	0.05
L4600N 6600E		0.01	0.30	15.0	2510	9.8	30.0	0.001	0.15	0.40	25.5	0.7	0.7	15.6	0.01	0.44
L4600N 6625E		0.01	0.41	2.6	1210	5.5	19.5	<0.001	0.06	0.25	0.7	<0.2	0.6	16.2	<0.01	0.02
L4600N 6650E		0.01	0.78	4.9	1470	6.1	12.5	<0.001	0.05	0.32	2.9	0.3	0.6	13.8	<0.01	0.03
L4600N 6675E		0.01	0.75	7.0	3580	9.4	6.9	<0.001	0.03	0.41	11.3	0.2	0.9	9.2	0.01	0.01
L4600N 6700E		0.01	0.64	4.6	1710	6.7	16.0	<0.001	0.06	0.33	3.4	0.4	0.5	12.0	<0.01	0.03
L4600N 6725E		0.01	0.56	3.5	3160	6.4	15.0	<0.001	0.08	0.34	2.5	0.6	0.5	18.5	<0.01	0.03
L4600N 6750E		0.01	0.42	4.0	780	6.3	12.1	<0.001	0.05	0.35	1.3	0.3	0.8	17.2	<0.01	0.04
L4600N 6775E		0.02	0.63	6.6	2480	7.7	14.2	<0.001	0.04	0.43	4.5	0.7	0.5	23.1	<0.01	0.05
L4600N 6800E		0.01	0.87	4.2	2490	6.7	12.2	<0.001	0.06	0.41	2.4	0.2	0.5	14.9	<0.01	0.05
L4600N 6825E		0.01	0.60	6.5	2880	7.1	8.7	<0.001	0.03	0.42	5.4	0.4	0.4	22.7	<0.01	0.04
L4600N 6850E		0.01	0.42	4.3	1900	6.3	11.2	<0.001	0.04	0.32	1.9	0.3	0.5	19.4	<0.01	0.04
L4600N 6875E		0.01	0.43	5.1	2430	6.8	12.5	<0.001	0.06	0.35	2.0	0.2	0.4	22.6	<0.01	0.06
L4600N 6900E		0.01	0.77	6.5	1740	13.3	27.3	<0.001	0.07	0.31	9.2	0.5	0.7	37.8	<0.01	0.04

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L24000N 5375E		0.2	0.110	0.07	0.38	154	0.14	3.61	82	0.8
L24000N 5400E		0.4	0.116	0.06	0.36	143	0.11	3.73	103	1.0
L24000N 5425E		0.4	0.221	0.03	0.20	148	0.10	8.39	117	4.1
L24000N 5450E		<0.2	0.101	0.02	0.20	130	0.22	4.76	84	0.5
L24000N 5475E		<0.2	0.101	0.03	0.26	131	0.20	4.48	94	0.6
L24000N 5500E		0.5	0.121	0.05	0.39	137	0.27	10.05	77	0.7
L24000N 5525E		1.4	0.122	0.10	0.63	168	0.22	14.40	88	0.8
L24000N 5550E		0.7	0.093	0.08	0.50	170	0.22	11.45	160	0.5
L24000N 5575E		1.0	0.095	0.10	0.54	145	0.21	8.35	114	0.7
L24000N 5600E		0.8	0.139	0.12	0.51	190	0.17	14.95	83	0.8
L24000N 5625E		0.4	0.063	0.10	0.45	100	0.15	6.36	67	0.5
L24000N 5650E		1.3	0.046	0.08	0.52	94	0.17	9.24	68	0.9
L24000N 5675E		0.6	0.047	0.07	0.46	74	0.19	6.64	68	0.5
L24000N 5700E		0.5	0.120	0.09	0.42	135	0.12	9.02	101	0.5
L24000N 5725E		<0.2	0.046	0.07	0.38	98	0.19	5.40	83	<0.5
L24000N 5750E		1.4	0.086	0.07	0.52	99	0.17	7.09	76	2.2
L24000N 5775E		0.4	0.059	0.06	0.57	109	0.25	8.61	78	0.9
L24000N 5800E		0.5	0.071	0.04	0.53	110	0.20	16.70	63	0.7
L24000N 5850E		1.3	0.102	0.07	0.72	99	0.23	10.70	91	2.1
L24000N 5900E		1.8	0.109	0.09	0.83	94	0.20	11.05	95	1.9
L24000N 5925E		1.8	0.099	0.08	0.66	103	0.23	8.62	106	1.3
L24000N 5950E		1.2	0.098	0.07	0.52	143	0.26	10.05	98	1.0
L24000N 5975E		1.5	0.145	0.09	0.58	132	0.28	11.15	110	1.8
L24000N 6000E		2.3	0.118	0.07	0.66	122	0.23	10.75	103	2.5
L4600N 6500E		9.5	0.025	0.05	6.51	118	0.46	38.7	87	0.7
L4600N 6525E		5.1	0.027	0.05	4.90	116	0.46	32.6	85	0.5
L4600N 6575E		6.6	0.040	0.05	4.55	121	0.53	38.7	92	0.5
L4600N 6600E		7.2	0.019	0.12	7.85	153	0.58	34.6	48	0.9
L4600N 6625E		<0.2	0.010	0.07	0.94	79	0.35	3.27	36	<0.5
L4600N 6650E		0.9	0.017	0.06	1.14	109	0.49	5.65	53	<0.5
L4600N 6675E		2.3	0.009	0.04	1.63	96	0.40	19.10	103	0.7
L4600N 6700E		1.2	0.011	0.08	1.26	113	0.55	5.46	60	0.7
L4600N 6725E		0.9	0.012	0.06	1.40	104	0.44	7.74	56	0.8
L4600N 6750E		<0.2	0.026	0.08	0.82	123	0.43	2.78	36	<0.5
L4600N 6775E		1.9	0.040	0.05	1.57	123	0.47	12.15	71	0.7
L4600N 6800E		0.5	0.026	0.06	1.09	117	0.49	6.80	51	<0.5
L4600N 6825E		4.2	0.041	0.06	1.61	123	0.43	16.40	80	<0.5
L4600N 6850E		0.4	0.020	0.07	0.97	123	0.44	5.22	48	<0.5
L4600N 6875E		0.6	0.017	0.08	1.79	101	0.41	10.60	61	<0.5
L4600N 6900E		2.5	0.008	0.12	5.81	98	0.52	22.7	99	2.0

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	Au-ICP21 Au Check ppm 0.001	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1
L4600N 6925E		0.24	0.013		0.16	2.63	9.3	<0.02	<10	70	0.49	0.13	0.12	0.10	17.60	11.3
L4600N 6950E		0.30	0.011		0.18	2.63	9.9	<0.02	<10	70	0.43	0.12	0.20	0.11	16.65	12.6
L4600N 6975E		0.24	0.009		0.24	2.19	6.5	<0.02	<10	70	0.37	0.11	0.18	0.08	15.70	9.2
L4600N 7000E		0.28	0.008		0.26	2.61	10.3	0.02	<10	90	0.53	0.12	0.38	0.10	24.4	15.2
L4600N 7025E		0.26	0.014		0.30	2.02	7.5	<0.02	<10	90	0.36	0.12	0.10	0.06	14.55	9.5
L4600N 7050E		0.24	0.010		0.16	2.54	10.6	<0.02	<10	90	0.49	0.15	0.23	0.10	24.7	13.5
L4600N 7075E		0.28	0.012		0.09	2.55	12.0	<0.02	<10	90	0.47	0.13	0.19	0.10	19.50	14.6
L4600N 7100E		0.30	0.020		0.14	2.64	27.6	<0.02	<10	90	0.98	0.34	0.30	0.16	36.5	31.8
L4600N 7125E		0.30	0.040		0.13	1.74	23.6	0.02	<10	80	0.54	0.49	0.31	0.06	31.6	27.0
L4600N 7150E		0.30	0.025		0.15	2.33	11.1	<0.02	<10	100	0.45	0.17	0.16	0.10	15.65	12.4
L4600N 7175E		0.24	0.025		0.14	2.70	10.0	<0.02	<10	90	0.51	0.14	0.36	0.08	23.7	12.8
L4600N 7200E		0.26	0.008		0.34	2.18	5.1	<0.02	<10	90	0.36	0.21	0.10	0.08	14.10	6.7
L4600N 7225E		0.24	0.009		0.44	2.27	9.3	<0.02	<10	100	0.34	0.17	0.09	0.11	14.30	9.7
L4600N 7250E		0.26	0.003		0.19	3.18	9.2	<0.02	<10	80	0.52	0.15	0.09	0.08	12.65	10.1
L4600N 7275E		0.22	0.008		0.06	1.32	3.3	<0.02	<10	60	0.12	0.20	0.10	0.03	11.95	4.4
L4600N 7300E		0.24	0.005		0.35	2.30	6.2	<0.02	<10	70	0.53	0.12	0.32	0.09	20.6	12.2
L4600N 7325E		0.28	0.011		0.16	2.96	13.0	<0.02	<10	130	0.99	0.14	0.47	0.21	34.8	20.1
L4600N 7350E		0.26	0.009		0.15	2.69	11.5	<0.02	<10	80	0.67	0.16	0.23	0.14	21.0	13.8
L4600N 7375E		0.20	0.006		0.11	3.11	9.6	<0.02	<10	80	0.54	0.13	0.42	0.10	24.6	17.0
L4600N 7425E		0.06	0.290		3.13	1.30	26.9	0.39	<10	60	0.44	3.59	0.91	2.19	43.1	19.5
L4700N 6500E		0.34	0.009		0.12	2.38	11.3	<0.02	<10	370	1.61	0.13	0.71	0.17	72.5	20.9
L4700N 6600E		0.34	0.111		0.59	1.62	55.2	0.07	<10	330	1.48	0.53	0.27	1.71	68.9	82.4
L4700N 6625E		0.26	0.018		0.22	1.65	5.8	<0.02	<10	90	0.20	0.14	0.04	0.06	9.92	5.6
L4700N 6650E		0.20	0.053		0.03	1.20	3.7	<0.02	<10	80	0.20	0.07	0.06	0.02	7.41	5.2
L4700N 6675E		0.32	0.007		0.24	2.17	5.2	<0.02	<10	120	0.34	0.13	0.04	0.07	11.95	5.7
L4700N 6700E		0.40	0.007		0.17	2.11	5.6	0.02	<10	150	0.47	0.10	0.11	0.11	14.95	11.1
L4700N 6725E		0.30	0.006		0.12	2.66	7.1	<0.02	<10	110	0.43	0.11	0.11	0.07	16.95	10.0
L4700N 6750E		0.18	0.019		0.21	2.00	2.2	<0.02	<10	90	0.17	0.15	0.05	0.05	11.20	2.7
L4700N 6775E		0.22	0.009		0.32	2.31	9.6	<0.02	<10	120	0.47	0.09	0.10	0.12	14.65	14.4
L4700N 6800E		0.22	0.008		0.13	2.48	9.0	<0.02	<10	100	0.39	0.11	0.13	0.07	13.70	11.5
L4700N 6825E		0.36	0.023		0.43	3.03	12.0	0.02	<10	190	1.69	0.16	0.59	0.27	157.0	24.1
L4700N 6850E		0.26	0.010		0.16	2.19	9.3	<0.02	<10	90	0.42	0.11	0.23	0.06	20.0	13.1
L4700N 6875E		0.22	0.008		0.43	2.62	8.6	<0.02	<10	80	0.43	0.12	0.08	0.12	13.60	10.8
L4700N 6900E		0.22	NSS		0.31	1.95	6.3	<0.02	<10	70	0.30	0.16	0.10	0.13	13.55	9.1
L4700N 6925E		0.26	0.010		0.23	2.18	5.6	<0.02	<10	120	0.41	0.13	0.24	0.05	17.95	7.1
L4700N 6950E		0.24	0.017		0.30	2.72	9.7	<0.02	<10	110	0.51	0.08	0.27	0.11	16.40	12.8
L4700N 6975E		0.26	0.017		0.34	3.06	9.4	<0.02	<10	80	0.56	0.10	0.23	0.11	20.5	14.3
L4700N 7000E		0.24	0.008		0.13	2.63	9.1	<0.02	<10	70	0.32	0.13	0.28	0.09	20.0	10.9
L4700N 7025E		0.18	0.012		0.24	1.98	8.8	<0.02	<10	70	0.32	0.11	0.07	0.05	13.45	10.9
L4700N 7050E		0.24	0.007		0.17	2.17	4.0	<0.02	<10	80	0.28	0.12	0.11	0.05	14.10	6.8

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CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
L4600N 6925E		5	2.03	122.5	5.25	8.14	0.06	0.04	0.04	0.035	0.05	8.2	10.3	0.40	449	2.22
L4600N 6950E		6	1.59	107.0	5.24	7.26	0.06	0.02	0.04	0.027	0.04	7.7	10.9	0.49	456	1.81
L4600N 6975E		5	1.70	84.9	3.77	7.28	0.06	<0.02	0.03	0.027	0.04	7.1	12.3	0.42	293	1.43
L4600N 7000E		6	2.14	124.5	5.26	7.17	0.08	0.03	0.03	0.028	0.05	11.7	16.3	0.58	610	1.92
L4600N 7025E		4	1.69	77.8	4.25	8.24	0.05	<0.02	0.03	0.023	0.05	6.7	9.9	0.34	545	1.71
L4600N 7050E		7	1.90	107.5	5.21	8.49	0.08	0.04	0.04	0.029	0.05	11.7	16.0	0.48	617	2.24
L4600N 7075E		4	2.11	109.5	6.05	8.38	0.07	0.02	0.04	0.029	0.04	8.9	13.1	0.51	486	2.24
L4600N 7100E		4	4.45	234	5.42	7.95	0.09	0.03	0.03	0.035	0.06	12.7	19.9	0.79	1880	3.19
L4600N 7125E		4	2.76	558	8.22	6.71	0.10	<0.02	0.01	0.070	0.13	13.1	12.2	0.53	2560	3.94
L4600N 7150E		6	2.50	113.0	5.52	9.18	0.07	<0.02	0.04	0.028	0.04	6.9	12.5	0.48	495	2.71
L4600N 7175E		6	2.35	150.0	5.22	7.71	0.08	0.03	0.02	0.032	0.04	11.0	17.6	0.62	486	2.20
L4600N 7200E		6	2.27	63.3	3.19	8.67	0.06	<0.02	0.03	0.025	0.05	6.6	8.3	0.30	681	2.02
L4600N 7225E		6	2.27	73.9	5.20	10.25	0.06	<0.02	0.05	0.027	0.04	6.6	7.3	0.37	400	2.58
L4600N 7250E		5	1.81	81.4	6.02	9.10	0.06	0.02	0.04	0.031	0.03	5.7	13.3	0.39	306	2.09
L4600N 7275E		4	1.51	30.3	1.71	13.85	<0.05	<0.02	0.02	0.014	0.03	5.8	2.2	0.12	109	1.47
L4600N 7300E		5	1.88	121.0	3.96	7.01	0.07	0.02	0.04	0.026	0.06	9.5	15.3	0.55	724	2.21
L4600N 7325E		6	4.47	260	5.52	8.82	0.09	0.02	0.03	0.038	0.09	15.2	31.4	1.09	1830	2.24
L4600N 7350E		4	2.80	140.0	5.14	8.77	0.07	<0.02	0.04	0.029	0.05	8.5	20.8	0.63	867	2.33
L4600N 7375E		7	2.69	178.0	5.48	7.35	0.08	0.04	0.04	0.031	0.05	11.7	22.5	0.81	589	2.09
L4600N 7425E		64	2.10	2690	3.31	4.09	0.09	0.12	0.09	0.096	0.54	24.3	6.0	0.62	196	206
L4700N 6500E		4	4.26	299	5.03	8.18	0.13	0.05	0.03	0.043	0.09	33.0	21.5	0.80	1250	3.74
L4700N 6600E		3	2.79	814	9.95	5.58	0.15	0.04	0.09	0.084	0.11	32.1	11.2	0.34	2140	5.59
L4700N 6625E		3	1.33	73.9	3.18	8.52	0.05	<0.02	0.05	0.022	0.04	4.8	1.3	0.07	95	1.98
L4700N 6650E		3	1.26	41.5	2.62	8.52	<0.05	<0.02	0.02	0.015	0.04	3.7	1.3	0.08	172	1.83
L4700N 6675E		5	2.67	66.8	4.21	7.68	0.05	<0.02	0.02	0.035	0.04	5.5	3.1	0.13	166	1.86
L4700N 6700E		4	2.20	92.3	3.93	7.88	0.06	<0.02	0.05	0.029	0.07	5.8	10.3	0.27	1020	1.65
L4700N 6725E		5	2.72	86.8	4.71	8.61	0.07	0.04	0.03	0.037	0.05	7.3	9.7	0.32	543	1.74
L4700N 6750E		4	2.31	44.2	1.40	7.68	<0.05	<0.02	0.04	0.019	0.04	5.5	4.3	0.15	89	0.82
L4700N 6775E		4	2.26	106.0	5.05	8.10	0.06	<0.02	0.06	0.027	0.05	6.2	10.1	0.40	868	2.16
L4700N 6800E		4	2.17	102.5	5.11	8.08	0.05	0.02	0.02	0.027	0.04	5.9	9.3	0.46	332	1.99
L4700N 6825E		4	4.50	545	5.96	7.82	0.13	0.03	0.04	0.039	0.10	22.8	19.5	0.97	1530	2.87
L4700N 6850E		4	2.47	119.5	4.84	8.55	0.06	0.02	0.03	0.027	0.05	8.9	9.9	0.45	476	2.29
L4700N 6875E		5	1.72	105.5	4.96	9.17	0.06	0.02	0.03	0.031	0.03	5.6	8.4	0.34	632	2.13
L4700N 6900E		7	2.72	75.5	4.46	10.25	0.06	<0.02	0.05	0.027	0.05	6.1	5.2	0.33	381	1.98
L4700N 6925E		7	1.93	81.4	3.26	7.33	0.06	0.02	0.03	0.026	0.04	8.8	11.9	0.43	180	1.07
L4700N 6950E		4	1.53	92.7	4.87	8.16	0.07	0.03	0.06	0.023	0.03	6.9	7.9	0.40	366	1.90
L4700N 6975E		6	1.77	120.0	4.97	7.53	0.07	0.03	0.04	0.028	0.04	8.4	14.9	0.53	472	1.99
L4700N 7000E		8	2.04	87.9	4.68	8.61	0.06	<0.02	0.04	0.029	0.04	9.6	12.5	0.52	406	1.97
L4700N 7025E		4	1.73	86.1	5.24	9.78	0.05	<0.02	0.05	0.027	0.05	5.8	4.8	0.31	300	1.91
L4700N 7050E		6	2.30	62.0	2.62	8.31	0.05	<0.02	0.03	0.023	0.05	6.6	8.9	0.37	284	1.32

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
L4600N 6925E		0.01	1.88	4.7	1560	5.2	12.3	<0.001	0.06	0.31	3.1	0.6	0.6	13.0	0.01	0.04
L4600N 6950E		0.01	0.60	4.9	1530	5.7	10.6	<0.001	0.04	0.27	2.5	0.3	0.4	20.7	<0.01	0.04
L4600N 6975E		0.01	0.35	3.7	1360	4.6	10.4	<0.001	0.05	0.23	1.4	0.3	0.4	18.2	<0.01	0.03
L4600N 7000E		0.01	0.65	5.7	2490	7.6	13.3	<0.001	0.04	0.33	3.2	0.4	0.4	25.5	<0.01	0.04
L4600N 7025E		0.01	0.20	3.8	1470	4.9	18.7	<0.001	0.06	0.26	1.1	0.3	0.5	17.2	<0.01	0.03
L4600N 7050E		0.01	3.04	5.7	1770	7.2	13.3	<0.001	0.04	0.42	2.9	0.7	1.0	19.4	0.02	0.05
L4600N 7075E		0.01	0.77	4.9	1570	7.9	15.8	<0.001	0.04	0.35	3.1	0.2	0.4	19.0	<0.01	0.04
L4600N 7100E		0.01	0.51	7.0	2340	15.6	13.1	<0.001	0.05	0.32	4.2	0.6	0.5	23.2	<0.01	0.05
L4600N 7125E		0.01	0.32	5.7	2690	6.9	18.3	<0.001	0.05	0.18	8.0	0.3	0.4	7.3	<0.01	0.14
L4600N 7150E		0.01	0.51	5.1	1440	8.9	14.8	<0.001	0.05	0.29	2.0	0.3	0.7	26.2	<0.01	0.04
L4600N 7175E		0.01	1.06	5.2	2060	7.1	12.6	<0.001	0.04	0.31	3.9	0.3	0.5	28.4	0.01	0.03
L4600N 7200E		0.01	0.24	3.5	1530	5.1	22.3	<0.001	0.06	0.21	0.8	0.4	0.6	19.4	<0.01	0.03
L4600N 7225E		0.01	0.52	5.0	1480	6.9	13.0	<0.001	0.06	0.33	1.5	0.4	0.5	17.4	<0.01	0.05
L4600N 7250E		0.01	1.20	4.0	1560	6.2	11.4	<0.001	0.06	0.32	2.9	0.3	0.4	15.4	<0.01	0.04
L4600N 7275E		0.01	0.32	1.9	360	5.1	6.2	0.001	0.03	0.17	1.0	0.2	0.9	22.9	<0.01	0.03
L4600N 7300E		0.01	0.67	5.5	2170	5.7	15.6	<0.001	0.05	0.31	2.5	0.6	0.4	21.9	<0.01	0.03
L4600N 7325E		0.01	0.41	7.7	2270	11.9	15.6	<0.001	0.04	0.30	6.6	0.5	0.5	35.9	<0.01	0.03
L4600N 7350E		0.01	0.83	5.1	1840	9.6	17.5	<0.001	0.06	0.29	2.8	0.4	0.5	20.8	<0.01	0.05
L4600N 7375E		0.01	1.31	7.5	2040	6.9	9.3	<0.001	0.04	0.35	4.9	0.5	0.4	28.8	0.01	0.04
L4600N 7425E		0.04	0.14	9.6	550	44.3	37.5	0.040	2.04	6.46	5.7	2.8	1.3	54.0	<0.01	0.35
L4700N 6500E		0.01	0.66	6.0	1780	12.5	23.2	0.001	0.07	0.32	8.3	0.5	0.5	56.4	<0.01	0.05
L4700N 6600E		0.01	0.22	11.1	2590	62.3	18.0	<0.001	0.09	0.50	20.6	0.4	0.6	17.4	0.01	0.23
L4700N 6625E		0.01	0.44	1.8	1070	4.6	6.8	<0.001	0.06	0.25	1.1	<0.2	0.6	12.6	<0.01	0.04
L4700N 6650E		0.01	0.29	2.4	540	3.4	8.2	<0.001	0.03	0.24	1.3	0.2	0.6	13.9	<0.01	0.03
L4700N 6675E		0.01	0.87	3.2	980	5.3	14.5	<0.001	0.04	0.26	2.7	<0.2	0.6	15.5	<0.01	0.04
L4700N 6700E		0.01	0.32	3.4	1760	7.1	22.3	<0.001	0.08	0.26	1.6	0.4	0.6	19.6	<0.01	0.03
L4700N 6725E		0.01	1.19	4.2	1760	6.9	17.3	<0.001	0.06	0.29	3.6	0.6	0.8	19.5	0.01	0.03
L4700N 6750E		0.01	0.67	1.8	710	5.6	10.4	<0.001	0.06	0.15	0.4	0.4	0.8	19.9	<0.01	0.01
L4700N 6775E		0.01	0.44	4.0	1370	7.9	17.6	<0.001	0.05	0.40	1.6	0.3	0.6	19.1	<0.01	0.05
L4700N 6800E		0.01	0.72	3.3	1210	8.5	11.3	<0.001	0.04	0.36	2.7	0.3	0.6	19.7	<0.01	0.04
L4700N 6825E		0.02	0.70	7.3	2520	13.1	14.8	<0.001	0.03	0.41	10.7	0.3	0.5	29.7	<0.01	0.05
L4700N 6850E		0.01	0.54	4.2	2250	7.8	14.1	<0.001	0.04	0.34	2.7	0.3	0.6	21.0	<0.01	0.04
L4700N 6875E		0.01	0.98	3.7	1470	7.3	8.6	<0.001	0.06	0.36	2.6	0.5	0.6	15.5	<0.01	0.02
L4700N 6900E		0.01	0.94	4.7	1660	6.4	17.5	<0.001	0.06	0.33	1.3	0.2	1.0	17.8	<0.01	0.03
L4700N 6925E		0.01	1.05	4.1	1370	7.2	9.6	<0.001	0.04	0.25	1.8	0.4	0.6	23.9	<0.01	0.02
L4700N 6950E		0.01	0.60	4.0	2840	7.3	7.2	<0.001	0.07	0.44	1.5	0.7	1.1	20.2	<0.01	0.05
L4700N 6975E		0.01	0.77	5.3	1930	7.1	9.6	<0.001	0.05	0.56	2.7	0.4	0.5	22.5	0.01	0.05
L4700N 7000E		0.01	0.73	5.8	2170	6.1	10.1	<0.001	0.06	0.31	1.9	0.8	0.6	21.5	<0.01	0.05
L4700N 7025E		0.01	0.47	4.2	1130	6.6	14.5	<0.001	0.05	0.40	2.1	0.3	0.5	14.9	<0.01	0.06
L4700N 7050E		0.01	0.67	3.8	1010	5.3	15.1	<0.001	0.05	0.25	1.1	0.3	0.7	20.4	<0.01	0.03

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L4600N 6925E		1.0	0.011	0.08	1.20	102	0.51	5.56	60	1.0
L4600N 6950E		0.8	0.021	0.05	0.96	117	0.44	5.37	58	0.5
L4600N 6975E		0.3	0.012	0.05	0.94	96	0.41	4.96	44	<0.5
L4600N 7000E		1.4	0.023	0.06	1.26	118	0.50	9.04	63	0.8
L4600N 7025E		0.2	0.011	0.09	0.86	107	0.38	3.53	44	<0.5
L4600N 7050E		1.0	0.025	0.07	1.08	112	0.57	6.85	59	1.2
L4600N 7075E		1.0	0.020	0.07	1.07	126	0.55	6.17	55	<0.5
L4600N 7100E		1.5	0.025	0.06	2.00	102	0.56	12.00	60	0.5
L4600N 7125E		4.0	0.019	0.10	1.74	111	0.32	12.85	78	<0.5
L4600N 7150E		0.3	0.020	0.07	1.03	139	0.54	5.04	50	<0.5
L4600N 7175E		1.9	0.028	0.05	1.18	113	0.59	9.40	55	0.6
L4600N 7200E		0.2	0.011	0.11	0.95	91	0.40	3.65	35	<0.5
L4600N 7225E		0.2	0.020	0.09	0.94	123	0.46	3.73	46	<0.5
L4600N 7250E		1.1	0.023	0.04	1.00	115	0.65	3.94	40	0.5
L4600N 7275E		<0.2	0.021	0.05	0.48	71	0.45	1.76	18	<0.5
L4600N 7300E		0.6	0.027	0.06	1.14	100	0.47	7.89	55	<0.5
L4600N 7325E		1.4	0.047	0.06	2.96	121	0.73	17.60	114	<0.5
L4600N 7350E		0.6	0.034	0.05	1.23	111	0.82	7.69	78	<0.5
L4600N 7375E		3.3	0.048	0.04	1.51	110	0.76	10.25	55	1.1
L4600N 7425E		12.5	0.044	0.39	5.67	41	3.83	9.66	292	3.7
L4700N 6500E		4.1	0.014	0.06	16.25	99	0.79	32.9	87	0.8
L4700N 6600E		5.5	0.007	0.08	5.57	165	0.45	47.2	121	<0.5
L4700N 6625E		0.2	0.007	0.05	0.75	107	0.40	2.20	26	<0.5
L4700N 6650E		<0.2	0.009	0.08	0.51	98	0.32	1.82	29	<0.5
L4700N 6675E		0.6	0.008	0.09	0.67	112	0.42	3.05	44	<0.5
L4700N 6700E		0.3	0.009	0.08	0.95	96	0.32	4.49	53	<0.5
L4700N 6725E		0.9	0.012	0.10	0.91	108	0.36	6.10	55	0.9
L4700N 6750E		<0.2	0.006	0.06	0.65	46	0.20	2.08	19	<0.5
L4700N 6775E		0.3	0.018	0.06	1.01	134	0.39	4.75	65	<0.5
L4700N 6800E		0.7	0.015	0.05	0.89	116	0.40	4.48	57	<0.5
L4700N 6825E		8.9	0.067	0.05	3.39	132	0.61	25.6	85	0.5
L4700N 6850E		0.6	0.022	0.07	1.12	133	0.49	6.93	56	0.5
L4700N 6875E		0.6	0.015	0.06	1.07	118	0.48	4.27	45	<0.5
L4700N 6900E		<0.2	0.024	0.10	0.90	113	0.40	3.27	51	<0.5
L4700N 6925E		0.4	0.019	0.07	0.87	86	0.37	6.41	39	0.6
L4700N 6950E		0.5	0.018	0.05	1.20	118	0.41	6.12	47	0.5
L4700N 6975E		0.9	0.024	0.05	1.13	116	0.49	6.59	58	0.7
L4700N 7000E		0.4	0.022	0.06	1.05	130	0.40	7.13	50	<0.5
L4700N 7025E		0.2	0.021	0.07	0.97	133	0.47	3.40	46	<0.5
L4700N 7050E		<0.2	0.016	0.09	0.76	78	0.35	3.23	39	<0.5

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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	WEI-21	Au-ICP21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Au Check	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co
	Units	kg	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	0.02	0.001	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1
L4700N 7075E		0.26	0.008		0.28	2.35	5.9	0.02	<10	80	0.37	0.11	0.13	0.09	15.05	9.2
L4700N 7100E		0.30	0.011		0.14	2.77	8.5	<0.02	<10	360	1.08	0.12	0.62	0.11	35.1	12.1
L4700N 7125E		0.34	0.008		0.22	2.47	4.9	<0.02	<10	250	0.62	0.16	0.33	0.12	17.55	7.2
L4700N 7150E		0.46	0.033		0.11	2.34	17.8	<0.02	<10	90	0.62	0.40	0.30	0.10	25.5	20.7
L4700N 7175E		0.56	0.012		0.13	2.52	13.7	0.02	<10	100	0.70	0.18	0.40	0.10	28.9	20.6
L4700N 7200E		0.44	0.062		0.10	2.41	19.0	0.06	<10	180	0.79	0.24	0.58	0.24	37.5	26.4
L4700N 7225E		0.46	0.030		0.17	2.36	12.0	<0.02	<10	100	0.68	0.22	0.30	0.14	24.8	18.1
L4700N 7250E		0.46	0.386		0.10	2.52	16.6	0.02	<10	180	1.25	0.17	0.44	0.33	47.2	31.2
L4700N 7275E		0.42	1.260	0.220	0.15	2.04	45.7	0.08	<10	350	1.44	0.40	0.39	0.82	59.0	33.8
L4700N 7300E		0.38	0.086		0.04	2.08	18.9	<0.02	<10	220	1.15	0.26	0.43	0.34	38.9	26.4
L4700N 7325E		0.28	0.063		0.22	2.37	11.1	<0.02	<10	160	0.74	0.16	0.28	0.14	31.8	16.0
L4700N 7350E		0.54	0.073		0.13	2.61	13.0	<0.02	<10	210	1.08	0.21	0.41	0.28	41.3	25.5
L4700N 7375E		0.36	0.030		0.23	3.15	17.5	<0.02	<10	60	0.77	0.17	0.29	0.11	21.9	15.7
L4700N 7400E		0.14	0.016		0.09	3.17	21.0	<0.02	<10	340	1.13	0.29	0.35	0.11	28.9	19.2
L5000N 6550E		0.72	0.074		1.19	2.03	168.5	0.05	<10	440	1.56	3.52	0.62	0.21	50.6	260
L5000N 6600E		0.38	0.015		0.12	2.22	9.5	<0.02	<10	130	0.77	0.13	0.18	0.10	22.5	22.1
L5000N 6625E		0.26	0.036		0.13	2.19	8.5	<0.02	<10	370	0.77	0.14	0.47	0.12	13.40	12.6
L5000N 6650E		0.44	0.009		0.08	1.96	10.5	<0.02	<10	230	0.92	0.12	0.32	0.13	26.0	22.5
L5000N 6675E		0.44	0.017		0.09	2.43	9.0	<0.02	<10	130	0.77	0.16	0.12	0.10	22.7	21.6
L5000N 6700E		0.56	0.009		0.17	1.95	8.1	<0.02	<10	100	0.43	0.13	0.05	0.08	14.35	12.0
L5000N 6725E		0.44	0.003		0.20	2.26	6.4	<0.02	<10	110	0.38	0.12	0.04	0.08	13.35	7.7
L5000N 6750E		0.28	0.133		0.15	2.11	12.8	<0.02	<10	70	0.33	0.18	0.03	0.04	12.95	11.2
L5000N 6775E		0.30	0.012		0.09	1.81	8.4	<0.02	<10	110	0.27	0.16	0.02	0.06	11.90	8.1
L5000N 6800E		0.34	0.006		0.10	2.64	7.7	0.02	<10	80	0.54	0.12	0.14	0.14	17.30	14.6
L5000N 6825E		0.42	0.011		0.25	2.44	9.2	<0.02	<10	90	0.55	0.11	0.08	0.07	14.40	10.6
L5000N 6850E		0.52	0.004		0.15	2.32	7.7	<0.02	<10	100	0.38	0.13	0.08	0.11	13.90	9.3
L5000N 6875E		0.24	0.004		0.16	1.74	7.5	<0.02	<10	80	0.23	0.14	0.05	0.02	11.50	7.5
L5000N 6900E		0.22	0.005		0.06	1.38	5.4	<0.02	<10	70	0.22	0.10	0.02	0.03	9.25	6.4
L5000N 6925E		0.24	0.044		0.21	2.22	7.5	<0.02	<10	70	0.39	0.12	0.07	0.05	17.30	7.7
L5000N 6950E		0.20	0.011		0.17	2.24	9.4	<0.02	<10	80	0.73	0.12	0.16	0.09	19.05	12.7
L5000N 6975E		0.18	0.014		0.09	2.27	10.7	<0.02	<10	160	1.19	0.12	0.35	0.08	38.0	18.4
L5000N 7000E		0.18	0.010		0.12	2.12	10.2	<0.02	<10	180	1.11	0.11	0.56	0.08	31.9	18.0
L5000N 7025E		0.22	0.023		0.10	3.09	22.2	<0.02	<10	500	1.32	0.26	0.40	0.16	26.2	20.4
L5000N 7050E		0.22	0.011		0.33	2.16	9.0	<0.02	<10	120	0.43	0.15	0.20	0.07	13.90	7.2
L5000N 7075E		0.22	0.013		0.14	2.35	7.5	<0.02	<10	160	0.64	0.18	0.19	0.14	16.45	8.0
L5000N 7100E		0.22	0.008		0.13	2.08	8.5	<0.02	<10	240	0.68	0.17	0.34	0.11	21.5	12.8
L5000N 7125E		0.24	0.028		0.18	2.39	12.8	<0.02	<10	110	0.90	0.22	0.17	0.08	29.5	23.9
L5000N 7150E		0.26	0.008		0.12	2.51	13.1	<0.02	<10	80	0.45	0.20	0.05	0.14	14.20	15.7
L5000N 7175E		0.28	0.010		0.26	1.98	9.1	0.02	<10	100	0.57	0.17	0.13	0.08	18.55	7.3
L5000N 7250E		0.26	0.020		0.23	2.28	11.4	0.02	<10	90	0.77	0.17	0.35	0.08	26.8	15.7

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
L4700N 7075E		6	1.74	69.0	4.11	9.60	0.06	<0.02	0.03	0.024	0.03	6.7	8.3	0.39	321	1.72
L4700N 7100E		9	5.13	351	4.60	7.89	0.16	0.07	0.03	0.039	0.09	45.6	18.4	0.69	508	4.10
L4700N 7125E		6	4.29	112.5	3.17	8.29	0.08	0.02	0.05	0.029	0.06	14.2	19.5	0.45	699	5.86
L4700N 7150E		5	2.56	152.5	5.66	7.79	0.07	0.04	0.02	0.033	0.06	11.1	14.8	0.51	1160	2.74
L4700N 7175E		5	2.38	205	5.83	7.90	0.09	0.03	0.01	0.034	0.06	12.8	16.8	0.60	1360	2.44
L4700N 7200E		6	4.09	225	5.95	8.64	0.10	<0.02	0.06	0.039	0.07	15.6	29.3	0.92	1500	3.95
L4700N 7225E		5	2.31	147.5	4.47	6.85	0.09	<0.02	0.04	0.030	0.05	11.5	16.7	0.53	873	3.21
L4700N 7250E		7	4.39	296	6.53	8.93	0.10	0.02	0.05	0.046	0.07	20.6	31.2	0.71	1650	2.91
L4700N 7275E		3	4.02	347	7.05	5.98	0.12	0.03	0.03	0.048	0.14	28.0	18.9	0.51	2590	4.74
L4700N 7300E		4	2.85	246	6.18	6.79	0.09	0.02	0.03	0.044	0.08	15.9	19.8	0.59	1720	3.55
L4700N 7325E		6	2.54	143.0	4.87	7.85	0.08	<0.02	0.06	0.027	0.07	16.9	17.4	0.59	848	2.73
L4700N 7350E		5	3.33	279	5.54	8.15	0.10	0.02	0.03	0.037	0.08	15.8	26.2	0.69	1550	2.94
L4700N 7375E		5	2.97	151.0	5.71	7.61	0.07	0.04	0.05	0.038	0.05	9.8	27.5	0.63	670	2.22
L4700N 7400E		4	6.67	306	5.90	9.26	0.09	0.07	0.05	0.051	0.10	17.5	26.1	0.84	1930	3.42
L5000N 6550E		3	4.52	1915	14.30	6.93	0.18	0.06	0.06	0.058	0.13	39.2	23.6	0.67	944	35.0
L5000N 6600E		2	2.39	224	5.32	5.86	0.06	0.03	0.05	0.038	0.08	9.0	12.6	0.34	1030	2.08
L5000N 6625E		3	2.02	162.5	5.08	7.83	0.07	0.03	0.04	0.031	0.07	10.4	8.6	0.25	744	7.02
L5000N 6650E		3	2.44	232	5.63	6.09	0.07	0.02	0.03	0.041	0.08	10.3	22.7	0.50	1000	3.77
L5000N 6675E		3	2.95	176.0	4.82	6.78	0.06	0.03	0.06	0.036	0.07	9.2	13.8	0.30	1100	2.51
L5000N 6700E		3	2.01	93.5	5.50	7.56	0.06	<0.02	0.04	0.035	0.05	6.6	7.6	0.18	361	2.88
L5000N 6725E		4	2.00	69.1	5.13	8.55	0.06	<0.02	0.03	0.031	0.04	6.2	5.5	0.18	264	2.67
L5000N 6750E		5	2.30	98.2	6.14	8.66	0.06	<0.02	0.02	0.034	0.05	6.0	4.3	0.25	231	3.13
L5000N 6775E		4	1.14	68.1	4.98	8.29	0.06	<0.02	0.03	0.029	0.04	5.6	2.2	0.13	224	2.45
L5000N 6800E		4	2.13	131.0	5.37	6.99	0.08	0.05	0.05	0.043	0.06	7.5	11.7	0.27	1340	2.37
L5000N 6825E		2	2.10	122.0	7.19	7.05	0.07	0.03	0.05	0.045	0.04	6.4	8.7	0.26	565	2.44
L5000N 6850E		5	1.73	87.7	5.84	7.40	0.07	0.02	0.05	0.037	0.05	6.0	10.7	0.25	406	2.43
L5000N 6875E		5	1.10	66.5	4.91	11.15	0.07	<0.02	0.02	0.025	0.06	5.4	3.1	0.20	263	2.30
L5000N 6900E		3	1.85	76.3	3.58	9.49	0.05	<0.02	0.01	0.022	0.05	4.6	1.4	0.09	155	2.04
L5000N 6925E		3	1.71	107.0	4.47	6.93	0.07	0.04	0.03	0.033	0.05	6.6	7.8	0.34	176	1.88
L5000N 6950E		4	2.02	154.0	5.27	6.83	0.08	0.03	0.02	0.037	0.07	8.6	11.5	0.46	384	2.27
L5000N 6975E		4	2.28	206	5.29	6.81	0.10	0.03	0.02	0.039	0.09	14.0	16.4	0.61	536	3.50
L5000N 7000E		3	2.15	231	5.32	6.19	0.09	0.03	0.03	0.042	0.11	12.4	16.5	0.62	572	3.88
L5000N 7025E		6	7.46	512	6.77	11.35	0.13	0.12	0.02	0.055	0.12	27.0	24.6	0.68	1060	6.83
L5000N 7050E		4	2.00	106.5	4.57	8.33	0.07	0.02	0.03	0.028	0.06	6.9	8.5	0.32	343	3.27
L5000N 7075E		7	1.66	144.0	4.26	9.86	0.07	<0.02	0.03	0.027	0.04	10.3	16.6	0.26	192	5.17
L5000N 7100E		4	2.66	216	4.47	8.96	0.08	<0.02	0.01	0.035	0.06	12.0	13.0	0.44	525	8.32
L5000N 7125E		4	2.18	276	5.49	7.71	0.08	0.02	0.03	0.035	0.07	11.4	15.3	0.52	837	3.91
L5000N 7150E		5	2.33	165.5	6.05	9.09	0.06	0.02	0.03	0.041	0.05	5.9	12.1	0.38	895	10.05
L5000N 7175E		3	2.40	146.5	3.75	8.23	0.06	<0.02	0.02	0.026	0.05	9.8	6.6	0.27	264	3.11
L5000N 7250E		3	2.38	341	5.67	7.23	0.09	0.03	0.04	0.042	0.08	12.0	19.1	0.67	579	2.89

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MORGAN HEIGHTS POST OFFICE
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Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
L4700N 7075E		0.01	0.86	4.3	1070	5.3	9.5	<0.001	0.05	0.30	1.8	0.4	0.7	20.5	<0.01	0.04
L4700N 7100E		0.02	0.53	7.6	2420	7.2	27.5	<0.001	0.06	0.32	12.8	0.4	0.5	42.2	0.01	0.04
L4700N 7125E		0.01	0.69	4.9	1970	5.8	22.8	<0.001	0.12	0.21	1.9	0.5	0.7	34.7	0.01	0.03
L4700N 7150E		0.01	0.78	5.6	2400	7.7	15.7	<0.001	0.04	0.38	2.9	0.3	0.7	20.8	0.01	0.23
L4700N 7175E		0.01	0.55	6.1	2760	8.6	14.6	<0.001	0.04	0.42	4.2	0.4	0.6	24.7	<0.01	0.06
L4700N 7200E		0.01	0.53	6.9	2380	17.0	16.1	0.001	0.06	0.40	4.8	0.3	0.6	41.5	0.01	0.09
L4700N 7225E		0.01	0.43	4.8	2220	7.5	14.8	<0.001	0.07	0.27	2.0	0.3	0.4	22.5	<0.01	0.06
L4700N 7250E		0.01	1.19	6.6	2130	15.5	23.3	<0.001	0.06	0.35	7.2	0.2	0.9	30.4	0.01	0.07
L4700N 7275E		0.01	0.21	5.4	2360	45.9	23.3	<0.001	0.06	0.25	6.6	0.4	0.5	25.5	0.01	0.06
L4700N 7300E		0.01	0.30	5.5	2540	22.9	16.3	<0.001	0.08	0.28	3.6	<0.2	0.6	27.2	<0.01	0.07
L4700N 7325E		0.01	0.71	6.1	2060	9.7	20.5	<0.001	0.08	0.29	2.2	0.5	0.5	26.1	<0.01	0.04
L4700N 7350E		0.01	0.58	7.3	2420	10.2	18.1	<0.001	0.04	0.34	4.8	0.5	0.6	46.6	0.01	0.05
L4700N 7375E		0.01	1.34	5.1	2340	5.7	17.5	<0.001	0.06	0.28	3.8	0.5	0.4	19.1	0.01	0.05
L4700N 7400E		0.01	0.53	5.1	1880	11.0	27.7	<0.001	0.09	0.33	6.6	0.4	0.5	40.4	<0.01	0.04
L5000N 6550E		0.01	0.28	14.7	1970	19.4	19.7	0.001	0.33	0.55	13.5	1.4	0.3	36.6	0.01	1.26
L5000N 6600E		0.01	0.29	3.7	2050	6.8	17.4	<0.001	0.04	0.24	4.7	<0.2	0.4	15.7	<0.01	0.04
L5000N 6625E		0.01	0.52	3.0	1640	5.9	26.7	<0.001	0.08	0.27	3.3	0.3	0.5	34.6	<0.01	0.04
L5000N 6650E		0.01	0.35	4.6	1410	7.5	14.0	<0.001	0.05	0.31	5.1	0.2	0.4	26.0	<0.01	0.03
L5000N 6675E		0.01	0.33	3.4	1880	7.5	19.5	<0.001	0.05	0.22	4.6	0.3	0.5	17.6	<0.01	0.05
L5000N 6700E		0.01	0.49	2.7	1390	6.4	16.9	<0.001	0.03	0.23	5.0	0.2	0.5	12.2	<0.01	0.04
L5000N 6725E		0.01	0.75	3.1	1060	6.6	17.7	<0.001	0.04	0.26	4.1	0.3	0.5	13.3	<0.01	0.02
L5000N 6750E		0.01	2.14	3.6	940	9.4	16.2	<0.001	0.03	0.29	5.3	0.2	1.2	10.7	<0.01	0.04
L5000N 6775E		0.01	0.73	2.6	950	6.6	12.7	<0.001	0.04	0.23	4.3	<0.2	0.6	8.1	<0.01	0.03
L5000N 6800E		0.01	1.83	3.5	3920	7.0	16.4	<0.001	0.06	0.29	4.4	0.4	0.7	11.9	0.01	0.04
L5000N 6825E		0.01	0.50	2.4	3300	8.8	16.2	<0.001	0.06	0.25	5.0	0.3	0.4	8.5	<0.01	0.04
L5000N 6850E		0.01	1.27	4.0	2020	6.6	16.1	<0.001	0.05	0.25	4.9	0.5	0.6	11.9	<0.01	0.03
L5000N 6875E		0.01	0.91	3.6	860	7.6	13.0	<0.001	0.03	0.28	4.2	<0.2	0.7	12.8	<0.01	0.02
L5000N 6900E		0.01	0.43	1.8	900	3.9	17.2	<0.001	0.03	0.23	2.4	<0.2	0.7	9.8	<0.01	0.03
L5000N 6925E		0.01	0.72	2.6	1060	5.9	12.5	<0.001	0.03	0.23	4.4	<0.2	0.6	15.2	<0.01	0.03
L5000N 6950E		0.01	0.40	3.8	1620	7.2	17.5	<0.001	0.03	0.24	3.8	0.3	0.5	17.6	<0.01	0.02
L5000N 6975E		0.01	0.39	5.3	1760	7.6	14.6	<0.001	0.03	0.28	5.3	<0.2	0.5	26.1	<0.01	0.03
L5000N 7000E		0.01	0.35	5.2	2090	6.7	14.7	<0.001	0.04	0.28	5.3	<0.2	0.5	31.2	<0.01	0.03
L5000N 7025E		0.01	0.80	6.2	2030	10.0	33.3	<0.001	0.07	0.35	13.6	0.4	0.7	30.0	0.01	0.07
L5000N 7050E		0.01	0.69	2.6	1060	7.9	17.4	<0.001	0.04	0.24	2.6	0.2	0.6	21.8	<0.01	0.02
L5000N 7075E		0.01	1.03	3.5	690	7.4	11.4	<0.001	0.05	0.25	2.4	0.2	0.7	27.6	<0.01	0.04
L5000N 7100E		0.01	2.19	3.8	1430	7.4	21.2	<0.001	0.04	0.24	3.0	0.2	1.2	26.7	<0.01	0.03
L5000N 7125E		0.01	0.52	4.5	1700	8.6	18.4	<0.001	0.05	0.28	4.6	0.4	0.6	16.7	<0.01	0.07
L5000N 7150E		0.01	0.86	3.7	990	11.0	17.9	<0.001	0.04	0.26	3.5	<0.2	0.7	14.2	<0.01	0.03
L5000N 7175E		0.01	0.50	2.1	830	5.5	17.9	<0.001	0.03	0.19	2.8	<0.2	0.6	16.7	<0.01	0.02
L5000N 7250E		0.01	0.46	4.6	2500	6.1	16.2	<0.001	0.04	0.37	4.8	<0.2	0.5	19.2	<0.01	0.06

***** See Appendix Page for comments regarding this certificate *****

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www.alsglobal.com/geochemistry

To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L4700N 7075E		0.2	0.025	0.06	0.83	117	0.41	3.99	44	<0.5
L4700N 7100E		2.2	0.019	0.10	8.20	101	0.49	65.7	73	0.9
L4700N 7125E		0.2	0.011	0.09	4.95	80	0.50	17.35	67	<0.5
L4700N 7150E		1.0	0.021	0.07	1.34	133	0.49	8.90	62	1.0
L4700N 7175E		1.2	0.033	0.06	1.73	140	0.58	11.65	71	0.6
L4700N 7200E		0.7	0.043	0.06	3.27	139	0.62	18.50	115	<0.5
L4700N 7225E		0.5	0.017	0.07	1.98	105	0.50	9.93	65	<0.5
L4700N 7250E		1.5	0.051	0.06	5.53	133	0.70	26.1	138	<0.5
L4700N 7275E		1.6	0.007	0.10	5.28	83	0.78	35.4	222	<0.5
L4700N 7300E		0.8	0.011	0.06	2.88	101	0.75	15.90	150	<0.5
L4700N 7325E		0.5	0.025	0.06	3.49	103	0.83	11.35	59	<0.5
L4700N 7350E		1.3	0.026	0.07	3.46	116	0.81	16.80	87	<0.5
L4700N 7375E		2.3	0.021	0.06	1.44	90	0.88	8.01	64	0.8
L4700N 7400E		1.9	0.012	0.11	7.05	86	1.29	19.20	113	1.8
L5000N 6550E		6.2	0.009	0.05	46.9	85	2.32	56.9	57	0.9
L5000N 6600E		2.1	0.007	0.06	1.43	108	0.37	9.24	61	0.6
L5000N 6625E		0.9	0.007	0.06	7.84	109	0.47	12.95	54	0.5
L5000N 6650E		1.7	0.009	0.04	7.93	128	0.46	14.05	69	<0.5
L5000N 6675E		2.3	0.005	0.06	1.58	88	0.45	8.71	64	0.6
L5000N 6700E		2.4	0.006	0.07	1.04	99	0.37	4.36	43	<0.5
L5000N 6725E		1.9	0.008	0.08	0.96	103	0.41	3.47	45	<0.5
L5000N 6750E		1.9	0.011	0.08	0.86	114	0.46	3.76	47	<0.5
L5000N 6775E		1.6	0.007	0.08	0.75	102	0.45	3.17	38	<0.5
L5000N 6800E		1.9	0.010	0.05	1.23	102	0.44	6.89	62	1.3
L5000N 6825E		2.4	0.006	0.04	1.22	89	0.40	6.16	50	0.7
L5000N 6850E		2.4	0.010	0.05	0.97	92	0.39	4.51	53	0.6
L5000N 6875E		1.7	0.023	0.05	0.67	139	0.46	2.83	45	<0.5
L5000N 6900E		0.4	0.009	0.08	0.59	112	0.35	2.78	37	<0.5
L5000N 6925E		1.9	0.009	0.06	1.06	107	0.41	4.60	42	0.9
L5000N 6950E		2.4	0.008	0.05	1.30	98	0.41	7.14	64	0.6
L5000N 6975E		3.4	0.009	0.05	1.83	95	0.46	13.00	64	0.6
L5000N 7000E		3.2	0.010	0.04	2.08	97	0.39	13.55	75	0.7
L5000N 7025E		4.0	0.012	0.09	9.19	107	0.78	44.5	96	2.2
L5000N 7050E		1.1	0.010	0.06	1.20	103	0.43	4.54	41	<0.5
L5000N 7075E		0.6	0.017	0.04	1.83	105	0.58	6.73	48	<0.5
L5000N 7100E		0.8	0.014	0.05	1.69	102	0.52	8.47	69	<0.5
L5000N 7125E		2.4	0.010	0.06	2.01	106	0.59	10.45	61	<0.5
L5000N 7150E		1.6	0.011	0.06	1.51	116	0.63	3.93	80	<0.5
L5000N 7175E		1.4	0.010	0.08	1.65	100	0.62	5.69	32	<0.5
L5000N 7250E		2.7	0.014	0.05	1.88	94	0.63	11.30	63	0.5

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201526

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

NSS is non-sufficient sample.
Applies to Method: ALL METHODS

Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
Applies to Method: ME-MS41

LABORATORY ADDRESSES

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:				
Au-ICP21	HOM-01	LOG-22	LOG-23	
ME-MS41	SCR-41	WEI-21		

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CERTIFICATE VA20201527

Project: Cathedral

P.O. No.: P71-28AUG20-1-B

This report is for 200 Soil samples submitted to our lab in Vancouver, BC, Canada on 11-SEP-2020.

The following have access to data associated with this certificate:

C. NAAS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
LOG-23	Pulp Login - Rcvd with Barcode
SCR-41	Screen to -180um and save both
HOM-01	Homogenize by light pulverizing

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5000N 7275E		0.24	0.020	0.16	2.23	18.8	<0.02	<10	50	0.30	0.26	0.04	0.13	12.60	12.6	5
L5000N 7300E		0.36	0.019	0.12	2.58	10.1	0.02	<10	80	0.74	0.21	0.09	0.08	26.5	15.8	4
L5000N 7325E		0.06	0.291	3.12	1.19	26.6	0.16	<10	70	0.36	3.50	0.87	2.23	40.4	18.4	58
L5200N 5800E		0.42	0.026	0.40	2.58	12.7	<0.02	<10	350	0.97	0.20	1.21	0.65	41.9	31.4	4
L5200N 5825E		0.40	0.019	0.29	2.79	14.2	0.02	<10	330	1.12	0.20	0.99	0.33	37.4	28.5	3
L5200N 5850E		0.50	0.013	0.24	2.64	13.2	<0.02	<10	260	0.97	0.22	0.89	0.41	38.7	31.6	4
L5200N 5900E		0.32	0.021	0.12	2.38	12.5	0.02	<10	190	0.52	0.19	0.20	0.12	18.75	17.2	6
L5200N 5925E		0.36	0.024	0.07	2.74	12.4	<0.02	<10	190	0.76	0.19	0.30	0.21	27.1	20.1	6
L5200N 5950E		0.30	0.008	0.26	3.11	6.7	<0.02	<10	150	0.70	0.10	0.11	0.13	16.80	11.3	5
L5200N 5975E		0.34	0.430	0.18	3.34	10.5	0.25	<10	420	1.20	0.28	0.56	0.19	44.9	39.2	4
L5200N 6000E		0.36	0.022	0.37	1.71	10.8	0.03	<10	430	1.01	0.12	0.87	0.52	40.0	27.3	3
L5200N 6025E		0.44	0.125	0.10	2.48	25.2	<0.02	<10	120	1.04	0.39	0.32	0.29	79.6	42.4	7
L5200N 6075E		0.46	5.99	0.53	2.59	100.0	1.13	<10	160	1.00	1.10	0.31	0.25	53.8	126.5	6
L5200N 6100E		0.38	0.027	0.07	3.21	6.4	<0.02	<10	280	0.67	0.09	0.14	0.10	19.40	13.2	5
L5200N 6200E		0.38	0.046	0.11	3.36	8.9	<0.02	<10	260	0.94	0.09	0.29	0.17	25.4	17.7	5
L5200N 6225E		0.26	0.012	0.12	2.80	7.3	0.03	<10	250	0.64	0.11	0.13	0.07	16.40	13.0	3
L5200N 6250E		0.30	0.012	0.14	3.45	8.2	<0.02	<10	200	0.87	0.15	0.11	0.21	16.35	22.2	3
L5200N 6275E		0.32	0.017	0.24	2.98	10.8	0.10	<10	370	1.08	0.11	0.38	0.19	50.0	23.3	3
L5200N 6300E		0.38	0.014	0.11	3.43	9.9	0.02	<10	190	0.81	0.12	0.26	0.10	24.3	20.9	6
L5200N 6325E		0.32	0.023	0.19	2.69	7.8	0.50	<10	180	0.62	0.11	0.23	0.06	19.65	17.7	4
L5200N 6350E		0.36	0.032	0.10	2.52	10.6	<0.02	<10	140	0.59	0.16	0.30	0.11	27.9	21.5	4
L5200N 6375E		0.32	0.009	0.34	2.94	8.5	0.52	<10	180	0.51	0.13	0.08	0.08	15.05	15.9	4
L5200N 6400E		0.30	0.026	0.11	2.33	10.1	<0.02	<10	150	0.65	0.11	0.30	0.13	28.6	24.1	5
L5200N 6425E		0.30	0.023	0.09	2.47	10.8	<0.02	<10	150	0.66	0.13	0.29	0.10	27.6	24.0	3
L5200N 6450E		0.30	0.018	0.44	2.33	8.0	<0.02	<10	130	0.56	0.13	0.18	0.12	17.10	16.1	4
L5200N 6475E		0.36	0.024	0.24	2.65	9.2	<0.02	<10	120	0.65	0.10	0.31	0.13	20.1	19.3	3
L5200N 6500E		0.30	0.016	0.29	1.77	9.9	<0.02	<10	130	0.28	0.13	0.10	0.12	10.80	11.6	3
L5200N 6525E		0.26	0.016	0.20	1.63	5.4	0.13	<10	110	0.21	0.11	0.14	0.07	8.55	8.0	3
L5200N 6550E		0.26	0.031	0.14	2.28	10.6	<0.02	<10	270	1.46	0.10	0.72	0.26	28.1	51.1	4
L5200N 6600E		0.28	0.009	0.18	2.07	6.6	0.07	<10	90	0.27	0.10	0.09	0.12	8.23	10.5	3
L5200N 6625E		0.28	0.012	0.25	1.39	3.9	<0.02	<10	110	0.20	0.09	0.06	0.03	8.64	7.0	3
L5200N 6650E		0.30	0.079	0.16	2.78	32.4	0.04	<10	570	1.04	0.61	0.79	0.32	24.1	37.3	5
L5200N 6675E		0.26	0.036	0.07	2.63	18.7	0.03	<10	240	0.91	0.26	0.20	0.14	25.0	21.5	5
L5200N 6700E		0.28	0.018	0.16	2.32	16.2	<0.02	<10	330	1.03	0.19	0.62	0.29	23.7	32.7	5
L5200N 6725E		0.26	0.008	0.10	1.61	21.5	<0.02	<10	410	0.43	0.28	0.62	0.13	14.45	10.2	4
L5200N 6750E		0.30	0.031	0.10	1.85	8.1	0.02	<10	430	0.41	0.15	0.30	0.05	13.50	9.3	4
L5200N 6775E		0.22	0.011	0.05	1.54	4.5	0.02	<10	130	0.17	0.15	0.10	0.04	11.75	5.1	4
L5200N 6800E		0.30	0.003	0.12	2.53	4.6	<0.02	<10	320	0.31	0.14	0.32	0.04	14.00	5.1	5
L5200N 6825E		0.30	0.007	0.19	2.30	6.1	<0.02	<10	180	0.35	0.18	0.11	0.06	17.85	7.7	5
L5200N 6850E		0.30	0.007	0.11	2.50	2.9	<0.02	<10	80	0.23	0.22	0.06	0.06	17.55	4.0	6

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CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5000N 7275E		2.34	109.5	6.43	9.03	0.05	<0.02	0.04	0.035	0.05	5.9	5.3	0.30	503	2.86	<0.01
L5000N 7300E		2.67	274	4.22	7.56	0.06	0.06	0.05	0.033	0.06	11.2	13.1	0.46	481	2.61	<0.01
L5000N 7325E		1.98	2660	3.32	3.89	0.08	0.12	0.09	0.096	0.53	22.6	5.1	0.60	189	198.5	0.03
L5200N 5800E		3.44	516	5.21	7.86	0.10	0.06	0.04	0.040	0.09	19.6	18.6	1.06	1690	6.98	0.01
L5200N 5825E		4.36	521	5.24	8.75	0.11	0.06	0.02	0.044	0.09	20.4	21.7	1.14	1110	3.25	0.01
L5200N 5850E		3.78	417	5.56	8.68	0.09	0.05	0.04	0.042	0.11	17.2	21.5	1.20	1460	3.08	0.01
L5200N 5900E		2.16	226	4.62	8.44	0.06	<0.02	0.03	0.032	0.05	6.9	13.1	0.42	680	2.47	0.01
L5200N 5925E		2.64	251	4.95	7.42	0.07	0.03	0.03	0.034	0.05	9.3	20.5	0.74	805	2.02	0.01
L5200N 5950E		1.42	134.5	6.23	7.89	0.08	<0.02	0.06	0.036	0.03	6.6	13.3	0.40	534	2.19	0.01
L5200N 5975E		2.86	496	6.06	13.00	0.09	0.05	0.04	0.063	0.06	17.9	39.8	1.35	1980	1.38	<0.01
L5200N 6000E		3.80	304	5.34	6.01	0.11	0.04	0.04	0.034	0.11	16.8	15.1	0.84	1670	1.73	0.01
L5200N 6025E		2.95	383	6.19	8.55	0.12	0.04	0.04	0.073	0.10	43.2	27.3	0.79	1400	2.76	0.01
L5200N 6075E		2.60	1290	8.06	7.79	0.11	0.03	0.08	0.059	0.10	26.7	23.7	0.85	1640	4.51	0.01
L5200N 6100E		2.15	170.0	5.24	8.84	0.07	0.03	0.05	0.033	0.05	7.8	14.7	0.49	756	2.16	0.01
L5200N 6200E		2.59	470	5.82	6.78	0.09	0.05	0.04	0.049	0.06	10.8	17.5	0.63	765	2.57	<0.01
L5200N 6225E		2.65	186.5	4.77	10.30	0.06	0.03	0.04	0.037	0.05	7.1	14.3	0.42	712	3.34	<0.01
L5200N 6250E		2.59	211	5.04	9.61	0.06	0.04	0.05	0.037	0.07	6.3	17.6	0.43	2770	4.74	0.01
L5200N 6275E		2.85	347	5.30	8.21	0.10	0.05	0.03	0.043	0.07	18.8	20.4	0.67	1250	3.51	0.01
L5200N 6300E		2.73	281	5.70	8.44	0.08	0.08	0.03	0.045	0.05	10.6	22.1	0.67	729	2.34	0.01
L5200N 6325E		2.39	206	5.27	9.62	0.07	0.03	0.04	0.037	0.08	7.8	15.9	0.53	1790	2.35	0.01
L5200N 6350E		2.58	304	5.43	7.73	0.07	0.02	0.02	0.040	0.07	10.0	15.9	0.63	1280	2.12	0.01
L5200N 6375E		2.28	232	5.75	10.05	0.07	0.03	0.04	0.037	0.04	6.4	15.3	0.47	925	3.52	0.01
L5200N 6400E		2.34	272	5.70	7.00	0.08	0.03	0.03	0.041	0.07	9.8	16.2	0.61	1400	2.63	0.01
L5200N 6425E		2.50	283	5.34	7.08	0.09	0.04	0.02	0.041	0.06	10.4	16.3	0.59	1460	2.49	0.01
L5200N 6450E		2.38	196.0	4.49	7.31	0.07	0.02	0.04	0.034	0.05	6.8	13.5	0.43	1220	2.00	0.01
L5200N 6475E		1.70	162.5	5.25	6.20	0.08	0.04	0.08	0.034	0.04	7.8	12.4	0.42	1520	3.43	0.01
L5200N 6500E		1.79	109.0	4.89	9.28	0.05	<0.02	0.05	0.022	0.04	4.7	4.9	0.31	327	5.59	0.01
L5200N 6525E		1.15	67.1	3.18	8.22	0.05	<0.02	0.06	0.017	0.04	4.1	4.9	0.22	190	2.99	0.01
L5200N 6550E		5.03	921	4.75	7.93	0.15	0.04	0.04	0.033	0.06	36.0	20.5	0.66	840	8.62	0.01
L5200N 6600E		1.44	78.8	4.57	10.35	0.05	<0.02	0.05	0.022	0.03	4.1	4.9	0.27	508	3.09	0.01
L5200N 6625E		1.91	71.8	2.53	7.64	<0.05	<0.02	0.03	0.016	0.03	4.4	2.3	0.13	763	2.10	0.01
L5200N 6650E		6.04	492	5.47	10.30	0.09	0.02	0.07	0.052	0.07	14.2	35.1	0.61	1480	8.86	0.01
L5200N 6675E		5.02	450	5.23	8.97	0.09	0.04	0.05	0.049	0.05	14.1	28.9	0.50	689	8.10	<0.01
L5200N 6700E		4.82	303	4.85	8.18	0.08	0.02	0.06	0.042	0.07	14.2	23.0	0.58	2440	11.60	0.01
L5200N 6725E		1.76	102.5	3.20	6.91	0.05	<0.02	0.04	0.025	0.08	10.1	4.9	0.17	742	8.20	<0.01
L5200N 6750E		2.41	126.0	3.77	8.01	0.05	<0.02	0.02	0.028	0.06	7.6	4.2	0.17	431	4.69	<0.01
L5200N 6775E		0.79	34.1	3.03	8.96	<0.05	<0.02	0.04	0.017	0.06	5.7	1.6	0.10	126	2.58	<0.01
L5200N 6800E		2.08	51.9	2.99	9.05	<0.05	<0.02	0.02	0.020	0.04	7.2	4.7	0.20	205	1.57	<0.01
L5200N 6825E		1.96	66.4	4.34	11.35	0.05	<0.02	0.05	0.025	0.04	8.7	3.9	0.18	342	3.16	<0.01
L5200N 6850E		1.52	33.3	1.89	13.40	<0.05	<0.02	0.02	0.018	0.04	9.2	4.6	0.18	103	1.85	<0.01

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5000N 7275E		0.91	3.2	1030	8.5	12.3	<0.001	0.02	0.28	2.1	0.3	0.6	9.6	<0.01	0.09	0.6
L5000N 7300E		0.93	3.7	1200	4.6	14.9	<0.001	0.02	0.19	4.6	0.4	0.5	12.1	<0.01	0.07	2.7
L5000N 7325E		0.15	8.5	540	42.7	35.8	0.040	2.00	6.17	5.3	3.4	1.1	50.3	<0.01	0.35	11.4
L5200N 5800E		0.39	6.7	2370	97.8	10.1	0.001	0.04	0.26	9.3	0.4	0.5	75.4	<0.01	0.13	3.1
L5200N 5825E		0.43	7.4	2260	52.6	11.5	<0.001	0.03	0.27	11.7	0.7	0.5	81.7	<0.01	0.13	3.0
L5200N 5850E		0.41	7.7	2330	53.6	11.8	<0.001	0.02	0.29	11.6	1.0	0.6	71.9	<0.01	0.12	3.3
L5200N 5900E		0.41	5.4	1780	10.9	12.3	<0.001	0.07	0.56	2.2	0.6	0.6	40.2	<0.01	0.10	0.3
L5200N 5925E		0.50	7.0	2080	12.2	10.1	<0.001	0.04	0.48	3.9	0.8	0.5	43.0	<0.01	0.08	1.1
L5200N 5950E		0.46	5.2	1620	7.8	7.8	<0.001	0.07	0.31	1.8	0.5	0.5	26.2	<0.01	0.04	0.2
L5200N 5975E		0.36	12.7	2540	16.8	15.2	<0.001	0.06	0.20	10.0	0.5	1.0	102.5	<0.01	0.21	2.0
L5200N 6000E		0.10	5.8	2550	17.0	9.2	<0.001	<0.01	1.12	11.6	0.3	0.4	29.2	<0.01	0.12	4.8
L5200N 6025E		1.38	32.7	2560	17.8	12.8	<0.001	0.03	0.35	9.4	0.8	0.9	37.2	0.01	0.13	2.5
L5200N 6075E		0.54	35.6	2990	35.2	12.6	<0.001	0.09	0.42	7.3	2.5	0.9	41.6	<0.01	0.50	1.5
L5200N 6100E		0.64	5.1	1840	11.3	10.8	<0.001	0.04	0.25	4.3	0.4	0.6	41.8	<0.01	0.05	1.4
L5200N 6200E		0.56	6.4	2010	8.0	11.4	<0.001	0.02	0.28	7.9	0.7	0.5	60.2	<0.01	0.06	2.7
L5200N 6225E		0.50	3.7	1440	6.3	16.8	<0.001	0.02	0.22	5.0	<0.2	0.7	38.8	<0.01	0.05	1.4
L5200N 6250E		0.70	4.0	2160	10.5	19.4	<0.001	0.04	0.25	4.2	0.7	0.6	29.3	<0.01	0.07	1.5
L5200N 6275E		0.42	5.2	2240	7.8	14.1	<0.001	0.03	0.29	8.6	0.6	0.5	56.7	0.01	0.05	2.8
L5200N 6300E		1.37	6.6	2000	7.5	13.9	<0.001	0.02	0.28	7.0	0.5	0.6	40.7	0.01	0.06	2.4
L5200N 6325E		0.46	4.5	2970	8.7	16.8	<0.001	0.03	0.23	4.8	0.3	0.6	40.5	<0.01	0.06	1.2
L5200N 6350E		0.59	6.4	2520	10.2	10.8	<0.001	0.02	0.37	5.1	0.4	0.6	35.1	<0.01	0.10	1.4
L5200N 6375E		1.84	4.7	1280	6.9	12.0	<0.001	0.01	0.25	5.5	0.4	0.8	25.8	0.01	0.05	1.5
L5200N 6400E		0.52	6.3	2460	8.8	11.8	<0.001	0.01	0.33	6.5	0.5	0.5	30.5	<0.01	0.05	2.4
L5200N 6425E		0.39	5.4	2560	8.9	12.1	<0.001	0.02	0.29	5.7	0.5	0.5	40.6	<0.01	0.08	2.1
L5200N 6450E		0.45	4.3	2350	8.0	13.1	<0.001	0.05	0.28	2.6	0.4	0.5	26.2	<0.01	0.06	0.6
L5200N 6475E		0.49	4.0	6640	7.2	9.5	<0.001	0.09	0.26	3.3	0.9	0.4	29.6	<0.01	0.06	1.8
L5200N 6500E		0.61	2.9	1480	8.6	12.0	<0.001	0.05	0.30	1.3	0.7	0.6	25.0	<0.01	0.06	<0.2
L5200N 6525E		0.64	2.6	830	5.0	7.4	<0.001	0.05	0.21	0.9	0.4	0.6	27.8	<0.01	0.04	<0.2
L5200N 6550E		0.56	5.8	1800	7.2	13.2	0.001	0.07	0.42	5.8	1.0	0.4	58.6	0.01	0.05	1.4
L5200N 6600E		0.40	3.7	1780	6.3	7.2	<0.001	0.04	0.23	1.1	0.3	0.6	22.4	<0.01	0.04	<0.2
L5200N 6625E		0.14	2.8	1530	4.9	10.3	<0.001	0.02	0.17	0.6	0.2	0.6	22.4	<0.01	0.04	<0.2
L5200N 6650E		0.62	5.5	2080	15.0	19.4	0.001	0.09	0.41	3.0	1.2	0.8	59.5	<0.01	0.12	0.6
L5200N 6675E		0.67	4.2	1810	10.1	13.8	<0.001	0.06	0.27	3.7	0.7	0.7	26.2	<0.01	0.07	1.0
L5200N 6700E		0.38	5.4	2590	10.4	19.5	<0.001	0.11	0.27	2.2	0.9	0.6	44.1	<0.01	0.06	0.4
L5200N 6725E		0.42	3.0	1530	6.1	21.1	<0.001	0.07	0.18	1.2	0.4	0.5	42.5	<0.01	0.05	0.2
L5200N 6750E		0.39	2.6	1210	6.3	18.0	<0.001	0.05	0.17	1.4	0.3	0.6	29.8	<0.01	0.04	0.2
L5200N 6775E		0.73	1.9	810	5.1	7.3	<0.001	0.03	0.15	0.8	0.4	0.7	15.9	<0.01	0.02	<0.2
L5200N 6800E		0.90	2.9	740	4.2	14.5	<0.001	0.02	0.11	1.9	0.3	0.7	29.6	<0.01	0.03	0.7
L5200N 6825E		2.51	3.3	910	6.6	11.0	<0.001	0.03	0.18	1.5	0.3	1.3	17.2	0.01	0.02	0.3
L5200N 6850E		3.61	2.7	550	4.9	10.7	<0.001	0.02	0.11	1.1	0.4	2.0	15.2	0.01	0.02	0.4

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To: **CME CONSULTANTS INC**
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SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5000N 7275E		0.012	0.06	1.09	99	0.77	3.24	44	<0.5
L5000N 7300E		0.011	0.05	1.87	74	0.76	8.72	47	1.1
L5000N 7325E		0.042	0.40	5.05	39	3.95	9.33	278	3.4
L5200N 5800E		0.015	0.04	3.03	112	0.44	28.1	170	1.0
L5200N 5825E		0.017	0.03	3.50	99	0.43	31.7	150	1.2
L5200N 5850E		0.027	0.04	3.42	118	0.43	24.2	146	0.7
L5200N 5900E		0.014	0.08	1.23	118	0.44	6.16	61	<0.5
L5200N 5925E		0.015	0.06	1.02	116	0.43	9.44	84	0.7
L5200N 5950E		0.011	0.04	0.98	116	0.37	8.70	53	<0.5
L5200N 5975E		0.008	0.05	1.18	146	0.31	17.35	84	0.7
L5200N 6000E		0.018	0.06	2.22	101	0.41	25.4	127	1.3
L5200N 6025E		0.015	0.06	3.42	113	0.39	19.25	122	1.3
L5200N 6075E		0.021	0.07	3.64	93	0.54	16.20	84	0.5
L5200N 6100E		0.009	0.06	1.20	101	14.65	8.23	62	0.9
L5200N 6200E		0.009	0.03	1.23	103	0.40	13.50	63	1.1
L5200N 6225E		0.009	0.05	1.07	112	0.35	6.01	47	0.6
L5200N 6250E		0.011	0.07	1.50	110	0.57	5.86	90	0.7
L5200N 6275E		0.010	0.04	5.51	115	0.36	26.4	64	0.9
L5200N 6300E		0.010	0.05	1.19	108	0.37	11.00	63	2.2
L5200N 6325E		0.013	0.05	1.03	119	0.33	7.79	65	0.5
L5200N 6350E		0.017	0.05	1.05	122	0.42	10.05	75	<0.5
L5200N 6375E		0.010	0.05	0.80	132	0.35	5.36	68	0.8
L5200N 6400E		0.016	0.05	1.04	127	0.37	11.20	71	0.5
L5200N 6425E		0.015	0.04	1.15	115	0.41	11.05	66	0.8
L5200N 6450E		0.010	0.05	0.98	102	0.34	6.23	59	<0.5
L5200N 6475E		0.015	0.03	1.38	121	0.38	8.23	49	0.9
L5200N 6500E		0.019	0.04	1.06	129	0.55	3.50	38	<0.5
L5200N 6525E		0.020	0.03	0.69	88	0.36	2.32	22	<0.5
L5200N 6550E		0.020	0.03	11.40	97	0.85	41.3	54	0.5
L5200N 6600E		0.015	0.04	0.85	125	0.57	2.91	33	<0.5
L5200N 6625E		0.007	0.11	0.58	80	0.24	1.88	23	<0.5
L5200N 6650E		<0.005	0.09	21.8	126	0.73	17.20	85	<0.5
L5200N 6675E		<0.005	0.07	14.30	132	0.63	15.45	68	0.6
L5200N 6700E		<0.005	0.06	16.40	114	0.58	15.25	86	<0.5
L5200N 6725E		<0.005	0.07	5.99	76	0.47	7.50	41	<0.5
L5200N 6750E		<0.005	0.10	3.60	96	0.43	5.64	41	<0.5
L5200N 6775E		<0.005	0.05	0.72	107	0.37	2.19	23	<0.5
L5200N 6800E		<0.005	0.09	1.52	84	0.26	3.29	31	<0.5
L5200N 6825E		<0.005	0.07	1.12	113	0.53	3.94	43	<0.5
L5200N 6850E		<0.005	0.07	0.60	72	0.30	2.43	27	<0.5

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CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5200N 6875E		0.28	0.006	0.10	2.36	10.1	<0.02	<10	240	0.29	0.13	0.12	0.06	13.05	10.7	4
L5200N 6900E		0.24	0.007	0.12	1.68	7.5	<0.02	<10	80	0.21	0.15	0.05	0.04	12.70	10.3	5
L5200N 6925E		0.28	0.012	0.26	2.13	7.8	<0.02	<10	70	0.26	0.16	0.06	0.06	13.35	7.2	5
L5200N 6950E		0.26	0.033	0.17	2.49	8.0	<0.02	<10	100	0.37	0.17	0.07	0.09	14.15	9.0	7
L5200N 6975E		0.30	0.015	0.18	1.82	8.3	<0.02	<10	150	0.19	0.23	0.07	0.09	14.45	8.3	5
L5200N 7000E		0.22	0.050	0.12	1.96	5.8	<0.02	<10	80	0.28	0.14	0.05	0.04	15.00	7.0	4
L5200N 7025E		0.28	0.008	1.07	2.73	5.9	<0.02	<10	160	1.40	0.12	0.23	0.08	41.7	7.9	4
L5200N 7050E		0.28	0.009	0.46	2.53	11.0	<0.02	<10	90	0.73	0.13	0.17	0.11	20.1	15.8	4
L5200N 7075E		0.30	0.010	0.25	2.41	5.2	<0.02	<10	90	0.67	0.11	0.15	0.08	20.3	6.5	3
L5200N 7100E		0.26	0.041	0.61	2.38	7.9	<0.02	<10	130	0.73	0.14	0.16	0.20	21.7	9.5	6
L5200N 7125E		0.28	0.009	0.13	2.72	10.6	<0.02	<10	70	0.70	0.13	0.14	0.11	18.05	10.7	5
L5200N 7150E		0.24	0.010	0.25	2.77	9.5	<0.02	<10	60	0.47	0.12	0.16	0.09	15.30	10.2	5
L5200N 7175E		0.32	0.006	0.15	2.05	5.4	<0.02	<10	60	0.28	0.17	0.07	0.04	13.55	12.1	4
L5200N 7200E		0.28	0.007	0.20	2.04	9.5	0.02	<10	50	0.31	0.13	0.11	0.03	12.65	8.0	4
L5200N 7225E		0.26	0.011	0.19	1.28	4.8	<0.02	<10	40	0.23	0.08	0.15	0.04	9.52	5.4	3
L5200N 7250E		0.22	0.009	0.22	2.49	14.6	<0.02	<10	60	0.33	0.16	0.10	0.07	13.50	7.6	6
L5200N 7275E		0.22	0.013	0.22	2.59	17.7	<0.02	<10	60	0.39	0.16	0.12	0.13	13.15	11.5	5
L5200N 7300E		0.24	0.010	0.26	2.05	9.2	<0.02	<10	70	0.48	0.15	0.17	0.08	15.55	9.8	5
L5200N 7325E		0.20	0.004	0.18	2.31	9.3	<0.02	<10	60	0.32	0.14	0.10	0.08	12.10	7.2	5
L5200N 7350E		0.18	0.010	0.60	2.55	2.3	<0.02	<10	60	0.25	0.17	0.10	0.05	16.35	1.2	6
L5200N 7375E		0.18	0.006	0.38	2.26	7.4	<0.02	<10	50	0.18	0.22	0.09	0.08	15.00	3.2	6
L5200N 7400E		0.24	0.006	0.16	1.49	9.8	<0.02	<10	40	0.19	0.17	0.12	0.02	11.80	4.6	3
L5200N 7450E		0.24	0.022	0.22	2.45	14.8	<0.02	<10	60	0.38	0.16	0.16	0.10	16.00	8.2	6
L5200N 7475E		0.30	0.007	0.26	2.49	8.3	0.06	<10	80	0.42	0.19	0.19	0.06	16.20	8.4	6
L5200N 7500E		0.14	0.005	0.42	2.19	7.8	<0.02	<10	70	0.27	0.24	0.10	0.05	18.15	5.0	9
L52N 76+25E		0.20	0.007	0.39	2.95	6.7	<0.02	<10	40	0.55	0.10	0.16	0.11	14.35	4.8	4
L5200N 7550E		0.28	0.024	0.16	2.80	11.8	<0.02	<10	70	0.69	0.15	0.26	0.11	24.0	12.4	5
L5200N 7575E		0.22	0.008	0.27	2.61	12.4	<0.02	<10	60	0.45	0.18	0.10	0.14	15.35	10.5	6
L5200N 7600E		0.22	0.064	0.22	1.65	6.1	0.05	<10	50	0.25	0.16	0.11	0.05	10.90	5.5	5
L52N 75+25E		0.30	0.077	0.19	3.02	15.2	<0.02	<10	110	0.96	0.16	0.42	0.15	22.9	12.7	4
L5200N 7650E		0.16	0.011	1.21	2.03	5.1	<0.02	<10	60	0.27	0.17	0.06	0.07	12.45	2.2	6
L5200N 7675E		0.20	0.006	0.10	2.10	9.4	<0.02	<10	50	0.22	0.26	0.09	0.03	14.00	5.1	6
L5200N 7700E		0.24	0.018	0.70	2.29	18.3	<0.02	<10	40	0.40	0.13	0.14	0.15	12.95	8.1	4
L5200N 7725E		0.22	0.031	0.37	2.01	13.5	0.03	<10	40	0.30	0.13	0.14	0.06	9.76	6.5	3
L5200N 7750E		0.22	0.011	0.13	1.56	6.5	<0.02	<10	50	0.21	0.13	0.11	0.04	9.91	6.7	4
L5200N 7775E		0.24	0.010	0.41	1.80	13.0	<0.02	<10	60	0.33	0.15	0.09	0.19	11.35	8.8	4
L5200N 7825E		0.20	0.015	0.11	1.27	11.4	0.11	<10	50	0.21	0.19	0.08	0.05	9.05	6.0	4
L5200N 7850E		0.26	0.123	0.26	1.54	8.9	<0.02	<10	50	0.22	0.22	0.11	0.07	11.30	7.3	5
L5200N 7875E		0.22	0.035	0.19	1.58	11.6	<0.02	<10	50	0.25	0.19	0.09	0.13	10.90	8.6	5
L5200N 7900E		0.18	0.015	0.08	2.81	11.1	<0.02	<10	240	0.59	0.21	0.44	0.26	17.45	13.7	9

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5200N 6875E		1.66	86.9	5.37	11.05	0.05	<0.02	0.03	0.030	0.04	5.9	7.4	0.42	320	2.66	<0.01
L5200N 6900E		1.90	47.2	3.68	10.10	0.05	<0.02	0.03	0.017	0.04	6.0	2.2	0.09	189	2.39	<0.01
L5200N 6925E		1.65	68.8	4.13	10.70	0.06	<0.02	0.04	0.026	0.05	6.2	4.6	0.18	241	2.28	<0.01
L5200N 6950E		1.75	88.8	5.46	11.20	0.06	<0.02	0.05	0.033	0.04	6.6	7.7	0.30	324	2.70	<0.01
L5200N 6975E		1.59	50.7	3.65	12.30	0.05	<0.02	0.03	0.021	0.04	6.9	2.5	0.16	208	2.84	<0.01
L5200N 7000E		1.70	64.4	3.68	9.42	<0.05	<0.02	0.03	0.027	0.05	6.8	3.2	0.13	390	2.47	<0.01
L5200N 7025E		2.07	163.0	3.46	6.66	0.10	0.04	0.11	0.027	0.07	25.6	12.1	0.38	209	3.36	<0.01
L5200N 7050E		2.29	204	5.64	7.25	0.06	0.02	0.05	0.042	0.07	10.0	16.9	0.53	376	2.61	<0.01
L5200N 7075E		2.08	128.0	3.34	6.59	0.05	0.02	0.04	0.027	0.06	10.4	11.1	0.44	196	1.95	<0.01
L5200N 7100E		2.14	130.0	4.28	7.29	0.06	0.02	0.08	0.033	0.07	12.1	12.9	0.47	356	2.42	<0.01
L5200N 7125E		2.47	165.0	4.92	7.48	0.05	0.03	0.05	0.037	0.07	9.1	12.3	0.51	282	2.47	<0.01
L5200N 7150E		2.29	156.5	5.30	8.13	0.05	0.02	0.06	0.041	0.05	7.1	16.5	0.54	304	2.44	<0.01
L5200N 7175E		3.30	64.9	3.24	9.77	<0.05	<0.02	0.02	0.021	0.06	6.7	4.0	0.26	958	2.49	<0.01
L5200N 7200E		2.08	90.4	5.13	10.40	0.05	<0.02	0.03	0.024	0.04	5.8	5.1	0.30	318	3.31	<0.01
L5200N 7225E		1.18	36.5	4.11	8.49	<0.05	<0.02	0.01	0.013	0.03	4.5	3.8	0.22	386	2.18	0.01
L5200N 7250E		1.82	120.5	4.31	10.05	0.06	<0.02	0.04	0.027	0.04	6.3	7.0	0.31	426	3.01	<0.01
L5200N 7275E		2.09	124.5	6.40	9.50	0.05	0.02	0.07	0.032	0.05	6.0	10.3	0.41	378	3.65	<0.01
L5200N 7300E		1.92	142.0	4.31	7.29	0.05	<0.02	0.05	0.027	0.07	7.5	10.5	0.57	364	3.48	<0.01
L5200N 7325E		2.08	86.2	4.67	8.74	<0.05	<0.02	0.04	0.031	0.05	5.6	10.1	0.36	257	2.63	<0.01
L5200N 7350E		1.94	94.5	0.86	8.22	<0.05	<0.02	0.08	0.021	0.04	8.6	5.4	0.09	46	1.39	<0.01
L5200N 7375E		2.05	50.0	2.41	9.23	<0.05	<0.02	0.04	0.024	0.05	8.1	7.6	0.24	119	2.37	<0.01
L5200N 7400E		1.03	35.7	3.11	9.42	<0.05	<0.02	0.02	0.015	0.03	5.5	2.4	0.14	132	3.02	<0.01
L5200N 7450E		1.87	105.5	4.82	9.92	0.05	0.02	0.06	0.031	0.04	8.1	14.4	0.36	369	3.86	<0.01
L5200N 7475E		2.81	136.5	3.78	9.59	0.05	<0.02	0.04	0.030	0.07	8.3	16.2	0.59	360	4.17	<0.01
L5200N 7500E		3.44	67.8	2.14	9.24	<0.05	<0.02	0.04	0.021	0.08	9.4	6.0	0.28	312	2.98	<0.01
L52N 76+25E		1.16	94.7	3.06	7.25	0.05	<0.02	0.08	0.025	0.03	7.4	6.4	0.23	174	1.82	0.01
L5200N 7550E		2.28	178.0	4.51	8.17	0.06	0.02	0.05	0.035	0.08	11.7	14.9	0.56	376	2.39	<0.01
L5200N 7575E		2.48	166.0	4.05	9.34	<0.05	0.02	0.06	0.036	0.06	7.6	14.6	0.41	476	3.17	<0.01
L5200N 7600E		2.03	65.5	2.16	8.52	<0.05	<0.02	0.03	0.016	0.04	5.4	10.1	0.38	239	1.73	<0.01
L52N 75+25E		2.35	223	4.31	7.08	0.06	0.02	0.05	0.036	0.06	12.3	24.8	0.58	394	4.56	<0.01
L5200N 7650E		1.91	51.7	2.08	6.87	<0.05	<0.02	0.10	0.026	0.04	6.3	5.2	0.12	93	2.18	<0.01
L5200N 7675E		2.04	61.0	2.50	10.05	<0.05	<0.02	0.03	0.021	0.04	7.3	5.2	0.25	182	1.95	<0.01
L5200N 7700E		1.48	75.3	5.46	8.60	0.05	<0.02	0.09	0.027	0.03	6.3	8.0	0.28	400	2.84	<0.01
L5200N 7725E		1.55	62.6	3.14	7.30	<0.05	<0.02	0.06	0.020	0.03	4.5	8.3	0.35	236	1.74	<0.01
L5200N 7750E		2.00	53.1	2.43	8.61	<0.05	<0.02	0.04	0.015	0.04	4.6	7.1	0.36	227	1.67	<0.01
L5200N 7775E		1.70	76.3	5.31	10.30	0.05	<0.02	0.07	0.025	0.04	5.3	6.6	0.32	517	3.05	<0.01
L5200N 7825E		1.62	40.5	3.68	8.93	<0.05	<0.02	0.03	0.015	0.04	4.3	2.7	0.15	332	2.43	<0.01
L5200N 7850E		2.44	46.6	2.82	9.40	<0.05	<0.02	0.03	0.017	0.05	5.3	4.4	0.26	421	2.16	<0.01
L5200N 7875E		1.68	62.2	4.04	8.87	<0.05	<0.02	0.04	0.019	0.04	5.2	4.6	0.26	511	2.57	<0.01
L5200N 7900E		2.40	183.5	4.66	10.25	0.05	<0.02	0.02	0.035	0.10	9.0	22.5	0.81	815	5.03	<0.01

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Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5200N 6875E		0.79	3.7	1170	7.1	9.2	<0.001	0.04	0.24	2.3	0.4	0.7	47.5	<0.01	0.04	0.2
L5200N 6900E		0.35	2.6	520	5.3	13.1	<0.001	0.02	0.19	0.8	0.2	0.9	18.6	<0.01	0.04	<0.2
L5200N 6925E		1.06	3.0	990	6.4	11.1	<0.001	0.04	0.19	1.5	0.5	0.9	12.7	<0.01	0.03	0.2
L5200N 6950E		1.30	4.3	1030	7.7	12.3	<0.001	0.04	0.21	1.7	0.6	0.9	16.9	0.01	0.04	0.3
L5200N 6975E		1.45	3.1	610	6.9	15.1	<0.001	0.02	0.17	1.7	<0.2	1.3	16.3	<0.01	0.04	0.2
L5200N 7000E		0.46	2.6	1110	4.8	14.3	<0.001	0.04	0.15	1.4	<0.2	0.8	12.7	<0.01	0.03	0.3
L5200N 7025E		0.40	3.4	1530	5.2	20.4	0.001	0.05	0.16	2.6	0.5	0.5	21.0	<0.01	0.02	0.8
L5200N 7050E		0.59	4.2	1420	7.8	19.7	<0.001	0.03	0.23	3.5	0.3	0.6	20.3	0.01	0.04	1.8
L5200N 7075E		0.51	2.7	1200	4.8	14.7	<0.001	0.02	0.12	2.5	0.2	0.6	18.6	<0.01	0.03	1.1
L5200N 7100E		0.96	4.3	1460	7.6	18.7	<0.001	0.03	0.15	1.5	0.3	0.7	23.4	<0.01	0.03	0.4
L5200N 7125E		0.74	4.1	1420	6.8	21.9	<0.001	0.03	0.19	2.9	0.5	0.6	17.1	<0.01	0.04	1.4
L5200N 7150E		1.17	4.3	1430	7.8	16.4	<0.001	0.03	0.22	3.0	0.4	0.7	17.1	<0.01	0.04	1.3
L5200N 7175E		0.89	2.8	900	5.6	18.7	<0.001	0.01	0.14	1.2	<0.2	1.0	18.0	<0.01	0.03	0.2
L5200N 7200E		0.72	2.9	1420	7.5	11.0	<0.001	0.02	0.21	3.2	0.2	0.9	19.4	<0.01	0.04	1.1
L5200N 7225E		0.38	2.1	890	4.7	7.2	<0.001	0.02	0.15	1.0	0.2	0.7	18.7	<0.01	0.01	<0.2
L5200N 7250E		1.04	3.6	1280	7.0	13.4	<0.001	0.02	0.20	1.3	0.2	0.8	20.3	<0.01	0.04	0.3
L5200N 7275E		1.32	3.8	2310	15.1	15.4	<0.001	0.05	0.24	2.1	0.5	0.6	15.3	<0.01	0.04	0.8
L5200N 7300E		0.54	4.8	1290	21.5	14.7	<0.001	0.04	0.21	1.6	0.4	0.5	20.6	<0.01	0.02	0.5
L5200N 7325E		0.85	3.5	1110	7.5	13.2	<0.001	0.03	0.18	2.1	0.4	0.6	17.8	<0.01	0.04	0.5
L5200N 7350E		1.13	1.7	640	8.1	12.8	<0.001	0.03	0.09	0.3	0.4	1.1	22.1	<0.01	0.02	<0.2
L5200N 7375E		1.44	2.9	570	8.0	14.2	<0.001	0.02	0.13	1.7	0.2	0.9	20.5	<0.01	0.02	0.3
L5200N 7400E		0.50	2.1	510	6.5	6.0	<0.001	0.02	0.13	1.1	0.2	0.7	18.9	<0.01	0.03	<0.2
L5200N 7450E		1.82	4.5	1320	7.5	11.0	0.001	0.03	0.20	2.3	0.4	0.7	19.4	0.01	0.04	0.9
L5200N 7475E		1.23	5.5	1050	7.0	21.6	<0.001	0.02	0.15	1.6	0.4	0.9	24.5	<0.01	0.04	0.4
L5200N 7500E		0.67	4.4	1030	8.3	20.5	<0.001	0.04	0.12	0.4	0.3	1.2	23.8	<0.01	0.02	<0.2
L52N 76+25E		0.69	2.0	1220	5.1	6.0	0.001	0.06	0.15	0.8	0.6	0.5	15.7	<0.01	0.03	<0.2
L5200N 7550E		1.01	4.9	1880	6.8	15.8	0.001	0.04	0.20	2.3	0.7	0.7	22.2	<0.01	0.04	0.6
L5200N 7575E		2.49	4.9	1100	7.8	17.2	<0.001	0.06	0.27	1.3	0.5	1.0	15.6	0.01	0.03	0.3
L5200N 7600E		0.89	4.0	420	7.9	10.1	<0.001	0.02	0.15	1.0	<0.2	0.8	14.8	<0.01	0.01	<0.2
L52N 75+25E		0.81	4.4	1770	7.4	14.0	<0.001	0.06	0.22	2.6	0.5	0.5	23.0	0.01	0.04	1.0
L5200N 7650E		0.79	2.3	1150	11.8	11.3	<0.001	0.06	0.15	0.4	0.5	0.8	16.5	<0.01	0.02	<0.2
L5200N 7675E		0.50	3.6	470	9.1	7.7	<0.001	0.02	0.18	1.1	<0.2	0.9	19.7	<0.01	0.03	<0.2
L5200N 7700E		1.51	2.7	1540	17.9	7.8	<0.001	0.05	0.20	1.5	0.5	0.5	10.7	0.01	0.04	0.3
L5200N 7725E		0.72	2.3	900	5.0	7.2	<0.001	0.03	0.16	1.1	0.3	0.4	13.2	<0.01	0.02	0.2
L5200N 7750E		0.36	3.3	880	6.3	10.3	<0.001	0.03	0.14	0.8	<0.2	0.5	16.6	<0.01	0.01	<0.2
L5200N 7775E		1.05	3.3	1130	8.8	9.0	<0.001	0.04	0.21	1.3	0.4	0.7	19.2	<0.01	0.03	<0.2
L5200N 7825E		0.36	2.5	850	7.0	9.5	<0.001	0.03	0.20	0.8	0.2	0.6	15.4	<0.01	0.03	<0.2
L5200N 7850E		0.42	3.3	870	7.3	15.7	<0.001	0.03	0.19	0.8	0.2	0.7	16.4	<0.01	0.03	<0.2
L5200N 7875E		0.51	3.5	1160	7.1	11.1	<0.001	0.04	0.20	0.7	0.2	0.7	16.4	<0.01	0.03	<0.2
L5200N 7900E		1.04	8.1	880	9.3	16.3	<0.001	0.02	0.24	4.5	<0.2	0.7	36.9	<0.01	0.04	1.1

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 30-OCT-2020
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CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5200N 6875E		0.021	0.04	0.90	139	0.42	4.04	50	<0.5
L5200N 6900E		0.006	0.09	0.64	130	0.36	2.37	29	<0.5
L5200N 6925E		0.007	0.05	0.81	129	0.36	3.17	35	<0.5
L5200N 6950E		0.006	0.07	1.15	125	0.45	3.63	50	<0.5
L5200N 6975E		0.008	0.09	0.58	135	0.39	2.48	38	<0.5
L5200N 7000E		<0.005	0.08	0.75	107	0.37	3.07	45	<0.5
L5200N 7025E		<0.005	0.08	2.29	73	0.37	21.1	50	0.6
L5200N 7050E		0.005	0.06	1.44	125	0.45	7.99	64	0.5
L5200N 7075E		<0.005	0.06	1.24	77	0.38	7.03	43	<0.5
L5200N 7100E		<0.005	0.07	1.27	95	0.37	8.16	55	<0.5
L5200N 7125E		<0.005	0.07	1.34	95	0.43	5.81	59	0.6
L5200N 7150E		<0.005	0.06	1.11	106	0.45	4.97	54	0.5
L5200N 7175E		0.006	0.10	0.66	96	0.38	2.69	44	<0.5
L5200N 7200E		0.021	0.09	0.82	156	0.60	3.44	38	<0.5
L5200N 7225E		0.024	0.04	0.49	170	0.40	2.55	20	<0.5
L5200N 7250E		0.005	0.06	0.97	117	0.53	3.13	41	<0.5
L5200N 7275E		0.005	0.04	1.36	131	0.67	3.83	48	<0.5
L5200N 7300E		0.006	0.05	1.40	99	0.49	4.89	55	<0.5
L5200N 7325E		0.007	0.07	0.84	108	0.62	3.05	43	<0.5
L5200N 7350E		<0.005	0.08	1.16	34	0.24	2.64	13	<0.5
L5200N 7375E		0.008	0.08	0.81	69	0.33	2.51	24	<0.5
L5200N 7400E		0.019	0.06	0.53	104	0.85	2.04	18	<0.5
L5200N 7450E		0.019	0.05	1.12	117	0.90	4.36	42	<0.5
L5200N 7475E		0.007	0.07	1.09	90	0.61	4.18	60	<0.5
L5200N 7500E		<0.005	0.08	1.06	65	0.38	2.56	33	<0.5
L52N 76+25E		0.012	0.04	1.34	85	0.48	4.85	21	<0.5
L5200N 7550E		0.006	0.06	1.41	94	0.61	9.32	55	<0.5
L5200N 7575E		<0.005	0.08	1.33	79	0.58	3.72	49	0.5
L5200N 7600E		0.017	0.05	0.59	67	0.56	2.18	37	<0.5
L52N 75+25E		0.008	0.04	2.47	84	1.73	12.65	58	<0.5
L5200N 7650E		<0.005	0.06	1.42	48	0.50	2.09	16	<0.5
L5200N 7675E		0.012	0.06	0.78	77	0.60	2.36	31	<0.5
L5200N 7700E		0.020	0.02	1.13	125	0.83	4.15	31	<0.5
L5200N 7725E		0.008	0.03	0.64	86	1.84	3.03	31	<0.5
L5200N 7750E		0.008	0.04	0.62	65	0.72	2.26	34	<0.5
L5200N 7775E		0.029	0.04	0.84	122	1.08	2.73	36	<0.5
L5200N 7825E		0.017	0.05	0.62	131	1.40	1.82	23	<0.5
L5200N 7850E		0.017	0.07	0.71	94	0.67	2.14	33	<0.5
L5200N 7875E		0.009	0.06	0.77	107	0.75	2.25	36	<0.5
L5200N 7900E		0.016	0.05	1.57	96	0.98	5.35	108	<0.5

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5200N 7925E		0.24	0.017	0.12	2.25	25.6	<0.02	<10	70	0.39	0.25	0.14	0.17	15.85	13.1	6
L5200N 7950E		0.22	0.007	0.28	2.17	13.1	<0.02	<10	210	0.95	0.22	0.67	0.45	23.3	16.7	13
L5200N 8000E		0.20	0.028	0.24	1.86	9.2	<0.02	<10	50	0.32	0.11	0.17	0.12	12.90	6.4	4
L5200N 8025E		0.24	0.042	0.27	1.94	15.7	0.02	<10	80	0.72	0.14	0.32	0.23	26.4	13.8	4
L5200N 8050E		0.28	0.114	0.04	1.37	13.2	<0.02	<10	120	0.38	0.12	0.62	0.12	20.3	11.0	3
L5200N 8075E		0.26	0.028	0.16	2.76	16.7	0.02	<10	210	1.43	0.19	0.87	0.44	45.7	14.6	7
L5200N 8100E		0.20	0.025	0.34	2.53	16.4	<0.02	<10	190	1.35	0.17	0.95	0.19	30.7	8.8	7
L5200N 8150E		0.26	0.064	0.37	1.84	13.7	<0.02	<10	90	0.50	0.15	0.29	0.22	20.7	15.8	4
L5200N 8175E		0.24	0.015	0.21	2.25	13.0	<0.02	<10	60	0.42	0.13	0.23	0.08	15.55	9.5	3
L5200N 8200E		0.30	0.032	0.08	1.30	8.1	0.02	<10	160	0.56	0.08	0.65	0.07	27.4	10.3	3
L5200N 8275E		0.26	0.036	0.45	2.39	29.5	<0.02	<10	180	1.03	0.12	1.02	0.33	81.7	15.9	7
L5200N 8300E		0.26	0.054	0.30	1.79	11.2	0.02	<10	160	0.79	0.11	0.77	0.18	64.1	19.5	4
L5200N 8325E		0.20	0.050	0.21	2.11	7.5	0.16	<10	150	0.74	0.13	0.78	0.18	22.7	10.1	5
L5200N 8350E		0.24	0.063	0.22	1.96	11.2	<0.02	<10	150	0.79	0.15	1.18	0.25	30.3	17.9	7
L5200N 8400E		0.26	0.015	0.39	2.39	8.0	<0.02	<10	110	0.84	0.12	0.43	0.12	17.75	9.5	5
L5300N 6000E		0.40	0.036	0.17	2.06	12.3	0.05	<10	500	1.28	0.12	0.71	0.21	57.0	33.7	5
L5300N 6025E		0.38	0.015	0.11	2.66	9.8	<0.02	<10	330	1.12	0.10	0.53	0.15	35.6	23.9	3
L5300N 6050E		0.30	0.065	0.35	1.93	14.3	0.03	<10	700	1.29	0.11	0.62	0.31	56.8	43.4	3
L5300N 6075E		0.32	0.037	0.17	2.01	11.8	<0.02	<10	360	1.09	0.11	0.71	0.20	48.2	31.9	3
L5300N 6100E		0.38	0.032	0.11	2.85	12.7	<0.02	<10	330	1.25	0.14	0.50	0.18	44.8	33.8	4
L5300N 6125E		0.38	0.018	0.09	2.90	11.5	<0.02	<10	220	0.77	0.16	0.34	0.12	28.2	24.3	6
L5300N 6150E		0.34	0.030	0.13	2.75	9.0	<0.02	<10	370	1.07	0.17	0.36	0.19	27.8	21.8	6
L5300N 6175E		0.34	0.011	0.04	2.82	3.2	<0.02	<10	250	0.48	0.14	0.17	0.08	15.60	6.1	7
L5300N 6200E		0.40	0.081	0.07	2.62	11.0	<0.02	<10	380	1.11	0.21	0.39	0.13	33.2	30.3	11
L5300N 6225E		0.44	0.021	0.11	2.52	5.5	0.04	<10	230	0.55	0.15	0.16	0.09	19.00	15.2	5
L5300N 6250E		0.34	0.012	0.09	3.21	6.4	<0.02	<10	280	0.76	0.12	0.23	0.09	19.60	12.8	5
L5300N 6275E		0.38	0.023	0.09	2.89	9.9	<0.02	<10	190	0.69	0.17	0.28	0.11	28.6	22.6	6
L5300N 6300E		0.32	0.080	0.13	3.06	15.3	0.02	<10	200	1.00	0.24	0.43	0.12	35.4	30.9	4
L5300N 6325E		0.34	0.351	0.47	2.68	22.6	0.22	<10	280	0.80	0.63	0.18	0.09	28.3	52.3	5
L5300N 6350E		0.28	0.112	0.39	2.69	16.1	0.06	<10	160	0.54	0.25	0.11	0.26	12.40	20.4	6
L5300N 6375E		0.40	0.012	0.72	1.98	3.3	<0.02	<10	110	0.38	0.13	0.15	0.05	13.25	5.7	5
L5300N 6400E		0.36	0.013	0.46	3.16	10.8	<0.02	<10	110	0.45	0.22	0.19	0.10	13.05	12.1	5
L5300N 6425E		0.34	0.016	0.33	3.37	14.0	<0.02	<10	150	0.50	0.17	0.20	0.13	16.80	22.2	5
L5300N 6450E		0.34	0.035	0.45	2.75	8.2	<0.02	<10	190	0.58	0.23	0.15	0.18	16.30	9.0	11
L5300N 6475E		0.38	0.031	0.16	2.48	14.4	<0.02	<10	100	0.37	0.27	0.19	0.20	15.05	16.4	6
L5300N 6500E		0.32	0.033	0.38	2.02	11.2	<0.02	<10	80	0.28	0.24	0.09	0.09	11.95	10.5	4
L5300N 6525E		0.32	0.022	0.55	1.75	6.6	0.02	<10	80	0.19	0.21	0.11	0.17	10.95	9.3	4
L5300N 6550E		0.22	0.010	0.06	0.64	4.1	<0.02	<10	90	0.11	0.14	0.18	0.03	7.07	6.8	4
L5300N 6575E		0.30	0.029	0.14	1.16	4.3	<0.02	<10	80	0.17	0.20	0.11	0.03	10.95	6.7	5
L5300N 6600E		0.28	0.021	0.27	1.93	9.0	0.04	<10	100	0.28	0.17	0.07	0.04	10.70	10.7	4

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SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5200N 7925E		1.92	109.0	6.35	9.52	0.05	<0.02	0.06	0.034	0.05	7.5	15.8	0.48	578	3.50	<0.01
L5200N 7950E		2.78	177.0	4.00	8.61	0.08	0.03	0.05	0.041	0.07	20.1	21.7	0.64	942	5.42	0.01
L5200N 8000E		1.20	73.1	3.59	6.80	<0.05	<0.02	0.05	0.020	0.03	6.1	9.1	0.30	202	2.37	<0.01
L5200N 8025E		2.05	137.5	4.27	6.60	0.05	<0.02	0.05	0.029	0.05	11.0	16.4	0.45	548	4.65	<0.01
L5200N 8050E		1.65	107.5	3.62	5.00	0.05	0.02	0.02	0.022	0.04	10.1	20.5	0.46	377	2.49	<0.01
L5200N 8075E		5.24	231	4.20	6.68	0.15	0.08	0.09	0.044	0.06	39.2	31.7	0.49	835	4.05	0.01
L5200N 8100E		2.93	284	3.55	6.36	0.12	0.09	0.11	0.035	0.05	35.6	29.7	0.40	299	2.92	0.01
L5200N 8150E		2.16	118.5	4.87	7.05	0.05	<0.02	0.03	0.029	0.04	8.7	14.8	0.51	694	3.91	<0.01
L5200N 8175E		1.80	91.9	4.96	8.35	0.05	<0.02	0.03	0.026	0.03	7.2	13.5	0.36	382	3.96	0.01
L5200N 8200E		1.33	193.5	3.58	4.67	0.06	0.04	0.03	0.022	0.04	16.1	14.2	0.49	400	2.43	0.01
L5200N 8275E		1.94	240	3.80	6.49	0.11	0.04	0.12	0.030	0.05	33.0	24.8	0.47	915	3.53	0.01
L5200N 8300E		1.51	204	4.59	5.79	0.09	0.03	0.06	0.028	0.06	24.3	16.3	0.55	1020	3.02	0.01
L5200N 8325E		2.63	173.0	3.63	7.42	0.06	<0.02	0.05	0.034	0.05	13.9	18.9	0.45	358	2.00	0.01
L5200N 8350E		2.43	187.5	4.54	6.06	0.08	0.03	0.07	0.034	0.07	19.8	15.0	0.65	1200	2.73	0.01
L5200N 8400E		1.99	156.5	4.69	7.78	0.05	<0.02	0.05	0.031	0.04	10.4	20.0	0.40	274	3.28	0.01
L5300N 6000E		2.46	490	6.30	6.49	0.12	0.03	0.02	0.048	0.08	22.9	17.3	0.95	2190	3.08	<0.01
L5300N 6025E		1.80	252	5.36	5.95	0.06	0.04	0.04	0.046	0.05	12.6	19.4	0.71	1180	2.10	<0.01
L5300N 6050E		2.56	567	9.11	6.48	0.13	0.04	0.03	0.049	0.09	24.0	14.4	0.83	4000	2.13	<0.01
L5300N 6075E		2.34	411	6.24	6.61	0.10	0.03	0.02	0.038	0.08	18.0	16.4	0.88	1680	2.15	<0.01
L5300N 6100E		2.06	455	6.02	7.09	0.07	0.03	0.02	0.044	0.07	14.0	19.9	0.95	1660	2.47	<0.01
L5300N 6125E		2.98	243	5.89	8.72	0.06	0.03	0.02	0.044	0.07	10.9	22.0	0.71	1580	2.46	<0.01
L5300N 6150E		3.46	324	6.09	7.28	0.06	0.03	0.05	0.045	0.07	12.2	17.2	0.54	2010	2.85	<0.01
L5300N 6175E		2.45	63.6	3.27	7.22	<0.05	0.03	0.02	0.028	0.05	7.8	10.3	0.35	460	1.42	<0.01
L5300N 6200E		3.54	297	5.63	7.09	0.05	0.02	0.03	0.045	0.07	13.3	17.1	0.66	1860	2.15	<0.01
L5300N 6225E		3.00	164.5	4.58	8.12	<0.05	0.02	0.06	0.037	0.08	7.7	11.3	0.41	1480	2.59	<0.01
L5300N 6250E		3.36	227	5.54	8.21	<0.05	0.02	0.04	0.041	0.04	8.1	17.1	0.57	659	2.22	<0.01
L5300N 6275E		3.21	262	5.32	7.68	<0.05	0.02	0.01	0.044	0.08	10.4	15.1	0.59	1800	2.34	<0.01
L5300N 6300E		2.49	591	5.77	8.34	<0.05	0.02	0.02	0.043	0.06	12.9	21.3	1.05	1280	2.62	<0.01
L5300N 6325E		2.92	2230	5.71	9.85	0.05	0.02	0.05	0.055	0.09	13.1	13.6	0.45	2660	7.61	<0.01
L5300N 6350E		2.60	551	5.21	10.80	<0.05	<0.02	0.08	0.060	0.06	5.6	19.9	0.54	1860	11.15	<0.01
L5300N 6375E		1.42	99.0	2.02	8.07	<0.05	<0.02	0.05	0.021	0.04	6.9	5.5	0.28	225	1.14	<0.01
L5300N 6400E		2.17	147.5	5.25	9.33	<0.05	0.02	0.05	0.031	0.04	6.1	15.6	0.52	427	2.67	<0.01
L5300N 6425E		1.97	230	5.97	8.74	<0.05	0.02	0.04	0.039	0.04	7.6	22.4	0.71	419	2.88	<0.01
L5300N 6450E		2.51	117.0	3.88	8.91	<0.05	<0.02	0.05	0.030	0.05	9.3	15.8	0.31	581	4.32	<0.01
L5300N 6475E		1.95	307	5.39	9.25	<0.05	<0.02	0.06	0.041	0.06	7.0	14.7	0.52	440	3.74	0.01
L5300N 6500E		1.11	115.0	4.77	13.20	<0.05	<0.02	0.04	0.025	0.03	5.7	5.5	0.30	256	2.70	<0.01
L5300N 6525E		1.29	79.6	2.99	11.20	<0.05	<0.02	0.05	0.017	0.04	5.5	4.2	0.30	208	4.30	<0.01
L5300N 6550E		1.20	34.0	2.44	7.32	<0.05	<0.02	0.04	0.009	0.05	3.5	1.1	0.07	159	2.31	<0.01
L5300N 6575E		1.44	28.7	2.17	9.23	<0.05	<0.02	0.02	0.011	0.05	5.6	2.4	0.16	153	1.68	0.01
L5300N 6600E		1.59	95.6	5.88	10.85	<0.05	<0.02	0.03	0.025	0.04	5.4	4.7	0.28	295	3.77	<0.01

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	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5200N 7925E		1.16	5.4	1940	11.0	10.1	<0.001	0.05	0.26	2.0	0.3	0.6	13.6	<0.01	0.07	0.4
L5200N 7950E		1.78	9.1	1480	10.9	23.1	<0.001	0.07	0.23	3.4	0.3	1.0	43.6	0.01	0.03	0.7
L5200N 8000E		0.77	2.6	960	6.1	5.2	<0.001	0.05	0.20	1.3	0.4	0.4	13.6	<0.01	0.03	0.2
L5200N 8025E		0.76	4.0	1620	9.2	11.7	<0.001	0.05	0.22	1.9	0.3	0.5	20.9	<0.01	0.03	0.3
L5200N 8050E		0.57	3.2	1680	7.9	7.8	<0.001	0.02	0.14	3.2	<0.2	0.3	24.0	<0.01	0.02	1.2
L5200N 8075E		0.75	6.2	3150	9.0	13.8	<0.001	0.15	0.26	5.2	0.4	0.5	48.4	0.02	0.02	1.8
L5200N 8100E		1.08	5.2	2180	8.6	11.7	0.001	0.12	0.23	5.1	0.5	0.6	44.3	0.02	0.03	2.0
L5200N 8150E		0.56	4.1	1250	10.3	11.1	<0.001	0.04	0.24	2.3	0.2	0.5	21.1	<0.01	0.04	0.3
L5200N 8175E		0.93	3.0	1500	7.8	8.3	<0.001	0.05	0.22	1.7	0.4	0.4	14.8	<0.01	0.04	0.2
L5200N 8200E		0.60	3.9	2150	4.7	7.3	<0.001	0.02	0.17	6.3	<0.2	0.3	27.2	<0.01	0.02	1.9
L5200N 8275E		0.71	5.3	1960	6.3	7.8	<0.001	0.09	0.39	5.2	0.8	0.5	41.5	0.01	0.02	1.5
L5200N 8300E		0.51	4.7	2100	5.4	8.5	<0.001	0.04	0.22	5.2	0.5	0.4	33.7	<0.01	0.02	1.3
L5200N 8325E		0.73	4.2	1290	5.5	13.8	<0.001	0.04	0.15	3.2	0.2	0.6	31.6	<0.01	0.02	0.7
L5200N 8350E		0.81	6.7	1410	7.6	22.1	0.001	0.07	0.31	4.7	0.4	0.6	45.5	0.01	0.02	1.1
L5200N 8400E		1.32	4.3	770	6.0	12.0	<0.001	0.04	0.21	3.0	0.3	0.5	25.6	<0.01	0.02	0.7
L5300N 6000E		0.22	9.0	2800	9.6	7.6	0.001	0.01	0.28	16.5	0.3	0.5	74.7	0.01	0.06	4.0
L5300N 6025E		0.31	5.6	2790	8.7	6.8	<0.001	0.07	0.26	3.4	0.3	0.4	69.8	<0.01	0.04	1.3
L5300N 6050E		0.24	8.6	2640	15.7	9.5	<0.001	0.02	0.31	21.5	0.4	0.5	54.2	0.01	0.06	4.2
L5300N 6075E		0.21	6.9	2910	9.0	8.4	<0.001	0.02	0.34	10.7	0.3	0.4	69.4	<0.01	0.05	2.6
L5300N 6100E		0.32	7.5	2420	10.0	9.7	<0.001	0.02	0.30	7.7	0.2	0.5	68.8	0.01	0.07	2.4
L5300N 6125E		0.37	7.2	3200	11.7	18.5	<0.001	0.03	0.28	4.8	0.3	0.6	53.7	<0.01	0.07	1.1
L5300N 6150E		0.36	6.9	2550	10.8	15.9	<0.001	0.09	0.27	3.6	0.6	0.5	45.4	<0.01	0.06	0.7
L5300N 6175E		1.08	4.3	1140	4.4	12.6	<0.001	0.04	0.19	2.7	0.5	0.6	25.5	<0.01	0.02	1.0
L5300N 6200E		0.41	10.2	2750	8.2	14.1	<0.001	0.03	0.24	5.1	0.4	0.5	67.7	<0.01	0.06	1.3
L5300N 6225E		0.50	5.1	2260	7.9	19.5	<0.001	0.06	0.21	1.8	0.4	0.6	61.5	<0.01	0.03	0.4
L5300N 6250E		0.72	5.5	2170	6.7	11.1	<0.001	0.04	0.20	2.8	0.4	0.5	80.1	<0.01	0.03	0.9
L5300N 6275E		0.46	7.1	2840	9.8	13.6	<0.001	0.02	0.24	5.0	0.5	0.6	42.9	<0.01	0.04	1.3
L5300N 6300E		0.36	6.7	2480	12.9	9.9	<0.001	0.02	0.34	5.2	0.4	0.5	54.4	<0.01	0.09	1.5
L5300N 6325E		0.39	5.3	2210	11.3	30.5	<0.001	0.05	0.20	4.2	0.6	0.7	31.6	<0.01	0.27	1.2
L5300N 6350E		0.43	4.8	2430	7.8	15.6	<0.001	0.05	0.22	1.0	0.5	0.8	27.3	<0.01	0.07	<0.2
L5300N 6375E		0.40	3.0	1150	4.8	10.5	<0.001	0.05	0.14	0.7	0.3	0.7	24.7	<0.01	0.03	<0.2
L5300N 6400E		0.84	4.0	3270	8.1	9.7	<0.001	0.06	0.35	2.5	0.6	0.5	23.3	<0.01	0.10	0.9
L5300N 6425E		0.98	6.2	1440	8.6	9.0	<0.001	0.03	0.32	4.0	0.6	0.6	44.1	<0.01	0.09	1.3
L5300N 6450E		0.99	6.2	960	7.5	19.3	<0.001	0.04	0.28	1.2	0.5	0.9	34.7	<0.01	0.06	<0.2
L5300N 6475E		0.97	5.1	1690	10.0	11.5	<0.001	0.05	0.29	1.9	0.6	0.6	29.6	<0.01	0.07	0.4
L5300N 6500E		0.72	3.4	1120	6.9	6.0	<0.001	0.03	0.24	1.4	0.4	1.0	23.2	<0.01	0.05	<0.2
L5300N 6525E		0.67	3.0	1180	6.9	9.2	<0.001	0.03	0.20	0.8	0.2	1.0	26.8	<0.01	0.05	<0.2
L5300N 6550E		0.36	2.5	600	3.9	8.1	<0.001	0.02	0.21	0.7	<0.2	0.8	24.2	<0.01	0.04	<0.2
L5300N 6575E		0.49	3.0	700	4.8	10.9	<0.001	0.01	0.18	0.9	<0.2	1.0	24.3	<0.01	0.04	<0.2
L5300N 6600E		0.87	3.3	1210	8.4	16.9	<0.001	0.01	0.26	3.3	<0.2	0.8	18.5	<0.01	0.04	0.9

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5200N 7925E		0.018	0.03	1.33	125	1.24	4.58	63	<0.5
L5200N 7950E		0.020	0.04	8.37	76	0.68	18.20	115	<0.5
L5200N 8000E		0.018	0.02	0.85	112	0.84	4.33	26	<0.5
L5200N 8025E		0.016	0.02	1.78	112	0.84	10.00	54	<0.5
L5200N 8050E		0.026	0.02	1.18	121	1.23	10.75	67	<0.5
L5200N 8075E		0.009	0.04	13.95	83	0.98	60.2	108	1.3
L5200N 8100E		0.010	0.05	16.45	70	0.93	46.1	60	1.9
L5200N 8150E		0.019	0.03	1.44	129	0.99	8.37	57	<0.5
L5200N 8175E		0.023	0.02	0.86	137	0.99	6.06	41	<0.5
L5200N 8200E		0.027	0.02	2.69	111	0.77	18.95	48	0.7
L5200N 8275E		0.025	0.03	24.2	117	3.40	35.0	53	0.6
L5200N 8300E		0.029	0.04	10.55	145	1.26	23.3	46	<0.5
L5200N 8325E		0.020	0.03	3.22	79	1.01	13.35	63	<0.5
L5200N 8350E		0.032	0.04	8.54	116	1.55	21.5	63	0.5
L5200N 8400E		0.024	0.03	2.18	108	1.13	8.24	51	<0.5
L5300N 6000E		0.015	0.03	2.02	133	0.30	26.2	74	<0.5
L5300N 6025E		<0.005	0.02	1.29	119	0.26	13.40	55	0.6
L5300N 6050E		0.010	0.03	2.19	140	0.28	41.3	121	<0.5
L5300N 6075E		0.013	0.03	1.81	161	0.24	21.3	71	<0.5
L5300N 6100E		0.010	0.03	1.40	132	0.31	15.45	72	0.5
L5300N 6125E		0.009	0.05	1.27	138	0.38	10.65	94	<0.5
L5300N 6150E		<0.005	0.06	2.71	108	0.30	13.60	92	0.5
L5300N 6175E		<0.005	0.08	0.99	68	0.18	6.95	42	0.6
L5300N 6200E		0.011	0.04	1.50	121	0.26	16.70	74	0.5
L5300N 6225E		0.010	0.06	1.05	109	0.26	6.75	61	<0.5
L5300N 6250E		0.011	0.03	1.13	134	0.30	8.23	64	0.6
L5300N 6275E		0.013	0.06	1.15	109	0.30	10.30	82	0.5
L5300N 6300E		0.013	0.04	1.33	134	0.37	13.30	80	<0.5
L5300N 6325E		0.007	0.07	3.15	106	0.40	13.40	56	0.5
L5300N 6350E		0.011	0.06	2.03	110	0.36	4.01	53	<0.5
L5300N 6375E		0.010	0.03	0.98	66	0.19	4.91	26	<0.5
L5300N 6400E		0.011	0.06	1.06	115	0.48	5.06	71	0.6
L5300N 6425E		0.014	0.04	1.02	146	0.35	6.86	74	0.6
L5300N 6450E		0.020	0.06	1.31	88	0.30	8.19	66	<0.5
L5300N 6475E		0.027	0.05	1.44	129	0.45	5.33	39	<0.5
L5300N 6500E		0.036	0.05	0.82	137	0.44	3.17	28	<0.5
L5300N 6525E		0.022	0.05	0.75	97	1.26	2.44	30	<0.5
L5300N 6550E		0.027	0.03	0.37	113	0.38	1.42	20	<0.5
L5300N 6575E		0.029	0.06	0.48	79	0.28	2.19	21	<0.5
L5300N 6600E		0.028	0.05	0.73	153	0.51	2.99	36	<0.5

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5300N 6625E		0.28	0.024	0.35	2.25	9.5	<0.02	<10	80	0.33	0.38	0.08	0.20	11.55	8.9	5
L5300N 6675E		0.38	0.013	0.22	2.05	10.4	<0.02	<10	90	0.29	0.16	0.10	0.10	13.15	18.1	4
L5300N 6700E		0.30	0.007	0.21	1.68	6.3	<0.02	<10	70	0.22	0.13	0.06	0.04	9.10	7.2	3
L5300N 6725E		0.38	0.008	0.27	2.36	5.2	<0.02	<10	100	0.43	0.11	0.06	0.06	11.15	9.2	3
L5300N 6750E		0.28	0.025	0.35	2.21	18.8	0.41	<10	140	0.33	0.31	0.15	0.06	12.15	19.3	3
L5300N 6775E		0.30	0.004	0.33	2.02	6.8	<0.02	<10	80	0.26	0.16	0.05	0.08	13.00	7.9	5
L5300N 6800E		0.32	0.017	0.19	1.47	6.3	<0.02	<10	110	0.26	0.10	0.07	0.03	10.80	9.9	3
L5300N 6825E		0.34	0.064	0.08	2.79	13.8	0.02	<10	170	0.69	0.20	0.07	0.12	20.4	12.8	7
L5300N 6850E		0.28	0.005	0.31	1.84	4.4	<0.02	<10	90	0.25	0.13	0.05	0.06	13.60	6.0	6
L5300N 6875E		0.30	0.005	0.12	2.10	4.2	0.04	<10	120	0.23	0.15	0.06	0.07	12.05	6.8	6
L5300N 6900E		0.42	0.019	0.11	1.84	5.5	<0.02	<10	100	0.23	0.17	0.05	0.06	15.90	7.7	5
L5300N 6925E		0.36	0.011	0.27	2.36	3.9	<0.02	<10	80	0.39	0.11	0.38	0.12	30.9	18.2	5
L5300N 6950E		0.32	0.007	0.27	2.32	7.3	<0.02	<10	90	0.32	0.13	0.05	0.06	10.45	11.2	4
L5300N 6975E		0.32	0.009	0.18	2.16	11.3	<0.02	<10	100	0.35	0.14	0.06	0.08	15.15	14.5	4
L5300N 7000E		0.26	0.014	0.12	1.52	6.7	<0.02	<10	90	0.18	0.15	0.06	0.04	8.84	6.8	3
L5300N 7025E		0.22	0.008	0.46	2.04	9.2	<0.02	<10	50	0.23	0.13	0.04	0.06	9.66	6.8	3
L5300N 7050E		0.32	0.009	0.39	2.41	10.2	<0.02	<10	60	0.40	0.12	0.09	0.12	10.90	11.4	3
L5300N 7075E		0.28	0.011	0.26	2.10	6.6	<0.02	<10	60	0.21	0.14	0.06	0.10	10.45	5.8	3
L5300N 7100E		0.24	0.006	0.33	2.70	9.9	<0.02	<10	90	0.61	0.15	0.09	0.09	14.60	10.8	5
L5300N 7125E		0.24	0.008	0.27	2.32	12.2	<0.02	<10	50	0.36	0.14	0.08	0.09	12.10	11.2	4
L5300N 7150E		0.28	0.006	0.12	2.16	12.7	<0.02	<10	80	0.25	0.14	0.07	0.07	9.68	8.7	3
L5300N 7175E		0.26	0.016	0.18	2.25	8.2	<0.02	<10	60	0.34	0.16	0.07	0.06	11.10	8.3	4
L5300N 7200E		0.28	0.066	0.10	2.30	6.6	0.02	<10	60	0.34	0.15	0.12	0.05	14.85	8.2	4
L5300N 7225E		0.28	0.010	0.15	1.74	6.7	<0.02	<10	60	0.19	0.18	0.06	0.07	10.75	5.6	5
L5300N 7250E		0.32	0.011	0.32	2.15	7.3	<0.02	<10	50	0.38	0.11	0.16	0.05	12.45	13.2	4
L5300N 7275E		0.26	0.005	0.30	2.57	8.7	<0.02	<10	50	0.26	0.12	0.08	0.11	8.90	8.0	4
L5300N 7300E		0.36	0.013	0.28	2.57	14.0	0.03	<10	90	0.76	0.14	0.29	0.10	22.8	8.5	4
L5300N 7325E		0.28	0.013	0.20	2.42	10.3	<0.02	<10	60	0.41	0.10	0.30	0.19	16.90	10.7	3
L5300N 7350E		0.28	0.010	0.18	2.64	8.5	<0.02	<10	50	0.31	0.14	0.10	0.05	11.25	6.2	4
L5300N 7375E		0.26	0.015	0.36	2.30	10.6	<0.02	<10	60	0.37	0.14	0.15	0.09	13.00	12.2	5
L5300N 7400E		0.26	0.007	0.24	2.92	3.6	<0.02	<10	50	0.23	0.12	0.07	0.08	10.30	2.9	5
L5300N 7425E		0.26	0.015	0.66	3.09	2.3	<0.02	<10	60	0.43	0.13	0.05	0.07	14.40	2.0	4
L5300N 7450E		0.24	0.013	0.20	1.87	5.2	<0.02	<10	50	0.19	0.12	0.09	0.06	7.79	9.1	2
L5300N 7475E		0.32	0.014	0.36	2.90	8.4	<0.02	<10	60	0.40	0.10	0.17	0.12	12.20	10.2	3
L5300N 7500E		0.26	0.011	0.14	1.89	7.6	<0.02	<10	70	0.23	0.13	0.08	0.07	8.19	8.1	4
L5300N 7525E		0.26	0.027	0.12	1.53	3.8	<0.02	<10	50	0.20	0.13	0.08	0.10	8.47	6.0	4
L5300N 7550E		0.30	0.048	0.22	1.76	7.1	<0.02	<10	50	0.25	0.14	0.11	0.04	8.98	9.4	4
L5300N 7575E		0.22	0.020	0.25	1.87	5.6	<0.02	<10	60	0.20	0.14	0.08	0.09	9.89	6.0	4
L5300N 7600E		0.20	0.013	1.28	2.79	5.9	<0.02	<10	100	0.63	0.11	0.16	0.15	12.90	5.4	5
L5300N 7625E		0.28	0.954	0.22	1.83	18.8	0.87	<10	430	0.90	0.14	0.76	0.14	17.95	11.3	3

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Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5300N 6625E		1.35	119.0	6.08	16.35	<0.05	<0.02	0.05	0.029	0.05	6.0	4.8	0.19	201	6.34	<0.01
L5300N 6675E		1.29	119.0	6.67	8.46	<0.05	<0.02	0.07	0.030	0.03	6.0	7.8	0.35	411	2.95	<0.01
L5300N 6700E		1.01	76.1	3.63	9.28	<0.05	<0.02	0.03	0.019	0.03	4.7	3.5	0.21	288	2.24	<0.01
L5300N 6725E		2.02	69.8	5.05	7.71	<0.05	0.03	0.05	0.032	0.04	4.9	2.6	0.15	1040	2.61	<0.01
L5300N 6750E		3.64	356	5.31	9.26	<0.05	<0.02	0.06	0.032	0.04	5.8	14.9	0.54	719	7.49	<0.01
L5300N 6775E		1.95	56.6	4.54	10.50	<0.05	<0.02	0.04	0.023	0.04	6.1	2.9	0.20	297	2.49	<0.01
L5300N 6800E		1.89	71.8	4.33	7.87	<0.05	<0.02	0.03	0.022	0.05	5.2	2.1	0.15	364	2.58	<0.01
L5300N 6825E		3.22	167.0	5.12	9.64	<0.05	0.02	0.04	0.041	0.05	10.6	13.6	0.30	733	4.87	<0.01
L5300N 6850E		1.84	44.9	3.20	10.25	<0.05	<0.02	0.03	0.021	0.05	6.7	2.2	0.14	225	2.85	<0.01
L5300N 6875E		1.74	44.7	3.79	10.85	<0.05	<0.02	0.04	0.023	0.05	5.8	3.3	0.19	347	2.01	<0.01
L5300N 6900E		2.10	77.7	4.32	9.46	<0.05	<0.02	0.03	0.025	0.05	7.6	3.7	0.20	376	2.37	<0.01
L5300N 6925E		2.20	90.9	5.78	14.75	<0.05	<0.02	0.04	0.051	0.10	12.7	5.7	0.67	1820	2.09	0.01
L5300N 6950E		1.69	111.0	5.31	11.00	<0.05	<0.02	0.04	0.038	0.04	5.4	3.4	0.26	842	2.44	<0.01
L5300N 6975E		1.57	129.5	6.09	7.99	<0.05	<0.02	0.04	0.035	0.04	7.2	6.9	0.37	472	2.01	<0.01
L5300N 7000E		1.76	72.7	3.12	8.39	<0.05	<0.02	0.05	0.018	0.06	4.5	2.5	0.19	222	2.65	<0.01
L5300N 7025E		2.04	89.2	4.55	7.99	<0.05	<0.02	0.06	0.026	0.05	4.8	4.0	0.27	173	2.33	<0.01
L5300N 7050E		2.30	146.0	5.61	8.59	<0.05	<0.02	0.07	0.033	0.06	5.2	10.0	0.42	358	2.64	<0.01
L5300N 7075E		1.83	67.6	3.42	9.96	<0.05	<0.02	0.04	0.020	0.05	5.2	3.6	0.22	197	1.99	<0.01
L5300N 7100E		2.34	129.0	4.89	8.51	<0.05	0.02	0.04	0.031	0.05	7.5	9.4	0.37	328	2.43	<0.01
L5300N 7125E		2.18	140.0	5.64	9.01	<0.05	<0.02	0.04	0.031	0.05	6.1	9.3	0.45	321	3.03	<0.01
L5300N 7150E		1.65	92.6	5.25	8.82	<0.05	<0.02	0.03	0.027	0.04	5.0	7.6	0.39	245	2.40	<0.01
L5300N 7175E		2.20	107.0	3.79	9.12	<0.05	<0.02	0.06	0.025	0.04	6.0	9.6	0.26	248	2.44	<0.01
L5300N 7200E		2.04	150.5	3.24	9.16	<0.05	<0.02	0.02	0.023	0.04	7.7	9.5	0.32	333	2.10	<0.01
L5300N 7225E		1.35	53.3	3.21	11.00	<0.05	<0.02	0.04	0.017	0.03	5.6	3.1	0.15	134	2.48	<0.01
L5300N 7250E		1.89	141.5	4.15	8.09	<0.05	<0.02	0.05	0.029	0.04	6.4	13.4	0.48	702	2.45	<0.01
L5300N 7275E		1.42	130.5	5.42	8.92	<0.05	<0.02	0.06	0.037	0.03	4.6	12.5	0.37	232	2.63	<0.01
L5300N 7300E		1.88	235	3.23	6.53	<0.05	0.03	0.06	0.029	0.05	12.5	13.2	0.46	240	1.90	<0.01
L5300N 7325E		1.37	165.0	5.08	6.76	<0.05	0.02	0.07	0.031	0.03	8.5	13.4	0.46	333	2.33	<0.01
L5300N 7350E		1.60	112.5	4.51	9.12	<0.05	<0.02	0.06	0.035	0.05	6.2	12.5	0.32	172	2.82	<0.01
L5300N 7375E		2.19	154.5	5.19	8.81	<0.05	<0.02	0.05	0.032	0.04	6.9	16.1	0.56	489	3.08	<0.01
L5300N 7400E		0.79	43.3	2.04	8.04	<0.05	<0.02	0.08	0.019	0.02	5.7	8.3	0.15	68	1.44	<0.01
L5300N 7425E		0.91	84.1	1.01	9.16	<0.05	<0.02	0.10	0.024	0.02	8.3	7.6	0.11	50	1.59	<0.01
L5300N 7450E		2.19	85.7	3.29	10.45	<0.05	<0.02	0.03	0.018	0.05	4.1	6.8	0.48	262	2.06	<0.01
L5300N 7475E		1.25	134.5	4.84	7.48	<0.05	0.02	0.09	0.036	0.03	6.5	15.4	0.40	237	2.39	<0.01
L5300N 7500E		1.32	72.0	4.83	9.18	<0.05	<0.02	0.04	0.020	0.03	4.3	6.0	0.24	195	2.53	<0.01
L5300N 7525E		2.40	53.9	2.22	7.64	<0.05	<0.02	0.06	0.015	0.04	4.6	5.4	0.26	205	1.90	<0.01
L5300N 7550E		1.63	77.9	3.69	8.36	<0.05	<0.02	0.04	0.022	0.04	4.7	7.2	0.41	367	2.71	<0.01
L5300N 7575E		1.66	56.2	3.39	9.16	<0.05	<0.02	0.06	0.018	0.04	5.4	4.3	0.25	193	2.39	<0.01
L5300N 7600E		1.69	147.0	2.19	6.18	<0.05	<0.02	0.13	0.028	0.04	7.0	12.4	0.30	174	2.59	<0.01
L5300N 7625E		3.51	46.0	3.51	4.49	<0.05	0.03	0.07	0.065	0.14	12.1	7.7	0.29	3580	11.10	<0.01

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5300N 6625E		1.18	3.3	800	8.8	13.2	<0.001	0.02	0.33	2.1	0.4	1.0	17.4	<0.01	0.16	0.2
L5300N 6675E		0.65	3.6	1910	8.5	6.2	<0.001	0.04	0.30	1.8	0.5	0.6	19.3	<0.01	0.07	0.4
L5300N 6700E		0.21	2.0	900	5.9	5.6	<0.001	0.02	0.21	0.6	0.3	0.6	17.0	<0.01	0.03	<0.2
L5300N 6725E		0.57	2.1	3980	6.9	12.2	<0.001	0.04	0.19	2.4	0.4	0.4	10.9	<0.01	0.02	0.9
L5300N 6750E		0.43	3.3	2190	10.0	11.9	<0.001	0.03	0.29	1.3	0.4	0.6	22.2	<0.01	0.10	0.2
L5300N 6775E		0.84	3.3	1340	6.3	11.8	<0.001	0.03	0.21	1.2	0.3	0.8	11.2	<0.01	0.03	0.2
L5300N 6800E		0.47	2.6	1250	5.5	14.3	<0.001	0.02	0.18	1.4	<0.2	0.6	14.5	<0.01	0.02	0.4
L5300N 6825E		2.62	4.7	1460	8.1	16.8	<0.001	0.04	0.26	2.4	0.5	1.1	17.6	0.01	0.06	0.6
L5300N 6850E		0.64	3.9	1050	4.7	17.3	<0.001	0.03	0.17	0.8	0.2	0.8	13.3	<0.01	0.02	<0.2
L5300N 6875E		1.13	3.9	960	5.3	10.2	<0.001	0.02	0.14	1.1	0.2	0.9	16.2	<0.01	0.02	0.2
L5300N 6900E		1.42	3.3	1420	6.6	13.0	<0.001	0.02	0.18	1.3	0.2	1.0	16.0	<0.01	0.03	0.4
L5300N 6925E		0.95	6.1	2780	5.8	15.1	<0.001	0.03	0.15	6.0	0.3	1.1	13.6	<0.01	0.01	0.5
L5300N 6950E		0.64	2.8	1450	6.2	11.4	<0.001	0.03	0.22	2.1	0.3	0.7	12.5	<0.01	0.03	0.3
L5300N 6975E		0.61	3.9	1180	9.6	10.9	<0.001	0.02	0.24	2.7	0.3	0.5	15.6	<0.01	0.03	0.8
L5300N 7000E		0.38	2.3	1270	4.8	15.8	<0.001	0.03	0.18	0.7	0.2	0.6	16.2	<0.01	0.03	<0.2
L5300N 7025E		0.62	2.5	1330	7.9	15.6	<0.001	0.02	0.21	1.4	<0.2	0.5	12.7	<0.01	0.03	0.4
L5300N 7050E		0.63	3.5	2570	5.7	15.7	<0.001	0.04	0.22	1.5	0.2	0.5	15.0	<0.01	0.04	0.4
L5300N 7075E		0.45	2.0	1050	5.8	11.6	<0.001	0.02	0.17	0.8	0.2	0.8	16.4	<0.01	0.02	<0.2
L5300N 7100E		0.77	3.2	1270	7.4	16.1	<0.001	0.02	0.22	2.5	0.3	0.6	16.5	<0.01	0.04	0.8
L5300N 7125E		0.62	5.5	1550	11.4	15.0	<0.001	0.01	0.44	2.5	0.3	0.5	14.4	<0.01	0.04	0.7
L5300N 7150E		0.67	3.0	1730	8.6	12.2	<0.001	0.01	0.26	2.2	0.2	0.5	13.9	<0.01	0.04	0.6
L5300N 7175E		1.05	2.9	1120	6.4	12.2	<0.001	0.02	0.24	1.3	0.2	0.7	15.2	<0.01	0.04	0.4
L5300N 7200E		0.99	3.3	1040	6.1	13.6	<0.001	<0.01	0.19	2.7	<0.2	0.8	17.5	<0.01	0.03	1.2
L5300N 7225E		0.57	2.6	830	6.3	9.7	<0.001	0.02	0.23	0.8	0.2	0.9	15.5	<0.01	0.03	<0.2
L5300N 7250E		0.96	3.5	1400	4.1	14.1	<0.001	0.01	0.22	2.1	0.2	0.6	16.9	<0.01	0.03	0.5
L5300N 7275E		1.06	3.1	1530	7.7	8.2	<0.001	0.04	0.25	1.4	0.4	0.5	12.1	<0.01	0.03	0.3
L5300N 7300E		1.23	4.1	1740	5.5	11.4	<0.001	0.01	0.18	2.4	0.3	0.6	19.1	0.01	0.05	0.7
L5300N 7325E		0.82	3.5	2350	6.2	6.6	<0.001	0.02	0.22	2.5	0.3	0.4	14.8	<0.01	0.03	1.0
L5300N 7350E		1.71	2.7	1020	6.6	10.0	<0.001	0.01	0.22	3.1	0.3	0.7	14.9	<0.01	0.04	1.9
L5300N 7375E		1.88	5.2	1320	7.2	12.3	<0.001	0.01	0.25	3.3	0.3	0.6	15.6	<0.01	0.03	1.3
L5300N 7400E		1.00	2.0	540	5.5	4.1	<0.001	0.03	0.15	0.9	0.3	0.5	15.3	0.01	0.02	0.2
L5300N 7425E		1.81	1.6	670	6.4	3.8	<0.001	0.04	0.16	0.4	0.5	0.8	14.0	0.01	0.02	<0.2
L5300N 7450E		0.65	3.1	610	5.2	10.5	<0.001	<0.01	0.20	2.7	<0.2	0.7	17.2	<0.01	0.02	0.3
L5300N 7475E		0.99	3.1	1380	6.8	7.7	<0.001	0.04	0.24	2.0	0.4	0.4	14.2	<0.01	0.03	0.8
L5300N 7500E		0.48	2.8	1070	6.2	7.7	<0.001	0.02	0.25	1.2	0.2	0.6	17.3	<0.01	0.03	<0.2
L5300N 7525E		0.34	2.8	1100	5.0	10.7	<0.001	0.03	0.15	0.4	<0.2	0.6	17.7	<0.01	0.02	<0.2
L5300N 7550E		0.41	3.4	1280	4.8	10.9	<0.001	0.02	0.19	1.0	<0.2	0.6	15.9	<0.01	0.04	<0.2
L5300N 7575E		0.47	2.6	1250	5.9	7.7	<0.001	0.03	0.18	0.7	0.3	0.6	16.4	<0.01	0.02	<0.2
L5300N 7600E		0.72	3.4	1470	4.7	11.1	<0.001	0.08	0.16	0.2	0.5	0.5	19.4	<0.01	0.02	<0.2
L5300N 7625E		0.23	2.1	2410	2.3	41.7	0.003	0.07	0.17	2.8	0.2	0.2	32.3	<0.01	0.03	1.2

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5300N 6625E		0.035	0.04	0.83	189	0.64	3.08	29	<0.5
L5300N 6675E		0.015	0.04	0.89	163	0.41	3.65	44	<0.5
L5300N 6700E		0.010	0.05	0.61	133	0.28	2.52	27	<0.5
L5300N 6725E		0.008	0.06	0.93	92	0.33	3.79	42	0.5
L5300N 6750E		0.012	0.05	1.99	115	0.52	4.47	46	<0.5
L5300N 6775E		0.010	0.06	0.75	123	0.39	3.05	40	<0.5
L5300N 6800E		0.006	0.07	0.81	114	0.36	3.06	43	<0.5
L5300N 6825E		0.008	0.06	4.23	92	0.48	9.39	70	0.6
L5300N 6850E		0.007	0.07	0.75	92	0.31	2.94	35	<0.5
L5300N 6875E		0.009	0.06	0.62	109	0.30	2.75	38	<0.5
L5300N 6900E		0.010	0.06	0.82	90	0.29	3.48	40	<0.5
L5300N 6925E		0.089	0.05	1.03	188	0.26	11.90	64	<0.5
L5300N 6950E		0.008	0.05	0.85	132	0.29	4.18	54	<0.5
L5300N 6975E		0.008	0.05	0.98	113	0.39	4.78	59	<0.5
L5300N 7000E		0.008	0.06	0.75	98	0.41	2.20	35	<0.5
L5300N 7025E		0.008	0.06	0.79	101	0.40	2.44	37	<0.5
L5300N 7050E		0.008	0.05	0.99	108	0.43	3.56	55	<0.5
L5300N 7075E		0.009	0.06	0.66	98	0.34	2.62	26	<0.5
L5300N 7100E		0.008	0.06	1.11	115	0.41	5.19	41	<0.5
L5300N 7125E		0.010	0.06	0.99	119	0.48	4.33	51	<0.5
L5300N 7150E		0.010	0.05	0.77	123	0.44	3.08	40	<0.5
L5300N 7175E		0.011	0.06	0.81	98	0.60	2.86	33	<0.5
L5300N 7200E		0.016	0.07	0.78	87	0.34	4.61	31	<0.5
L5300N 7225E		0.021	0.04	0.58	112	0.48	2.13	25	<0.5
L5300N 7250E		0.019	0.04	0.82	98	0.57	4.66	40	<0.5
L5300N 7275E		0.012	0.04	0.92	111	0.51	2.89	30	<0.5
L5300N 7300E		0.015	0.05	1.63	77	0.41	10.75	39	0.8
L5300N 7325E		0.018	0.03	1.08	117	0.51	7.67	38	<0.5
L5300N 7350E		0.021	0.04	1.01	106	0.58	3.46	27	0.5
L5300N 7375E		0.023	0.04	0.91	120	0.61	4.57	47	<0.5
L5300N 7400E		0.015	0.02	0.78	61	0.37	2.41	17	<0.5
L5300N 7425E		0.007	0.03	1.25	40	0.37	4.22	9	<0.5
L5300N 7450E		0.033	0.04	0.50	93	0.50	2.42	37	<0.5
L5300N 7475E		0.014	0.03	1.01	105	0.54	5.08	34	<0.5
L5300N 7500E		0.022	0.04	0.63	128	0.50	2.45	26	<0.5
L5300N 7525E		0.007	0.06	0.67	58	0.33	1.81	24	<0.5
L5300N 7550E		0.015	0.05	0.69	98	0.46	2.71	34	<0.5
L5300N 7575E		0.013	0.06	0.75	97	0.50	2.40	25	<0.5
L5300N 7600E		<0.005	0.05	2.14	47	0.41	4.89	30	<0.5
L5300N 7625E		<0.005	0.11	4.41	48	400	12.05	40	0.7

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Finalized Date: 30-OCT-2020
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CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5300N 7650E		0.24	0.021	0.12	2.40	6.4	<0.02	<10	180	0.41	0.21	0.22	0.07	13.85	5.4	7
L5300N 7675E		0.28	0.031	0.13	2.44	52.1	0.02	<10	150	0.82	0.20	0.61	0.10	19.60	12.9	6
L5300N 7700E		0.30	0.200	0.72	2.87	19.1	0.08	<10	110	0.69	0.39	0.27	0.05	19.50	9.1	5
L5300N 7725E		0.28	0.013	0.20	2.77	15.5	<0.02	<10	90	0.38	0.16	0.12	0.10	11.65	11.1	5
L5300N 7750E		0.28	0.039	0.47	2.66	10.4	<0.02	<10	80	0.36	0.13	0.13	0.07	12.05	8.9	5
L5300N 7775E		0.26	0.020	0.39	1.68	11.3	<0.02	<10	40	0.16	0.16	0.07	0.08	7.45	5.7	4
L5300N 7800E		0.30	0.098	0.17	1.25	5.5	0.02	<10	70	0.19	0.13	0.07	0.04	9.30	3.7	2
L5300N 7825E		0.30	0.015	0.07	2.13	13.5	<0.02	<10	220	0.52	0.16	0.47	0.09	10.50	14.0	4
L5300N 7850E		0.26	0.021	0.09	1.68	10.1	<0.02	<10	50	0.19	0.16	0.07	0.02	9.87	5.7	6
L5300N 7875E		0.32	0.018	0.56	3.41	33.6	<0.02	<10	270	2.05	0.14	1.19	0.19	46.2	31.6	6
L5300N 7900E		0.32	0.091	0.08	1.45	15.9	0.04	<10	120	0.32	0.13	0.52	0.06	14.85	11.8	3
L5300N 7925E		0.32	0.075	0.09	1.50	10.8	<0.02	<10	180	0.49	0.12	0.47	0.07	13.15	10.8	3
L5300N 7950E		0.28	0.017	0.23	1.99	15.7	<0.02	<10	90	0.30	0.14	0.13	0.06	9.62	8.4	4
L5300N 7975E		0.24	0.016	0.12	1.76	17.9	<0.02	<10	220	0.37	0.18	0.83	0.11	15.65	10.0	5
L5300N 8000E		0.32	0.020	0.07	2.00	15.6	0.03	<10	140	0.54	0.14	0.61	0.12	19.05	15.4	4
L5300N 8025E		0.24	0.041	0.04	0.95	2.7	<0.02	<10	50	0.11	0.14	0.08	0.02	8.48	2.4	3
L5300N 8050E		0.24	0.015	0.11	1.82	8.0	<0.02	<10	150	0.37	0.12	0.58	0.10	12.65	11.5	4
L5300N 8075E		0.28	0.013	0.09	2.16	14.9	<0.02	<10	190	0.63	0.17	0.44	0.11	15.20	18.7	6
L5300N 8100E		0.32	0.538	0.15	1.78	16.1	<0.02	<10	190	0.57	0.17	0.46	0.13	17.50	15.6	8
L5300N 8125E		0.26	0.171	0.14	1.86	9.3	<0.02	<10	120	0.50	0.14	0.39	0.10	15.60	16.8	6
L5300N 8150E		0.22	0.011	0.22	1.94	14.1	<0.02	<10	160	0.44	0.18	0.41	0.09	15.05	27.4	8
L5300N 8175E		0.16	0.022	0.17	2.02	46.7	<0.02	<10	160	0.57	0.12	0.91	0.12	25.6	14.4	5
L5300N 8200E		0.30	0.015	0.36	1.48	14.9	<0.02	<10	60	0.57	0.09	0.37	0.08	17.25	9.3	3
L5300N 8225E		0.24	0.010	0.25	1.93	22.6	<0.02	<10	120	0.68	0.16	0.45	0.17	18.70	37.9	5
L5300N 8250E		0.30	0.047	0.07	1.56	12.0	<0.02	<10	80	0.48	0.11	0.54	0.10	17.30	11.1	3
L5300N 8275E		0.24	0.064	0.08	1.95	10.7	<0.02	<10	90	0.61	0.11	0.49	0.13	12.95	13.4	5
L5300N 8300E		0.24	0.011	0.07	1.26	4.5	<0.02	<10	80	0.35	0.10	0.50	0.09	8.74	7.4	4
L5300N 8325E		0.30	0.013	0.04	1.03	4.2	<0.02	<10	50	0.30	0.06	0.30	0.07	10.15	5.2	3
L5300N 8350E		0.28	0.011	0.18	2.03	8.4	<0.02	<10	120	0.41	0.11	0.19	0.07	13.60	10.8	4
L5300N 8375E		0.26	0.010	0.09	1.53	5.4	<0.02	<10	180	0.32	0.14	0.65	0.12	14.05	9.7	7
L5300N 8400E		0.32	0.023	0.08	1.83	14.6	<0.02	<10	100	0.66	0.11	0.64	0.07	25.1	10.6	6
L5300N 8425E		0.06	0.278	3.00	1.22	25.1	0.13	<10	60	0.38	3.43	0.92	2.07	38.3	17.4	62
L5400N 6000E		0.36	0.017	0.15	1.92	10.8	<0.02	<10	170	0.44	0.19	0.22	0.15	15.50	13.4	6
L5400N 6100E		0.56	0.024	0.22	2.57	14.7	<0.02	<10	300	0.86	0.20	0.64	0.15	27.7	22.0	6
L5400N 6200E		0.38	0.014	0.07	2.35	5.8	<0.02	<10	250	0.54	0.14	0.17	0.09	17.15	12.0	7
L5400N 6225E		0.42	0.013	0.08	2.75	5.4	<0.02	<10	160	0.44	0.13	0.17	0.07	16.75	10.7	7
L5400N 6250E		0.44	0.039	0.11	3.17	8.3	<0.02	<10	240	0.82	0.09	0.22	0.12	22.4	16.4	3
L5400N 6275E		0.52	0.021	0.06	2.50	8.9	<0.02	<10	400	1.29	0.11	0.40	0.21	60.6	27.2	3
L5400N 6300E		0.52	0.025	0.10	2.53	8.5	0.02	<10	240	1.01	0.15	0.30	0.14	43.2	25.5	5
L5400N 6325E		0.46	0.068	0.08	2.56	10.9	0.06	<10	290	1.06	0.18	0.31	0.17	55.9	21.7	5

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5300N 7650E		2.66	57.0	2.79	10.20	<0.05	<0.02	0.02	0.026	0.06	8.5	14.1	0.35	303	5.58	<0.01
L5300N 7675E		3.17	234	4.19	8.58	<0.05	0.03	0.03	0.036	0.07	11.9	26.0	0.58	821	14.55	<0.01
L5300N 7700E		2.35	135.0	3.41	8.03	<0.05	0.02	0.05	0.036	0.04	10.6	15.5	0.48	294	3.52	<0.01
L5300N 7725E		2.65	117.5	5.44	10.05	<0.05	<0.02	0.04	0.033	0.05	6.2	14.3	0.54	337	3.29	<0.01
L5300N 7750E		2.58	131.0	3.88	8.90	<0.05	<0.02	0.06	0.029	0.05	6.6	13.9	0.48	275	2.39	<0.01
L5300N 7775E		1.29	44.7	2.65	9.24	<0.05	<0.02	0.05	0.015	0.03	4.1	3.6	0.19	154	2.00	<0.01
L5300N 7800E		0.67	32.7	2.08	8.37	<0.05	<0.02	0.02	0.012	0.03	5.5	2.2	0.10	133	2.60	<0.01
L5300N 7825E		1.91	221	3.85	9.31	<0.05	<0.02	0.02	0.027	0.04	12.5	18.2	0.35	1000	8.85	<0.01
L5300N 7850E		1.37	42.3	3.70	9.70	<0.05	<0.02	0.03	0.018	0.04	5.6	3.3	0.18	191	2.30	<0.01
L5300N 7875E		8.98	645	6.40	9.52	0.13	0.03	0.09	0.051	0.13	59.0	27.8	0.76	2270	14.00	0.01
L5300N 7900E		1.97	158.5	4.09	7.27	<0.05	<0.02	0.01	0.034	0.06	8.3	12.3	0.54	354	10.95	<0.01
L5300N 7925E		1.85	103.5	3.45	6.67	<0.05	<0.02	0.02	0.022	0.06	9.7	12.5	0.49	366	4.79	<0.01
L5300N 7950E		1.47	76.7	4.36	9.24	<0.05	<0.02	0.03	0.022	0.04	5.8	13.2	0.36	218	5.40	0.01
L5300N 7975E		2.08	119.0	2.88	8.90	<0.05	<0.02	0.04	0.024	0.08	13.9	16.3	0.31	408	6.19	<0.01
L5300N 8000E		2.58	159.0	4.07	7.32	<0.05	0.02	0.03	0.029	0.07	11.5	24.3	0.53	712	6.67	<0.01
L5300N 8025E		1.30	15.1	1.01	7.84	<0.05	<0.02	0.03	0.008	0.03	4.6	2.2	0.09	67	1.16	<0.01
L5300N 8050E		1.84	106.5	3.19	7.20	<0.05	<0.02	0.04	0.020	0.04	8.0	19.1	0.45	726	3.50	<0.01
L5300N 8075E		2.88	167.5	4.50	7.64	<0.05	<0.02	0.03	0.032	0.07	8.4	19.4	0.49	972	4.81	<0.01
L5300N 8100E		2.24	118.0	4.13	7.05	<0.05	<0.02	0.04	0.028	0.06	9.8	14.7	0.43	484	3.16	<0.01
L5300N 8125E		2.41	103.0	3.88	6.78	<0.05	<0.02	0.03	0.023	0.05	7.5	14.1	0.40	956	3.89	<0.01
L5300N 8150E		2.19	109.0	4.58	7.91	<0.05	<0.02	0.03	0.028	0.07	6.8	13.1	0.39	1280	5.34	<0.01
L5300N 8175E		1.54	134.5	3.77	7.43	<0.05	0.03	0.05	0.027	0.05	15.5	25.6	0.46	452	2.29	<0.01
L5300N 8200E		1.49	111.5	3.61	4.95	<0.05	<0.02	0.06	0.021	0.04	8.9	9.5	0.38	364	2.27	<0.01
L5300N 8225E		2.81	126.5	4.30	7.33	<0.05	<0.02	0.06	0.034	0.06	9.1	13.6	0.42	1840	5.86	<0.01
L5300N 8250E		1.41	117.0	3.47	6.28	<0.05	<0.02	0.02	0.025	0.04	8.9	12.9	0.45	415	3.26	0.01
L5300N 8275E		2.35	159.0	4.63	6.72	<0.05	<0.02	0.04	0.025	0.05	6.7	14.8	0.49	792	3.22	<0.01
L5300N 8300E		1.33	52.9	3.35	6.85	<0.05	<0.02	0.04	0.016	0.03	4.5	9.1	0.26	351	2.45	<0.01
L5300N 8325E		1.03	53.8	2.43	5.27	<0.05	<0.02	0.03	0.013	0.02	5.2	10.1	0.31	193	1.35	<0.01
L5300N 8350E		1.79	146.5	4.49	8.50	<0.05	<0.02	0.04	0.027	0.05	6.4	20.4	0.53	429	3.06	<0.01
L5300N 8375E		1.54	91.0	3.70	7.04	<0.05	<0.02	0.03	0.019	0.04	8.7	12.7	0.25	288	3.12	<0.01
L5300N 8400E		2.52	178.0	4.42	7.17	<0.05	0.04	0.02	0.030	0.05	9.8	20.7	0.37	276	2.31	<0.01
L5300N 8425E		1.93	2680	3.33	3.72	0.05	0.12	0.08	0.091	0.52	21.8	5.4	0.62	198	205	0.03
L5400N 6000E		2.66	185.0	3.51	6.01	<0.05	<0.02	0.11	0.022	0.05	7.5	10.7	0.38	747	3.35	<0.01
L5400N 6100E		3.08	399	4.92	7.51	<0.05	<0.02	0.09	0.039	0.07	15.1	17.8	0.75	820	5.03	<0.01
L5400N 6200E		2.06	170.0	4.18	6.84	<0.05	<0.02	0.04	0.030	0.06	8.1	9.5	0.41	1270	1.91	<0.01
L5400N 6225E		2.06	130.0	4.10	7.19	<0.05	0.03	0.04	0.029	0.04	7.8	13.1	0.45	530	1.86	<0.01
L5400N 6250E		3.23	256	5.58	6.44	<0.05	0.04	0.05	0.046	0.05	9.1	23.2	0.53	853	2.29	<0.01
L5400N 6275E		3.39	429	6.27	6.25	0.05	0.02	0.02	0.044	0.08	16.3	15.3	0.78	2830	2.17	<0.01
L5400N 6300E		3.31	380	5.82	6.81	<0.05	0.02	0.04	0.045	0.08	13.1	16.3	0.73	2240	2.63	<0.01
L5400N 6325E		2.65	427	5.93	6.13	0.05	0.03	0.03	0.052	0.07	18.2	14.1	0.78	3050	2.28	<0.01

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5300N 7650E		1.42	4.2	920	5.7	19.8	<0.001	0.05	0.18	0.7	<0.2	1.2	26.7	0.01	0.02	<0.2
L5300N 7675E		0.91	5.8	1950	6.5	23.2	<0.001	0.06	0.46	2.5	0.2	0.6	32.8	<0.01	0.05	0.9
L5300N 7700E		0.72	4.0	1340	6.2	12.0	<0.001	0.04	0.19	1.8	0.3	0.6	21.4	<0.01	0.08	0.6
L5300N 7725E		0.90	4.6	1890	8.8	16.0	<0.001	0.02	0.24	2.5	0.3	0.6	16.9	<0.01	0.03	0.7
L5300N 7750E		0.79	4.1	1320	6.8	15.5	<0.001	0.03	0.20	1.7	0.3	0.6	17.6	<0.01	0.03	0.4
L5300N 7775E		0.47	2.4	580	5.5	7.4	<0.001	0.02	0.21	0.6	0.2	0.7	15.1	<0.01	0.03	<0.2
L5300N 7800E		0.41	1.5	310	5.2	7.0	<0.001	0.01	0.15	0.7	<0.2	0.8	16.9	<0.01	0.02	<0.2
L5300N 7825E		0.64	3.3	880	6.5	12.8	<0.001	0.02	0.23	2.7	<0.2	0.7	33.1	<0.01	0.03	0.4
L5300N 7850E		0.71	3.2	590	7.5	6.6	<0.001	0.02	0.21	0.9	0.2	0.8	14.8	<0.01	0.02	<0.2
L5300N 7875E		1.22	8.2	3590	8.3	20.9	<0.001	0.10	0.53	9.2	0.6	0.8	51.3	0.01	0.03	2.4
L5300N 7900E		0.65	3.6	1320	4.9	13.2	<0.001	0.02	0.33	2.8	<0.2	0.5	28.5	<0.01	0.08	0.5
L5300N 7925E		0.60	3.5	1100	5.3	19.5	<0.001	0.02	0.19	2.8	<0.2	0.5	28.2	<0.01	0.03	0.5
L5300N 7950E		1.02	3.2	740	6.1	9.6	<0.001	0.03	0.21	1.7	<0.2	0.6	15.6	<0.01	0.04	0.2
L5300N 7975E		0.78	3.9	750	8.1	22.7	<0.001	0.03	0.19	1.8	<0.2	0.7	44.3	<0.01	0.03	0.2
L5300N 8000E		0.91	4.4	1220	6.4	17.5	<0.001	0.02	0.20	4.1	<0.2	0.6	29.9	<0.01	0.02	1.2
L5300N 8025E		0.38	1.6	410	4.9	12.1	<0.001	0.02	0.12	0.4	<0.2	0.8	17.4	<0.01	0.02	<0.2
L5300N 8050E		0.52	3.7	1030	4.8	14.5	<0.001	0.04	0.15	1.6	<0.2	0.5	27.2	<0.01	0.02	0.2
L5300N 8075E		1.04	5.0	1140	6.8	17.1	<0.001	0.05	0.19	2.0	<0.2	0.7	25.1	<0.01	0.03	0.5
L5300N 8100E		0.58	5.6	1210	5.6	19.6	<0.001	0.06	0.21	2.1	<0.2	0.6	27.1	<0.01	0.04	0.4
L5300N 8125E		0.68	4.2	1090	5.5	17.0	<0.001	0.04	0.20	1.3	<0.2	0.6	23.2	<0.01	0.03	0.2
L5300N 8150E		1.53	4.9	770	8.8	15.9	<0.001	0.03	0.23	1.8	<0.2	0.8	24.4	<0.01	0.03	0.3
L5300N 8175E		0.66	3.6	1890	6.2	8.1	<0.001	0.07	0.26	3.1	0.5	0.4	38.6	<0.01	0.03	1.3
L5300N 8200E		0.32	2.4	1630	3.9	7.8	<0.001	0.05	0.17	1.1	<0.2	0.3	17.2	<0.01	0.03	0.3
L5300N 8225E		0.49	4.5	1680	10.5	17.2	<0.001	0.06	0.25	1.1	<0.2	0.5	27.9	<0.01	0.03	0.2
L5300N 8250E		0.53	3.3	1480	6.0	8.9	<0.001	0.04	0.19	2.3	<0.2	0.5	21.5	<0.01	0.02	0.7
L5300N 8275E		0.34	4.1	1360	4.9	10.6	<0.001	0.06	0.19	1.2	<0.2	0.5	21.1	<0.01	0.02	0.3
L5300N 8300E		0.45	2.8	850	3.4	12.3	<0.001	0.04	0.19	1.0	<0.2	0.5	21.0	<0.01	0.02	0.2
L5300N 8325E		0.54	2.6	710	2.5	7.6	<0.001	0.03	0.14	1.2	<0.2	0.4	15.1	<0.01	0.01	0.2
L5300N 8350E		1.20	4.3	780	6.3	10.3	<0.001	0.02	0.20	3.3	<0.2	0.6	19.0	<0.01	0.02	1.3
L5300N 8375E		1.21	4.2	480	5.2	14.1	<0.001	0.03	0.24	2.4	<0.2	0.7	29.4	<0.01	0.02	0.8
L5300N 8400E		1.34	4.6	610	5.2	11.7	<0.001	0.02	0.32	3.7	<0.2	0.5	23.0	<0.01	0.01	4.0
L5300N 8425E		0.12	8.0	550	43.0	33.1	0.037	2.07	5.70	4.9	2.8	1.1	47.5	<0.01	0.29	11.3
L5400N 6000E		0.32	5.7	2050	9.3	9.9	<0.001	0.15	0.38	0.6	0.4	0.4	39.9	<0.01	0.08	<0.2
L5400N 6100E		0.50	7.9	2460	13.5	12.5	<0.001	0.09	0.29	4.0	1.1	0.5	49.4	<0.01	0.09	0.7
L5400N 6200E		0.33	5.0	2030	7.1	12.8	<0.001	0.06	0.20	2.5	0.2	0.5	39.0	<0.01	0.04	0.5
L5400N 6225E		0.61	4.9	1950	5.7	10.2	<0.001	0.04	0.19	2.8	0.2	0.5	34.8	<0.01	0.04	1.0
L5400N 6250E		0.48	4.6	2120	7.7	11.2	<0.001	0.05	0.20	4.7	0.4	0.4	37.2	<0.01	0.06	2.0
L5400N 6275E		0.23	6.5	2980	9.6	11.5	<0.001	0.03	0.24	8.2	0.3	0.4	86.4	<0.01	0.04	1.6
L5400N 6300E		0.42	7.2	2840	11.8	12.5	<0.001	0.04	0.26	7.3	0.4	0.5	56.9	<0.01	0.05	1.7
L5400N 6325E		0.48	6.1	2610	9.9	10.1	<0.001	0.03	0.22	9.4	0.3	0.5	57.9	0.01	0.04	2.1

***** See Appendix Page for comments regarding this certificate *****

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www.alsglobal.com/geochemistry

To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5300N 7650E		0.011	0.08	2.04	74	0.87	3.93	49	<0.5
L5300N 7675E		0.009	0.05	12.10	96	2.90	11.60	57	0.5
L5300N 7700E		0.012	0.07	1.91	74	1.64	10.45	41	<0.5
L5300N 7725E		0.011	0.06	1.10	120	0.93	4.06	56	<0.5
L5300N 7750E		0.008	0.06	1.07	84	0.65	4.14	44	<0.5
L5300N 7775E		0.016	0.05	0.59	88	1.02	1.86	19	<0.5
L5300N 7800E		0.030	0.03	0.57	85	0.62	2.25	15	<0.5
L5300N 7825E		0.019	0.03	4.51	112	4.03	12.15	81	<0.5
L5300N 7850E		0.029	0.04	0.78	103	0.85	1.91	26	<0.5
L5300N 7875E		0.092	0.05	29.1	151	3.00	59.7	102	<0.5
L5300N 7900E		0.049	0.02	1.57	116	1.11	7.46	54	<0.5
L5300N 7925E		0.029	0.02	2.40	95	1.18	9.04	48	<0.5
L5300N 7950E		0.036	0.02	0.91	137	1.29	3.29	37	<0.5
L5300N 7975E		0.020	0.04	3.82	98	3.00	8.35	54	<0.5
L5300N 8000E		0.036	0.03	2.76	101	1.54	10.95	96	<0.5
L5300N 8025E		0.018	0.04	0.41	37	0.90	1.47	13	<0.5
L5300N 8050E		0.019	0.03	1.32	86	0.89	6.05	60	<0.5
L5300N 8075E		0.020	0.04	1.95	100	4.16	6.01	91	<0.5
L5300N 8100E		0.024	0.03	1.94	99	1.17	7.66	63	<0.5
L5300N 8125E		0.020	0.03	1.45	99	0.79	5.07	67	<0.5
L5300N 8150E		0.029	0.05	1.26	120	0.84	3.91	79	<0.5
L5300N 8175E		0.021	0.03	20.4	101	3.84	14.70	60	0.6
L5300N 8200E		0.024	0.02	1.97	86	0.71	7.91	34	<0.5
L5300N 8225E		0.018	0.04	1.94	99	0.96	7.27	58	<0.5
L5300N 8250E		0.025	0.02	1.14	102	1.48	7.46	52	<0.5
L5300N 8275E		0.019	0.02	1.34	125	1.07	6.30	56	<0.5
L5300N 8300E		0.025	0.02	0.74	107	1.29	2.93	37	<0.5
L5300N 8325E		0.024	<0.02	0.66	71	1.19	3.98	31	<0.5
L5300N 8350E		0.032	0.03	0.82	93	1.46	4.62	55	<0.5
L5300N 8375E		0.027	0.03	1.27	122	1.12	5.30	64	<0.5
L5300N 8400E		0.036	0.02	3.30	131	1.39	9.03	68	1.4
L5300N 8425E		0.043	0.35	5.25	41	3.68	8.70	288	3.3
L5400N 6000E		0.015	0.06	2.07	84	0.34	5.28	47	<0.5
L5400N 6100E		0.017	0.05	2.26	103	0.37	15.70	73	<0.5
L5400N 6200E		0.011	0.05	1.15	102	0.29	7.13	61	<0.5
L5400N 6225E		0.010	0.05	0.95	95	0.26	5.66	59	0.7
L5400N 6250E		0.006	0.03	1.25	111	0.34	9.66	57	0.8
L5400N 6275E		0.016	0.03	1.80	122	0.34	18.10	83	<0.5
L5400N 6300E		0.016	0.05	1.58	111	0.33	14.80	84	<0.5
L5400N 6325E		0.014	0.05	1.95	114	0.31	19.40	78	0.7

***** See Appendix Page for comments regarding this certificate *****

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SURREY BC V3Z 6R3

Finalized Date: 30-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201527

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	HOM-01	LOG-22	LOG-23
ME-MS41	SCR-41	WEI-21	

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Finalized Date: 29-OCT-2020
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CERTIFICATE VA20201528

Project: Cathedral

P.O. No.: P71-28AUG20-1-C

This report is for 216 Soil samples submitted to our lab in Vancouver, BC, Canada on 11-SEP-2020.

The following have access to data associated with this certificate:

CHRIS NAAS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
LOG-23	Pulp Login - Rcvd with Barcode
SCR-41	Screen to -180um and save both
HOM-01	Homogenize by light pulverizing

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5400N 6350E		0.50	0.027	0.10	2.54	8.4	<0.02	<10	300	0.74	0.12	0.44	0.13	37.2	24.9	3
L5400N 6375E		0.46	0.016	0.07	2.70	7.3	<0.02	<10	210	0.50	0.15	0.25	0.09	22.4	16.9	6
L5400N 6400E		0.42	0.058	0.14	2.97	15.4	0.02	<10	170	0.69	0.19	0.26	0.20	29.2	30.5	5
L5400N 6425E		0.42	0.016	0.06	2.88	9.4	<0.02	<10	150	0.56	0.12	0.37	0.08	22.0	20.1	3
L5400N 6450E		0.46	0.045	0.30	3.04	31.8	0.07	<10	140	0.59	0.48	0.24	0.10	21.5	32.2	6
L5400N 6475E		0.40	0.021	0.20	2.69	8.9	<0.02	<10	200	0.51	0.18	0.20	0.10	13.45	15.2	5
L5400N 6500E		0.08	0.008	0.10	0.51	1.1	<0.02	<10	90	0.08	0.09	0.07	0.05	5.88	1.4	3
L5400N 6525E		0.32	0.023	0.36	1.50	5.7	<0.02	<10	120	0.21	0.20	0.12	0.05	8.50	9.2	4
L5400N 6550E		0.38	0.049	0.12	1.57	9.1	<0.02	<10	190	0.56	0.25	0.16	0.06	18.00	30.3	4
L5400N 6575E		0.36	0.012	0.17	1.14	4.4	0.02	<10	160	0.28	0.25	0.11	0.11	9.74	23.5	4
L5400N 6600E		0.50	0.013	0.09	2.44	8.7	<0.02	<10	170	0.66	0.39	0.11	0.09	15.50	81.4	6
L5400N 6625E		0.26	0.011	0.28	2.41	28.2	<0.02	<10	80	0.27	0.83	0.06	0.16	20.9	11.0	7
L5400N 6650E		0.28	0.015	0.09	2.03	3.5	<0.02	<10	150	0.21	0.19	0.14	0.04	12.20	14.1	4
L5400N 6675E		0.30	0.021	0.06	2.08	7.0	<0.02	<10	170	0.19	0.19	0.14	0.04	13.95	46.7	3
L5400N 6700E		0.46	0.038	0.17	2.23	20.8	0.11	<10	100	0.61	0.39	0.39	0.11	36.0	81.5	4
L5400N 6725E		0.34	0.025	0.21	2.26	8.8	<0.02	<10	100	0.49	0.10	0.42	0.09	22.9	11.6	3
L5400N 6750E		0.30	0.009	0.24	2.31	3.8	<0.02	<10	260	0.88	0.15	0.38	0.07	15.70	7.4	4
L5400N 6775E		0.32	0.005	0.14	1.87	6.2	<0.02	<10	110	0.39	0.09	0.15	0.15	14.40	12.3	3
L5400N 6800E		0.36	0.007	0.52	2.44	4.5	<0.02	<10	130	0.33	0.11	0.14	0.05	12.25	3.2	3
L5400N 6825E		0.30	0.009	0.36	2.50	6.8	<0.02	<10	200	0.65	0.17	0.26	0.09	17.10	8.4	6
L5400N 6850E		0.40	0.012	0.21	2.52	16.5	<0.02	<10	220	0.71	0.15	0.22	0.16	23.7	29.7	4
L5400N 6875E		0.36	0.016	0.07	1.44	7.6	<0.02	<10	100	0.24	0.12	0.10	0.06	10.85	10.2	2
L5400N 6900E		0.34	0.028	0.15	2.41	21.5	<0.02	<10	350	0.99	0.18	0.70	0.10	38.5	28.1	3
L5400N 6925E		0.42	0.011	0.15	2.53	9.5	0.02	<10	180	0.67	0.16	0.20	0.11	23.1	11.5	4
L5400N 6950E		0.40	0.015	0.12	2.11	12.1	<0.02	<10	360	0.53	0.11	0.73	0.14	16.80	10.7	3
L5400N 6975E		0.38	0.012	0.09	2.73	5.6	<0.02	<10	200	0.62	0.10	0.28	0.08	27.7	10.4	4
L5400N 7000E		0.32	0.019	0.31	2.19	6.7	<0.02	<10	90	0.29	0.14	0.07	0.05	11.80	4.5	3
L5400N 7025E		0.36	0.015	0.33	2.86	5.5	<0.02	<10	230	0.70	0.14	0.22	0.06	17.70	8.1	4
L5400N 7050E		0.34	0.016	0.20	2.64	6.4	<0.02	<10	80	0.60	0.14	0.36	0.11	24.2	12.5	3
L5400N 7075E		0.34	0.018	0.47	2.50	6.5	<0.02	<10	110	0.74	0.15	0.12	0.11	18.50	7.9	5
L5400N 7100E		0.34	0.013	0.18	2.89	8.0	<0.02	<10	230	0.68	0.15	0.29	0.07	21.7	10.5	5
L5400N 7125E		0.22	0.010	0.14	2.81	7.0	<0.02	<10	420	0.79	0.17	0.54	0.12	30.7	16.1	7
L5400N 7150E		0.16	0.010	0.22	2.25	5.0	0.05	<10	560	0.36	0.12	0.58	0.14	12.95	5.4	4
L5400N 7175E		0.36	0.012	0.44	2.80	4.9	<0.02	<10	150	0.83	0.16	0.20	0.06	32.3	8.7	7
L5400N 7200E		0.22	0.008	0.41	3.18	5.1	<0.02	<10	430	1.02	0.18	0.46	0.09	27.3	10.9	7
L5400N 7225E		0.20	0.015	0.56	2.61	6.0	<0.02	<10	710	1.36	0.15	0.91	0.27	51.1	19.1	5
L5400N 7250E		0.46	0.013	0.14	2.63	5.7	<0.02	<10	280	1.46	0.15	0.48	0.09	51.5	17.0	4
L5400N 7275E		0.38	0.017	0.41	2.58	7.5	<0.02	<10	100	0.56	0.13	0.17	0.08	18.05	10.2	4
L5400N 7300E		0.34	0.015	0.32	2.46	9.2	<0.02	<10	130	0.68	0.14	0.15	0.14	15.00	14.5	4
L5400N 7325E		0.28	0.019	0.59	2.16	3.9	<0.02	<10	80	0.29	0.14	0.08	0.11	10.25	5.8	5

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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5400N 6350E		2.70	335	5.49	7.64	0.06	0.02	0.02	0.037	0.07	12.7	12.1	0.74	1420	2.52	<0.01
L5400N 6375E		3.07	187.0	4.76	8.75	<0.05	0.02	0.02	0.038	0.07	9.4	11.3	0.61	1340	2.32	0.01
L5400N 6400E		2.56	293	5.67	10.05	0.05	<0.02	0.03	0.040	0.06	10.2	17.5	0.77	1400	4.24	<0.01
L5400N 6425E		2.18	218	5.78	8.85	<0.05	0.02	0.03	0.034	0.04	9.2	16.3	0.79	670	2.61	<0.01
L5400N 6450E		2.53	321	6.38	10.10	<0.05	0.02	0.02	0.043	0.05	9.3	19.2	0.82	892	5.29	<0.01
L5400N 6475E		2.29	158.5	4.84	9.66	<0.05	<0.02	0.04	0.030	0.05	6.3	13.8	0.61	866	3.48	<0.01
L5400N 6500E		0.60	12.9	0.48	1.77	<0.05	<0.02	0.05	0.008	0.05	2.9	0.7	0.05	42	0.73	0.01
L5400N 6525E		0.94	46.9	3.12	8.98	<0.05	<0.02	0.03	0.020	0.06	4.4	5.3	0.24	1140	1.61	<0.01
L5400N 6550E		1.43	136.5	4.15	8.33	<0.05	<0.02	0.08	0.029	0.08	8.8	8.6	0.33	1840	2.32	<0.01
L5400N 6575E		1.92	51.9	2.44	6.15	<0.05	<0.02	0.07	0.016	0.09	4.5	3.7	0.17	3090	2.12	<0.01
L5400N 6600E		2.94	342	4.64	9.53	<0.05	<0.02	0.06	0.036	0.07	6.8	22.5	0.42	1740	7.77	<0.01
L5400N 6625E		1.55	275	8.42	14.65	<0.05	<0.02	0.07	0.035	0.04	11.7	6.6	0.31	216	34.0	<0.01
L5400N 6650E		0.98	55.7	3.19	10.40	<0.05	<0.02	0.02	0.014	0.04	6.3	4.8	0.32	331	10.60	<0.01
L5400N 6675E		2.27	47.3	2.21	8.82	<0.05	<0.02	0.01	0.015	0.05	7.2	3.7	0.22	1060	10.45	<0.01
L5400N 6700E		2.21	475	6.79	7.06	<0.05	0.03	0.04	0.032	0.06	12.7	13.8	0.72	1120	7.10	<0.01
L5400N 6725E		1.41	160.5	5.11	5.57	<0.05	0.02	0.06	0.040	0.04	10.9	17.8	0.54	313	12.30	<0.01
L5400N 6750E		1.73	328	3.11	7.38	<0.05	0.02	0.05	0.028	0.05	17.6	18.2	0.24	321	32.6	<0.01
L5400N 6775E		1.44	113.5	5.20	5.86	<0.05	<0.02	0.07	0.032	0.05	6.6	6.9	0.27	695	4.10	<0.01
L5400N 6800E		1.71	90.6	2.07	7.57	<0.05	<0.02	0.05	0.022	0.04	8.4	11.0	0.19	95	5.28	<0.01
L5400N 6825E		2.84	215	3.68	8.32	<0.05	0.02	0.05	0.032	0.07	14.8	14.2	0.38	494	12.55	<0.01
L5400N 6850E		3.11	306	6.20	6.67	<0.05	0.03	0.05	0.047	0.07	9.5	22.4	0.47	1400	4.39	<0.01
L5400N 6875E		1.80	72.7	4.46	7.70	<0.05	<0.02	0.05	0.029	0.05	5.2	2.0	0.19	359	2.43	<0.01
L5400N 6900E		2.80	386	6.61	7.32	0.06	0.07	0.05	0.031	0.07	31.7	19.4	0.74	818	19.75	<0.01
L5400N 6925E		3.79	220	4.45	8.17	<0.05	0.02	0.05	0.038	0.06	16.8	16.8	0.38	489	16.00	<0.01
L5400N 6950E		2.08	185.0	4.00	6.97	<0.05	0.02	0.03	0.035	0.04	10.2	17.6	0.54	365	14.80	<0.01
L5400N 6975E		2.47	105.0	4.59	7.51	<0.05	0.07	0.03	0.035	0.05	14.8	16.5	0.42	503	24.8	<0.01
L5400N 7000E		1.98	77.8	3.90	7.26	<0.05	<0.02	0.03	0.027	0.06	6.3	7.4	0.32	110	2.36	<0.01
L5400N 7025E		2.18	198.0	3.77	7.95	<0.05	0.04	0.04	0.044	0.06	9.6	18.0	0.46	280	5.51	<0.01
L5400N 7050E		2.43	200	4.21	7.97	<0.05	<0.02	0.03	0.040	0.07	12.3	16.7	0.74	296	2.92	<0.01
L5400N 7075E		2.29	172.0	3.94	7.15	<0.05	0.02	0.07	0.034	0.07	9.7	12.8	0.51	208	2.28	<0.01
L5400N 7100E		2.48	165.0	4.40	7.89	<0.05	0.05	0.05	0.040	0.05	12.2	14.9	0.50	462	8.74	<0.01
L5400N 7125E		2.13	267	4.53	7.96	0.05	0.11	0.05	0.038	0.05	24.0	16.5	0.48	1380	18.25	<0.01
L5400N 7150E		1.77	74.8	3.26	7.81	<0.05	0.02	0.03	0.026	0.05	8.8	8.4	0.34	463	22.3	<0.01
L5400N 7175E		2.51	204	3.58	8.04	<0.05	0.04	0.06	0.041	0.06	15.9	14.8	0.47	240	3.35	<0.01
L5400N 7200E		1.98	244	3.82	8.84	<0.05	0.03	0.06	0.040	0.06	15.8	13.0	0.42	393	8.80	<0.01
L5400N 7225E		2.94	244	4.92	7.10	0.08	0.12	0.07	0.039	0.05	41.6	15.8	0.44	1900	20.0	0.01
L5400N 7250E		3.00	168.5	4.41	7.92	0.08	0.04	0.04	0.036	0.06	34.8	19.0	0.57	1140	10.60	<0.01
L5400N 7275E		2.21	205	4.11	7.33	<0.05	<0.02	0.06	0.036	0.07	8.4	13.4	0.60	376	2.37	<0.01
L5400N 7300E		2.19	213	4.89	8.32	<0.05	<0.02	0.05	0.041	0.08	7.6	13.0	0.73	502	3.15	<0.01
L5400N 7325E		1.84	127.0	3.03	7.81	<0.05	<0.02	0.05	0.024	0.06	5.4	8.6	0.34	230	2.14	<0.01

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5400N 6350E		0.43	6.7	2790	8.5	10.3	<0.001	0.02	0.27	6.0	0.4	0.5	91.4	<0.01	0.04	2.1
L5400N 6375E		0.84	6.5	2770	8.8	14.4	0.001	0.03	0.24	3.0	0.2	0.7	65.9	<0.01	0.03	0.6
L5400N 6400E		0.93	7.4	2300	15.0	14.3	<0.001	0.03	0.29	4.4	0.3	0.8	47.6	<0.01	0.05	1.2
L5400N 6425E		0.69	5.3	2710	9.8	11.6	0.001	0.02	0.29	4.2	0.3	0.6	50.0	<0.01	0.04	2.2
L5400N 6450E		0.97	8.3	2380	17.6	11.2	<0.001	0.03	0.43	3.3	0.4	0.8	35.7	<0.01	0.11	0.9
L5400N 6475E		0.40	5.1	1480	7.6	12.7	<0.001	0.06	0.29	1.0	0.3	0.6	36.9	<0.01	0.05	0.2
L5400N 6500E		0.16	1.8	980	5.8	4.0	<0.001	0.06	0.11	0.1	0.3	0.4	21.5	<0.01	0.01	<0.2
L5400N 6525E		0.57	2.9	860	7.5	13.2	<0.001	0.03	0.22	1.1	0.2	0.8	25.2	<0.01	0.04	<0.2
L5400N 6550E		0.49	3.6	1180	12.6	19.3	<0.001	0.07	0.26	1.4	0.3	0.8	26.0	<0.01	0.07	0.3
L5400N 6575E		0.26	2.8	1290	10.0	32.6	<0.001	0.10	0.20	0.3	0.2	0.7	25.9	<0.01	0.04	<0.2
L5400N 6600E		0.50	4.6	1580	14.2	38.9	<0.001	0.07	0.20	1.3	0.2	0.8	23.4	<0.01	0.08	0.2
L5400N 6625E		3.28	4.2	1070	7.5	7.4	<0.001	0.10	0.35	1.2	0.6	1.4	11.0	0.01	0.36	0.2
L5400N 6650E		0.50	2.4	500	5.9	7.6	<0.001	0.03	0.16	1.6	<0.2	0.9	16.6	<0.01	0.04	0.2
L5400N 6675E		0.20	1.8	900	6.8	13.0	<0.001	0.03	0.10	0.6	<0.2	0.7	16.3	<0.01	0.04	<0.2
L5400N 6700E		0.71	7.1	2860	10.9	10.8	<0.001	0.06	0.32	2.9	0.3	0.5	19.9	0.01	0.19	1.1
L5400N 6725E		0.72	3.5	2180	6.2	7.3	<0.001	0.05	0.31	2.7	0.2	0.4	24.1	<0.01	0.04	1.4
L5400N 6750E		1.05	2.3	1480	4.8	17.2	<0.001	0.08	0.16	1.4	<0.2	0.7	57.8	<0.01	0.03	0.4
L5400N 6775E		0.42	2.8	1670	6.2	10.0	<0.001	0.08	0.22	1.5	<0.2	0.4	12.3	<0.01	0.02	0.5
L5400N 6800E		0.37	1.7	1240	4.5	9.2	<0.001	0.09	0.11	0.3	0.2	0.5	15.3	<0.01	0.02	<0.2
L5400N 6825E		1.08	3.5	1540	5.8	19.5	<0.001	0.09	0.15	1.6	0.3	0.7	26.2	<0.01	0.02	0.6
L5400N 6850E		0.63	4.4	2360	9.0	13.5	<0.001	0.08	0.27	3.1	0.5	0.4	17.5	<0.01	0.06	1.2
L5400N 6875E		0.39	2.5	1610	7.6	10.3	<0.001	0.08	0.21	1.5	<0.2	0.5	10.5	<0.01	0.03	0.3
L5400N 6900E		0.34	4.0	2120	11.3	13.0	<0.001	0.05	0.25	6.0	0.6	0.4	43.8	<0.01	0.05	3.0
L5400N 6925E		0.55	3.4	2060	6.4	17.7	<0.001	0.09	0.25	2.5	0.3	0.6	20.0	<0.01	0.04	0.6
L5400N 6950E		0.48	3.8	1860	5.3	6.7	<0.001	0.06	0.15	1.7	0.3	0.5	37.8	<0.01	0.03	0.5
L5400N 6975E		0.63	2.7	1920	3.4	8.8	<0.001	0.05	0.12	3.6	0.2	0.6	17.5	<0.01	0.02	2.5
L5400N 7000E		0.49	1.9	1190	7.0	16.8	<0.001	0.03	0.16	1.1	<0.2	0.6	14.9	<0.01	0.03	0.4
L5400N 7025E		0.67	3.4	1490	5.2	13.5	<0.001	0.05	0.13	2.2	0.2	0.7	20.0	<0.01	0.02	1.1
L5400N 7050E		0.71	4.6	1920	7.9	12.7	<0.001	0.03	0.25	2.9	<0.2	0.6	23.0	<0.01	0.03	1.0
L5400N 7075E		0.68	3.9	1180	6.0	17.2	<0.001	0.04	0.18	2.3	0.2	0.6	20.3	<0.01	0.03	0.7
L5400N 7100E		0.68	3.7	1730	5.8	8.8	<0.001	0.08	0.18	2.8	0.2	0.6	24.6	<0.01	0.03	1.4
L5400N 7125E		0.71	4.7	3040	5.4	8.4	<0.001	0.11	0.20	4.4	0.2	0.6	36.5	0.01	0.03	2.0
L5400N 7150E		0.72	2.6	1830	4.5	6.8	<0.001	0.10	0.14	0.9	<0.2	0.6	38.6	<0.01	0.02	0.2
L5400N 7175E		1.32	4.9	1880	6.3	14.5	<0.001	0.05	0.16	2.4	0.2	0.8	19.9	0.01	0.02	0.6
L5400N 7200E		0.83	4.4	1970	7.3	6.9	<0.001	0.11	0.17	1.3	0.4	0.7	40.2	<0.01	0.03	0.4
L5400N 7225E		0.66	4.1	3780	8.1	8.0	<0.001	0.15	0.18	6.3	0.4	0.5	62.0	0.01	0.03	2.0
L5400N 7250E		0.55	4.1	2400	4.5	11.5	<0.001	0.07	0.17	3.7	<0.2	0.6	30.3	0.01	0.03	0.8
L5400N 7275E		0.42	4.1	1360	6.5	12.9	<0.001	0.05	0.20	1.4	0.2	0.6	19.7	<0.01	0.03	0.3
L5400N 7300E		0.48	4.6	1080	6.9	15.0	<0.001	0.05	0.24	1.8	0.3	0.6	22.0	<0.01	0.04	0.3
L5400N 7325E		0.71	3.0	1190	5.5	13.3	<0.001	0.05	0.17	0.7	0.2	0.7	17.7	<0.01	0.03	0.2

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5400N 6350E		0.016	0.04	1.34	135	0.36	13.90	65	<0.5
L5400N 6375E		0.015	0.06	1.19	107	0.31	8.25	69	0.5
L5400N 6400E		0.018	0.06	1.34	123	0.52	10.05	101	<0.5
L5400N 6425E		0.012	0.04	1.10	132	0.33	8.75	63	0.6
L5400N 6450E		0.021	0.05	1.32	139	0.54	8.22	70	0.5
L5400N 6475E		0.012	0.05	1.35	115	0.41	4.85	68	<0.5
L5400N 6500E		<0.005	0.02	0.41	13	0.10	0.94	9	<0.5
L5400N 6525E		0.033	0.05	0.55	95	0.39	2.12	31	<0.5
L5400N 6550E		0.025	0.06	1.53	84	0.45	7.31	45	<0.5
L5400N 6575E		0.014	0.07	0.81	55	0.29	2.24	32	<0.5
L5400N 6600E		0.019	0.08	1.33	93	0.48	4.36	88	<0.5
L5400N 6625E		0.019	0.06	2.08	81	0.64	4.79	26	<0.5
L5400N 6650E		0.018	0.03	0.65	109	0.37	2.76	25	<0.5
L5400N 6675E		0.005	0.07	0.82	77	0.38	2.87	21	<0.5
L5400N 6700E		0.022	0.03	2.01	110	0.69	12.85	52	0.5
L5400N 6725E		0.010	0.03	1.68	102	0.66	9.93	53	0.6
L5400N 6750E		0.005	0.06	16.60	80	1.17	13.90	41	<0.5
L5400N 6775E		0.007	0.03	1.28	91	0.34	5.99	50	<0.5
L5400N 6800E		<0.005	0.07	1.91	79	0.30	4.99	22	<0.5
L5400N 6825E		0.007	0.07	5.19	85	0.49	12.50	48	0.5
L5400N 6850E		0.007	0.04	4.03	108	0.43	10.25	87	0.7
L5400N 6875E		0.006	0.05	0.90	112	0.52	3.87	57	<0.5
L5400N 6900E		0.007	0.07	22.1	92	1.27	27.7	61	1.5
L5400N 6925E		0.008	0.07	19.30	99	0.61	15.30	67	<0.5
L5400N 6950E		0.009	0.05	12.75	89	0.40	10.45	56	<0.5
L5400N 6975E		0.006	0.10	7.23	81	0.36	12.25	62	1.7
L5400N 7000E		0.005	0.06	0.77	94	0.38	3.26	32	<0.5
L5400N 7025E		0.005	0.08	1.70	84	0.45	9.07	60	0.8
L5400N 7050E		0.013	0.05	1.30	94	0.61	10.25	60	<0.5
L5400N 7075E		0.008	0.06	1.60	79	0.43	8.88	51	0.5
L5400N 7100E		0.007	0.10	6.09	90	0.47	11.15	47	1.1
L5400N 7125E		0.009	0.14	16.00	82	0.53	26.6	42	2.5
L5400N 7150E		0.005	0.08	3.45	80	0.39	6.34	44	<0.5
L5400N 7175E		0.008	0.10	3.24	75	0.39	12.40	52	0.9
L5400N 7200E		<0.005	0.07	7.58	86	0.41	13.10	35	<0.5
L5400N 7225E		0.008	0.09	43.9	88	0.42	56.5	52	2.5
L5400N 7250E		0.011	0.08	10.05	89	0.42	38.9	50	0.7
L5400N 7275E		0.010	0.06	1.27	87	0.42	7.27	47	<0.5
L5400N 7300E		0.012	0.05	1.44	99	0.44	13.75	67	<0.5
L5400N 7325E		0.007	0.05	0.74	70	0.37	2.50	35	<0.5

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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5400N 7350E		0.30	0.013	0.31	1.88	5.0	0.05	<10	80	0.27	0.15	0.10	0.08	9.41	7.5	3
L5400N 7375E		0.36	0.028	0.15	1.53	11.7	<0.02	<10	40	0.28	0.13	0.22	0.07	11.80	13.0	3
L5400N 7400E		0.36	0.020	0.25	2.48	8.9	0.04	<10	110	0.62	0.16	0.22	0.11	19.20	10.0	5
L5400N 7425E		0.34	0.012	0.64	1.89	1.8	<0.02	<10	80	0.19	0.21	0.07	0.03	11.85	1.9	4
L5400N 7450E		0.34	0.016	0.38	2.13	5.6	<0.02	<10	70	0.33	0.13	0.14	0.06	10.25	11.4	2
L5400N 7475E		0.34	0.008	0.34	2.35	9.0	<0.02	<10	70	0.33	0.15	0.14	0.12	11.10	11.5	4
L5400N 7500E		0.18	0.010	0.87	1.74	2.2	<0.02	<10	60	0.15	0.14	0.07	0.06	9.68	2.1	4
L5400N 7525E		0.20	0.007	1.02	2.44	11.0	<0.02	<10	80	0.43	0.14	0.09	0.06	13.55	6.1	5
L5400N 7550E		0.18	0.011	0.78	2.05	4.8	<0.02	<10	150	0.42	0.16	0.32	0.13	14.25	14.7	5
L5400N 7575E		0.14	0.009	0.45	2.89	107.5	0.02	<10	690	1.56	0.17	0.95	1.13	48.1	39.4	5
L5400N 7600E		0.14	0.010	0.20	2.75	65.5	<0.02	<10	680	1.14	0.17	0.95	0.32	29.9	20.9	5
L5400N 7625E		0.12	0.011	0.36	3.40	75.5	<0.02	<10	460	1.39	0.17	0.84	0.41	35.8	44.5	6
L5400N 7650E		0.20	0.008	0.33	2.11	10.0	<0.02	<10	150	0.42	0.19	0.44	0.11	17.05	7.6	4
L5400N 7675E		0.22	0.007	0.28	2.17	19.1	<0.02	<10	50	0.22	0.21	0.11	0.13	10.90	7.5	6
L5400N 7700E		0.28	0.026	0.37	2.36	18.6	<0.02	<10	110	0.35	0.24	0.26	0.05	12.70	5.7	5
L5400N 7725E		0.24	0.026	0.10	3.14	79.0	0.02	<10	260	0.98	0.20	0.64	0.03	36.8	12.5	6
L5400N 7750E		0.24	0.012	0.13	2.94	51.4	<0.02	<10	320	0.58	0.19	0.81	0.10	18.05	12.4	6
L5400N 7775E		0.24	0.013	0.22	2.12	9.5	<0.02	<10	160	0.25	0.15	0.30	0.05	11.75	5.1	5
L5400N 7800E		0.26	0.015	0.18	1.98	11.4	<0.02	<10	150	0.30	0.18	0.23	0.08	12.15	8.1	5
L5400N 7825E		0.34	0.010	0.26	2.77	13.8	<0.02	<10	240	0.59	0.19	0.55	0.11	17.10	10.4	8
L5400N 7850E		0.26	0.028	0.15	1.99	16.3	0.09	<10	150	0.48	0.15	0.72	0.11	20.6	9.3	8
L5400N 7875E		0.36	0.023	0.08	2.04	11.2	0.02	<10	140	0.29	0.18	0.48	0.08	13.35	9.0	5
L5400N 7900E		0.34	0.022	0.10	1.44	14.2	0.02	<10	90	0.27	0.11	0.31	0.08	10.90	8.0	2
L5400N 7925E		0.36	0.015	0.33	2.15	15.9	<0.02	<10	200	0.68	0.14	0.79	0.19	22.7	14.4	4
L5400N 7950E		0.36	0.020	0.11	1.84	13.2	0.02	<10	120	0.33	0.17	0.49	0.09	9.57	13.5	3
L5400N 7975E		0.30	0.011	0.26	2.56	15.1	<0.02	<10	160	0.65	0.17	0.84	0.12	18.70	56.5	5
L5400N 8000E		0.30	0.014	0.10	1.63	8.8	<0.02	<10	100	0.30	0.10	0.62	0.09	12.65	10.5	4
L5400N 8025E		0.34	0.005	0.13	2.50	22.4	<0.02	<10	160	0.90	0.34	0.76	0.27	42.3	84.9	11
L5400N 8050E		0.28	0.014	0.17	1.53	7.5	0.03	<10	120	0.27	0.15	0.39	0.07	10.65	17.6	4
L5400N 8075E		0.30	0.019	0.07	1.77	7.3	<0.02	<10	100	0.32	0.17	0.32	0.13	10.35	11.0	3
L5400N 8100E		0.18	0.110	0.24	3.72	25.2	<0.02	<10	140	1.78	0.26	0.93	0.32	43.4	29.2	12
L5400N 8125E		0.26	0.031	0.08	1.69	7.8	0.03	<10	110	0.33	0.18	0.65	0.15	15.50	19.8	6
L5400N 8150E		0.24	0.047	0.10	2.14	18.7	0.02	<10	140	0.54	0.22	0.79	0.23	25.8	45.1	7
L5400N 8175E		0.34	0.042	0.12	2.08	9.5	0.02	<10	110	0.44	0.16	0.42	0.07	17.45	17.9	4
L5400N 8200E		0.26	0.039	0.10	0.85	5.8	0.05	<10	90	0.13	0.18	0.16	0.07	12.05	9.2	4
L5400N 8225E		0.38	0.022	0.05	1.64	5.3	<0.02	<10	100	0.31	0.12	0.64	0.10	9.17	10.7	5
L5400N 8250E		0.36	0.009	0.07	1.26	7.2	<0.02	<10	70	0.41	0.13	0.49	0.10	10.00	6.6	4
L5400N 8275E		0.32	0.015	0.15	0.90	1.6	<0.02	<10	60	0.21	0.08	0.20	0.08	7.63	2.0	3
L5400N 8300E		0.32	0.036	0.07	1.02	6.7	0.04	<10	50	0.19	0.12	0.11	0.04	7.73	4.9	4
L5400N 8325E		0.32	0.053	0.07	1.45	6.9	0.04	<10	70	0.35	0.11	0.20	0.05	12.35	8.3	5

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5400N 7350E		1.74	77.2	2.67	8.78	<0.05	<0.02	0.06	0.026	0.05	5.0	11.1	0.34	231	1.78	<0.01
L5400N 7375E		1.44	97.1	5.20	6.83	<0.05	<0.02	0.03	0.023	0.04	5.6	8.7	0.41	379	2.66	<0.01
L5400N 7400E		2.31	157.5	4.07	7.89	<0.05	<0.02	0.04	0.030	0.05	11.2	13.7	0.55	303	2.30	<0.01
L5400N 7425E		1.87	31.3	0.93	8.76	<0.05	<0.02	0.03	0.017	0.04	6.3	4.1	0.13	98	0.94	<0.01
L5400N 7450E		2.29	121.5	3.43	8.44	<0.05	<0.02	0.04	0.024	0.05	5.5	11.4	0.60	379	2.05	<0.01
L5400N 7475E		1.82	113.0	4.92	9.55	<0.05	<0.02	0.05	0.031	0.04	5.4	12.7	0.51	345	3.46	<0.01
L5400N 7500E		1.47	48.5	1.44	7.38	<0.05	<0.02	0.07	0.018	0.05	5.2	2.9	0.12	61	1.08	<0.01
L5400N 7525E		2.15	118.5	2.11	7.37	<0.05	<0.02	0.06	0.028	0.05	7.4	7.8	0.33	245	2.14	<0.01
L5400N 7550E		2.68	74.8	3.14	7.97	<0.05	<0.02	0.06	0.029	0.07	7.0	9.5	0.33	993	7.80	<0.01
L5400N 7575E		7.07	298	5.75	7.02	0.10	0.10	0.09	0.041	0.09	44.0	22.4	0.41	5090	20.1	0.01
L5400N 7600E		6.59	309	5.88	7.81	0.08	0.10	0.08	0.045	0.08	32.9	26.0	0.48	1770	18.30	<0.01
L5400N 7625E		13.30	509	5.73	7.91	0.12	0.09	0.09	0.053	0.14	39.5	17.5	0.55	4000	21.1	0.01
L5400N 7650E		3.06	84.4	2.43	8.82	<0.05	<0.02	0.03	0.021	0.06	11.5	10.1	0.33	279	8.36	<0.01
L5400N 7675E		1.72	61.3	4.52	11.90	<0.05	<0.02	0.05	0.025	0.05	5.8	6.1	0.33	232	3.14	<0.01
L5400N 7700E		2.40	81.2	2.62	9.28	<0.05	<0.02	0.05	0.023	0.05	7.6	11.8	0.35	251	9.79	<0.01
L5400N 7725E		5.84	384	4.07	9.58	0.07	0.08	0.09	0.048	0.08	32.4	26.6	0.64	284	10.40	0.01
L5400N 7750E		5.98	253	3.42	9.94	<0.05	0.04	0.04	0.043	0.12	13.3	28.3	0.64	427	8.67	<0.01
L5400N 7775E		2.36	61.6	2.46	9.20	<0.05	<0.02	0.03	0.020	0.05	6.8	14.0	0.36	168	10.40	<0.01
L5400N 7800E		1.57	91.7	3.19	9.04	<0.05	<0.02	0.02	0.022	0.06	6.3	9.1	0.32	365	9.78	<0.01
L5400N 7825E		3.66	297	3.72	9.55	<0.05	0.02	0.04	0.035	0.05	12.6	28.1	0.60	326	11.25	<0.01
L5400N 7850E		2.11	204	3.71	7.81	<0.05	<0.02	0.03	0.031	0.05	12.3	21.1	0.52	344	13.80	0.01
L5400N 7875E		1.66	89.4	3.20	9.20	<0.05	<0.02	0.02	0.022	0.04	7.4	15.5	0.45	370	7.61	0.01
L5400N 7900E		1.04	98.7	4.47	7.53	<0.05	<0.02	0.03	0.021	0.04	4.9	6.6	0.38	237	3.72	0.01
L5400N 7925E		3.26	260	3.84	7.43	<0.05	<0.02	0.06	0.033	0.08	14.3	22.4	0.49	551	3.71	0.01
L5400N 7950E		1.36	87.5	4.91	9.83	<0.05	<0.02	0.02	0.026	0.04	5.1	12.2	0.36	233	8.67	0.01
L5400N 7975E		2.91	243	5.15	9.45	<0.05	<0.02	0.04	0.040	0.08	12.0	16.9	0.50	1120	14.35	0.01
L5400N 8000E		2.18	121.0	3.49	6.25	<0.05	0.02	0.03	0.022	0.04	7.5	19.2	0.50	386	4.75	<0.01
L5400N 8025E		3.57	238	6.88	11.95	<0.05	<0.02	0.04	0.075	0.08	15.4	19.1	0.44	2100	9.76	0.01
L5400N 8050E		1.94	101.0	3.44	7.01	<0.05	<0.02	0.02	0.021	0.05	5.6	11.0	0.39	536	3.29	<0.01
L5400N 8075E		1.91	101.5	3.48	8.89	<0.05	<0.02	0.03	0.023	0.05	5.4	9.9	0.39	220	3.31	0.01
L5400N 8100E		3.25	159.0	7.51	9.97	<0.05	0.02	0.06	0.074	0.06	15.4	20.1	0.39	3230	8.71	0.01
L5400N 8125E		1.80	84.3	3.63	7.42	<0.05	<0.02	0.02	0.027	0.05	6.2	20.4	0.28	1320	4.31	<0.01
L5400N 8150E		2.90	136.5	4.87	8.20	<0.05	0.02	0.04	0.046	0.05	8.0	24.2	0.50	1920	3.77	<0.01
L5400N 8175E		2.63	176.5	3.97	8.33	<0.05	<0.02	0.02	0.027	0.06	8.6	18.8	0.64	404	2.61	0.01
L5400N 8200E		0.87	44.2	3.16	8.25	<0.05	<0.02	0.02	0.011	0.05	6.3	1.0	0.05	128	3.51	<0.01
L5400N 8225E		1.41	65.4	3.29	7.90	<0.05	<0.02	0.02	0.021	0.04	4.9	16.0	0.37	476	3.67	0.01
L5400N 8250E		1.39	54.7	2.89	8.55	<0.05	<0.02	0.02	0.017	0.03	5.2	11.4	0.26	171	3.35	<0.01
L5400N 8275E		0.62	17.8	1.25	5.55	<0.05	<0.02	0.03	0.008	0.03	4.0	2.9	0.09	61	1.14	<0.01
L5400N 8300E		0.65	40.0	3.12	9.19	<0.05	<0.02	0.02	0.013	0.03	3.7	3.1	0.13	109	2.16	<0.01
L5400N 8325E		1.13	93.6	3.41	7.42	<0.05	<0.02	0.02	0.017	0.03	5.4	15.3	0.42	291	1.65	<0.01

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
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Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5400N 7350E		0.40	2.8	1050	6.3	11.6	<0.001	0.03	0.16	0.6	<0.2	0.6	21.3	<0.01	0.02	<0.2
L5400N 7375E		0.41	3.1	1780	4.9	8.6	<0.001	0.03	0.19	1.0	0.3	0.4	13.9	<0.01	0.04	0.2
L5400N 7400E		0.76	4.3	1330	6.1	14.5	<0.001	0.03	0.20	2.1	0.2	0.5	22.3	<0.01	0.03	0.4
L5400N 7425E		0.38	1.6	550	6.5	9.8	<0.001	0.03	0.09	0.2	<0.2	0.9	19.6	<0.01	<0.01	<0.2
L5400N 7450E		0.41	3.3	940	3.6	16.5	<0.001	0.03	0.17	1.3	<0.2	0.6	19.2	<0.01	0.03	0.2
L5400N 7475E		0.71	3.2	1390	6.6	9.6	<0.001	0.04	0.20	1.3	0.3	0.6	17.4	<0.01	0.04	0.2
L5400N 7500E		0.34	1.6	1210	5.7	8.0	<0.001	0.06	0.11	0.2	0.2	0.6	19.3	<0.01	0.01	<0.2
L5400N 7525E		0.75	3.2	1320	4.7	10.8	<0.001	0.08	0.15	0.2	0.3	0.6	17.8	<0.01	0.02	<0.2
L5400N 7550E		0.32	3.3	1310	8.8	22.2	<0.001	0.09	0.15	0.3	0.3	0.6	28.1	<0.01	0.02	<0.2
L5400N 7575E		0.52	5.9	4260	11.2	25.1	0.001	0.19	0.25	6.6	0.6	0.4	57.7	0.01	0.03	2.0
L5400N 7600E		0.76	5.4	2980	9.7	17.5	<0.001	0.15	0.22	7.6	0.6	0.5	62.6	0.01	0.03	2.2
L5400N 7625E		0.45	6.2	3600	13.2	29.0	0.001	0.18	0.39	9.2	0.6	0.5	46.0	0.01	0.04	2.6
L5400N 7650E		0.54	2.7	1140	6.8	19.0	<0.001	0.07	0.15	0.5	0.2	0.7	31.6	<0.01	0.01	<0.2
L5400N 7675E		1.00	3.5	1010	8.2	9.8	<0.001	0.04	0.22	1.6	0.4	0.8	15.2	<0.01	0.02	0.2
L5400N 7700E		0.75	3.4	1010	6.7	12.2	<0.001	0.06	0.19	0.6	<0.2	0.7	23.5	<0.01	0.02	<0.2
L5400N 7725E		1.16	5.4	1660	12.1	13.6	<0.001	0.05	0.55	6.7	0.6	0.6	36.7	<0.01	0.02	2.6
L5400N 7750E		0.88	6.5	2410	8.5	29.3	<0.001	0.10	0.35	3.8	0.2	0.7	47.7	<0.01	0.01	1.2
L5400N 7775E		0.72	3.2	950	6.3	12.2	<0.001	0.04	0.16	0.9	<0.2	0.7	23.6	<0.01	0.02	<0.2
L5400N 7800E		0.63	3.3	730	5.7	13.6	<0.001	0.03	0.18	1.0	<0.2	0.7	21.6	<0.01	0.02	<0.2
L5400N 7825E		1.34	6.6	1170	7.2	15.6	<0.001	0.03	0.20	3.2	<0.2	0.8	36.0	<0.01	0.03	1.0
L5400N 7850E		1.03	6.1	1810	5.8	12.6	<0.001	0.03	0.17	2.2	<0.2	0.6	35.0	<0.01	0.02	0.5
L5400N 7875E		0.93	3.7	670	6.4	11.3	<0.001	0.02	0.15	2.7	<0.2	0.7	28.5	<0.01	0.02	1.1
L5400N 7900E		0.54	2.6	650	5.6	7.9	<0.001	0.03	0.20	1.5	<0.2	0.5	19.9	<0.01	0.02	0.2
L5400N 7925E		0.60	4.2	1470	7.0	16.3	<0.001	0.05	0.25	2.5	0.2	0.5	38.7	<0.01	0.02	0.5
L5400N 7950E		0.91	2.9	640	5.7	10.3	<0.001	0.03	0.20	2.1	<0.2	0.7	25.3	<0.01	0.04	0.3
L5400N 7975E		1.55	4.5	970	14.2	17.7	<0.001	0.04	0.23	3.2	0.2	0.7	34.1	<0.01	0.03	0.9
L5400N 8000E		0.65	3.9	950	4.3	15.8	<0.001	0.02	0.16	3.2	<0.2	0.4	26.4	<0.01	0.02	1.0
L5400N 8025E		3.17	7.9	1370	25.4	20.7	<0.001	0.07	0.38	3.0	0.2	1.4	37.9	0.01	0.05	1.0
L5400N 8050E		0.49	3.7	790	5.8	16.2	<0.001	0.02	0.17	1.3	<0.2	0.6	22.9	<0.01	0.03	<0.2
L5400N 8075E		0.40	3.3	770	8.2	10.0	<0.001	0.03	0.22	0.9	0.2	0.7	21.6	<0.01	0.03	<0.2
L5400N 8100E		2.36	8.1	2000	15.6	14.0	<0.001	0.10	0.58	2.0	0.3	0.9	43.0	0.01	0.04	0.9
L5400N 8125E		0.72	3.9	820	8.8	17.0	<0.001	0.04	0.28	1.9	<0.2	0.6	35.5	<0.01	0.03	0.5
L5400N 8150E		0.67	6.3	1570	15.2	18.7	<0.001	0.07	0.42	2.4	0.2	0.6	46.9	0.01	0.03	0.7
L5400N 8175E		0.98	4.6	1220	5.3	16.5	<0.001	0.02	0.18	2.7	<0.2	0.6	27.6	<0.01	0.03	0.6
L5400N 8200E		0.95	2.2	370	5.0	12.0	<0.001	0.02	0.25	1.1	<0.2	1.2	20.1	<0.01	0.03	0.3
L5400N 8225E		0.58	3.6	740	5.0	12.7	<0.001	0.03	0.19	1.6	<0.2	0.6	28.8	<0.01	0.02	0.3
L5400N 8250E		0.82	4.0	620	6.0	11.8	<0.001	0.03	0.42	1.5	0.2	0.7	23.8	<0.01	0.02	0.3
L5400N 8275E		0.22	1.7	450	3.6	7.5	0.001	0.02	0.14	0.3	<0.2	0.5	15.5	<0.01	0.01	<0.2
L5400N 8300E		0.45	2.3	610	3.8	4.8	<0.001	0.02	0.18	1.0	<0.2	0.7	12.6	<0.01	0.02	<0.2
L5400N 8325E		0.68	4.3	920	4.1	6.0	<0.001	0.02	0.17	1.4	<0.2	0.6	14.2	<0.01	0.02	0.2

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Finalized Date: 29-OCT-2020
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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5400N 7350E		0.009	0.05	0.68	71	0.43	2.86	35	<0.5
L5400N 7375E		0.020	0.03	0.78	137	0.84	5.14	31	<0.5
L5400N 7400E		0.016	0.04	1.15	92	0.49	9.32	48	<0.5
L5400N 7425E		0.006	0.06	0.53	39	0.17	1.91	14	<0.5
L5400N 7450E		0.014	0.04	0.94	75	0.67	4.10	44	<0.5
L5400N 7475E		0.015	0.04	0.90	113	0.49	3.82	40	<0.5
L5400N 7500E		<0.005	0.06	0.89	37	0.30	1.79	13	<0.5
L5400N 7525E		<0.005	0.06	1.70	51	0.39	3.74	29	<0.5
L5400N 7550E		0.005	0.10	1.40	69	0.38	3.91	32	<0.5
L5400N 7575E		0.010	0.13	36.7	84	1.50	60.3	137	2.0
L5400N 7600E		0.010	0.08	31.4	82	1.36	49.6	99	1.9
L5400N 7625E		0.013	0.10	42.2	98	3.89	60.3	98	1.5
L5400N 7650E		0.008	0.07	3.51	76	0.62	7.02	31	<0.5
L5400N 7675E		0.025	0.05	1.06	137	0.79	2.65	32	<0.5
L5400N 7700E		0.011	0.07	3.48	88	1.29	4.07	33	<0.5
L5400N 7725E		0.019	0.08	85.7	101	1.66	34.9	60	1.8
L5400N 7750E		0.015	0.07	14.05	78	1.57	13.05	60	0.8
L5400N 7775E		0.011	0.05	1.64	83	0.68	4.23	35	<0.5
L5400N 7800E		0.016	0.04	1.16	91	0.83	3.21	42	<0.5
L5400N 7825E		0.019	0.05	6.83	89	1.12	10.20	86	0.5
L5400N 7850E		0.025	0.04	4.85	114	7.92	10.55	53	<0.5
L5400N 7875E		0.029	0.03	1.44	96	0.83	4.78	54	<0.5
L5400N 7900E		0.040	0.02	0.73	124	0.77	4.01	32	<0.5
L5400N 7925E		0.021	0.03	3.84	84	1.16	13.70	77	<0.5
L5400N 7950E		0.030	0.02	0.87	133	0.97	3.50	53	<0.5
L5400N 7975E		0.032	0.04	2.19	114	1.06	8.38	81	<0.5
L5400N 8000E		0.025	0.02	1.84	76	0.76	6.97	78	<0.5
L5400N 8025E		0.038	0.05	5.15	114	1.15	14.55	92	<0.5
L5400N 8050E		0.024	0.03	0.90	92	0.81	3.57	63	<0.5
L5400N 8075E		0.024	0.04	0.83	92	1.03	3.46	41	<0.5
L5400N 8100E		0.030	0.07	6.94	155	1.49	16.95	108	<0.5
L5400N 8125E		0.018	0.04	2.59	108	0.92	3.79	87	<0.5
L5400N 8150E		0.020	0.04	3.40	120	1.44	8.66	112	<0.5
L5400N 8175E		0.028	0.03	1.11	90	1.20	7.32	70	<0.5
L5400N 8200E		0.049	0.02	0.61	126	0.97	2.04	19	<0.5
L5400N 8225E		0.021	0.02	1.06	100	1.27	3.44	70	<0.5
L5400N 8250E		0.027	0.02	0.92	97	1.75	3.13	45	<0.5
L5400N 8275E		0.013	0.03	0.52	49	1.03	1.65	15	<0.5
L5400N 8300E		0.028	0.02	0.48	113	1.06	1.77	18	<0.5
L5400N 8325E		0.030	0.02	0.62	89	1.06	4.11	49	<0.5

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5400N 8350E		0.26	0.047	0.10	1.25	6.5	<0.02	<10	80	0.48	0.09	0.24	0.06	12.15	8.4	3
L5400N 8375E		0.34	0.007	0.11	1.38	10.9	<0.02	<10	130	0.50	0.11	0.76	0.18	23.0	11.0	6
L5400N 8400E		0.28	0.101	0.41	2.82	30.4	0.03	<10	420	0.98	0.30	0.45	0.17	46.2	40.6	5
L5400N 8425E		0.06	0.257	2.94	1.18	25.0	0.23	<10	70	0.39	3.46	0.92	1.96	38.8	18.1	62
L5500N 6125E		0.58	0.281	0.15	1.41	12.8	<0.02	<10	60	0.38	0.16	1.07	0.10	13.95	8.8	5
L5500N 6150E		0.32	0.139	0.45	3.24	61.7	0.17	<10	260	1.02	0.35	0.65	0.31	53.2	74.8	6
L5500N 6175E		0.52	0.825	2.22	2.49	232	0.92	<10	160	0.60	0.91	0.26	0.17	37.5	70.7	5
L5500N 6200E		0.44	0.207	0.49	2.53	70.9	0.09	<10	230	0.72	0.51	0.56	0.23	30.5	56.7	5
L5500N 6225E		0.36	0.097	0.30	2.29	28.8	0.13	<10	280	0.72	0.33	0.39	0.09	34.4	28.9	4
L5500N 6250E		0.40	0.043	0.36	2.58	22.4	0.06	<10	290	0.77	0.32	0.25	0.21	27.9	50.1	7
L5500N 6275E		0.52	0.190	1.03	2.59	88.2	0.14	<10	320	0.55	0.63	0.29	0.14	35.4	39.9	5
L5500N 6300E		0.46	0.047	0.41	2.38	25.9	0.03	<10	230	0.69	0.36	0.29	0.15	40.8	48.8	9
L5500N 6350E		0.42	0.025	0.38	2.51	21.6	0.06	<10	150	0.68	0.14	0.52	0.17	29.0	24.5	4
L5500N 6375E		0.48	0.026	0.17	2.75	15.6	0.02	<10	320	1.25	0.15	0.47	0.40	45.1	42.0	4
L5500N 6400E		0.40	0.015	0.13	2.30	15.4	0.02	<10	180	0.53	0.17	0.23	0.21	17.05	20.7	5
L5500N 6425E		0.28	0.015	0.22	2.63	8.7	0.04	<10	140	0.44	0.13	0.09	0.25	12.75	13.5	4
L5500N 6450E		0.28	0.040	0.11	2.99	16.6	0.02	<10	200	0.86	0.14	0.45	0.06	36.5	19.5	5
L5500N 6475E		0.30	0.019	0.16	2.96	14.8	<0.02	<10	360	0.78	0.14	0.56	0.07	22.8	12.6	5
L5500N 6500E		0.30	0.024	0.23	2.84	10.9	<0.02	<10	190	0.68	0.12	0.43	0.16	28.0	15.0	4
L5500N 6525E		0.34	0.022	0.13	2.57	10.7	<0.02	<10	300	0.68	0.09	0.63	0.06	32.0	12.3	3
L5500N 6550E		0.28	0.023	0.12	2.62	14.7	0.02	<10	130	0.71	0.15	0.50	0.13	30.9	17.2	5
L5500N 6575E		0.42	0.034	0.17	2.71	22.3	0.02	<10	70	0.46	0.20	0.31	0.11	19.25	18.6	3
L5500N 6600E		0.22	0.060	0.44	2.48	15.2	0.04	<10	70	0.38	0.21	0.13	0.09	15.25	15.2	5
L5500N 6625E		0.32	0.052	0.20	2.27	20.4	<0.02	<10	100	0.37	0.50	0.08	0.21	10.35	20.1	4
L5500N 6650E		0.34	0.026	0.06	2.15	15.8	<0.02	<10	180	0.71	0.23	0.38	0.15	24.9	53.5	3
L5500N 6675E		0.34	0.047	0.32	1.90	16.4	<0.02	<10	260	0.63	0.41	0.14	0.31	22.0	40.6	4
L5500N 6700E		0.36	0.566	0.08	1.91	25.8	0.04	<10	160	0.48	0.31	0.16	0.16	11.55	19.4	4
L5500N 6725E		0.54	0.023	1.18	1.22	20.6	<0.02	<10	350	0.75	0.20	1.42	0.50	20.4	51.7	5
L5500N 6750E		0.38	0.080	0.16	1.34	10.9	0.06	<10	160	0.32	0.29	0.13	0.06	14.30	14.3	4
L5500N 6775E		0.46	0.138	0.24	2.01	14.7	0.02	<10	670	1.07	0.20	0.62	0.12	48.1	53.5	2
L5500N 6800E		0.36	0.028	0.10	2.03	19.3	0.02	<10	290	0.83	0.20	0.47	0.12	42.1	44.3	3
L5500N 6825E		0.38	0.035	0.08	2.13	15.5	<0.02	<10	390	0.88	0.24	0.17	0.06	28.5	41.1	3
L5500N 6850E		0.42	0.018	0.13	2.39	12.5	0.17	<10	500	1.41	0.18	0.46	0.12	46.7	40.8	3
L5500N 6875E		0.48	0.015	0.08	1.88	32.5	<0.02	<10	480	1.24	0.18	0.58	0.11	46.9	30.2	5
L5500N 6900E		0.44	0.022	0.15	1.98	26.4	<0.02	<10	660	1.31	0.20	0.65	0.16	57.6	33.3	3
L5500N 6925E		0.46	0.030	0.12	2.28	36.6	0.03	<10	540	1.42	0.21	0.72	0.18	60.7	35.1	3
L5500N 6950E		0.48	0.013	0.21	2.15	65.8	<0.02	<10	460	1.45	0.33	0.55	0.23	62.9	38.4	5
L5500N 6975E		0.32	0.023	0.11	2.06	16.4	<0.02	<10	270	0.70	0.18	0.42	0.18	18.40	23.5	5
L5500N 7000E		0.34	0.010	0.18	2.47	22.7	0.02	<10	180	1.58	0.23	0.35	0.07	47.1	27.4	2
L5500N 7025E		0.36	0.015	0.13	1.44	11.7	<0.02	<10	150	0.38	0.39	0.11	0.03	13.75	13.7	3

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Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5400N 8350E		1.69	80.3	3.69	5.79	<0.05	<0.02	0.02	0.017	0.04	5.2	10.7	0.26	341	2.50	<0.01
L5400N 8375E		1.80	72.6	3.65	5.75	<0.05	0.02	0.04	0.022	0.04	10.3	21.2	0.41	949	1.58	<0.01
L5400N 8400E		5.11	767	6.76	10.05	0.06	0.02	0.04	0.061	0.09	19.0	29.1	1.01	1700	7.02	<0.01
L5400N 8425E		1.96	2670	3.32	3.60	0.05	0.12	0.07	0.088	0.51	21.3	5.9	0.62	202	202	0.03
L5500N 6125E		1.20	63.6	4.53	6.76	<0.05	<0.02	0.03	0.030	0.03	4.9	30.2	0.25	203	2.69	<0.01
L5500N 6150E		6.47	1190	6.63	9.33	0.06	0.03	0.09	0.068	0.05	33.9	32.7	0.59	1720	19.15	<0.01
L5500N 6175E		4.64	1990	10.25	9.52	0.06	<0.02	0.07	0.251	0.06	17.6	20.0	0.59	814	52.5	<0.01
L5500N 6200E		4.70	766	6.69	8.28	<0.05	<0.02	0.08	0.058	0.06	13.1	23.9	0.62	1060	17.20	<0.01
L5500N 6225E		3.16	865	6.30	7.42	<0.05	0.02	0.04	0.043	0.08	15.0	17.4	0.71	604	8.48	<0.01
L5500N 6250E		3.71	640	5.40	8.58	<0.05	<0.02	0.05	0.043	0.06	11.7	20.5	0.56	1250	8.30	<0.01
L5500N 6275E		2.49	1430	10.15	9.40	<0.05	0.03	0.07	0.111	0.09	18.1	19.2	0.53	530	31.2	0.01
L5500N 6300E		3.80	771	5.37	7.49	<0.05	0.02	0.07	0.053	0.09	16.9	18.4	0.64	1320	5.83	<0.01
L5500N 6350E		3.56	472	5.50	7.10	<0.05	0.02	0.09	0.041	0.06	13.7	19.5	0.77	898	2.71	<0.01
L5500N 6375E		3.62	795	7.14	6.38	0.05	0.04	0.06	0.042	0.08	15.8	19.2	0.83	1890	21.9	<0.01
L5500N 6400E		3.00	285	5.16	8.49	<0.05	<0.02	0.05	0.035	0.06	7.3	15.6	0.48	1760	9.85	<0.01
L5500N 6425E		1.76	146.0	4.67	7.97	<0.05	0.02	0.06	0.033	0.04	5.6	12.3	0.43	632	3.77	<0.01
L5500N 6450E		3.14	638	5.17	8.38	0.05	0.09	0.08	0.035	0.05	23.4	24.2	0.90	518	42.8	<0.01
L5500N 6475E		2.49	299	5.10	8.52	<0.05	<0.02	0.07	0.042	0.05	13.6	19.8	0.72	450	21.5	<0.01
L5500N 6500E		1.82	271	4.82	7.89	<0.05	0.04	0.11	0.035	0.04	10.8	21.1	0.67	343	16.85	<0.01
L5500N 6525E		1.88	324	4.60	7.41	<0.05	0.04	0.12	0.031	0.04	13.9	19.5	0.75	413	8.92	<0.01
L5500N 6550E		2.38	244	5.27	7.73	<0.05	0.02	0.11	0.037	0.05	13.1	20.4	0.78	889	12.50	<0.01
L5500N 6575E		1.59	284	5.36	7.02	<0.05	0.03	0.06	0.040	0.03	8.5	20.1	0.63	472	2.73	<0.01
L5500N 6600E		1.77	191.5	4.83	9.06	<0.05	<0.02	0.06	0.033	0.04	6.4	11.8	0.38	373	3.25	<0.01
L5500N 6625E		1.41	300	5.63	8.34	<0.05	<0.02	0.05	0.035	0.04	5.0	15.0	0.31	378	11.45	<0.01
L5500N 6650E		2.57	836	5.40	7.33	0.05	<0.02	0.04	0.034	0.05	20.1	21.9	0.52	723	9.86	0.01
L5500N 6675E		1.93	191.0	5.30	9.07	<0.05	<0.02	0.05	0.028	0.08	8.0	10.7	0.25	2770	4.69	<0.01
L5500N 6700E		3.91	375	6.07	7.98	<0.05	<0.02	0.04	0.034	0.05	5.7	27.3	0.34	287	16.35	<0.01
L5500N 6725E		4.15	986	4.80	4.92	0.10	0.03	0.11	0.021	0.06	54.6	15.5	0.41	700	6.48	<0.01
L5500N 6750E		2.06	110.5	2.93	7.35	<0.05	<0.02	0.03	0.018	0.06	7.4	3.3	0.14	1420	3.88	<0.01
L5500N 6775E		1.80	312	7.64	6.70	0.06	0.06	0.03	0.024	0.15	22.5	22.9	0.91	1340	3.28	<0.01
L5500N 6800E		1.74	443	6.30	6.82	<0.05	0.02	0.03	0.032	0.09	15.9	17.8	0.70	1080	3.31	<0.01
L5500N 6825E		1.83	173.5	7.57	7.20	<0.05	0.02	0.03	0.028	0.14	11.9	17.3	0.61	2270	3.82	<0.01
L5500N 6850E		1.60	267	7.33	8.90	0.06	0.04	0.02	0.039	0.12	16.5	33.4	1.03	1930	5.02	<0.01
L5500N 6875E		1.99	300	5.95	7.52	0.07	0.05	0.01	0.031	0.14	15.9	28.9	0.87	1400	4.03	<0.01
L5500N 6900E		2.43	400	6.21	8.02	0.09	0.04	0.02	0.032	0.14	26.5	28.6	0.94	1620	3.75	<0.01
L5500N 6925E		2.41	416	6.51	8.72	0.09	0.06	0.02	0.040	0.14	25.9	32.1	1.04	1680	3.41	<0.01
L5500N 6950E		2.33	449	6.24	8.16	0.09	0.04	0.04	0.041	0.12	27.5	27.7	0.90	1820	4.29	<0.01
L5500N 6975E		2.46	260	4.52	8.57	<0.05	<0.02	0.03	0.039	0.06	7.6	32.7	0.48	1000	12.80	<0.01
L5500N 7000E		1.44	436	7.59	9.04	0.05	0.02	0.03	0.064	0.07	13.3	26.0	0.89	971	3.31	<0.01
L5500N 7025E		1.41	188.0	4.42	8.92	<0.05	<0.02	0.04	0.070	0.05	5.3	5.5	0.26	1320	2.90	<0.01

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	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5400N 8350E		0.46	2.3	630	3.1	13.3	<0.001	0.03	0.17	1.3	<0.2	0.5	15.9	<0.01	0.01	0.2
L5400N 8375E		0.99	4.5	1280	4.6	11.3	<0.001	0.04	0.29	3.4	<0.2	0.5	24.6	0.01	0.01	1.6
L5400N 8400E		0.52	7.2	2680	22.6	16.5	<0.001	0.03	0.49	8.5	0.3	0.6	75.7	<0.01	0.15	2.7
L5400N 8425E		0.12	8.5	560	44.9	33.6	0.038	2.05	5.94	4.9	2.9	1.1	45.9	<0.01	0.31	11.3
L5500N 6125E		1.24	3.3	610	6.7	7.7	<0.001	0.05	0.28	2.3	0.2	0.6	30.9	<0.01	0.03	1.0
L5500N 6150E		0.56	8.4	2360	15.1	13.0	0.001	0.17	0.71	2.9	1.0	0.5	75.5	0.01	0.21	0.7
L5500N 6175E		0.55	8.1	2620	39.5	16.5	0.002	0.19	0.98	4.6	1.6	0.6	46.4	0.01	0.64	0.7
L5500N 6200E		0.42	6.9	2110	19.1	12.8	0.001	0.20	0.50	1.9	0.8	0.5	60.5	<0.01	0.35	0.3
L5500N 6225E		0.55	6.3	3800	13.7	12.7	<0.001	0.09	0.41	4.1	0.4	0.5	47.2	<0.01	0.17	1.1
L5500N 6250E		0.65	8.0	1690	15.3	15.0	<0.001	0.11	0.41	2.0	0.4	0.5	48.7	<0.01	0.13	0.4
L5500N 6275E		0.62	8.2	4070	21.2	11.0	0.001	0.20	0.90	4.0	1.4	0.7	32.1	<0.01	0.40	1.7
L5500N 6300E		0.63	9.9	2330	17.3	15.4	<0.001	0.09	0.49	4.8	0.8	0.6	50.7	<0.01	0.13	1.1
L5500N 6350E		0.46	5.9	2380	9.8	9.2	<0.001	0.02	0.91	5.2	0.2	0.4	30.2	<0.01	0.07	1.8
L5500N 6375E		0.45	7.5	2660	12.5	11.0	<0.001	0.03	0.36	8.5	0.4	0.4	59.3	<0.01	0.06	3.5
L5500N 6400E		0.39	5.0	2270	9.7	19.8	<0.001	0.08	0.34	1.3	0.5	0.5	42.2	<0.01	0.05	0.3
L5500N 6425E		0.66	4.1	1530	7.3	9.9	<0.001	0.07	0.29	1.1	0.4	0.5	37.8	<0.01	0.04	0.4
L5500N 6450E		0.83	6.0	2010	8.8	8.8	<0.001	0.04	0.44	6.9	0.7	0.6	40.7	<0.01	0.05	2.8
L5500N 6475E		1.14	4.8	1700	9.9	7.2	<0.001	0.05	0.47	2.4	0.5	0.7	42.6	<0.01	0.04	0.5
L5500N 6500E		0.69	5.2	1970	9.0	5.2	0.001	0.06	0.35	3.6	0.5	0.5	38.2	<0.01	0.04	1.3
L5500N 6525E		0.93	4.5	2070	6.9	5.4	<0.001	0.03	0.32	5.4	0.4	0.5	31.6	<0.01	0.03	2.4
L5500N 6550E		0.89	5.8	2270	8.0	7.6	<0.001	0.05	0.35	3.3	0.5	0.5	28.0	<0.01	0.04	0.9
L5500N 6575E		0.82	3.8	1860	9.6	5.4	<0.001	0.04	0.35	2.4	0.3	0.5	17.9	<0.01	0.06	1.0
L5500N 6600E		1.24	3.7	1310	8.0	8.5	<0.001	0.04	0.29	2.0	0.4	0.8	19.5	<0.01	0.08	0.5
L5500N 6625E		1.06	3.3	920	8.2	8.7	<0.001	0.06	0.29	1.4	0.2	0.7	20.3	<0.01	0.18	0.3
L5500N 6650E		0.50	4.1	1550	9.1	13.7	<0.001	0.07	0.28	3.1	0.3	0.5	25.3	<0.01	0.06	0.6
L5500N 6675E		0.48	3.5	1430	34.8	26.3	<0.001	0.09	0.27	1.0	0.3	0.8	24.1	<0.01	0.11	0.2
L5500N 6700E		0.89	3.1	890	11.8	9.5	<0.001	0.05	0.32	1.8	0.2	0.6	21.2	<0.01	0.09	0.3
L5500N 6725E		0.45	4.8	1750	26.4	12.8	0.001	0.14	0.52	4.0	4.1	0.4	64.3	0.01	0.10	0.7
L5500N 6750E		0.48	2.9	1420	13.3	17.4	<0.001	0.06	0.27	0.5	0.2	1.0	27.8	<0.01	0.07	<0.2
L5500N 6775E		0.09	6.0	2190	12.2	11.7	<0.001	0.08	0.28	6.2	<0.2	0.3	18.3	<0.01	0.08	4.8
L5500N 6800E		0.38	5.2	2510	14.7	11.3	<0.001	0.03	0.35	4.6	<0.2	0.4	21.2	<0.01	0.07	2.3
L5500N 6825E		0.21	4.8	2050	13.3	19.7	<0.001	0.04	0.33	4.6	<0.2	0.4	15.2	<0.01	0.07	2.7
L5500N 6850E		0.13	7.1	2260	12.6	12.8	<0.001	0.04	0.38	7.9	0.4	0.5	22.5	<0.01	0.07	4.0
L5500N 6875E		0.19	7.6	2120	10.9	12.6	0.001	0.06	0.33	5.9	0.2	0.4	32.0	<0.01	0.05	4.5
L5500N 6900E		0.21	6.6	2220	13.0	11.3	<0.001	0.04	0.38	7.5	0.3	0.4	46.9	<0.01	0.06	6.6
L5500N 6925E		0.28	6.8	2440	12.5	12.7	0.001	0.04	0.36	8.9	<0.2	0.5	52.2	<0.01	0.06	7.0
L5500N 6950E		0.30	7.7	2120	16.4	13.3	0.001	0.06	0.41	8.7	0.3	0.5	60.7	<0.01	0.07	5.4
L5500N 6975E		0.43	4.6	1510	10.4	19.1	<0.001	0.08	0.32	1.3	0.4	0.5	30.9	<0.01	0.04	0.2
L5500N 7000E		0.23	6.1	2230	11.8	10.5	0.001	0.04	0.41	8.6	0.4	1.1	28.7	<0.01	0.04	4.3
L5500N 7025E		0.18	3.3	1390	8.3	11.9	<0.001	0.03	0.31	1.2	0.2	1.0	24.4	<0.01	0.03	0.2

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5400N 8350E		0.023	0.02	1.04	127	1.84	4.02	39	<0.5
L5400N 8375E		0.038	0.02	8.57	97	0.76	10.40	54	0.5
L5400N 8400E		0.041	0.06	2.94	116	0.57	19.65	95	<0.5
L5400N 8425E		0.043	0.34	5.64	41	3.79	8.77	297	3.3
L5500N 6125E		0.037	0.02	1.32	145	0.90	3.67	59	<0.5
L5500N 6150E		0.022	0.04	59.2	116	1.19	23.6	70	<0.5
L5500N 6175E		0.028	0.08	8.81	111	0.77	14.55	66	<0.5
L5500N 6200E		0.024	0.04	8.64	124	0.69	12.15	71	<0.5
L5500N 6225E		0.012	0.05	3.88	104	0.57	12.05	64	<0.5
L5500N 6250E		0.020	0.07	2.53	93	0.54	9.59	66	<0.5
L5500N 6275E		0.036	0.07	4.59	132	0.68	8.25	45	0.6
L5500N 6300E		0.037	0.07	2.46	88	0.54	14.65	67	<0.5
L5500N 6350E		0.020	0.03	3.91	114	0.41	13.40	62	<0.5
L5500N 6375E		0.016	0.04	4.21	125	0.42	16.40	166	0.8
L5500N 6400E		0.009	0.05	3.02	113	0.50	6.54	78	<0.5
L5500N 6425E		0.008	0.04	1.25	101	0.34	4.60	53	<0.5
L5500N 6450E		0.012	0.06	18.35	108	0.55	24.5	66	2.0
L5500N 6475E		0.015	0.04	5.34	102	0.40	15.75	68	<0.5
L5500N 6500E		0.013	0.04	3.46	109	0.33	12.50	82	0.7
L5500N 6525E		0.024	0.04	2.68	101	0.34	13.05	50	0.9
L5500N 6550E		0.020	0.05	2.58	102	0.51	13.70	62	<0.5
L5500N 6575E		0.015	0.03	1.01	118	0.52	8.18	48	0.6
L5500N 6600E		0.019	0.04	1.11	111	0.59	5.03	36	<0.5
L5500N 6625E		0.019	0.04	1.25	105	0.57	3.33	43	<0.5
L5500N 6650E		0.017	0.03	4.66	108	0.49	22.5	79	<0.5
L5500N 6675E		0.020	0.06	1.82	108	0.64	7.70	95	<0.5
L5500N 6700E		0.024	0.02	8.34	123	0.87	4.99	108	<0.5
L5500N 6725E		0.020	0.03	89.5	104	0.64	57.0	103	<0.5
L5500N 6750E		0.011	0.07	1.33	74	0.44	3.58	35	<0.5
L5500N 6775E		0.008	0.04	2.64	89	0.69	22.8	64	1.5
L5500N 6800E		0.016	0.03	1.91	106	0.60	14.80	63	<0.5
L5500N 6825E		0.008	0.05	1.77	96	0.78	8.64	87	<0.5
L5500N 6850E		0.006	0.04	1.86	114	0.60	16.25	77	0.8
L5500N 6875E		0.010	0.04	2.21	88	0.78	15.75	57	1.0
L5500N 6900E		0.017	0.04	2.87	97	0.90	27.2	62	0.9
L5500N 6925E		0.018	0.04	2.95	106	0.90	26.8	71	1.5
L5500N 6950E		0.020	0.05	3.56	99	0.78	28.7	67	0.6
L5500N 6975E		0.017	0.04	3.59	96	0.52	6.98	99	<0.5
L5500N 7000E		0.008	0.02	3.02	115	1.03	15.55	76	<0.5
L5500N 7025E		0.009	0.07	1.12	99	0.73	5.18	41	<0.5

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5500N 7050E		0.40	0.012	0.16	2.43	20.7	<0.02	<10	230	1.24	0.22	0.20	0.08	33.9	27.3	3
L5500N 7075E		0.30	0.022	0.14	1.10	12.1	<0.02	<10	60	0.20	0.24	0.08	0.03	9.47	10.8	4
L5500N 7100E		0.34	0.053	0.14	1.84	33.2	0.03	<10	130	0.47	0.31	0.13	0.06	14.15	34.9	3
L5500N 7125E		0.24	0.029	0.17	1.30	10.2	0.03	<10	90	0.23	0.18	0.05	0.02	8.68	10.9	2
L5500N 7150E		0.26	0.038	0.12	1.17	6.2	0.03	<10	140	0.18	0.18	0.08	0.04	10.00	10.5	3
L5500N 7175E		0.32	0.021	0.30	1.63	11.0	<0.02	<10	150	0.30	0.20	0.36	0.08	12.30	10.8	3
L5500N 7200E		0.30	0.030	0.28	1.98	26.2	<0.02	<10	80	0.29	0.28	0.08	0.09	12.50	14.1	4
L5500N 7225E		0.26	0.050	0.41	1.39	8.9	0.02	<10	60	0.15	0.20	0.09	0.11	8.97	7.7	3
L5500N 7250E		0.34	0.028	0.45	2.01	15.8	0.02	<10	180	0.31	0.18	0.09	0.06	9.93	16.1	4
L5500N 7275E		0.28	0.037	0.25	1.52	6.3	<0.02	<10	60	0.23	0.16	0.08	0.09	9.09	6.9	3
L5500N 7300E		0.42	0.036	0.36	1.23	14.7	0.02	<10	90	0.22	0.13	0.20	0.06	11.35	13.0	3
L5500N 7325E		0.28	0.028	0.10	1.64	16.2	0.04	<10	150	0.32	0.15	0.26	0.08	9.69	11.7	3
L5500N 7350E		0.28	0.014	0.33	3.38	16.4	<0.02	<10	560	1.63	0.17	0.50	0.55	39.7	43.5	5
L5500N 7375E		0.32	0.013	0.53	1.88	7.1	0.13	<10	90	0.30	0.15	0.26	0.08	12.85	8.2	4
L5500N 7400E		0.32	0.028	0.22	1.29	6.2	0.02	<10	100	0.24	0.19	0.12	0.05	11.85	7.8	4
L5500N 7425E		0.32	0.019	0.39	1.93	11.4	<0.02	<10	60	0.26	0.18	0.11	0.07	11.20	9.3	4
L5500N 7450E		0.34	0.015	0.25	1.77	8.4	<0.02	<10	120	0.41	0.14	0.35	0.08	15.10	9.7	4
L5500N 7475E		0.30	0.047	0.17	1.81	20.4	<0.02	<10	70	0.25	0.14	0.21	0.10	11.40	10.7	4
L5500N 7500E		0.30	0.014	0.30	2.09	64.6	<0.02	<10	80	0.64	0.19	0.34	0.08	16.25	10.4	4
L5500N 7525E		0.20	0.026	0.54	1.25	2.0	0.07	<10	60	0.14	0.15	0.07	0.04	9.75	1.1	3
L5500N 7550E		0.32	0.054	0.19	1.59	9.6	0.06	<10	80	0.22	0.20	0.13	0.05	12.15	11.0	3
L5500N 7575E		0.32	0.031	0.36	1.07	1.1	0.02	<10	80	0.08	0.16	0.08	0.02	11.70	1.1	2
L5500N 7600E		0.26	0.015	0.10	3.08	18.7	<0.02	<10	190	1.04	0.26	0.49	0.27	25.1	43.0	14
L5500N 7625E		0.20	0.018	0.34	2.89	19.1	<0.02	<10	210	0.73	0.24	0.16	0.21	18.10	30.0	6
L5500N 7650E		0.30	0.009	0.15	2.49	33.0	<0.02	<10	250	0.69	0.22	0.68	0.19	22.4	37.0	10
L5500N 7675E		0.20	0.016	0.29	3.80	41.7	0.02	<10	220	1.67	0.31	0.73	0.28	20.7	61.7	8
L5500N 7700E		0.32	0.025	0.29	1.28	13.9	0.13	<10	60	0.17	0.18	0.11	0.04	10.50	19.2	4
L5500N 7725E		0.34	0.058	0.14	2.13	16.5	0.02	<10	220	0.54	0.40	0.33	0.17	22.5	19.2	9
L5500N 7750E		0.40	0.042	0.31	2.63	65.1	<0.02	<10	190	0.94	0.23	0.50	0.17	27.1	39.3	8
L5500N 7775E		0.12	0.018	0.27	2.64	167.0	<0.02	<10	150	0.90	0.22	0.90	0.14	23.9	20.9	6
L5500N 7800E		0.24	0.013	0.14	1.39	17.9	0.02	<10	90	0.21	0.10	0.23	0.16	8.12	5.7	2
L5500N 7825E		0.28	0.029	0.32	1.46	17.3	0.07	<10	70	0.17	0.28	0.09	0.06	14.45	11.5	8
L5500N 7850E		0.34	0.085	0.42	2.22	29.1	0.03	<10	250	0.91	0.20	0.63	0.14	22.7	19.8	5
L5500N 7875E		0.22	0.015	0.17	2.04	15.9	<0.02	<10	130	0.93	0.16	0.64	0.18	23.8	12.4	9
L5500N 7900E		0.52	0.017	0.12	1.73	30.8	0.02	<10	70	0.65	0.16	0.51	0.07	19.20	15.3	7
L5500N 7925E		0.38	0.036	0.11	1.54	95.5	<0.02	<10	70	0.65	0.20	0.70	0.07	21.4	17.4	4
L5500N 7950E		0.30	0.013	0.33	2.02	23.9	<0.02	<10	130	0.97	0.23	1.31	0.16	30.9	23.9	8
L5500N 7975E		0.36	0.023	0.19	1.19	7.2	0.04	<10	100	0.32	0.15	0.51	0.07	10.75	5.6	3
L5500N 8000E		0.36	0.018	0.13	1.72	37.9	<0.02	<10	80	0.69	0.19	0.62	0.10	41.2	20.6	9
L5500N 8025E		0.36	0.020	0.14	1.65	22.6	0.04	<10	90	0.56	0.17	0.82	0.11	18.95	17.1	6

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	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5500N 7050E		1.18	316	7.22	9.41	<0.05	0.04	0.02	0.061	0.06	8.8	23.1	0.77	1800	3.54	<0.01
L5500N 7075E		1.16	98.8	3.69	9.63	<0.05	<0.02	0.04	0.028	0.04	4.4	1.9	0.12	192	4.69	<0.01
L5500N 7100E		2.69	360	7.46	9.61	<0.05	<0.02	0.05	0.057	0.05	6.6	13.3	0.45	944	8.30	<0.01
L5500N 7125E		1.38	110.5	3.40	8.43	<0.05	<0.02	0.03	0.021	0.04	4.1	1.7	0.08	406	5.04	<0.01
L5500N 7150E		1.35	44.2	2.30	8.82	<0.05	<0.02	0.02	0.014	0.04	4.8	1.9	0.09	1140	4.54	<0.01
L5500N 7175E		1.56	87.2	3.42	8.77	<0.05	<0.02	0.03	0.026	0.04	6.4	9.9	0.32	215	4.06	<0.01
L5500N 7200E		1.38	126.0	4.63	10.30	<0.05	<0.02	0.04	0.028	0.04	5.9	10.6	0.24	328	3.52	<0.01
L5500N 7225E		0.94	65.7	2.44	8.73	<0.05	<0.02	0.07	0.017	0.03	4.6	3.2	0.14	189	6.42	<0.01
L5500N 7250E		1.25	129.5	4.45	8.34	<0.05	<0.02	0.06	0.032	0.03	4.7	10.9	0.28	298	4.90	<0.01
L5500N 7275E		1.09	80.7	1.97	7.16	<0.05	<0.02	0.06	0.020	0.04	4.7	3.7	0.16	129	3.40	<0.01
L5500N 7300E		1.18	86.7	4.18	7.45	<0.05	<0.02	0.04	0.021	0.03	5.5	6.3	0.30	328	5.04	<0.01
L5500N 7325E		1.21	98.8	4.50	8.62	<0.05	<0.02	0.03	0.027	0.04	4.8	10.2	0.30	626	10.90	<0.01
L5500N 7350E		4.29	1250	5.43	10.50	0.12	0.04	0.04	0.057	0.09	46.9	24.6	0.63	4700	37.1	<0.01
L5500N 7375E		1.81	95.3	2.71	9.10	<0.05	<0.02	0.02	0.022	0.04	6.6	10.6	0.43	226	4.53	<0.01
L5500N 7400E		1.55	41.2	1.94	7.65	<0.05	<0.02	0.01	0.014	0.04	6.2	3.6	0.16	525	3.28	<0.01
L5500N 7425E		1.50	77.6	3.35	10.90	<0.05	<0.02	0.03	0.023	0.03	5.5	6.5	0.32	232	3.02	<0.01
L5500N 7450E		2.78	92.8	2.95	10.25	<0.05	<0.02	0.03	0.025	0.05	7.3	16.1	0.42	558	3.13	<0.01
L5500N 7475E		1.34	113.5	5.35	8.31	<0.05	<0.02	0.07	0.029	0.03	5.2	9.0	0.38	261	4.14	<0.01
L5500N 7500E		2.29	157.0	4.56	9.66	<0.05	<0.02	0.04	0.044	0.05	7.6	15.5	0.42	384	5.28	<0.01
L5500N 7525E		0.89	28.9	0.67	8.61	<0.05	<0.02	0.04	0.015	0.03	4.7	1.9	0.06	39	1.12	<0.01
L5500N 7550E		1.61	59.8	2.36	10.30	<0.05	<0.02	0.02	0.019	0.05	6.0	3.9	0.21	215	3.64	<0.01
L5500N 7575E		0.86	12.1	0.44	8.15	<0.05	<0.02	0.02	0.009	0.03	6.3	1.2	0.05	36	1.12	<0.01
L5500N 7600E		4.10	605	5.53	10.90	0.05	0.02	0.02	0.069	0.08	15.5	30.4	0.73	1280	8.67	<0.01
L5500N 7625E		3.03	622	5.73	11.25	<0.05	<0.02	0.03	0.054	0.07	9.0	34.3	0.59	697	21.3	<0.01
L5500N 7650E		4.50	347	4.91	9.82	<0.05	<0.02	0.15	0.048	0.08	13.0	29.7	0.68	1720	8.92	<0.01
L5500N 7675E		8.06	895	6.35	15.10	0.06	0.02	0.04	0.090	0.10	22.0	34.8	0.77	1120	16.55	0.01
L5500N 7700E		0.78	75.5	4.38	11.05	<0.05	<0.02	0.03	0.023	0.03	5.1	2.7	0.15	112	6.60	<0.01
L5500N 7725E		3.00	285	4.42	13.30	<0.05	<0.02	0.02	0.047	0.06	12.8	21.5	0.50	417	29.5	0.01
L5500N 7750E		5.23	433	4.86	9.07	0.07	<0.02	0.03	0.047	0.08	14.6	25.2	0.70	715	13.00	0.01
L5500N 7775E		8.20	297	4.57	11.50	0.08	0.02	0.06	0.042	0.07	20.3	37.3	0.52	416	7.34	0.01
L5500N 7800E		1.90	41.7	1.55	8.20	<0.05	<0.02	0.03	0.017	0.06	4.8	5.4	0.14	222	6.04	0.01
L5500N 7825E		2.31	106.0	3.11	11.00	<0.05	<0.02	0.04	0.022	0.05	7.5	6.9	0.22	240	22.8	0.01
L5500N 7850E		4.64	278	4.25	7.88	0.07	<0.02	0.08	0.037	0.07	17.1	22.0	0.56	750	13.25	0.01
L5500N 7875E		3.98	157.0	3.47	6.86	0.07	<0.02	0.04	0.033	0.06	18.5	17.3	0.48	1290	9.03	0.01
L5500N 7900E		3.16	169.5	4.21	7.39	0.05	<0.02	0.04	0.031	0.06	11.8	18.5	0.58	469	7.15	0.01
L5500N 7925E		2.60	182.0	4.01	6.55	0.06	0.02	0.03	0.027	0.06	14.5	16.0	0.55	528	5.72	0.01
L5500N 7950E		3.19	243	4.63	8.10	0.08	0.02	0.06	0.040	0.10	23.1	13.2	0.53	934	7.28	0.02
L5500N 7975E		1.71	61.1	2.13	7.10	<0.05	<0.02	0.02	0.016	0.03	6.1	9.5	0.23	165	3.04	0.01
L5500N 8000E		2.96	177.0	4.69	6.76	0.07	0.03	0.04	0.032	0.07	15.3	20.4	0.63	771	5.00	0.01
L5500N 8025E		3.59	127.0	4.12	6.38	0.05	0.02	0.04	0.029	0.06	10.6	14.4	0.52	694	5.46	0.01

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5500N 7050E		0.22	5.2	1920	11.9	10.6	<0.001	0.04	0.38	3.5	0.2	1.0	28.0	<0.01	0.04	1.6
L5500N 7075E		0.34	3.0	860	7.6	11.1	0.001	0.03	0.29	0.9	0.2	0.9	13.3	<0.01	0.05	<0.2
L5500N 7100E		0.59	4.6	2090	13.6	19.0	<0.001	0.03	0.43	3.2	0.2	0.7	19.1	<0.01	0.10	0.6
L5500N 7125E		0.14	2.1	1230	6.0	9.6	<0.001	0.04	0.19	0.5	0.2	0.7	16.6	<0.01	0.02	<0.2
L5500N 7150E		0.27	1.9	610	7.2	13.8	<0.001	0.03	0.23	0.5	0.3	0.8	19.8	<0.01	0.04	<0.2
L5500N 7175E		0.66	3.1	1410	8.3	12.2	<0.001	0.03	0.23	1.6	0.3	0.6	31.0	<0.01	0.04	0.3
L5500N 7200E		1.28	3.2	1040	8.4	10.9	<0.001	0.03	0.26	1.4	0.3	0.8	15.2	<0.01	0.04	0.3
L5500N 7225E		0.33	2.0	780	7.7	6.5	<0.001	0.04	0.22	0.3	0.3	0.7	16.9	<0.01	0.03	<0.2
L5500N 7250E		0.48	3.1	1010	8.4	8.8	<0.001	0.03	0.31	1.0	0.2	0.6	16.7	<0.01	0.05	0.2
L5500N 7275E		0.24	1.9	940	5.6	6.5	<0.001	0.04	0.20	0.3	0.3	0.6	17.8	<0.01	0.02	<0.2
L5500N 7300E		0.40	3.2	1510	7.4	8.2	<0.001	0.03	0.36	1.0	<0.2	0.5	18.6	<0.01	0.03	<0.2
L5500N 7325E		0.32	3.4	1050	7.8	13.7	<0.001	0.04	0.38	1.0	0.2	0.5	25.1	<0.01	0.04	<0.2
L5500N 7350E		0.72	6.5	1380	12.1	22.3	<0.001	0.05	0.57	8.2	0.7	0.6	46.2	<0.01	0.05	2.4
L5500N 7375E		0.87	3.7	950	5.3	11.1	<0.001	0.03	0.24	0.9	<0.2	0.7	22.5	<0.01	0.02	<0.2
L5500N 7400E		0.36	2.6	640	6.9	17.4	<0.001	0.02	0.19	0.6	<0.2	0.9	22.4	<0.01	0.02	<0.2
L5500N 7425E		0.54	3.4	1260	7.2	7.3	<0.001	0.04	0.28	0.8	0.2	0.8	17.1	<0.01	0.02	<0.2
L5500N 7450E		0.39	3.7	1460	5.4	18.9	<0.001	0.03	0.26	1.0	0.2	0.8	23.3	<0.01	0.02	<0.2
L5500N 7475E		1.30	3.4	2600	8.2	6.1	0.001	0.05	0.36	1.3	<0.2	0.5	16.1	<0.01	0.03	0.2
L5500N 7500E		0.84	4.1	1360	6.5	14.8	<0.001	0.03	0.33	1.6	0.4	0.9	21.4	<0.01	0.02	0.4
L5500N 7525E		0.22	1.1	640	7.5	5.2	<0.001	0.03	0.12	0.1	0.2	0.8	18.6	<0.01	<0.01	<0.2
L5500N 7550E		0.51	2.6	1150	6.5	11.6	<0.001	0.03	0.21	0.8	<0.2	1.0	19.5	<0.01	0.02	<0.2
L5500N 7575E		0.18	0.9	330	6.1	6.0	<0.001	0.02	0.10	0.2	<0.2	0.9	21.0	<0.01	<0.01	<0.2
L5500N 7600E		1.17	12.5	1830	15.1	20.9	0.001	0.03	0.42	3.2	0.2	0.8	35.9	<0.01	0.04	1.1
L5500N 7625E		0.75	7.4	860	12.1	16.4	<0.001	0.03	0.47	2.7	0.3	0.9	25.2	<0.01	0.07	0.6
L5500N 7650E		0.52	9.2	1410	11.6	33.0	<0.001	0.05	0.55	3.2	0.2	0.7	49.4	<0.01	0.05	0.5
L5500N 7675E		0.85	9.3	1480	23.8	29.9	0.001	0.05	0.64	4.0	0.6	0.9	49.4	<0.01	0.05	1.1
L5500N 7700E		1.06	3.0	820	6.6	5.3	<0.001	0.05	0.34	1.4	0.3	1.0	16.2	<0.01	0.05	0.3
L5500N 7725E		2.77	7.1	840	9.3	17.0	<0.001	0.04	0.42	1.2	<0.2	2.6	34.0	0.01	0.07	<0.2
L5500N 7750E		1.23	7.9	1490	10.2	23.5	<0.001	0.02	0.44	5.0	0.3	0.8	37.6	<0.01	0.05	0.9
L5500N 7775E		0.79	5.2	1790	10.6	12.9	<0.001	0.06	0.45	3.7	0.8	0.7	49.0	<0.01	0.04	0.7
L5500N 7800E		0.36	1.3	670	4.4	8.8	<0.001	0.02	0.16	0.9	0.2	0.8	23.4	<0.01	0.01	<0.2
L5500N 7825E		0.60	4.3	640	8.4	14.8	<0.001	0.01	0.40	1.2	0.2	1.0	21.1	<0.01	0.04	<0.2
L5500N 7850E		0.34	4.9	1990	6.3	19.3	<0.001	0.04	0.46	3.5	0.5	0.6	38.5	<0.01	0.03	0.5
L5500N 7875E		0.23	7.1	2240	4.7	17.3	<0.001	0.08	0.37	2.0	0.4	0.5	41.8	<0.01	0.03	0.4
L5500N 7900E		0.63	6.0	1460	6.1	18.1	<0.001	0.02	0.43	3.5	0.2	0.6	30.2	<0.01	0.02	0.7
L5500N 7925E		0.56	3.9	1620	5.1	19.1	<0.001	0.02	0.35	4.7	0.2	0.5	31.6	<0.01	0.02	1.1
L5500N 7950E		1.07	5.9	2180	8.7	25.5	<0.001	0.08	0.40	6.8	0.4	0.8	51.9	0.01	0.02	1.2
L5500N 7975E		0.49	2.4	670	4.2	12.3	<0.001	0.02	0.12	1.4	<0.2	0.7	29.9	<0.01	0.01	<0.2
L5500N 8000E		0.89	8.5	950	7.5	21.6	<0.001	0.03	0.35	6.2	0.3	0.5	37.1	0.01	0.03	1.9
L5500N 8025E		0.60	5.4	1430	8.4	19.1	<0.001	0.04	0.29	4.2	0.3	0.5	39.1	<0.01	0.02	0.8

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5500N 7050E		0.006	0.04	2.35	115	0.90	11.60	68	0.8
L5500N 7075E		0.020	0.04	0.59	115	0.49	2.15	33	<0.5
L5500N 7100E		0.019	0.05	1.28	120	0.55	4.68	63	<0.5
L5500N 7125E		0.007	0.05	0.78	96	0.44	2.20	33	<0.5
L5500N 7150E		0.019	0.08	0.47	86	0.43	1.76	21	<0.5
L5500N 7175E		0.017	0.04	0.96	96	0.54	4.02	36	<0.5
L5500N 7200E		0.015	0.05	0.84	101	0.74	2.76	37	<0.5
L5500N 7225E		0.012	0.03	0.65	75	0.42	1.95	17	<0.5
L5500N 7250E		0.015	0.04	0.83	101	0.52	2.73	35	<0.5
L5500N 7275E		0.007	0.04	0.94	54	0.34	2.13	17	<0.5
L5500N 7300E		0.020	0.03	0.92	112	0.44	3.97	34	<0.5
L5500N 7325E		0.014	0.04	1.58	116	0.52	3.59	49	<0.5
L5500N 7350E		0.012	0.09	29.8	101	0.81	44.0	110	0.6
L5500N 7375E		0.014	0.05	1.17	71	0.48	4.37	41	<0.5
L5500N 7400E		0.018	0.06	0.70	67	0.42	2.47	26	<0.5
L5500N 7425E		0.019	0.04	0.80	98	0.46	2.94	30	<0.5
L5500N 7450E		0.021	0.04	1.10	81	0.78	5.25	64	<0.5
L5500N 7475E		0.020	0.03	1.15	107	0.66	4.09	37	<0.5
L5500N 7500E		0.017	0.04	2.35	86	0.99	6.84	52	<0.5
L5500N 7525E		0.007	0.04	0.60	24	0.20	1.56	8	<0.5
L5500N 7550E		0.025	0.05	0.78	71	0.48	2.68	23	<0.5
L5500N 7575E		0.014	0.04	0.44	24	0.14	1.27	7	<0.5
L5500N 7600E		0.016	0.08	6.26	98	0.72	12.00	125	0.5
L5500N 7625E		0.013	0.05	3.77	110	1.01	7.51	93	<0.5
L5500N 7650E		0.021	0.05	7.73	97	1.00	10.50	146	<0.5
L5500N 7675E		0.023	0.07	23.9	121	2.03	19.15	108	<0.5
L5500N 7700E		0.067	0.02	0.77	140	0.73	2.59	18	<0.5
L5500N 7725E		0.024	0.05	4.30	98	0.72	6.50	74	<0.5
L5500N 7750E		0.029	0.05	8.52	97	1.49	15.10	98	<0.5
L5500N 7775E		0.015	0.04	45.9	120	2.66	28.2	60	<0.5
L5500N 7800E		0.006	0.06	1.97	51	1.03	2.75	21	<0.5
L5500N 7825E		0.040	0.05	0.91	106	0.80	2.12	41	<0.5
L5500N 7850E		0.021	0.03	12.20	91	0.97	22.4	85	<0.5
L5500N 7875E		0.013	0.06	12.60	68	0.69	22.2	82	<0.5
L5500N 7900E		0.037	0.03	7.11	95	1.12	12.70	62	<0.5
L5500N 7925E		0.036	0.02	6.68	94	1.87	16.95	55	<0.5
L5500N 7950E		0.045	0.03	13.05	100	1.28	41.0	69	0.5
L5500N 7975E		0.029	0.03	1.16	71	1.47	4.90	46	<0.5
L5500N 8000E		0.053	0.03	8.01	107	0.85	22.5	60	0.6
L5500N 8025E		0.043	0.03	5.78	96	0.96	17.05	75	0.5

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Finalized Date: 29-OCT-2020
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CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L5500N 8050E		0.40	0.020	0.32	2.05	30.7	<0.02	<10	120	0.89	0.22	1.03	0.24	67.3	25.9	14
L5500N 8075E		0.22	0.007	0.15	2.05	19.8	<0.02	<10	120	0.66	0.19	0.85	0.14	35.3	15.0	18
L5500N 8100E		0.30	0.067	0.18	1.87	10.6	<0.02	<10	120	0.57	0.17	1.02	0.12	18.25	13.4	6
L5500N 8125E		0.16	0.026	0.32	1.23	4.4	<0.02	<10	80	0.39	0.13	0.20	0.10	10.85	5.5	5
L5500N 8150E		0.30	0.070	0.09	1.44	22.9	0.08	<10	120	0.35	0.25	0.81	0.14	16.00	9.1	8
L5500N 8175E		0.38	0.019	0.09	1.60	19.1	<0.02	<10	80	0.48	0.13	0.60	0.07	16.35	9.6	8
L5500N 8200E		0.34	0.007	0.12	1.89	19.8	<0.02	<10	70	0.55	0.14	0.72	0.09	20.0	9.8	8
L5500N 8225E		0.30	0.014	0.04	1.92	15.8	<0.02	<10	80	0.61	0.13	0.41	0.05	19.25	13.2	5
L5500N 8250E		0.28	0.008	0.09	2.01	16.4	<0.02	<10	100	0.61	0.15	0.51	0.12	14.75	9.7	5
L5500N 8275E		0.44	0.004	0.14	2.36	38.7	<0.02	<10	90	1.20	0.19	1.27	0.22	51.8	32.3	9
L5500N 8300E		0.42	0.006	0.19	1.70	10.3	<0.02	<10	80	0.39	0.17	0.79	0.08	14.70	9.7	4
L5500N 8325E		0.34	0.005	0.07	1.80	12.7	<0.02	<10	80	0.46	0.16	0.80	0.13	13.70	11.3	6
L5500N 8350E		0.26	0.005	0.06	1.79	10.3	<0.02	<10	60	0.48	0.16	0.52	0.07	13.80	9.6	5
L5500N 8375E		0.34	0.002	0.10	2.01	10.6	<0.02	<10	120	0.58	0.23	0.47	0.11	18.45	13.4	10
L5500N 8400E		0.32	0.004	0.10	2.44	13.4	<0.02	<10	120	0.69	0.23	0.53	0.12	22.2	13.8	12
L5500N 8425E		0.06	0.270	3.07	1.37	27.6	0.17	<10	70	0.47	4.00	0.94	2.09	43.2	19.6	69
L6350E 4900N		0.36	0.029	0.19	2.05	10.1	0.02	<10	550	1.19	0.16	0.63	0.18	48.9	32.3	3
L6350E 4950N		0.34	0.009	0.19	3.81	8.7	<0.02	<10	290	1.30	0.10	0.30	0.13	22.7	16.0	4
L6350E 5000N		0.32	0.034	0.09	3.18	8.6	0.02	<10	320	1.13	0.19	0.22	0.15	25.7	22.6	7
L6350E 5050N		0.36	0.017	0.14	2.86	10.3	<0.02	<10	200	0.93	0.22	0.32	0.14	39.3	25.0	9
L6350E 5100N		0.32	0.013	0.07	3.76	8.4	0.03	<10	320	1.86	0.10	0.39	0.23	52.0	69.5	3
L6350E 5150N		0.40	0.027	0.12	2.95	26.7	0.02	<10	200	0.79	0.34	0.26	0.17	29.6	27.8	7
L6350E 5200N		0.36	0.015	0.12	4.11	9.8	0.04	<10	290	1.89	0.12	0.33	0.24	52.7	27.7	4
L6350E 5250N		0.30	0.005	0.11	3.40	6.4	<0.02	<10	200	0.60	0.13	0.14	0.10	19.20	11.9	7
L6350E 5300N		0.38	0.024	0.08	2.62	10.1	0.11	<10	200	0.67	0.12	0.20	0.10	19.05	14.2	6
L6350E 5350N		0.42	0.023	0.08	2.53	9.1	0.05	<10	240	1.10	0.13	0.38	0.15	45.5	27.3	4
L6350E 5400N		0.34	0.017	0.06	2.96	8.2	<0.02	<10	210	0.68	0.11	0.30	0.09	22.1	18.3	4
L6350E 5500N		0.30	0.053	0.12	2.55	8.3	<0.02	<10	120	0.59	0.11	0.35	0.10	24.6	13.8	4
L6350E 5550N		0.30	0.024	0.08	2.76	10.0	<0.02	<10	180	0.54	0.12	0.26	0.12	17.45	18.5	4
L6350E 5600N		0.32	0.037	0.06	2.47	9.2	0.02	<10	160	0.54	0.13	0.47	0.07	17.80	8.9	4
L6350E 5650N		0.26	0.029	0.24	2.98	32.2	<0.02	<10	70	0.61	0.41	0.10	0.12	18.15	19.7	8
L6350E 5700N		0.34	0.018	0.10	1.83	38.2	0.02	<10	360	1.06	0.21	0.47	0.29	30.5	63.9	7
L6350E 5750N		0.24	0.075	0.20	1.64	28.5	0.02	<10	360	0.51	0.44	0.19	0.08	18.05	26.8	5
L6350E 5850N		0.34	0.177	0.52	3.08	31.6	0.54	<10	630	2.24	0.38	0.69	0.30	89.1	119.5	5
L6650E 4400N		0.32	0.012	0.21	2.29	17.8	<0.02	<10	390	1.12	0.10	0.99	0.20	49.6	34.0	4
L6650E 4450N		0.30	0.008	0.09	2.34	8.8	<0.02	<10	90	0.72	0.09	0.40	0.10	30.0	17.4	5
L6650E 4500N		0.34	0.029	0.38	2.15	12.0	0.02	<10	130	0.57	0.14	0.31	0.14	24.6	19.6	5
L6650E 4550N		0.32	0.010	0.31	2.58	9.5	<0.02	<10	110	0.72	0.07	0.34	0.09	27.6	18.8	4
L6650E 4600N		0.32	0.002	0.26	3.14	7.3	<0.02	<10	80	0.51	0.12	0.10	0.09	13.30	8.7	7
L6650E 4650N		0.30	0.004	0.18	2.72	8.1	<0.02	<10	110	0.63	0.09	0.17	0.09	18.50	11.7	6

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L5500N 8050E		2.64	207	5.06	7.63	0.09	0.05	0.08	0.039	0.07	21.4	15.6	0.54	1050	5.14	0.01
L5500N 8075E		2.44	202	4.01	7.39	0.07	0.04	0.05	0.033	0.08	17.9	18.1	0.71	530	3.40	0.02
L5500N 8100E		3.61	97.2	3.90	7.99	<0.05	<0.02	0.04	0.032	0.05	10.2	17.3	0.52	805	3.51	0.02
L5500N 8125E		2.61	40.0	1.87	5.46	<0.05	<0.02	0.06	0.015	0.06	5.8	4.1	0.16	159	1.82	0.01
L5500N 8150E		1.86	78.3	2.92	7.62	<0.05	<0.02	0.04	0.030	0.04	9.2	14.3	0.21	374	4.54	0.01
L5500N 8175E		3.67	89.6	3.15	6.86	<0.05	0.02	0.03	0.026	0.06	9.3	18.5	0.55	384	2.23	0.01
L5500N 8200E		2.86	86.6	3.34	8.38	<0.05	<0.02	0.04	0.030	0.05	10.2	27.7	0.54	403	2.10	0.01
L5500N 8225E		2.51	119.0	4.20	7.98	<0.05	<0.02	0.02	0.029	0.05	8.3	18.8	0.54	775	2.83	0.01
L5500N 8250E		3.03	72.7	3.93	8.35	<0.05	<0.02	0.03	0.035	0.05	6.9	21.6	0.48	968	3.65	0.01
L5500N 8275E		3.99	108.5	6.58	11.30	0.08	0.02	0.04	0.058	0.09	18.9	18.2	0.72	3470	6.82	0.02
L5500N 8300E		2.50	63.4	3.25	8.18	<0.05	<0.02	0.03	0.023	0.05	7.5	16.9	0.46	476	2.56	0.01
L5500N 8325E		3.29	63.8	3.85	8.28	<0.05	<0.02	0.03	0.024	0.05	6.6	22.8	0.52	987	3.64	0.01
L5500N 8350E		2.45	61.2	3.38	8.83	<0.05	<0.02	0.03	0.022	0.05	6.9	16.8	0.48	480	2.62	0.01
L5500N 8375E		2.96	64.8	4.10	9.68	<0.05	<0.02	0.03	0.032	0.06	8.6	23.2	0.52	1620	4.42	0.01
L5500N 8400E		3.33	80.7	4.93	10.35	0.05	<0.02	0.03	0.040	0.08	10.6	27.1	0.66	1460	5.10	0.02
L5500N 8425E		2.11	2750	3.41	4.32	0.07	0.13	0.06	0.098	0.55	24.4	5.9	0.64	206	209	0.04
L6350E 4900N		2.47	575	5.53	5.77	0.09	0.03	0.03	0.042	0.11	25.4	12.6	0.63	1910	2.39	0.01
L6350E 4950N		2.28	291	4.96	6.66	0.05	0.05	0.08	0.047	0.04	10.8	21.1	0.49	430	2.44	0.01
L6350E 5000N		3.13	156.5	4.74	8.91	0.05	0.02	0.06	0.039	0.05	11.9	12.4	0.46	2980	2.96	0.01
L6350E 5050N		3.30	293	5.51	8.31	0.06	0.03	0.05	0.053	0.10	13.3	16.1	0.71	2330	2.92	0.01
L6350E 5100N		2.32	457	5.91	7.09	0.06	0.05	0.05	0.065	0.05	14.2	18.5	0.70	3260	2.23	0.01
L6350E 5150N		3.27	267	5.57	9.37	0.05	<0.02	0.03	0.044	0.08	11.5	20.9	0.71	1780	3.68	0.01
L6350E 5200N		2.82	356	5.76	6.31	0.05	0.05	0.05	0.066	0.07	13.9	16.3	0.55	2120	2.22	0.01
L6350E 5250N		2.78	161.5	4.56	8.65	<0.05	0.02	0.06	0.037	0.05	7.8	13.4	0.47	928	2.44	0.01
L6350E 5300N		2.19	173.5	4.99	8.46	<0.05	0.02	0.03	0.034	0.05	7.9	13.3	0.47	1090	2.34	0.01
L6350E 5350N		2.86	409	5.52	6.88	0.05	0.03	0.02	0.039	0.06	12.6	16.9	0.73	1770	3.65	0.01
L6350E 5400N		2.60	238	5.58	7.47	<0.05	0.03	0.01	0.037	0.04	9.0	18.0	0.64	971	2.44	0.01
L6350E 5500N		1.73	236	3.93	7.31	<0.05	<0.02	0.05	0.030	0.04	10.2	14.9	0.64	472	3.12	0.01
L6350E 5550N		1.94	202	5.51	7.44	<0.05	0.02	0.04	0.035	0.05	8.1	17.5	0.68	751	2.60	0.01
L6350E 5600N		2.32	97.2	3.72	7.62	<0.05	0.02	0.05	0.030	0.05	8.8	19.6	0.55	337	25.9	0.01
L6350E 5650N		1.31	202	6.20	10.10	<0.05	0.02	0.05	0.038	0.03	7.5	12.3	0.40	570	5.35	0.01
L6350E 5700N		2.79	900	5.02	7.82	0.10	0.02	0.05	0.035	0.06	37.0	24.3	0.47	1240	8.27	0.01
L6350E 5750N		1.60	234	4.47	7.57	<0.05	<0.02	0.04	0.032	0.09	8.9	8.4	0.31	980	4.74	0.01
L6350E 5850N		1.92	570	9.55	12.30	0.16	0.11	0.03	0.065	0.12	47.2	36.5	1.47	2980	7.51	0.01
L6650E 4400N		3.10	572	6.69	8.58	0.12	0.03	0.02	0.041	0.08	21.9	26.8	1.58	1940	2.02	0.02
L6650E 4450N		2.06	154.5	4.30	6.34	<0.05	0.03	0.03	0.028	0.04	13.2	12.6	0.48	662	1.75	0.01
L6650E 4500N		2.10	178.0	5.12	7.51	<0.05	<0.02	0.02	0.026	0.05	10.3	13.8	0.49	1030	2.55	0.01
L6650E 4550N		2.08	152.5	5.05	7.84	<0.05	<0.02	0.03	0.028	0.04	12.4	14.4	0.66	726	1.86	0.01
L6650E 4600N		2.09	84.2	4.68	8.84	<0.05	<0.02	0.06	0.028	0.04	6.2	10.4	0.33	371	2.50	0.01
L6650E 4650N		2.32	119.5	5.24	7.41	<0.05	<0.02	0.05	0.033	0.03	7.9	12.2	0.38	542	1.95	0.01

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L5500N 8050E		1.15	10.8	1930	10.4	16.5	0.001	0.07	0.59	5.0	0.6	0.6	51.3	0.02	0.03	1.4
L5500N 8075E		1.10	12.8	1540	7.8	21.3	<0.001	0.04	0.43	4.8	0.2	0.6	51.4	0.01	0.02	1.3
L5500N 8100E		0.49	5.2	1740	5.7	24.4	<0.001	0.05	0.22	2.1	0.3	0.7	43.3	<0.01	0.01	0.3
L5500N 8125E		0.17	2.7	1070	4.3	22.6	<0.001	0.04	0.16	0.3	0.2	0.6	23.4	<0.01	0.01	<0.2
L5500N 8150E		0.79	4.7	710	7.1	12.1	<0.001	0.03	0.46	2.1	0.2	0.9	46.7	<0.01	0.03	0.4
L5500N 8175E		0.65	6.6	1070	4.2	21.6	<0.001	0.03	0.32	3.2	0.2	0.6	34.8	<0.01	0.01	0.8
L5500N 8200E		0.80	6.1	1540	5.4	15.1	<0.001	0.03	0.25	2.7	0.2	0.8	36.0	<0.01	0.01	0.6
L5500N 8225E		0.88	4.6	1380	4.6	12.4	<0.001	<0.01	0.21	3.6	<0.2	0.7	22.4	<0.01	<0.01	1.3
L5500N 8250E		0.31	4.2	1460	4.1	19.5	<0.001	0.04	0.22	1.5	0.2	0.7	30.9	<0.01	0.01	0.3
L5500N 8275E		1.16	8.0	2810	24.9	21.8	<0.001	0.06	0.62	3.8	0.4	0.9	47.1	<0.01	0.02	1.1
L5500N 8300E		0.51	3.3	1400	4.0	18.5	<0.001	0.03	0.26	2.0	<0.2	0.7	37.8	<0.01	<0.01	0.3
L5500N 8325E		0.68	5.3	1150	4.6	19.5	<0.001	0.03	0.36	2.3	0.3	0.8	38.6	<0.01	<0.01	0.3
L5500N 8350E		0.49	3.9	1210	4.0	17.7	<0.001	0.02	0.21	1.6	0.2	0.7	31.6	<0.01	0.01	0.2
L5500N 8375E		0.79	7.2	1360	5.9	20.0	<0.001	0.03	0.30	2.0	0.2	1.0	37.6	<0.01	0.02	0.3
L5500N 8400E		1.42	8.5	1440	7.0	20.2	<0.001	0.03	0.34	4.1	0.2	1.0	44.2	<0.01	0.01	1.1
L5500N 8425E		0.12	9.1	570	46.5	39.5	0.038	2.09	5.92	5.8	3.5	1.2	54.0	<0.01	0.30	11.9
L6350E 4900N		0.13	6.4	2230	10.9	12.6	<0.001	0.01	0.44	15.6	0.3	0.4	65.2	<0.01	0.07	3.0
L6350E 4950N		0.48	4.6	2460	5.8	10.5	<0.001	0.08	0.28	3.6	0.6	0.4	57.3	<0.01	0.04	1.3
L6350E 5000N		0.33	6.2	2650	11.2	19.1	<0.001	0.09	0.28	2.4	0.7	0.6	39.6	0.01	0.05	0.5
L6350E 5050N		0.29	9.6	3220	16.2	16.4	<0.001	0.04	0.32	5.2	0.9	0.7	48.2	<0.01	0.05	0.8
L6350E 5100N		0.28	6.6	2710	10.9	11.8	<0.001	0.07	0.17	5.4	0.6	0.5	42.6	<0.01	0.04	1.9
L6350E 5150N		0.26	7.7	2630	17.1	19.0	<0.001	0.05	0.32	3.1	0.5	0.6	38.0	<0.01	0.12	0.5
L6350E 5200N		0.46	7.3	2490	10.4	9.0	<0.001	0.05	0.24	6.1	0.6	0.4	49.2	<0.01	0.04	2.1
L6350E 5250N		0.76	5.8	1800	6.4	15.1	<0.001	0.06	0.19	2.2	0.6	0.6	50.8	<0.01	0.04	0.4
L6350E 5300N		0.57	6.4	2380	9.2	15.0	<0.001	0.03	0.26	2.8	0.5	0.5	40.7	<0.01	0.05	0.7
L6350E 5350N		0.29	6.6	2690	8.6	12.4	<0.001	0.02	0.24	5.5	0.4	0.5	49.9	<0.01	0.05	1.1
L6350E 5400N		0.43	5.0	2340	7.9	11.4	<0.001	0.01	0.25	5.0	0.3	0.5	55.2	<0.01	0.05	1.9
L6350E 5500N		0.55	4.8	1840	7.2	7.3	<0.001	0.02	0.22	2.5	0.5	0.5	42.9	<0.01	0.04	0.6
L6350E 5550N		0.65	5.1	2090	8.5	12.8	<0.001	0.02	0.33	2.4	0.5	0.5	57.9	<0.01	0.05	0.7
L6350E 5600N		1.06	3.5	2050	5.0	10.9	<0.001	0.04	0.19	1.9	0.4	0.6	33.1	<0.01	0.02	0.4
L6350E 5650N		2.82	6.2	1570	12.2	6.9	<0.001	0.05	0.38	2.0	0.6	0.9	17.1	0.01	0.12	0.4
L6350E 5700N		1.14	6.2	1740	18.7	14.7	<0.001	0.07	0.37	2.7	0.4	0.9	39.0	0.01	0.06	0.3
L6350E 5750N		0.47	4.3	1660	14.4	14.1	<0.001	0.03	0.36	2.4	0.3	0.6	32.7	<0.01	0.13	0.3
L6350E 5850N		0.09	9.5	2170	17.3	11.9	<0.001	0.07	0.35	21.4	0.6	0.8	29.0	<0.01	0.20	7.8
L6650E 4400N		0.49	8.2	2920	13.2	12.6	<0.001	0.01	0.46	11.8	<0.2	0.5	79.5	<0.01	0.02	6.2
L6650E 4450N		0.98	5.4	2460	5.6	10.0	<0.001	0.03	0.42	2.0	0.6	0.6	16.7	0.01	0.04	0.5
L6650E 4500N		0.36	5.6	2340	9.9	13.3	<0.001	0.02	0.41	2.6	0.3	0.5	19.1	<0.01	0.06	0.4
L6650E 4550N		0.40	5.6	2200	6.9	13.0	<0.001	0.01	0.37	2.9	0.4	0.5	20.2	<0.01	0.04	0.5
L6650E 4600N		0.90	5.1	1480	5.9	11.5	<0.001	0.04	0.29	1.8	0.5	0.5	13.4	<0.01	0.04	0.4
L6650E 4650N		0.77	5.1	2480	6.5	14.5	<0.001	0.03	0.29	2.3	0.4	0.5	15.1	<0.01	0.03	0.6

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L5500N 8050E		0.039	0.04	16.55	127	1.20	37.4	64	1.2
L5500N 8075E		0.050	0.05	9.21	74	1.22	19.20	75	0.9
L5500N 8100E		0.031	0.04	3.09	109	1.02	11.15	84	<0.5
L5500N 8125E		0.006	0.04	1.21	50	0.73	3.08	25	<0.5
L5500N 8150E		0.028	0.04	4.15	105	1.37	5.28	73	<0.5
L5500N 8175E		0.035	0.04	7.54	69	1.24	9.12	60	<0.5
L5500N 8200E		0.035	0.03	4.59	92	1.11	9.16	74	<0.5
L5500N 8225E		0.049	0.03	1.47	112	1.14	8.05	56	<0.5
L5500N 8250E		0.021	0.04	1.96	113	0.98	6.86	83	<0.5
L5500N 8275E		0.073	0.04	8.26	199	1.17	20.3	84	<0.5
L5500N 8300E		0.029	0.03	2.72	86	1.07	6.98	68	0.5
L5500N 8325E		0.041	0.04	3.08	115	1.36	6.19	89	<0.5
L5500N 8350E		0.030	0.03	1.07	103	1.28	5.98	58	<0.5
L5500N 8375E		0.032	0.05	2.77	127	1.22	6.09	110	<0.5
L5500N 8400E		0.048	0.05	4.92	132	1.69	8.32	115	<0.5
L5500N 8425E		0.046	0.38	5.43	44	4.31	9.85	304	3.8
L6350E 4900N		0.007	0.04	1.79	95	0.25	35.5	66	<0.5
L6350E 4950N		0.006	0.03	1.53	93	0.39	11.20	47	1.0
L6350E 5000N		0.012	0.10	1.67	108	0.25	12.25	69	<0.5
L6350E 5050N		0.018	0.07	1.68	111	0.31	14.35	91	0.6
L6350E 5100N		0.005	0.03	1.31	105	0.22	16.45	58	0.9
L6350E 5150N		0.013	0.07	1.09	124	0.41	10.05	105	<0.5
L6350E 5200N		0.008	0.04	1.70	103	0.42	17.90	75	0.9
L6350E 5250N		0.011	0.05	1.07	106	0.27	7.70	65	0.5
L6350E 5300N		0.010	0.05	0.87	116	0.30	7.57	68	0.5
L6350E 5350N		0.014	0.03	1.41	123	0.26	14.40	74	<0.5
L6350E 5400N		0.010	0.04	0.96	132	0.32	9.40	64	0.8
L6350E 5500N		0.020	0.03	0.99	99	0.34	9.33	52	<0.5
L6350E 5550N		0.010	0.03	1.00	137	0.36	7.47	67	0.5
L6350E 5600N		0.011	0.05	1.61	75	0.40	7.68	61	0.5
L6350E 5650N		0.025	0.03	1.06	115	0.88	5.51	51	0.7
L6350E 5700N		0.017	0.04	8.98	111	0.66	38.5	105	<0.5
L6350E 5750N		0.023	0.06	1.58	91	0.55	4.83	58	<0.5
L6350E 5850N		0.006	0.03	3.90	148	1.22	55.1	94	2.4
L6650E 4400N		0.095	0.04	2.89	143	2.43	25.9	88	1.1
L6650E 4450N		0.021	0.08	1.55	106	0.37	12.20	56	1.0
L6650E 4500N		0.027	0.05	1.36	131	0.45	9.77	63	<0.5
L6650E 4550N		0.031	0.05	1.29	130	0.41	11.00	62	<0.5
L6650E 4600N		0.012	0.05	1.03	100	0.40	4.89	54	<0.5
L6650E 4650N		0.011	0.06	1.26	104	0.44	6.84	66	<0.5

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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
L6650E 4700N		0.26	0.004	0.06	2.66	12.8	<0.02	<10	100	0.53	0.11	0.08	0.07	12.95	34.4	4
L6650E 4750N		0.32	0.010	0.10	2.38	9.8	<0.02	<10	160	0.69	0.12	0.18	0.08	21.0	18.1	4
L6650E 4800N		0.34	0.001	0.23	3.01	9.5	<0.02	<10	80	0.45	0.12	0.11	0.12	15.30	15.2	5
L6650E 4850N		0.28	0.002	0.18	2.90	6.9	<0.02	<10	130	0.75	0.10	0.06	0.18	9.81	11.5	5
L6650E 4900N		0.34	0.013	0.13	2.20	8.3	<0.02	<10	110	0.88	0.08	0.33	0.11	28.1	27.7	3
L6650E 4950N		0.28	0.007	0.07	2.00	7.1	<0.02	<10	140	0.73	0.06	0.33	0.09	28.7	22.4	3
L6650E 5000N		0.34	0.033	0.06	2.04	10.6	<0.02	<10	150	1.07	0.11	0.35	0.13	30.7	31.8	3
L6650E 5050N		0.30	0.029	0.06	1.94	8.5	<0.02	<10	140	0.31	0.14	0.03	0.05	13.60	9.4	4
L6650E 5100N		0.28	0.012	0.12	1.98	11.0	<0.02	<10	100	0.52	0.13	0.08	0.06	17.10	13.2	3
L6650E 5150N		0.28	0.010	0.02	2.39	10.6	<0.02	<10	490	0.70	0.20	0.28	0.10	13.75	11.5	6
L6650E 5200N		0.30	0.058	0.13	2.46	8.9	<0.02	<10	90	0.56	0.17	0.06	0.07	17.25	7.5	6
L6650E 5250N		0.26	0.023	0.04	2.32	11.2	<0.02	<10	270	0.91	0.13	0.35	0.08	22.0	23.8	3
L6650E 5300N		0.32	0.044	0.11	2.85	29.3	0.04	<10	530	1.14	0.32	0.28	0.20	23.1	54.1	6
L6650E 5350N		0.28	0.014	0.77	2.29	20.7	<0.02	<10	130	0.42	0.28	0.14	0.11	14.70	24.0	5
L6650E 5400N		0.32	0.017	0.39	1.79	7.5	0.02	<10	110	0.46	0.23	0.12	0.05	13.50	22.1	4
L6650E 5450N		0.26	0.016	0.20	2.14	12.2	<0.02	<10	210	0.48	0.14	0.15	0.08	15.60	20.4	3

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
L6650E 4700N		1.97	147.5	6.45	7.72	<0.05	0.02	0.02	0.052	0.03	5.8	10.0	0.38	438	5.09	0.01
L6650E 4750N		2.60	133.0	5.26	7.83	<0.05	0.02	0.03	0.037	0.06	9.0	11.0	0.40	1400	2.00	0.01
L6650E 4800N		2.06	102.0	6.28	9.24	<0.05	0.03	0.04	0.044	0.04	7.1	11.5	0.41	773	2.47	0.01
L6650E 4850N		1.97	102.0	4.81	6.95	<0.05	0.03	0.06	0.039	0.05	4.9	14.2	0.26	398	2.05	0.01
L6650E 4900N		2.09	252	7.14	5.21	0.05	0.04	0.02	0.054	0.09	11.8	10.9	0.46	1900	2.67	0.01
L6650E 4950N		1.95	154.0	6.14	5.01	<0.05	0.03	0.02	0.047	0.07	11.3	14.9	0.42	1450	1.59	0.01
L6650E 5000N		1.73	332	6.46	4.66	0.05	0.03	0.02	0.055	0.09	12.1	13.1	0.48	1640	2.42	0.01
L6650E 5050N		1.58	81.5	4.65	7.34	<0.05	<0.02	0.02	0.029	0.04	7.1	2.8	0.14	243	2.62	0.01
L6650E 5100N		2.28	128.5	3.83	5.79	<0.05	0.02	0.04	0.033	0.06	7.5	8.6	0.23	746	2.17	0.01
L6650E 5150N		3.51	169.0	4.47	8.00	<0.05	0.03	0.01	0.046	0.05	11.4	34.4	0.41	523	13.45	0.01
L6650E 5200N		2.26	78.0	3.71	7.41	<0.05	0.04	0.06	0.027	0.05	8.4	7.0	0.15	618	2.87	0.01
L6650E 5250N		4.16	485	4.61	6.98	0.05	0.05	0.02	0.032	0.04	17.5	18.6	0.71	951	4.07	0.01
L6650E 5300N		5.40	417	6.48	9.77	0.05	0.04	0.05	0.055	0.06	12.8	24.9	0.68	1920	10.50	0.01
L6650E 5350N		3.84	189.5	5.76	10.35	<0.05	<0.02	0.05	0.034	0.05	6.2	9.4	0.43	1200	7.17	0.01
L6650E 5400N		1.98	98.0	3.45	7.10	<0.05	<0.02	0.07	0.023	0.06	6.7	4.6	0.23	2970	4.42	0.01
L6650E 5450N		1.60	155.5	6.24	7.10	<0.05	0.02	0.02	0.037	0.04	7.3	9.7	0.39	780	3.22	0.01

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Finalized Date: 29-OCT-2020
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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
L6650E 4700N		0.64	6.0	1270	17.1	10.8	<0.001	0.01	0.40	4.7	0.4	0.5	13.8	<0.01	0.07	1.4
L6650E 4750N		0.36	4.9	2430	9.9	19.8	<0.001	0.02	0.27	3.5	0.4	0.6	19.3	<0.01	0.04	0.7
L6650E 4800N		0.88	4.4	1800	7.3	11.3	<0.001	0.02	0.25	3.9	0.6	0.6	8.9	<0.01	0.04	1.1
L6650E 4850N		0.73	4.1	1260	5.1	14.2	<0.001	0.03	0.24	2.6	0.4	0.5	11.7	<0.01	0.03	1.0
L6650E 4900N		0.52	5.2	2600	14.8	13.8	<0.001	0.01	0.19	8.5	0.5	0.4	12.5	<0.01	0.02	3.5
L6650E 4950N		0.18	4.6	2320	9.0	14.3	<0.001	<0.01	0.19	8.4	<0.2	0.4	11.1	<0.01	0.03	4.0
L6650E 5000N		0.21	5.3	2250	11.0	11.7	<0.001	<0.01	0.22	9.9	0.2	0.4	15.5	<0.01	0.03	4.9
L6650E 5050N		0.74	2.6	1030	7.0	15.2	<0.001	0.01	0.22	2.3	0.3	0.6	21.5	<0.01	0.04	0.8
L6650E 5100N		0.35	2.6	2000	6.0	17.3	<0.001	0.04	0.17	2.1	0.2	0.5	15.3	<0.01	0.04	0.8
L6650E 5150N		0.62	4.4	1270	10.0	10.5	<0.001	0.03	0.17	4.3	0.3	0.6	29.8	<0.01	0.05	1.1
L6650E 5200N		2.57	3.7	1720	6.4	19.6	<0.001	0.04	0.21	1.4	0.4	1.2	13.6	0.02	0.03	0.5
L6650E 5250N		0.46	4.4	1940	8.0	10.0	<0.001	0.02	0.25	9.2	0.6	0.4	36.6	<0.01	0.04	2.0
L6650E 5300N		0.57	5.0	2510	18.3	12.7	<0.001	0.09	0.41	4.4	1.0	0.6	33.3	<0.01	0.12	1.0
L6650E 5350N		0.41	3.7	2410	12.3	11.6	<0.001	0.04	0.37	1.4	0.4	0.7	18.9	<0.01	0.08	0.2
L6650E 5400N		0.14	2.6	2590	9.2	13.8	<0.001	0.08	0.18	0.6	0.5	0.6	21.5	<0.01	0.06	<0.2
L6650E 5450N		0.40	3.5	1610	7.2	10.1	<0.001	0.02	0.27	4.0	0.2	0.4	18.1	<0.01	0.06	2.4

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Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
L6650E 4700N		0.008	0.06	1.07	127	0.38	5.17	56	0.5
L6650E 4750N		0.010	0.08	1.29	115	0.39	8.74	75	0.5
L6650E 4800N		0.009	0.05	0.96	127	0.43	5.74	55	0.6
L6650E 4850N		0.007	0.05	0.97	100	0.45	4.10	64	0.8
L6650E 4900N		0.009	0.05	1.72	117	0.32	14.85	104	1.0
L6650E 4950N		<0.005	0.04	1.38	99	0.26	12.35	74	0.6
L6650E 5000N		0.007	0.04	1.37	101	0.35	14.40	88	0.8
L6650E 5050N		0.006	0.06	0.88	100	0.36	3.28	42	<0.5
L6650E 5100N		<0.005	0.06	1.31	82	0.32	5.65	47	<0.5
L6650E 5150N		0.006	0.04	13.65	98	1.03	8.93	108	0.7
L6650E 5200N		0.008	0.07	1.14	74	0.45	4.14	48	1.0
L6650E 5250N		0.010	0.03	21.7	106	0.68	20.6	61	1.0
L6650E 5300N		0.009	0.06	13.00	126	0.73	14.35	90	0.7
L6650E 5350N		0.013	0.06	1.70	135	0.58	5.10	50	<0.5
L6650E 5400N		0.008	0.07	1.57	76	0.31	5.06	23	<0.5
L6650E 5450N		0.008	0.04	1.28	125	0.38	6.58	62	<0.5

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 29-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201528

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	HOM-01	LOG-22	LOG-23
ME-MS41	SCR-41	WEI-21	

APPENDIX III
CERTIFCATES OF ANALYSIS

c. Whole Rock Samples

ALS Canada Ltd.
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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-MAY-2020
Account: CMECON

CERTIFICATE VA20106069

Project: Thane

P.O. No.: P71-19MAY20-1

This report is for 14 Pulp samples submitted to our lab in Vancouver, BC, Canada on 20-MAY-2020.

The following have access to data associated with this certificate:

C. NAAS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-23	Pulp Login - Rcvd with Barcode
HOM-01	Homogenize by light pulverizing

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP06	Whole Rock Package - ICP-AES	ICP-AES
OA-GRA05	Loss on Ignition at 1000C	WST-SEQ
TOT-ICP06	Total Calculation for ICP06	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:



Saa Traxler, General Manager, North Vancouver

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-MAY-2020
Account: CMECON

Project: Thane

CERTIFICATE OF ANALYSIS VA20106069

Sample Description	Method	WEI-21	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05
	Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
	Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	LOD	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	0.01	0.01	0.01	0.01	0.01	0.01
1239		0.12	56.0	17.50	8.39	5.82	3.12	4.05	3.22	<0.002	0.72	0.15	0.26	0.08	0.14	1.60
1328		0.08	55.3	17.40	9.36	5.42	2.89	4.54	1.35	<0.002	0.72	0.08	0.39	0.08	0.05	2.95
1412		0.10	55.7	17.35	8.24	6.04	2.74	3.60	3.23	0.002	0.66	0.16	0.37	0.07	0.16	0.99
1442		0.08	54.9	16.25	8.42	5.64	2.99	3.29	3.63	0.002	0.75	0.18	0.43	0.07	0.25	2.08
1447		0.06	75.5	12.30	1.65	0.72	0.21	3.12	5.31	<0.002	0.08	0.02	0.02	0.02	0.08	0.34
1467		0.06	43.9	19.45	12.40	10.15	4.98	2.29	2.11	0.002	1.21	0.20	0.72	0.11	0.22	2.90
1605		0.10	53.3	16.85	8.79	9.22	1.44	2.62	3.29	<0.002	0.48	0.11	0.25	0.20	0.16	3.35
1663		0.10	61.3	16.80	6.52	5.12	2.28	3.78	2.90	<0.002	0.56	0.08	0.30	0.09	0.26	1.89
1715		0.10	57.0	17.65	5.76	5.06	2.33	4.09	2.98	0.002	0.68	0.11	0.38	0.07	0.17	3.03
1735		0.10	55.1	22.0	4.56	6.54	1.42	4.70	2.63	<0.002	0.43	0.08	0.16	0.12	0.11	2.41
1758		0.10	51.3	18.90	9.54	7.94	3.88	3.45	1.91	<0.002	0.76	0.17	0.41	0.11	0.20	1.31
1811		0.10	56.6	17.15	6.20	3.49	1.53	3.26	7.20	0.002	0.87	0.08	0.48	0.06	0.30	0.81
1487		0.06	54.9	15.70	8.48	4.35	2.14	4.70	0.92	<0.002	0.58	0.12	0.36	0.10	0.06	3.88
1651		0.04	55.1	14.25	11.75	1.26	2.01	0.68	7.56	<0.002	0.39	0.08	0.20	0.05	0.56	4.81

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 30-MAY-2020
Account: CMECON

Project: Thane

CERTIFICATE OF ANALYSIS VA20106069

Sample Description	Method Analyte Units LOD	TOT-ICP06 Total % 0.01
1239		101.05
1328		100.53
1412		99.31
1442		98.88
1447		99.37
1467		100.64
1605		100.06
1663		101.88
1715		99.31
1735		100.26
1758		99.88
1811		98.03
1487		96.29
1651		98.70

***** See Appendix Page for comments regarding this certificate *****

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SURREY BC V3Z 6R3

Finalized Date: 30-MAY-2020
Account: CMECON

Project: Thane

CERTIFICATE OF ANALYSIS VA20106069

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

HOM-01	LOG-23	ME-ICP06	OA-GRA05
TOT-ICP06	WEI-21		

APPENDIX III
CERTIFCATES OF ANALYSIS

d. Rock Samples

ALS Canada Ltd.
2103 Dollarton Hwy
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Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

CERTIFICATE VA20201530

Project: Cathedral

P.O. No.: P71-28AUG20-2

This report is for 209 Rock samples submitted to our lab in Vancouver, BC, Canada on 11-SEP-2020.

The following have access to data associated with this certificate:

C. NAAS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um
LOG-23	Pulp Login - Rcvd with Barcode
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-OG46	Ore Grade Elements - AquaRegia	ICP-AES
Cu-OG46	Ore Grade Cu - Aqua Regia	
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
Au-GRA21	Au 30g FA-GRAV finish	WST-SIM
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:



Saa Traxler, General Manager, North Vancouver

ALS Canada Ltd.
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www.alsglobal.com/geochemistry

To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	WEI-21	Au-ICP21	Au-GRA21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co
	Units	kg	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	0.02	0.001	0.05	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1
2291		0.74	0.294		3.73	1.70	7.5	0.20	<10	170	0.31	0.55	1.82	0.47	35.4	22.1
2293		0.62	0.015		0.19	0.51	4.5	0.02	<10	260	0.19	0.14	0.11	0.03	32.8	20.0
2294		0.82	0.106		0.90	0.79	110.5	0.06	<10	90	0.12	0.88	0.54	0.23	13.80	43.7
2295		1.58	0.010		0.01	1.90	2.3	<0.02	<10	300	0.23	0.03	0.37	0.03	11.20	21.1
2296		0.86	0.004		0.10	0.78	1.8	<0.02	<10	50	0.60	0.03	0.60	0.02	34.8	8.4
2297		0.96	0.030		0.01	2.14	7.6	<0.02	<10	410	0.14	0.04	0.51	0.03	26.2	92.8
2298		0.76	0.722		24.1	1.96	45.6	0.39	<10	20	0.56	2.61	0.09	1.52	5.49	9.6
2299		0.50	0.014		0.27	2.61	6.3	<0.02	<10	280	0.91	0.04	0.27	0.03	13.30	52.0
2300		0.72	0.008		0.45	1.63	3.5	0.03	<10	550	0.57	0.06	1.12	0.04	31.7	18.5
2303		0.56	0.031		0.33	1.40	99.0	0.03	<10	10	0.12	2.17	0.04	0.01	13.85	40.8
2304		0.36	0.105		0.71	1.25	89.2	0.05	<10	40	0.11	0.74	0.15	0.05	4.61	64.2
2305		1.38	0.876		1.91	5.05	506	0.78	<10	10	0.21	2.12	0.27	0.09	2.35	285
2306		1.10	3.93		3.83	1.93	414	4.09	<10	110	0.52	2.02	0.18	0.11	21.8	19.3
2307		0.84	0.025		0.06	2.34	8.6	<0.02	<10	420	0.45	0.07	0.97	0.02	35.6	40.6
2309		0.90	0.024		1.07	0.81	26.6	0.03	<10	140	0.08	0.44	0.60	0.12	11.55	65.6
2310		0.54	0.410		6.50	0.51	101.5	0.42	<10	10	0.18	7.01	0.08	0.11	8.81	641
2311		0.08	1.795		3.71	1.17	29.0	1.44	<10	70	0.34	3.06	0.96	1.48	34.2	18.7
2312		0.62	0.030		1.18	2.10	28.4	<0.02	<10	90	0.66	0.79	0.39	0.05	15.25	206
2313		0.96	0.128		3.74	1.31	1.3	0.08	<10	60	0.19	0.10	1.14	0.63	8.28	30.9
2314		1.42	1.070		6.60	1.57	2.1	0.77	<10	100	0.09	0.29	1.13	0.41	4.74	60.1
2315		0.82	0.005		0.06	0.97	5.6	<0.02	<10	270	0.14	0.13	0.85	0.02	8.21	211
2316		0.56	0.005		0.22	2.40	0.8	0.02	<10	240	0.78	0.01	2.62	0.14	7.41	105.0
2317		0.12	0.690		18.45	1.65	1.1	0.42	<10	40	<0.05	0.73	0.10	0.37	1.78	38.2
2318		0.50	0.138		22.0	1.69	2.7	0.18	<10	20	0.18	0.77	2.32	1.80	4.34	90.0
2319		1.18	1.825		29.8	2.04	2.1	1.89	<10	30	0.18	3.10	0.88	5.01	4.02	106.0
2320		0.92	0.047		0.89	2.11	1.1	0.06	<10	140	0.18	0.04	2.11	0.19	11.70	30.3
2321		0.74	2.72		26.0	1.90	5.5	2.54	<10	70	0.10	2.09	0.91	1.78	6.42	243
2322		0.54	0.028		0.54	3.25	1.0	<0.02	<10	220	0.29	0.22	3.89	0.09	15.60	25.8
2323		0.58	0.020		0.84	2.97	2.2	<0.02	<10	50	0.29	0.06	1.62	0.16	10.90	83.4
2324		1.06	0.379		22.6	3.13	1.8	0.32	<10	70	0.44	0.31	1.21	2.00	3.95	64.5
2325		0.90	0.013		0.18	2.86	6.6	<0.02	<10	70	0.21	8.27	0.71	0.02	4.94	254
2326		0.50	0.041		2.30	0.43	0.6	0.03	<10	210	0.06	0.69	1.20	0.17	6.94	17.2
2327		0.66	0.026		0.66	0.32	1.4	<0.02	<10	70	0.13	0.11	0.14	0.10	15.20	2.6
2328		0.52	0.008		0.35	1.00	8.6	<0.02	<10	270	0.73	0.05	8.28	0.14	16.15	18.5
2329		0.80	0.009		0.10	2.68	0.6	<0.02	<10	510	0.09	0.02	2.32	0.05	8.24	23.2
2330		0.50	0.134		0.65	1.52	0.7	0.07	<10	110	0.16	0.37	1.27	0.05	26.0	15.0
2331		0.52	0.032		0.23	0.36	3.1	0.02	<10	40	0.11	0.04	0.13	0.02	11.35	1.8
2332		1.14	0.007		0.15	0.46	24.6	<0.02	<10	130	0.53	0.30	0.12	0.01	8.95	16.6
2333		0.30	0.059		0.78	0.87	304	0.06	<10	80	0.19	1.00	0.42	0.04	11.60	4.4
2334		0.74	0.008		0.07	0.49	37.0	<0.02	<10	150	0.12	0.19	0.16	0.03	8.24	46.5

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
2291		3	0.08	4290	5.77	7.89	0.21	0.23	<0.01	0.085	0.05	20.6	16.6	1.30	635	16.90
2293		3	0.63	454	1.92	3.42	0.06	0.30	0.04	0.027	0.26	17.7	2.8	0.17	94	3.56
2294		5	0.14	1280	4.64	4.31	0.07	0.16	0.04	0.043	0.07	7.7	7.8	0.37	276	2.91
2295		2	0.26	6.2	4.72	6.99	0.10	0.14	0.01	0.013	0.21	6.1	17.0	0.79	713	0.53
2296		2	0.52	216	3.38	4.54	0.10	0.14	<0.01	0.017	0.20	16.5	6.8	0.35	358	1.45
2297		3	0.66	2.6	5.67	8.67	0.10	0.24	0.01	0.007	0.29	15.3	21.0	0.89	1380	0.40
2298		3	0.12	>10000	12.70	8.52	0.15	0.09	0.16	0.992	0.03	2.0	21.5	0.62	1200	36.4
2299		2	0.68	1020	16.30	9.40	0.13	0.08	0.01	0.028	0.37	6.1	26.6	1.12	549	0.81
2300		1	0.68	471	12.65	11.70	0.18	0.10	0.01	0.020	0.21	16.9	14.3	1.12	376	0.99
2303		3	0.54	52.3	12.35	6.21	0.12	0.07	0.02	0.093	0.14	6.8	17.4	0.39	1440	6.97
2304		4	0.26	1330	6.10	4.93	0.07	0.05	0.01	0.087	0.08	2.4	16.7	0.54	367	2.42
2305		2	0.13	3770	24.6	17.00	0.48	0.10	0.01	0.186	0.01	1.0	75.5	1.56	3250	55.6
2306		2	0.82	521	16.15	7.60	0.15	0.09	0.20	0.045	0.27	10.7	17.6	0.57	883	51.0
2307		2	0.60	81.2	7.69	9.67	0.11	0.13	<0.01	0.012	0.23	19.4	26.2	1.31	799	3.25
2309		1	0.13	1910	3.37	3.16	0.08	0.17	0.01	0.048	0.27	5.4	8.2	0.40	316	2.90
2310		1	0.42	2420	30.1	2.57	0.24	0.13	0.11	0.088	0.18	4.7	3.9	0.15	67	14.75
2311		64	1.86	8550	4.03	3.66	0.08	0.13	0.16	0.122	0.46	19.1	5.3	0.61	214	676
2312		1	1.83	1620	11.85	7.25	0.12	0.17	0.01	0.051	0.36	9.4	15.2	0.50	572	2.97
2313		3	0.10	7250	2.62	3.77	0.08	0.10	0.01	0.026	0.07	3.7	3.1	0.67	343	1.77
2314		4	0.15	>10000	4.85	5.43	0.10	0.10	0.01	0.570	0.08	2.2	4.5	0.68	290	41.4
2315		4	0.26	81.1	4.94	4.47	0.09	0.08	<0.01	0.010	0.15	3.6	5.2	0.60	201	45.4
2316		3	0.53	2480	1.99	6.68	0.09	0.06	<0.01	0.006	0.04	3.7	5.5	0.60	290	0.50
2317		4	0.73	>10000	9.35	5.95	0.09	0.02	0.01	1.695	0.24	0.8	10.5	0.75	212	228
2318		1	0.10	>10000	5.78	5.47	0.24	0.15	0.01	0.332	0.01	1.9	1.8	0.28	179	3.40
2319		4	0.28	>10000	14.05	6.23	0.20	0.08	0.01	0.973	0.07	1.9	13.0	1.19	469	10.35
2320		3	0.20	3550	3.64	5.28	0.08	0.13	<0.01	0.028	0.14	5.2	9.4	1.32	494	2.36
2321		4	0.14	>10000	12.55	5.71	0.16	0.09	0.01	0.860	0.06	2.8	10.3	1.23	440	6.34
2322		1	3.54	1140	6.31	10.15	0.08	0.03	<0.01	0.042	0.18	6.6	25.3	2.34	903	2100
2323		2	0.54	1070	6.59	10.60	0.11	0.15	0.01	0.030	0.08	4.9	26.7	2.41	995	5.73
2324		2	0.41	9570	9.71	10.65	0.26	0.08	0.01	0.055	0.05	2.2	13.8	1.95	847	26.7
2325		26	0.30	79.2	9.85	8.67	0.11	0.18	0.01	0.010	0.13	2.3	20.9	2.31	502	3.47
2326		2	0.39	4110	1.37	1.28	<0.05	0.07	<0.01	0.049	0.24	3.8	1.7	0.13	273	1.89
2327		5	0.16	1170	0.56	1.04	<0.05	0.13	0.01	0.011	0.14	9.6	0.7	0.06	70	1.88
2328		9	9.67	173.5	3.92	3.46	0.07	0.05	0.05	0.060	0.19	7.2	5.8	1.45	1010	0.43
2329		174	2.20	176.5	4.35	7.76	0.12	0.09	<0.01	0.010	0.94	3.9	19.9	2.41	869	0.77
2330		7	1.22	665	4.75	6.54	0.15	0.09	0.01	0.018	0.59	11.4	11.1	0.96	660	0.34
2331		5	1.08	110.5	0.93	1.74	0.05	0.13	0.01	0.005	0.17	8.8	1.6	0.12	168	0.52
2332		1	0.20	17.6	11.15	4.84	0.13	0.09	0.01	<0.005	0.13	4.7	3.2	0.10	98	6.18
2333		2	0.26	479	5.61	6.41	0.09	0.06	0.03	0.030	0.07	5.7	10.4	0.35	305	36.7
2334		2	0.35	14.2	3.65	2.67	0.05	0.11	0.02	<0.005	0.19	4.2	4.1	0.14	213	2.18

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
2291		0.06	0.42	7.5	1750	12.3	1.5	0.012	0.40	0.57	9.2	0.4	2.3	148.5	<0.01	0.35
2293		0.04	0.48	0.7	400	2.2	10.6	<0.001	0.35	0.21	3.4	<0.2	0.3	23.6	<0.01	0.06
2294		0.06	0.70	2.9	900	60.2	2.9	0.001	0.43	0.13	3.7	0.4	0.4	28.6	<0.01	0.41
2295		0.02	<0.05	1.1	710	1.4	7.8	<0.001	0.14	<0.05	4.1	<0.2	0.2	23.6	<0.01	<0.01
2296		0.06	0.19	0.6	960	4.1	9.6	<0.001	0.04	0.12	4.4	<0.2	0.6	14.5	<0.01	0.01
2297		0.02	<0.05	3.5	1790	1.3	9.9	<0.001	0.73	0.07	9.4	<0.2	<0.2	19.5	<0.01	0.03
2298		0.01	<0.05	2.6	320	832	1.7	<0.001	3.80	0.30	9.4	1.6	0.6	2.8	<0.01	1.86
2299		0.02	<0.05	5.1	1360	3.2	21.7	<0.001	0.09	0.21	4.6	0.2	0.2	7.3	<0.01	0.02
2300		0.03	<0.05	2.4	1570	9.6	7.1	<0.001	0.34	0.12	6.4	<0.2	0.3	37.3	<0.01	0.02
2303		0.01	0.06	3.3	400	14.0	8.0	<0.001	0.42	0.64	2.5	<0.2	3.7	7.6	<0.01	0.04
2304		0.01	<0.05	4.3	370	2.9	3.1	<0.001	2.62	0.06	4.3	0.2	<0.2	8.9	<0.01	0.33
2305		0.01	<0.05	27.8	730	6.1	0.6	0.003	>10.0	0.21	11.3	0.8	<0.2	3.5	<0.01	1.43
2306		0.01	0.06	1.7	1160	352	14.8	<0.001	0.29	0.42	4.9	0.8	0.4	5.1	<0.01	0.41
2307		0.06	<0.05	3.5	1670	3.5	13.1	0.001	0.14	0.06	6.0	<0.2	<0.2	23.0	<0.01	0.03
2309		0.02	0.27	2.4	1030	12.6	5.8	<0.001	1.96	0.06	6.4	0.2	0.4	13.1	<0.01	0.12
2310		0.02	0.19	10.1	710	12.5	6.4	0.001	>10.0	0.27	2.2	4.0	0.4	6.0	<0.01	2.64
2311		0.05	0.21	66.1	540	46.5	29.9	0.588	2.73	14.80	4.5	5.5	1.5	47.2	<0.01	0.97
2312		0.02	0.07	1.9	720	4.6	18.4	0.001	4.13	0.15	5.8	0.6	2.8	19.2	<0.01	0.56
2313		0.07	0.16	6.5	1890	1.2	2.2	<0.001	0.09	0.07	4.6	0.3	0.2	128.5	<0.01	0.44
2314		0.02	0.21	15.8	1120	2.4	2.3	0.008	1.96	0.14	2.9	3.5	0.2	244	<0.01	1.03
2315		0.04	0.27	4.6	1850	0.7	6.0	0.007	0.50	0.10	4.5	0.5	0.2	76.0	<0.01	0.16
2316		0.06	<0.05	4.7	680	2.6	1.3	<0.001	0.06	0.05	1.5	0.2	<0.2	187.5	<0.01	0.03
2317		0.02	0.05	24.1	350	2.0	9.3	0.044	4.32	<0.05	5.1	9.5	0.2	14.4	<0.01	2.65
2318		0.03	0.29	21.8	1780	7.1	0.3	<0.001	2.70	0.25	4.0	9.1	0.2	571	<0.01	1.16
2319		0.04	0.06	20.6	1530	36.4	3.0	0.001	4.65	0.10	8.0	19.3	0.2	289	<0.01	5.38
2320		0.10	0.08	6.5	2820	0.9	5.0	0.001	0.16	<0.05	7.7	0.3	0.2	152.5	<0.01	0.17
2321		0.05	0.06	36.1	1700	15.9	2.7	<0.001	5.98	0.08	10.3	19.3	<0.2	174.5	<0.01	3.61
2322		0.04	<0.05	5.4	2890	2.5	5.9	1.225	0.28	<0.05	15.8	0.8	0.2	123.5	<0.01	0.33
2323		0.08	0.05	7.0	2410	5.7	3.3	0.003	0.20	0.06	16.0	0.5	0.3	88.8	<0.01	0.10
2324		0.02	0.16	10.7	1650	6.9	1.5	0.005	0.67	0.18	4.6	5.1	0.2	381	<0.01	2.66
2325		0.03	0.13	16.2	1950	1.2	7.4	0.001	4.12	0.08	6.1	2.1	0.3	78.8	<0.01	8.00
2326		0.02	0.09	0.9	250	1.6	9.1	0.001	0.33	<0.05	1.0	0.9	<0.2	39.5	<0.01	0.81
2327		0.07	0.20	2.0	50	3.1	2.7	<0.001	0.03	0.14	0.5	0.3	<0.2	25.9	<0.01	0.14
2328		0.02	<0.05	5.0	1320	2.7	8.3	<0.001	0.04	3.09	29.5	0.5	0.4	172.5	<0.01	0.24
2329		0.07	0.14	30.3	950	0.7	47.9	<0.001	0.04	0.11	9.2	0.2	0.3	57.7	<0.01	0.03
2330		0.11	0.48	6.8	2650	2.4	34.5	<0.001	0.02	0.09	8.6	0.4	0.2	38.7	<0.01	0.22
2331		0.08	1.34	1.3	230	4.4	8.4	<0.001	0.02	1.62	0.9	<0.2	0.3	16.8	<0.01	0.06
2332		0.13	0.48	1.0	760	3.1	4.6	<0.001	0.41	0.12	1.6	<0.2	0.3	13.6	<0.01	0.17
2333		0.10	1.00	5.6	740	20.3	4.8	0.007	0.64	0.07	5.8	2.4	0.4	22.5	<0.01	0.28
2334		0.05	0.07	2.2	740	4.3	5.8	<0.001	0.69	0.23	1.1	0.2	<0.2	11.0	<0.01	0.09

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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Cu-OG46
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	0.001
2291		7.0	0.153	<0.02	1.24	145	0.46	13.05	45	3.3	
2293		19.8	0.021	0.02	4.26	9	0.30	11.45	12	7.2	
2294		8.7	0.080	<0.02	1.45	65	0.56	5.29	36	2.8	
2295		3.7	0.006	0.02	0.96	33	0.14	19.20	36	3.3	
2296		8.6	0.039	<0.02	2.84	26	0.26	19.90	28	2.1	
2297		4.6	0.006	0.02	0.96	66	0.13	8.84	69	5.4	
2298		1.7	0.006	<0.02	5.18	70	0.34	17.30	220	2.4	2.32
2299		1.7	0.010	0.05	1.40	108	3.07	8.99	32	3.1	
2300		3.6	0.007	<0.02	1.15	149	1.38	9.47	34	2.1	
2303		3.2	0.014	0.02	0.90	26	39.1	1.86	93	1.5	
2304		1.2	0.007	<0.02	0.34	42	0.83	2.45	24	1.3	
2305		1.6	0.012	<0.02	0.46	74	0.54	4.00	185	2.7	
2306		4.4	0.006	0.04	1.44	84	0.84	5.97	184	3.4	
2307		6.3	0.005	0.03	1.70	77	0.18	11.25	102	3.1	
2309		4.0	0.054	<0.02	1.63	31	0.59	12.05	22	3.3	
2310		1.5	0.013	0.02	0.77	48	3.21	3.23	8	3.6	
2311		9.6	0.044	0.33	3.92	39	8.16	8.33	77	3.9	
2312		3.5	0.010	0.05	1.77	14	19.45	11.35	59	3.3	
2313		0.9	0.122	<0.02	1.00	83	0.40	5.60	37	2.1	
2314		1.0	0.115	<0.02	0.62	71	0.39	3.26	53	1.9	1.500
2315		0.4	0.191	0.02	1.07	111	0.40	6.94	19	1.5	
2316		0.7	0.031	<0.02	0.25	57	<0.05	3.44	27	2.5	
2317		0.4	0.109	0.04	0.10	64	0.12	0.32	111	<0.5	5.41
2318		0.2	0.180	<0.02	0.24	66	0.38	5.31	21	3.1	3.80
2319		<0.2	0.151	0.02	0.16	99	0.31	4.33	106	1.6	8.70
2320		0.3	0.200	0.02	0.26	126	0.37	8.06	46	3.5	
2321		<0.2	0.161	<0.02	0.13	108	0.30	5.56	66	1.8	5.68
2322		0.3	0.007	0.04	0.19	124	0.39	14.85	96	0.5	
2323		0.7	0.252	<0.02	0.29	189	0.52	9.78	51	2.9	
2324		0.2	0.180	<0.02	3.95	93	0.41	4.11	153	1.6	
2325		0.7	0.237	0.03	0.47	129	0.22	4.52	34	5.8	
2326		4.2	0.015	0.04	0.42	10	0.46	4.17	13	2.1	
2327		23.4	0.025	<0.02	2.67	10	0.15	1.73	6	3.3	
2328		1.1	<0.005	0.02	0.46	178	0.27	15.90	53	1.1	
2329		1.0	0.264	0.19	0.30	144	0.46	6.94	46	2.0	
2330		0.9	0.282	0.04	0.55	135	0.09	15.25	56	2.1	
2331		9.5	0.038	<0.02	1.16	13	0.19	3.47	13	2.8	
2332		8.2	0.042	<0.02	0.87	63	0.35	7.97	7	1.8	
2333		5.6	0.045	<0.02	1.02	35	0.32	10.90	17	1.0	
2334		8.4	<0.005	<0.02	1.21	16	0.29	6.00	11	3.1	

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SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	WEI-21	Au-ICP21	Au-GRA21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co
	Units	kg	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	0.02	0.001	0.05	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1
2363		0.80	0.063		3.30	2.20	15.8	0.10	<10	10	0.56	0.08	2.10	0.75	6.23	71.4
2364		0.66	0.047		1.57	1.79	0.8	0.03	<10	140	0.15	0.05	0.53	0.10	7.40	12.4
2365		1.46	0.719		5.96	1.12	13.3	0.55	<10	40	0.11	0.87	1.22	1.46	3.30	58.6
2366		0.14	0.142		14.65	0.18	4.6	0.12	<10	10	<0.05	0.29	0.05	0.17	0.78	3.8
2367		0.54	0.003		0.11	1.25	1.1	<0.02	<10	40	0.24	0.08	1.29	0.03	8.97	6.2
2368		0.56	0.013		0.16	0.41	2.1	<0.02	<10	40	0.18	0.01	1.23	0.16	25.4	6.0
2369		0.48	0.290		1.55	0.34	1.5	0.29	<10	30	0.18	0.13	2.20	0.07	54.4	11.5
2370		0.92	0.019		10.95	0.26	5.8	<0.02	<10	40	0.18	0.02	7.29	0.91	6.38	15.2
2371		0.62	0.024		0.31	1.16	0.9	<0.02	<10	30	0.15	0.13	1.13	0.05	18.50	12.5
2372		0.46	0.046		0.47	1.25	1.4	0.03	<10	50	0.18	0.08	0.93	0.10	16.05	11.8
2373		0.50	0.005		0.06	1.19	0.6	<0.02	<10	30	0.07	0.01	2.12	0.02	4.81	11.3
2374		1.04	0.263		0.22	0.89	0.9	0.17	<10	60	0.13	0.86	0.47	0.09	8.13	12.6
2351		1.62	0.010		1.37	2.02	5.0	<0.02	<10	150	0.31	0.45	15.45	0.24	19.65	12.5
2352		0.82	0.039		0.68	0.72	2.7	0.03	<10	70	0.17	0.03	0.47	0.14	15.40	6.5
2353		0.60	0.010		0.07	1.37	2.6	<0.02	<10	50	0.30	0.03	0.39	0.08	20.2	7.0
2354		0.80	0.015		0.16	1.17	26.4	<0.02	<10	50	0.41	0.12	0.32	0.04	16.75	20.3
2355		0.78	0.013		0.66	1.34	1.7	0.02	<10	90	0.23	0.02	1.19	0.08	12.55	25.4
2356		0.90	0.005		0.19	2.23	0.7	<0.02	<10	40	0.20	0.01	2.91	0.18	9.06	19.0
2357		0.58	0.056		0.53	2.38	1.4	0.11	<10	30	0.35	0.20	2.68	0.54	7.41	18.1
2358		0.74	0.001		1.71	1.42	1.2	<0.02	<10	270	0.44	0.02	6.51	0.44	24.0	13.4
2359		0.96	0.024		0.59	2.13	0.7	<0.02	<10	30	0.11	0.04	0.97	0.12	4.78	20.7
2360		0.08	1.980		3.74	1.14	31.0	2.70	<10	120	0.36	3.36	0.96	1.66	37.3	18.9
2361		0.98	0.062		2.49	2.72	2.3	0.05	<10	10	0.17	0.16	1.25	0.30	6.25	22.6
2362		0.76	0.462		8.65	0.46	1.7	0.36	<10	40	0.09	0.11	0.28	0.77	3.05	8.9
2401		0.74	0.010		0.62	1.17	51.3	<0.02	<10	60	0.24	0.20	0.69	0.15	23.8	14.5
2402		0.76	0.001		0.09	0.71	5.8	<0.02	<10	120	0.27	0.07	0.64	0.03	19.55	30.8
2403		0.88	0.002		0.07	0.70	5.3	<0.02	<10	50	0.22	0.03	2.09	0.08	77.8	5.2
2412		0.08	1.965		3.42	1.16	32.0	1.36	<10	110	0.37	3.32	0.98	1.64	37.4	19.1
2418		1.32	0.004		0.18	1.98	2.1	<0.02	<10	100	0.28	0.10	0.95	0.04	16.25	20.5
2419		1.28	0.005		1.03	2.10	1.5	<0.02	<10	40	0.14	0.02	0.92	0.11	9.61	21.4
2420		0.84	0.025		2.49	1.29	45.9	0.02	<10	10	0.05	6.21	0.09	0.19	1.54	335
2421		0.92	0.011		1.02	0.07	12.4	<0.02	<10	600	<0.05	0.14	0.14	0.13	0.75	2.9
2422		0.68	0.006		0.18	2.81	16.6	<0.02	<10	30	0.82	0.12	6.17	0.09	144.5	30.4
2423		0.90	0.028		0.32	1.09	71.8	0.02	<10	100	0.29	0.31	2.43	0.13	32.2	82.0
2424		0.92	0.005		0.14	1.11	6.4	<0.02	<10	50	0.21	0.11	0.30	0.02	10.00	13.7
2425		0.80	0.010		0.28	1.09	5.1	<0.02	<10	30	0.19	0.07	2.09	0.08	36.0	8.4
2404		1.40	0.003		0.18	1.38	12.3	<0.02	<10	40	0.43	0.14	1.50	0.12	21.3	18.3
2405		0.72	0.001		0.21	2.27	4.1	<0.02	<10	70	0.58	0.05	1.11	0.07	25.5	34.3
2406		0.56	0.002		0.11	2.57	1.3	<0.02	<10	540	0.30	0.01	3.09	0.13	19.65	19.6
2407		0.40	0.016		0.27	0.28	0.7	<0.02	<10	50	<0.05	0.01	0.18	0.07	2.99	1.7

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
2363		10	0.07	7700	4.88	6.75	0.24	0.07	0.01	0.105	0.04	3.1	7.8	0.67	451	8.73
2364		14	0.62	2950	3.82	6.73	0.06	0.14	0.01	0.013	0.19	3.6	16.1	1.25	375	0.52
2365		23	0.16	4220	5.74	5.60	0.09	0.10	0.02	0.112	0.08	1.6	8.7	0.98	643	341
2366		5	0.12	5320	3.71	1.13	0.05	<0.02	0.02	0.780	0.02	0.4	1.9	0.11	107	454
2367		3	0.35	35.9	2.02	4.25	0.20	0.07	<0.01	0.044	0.15	4.1	6.7	0.63	307	2.01
2368		17	0.14	99.2	3.36	2.38	0.08	0.14	0.01	0.007	0.10	11.5	1.7	0.13	205	1.92
2369		54	0.07	2270	6.00	4.12	0.23	0.16	0.01	0.049	0.07	22.6	1.7	0.65	401	1.61
2370		3	1.81	1260	5.29	0.65	<0.05	<0.02	0.01	0.027	0.14	2.6	1.2	1.48	1670	0.46
2371		9	0.27	355	3.37	4.66	0.07	0.08	<0.01	0.009	0.11	8.7	9.2	0.77	418	0.59
2372		8	0.48	863	3.02	4.60	0.07	0.07	<0.01	0.008	0.17	7.5	9.0	0.81	396	0.66
2373		7	0.37	38.7	2.22	4.17	0.13	0.04	<0.01	0.009	0.08	2.1	9.5	0.80	411	0.65
2374		13	0.32	206	3.42	3.89	0.05	0.05	0.01	0.011	0.07	3.5	11.6	0.71	475	5.74
2351		2	0.40	5970	4.85	5.77	0.05	0.04	0.01	0.115	0.12	11.4	36.5	1.06	2910	4.65
2352		2	0.06	1670	1.57	3.06	0.09	0.22	0.02	0.015	0.14	6.9	6.8	0.48	210	1.47
2353		2	0.20	166.0	3.43	7.61	0.11	0.17	<0.01	0.013	0.13	8.6	18.5	0.76	411	1.03
2354		2	0.50	256	7.78	7.66	0.11	0.06	0.02	0.019	0.11	6.9	12.8	0.56	293	5.44
2355		8	0.13	1090	3.19	4.72	0.07	0.05	<0.01	0.008	0.13	5.6	5.8	0.78	293	2.29
2356		10	0.12	316	4.56	7.09	0.12	0.06	<0.01	0.009	0.07	3.9	12.7	1.77	935	0.46
2357		8	0.07	2880	2.87	8.04	0.30	0.14	<0.01	0.063	0.01	3.2	6.4	0.94	470	0.37
2358		1	2.78	139.5	3.68	2.16	0.05	0.02	<0.01	0.032	0.32	11.1	3.8	0.35	1120	0.43
2359		5	0.06	1450	3.96	6.70	0.14	0.05	<0.01	0.011	0.05	2.5	16.8	1.54	995	1.89
2360		64	2.00	8400	4.00	4.01	0.07	0.14	0.16	0.126	0.45	20.6	5.8	0.60	210	609
2361		5	0.06	3410	5.26	8.94	0.25	0.05	<0.01	0.035	0.02	3.1	14.7	1.67	977	3.87
2362		10	0.08	>10000	3.25	1.71	0.06	0.02	<0.01	0.339	0.03	1.9	1.7	0.15	151	1.49
2401		2	1.20	1610	8.73	8.05	0.11	0.12	0.01	0.087	0.15	14.0	10.6	0.26	169	1.56
2402		2	0.49	173.0	5.55	4.80	0.12	0.19	0.01	0.056	0.12	8.5	10.2	0.27	243	3.03
2403		1	0.41	281	1.78	4.14	0.08	0.06	0.01	0.037	0.05	51.6	7.7	0.42	272	0.16
2412		65	2.00	8460	4.04	4.03	0.08	0.14	0.16	0.128	0.46	20.6	5.8	0.61	214	661
2418		5	0.46	496	6.36	9.25	0.11	0.09	0.01	<0.005	0.10	7.4	15.7	1.67	358	5.45
2419		2	0.05	1280	3.47	6.93	0.11	0.14	0.01	0.010	0.05	4.8	21.1	1.69	872	0.50
2420		4	0.12	629	14.85	3.84	0.14	<0.02	0.03	0.046	0.04	0.7	13.4	0.55	898	5.45
2421		16	0.11	1600	0.72	0.25	<0.05	<0.02	0.09	0.031	0.02	0.3	0.6	0.02	110	53.1
2422		3	0.65	315	8.71	15.10	0.29	0.10	0.01	0.156	0.01	99.0	40.2	2.20	1230	0.37
2423		2	0.55	640	4.69	5.53	0.08	0.09	0.01	0.035	0.06	18.9	16.5	0.81	466	0.31
2424		3	0.68	262	4.19	5.11	0.05	0.10	0.01	0.011	0.05	5.8	11.9	0.43	195	0.34
2425		1	0.22	629	2.06	5.74	0.06	0.08	0.01	0.048	0.08	19.0	15.6	0.79	557	0.31
2404		2	0.44	396	5.38	7.31	0.12	0.16	0.02	0.027	0.04	12.4	16.2	1.09	507	0.23
2405		3	1.75	1440	5.93	8.29	0.10	0.14	<0.01	0.031	0.18	13.4	30.9	1.22	1120	1.55
2406		114	3.52	142.5	5.39	8.18	0.12	0.05	<0.01	0.030	1.96	9.3	27.2	2.37	795	0.61
2407		15	0.33	1320	0.74	0.87	<0.05	0.03	<0.01	<0.005	0.17	1.6	1.8	0.12	89	0.56

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SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

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	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
2363		0.01	0.12	14.3	890	3.5	1.0	0.003	1.83	0.14	3.2	3.4	0.2	172.5	<0.01	0.29
2364		0.06	0.22	4.3	760	1.7	12.0	<0.001	0.21	0.20	6.4	0.7	0.2	45.3	<0.01	0.09
2365		0.04	0.17	15.0	330	45.3	3.1	0.119	2.00	0.58	8.6	8.3	0.4	52.8	<0.01	0.87
2366		0.02	0.12	3.8	130	1.5	1.2	0.264	1.60	0.30	0.9	7.1	0.2	4.9	<0.01	0.73
2367		0.05	0.37	4.3	1480	1.5	6.3	0.001	0.02	0.67	2.6	<0.2	0.2	184.0	<0.01	0.02
2368		0.06	0.49	5.7	3230	3.6	4.3	<0.001	0.03	0.69	1.8	0.2	0.3	76.4	<0.01	0.01
2369		0.06	0.15	11.0	6840	1.1	1.3	0.001	0.12	0.17	9.9	1.7	0.4	23.7	0.01	0.45
2370		0.02	<0.05	4.0	530	15.6	6.8	<0.001	0.40	1.61	4.0	0.2	<0.2	291	<0.01	0.01
2371		0.06	0.21	5.6	1810	2.4	4.5	<0.001	0.03	0.18	3.2	0.2	0.2	42.4	<0.01	0.05
2372		0.06	0.15	5.7	1500	2.3	7.5	<0.001	0.05	0.18	3.4	0.4	0.2	38.9	<0.01	0.12
2373		0.03	0.11	5.5	610	0.7	3.0	<0.001	0.02	0.14	2.8	<0.2	0.2	81.1	<0.01	0.08
2374		0.05	0.20	5.3	730	1.7	2.9	0.001	0.65	0.13	6.3	0.5	0.2	18.6	<0.01	1.40
2351		0.02	<0.05	1.5	350	4.9	5.8	<0.001	0.64	0.12	5.5	0.5	0.3	402	<0.01	0.10
2352		0.04	0.42	1.4	710	3.0	3.6	<0.001	0.19	0.26	2.6	<0.2	0.4	21.8	<0.01	0.03
2353		0.04	0.29	1.4	1280	2.2	5.3	<0.001	0.03	0.19	5.9	<0.2	0.4	14.4	<0.01	0.02
2354		0.04	1.46	2.7	1650	5.1	5.7	<0.001	0.17	0.29	5.4	<0.2	0.7	21.4	<0.01	0.06
2355		0.05	0.11	4.7	1760	2.3	5.1	<0.001	0.14	0.09	2.4	0.3	<0.2	61.3	<0.01	0.07
2356		0.04	0.08	7.7	1680	2.1	2.9	<0.001	0.04	0.15	5.3	<0.2	0.2	132.5	<0.01	0.02
2357		0.01	0.22	11.1	2230	2.4	0.3	<0.001	0.07	0.87	3.9	0.2	0.2	598	<0.01	0.16
2358		0.02	<0.05	3.6	1900	51.7	9.8	<0.001	0.02	0.58	13.7	0.3	<0.2	95.5	<0.01	0.01
2359		0.05	0.13	6.3	1590	1.7	1.1	0.001	0.12	0.12	3.6	0.2	0.2	70.5	<0.01	0.05
2360		0.05	0.24	65.6	530	48.0	29.7	0.594	2.70	16.25	4.6	5.7	2.1	49.7	<0.01	1.04
2361		0.02	0.14	10.6	1350	4.6	0.5	0.001	0.34	0.21	2.5	0.7	<0.2	228	<0.01	0.15
2362		0.02	0.13	3.8	170	4.3	1.2	<0.001	1.66	0.11	0.7	3.9	<0.2	77.1	<0.01	0.41
2401		0.05	0.31	7.7	2260	3.5	6.7	<0.001	1.06	0.41	3.9	1.7	1.2	19.1	<0.01	0.19
2402		0.08	0.35	2.7	1590	4.0	2.7	0.002	0.89	0.32	3.4	0.2	1.2	19.1	<0.01	0.08
2403		0.09	<0.05	32.4	1880	1.4	1.8	<0.001	0.10	0.19	3.8	<0.2	0.6	35.5	<0.01	0.01
2412		0.05	0.24	65.3	540	47.1	30.3	0.626	2.73	16.35	4.6	5.7	1.4	50.2	<0.01	1.03
2418		0.06	0.33	4.7	2160	2.1	5.2	0.001	2.01	0.18	11.8	1.0	0.3	51.5	<0.01	0.08
2419		0.05	0.12	4.2	1770	3.8	1.6	<0.001	0.07	0.18	4.3	<0.2	0.4	102.5	<0.01	0.02
2420		0.01	<0.05	6.0	320	48.2	1.5	0.001	>10.0	0.14	3.7	16.6	<0.2	6.2	<0.01	3.78
2421		0.01	<0.05	2.5	70	1.1	1.0	0.012	0.22	3.48	0.3	0.5	<0.2	8.1	<0.01	0.05
2422		0.04	<0.05	25.0	2650	11.4	0.7	<0.001	0.67	0.14	22.0	0.4	3.7	89.0	<0.01	0.07
2423		0.05	0.14	8.3	1900	7.6	2.7	<0.001	2.06	0.15	8.5	2.5	0.7	46.8	<0.01	0.15
2424		0.08	0.07	1.7	690	2.8	2.0	<0.001	1.03	0.25	2.3	1.1	0.5	33.1	<0.01	0.05
2425		0.08	<0.05	2.0	2190	1.9	5.0	<0.001	0.10	0.08	6.4	<0.2	0.5	47.2	<0.01	0.01
2404		0.08	0.15	65.7	1870	4.5	1.7	0.001	1.36	0.37	7.5	0.6	1.0	66.0	<0.01	0.08
2405		0.03	0.12	5.4	1730	3.9	12.2	<0.001	0.07	0.13	10.4	<0.2	0.3	24.8	<0.01	0.01
2406		0.10	<0.05	51.1	2150	2.3	65.1	<0.001	0.04	0.08	17.4	0.2	0.5	59.6	<0.01	0.03
2407		0.05	0.13	4.3	220	2.8	5.5	<0.001	0.09	0.11	0.6	0.4	<0.2	21.9	<0.01	0.05

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CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Cu-OG46
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	0.001
2363		0.5	0.095	<0.02	1.42	78	0.29	3.83	47	1.4	
2364		1.5	0.162	0.06	0.48	84	0.11	3.33	39	2.6	
2365		3.3	0.113	<0.02	0.86	96	0.64	3.77	69	2.1	
2366		0.3	0.020	<0.02	0.14	11	0.14	0.32	17	<0.5	
2367		0.6	0.117	<0.02	0.45	47	0.29	4.66	20	1.3	
2368		1.4	0.081	<0.02	0.77	125	0.23	14.80	26	3.2	
2369		3.0	0.090	<0.02	1.64	272	0.14	32.0	33	2.9	
2370		0.2	<0.005	0.02	0.11	23	0.06	8.10	105	<0.5	
2371		5.9	0.138	<0.02	1.79	140	0.21	9.48	42	1.4	
2372		3.6	0.129	<0.02	1.18	115	0.24	7.99	49	1.2	
2373		0.9	0.098	<0.02	0.38	47	0.57	2.93	29	0.7	
2374		1.3	0.122	<0.02	0.44	83	3.43	5.38	47	1.3	
2351		0.7	<0.005	0.02	0.31	42	0.06	17.95	118	0.9	
2352		20.7	0.036	<0.02	2.71	34	0.25	7.84	12	5.1	
2353		6.2	0.084	<0.02	1.46	71	0.48	12.15	29	3.2	
2354		5.1	0.106	<0.02	1.50	96	0.51	7.53	23	1.6	
2355		1.0	0.130	<0.02	0.45	108	0.31	6.21	31	0.9	
2356		1.9	0.137	<0.02	0.49	118	0.68	5.75	74	1.0	
2357		0.3	0.207	<0.02	0.52	98	0.23	5.33	47	2.7	
2358		2.0	<0.005	0.05	0.80	33	0.09	14.40	72	<0.5	
2359		0.8	0.114	<0.02	0.21	76	0.85	2.44	84	0.9	
2360		11.1	0.044	0.32	4.26	38	6.74	8.91	75	4.3	
2361		1.0	0.124	<0.02	0.30	83	0.54	2.90	92	1.1	
2362		0.6	0.019	<0.02	0.18	17	0.09	0.81	15	0.6	1.920
2401		1.0	0.074	0.03	1.09	106	0.22	9.10	15	2.6	
2402		4.2	0.126	<0.02	1.57	90	0.55	10.70	23	3.8	
2403		4.9	0.006	<0.02	0.42	47	0.21	11.60	15	1.3	
2412		11.5	0.045	0.31	4.66	39	9.10	8.74	73	4.3	
2418		2.6	0.284	<0.02	0.59	173	4.91	9.77	33	1.6	
2419		1.5	0.092	<0.02	0.64	75	0.22	4.98	117	2.1	
2420		<0.2	0.005	<0.02	0.07	39	0.06	2.02	102	<0.5	
2421		0.6	<0.005	<0.02	0.06	5	0.14	0.55	7	<0.5	
2422		6.3	0.031	<0.02	1.20	194	0.12	27.1	52	2.0	
2423		3.5	0.027	<0.02	0.82	57	0.14	12.40	50	1.6	
2424		1.3	0.018	<0.02	0.52	60	0.08	3.98	18	2.7	
2425		5.3	0.013	<0.02	0.84	63	0.11	16.25	51	2.1	
2404		3.3	0.092	<0.02	1.32	103	0.49	11.30	44	3.4	
2405		3.4	0.058	0.03	3.64	124	0.49	17.30	47	3.3	
2406		2.5	0.181	0.14	1.06	223	0.37	13.60	71	1.3	
2407		1.5	0.035	<0.02	0.80	25	0.05	1.08	8	0.6	

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CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	WEI-21	Au-ICP21	Au-GRA21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co
	Units	kg	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	0.02	0.001	0.05	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1
2408		0.90	0.019		0.10	2.09	1.9	<0.02	<10	270	0.16	0.03	1.59	0.07	15.35	22.3
2409		0.70	0.004		0.10	0.60	0.3	<0.02	<10	60	0.14	0.01	0.66	0.05	5.23	6.4
2410		0.46	0.002		0.01	0.24	0.5	<0.02	<10	30	0.05	0.01	0.13	0.01	5.70	3.3
2411		1.08	0.096		0.16	1.01	2.8	0.11	<10	170	0.42	0.36	6.36	0.16	12.75	25.2
2413		0.82	0.043		1.21	1.34	25.8	0.03	<10	40	0.14	0.04	1.07	0.08	12.25	10.7
2414		0.60	0.001		0.48	2.10	3.9	<0.02	<10	50	0.16	0.02	1.07	0.33	16.00	14.6
2415		0.46	<0.001		0.11	0.33	0.6	<0.02	<10	1430	0.26	0.02	12.20	0.50	20.0	11.6
2416		0.62	0.002		0.14	0.22	0.5	<0.02	<10	3250	0.31	0.07	15.80	0.43	28.3	5.8
2417		1.14	0.014		7.17	0.68	22.7	<0.02	<10	270	0.05	0.08	0.26	0.29	3.63	11.1
2277		0.34	0.002		0.21	1.03	2.2	<0.02	<10	60	0.29	0.03	0.85	0.10	32.6	6.9
2278		0.40	0.005		0.25	0.64	13.6	<0.02	<10	1000	0.34	0.12	0.74	0.04	23.5	18.9
2279		0.54	0.130		6.39	0.97	395	0.11	<10	40	0.17	1.38	1.07	0.09	10.90	116.0
2280		0.72	0.070		1.50	1.14	5.5	0.08	<10	170	0.26	0.17	0.90	0.09	23.6	10.8
2281		0.36	0.014		0.32	1.40	2.1	<0.02	<10	280	0.49	0.05	0.73	0.11	41.4	25.2
2282		0.50	0.181		3.54	1.93	14.0	0.17	<10	300	0.50	0.15	1.28	0.20	36.2	11.9
2283		0.40	0.006		0.13	1.42	3.3	<0.02	<10	100	0.49	0.08	2.11	0.07	22.1	11.7
2284		0.56	0.002		0.06	2.04	1.8	<0.02	<10	3870	0.89	0.02	9.70	0.16	22.2	17.1
2285		0.60	0.043		0.58	0.97	6.8	0.05	<10	50	0.16	0.04	1.14	0.25	23.5	8.1
2286		0.62	0.269		1.11	1.14	18.9	0.39	<10	200	0.90	0.33	1.24	0.11	138.0	8.8
2287		0.60	0.011		0.07	0.80	4.1	<0.02	<10	130	0.20	0.01	0.76	0.08	27.0	13.9
2288		0.62	0.188		1.75	3.05	18.0	0.31	<10	100	0.46	0.43	5.47	0.17	3.37	137.0
2289		0.58	0.005		0.13	0.97	1.2	<0.02	<10	130	0.34	0.02	0.95	0.05	25.0	8.0
2290		0.08	1.835		4.39	1.18	31.6	1.65	<10	110	0.39	3.61	0.99	1.78	40.2	19.7
2292		0.48	0.002		0.01	0.52	2.9	<0.02	<10	2120	0.70	0.01	8.77	0.11	29.6	11.4
3128		1.24	0.008		0.07	1.88	3.2	<0.02	<10	70	0.27	0.04	1.92	0.03	10.70	45.0
3129		0.80	0.006		0.69	2.73	1.1	<0.02	<10	100	0.18	0.04	1.30	0.07	4.36	45.3
3130		0.66	0.092		1.09	1.85	0.7	0.14	<10	150	0.15	0.04	1.79	0.10	14.60	25.0
3131		1.24	0.011		0.44	2.94	0.9	<0.02	<10	170	0.26	0.02	2.62	0.09	10.35	30.6
3132		0.52	0.005		0.51	2.97	0.8	<0.02	<10	10	0.19	0.09	1.40	0.06	7.25	15.5
3133		0.76	0.094		2.41	2.20	3.6	0.07	<10	40	0.16	0.30	0.94	0.45	10.85	68.3
3134		2.20	0.002		0.21	1.84	0.8	<0.02	<10	120	0.24	0.02	1.97	0.11	17.05	14.7
3135		0.68	0.059		12.30	7.07	1.4	0.10	<10	30	0.43	0.98	1.41	1.26	36.6	67.2
3136		0.86	0.001		0.28	1.43	0.3	<0.02	<10	60	0.20	0.03	2.28	0.53	8.21	10.8
3137		0.56	0.068		0.66	2.57	9.9	0.06	<10	70	0.18	5.09	1.51	0.06	10.10	211
3138		0.68	0.008		0.32	2.21	0.6	<0.02	<10	90	0.22	0.08	0.69	0.17	13.15	25.0
3139		0.80	0.019		0.27	1.37	0.4	<0.02	<10	70	0.18	0.05	1.29	0.05	17.45	13.7
3116		0.96	0.097		2.19	1.28	7.1	0.24	<10	80	0.08	0.25	0.35	0.14	5.58	37.6
3117		0.56	0.043		0.52	0.93	3.0	0.04	<10	90	0.09	0.23	0.36	0.01	6.86	6.8
3118		1.58	0.703		0.27	9.08	240	0.36	<10	30	0.33	1.15	0.34	0.02	43.2	77.4
3119		0.82	5.09		6.55	7.46	110.0	4.74	<10	40	0.46	2.92	0.37	0.25	15.15	28.1

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
2408		171	0.61	254	3.77	6.06	0.08	0.13	<0.01	0.009	0.36	7.2	18.9	2.14	548	0.13
2409		95	0.14	193.0	1.91	2.56	0.06	0.16	<0.01	0.011	0.06	2.5	3.3	0.58	300	0.20
2410		4	0.12	15.5	0.81	1.12	<0.05	0.06	<0.01	<0.005	0.14	3.2	0.7	0.04	45	0.51
2411		25	4.22	54.3	5.12	4.15	0.07	0.04	<0.01	0.008	0.05	7.0	6.1	0.99	1100	68.8
2413		41	0.54	787	3.37	4.28	0.07	0.07	0.09	0.037	0.08	5.9	9.2	0.97	259	2.32
2414		3	0.23	1140	4.53	9.06	0.09	0.07	0.01	0.008	0.10	8.3	31.5	1.34	864	1.75
2415		3	0.45	86.4	3.96	0.81	<0.05	0.03	<0.01	0.019	0.14	10.1	1.5	1.59	2700	1.54
2416		2	0.60	68.9	2.20	0.80	0.05	0.02	<0.01	0.027	0.09	14.0	1.7	1.15	3180	47.3
2417		8	0.14	5000	3.34	2.51	0.06	0.03	0.01	0.107	0.04	1.5	9.5	0.40	223	27.0
2277		2	0.46	314	2.81	5.93	0.07	0.12	0.01	0.036	0.14	16.5	12.5	0.42	554	1.48
2278		2	2.83	142.0	3.34	2.21	0.05	0.16	0.01	0.019	0.20	11.2	4.6	0.16	582	22.0
2279		3	1.73	2240	6.58	4.59	0.06	0.23	0.02	0.069	0.19	5.0	10.7	0.52	849	15.55
2280		2	0.37	3130	3.64	5.53	0.06	0.10	<0.01	0.171	0.13	13.3	8.4	0.69	504	46.5
2281		2	0.70	1190	3.07	5.28	0.08	0.11	<0.01	0.051	0.18	22.1	13.6	0.75	781	1.81
2282		2	0.81	6920	5.32	6.80	0.07	0.09	<0.01	0.282	0.17	22.5	22.8	1.04	1110	5.68
2283		2	0.71	423	4.72	5.57	0.08	0.18	<0.01	0.025	0.17	10.8	18.0	1.00	948	1.19
2284		1	0.78	86.4	5.40	3.27	0.05	0.03	<0.01	0.021	0.17	9.4	11.6	1.96	1940	0.32
2285		2	0.14	2090	6.02	6.23	0.09	0.16	<0.01	0.040	0.04	13.9	13.9	0.42	297	1.38
2286		1	1.19	671	6.15	4.25	0.12	0.06	0.01	0.053	0.20	100.5	12.8	0.27	182	310
2287		4	0.26	359	5.07	4.73	0.09	0.18	<0.01	0.007	0.14	14.1	5.8	0.48	217	2.39
2288		2	0.64	3340	9.80	11.50	0.24	0.05	0.01	0.195	0.01	2.7	24.3	3.34	1080	1.19
2289		1	0.40	477	3.28	5.14	0.10	0.13	<0.01	0.021	0.16	12.7	8.8	0.50	458	1.63
2290		65	2.12	8470	4.08	4.05	0.07	0.14	0.19	0.134	0.47	23.1	5.8	0.62	215	681
2292		2	2.28	15.3	4.61	1.55	0.07	0.06	<0.01	0.030	0.13	14.3	3.7	2.49	1260	1.44
3128		3	0.15	85.3	3.63	5.50	0.06	0.16	<0.01	0.014	0.11	4.8	7.8	1.06	407	0.26
3129		5	0.35	840	6.06	7.28	0.08	0.10	<0.01	0.008	0.13	2.0	18.3	2.07	582	0.53
3130		2	0.27	2440	3.46	5.38	0.08	0.10	<0.01	0.028	0.12	7.2	7.6	1.03	447	352
3131		1	0.55	1080	5.53	8.16	0.10	0.18	<0.01	0.025	0.12	4.6	21.7	2.08	888	1.43
3132		14	0.06	794	4.53	6.64	0.18	0.17	<0.01	0.018	0.02	3.8	15.3	2.26	708	0.82
3133		4	0.14	3850	5.15	7.17	0.11	0.07	<0.01	0.040	0.08	5.1	10.3	1.51	549	24.9
3134		5	0.28	424	5.33	7.71	0.09	0.14	<0.01	0.021	0.11	8.7	12.7	1.39	779	0.56
3135		151	0.67	>10000	16.25	28.7	0.26	0.12	0.01	0.267	0.10	17.2	54.9	6.16	2050	24.2
3136		7	0.85	1310	2.64	5.38	0.05	0.04	<0.01	0.005	0.20	3.8	12.3	0.98	611	2.21
3137		2	0.37	262	5.81	11.10	0.17	0.05	0.01	0.016	0.11	4.6	21.5	1.88	797	2.71
3138		5	0.41	2020	4.64	9.18	0.08	0.09	<0.01	0.009	0.16	6.7	16.4	1.58	599	50.9
3139		3	0.56	663	3.38	5.81	0.12	0.11	<0.01	0.010	0.13	8.7	18.1	0.94	482	4.04
3116		7	0.15	5650	3.75	4.46	0.09	0.05	0.01	0.033	0.12	3.0	11.7	0.88	379	1.38
3117		7	0.38	543	2.17	3.48	0.08	0.06	0.01	0.015	0.22	3.4	5.6	0.54	242	1975
3118		1	0.27	126.0	31.8	26.9	0.67	0.17	<0.01	0.077	0.03	11.5	128.5	2.48	8580	11.70
3119		1	0.40	>10000	26.3	27.0	0.41	0.19	0.05	0.461	0.08	6.5	75.3	2.39	5040	45.0

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	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
2408		0.06	0.06	71.7	3300	1.0	12.6	<0.001	0.05	0.16	4.6	0.2	<0.2	79.8	<0.01	0.03
2409		0.07	0.21	14.2	130	0.9	1.9	<0.001	0.03	0.06	5.5	<0.2	0.2	25.0	<0.01	0.01
2410		0.05	0.68	0.9	100	1.5	3.1	<0.001	0.04	0.06	0.4	0.2	<0.2	24.4	<0.01	0.02
2411		0.03	<0.05	19.7	1120	6.0	3.9	0.050	1.56	0.22	10.2	1.2	0.2	90.2	<0.01	0.28
2413		0.05	0.10	15.4	2340	2.3	3.9	<0.001	0.04	3.17	4.3	0.6	<0.2	100.5	<0.01	0.08
2414		0.05	0.13	5.8	1650	1.7	5.2	0.001	0.16	0.10	5.0	0.3	0.3	66.1	<0.01	0.03
2415		0.01	<0.05	3.2	840	6.3	4.9	0.001	0.06	0.14	6.7	0.4	<0.2	167.0	<0.01	0.01
2416		0.01	<0.05	1.2	220	7.9	2.9	0.010	0.11	0.08	3.3	0.5	<0.2	535	<0.01	0.03
2417		0.03	0.11	3.4	610	5.4	1.3	0.001	0.62	0.16	2.2	1.8	0.2	35.1	<0.01	0.15
2277		0.04	<0.05	0.5	1030	4.1	5.5	<0.001	0.07	0.22	5.4	<0.2	0.3	15.8	<0.01	<0.01
2278		0.03	<0.05	1.3	690	4.4	10.0	<0.001	0.11	0.26	3.2	0.3	<0.2	39.5	<0.01	0.09
2279		0.02	<0.05	7.8	1240	19.6	8.3	0.003	3.63	0.60	5.4	1.1	<0.2	41.5	<0.01	0.52
2280		0.07	0.10	1.7	1330	2.9	5.7	0.001	0.28	0.13	8.6	0.5	0.5	23.2	<0.01	0.12
2281		0.05	<0.05	2.5	1460	3.2	8.4	<0.001	0.16	0.10	7.3	0.2	0.3	21.6	<0.01	0.03
2282		0.04	<0.05	1.5	1290	4.6	8.7	<0.001	0.53	0.17	12.0	0.5	0.3	34.4	<0.01	0.13
2283		0.05	0.17	3.0	1880	4.4	8.7	<0.001	0.07	0.12	11.1	0.2	0.9	41.1	<0.01	0.02
2284		0.01	<0.05	2.0	1090	4.8	6.7	<0.001	0.13	0.10	6.1	0.2	0.2	223	<0.01	<0.01
2285		0.08	0.25	5.6	1610	1.6	1.2	0.001	0.29	0.15	2.3	0.3	0.6	34.6	<0.01	0.08
2286		0.04	0.35	12.7	2200	2.5	13.6	0.048	0.27	0.26	1.7	0.6	0.7	106.0	<0.01	0.39
2287		0.06	0.31	3.7	1560	2.9	5.0	<0.001	0.04	0.14	2.4	<0.2	0.8	34.3	<0.01	0.01
2288		0.02	<0.05	18.9	860	3.5	0.3	<0.001	1.91	0.06	11.4	0.8	1.8	119.0	<0.01	0.36
2289		0.07	0.18	0.9	1310	4.0	5.2	<0.001	0.04	0.22	4.8	0.2	0.6	41.0	<0.01	0.01
2290		0.05	0.23	68.5	540	49.8	31.1	0.647	2.76	16.60	4.9	5.9	1.6	53.5	<0.01	1.01
2292		0.03	<0.05	4.2	1050	3.6	6.5	<0.001	0.07	0.43	8.9	0.2	0.3	142.5	<0.01	0.01
3128		0.09	0.11	4.3	1790	1.6	3.4	<0.001	0.19	0.09	5.7	0.4	0.2	127.0	<0.01	0.11
3129		0.09	0.08	7.5	2390	0.6	5.8	<0.001	0.12	0.08	4.8	0.3	0.2	137.0	<0.01	0.09
3130		0.12	0.09	5.0	2400	1.0	3.5	0.152	0.33	0.06	4.9	0.9	0.2	134.5	<0.01	0.16
3131		0.07	<0.05	5.2	2290	0.9	5.0	<0.001	0.09	0.11	10.5	0.3	0.2	143.5	<0.01	0.09
3132		0.01	0.10	10.3	1950	0.8	0.8	<0.001	0.04	0.19	4.5	0.3	0.2	193.0	<0.01	0.03
3133		0.04	0.15	9.7	1140	2.2	4.9	0.001	0.10	0.17	2.7	1.1	0.2	143.5	<0.01	0.57
3134		0.07	0.14	5.2	2000	1.2	4.2	<0.001	0.04	0.08	8.5	<0.2	0.2	64.5	<0.01	0.03
3135		0.01	<0.05	54.6	2590	15.1	6.1	0.001	0.89	0.06	27.0	2.8	0.6	33.5	<0.01	0.60
3136		0.04	0.12	6.3	1010	0.8	12.2	<0.001	0.03	0.06	2.8	<0.2	0.2	56.4	<0.01	0.02
3137		0.02	0.10	10.2	1420	3.1	5.1	<0.001	1.16	0.17	4.3	1.3	0.2	135.5	<0.01	4.28
3138		0.05	0.15	5.2	1760	0.9	8.4	0.014	0.03	0.08	6.2	0.3	<0.2	52.9	<0.01	0.07
3139		0.08	0.21	4.2	1580	0.9	7.6	<0.001	0.06	0.05	4.1	0.3	0.3	45.0	<0.01	0.07
3116		0.04	0.08	5.1	550	2.0	3.6	0.001	1.51	0.08	2.2	2.8	<0.2	62.2	<0.01	0.09
3117		0.05	0.25	3.0	690	1.9	9.9	0.925	0.40	0.07	2.6	1.3	<0.2	33.7	<0.01	0.09
3118		0.01	0.05	5.2	1950	3.2	2.7	0.001	5.01	0.07	17.8	0.2	0.2	4.7	<0.01	0.52
3119		0.01	<0.05	6.4	1960	19.9	5.3	0.002	3.76	0.18	14.8	0.9	0.3	4.9	<0.01	1.07

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Cu-OG46
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	0.001
2408		0.8	0.187	0.04	0.37	132	0.24	7.70	54	3.7	
2409		2.2	0.126	<0.02	0.29	86	0.16	6.17	19	3.7	
2410		4.8	0.037	<0.02	1.14	12	0.09	2.91	3	1.6	
2411		0.9	0.012	0.03	0.31	198	0.79	10.90	36	0.9	
2413		1.3	0.151	0.21	0.61	91	0.31	8.51	29	1.8	
2414		3.8	0.107	<0.02	1.12	96	0.65	8.41	107	1.3	
2415		1.9	<0.005	<0.02	0.67	65	0.10	19.35	89	0.5	
2416		0.4	<0.005	<0.02	0.20	20	0.12	24.6	37	<0.5	
2417		0.8	0.023	<0.02	0.60	27	1.85	3.36	40	0.6	
2277		8.7	0.009	0.03	2.56	24	0.20	19.60	46	2.1	
2278		5.2	<0.005	0.05	1.95	39	0.28	11.20	47	4.8	
2279		9.6	<0.005	0.03	5.82	68	0.22	10.15	41	7.2	
2280		3.2	0.014	0.02	1.33	64	0.10	13.95	31	2.1	
2281		5.7	<0.005	0.02	1.46	50	0.10	18.45	53	2.5	
2282		3.0	<0.005	0.02	1.28	67	0.08	14.40	65	2.2	
2283		7.2	0.092	0.02	1.72	124	0.47	17.95	62	3.0	
2284		2.3	<0.005	<0.02	0.60	49	0.08	20.3	71	0.5	
2285		2.9	0.088	<0.02	0.84	124	0.38	8.87	31	3.4	
2286		3.8	0.059	0.02	0.68	317	0.27	6.10	18	1.5	
2287		4.0	0.132	<0.02	1.22	123	0.55	12.10	15	3.5	
2288		0.8	0.013	<0.02	0.16	273	0.21	4.37	89	1.2	
2289		4.9	0.074	<0.02	1.15	40	0.22	14.75	44	2.8	
2290		11.9	0.045	0.34	4.37	40	8.33	9.63	76	4.3	
2292		2.4	<0.005	<0.02	0.93	71	0.14	22.8	49	1.8	
3128		1.3	0.159	0.02	0.24	119	0.33	6.95	31	4.1	
3129		0.4	0.233	0.02	0.18	143	0.58	5.59	70	1.8	
3130		0.4	0.163	<0.02	0.32	122	0.16	7.47	39	2.8	
3131		0.4	0.173	0.02	0.20	156	0.45	8.22	57	4.4	
3132		0.6	0.150	<0.02	0.66	79	0.39	5.44	59	4.9	
3133		0.5	0.123	0.02	1.20	60	0.27	4.37	69	1.7	
3134		1.3	0.156	0.02	0.53	155	0.20	10.00	59	3.0	
3135		2.5	0.043	0.03	1.86	314	0.17	18.35	174	2.8	2.86
3136		1.7	0.068	0.05	0.52	45	0.41	6.59	50	0.9	
3137		0.9	0.071	0.02	0.50	91	0.17	5.15	72	0.8	
3138		1.5	0.193	0.03	0.61	107	0.23	7.21	68	1.3	
3139		2.2	0.236	0.02	0.80	110	0.12	8.02	31	2.3	
3116		2.6	0.101	<0.02	0.32	59	0.27	1.65	31	0.9	
3117		1.8	0.109	0.07	0.54	54	0.41	3.27	18	1.1	
3118		5.6	0.019	<0.02	0.75	159	0.21	8.49	362	4.2	
3119		6.3	0.016	0.02	0.96	152	0.34	13.90	272	4.6	3.02

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SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	WEI-21	Au-ICP21	Au-GRA21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co
	Units	kg	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	0.02	0.001	0.05	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1
3120		1.10	0.332		0.19	3.29	273	0.20	<10	10	0.28	0.68	0.03	0.01	4.23	64.7
3121		0.66	0.010		0.08	0.45	32.3	<0.02	<10	100	1.01	0.38	1.18	0.03	18.80	45.3
3122		1.42	0.025		0.06	6.82	85.9	0.02	<10	80	0.53	0.20	0.39	0.01	19.10	56.2
3123		0.86	0.028		0.19	1.81	5.5	<0.02	<10	60	0.39	0.03	1.04	0.08	20.9	6.2
3124		1.40	0.002		0.03	2.19	2.8	<0.02	<10	260	0.53	0.03	0.92	0.04	31.6	6.7
3126		0.94	0.022		0.66	1.95	2.0	0.02	<10	120	0.20	0.16	1.87	0.13	13.80	62.8
3127		0.74	0.017		3.41	0.84	3.5	0.05	<10	120	0.18	0.29	0.54	0.12	12.75	131.0
3101		0.42	0.005		0.09	2.47	0.5	<0.02	<10	100	0.16	0.03	2.02	0.05	10.55	21.5
3102		1.14	0.130		1.71	0.49	5.4	0.10	<10	80	<0.05	2.36	0.19	0.10	4.88	30.8
3103		1.28	0.454		7.44	2.41	12.3	0.29	<10	100	0.06	1.29	0.12	0.36	4.73	228
3104		1.02	0.003		0.08	2.13	0.7	<0.02	<10	230	0.32	0.01	1.12	0.06	19.05	19.7
3105		0.58	0.004		0.09	1.33	0.6	<0.02	<10	60	0.32	0.02	1.36	0.06	15.90	10.8
3106		0.60	0.004		0.07	0.76	0.4	<0.02	<10	70	0.20	0.01	0.61	0.05	16.20	6.7
3107		1.00	<0.001		0.04	0.98	0.4	<0.02	<10	90	0.14	<0.01	1.17	0.03	10.95	7.0
3108		0.08	1.975		4.02	1.13	31.3	1.74	<10	90	0.40	3.39	0.96	1.68	38.5	20.2
3109		0.98	0.003		0.70	1.85	0.5	<0.02	<10	70	0.31	0.01	0.51	0.28	14.40	143.0
3110		1.02	>10.0	77.8	56.4	0.17	0.5	>25.0	<10	30	0.06	0.30	0.09	1.00	1.64	2.4
3111		0.90	0.023		0.18	2.13	0.7	0.02	<10	60	0.31	0.01	1.38	0.13	9.45	25.0
3112		0.40	0.003		0.03	0.87	0.2	<0.02	<10	70	0.21	<0.01	0.68	0.02	11.20	3.6
3113		1.10	0.053		0.98	1.50	0.6	0.10	<10	60	0.24	0.05	1.43	0.14	15.30	18.5
3114		1.56	0.028		1.18	1.41	0.6	0.02	<10	50	0.13	0.13	1.16	0.21	9.44	15.2
3115		0.74	0.028		0.71	2.63	0.3	<0.02	<10	40	0.13	0.02	2.97	0.23	14.40	19.5
3140		0.46	0.162		2.74	2.03	3.3	0.11	<10	50	0.31	0.07	1.14	0.22	15.85	29.3
3141		0.90	0.008		0.16	0.73	0.3	<0.02	<10	110	0.29	0.03	3.40	0.04	8.20	10.2
3142		0.60	0.004		0.08	1.24	1.8	<0.02	<10	140	0.24	0.08	0.93	0.04	21.5	9.7
3143		0.52	0.425		2.01	0.68	11.7	0.42	<10	60	0.22	0.51	0.85	0.06	26.3	2.6
3144		0.56	0.009		0.05	1.48	4.1	<0.02	<10	70	0.26	0.03	1.06	0.07	24.7	9.5
3145		0.68	0.018		7.68	1.40	25.4	<0.02	<10	20	0.05	0.93	0.71	2.63	1.26	17.2
3146		0.54	0.077		0.31	1.60	5.3	0.07	<10	70	0.18	0.04	0.92	0.28	21.7	12.2
3147		0.70	0.025		0.22	0.78	2.5	0.03	<10	90	0.16	0.03	0.70	0.10	17.10	7.7
3148		1.48	0.054		23.8	0.56	>10000	0.05	<10	10	<0.05	5.33	0.05	10.35	1.46	67.7
3149		0.42	0.009		1.96	3.37	183.0	<0.02	<10	<10	0.27	3.90	1.20	0.81	8.96	67.2
3150		0.62	0.002		0.16	1.04	9.0	<0.02	<10	50	0.08	0.09	1.10	0.08	2.42	13.6
3301		0.68	0.009		0.40	2.31	46.1	<0.02	<10	40	0.19	0.90	1.53	0.07	6.71	549
3302		0.82	0.543		11.30	2.06	5.0	0.22	<10	40	0.17	0.94	2.00	1.49	8.34	47.9
3303		0.34	0.758		27.5	2.24	8.5	1.18	<10	30	0.20	2.09	0.82	0.66	4.75	374
3304		0.78	0.156		20.3	3.26	6.2	0.12	<10	20	0.41	30.1	3.87	1.46	1.96	36.4
3305		0.78	1.495		13.05	0.97	6.3	0.87	<10	70	0.05	1.09	0.17	0.39	2.38	225
3306		0.72	0.017		1.04	0.65	0.5	<0.02	<10	30	0.05	0.07	11.25	0.13	2.92	8.2
3307		0.76	0.024		5.49	3.26	2.5	0.02	<10	410	0.33	0.25	2.38	0.35	7.99	24.5

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CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
3120		4	0.33	123.5	17.70	14.10	0.22	0.06	0.01	0.037	0.02	1.9	35.6	0.96	1180	47.4
3121		2	1.11	16.7	3.28	1.49	0.06	0.28	<0.01	0.007	0.32	9.1	3.3	0.07	642	2.55
3122		2	0.85	108.5	20.3	22.9	0.26	0.20	0.01	0.036	0.22	10.7	84.0	2.71	2890	4.36
3123		3	0.62	573	5.87	7.80	0.14	0.14	0.01	0.023	0.13	9.6	21.1	1.31	540	3.36
3124		3	5.31	92.6	6.74	11.00	0.13	0.10	<0.01	0.027	0.46	16.3	14.2	1.20	800	1.38
3126		2	0.28	1420	3.86	6.22	0.12	0.18	<0.01	0.027	0.10	6.5	11.4	1.42	634	2.97
3127		1	0.18	1070	2.94	2.63	0.06	0.10	<0.01	<0.005	0.06	7.2	2.9	0.27	118	6.76
3101		8	0.20	306	5.25	6.65	0.09	0.06	<0.01	0.008	0.07	4.9	22.2	1.94	1040	0.57
3102		8	0.21	1380	2.22	2.50	0.06	0.03	0.01	0.082	0.07	2.4	3.2	0.34	177	160.5
3103		187	0.21	>10000	9.52	11.70	0.13	0.08	0.05	0.441	0.12	2.2	21.2	1.90	549	201
3104		5	0.27	171.0	4.50	7.34	0.09	0.11	<0.01	0.014	0.13	9.9	17.7	1.39	756	0.84
3105		4	0.12	105.5	2.93	6.16	0.08	0.12	<0.01	0.010	0.10	8.7	9.9	0.85	562	0.86
3106		5	0.15	102.5	1.80	3.27	0.07	0.07	<0.01	0.006	0.11	9.3	4.6	0.41	356	1.24
3107		4	0.44	37.3	2.50	4.40	0.07	0.08	<0.01	0.007	0.13	5.0	5.2	0.59	454	0.48
3108		62	2.01	8580	4.01	3.99	0.09	0.13	0.17	0.126	0.45	21.4	5.7	0.61	216	653
3109		6	0.92	>10000	3.31	5.95	0.05	0.10	<0.01	0.013	0.24	5.1	18.3	1.09	889	1.42
3110		5	0.18	>10000	3.58	0.46	0.05	0.02	0.06	0.018	0.07	0.8	0.8	0.05	105	1.08
3111		7	0.20	353	3.71	6.50	0.08	0.09	<0.01	<0.005	0.12	4.4	23.4	1.70	740	1.40
3112		7	0.17	70.8	1.50	3.83	0.09	0.11	<0.01	0.007	0.11	5.6	4.3	0.41	337	0.41
3113		15	0.17	2680	5.18	6.07	0.10	0.10	<0.01	0.020	0.11	6.9	11.8	1.18	643	0.78
3114		7	0.16	2920	2.58	5.07	0.08	0.05	0.01	0.016	0.08	4.7	11.8	1.15	507	16.50
3115		10	0.17	2120	4.77	9.34	0.10	0.07	<0.01	0.008	0.09	6.9	19.3	2.34	1070	6.31
3140		4	0.18	4030	4.36	7.68	0.10	0.14	0.02	0.027	0.10	8.0	15.7	1.63	792	9.24
3141		4	2.14	248	1.21	1.96	<0.05	0.07	<0.01	0.006	0.28	4.0	4.1	0.36	500	0.64
3142		2	0.77	147.0	3.03	5.98	0.12	0.08	<0.01	0.009	0.19	10.5	12.9	0.57	330	3.70
3143		1	0.33	1840	2.92	3.80	0.12	0.12	0.05	0.156	0.13	13.4	4.0	0.25	118	8.97
3144		2	0.39	130.0	3.26	6.91	0.12	0.06	0.01	0.008	0.13	11.9	12.8	0.56	390	0.51
3145		6	0.12	9970	4.83	5.79	0.08	<0.02	0.29	0.492	0.04	0.5	23.8	0.67	581	1.51
3146		4	0.85	332	3.73	7.43	0.12	0.10	0.07	0.017	0.13	10.5	19.4	0.89	631	0.92
3147		1	0.47	787	1.85	4.08	0.12	0.10	0.01	0.016	0.15	8.4	4.7	0.26	126	13.25
3148		7	1.25	6470	10.15	4.52	0.12	0.02	0.83	0.221	0.03	0.7	5.9	0.28	367	5.60
3149		3	0.11	1740	9.60	10.80	0.28	0.08	0.04	0.033	0.01	4.6	43.1	1.16	1210	44.4
3150		85	0.16	134.5	2.32	3.17	0.10	0.13	<0.01	0.007	0.05	1.0	9.2	1.19	426	0.70
3301		2	0.57	255	9.51	7.35	0.13	0.14	<0.01	0.008	0.13	3.1	12.8	1.48	476	5.93
3302		5	0.13	>10000	6.47	6.75	0.12	0.17	<0.01	0.305	0.04	4.0	13.7	1.26	576	6.55
3303		4	0.25	>10000	12.10	7.93	0.20	0.11	0.01	0.282	0.06	2.2	16.3	1.39	499	8.57
3304		4	0.06	>10000	3.63	7.12	0.27	0.07	<0.01	0.023	0.01	0.8	7.3	0.82	410	29.8
3305		4	0.24	>10000	8.39	3.72	0.10	0.02	<0.01	1.540	0.10	1.1	5.9	0.39	132	35.9
3306		3	0.15	1690	1.35	2.28	<0.05	0.02	<0.01	0.021	0.06	1.6	3.7	0.38	1280	2.96
3307		282	2.99	9100	6.71	9.38	0.18	0.09	<0.01	0.039	1.09	4.2	22.3	3.10	1540	2.91

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	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
3120		0.01	<0.05	5.3	570	11.2	1.6	0.003	3.47	0.07	6.9	0.4	<0.2	1.6	<0.01	0.17
3121		0.01	0.37	0.9	110	2.0	18.8	<0.001	1.49	0.06	1.2	<0.2	<0.2	39.3	<0.01	0.09
3122		0.01	<0.05	6.6	1800	1.4	15.5	<0.001	3.16	0.07	17.0	<0.2	0.2	6.2	<0.01	0.04
3123		0.06	0.18	5.7	1690	2.7	9.5	0.001	0.08	0.21	7.8	0.2	0.4	37.1	<0.01	0.02
3124		0.03	<0.05	5.1	1740	1.6	40.7	<0.001	0.06	0.16	9.7	<0.2	0.4	41.9	<0.01	0.01
3126		0.08	0.05	6.5	1930	1.2	3.8	0.001	0.24	0.12	7.1	1.2	0.2	142.5	<0.01	0.27
3127		0.08	0.20	4.3	540	4.9	2.4	<0.001	1.26	0.12	0.9	2.1	<0.2	101.5	<0.01	0.65
3101		0.04	0.06	10.5	2020	1.0	3.8	<0.001	0.05	0.07	6.5	0.2	<0.2	99.5	<0.01	0.07
3102		0.01	0.26	4.0	510	1.9	3.0	0.070	0.18	0.05	2.1	1.0	<0.2	20.8	<0.01	2.50
3103		0.01	0.27	49.8	670	4.4	6.0	0.076	2.72	0.17	5.8	10.1	0.2	6.7	0.01	1.37
3104		0.06	0.23	6.3	1820	2.1	7.1	<0.001	0.01	0.05	4.8	0.2	0.4	254	<0.01	0.02
3105		0.05	0.21	4.4	1030	2.6	3.7	<0.001	<0.01	0.06	4.3	<0.2	0.3	66.6	<0.01	0.02
3106		0.07	0.45	3.0	710	0.9	4.4	0.001	0.01	0.06	2.2	<0.2	0.2	42.2	<0.01	0.02
3107		0.07	0.26	3.5	1030	0.5	6.2	<0.001	<0.01	0.05	2.7	<0.2	0.2	32.6	<0.01	<0.01
3108		0.05	0.22	68.2	540	49.6	31.2	0.650	2.71	15.60	4.7	5.7	1.8	51.3	<0.01	0.99
3109		0.02	0.08	9.0	1050	0.6	10.2	0.001	0.01	0.06	2.6	<0.2	<0.2	19.2	<0.01	0.02
3110		0.01	0.06	1.5	120	1.8	3.7	<0.001	2.33	0.15	0.5	4.2	<0.2	20.3	<0.01	1.73
3111		0.04	0.15	8.0	1590	5.0	6.7	0.001	0.02	0.07	5.0	<0.2	0.2	48.0	<0.01	0.04
3112		0.08	0.33	4.5	590	1.5	5.2	<0.001	<0.01	0.05	1.8	<0.2	0.2	57.8	<0.01	0.01
3113		0.05	0.22	9.1	1920	1.9	5.6	<0.001	0.15	0.09	4.9	<0.2	0.2	78.3	<0.01	0.10
3114		0.03	0.10	5.8	670	1.4	4.0	0.010	0.21	0.07	3.9	0.9	0.2	76.8	<0.01	0.19
3115		0.04	0.10	8.5	1990	0.7	5.7	0.001	0.14	0.05	8.0	0.7	0.2	58.1	<0.01	0.03
3140		0.05	0.13	8.6	1570	1.2	3.9	0.001	0.12	0.10	6.0	0.9	0.3	86.0	<0.01	0.33
3141		0.02	0.07	3.1	410	1.0	11.8	<0.001	0.01	0.08	2.1	<0.2	<0.2	80.6	<0.01	0.04
3142		0.08	0.38	3.6	1840	3.1	11.3	0.001	0.11	0.08	2.6	0.2	0.4	55.5	<0.01	0.05
3143		0.06	0.63	3.0	2540	2.9	4.4	0.006	0.46	0.11	2.4	1.2	1.2	30.8	<0.01	2.93
3144		0.06	0.16	3.0	1930	3.9	6.4	<0.001	0.33	0.09	2.8	0.2	0.3	39.5	<0.01	0.13
3145		0.01	<0.05	3.0	330	118.0	1.1	<0.001	1.12	0.09	3.4	0.7	0.2	20.6	<0.01	1.11
3146		0.09	0.26	4.0	2010	6.5	6.3	<0.001	0.20	0.09	4.0	<0.2	0.4	38.1	<0.01	0.07
3147		0.07	0.49	1.7	1600	2.3	6.7	0.004	0.38	0.09	2.1	0.3	0.5	24.6	<0.01	0.20
3148		0.02	0.06	23.6	140	284	2.2	<0.001	7.84	28.8	0.9	5.8	<0.2	4.5	<0.01	5.92
3149		0.01	0.15	9.4	760	74.0	0.2	0.002	2.16	1.06	3.6	1.9	0.4	238	<0.01	2.16
3150		0.11	<0.05	26.0	940	2.2	1.6	<0.001	0.06	0.13	4.6	<0.2	<0.2	30.6	<0.01	0.01
3301		0.09	0.09	8.9	2010	3.1	5.9	0.003	3.82	0.23	6.0	3.8	0.2	126.0	<0.01	1.12
3302		0.05	0.07	12.3	1370	16.5	1.6	0.001	1.83	0.09	6.3	5.2	0.2	122.0	<0.01	1.29
3303		0.04	0.08	47.2	1950	27.7	2.5	<0.001	5.57	0.09	10.4	14.0	0.2	180.0	<0.01	3.02
3304		0.01	0.06	4.5	1180	5930	0.3	0.001	0.86	0.15	2.5	13.1	<0.2	467	<0.01	2.52
3305		0.02	0.10	24.6	380	13.8	3.7	0.007	4.99	0.05	2.1	11.2	<0.2	57.6	<0.01	2.76
3306		0.01	<0.05	<0.2	90	2.8	3.0	0.001	0.12	0.08	6.2	0.5	<0.2	134.5	<0.01	0.06
3307		0.05	0.11	55.9	610	19.0	55.3	0.001	0.78	0.06	13.3	0.3	0.5	97.3	<0.01	0.04

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To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Cu-OG46
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	0.001
3120		2.4	0.011	<0.02	0.42	81	0.26	2.74	111	2.4	
3121		36.6	<0.005	0.04	8.53	4	0.44	14.25	13	5.9	
3122		5.2	0.016	0.04	1.18	129	0.18	9.65	244	4.8	
3123		5.5	0.149	0.03	1.21	139	0.77	11.05	29	3.2	
3124		3.9	0.048	0.14	1.44	130	0.23	12.55	26	2.2	
3126		0.6	0.116	<0.02	0.29	113	0.20	8.40	39	5.0	
3127		2.9	0.059	<0.02	0.70	28	0.15	2.56	10	2.8	
3101		0.3	0.126	<0.02	0.22	139	0.40	7.61	35	1.3	
3102		0.5	0.055	0.02	0.40	31	0.41	1.96	14	0.6	
3103		1.3	0.119	0.04	0.33	79	0.56	2.36	44	1.5	1.830
3104		2.4	0.211	0.02	0.96	145	0.16	7.97	67	2.2	
3105		3.2	0.111	<0.02	1.27	80	0.12	7.97	44	2.0	
3106		5.4	0.092	<0.02	1.00	61	0.05	5.09	23	1.7	
3107		1.6	0.100	0.02	0.61	67	0.11	5.22	31	1.3	
3108		10.9	0.044	0.35	4.51	39	9.17	9.36	75	4.2	
3109		1.4	0.052	0.06	3.75	45	0.18	8.38	63	2.3	2.07
3110		0.3	0.005	0.02	0.14	3	<0.05	1.24	5	0.5	3.26
3111		4.8	0.135	0.02	1.02	92	1.38	5.70	80	1.5	
3112		1.7	0.095	0.02	0.48	33	0.10	3.74	24	2.5	
3113		1.3	0.191	<0.02	0.59	183	0.25	9.26	55	2.4	
3114		2.4	0.071	<0.02	0.56	48	0.45	4.98	35	0.9	
3115		1.8	0.120	<0.02	0.67	111	0.58	9.67	62	1.3	
3140		1.7	0.161	0.02	1.15	105	0.43	8.53	61	2.2	
3141		5.7	0.026	0.04	0.78	24	0.09	5.64	15	1.3	
3142		2.6	0.212	0.03	0.85	83	0.29	10.20	34	1.4	
3143		2.9	0.139	<0.02	1.16	42	0.55	12.60	11	2.4	
3144		1.4	0.128	0.02	0.48	85	0.40	11.10	32	1.4	
3145		<0.2	0.005	<0.02	0.10	52	<0.05	1.08	492	<0.5	
3146		2.9	0.211	0.02	0.78	126	0.37	10.15	67	1.7	
3147		3.0	0.166	0.03	1.27	45	0.49	7.57	13	2.2	
3148		<0.2	0.006	0.09	0.09	19	0.34	0.95	1060	<0.5	
3149		0.6	0.065	<0.02	0.89	67	0.56	3.83	195	1.9	
3150		0.2	0.151	<0.02	0.16	82	0.12	4.84	33	3.0	
3301		0.4	0.196	0.02	0.19	194	0.69	6.16	45	2.9	
3302		0.9	0.145	<0.02	0.22	99	0.32	5.04	75	4.1	2.19
3303		<0.2	0.190	<0.02	0.15	119	0.42	5.42	64	2.4	3.09
3304		0.3	0.075	<0.02	0.18	107	0.37	2.07	47	1.9	1.125
3305		0.6	0.081	0.03	0.17	41	0.12	0.99	90	<0.5	3.46
3306		0.2	0.010	<0.02	0.71	14	0.11	15.05	19	<0.5	
3307		1.1	0.258	0.26	0.48	204	0.47	5.68	108	1.8	

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SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	WEI-21	Au-ICP21	Au-GRA21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co
	Units	kg	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	0.02	0.001	0.05	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1
3308		0.82	0.096		12.00	2.36	0.5	0.09	<10	120	0.16	0.68	2.38	0.83	11.20	32.6
3309		0.60	0.297		4.81	3.30	10.5	0.26	<10	80	0.13	0.52	0.74	0.08	10.80	320
3310		0.62	0.093		1.46	3.85	1.6	0.07	<10	480	0.20	0.25	1.16	0.05	10.30	28.0
3311		0.64	0.044		2.11	2.51	3.8	0.03	<10	10	0.07	4.70	1.18	0.23	6.13	40.8
3312		1.00	0.105		3.16	2.18	12.1	0.05	<10	30	0.44	0.73	1.70	0.04	5.78	29.7
3313		0.08	1.990		4.34	1.18	29.4	2.92	<10	60	0.36	3.64	0.97	1.69	37.3	19.0
3314		1.06	0.004		0.12	0.96	5.2	<0.02	<10	50	0.49	0.09	3.63	0.04	23.5	5.6
3315		1.44	0.002		0.11	0.45	9.9	<0.02	<10	70	0.57	0.13	0.27	0.02	35.2	5.0
3316		0.78	0.112		0.58	0.54	94.1	0.63	20	80	0.35	0.34	0.51	0.02	14.55	63.7
3317		1.84	0.072		2.63	0.60	180.5	0.07	<10	110	0.65	1.60	0.58	0.04	22.5	25.8
3351		1.26	0.004		0.11	1.79	1.4	<0.02	<10	60	0.20	0.03	1.22	0.11	11.35	13.4
3352		0.44	0.029		0.58	0.78	1.7	0.06	<10	40	0.11	0.02	0.52	0.12	5.22	6.3
3353		0.40	0.039		0.59	0.38	2.7	0.02	<10	40	0.07	0.05	0.07	0.05	10.05	1.9
3354		0.64	0.034		0.84	0.36	1.3	0.02	<10	40	<0.05	0.03	0.09	0.09	5.12	2.8
3355		0.58	0.008		0.25	1.77	1.6	<0.02	<10	100	0.19	0.02	0.84	0.05	17.15	9.8
3356		0.22	0.004		0.13	1.28	2.1	<0.02	<10	170	0.25	0.01	1.23	0.50	19.00	12.2
3357		0.46	0.007		2.47	0.62	7.1	<0.02	<10	20	<0.05	0.78	0.22	0.35	2.13	1.1
3358		0.38	0.007		0.14	1.31	1.2	<0.02	<10	170	0.26	0.03	1.05	0.10	18.65	12.5
3359		0.58	0.012		0.38	1.10	1.6	<0.02	<10	100	0.13	0.03	0.93	0.20	16.85	10.4
3360		0.86	0.002		0.21	1.45	0.7	<0.02	<10	80	0.14	0.02	0.98	0.09	16.10	11.2
2266		0.66	0.001		3.42	4.70	4.6	<0.02	<10	70	0.44	0.44	0.31	0.02	20.7	36.1
2267		0.62	0.026		0.47	4.99	133.5	0.03	<10	70	0.56	0.49	0.51	0.14	32.2	22.5
2268		0.48	<0.001		0.02	0.79	1.7	<0.02	<10	140	0.46	0.02	0.38	0.04	26.2	3.8
2269		0.82	0.588		1.51	3.30	148.0	0.48	<10	40	1.92	31.4	0.11	0.04	8.65	92.4
2270		0.56	0.005		0.58	0.35	2.8	0.02	<10	100	0.96	0.88	0.14	0.04	49.2	3.0
2271		0.58	0.011		0.18	0.50	3.2	<0.02	<10	480	0.35	0.05	1.55	0.11	25.0	28.4
2272		0.38	0.014		0.12	2.10	2.7	<0.02	<10	80	0.64	0.29	2.19	0.06	28.0	19.8
2273		0.36	<0.001		0.21	2.35	45.9	<0.02	<10	20	0.21	0.21	0.51	0.18	16.65	16.4
2274		0.72	0.007		0.09	2.47	22.3	<0.02	<10	150	0.34	0.08	1.43	0.08	17.95	82.6
2275		0.74	0.015		1.66	1.31	5.4	<0.02	<10	70	0.27	0.11	4.39	0.19	18.20	12.1
2276		0.62	0.115		13.60	2.97	12.5	0.10	<10	60	0.25	3.90	0.34	0.18	9.57	19.7
2308		0.38	0.008		0.12	1.01	4.1	<0.02	<10	80	0.27	0.04	1.32	0.12	18.65	15.9
2251		0.66	0.541		1.34	2.29	84.7	0.28	<10	80	0.19	0.76	0.53	0.06	15.40	160.5
2252		0.80	0.009		0.15	1.27	7.4	<0.02	<10	50	0.44	0.12	0.40	0.04	12.50	9.8
2253		0.78	0.004		0.65	1.66	10.1	<0.02	<10	50	0.22	0.04	2.12	0.23	4.86	38.0
2254		1.02	0.006		0.15	1.47	2.2	<0.02	<10	70	0.34	0.08	2.96	0.11	69.4	4.9
2255		1.12	0.555		7.10	2.28	5.0	1.08	<10	60	0.59	2.56	3.05	0.45	24.2	18.1
2256		1.80	0.037		0.17	1.71	2.2	<0.02	<10	80	0.31	0.08	3.20	0.11	52.4	9.4
2257		0.54	0.018		1.14	0.35	91.4	0.02	<10	140	0.43	0.15	8.41	1.47	11.70	33.5
2258		0.82	2.49		11.90	2.09	26.8	3.22	<10	60	0.31	2.93	0.60	1.01	16.15	193.5

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	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
3308		46	0.83	>10000	7.19	8.50	0.14	0.06	<0.01	0.029	0.25	5.0	15.8	2.07	1140	0.90
3309		7	0.26	5170	8.90	11.40	0.11	0.06	0.01	0.028	0.17	4.9	22.4	2.52	902	159.0
3310		13	5.89	6350	9.09	13.20	0.16	0.23	<0.01	0.043	1.29	4.6	23.2	2.48	887	1.31
3311		5	<0.05	2480	5.91	8.88	0.27	0.10	<0.01	0.024	0.01	3.0	16.0	1.38	993	1.66
3312		9	0.12	3670	4.36	7.41	0.18	0.03	<0.01	0.057	0.05	3.2	11.0	0.85	500	5320
3313		64	1.98	8470	4.06	3.97	0.10	0.14	0.16	0.135	0.46	20.6	5.2	0.61	211	662
3314		2	2.35	122.0	3.08	2.63	0.06	0.14	<0.01	0.032	0.42	11.1	7.1	0.35	2040	6.83
3315		2	3.60	310	4.81	1.10	0.08	0.13	<0.01	0.022	0.35	17.5	4.7	0.03	851	3.04
3316		5	0.48	306	3.42	1.88	0.08	0.05	0.01	0.054	0.01	5.5	6.9	0.13	1820	21.2
3317		2	2.13	1870	7.60	1.64	0.10	0.09	0.01	0.097	0.31	10.6	7.5	0.05	1080	6.22
3351		10	0.51	330	3.11	6.73	0.12	0.16	<0.01	0.017	0.16	5.3	10.9	0.97	462	3.46
3352		11	0.11	551	1.86	3.51	0.08	0.11	<0.01	0.023	0.07	2.5	4.6	0.48	265	4.77
3353		3	0.07	494	0.78	1.60	<0.05	0.10	<0.01	0.025	0.11	5.2	1.5	0.11	103	12.15
3354		9	0.07	1050	0.84	1.63	0.06	0.03	<0.01	0.031	0.10	3.3	2.1	0.15	106	100.5
3355		5	0.37	456	4.12	8.25	0.12	0.06	<0.01	0.013	0.21	8.5	13.0	0.88	513	2.22
3356		5	0.30	241	3.38	5.36	0.10	0.09	0.01	0.014	0.15	9.6	13.2	0.86	626	0.92
3357		8	0.06	379	2.15	3.60	0.10	0.02	<0.01	0.069	0.02	1.0	6.4	0.29	315	1000
3358		6	0.60	227	3.82	5.90	0.12	0.13	<0.01	0.015	0.18	9.5	22.5	0.92	709	2.96
3359		5	0.36	387	3.17	4.45	0.10	0.07	<0.01	0.010	0.16	8.3	8.5	0.71	428	2.74
3360		6	0.44	324	3.61	5.86	0.10	0.09	<0.01	0.009	0.16	8.0	11.6	0.96	602	17.55
2266		3	1.22	2620	12.75	11.10	0.16	0.13	<0.01	0.137	0.31	9.4	61.1	1.22	4060	2.33
2267		3	1.90	4220	12.75	10.15	0.18	0.23	<0.01	0.049	0.27	14.4	44.3	1.48	3060	3.39
2268		2	0.65	18.6	3.51	4.96	0.10	0.14	<0.01	0.005	0.16	12.6	8.5	0.43	267	1.73
2269		2	0.46	1065	18.95	14.35	0.36	0.10	2.18	0.050	0.04	3.8	31.3	0.90	1940	19.15
2270		3	0.99	897	1.98	1.93	0.08	0.34	0.02	0.009	0.13	21.9	1.8	0.06	287	1.22
2271		2	0.43	812	4.02	3.03	0.08	0.16	0.04	0.060	0.15	12.8	5.9	0.63	442	3.16
2272		3	1.02	169.5	5.54	8.05	0.09	0.08	0.03	0.036	0.13	12.6	31.2	1.52	1270	1.39
2273		2	0.63	156.5	7.86	12.30	0.18	0.08	0.01	0.021	0.04	7.9	23.1	1.67	477	5.51
2274		4	1.05	140.5	7.83	10.65	0.16	0.15	<0.01	0.025	0.13	8.5	26.8	1.73	651	2.51
2275		2	0.10	4620	3.57	5.28	0.29	0.07	0.01	0.022	0.01	11.6	18.0	0.60	498	7.48
2276		3	0.33	>10000	13.50	7.93	0.15	0.18	0.09	0.713	0.09	4.2	50.7	0.89	1860	2.33
2308		2	0.84	276	4.51	4.95	0.10	0.19	0.01	0.012	0.11	8.6	10.3	0.59	279	2.04
2251		2	0.13	2600	7.97	12.60	0.15	0.20	0.02	0.051	0.12	7.2	36.3	1.64	678	3.54
2252		3	0.62	775	11.60	9.17	0.10	0.04	0.01	0.062	0.11	5.7	8.2	0.45	225	2.85
2253		1	0.34	1890	3.56	7.72	0.07	0.07	0.02	0.043	0.09	3.5	23.4	1.21	720	0.82
2254		3	0.36	317	2.67	6.76	0.11	0.09	0.01	0.023	0.06	51.3	17.4	1.31	721	5.07
2255		2	0.35	>10000	17.95	10.70	0.30	0.09	0.01	0.496	0.05	20.8	22.9	1.51	1360	183.5
2256		3	0.35	1645	5.63	8.41	0.11	0.09	<0.01	0.032	0.07	39.9	16.5	1.43	808	4.09
2257		1	1.36	406	5.63	0.83	<0.05	0.06	0.09	0.023	0.14	4.8	2.0	1.40	1040	304
2258		2	0.12	>10000	15.45	10.75	0.29	0.17	0.02	0.458	0.06	8.5	17.6	1.76	595	6.22

***** See Appendix Page for comments regarding this certificate *****

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
3308		0.06	0.06	25.0	1250	10.2	12.9	0.003	0.81	0.06	9.2	0.9	0.4	77.8	<0.01	0.08
3309		0.02	0.07	12.5	1720	1.9	7.4	0.132	1.37	0.06	6.3	2.4	<0.2	54.6	<0.01	1.37
3310		0.12	0.09	13.3	2660	3.3	84.1	0.004	0.38	0.08	15.5	0.9	0.3	90.6	<0.01	0.23
3311		0.02	0.15	6.6	1670	3.5	0.6	<0.001	0.75	0.17	5.3	2.3	0.2	206	0.01	3.22
3312		0.03	0.12	7.1	980	3.6	2.8	4.11	1.51	0.06	3.5	2.4	0.2	65.6	<0.01	0.52
3313		0.05	0.20	61.2	540	49.0	31.3	0.623	2.70	15.20	4.8	5.4	1.7	49.9	<0.01	1.02
3314		0.01	<0.05	2.0	1690	3.5	23.1	0.004	0.06	0.15	5.7	<0.2	0.2	42.7	<0.01	0.01
3315		0.01	<0.05	1.2	1220	2.3	16.7	0.001	0.04	0.25	2.8	<0.2	0.2	9.2	<0.01	0.01
3316		0.01	<0.05	4.8	220	2.1	1.2	0.010	0.62	0.11	7.0	0.2	0.2	8.7	0.01	0.04
3317		0.01	<0.05	4.9	1480	7.3	16.0	<0.001	0.78	0.34	8.3	0.3	0.2	9.9	<0.01	0.05
3351		0.13	0.10	4.3	1370	0.6	8.9	0.001	0.15	<0.05	7.1	0.3	0.3	64.8	<0.01	0.04
3352		0.05	0.15	2.6	570	0.6	3.9	<0.001	0.07	<0.05	4.2	0.3	0.2	17.8	<0.01	0.13
3353		0.04	0.12	0.7	70	4.5	2.7	<0.001	0.05	<0.05	0.9	0.3	<0.2	7.7	<0.01	0.13
3354		0.02	0.12	1.0	110	1.9	3.3	0.015	0.10	0.05	1.1	0.3	<0.2	4.1	<0.01	0.19
3355		0.07	0.42	5.1	1810	2.2	10.1	<0.001	0.12	0.05	3.1	<0.2	0.3	38.9	<0.01	0.06
3356		0.07	0.27	6.0	1760	3.3	6.1	<0.001	0.05	0.08	5.6	<0.2	0.3	63.6	<0.01	0.01
3357		0.02	0.08	1.0	180	6.7	1.2	0.078	0.05	0.14	1.7	0.3	<0.2	34.2	<0.01	0.27
3358		0.08	0.37	5.6	1550	1.9	11.9	<0.001	0.03	0.11	5.6	<0.2	0.4	36.8	<0.01	0.01
3359		0.09	0.21	4.7	1620	2.6	6.3	<0.001	0.14	0.07	3.5	<0.2	0.2	49.2	<0.01	0.05
3360		0.08	0.25	4.0	1780	1.5	9.1	0.005	0.05	0.06	3.7	<0.2	0.2	37.7	<0.01	0.01
2266		0.01	<0.05	5.1	1530	1.4	17.0	<0.001	0.46	0.21	9.8	0.2	0.2	10.6	<0.01	0.02
2267		0.01	<0.05	5.6	1680	2.5	12.7	0.001	0.13	0.24	8.6	<0.2	<0.2	10.7	<0.01	<0.01
2268		0.06	0.37	1.1	750	5.6	8.1	<0.001	0.02	0.15	4.4	<0.2	0.6	22.1	<0.01	<0.01
2269		<0.01	<0.05	7.8	660	5.8	2.2	0.001	4.01	0.50	7.3	0.4	0.2	3.1	<0.01	24.1
2270		0.02	0.69	0.5	90	5.2	9.1	<0.001	0.06	0.18	1.6	<0.2	0.2	8.6	<0.01	0.04
2271		0.02	<0.05	2.0	1550	3.3	6.2	<0.001	0.11	0.17	7.4	<0.2	0.6	49.8	<0.01	0.03
2272		0.04	<0.05	5.4	1730	28.9	8.7	<0.001	0.21	0.13	13.3	<0.2	0.4	59.3	<0.01	0.14
2273		0.06	0.11	3.1	1390	3.5	2.4	0.001	1.51	0.33	11.5	<0.2	0.3	14.1	<0.01	0.12
2274		0.02	0.06	11.1	1400	1.4	8.3	0.002	1.52	0.12	11.3	0.3	0.6	33.4	<0.01	0.11
2275		0.02	0.18	4.8	950	1.8	0.4	0.004	0.45	0.81	3.7	0.4	0.4	206	<0.01	0.08
2276		<0.01	<0.05	5.6	660	7.4	5.4	<0.001	3.61	0.39	8.2	1.7	0.2	7.8	<0.01	2.14
2308		0.09	0.25	3.1	1500	9.3	6.2	<0.001	0.15	0.24	2.8	<0.2	0.5	59.6	<0.01	0.02
2251		0.01	0.08	8.5	1600	20.1	3.7	<0.001	3.12	0.10	12.7	0.2	0.3	22.1	<0.01	0.29
2252		0.04	0.91	2.4	1690	4.3	6.0	<0.001	0.10	0.31	4.6	0.3	0.6	20.0	<0.01	0.22
2253		0.06	<0.05	8.9	830	3.6	5.2	0.001	0.21	0.05	4.0	<0.2	0.4	76.2	<0.01	0.07
2254		0.07	<0.05	1.8	1580	1.5	2.8	0.002	0.02	0.09	12.7	<0.2	0.4	56.4	<0.01	0.06
2255		0.02	<0.05	5.1	1120	4.4	2.1	0.008	2.47	0.21	9.3	1.1	0.5	68.6	<0.01	1.35
2256		0.06	<0.05	3.7	1520	1.1	3.3	0.001	0.07	0.09	10.9	<0.2	0.3	69.5	<0.01	0.02
2257		0.02	<0.05	5.4	1080	112.5	5.3	0.001	0.77	27.4	9.1	0.7	<0.2	135.5	<0.01	0.13
2258		0.02	0.10	26.5	1260	11.4	2.3	<0.001	6.70	0.31	7.4	2.8	1.1	42.9	<0.01	2.17

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To: **CME CONSULTANTS INC**
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MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Cu-OG46
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	0.001
3308		0.7	0.231	0.06	0.29	263	0.13	7.81	102	1.1	1.480
3309		0.2	0.136	0.04	0.37	136	0.44	5.51	73	1.6	
3310		1.2	0.263	0.35	0.59	316	0.42	8.82	35	5.5	
3311		1.4	0.116	<0.02	0.57	86	0.41	4.79	85	1.9	
3312		0.3	0.162	0.02	0.49	98	1.24	3.45	56	0.7	
3313		10.4	0.044	0.35	4.17	39	7.67	9.29	76	4.2	
3314		4.4	<0.005	0.05	1.12	57	0.55	19.35	46	5.8	
3315		12.0	<0.005	0.05	5.93	16	0.16	11.20	41	3.7	
3316		0.2	<0.005	<0.02	0.62	18	1.45	39.4	11	0.6	
3317		4.7	<0.005	0.05	2.79	55	0.31	13.20	68	3.3	
3351		0.8	0.224	0.03	0.28	126	0.22	8.26	44	3.8	
3352		0.4	0.117	<0.02	0.19	66	0.26	4.27	29	2.3	
3353		7.9	0.008	<0.02	1.80	13	0.07	3.37	11	2.7	
3354		1.3	0.026	<0.02	0.31	20	0.40	1.42	25	0.8	
3355		1.1	0.279	0.03	0.56	151	0.34	8.06	44	1.2	
3356		0.9	0.187	0.02	0.44	134	0.14	8.78	130	1.8	
3357		0.6	0.020	<0.02	0.24	43	0.34	1.31	31	<0.5	
3358		2.7	0.224	0.02	1.36	157	0.33	8.92	60	2.2	
3359		0.9	0.173	0.02	0.43	125	0.15	6.86	70	1.7	
3360		1.1	0.183	0.02	0.55	125	0.41	6.53	57	2.0	
2266		4.2	0.013	0.05	1.81	97	0.22	9.51	287	3.5	
2267		3.8	0.006	0.05	1.68	105	0.14	16.95	101	7.4	
2268		7.8	0.066	0.02	2.01	29	0.40	16.05	19	2.1	
2269		1.7	0.009	<0.02	1.55	77	2.92	6.31	86	2.5	
2270		37.6	<0.005	0.02	11.55	2	2.79	11.80	17	6.8	
2271		5.1	<0.005	<0.02	1.67	88	0.13	16.95	30	4.6	
2272		4.2	0.019	0.02	1.54	131	0.23	18.20	136	2.2	
2273		1.9	0.148	0.02	0.57	162	0.15	5.93	37	2.0	
2274		3.1	0.073	0.02	1.12	131	0.34	18.00	44	4.0	
2275		2.0	0.044	<0.02	0.43	64	0.32	9.25	25	1.1	
2276		2.2	0.007	0.02	0.61	56	0.09	6.27	111	4.9	4.51
2308		3.1	0.142	<0.02	1.07	97	0.78	9.25	18	5.1	
2251		3.3	0.053	<0.02	1.84	140	0.56	9.14	40	3.9	
2252		5.8	0.103	0.02	0.98	112	0.38	6.48	21	1.4	
2253		0.5	0.019	0.02	0.43	72	0.14	6.52	60	1.7	
2254		3.9	0.007	<0.02	0.54	88	0.05	13.85	44	2.2	
2255		1.4	0.007	<0.02	2.27	167	0.12	5.60	87	2.1	3.60
2256		2.0	0.008	<0.02	0.59	200	0.05	12.30	49	1.8	
2257		3.6	<0.005	0.04	1.86	34	0.05	10.65	110	2.2	
2258		2.1	0.062	<0.02	0.86	121	0.28	6.58	65	3.7	5.93

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Finalized Date: 25-OCT-2020
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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	WEI-21	Au-ICP21	Au-GRA21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co
	Units	kg	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	0.02	0.001	0.05	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1
2259		0.72	0.005		0.17	1.14	3.3	<0.02	<10	480	0.69	0.06	7.77	0.10	27.5	22.3
2260		0.44	0.002		0.18	0.52	5.0	<0.02	<10	410	0.76	0.02	7.01	0.17	21.5	12.2
2261		0.60	0.033		0.49	2.09	88.3	0.02	<10	160	0.33	0.11	0.91	0.62	50.4	28.3
2262		0.66	0.011		0.12	1.19	11.3	<0.02	<10	150	0.19	0.09	0.72	0.12	28.3	27.8
2263		0.48	0.024		0.08	0.94	6.7	0.02	<10	230	0.19	0.07	0.61	0.05	22.7	11.2
2264		0.62	0.223		0.73	0.68	26.3	0.39	<10	160	0.32	0.56	0.19	0.01	20.0	31.5
2265		0.24	0.008		0.03	0.98	3.6	<0.02	<10	120	0.32	0.02	0.80	0.04	22.7	11.2
2301		0.72	0.037		0.81	0.57	46.4	0.04	<10	100	0.25	0.33	0.27	0.03	5.88	90.5
2302		0.70	0.086		0.47	1.17	20.3	0.06	<10	130	0.20	0.41	0.41	0.06	27.3	36.6

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	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
2259		2	1.14	503	6.46	3.84	0.06	0.05	0.01	0.028	0.20	14.4	7.6	1.01	1460	1.12
2260		1	2.73	188.5	3.71	1.24	<0.05	0.03	0.02	0.028	0.19	10.7	5.7	1.18	1440	2.05
2261		2	0.66	1290	6.74	7.79	0.11	0.16	0.01	0.084	0.13	34.1	35.2	1.13	562	0.73
2262		2	0.39	462	3.35	6.99	0.09	0.17	<0.01	0.039	0.15	15.1	18.6	0.81	298	2.33
2263		2	0.37	325	3.39	5.22	0.07	0.17	<0.01	0.029	0.16	10.5	9.5	0.57	232	2.60
2264		2	0.50	934	16.15	6.21	0.15	0.12	0.03	0.130	0.18	15.0	3.5	0.20	63	71.5
2265		2	0.31	362	2.78	4.64	0.08	0.16	<0.01	0.019	0.15	13.6	6.6	0.42	177	1.70
2301		2	0.43	445	27.9	10.15	0.19	0.10	0.01	0.027	0.07	2.9	3.7	0.34	199	2.49
2302		1	0.24	834	8.00	4.99	0.11	0.19	0.04	0.052	0.16	17.6	12.7	0.55	201	11.60

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: **CME CONSULTANTS INC**
PO BOX 38099
MORGAN HEIGHTS POST OFFICE
SURREY BC V3Z 6R3

Finalized Date: 25-OCT-2020
Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
2259		0.01	<0.05	5.3	1320	3.4	9.1	<0.001	0.19	0.16	9.7	<0.2	0.2	95.9	<0.01	0.02
2260		0.01	<0.05	2.3	1070	6.3	8.3	<0.001	0.04	0.42	4.4	0.2	<0.2	112.0	<0.01	<0.01
2261		0.03	0.12	4.2	1670	48.1	3.4	<0.001	0.80	0.19	13.2	0.2	1.4	30.7	<0.01	0.08
2262		0.03	0.28	4.1	1640	3.2	4.2	<0.001	0.52	0.20	6.1	<0.2	0.5	20.9	<0.01	0.06
2263		0.04	0.60	2.2	1610	1.7	4.8	<0.001	0.19	0.17	4.5	<0.2	1.0	22.6	<0.01	0.03
2264		0.02	1.25	1.8	1460	2.6	5.8	0.001	1.55	0.26	3.8	0.7	2.0	15.5	<0.01	0.40
2265		0.06	0.44	2.0	1580	2.1	5.1	<0.001	0.03	0.24	3.0	<0.2	1.3	33.9	<0.01	0.02
2301		0.05	0.27	25.8	900	2.8	3.3	0.001	2.11	0.30	4.7	0.7	0.7	20.4	<0.01	0.39
2302		0.02	0.37	2.3	1360	4.1	3.6	0.002	2.25	0.33	7.6	0.6	1.4	19.9	<0.01	0.21

***** See Appendix Page for comments regarding this certificate *****

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Account: CMECON

Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Cu-OG46
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	0.001
2259		2.7	<0.005	0.02	1.00	97	0.21	19.80	70	1.4	
2260		2.2	<0.005	0.02	1.19	29	0.10	15.25	57	0.8	
2261		3.6	0.087	<0.02	1.96	144	0.38	13.75	111	3.4	
2262		4.1	0.158	<0.02	1.11	90	0.71	9.39	27	3.2	
2263		4.1	0.138	<0.02	1.62	89	0.60	11.20	16	5.1	
2264		6.1	0.186	0.02	1.67	132	0.50	3.77	11	4.9	
2265		4.0	0.152	<0.02	1.85	94	0.57	8.81	18	4.3	
2301		2.0	0.068	<0.02	0.65	304	14.95	4.33	17	2.2	
2302		3.8	0.122	<0.02	1.49	82	0.52	8.63	26	3.9	

***** See Appendix Page for comments regarding this certificate *****

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Project: Cathedral

CERTIFICATE OF ANALYSIS VA20201530

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-GRA21	Au-ICP21	CRU-31	CRU-QC
Cu-OG46	LOG-21	LOG-23	ME-MS41
ME-OG46	PUL-31	PUL-QC	SPL-21
WEI-21			

APPENDIX IV
GEOPHYSICS LOGISTICS REPORT

A LOGISTICS REPORT

ON

INDUCED POLARIZATION SURVEYING

CATHEDRAL PROPERTY
USLIKA AREA, BRITISH COLUMBIA

OMINECA M.D.
5650 °' N, 1255.72 °' W
NTS 94C/03

Claims Surveyed

689828,1025889,1055274

Work Dates

August 6th– 22nd,2020

for

IMC INTERNATIONAL MINING CORP.

VANCOUVER, BRITISH COLUMBIA

by

ALEXANDER WALCOTT, B.Sc.
PETER E. WALCOTT & ASSOCIATES LIMITED

COQUITLAM, BRITISH COLUMBIA
JANUARY 2021

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INTRODUCTION…….	3
PROPERTY, LOCATION AND ACCESS……...	4
SURVEY SPECIFICATIONS……...	7
DISCUSSION OF RESULTS……	9

APPENDIX I

Personnel Employed on Project

ACCOMPANYING MAPS

Claim and Line Location Map	Scale 1:10,000
IP Pseudo-sections 25 m a-spacing 4700N, 5300N, 5400N	Scale 1: 2,000
100 m a-spacing 5000N, 5200N, 6350E, 6650E, 17400N	Scale 1:10,000
Loke 2D Inverted Sections (Merged with Historic Data) 4600N,4700N, 5000N,5300N, 5400N, 5500N, 6350E,6650E, 17400N	Scale 1:10,000

INTRODUCTION.

Between August 6th and 22nd, 2020, Peter E. Walcott & Associates Limited undertook induced polarization surveying over parts of the Cathedral property for IMC International Mining Corp.

Measurements – first to sixth separation – of apparent chargeability – the IP response parameter – and resistivity were made along the traverse lines using the pole-dipole technique utilising a both 25 and 100-metre dipole.

In total, some 9.7-line kilometres of induced polarization surveying was completed on eight traverses.

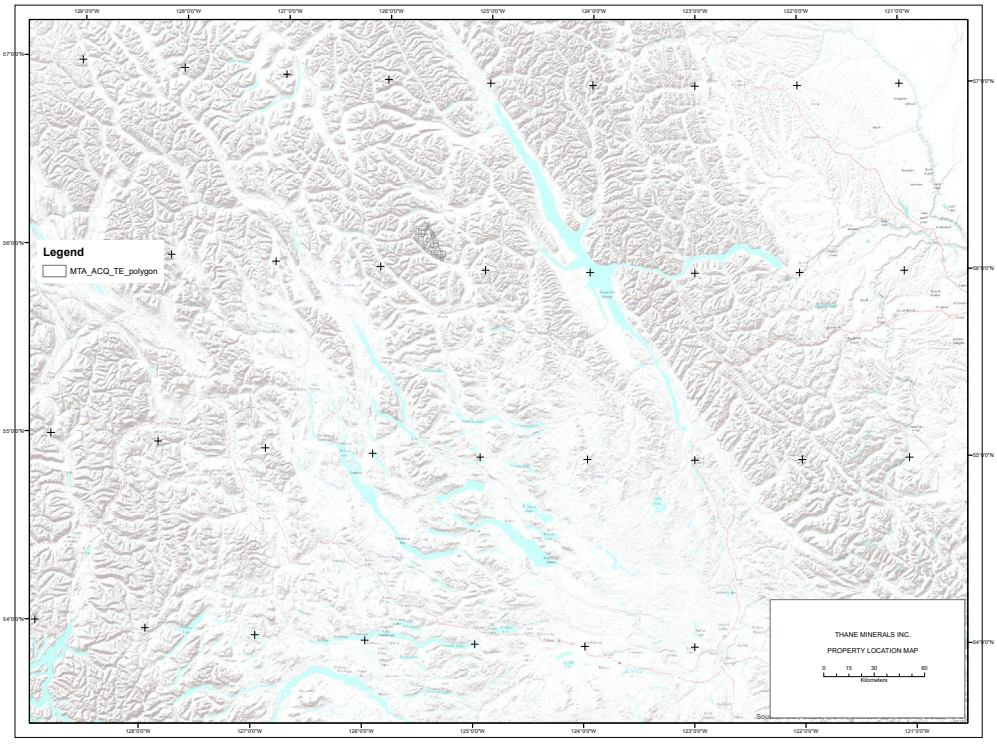
The data are presented as individual pseudo sections at a scale of 1:2,000 and 1:10,000 respectively.

In addition to induced polarization surveying, horizontal / vertical positions of the line stations were measured using a Garmin handheld GPS unit.

PROPERTY LOCATION AND ACCESS.

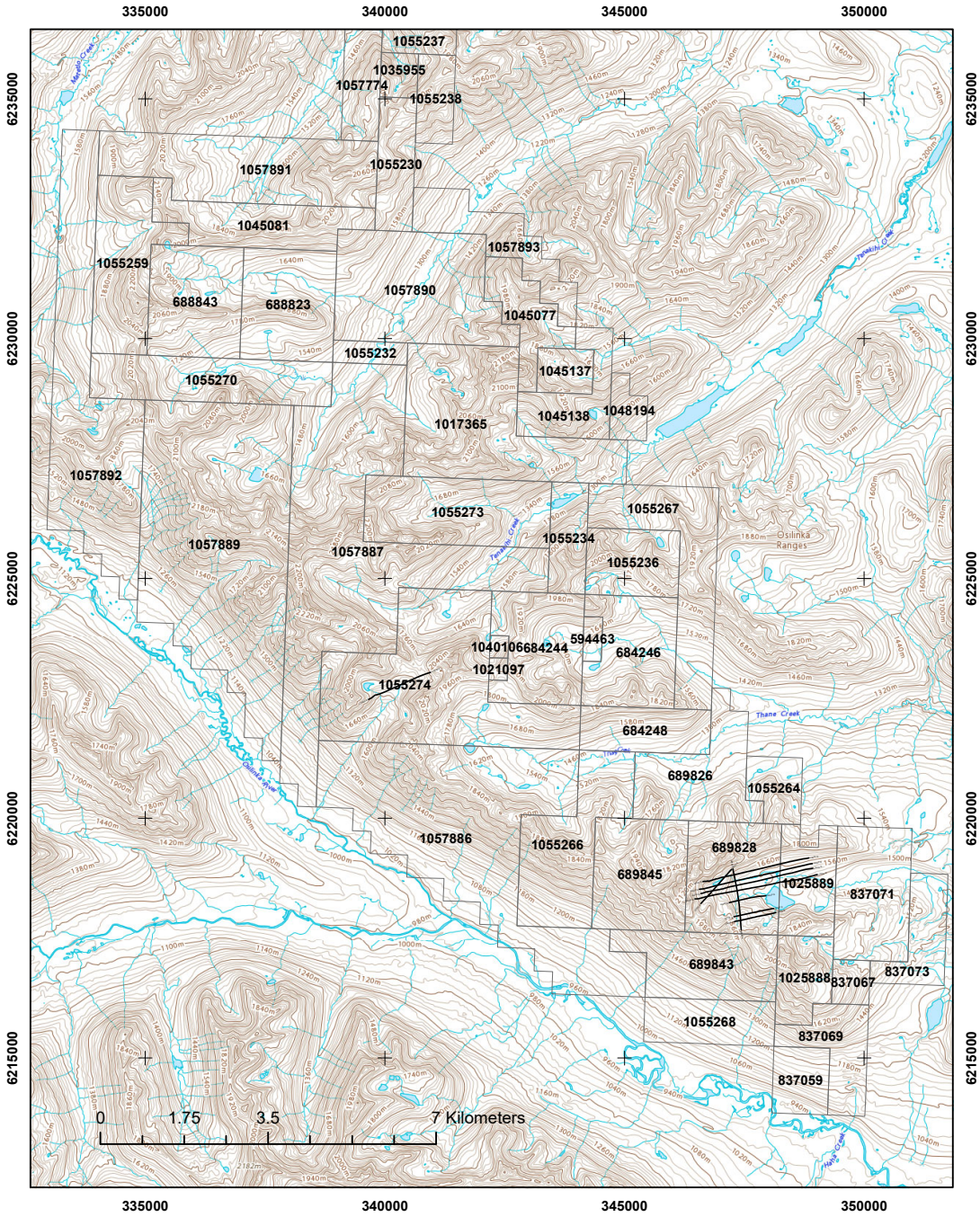
The Cathedral property is in the Omineca Mining Divisions, some 65 kilometers northwest of the community of Germansen Landing.

Access to the property is gain via a well establish network of resource roads emanating from the communities of Fort St. James or Mackenzie respectively and then by helicopter to a camp established on the property where the crew was housed of the duration of the survey.



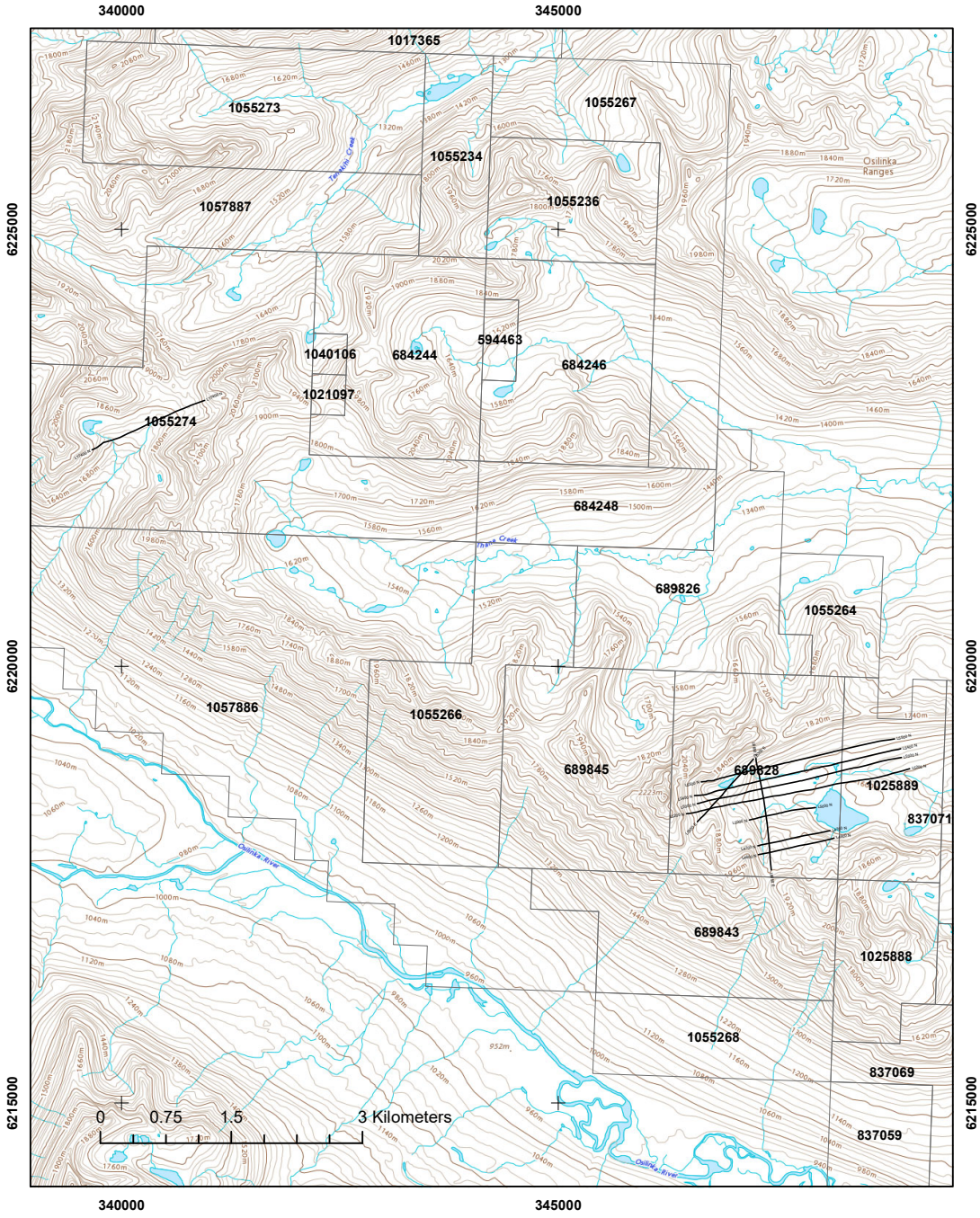
Property Location Map

PROPERTY LOCATION AND ACCESS con't.



Claim and Line Location Map

PROPERTY LOCATION AND ACCESS con't.



IP Line Location Map

SURVEY SPECIFICATIONS.

The Induced Polarization Survey.

The induced polarization (IP) survey was conducted using a pulse type system, the principal components of which were manufactured by Walcer Geophysics Ltd. of Enniskillen, Ontario, and by Instrumentation GDD of St. Foy, Quebec.

The system consists basically of three units, a receiver (GDD), transmitter (Walcer) and a motor generator (Honda). The transmitter, which provides a maximum of 9.0 kw dc to the ground, obtains its power from a 20 kw 60 cps alternator driven by a Honda 24 hp gasoline engine. The cycling rate of the transmitter is 2 seconds "current-on" and 2 seconds "current-off" with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through the current electrodes C_1 and C_2, the primary voltages (V) appearing between any two potential electrodes, P_1 through P_7, during the "current-on" part of the cycle, and the apparent chargeability, (M_a) presented as a direct readout in millivolts per volt using a 200 millisecond delay and a 1000 millisecond sample window by the receiver, a digital receiver controlled by a micro-processor – the sample window is actually the total of twenty individual windows of 50 millisecond widths.

The apparent resistivity ($\int_a$) in ohm metres is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used. The chargeability and resistivity are called apparent as they are values which that portion of the earth sampled would have if it were homogeneous. As the earth sampled is usually inhomogeneous the calculated apparent chargeability and resistivity are functions of the actual chargeability and resistivity of the rocks.

The survey was carried out using the "pole-dipole" method of surveying. In this method the current electrode, C_1, and the potential electrodes, P_1 through P_{n+1}, are moved in unison along the survey lines at a spacing of "a" (the dipole) apart, while the second current electrode, C_2, is kept constant at "infinity". The distance, "na" between C_1 and the nearest potential electrode generally controls the depth to be explored by the particular separation, "n", traverse.

On this survey a both 25 and 100 metres dipole was employed and first to sixth separations readings were obtained. In total some 9.7 kilometres of surveying were completed.

SURVEY SPECIFICATIONS cont'd.

Horizontal and vertical control.

The horizontal position of the stations was recorded using a GLONASS equipped Garmin C66 handheld GPS receiver.

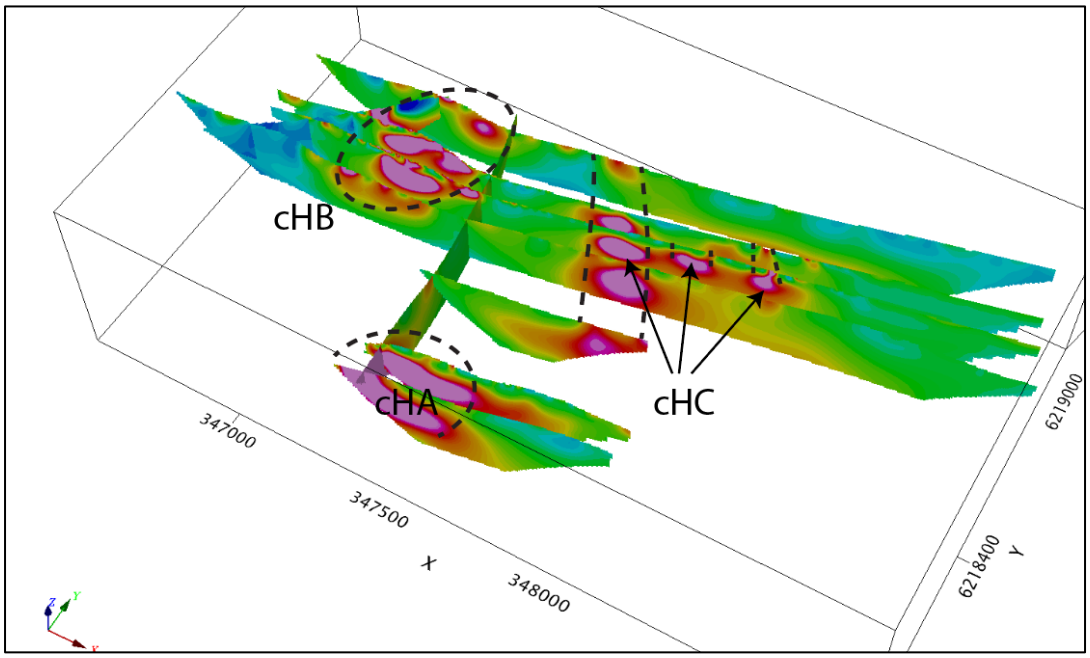
Data Presentation.

The data are presented as individual pseudo section plots of apparent resistivity and apparent chargeability at a scale of 1:2000, and 1:10,000 respectively generated using Geosoft Oasis Montaj. In addition, data was subjected to 2D inversion and presented as model sections at a scale of 1: 10,000.

DISCUSSION OF RESULTS.

The 2020 induced polarization program was designed to expand on the 2019 induced polarization survey, continuing it both the north and south directions.

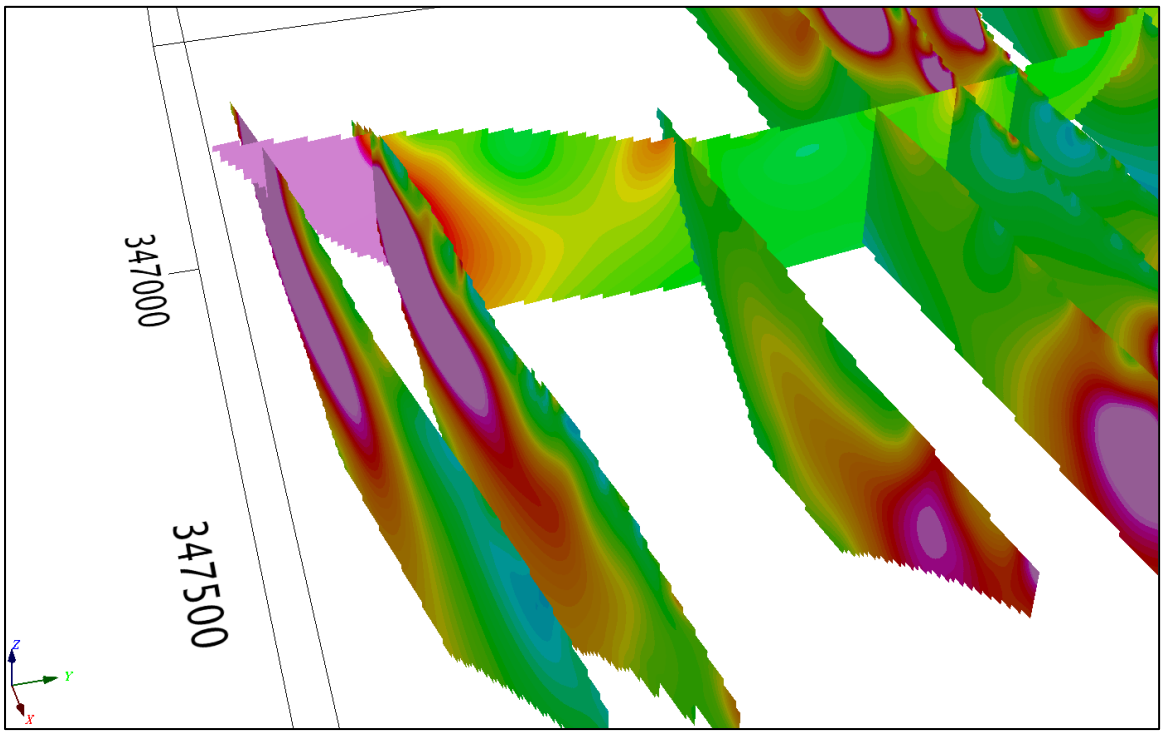
In addition to expansion the historic grid, detailed surveying utilizing a 25 m a-spacing was also undertaken on several lines to further define several discrete zones identified during the 2019, proximal to cHC.



3D View of 2019/2020
Modelled Chargeability (mV/V)

Anomaly cHA, is situated in the southern portion of the survey grid. This feature was initially identified in 2019. In 2020, the southern extent of line 6650E which was orthogonal to the historic lines also partially resolved this chargeability feature associated with a moderate resistivity. The feature however remains open to the southwest.

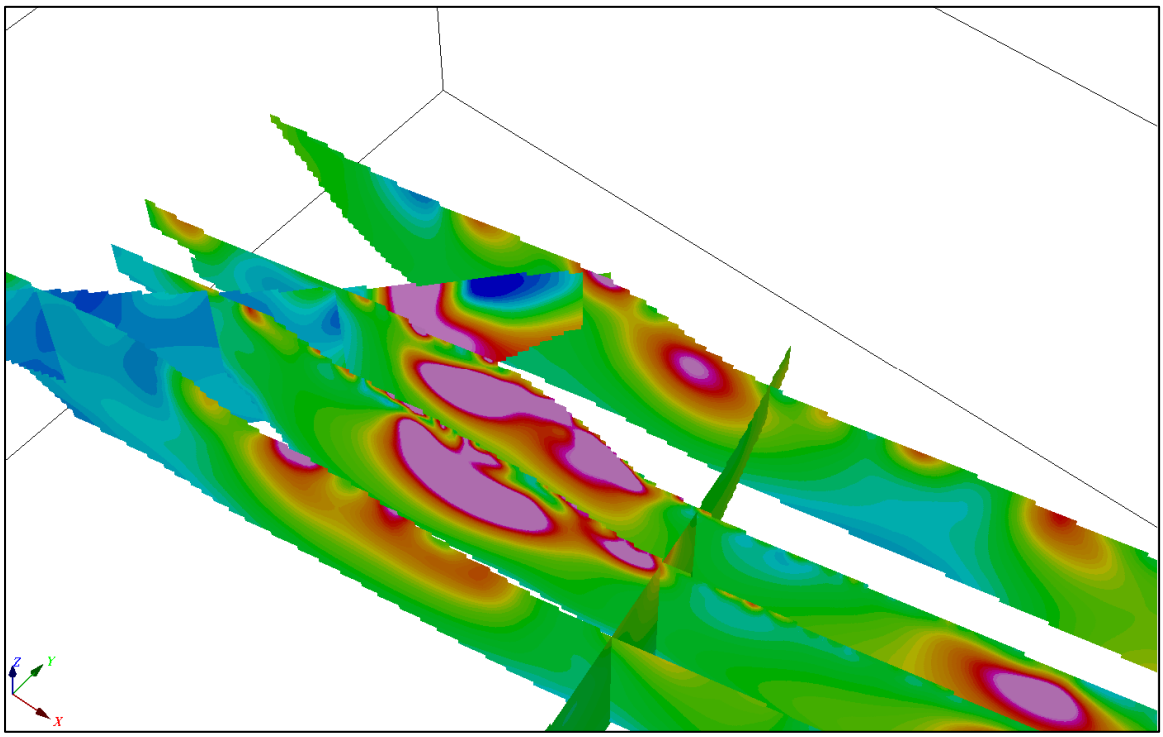
DISCUSSION OF RESULTS cont'd.



Detailed View Anomaly cHA

Anomaly cHB is in the northwest corner of the main survey grid. This feature was also identified with the 2019 survey. The combined results of the 2019/2012, shows a plug like feature potentially elongated in a north-westerly orientation. The chargeability feature is associated with a discrete resistivity plug, and likely of interest.

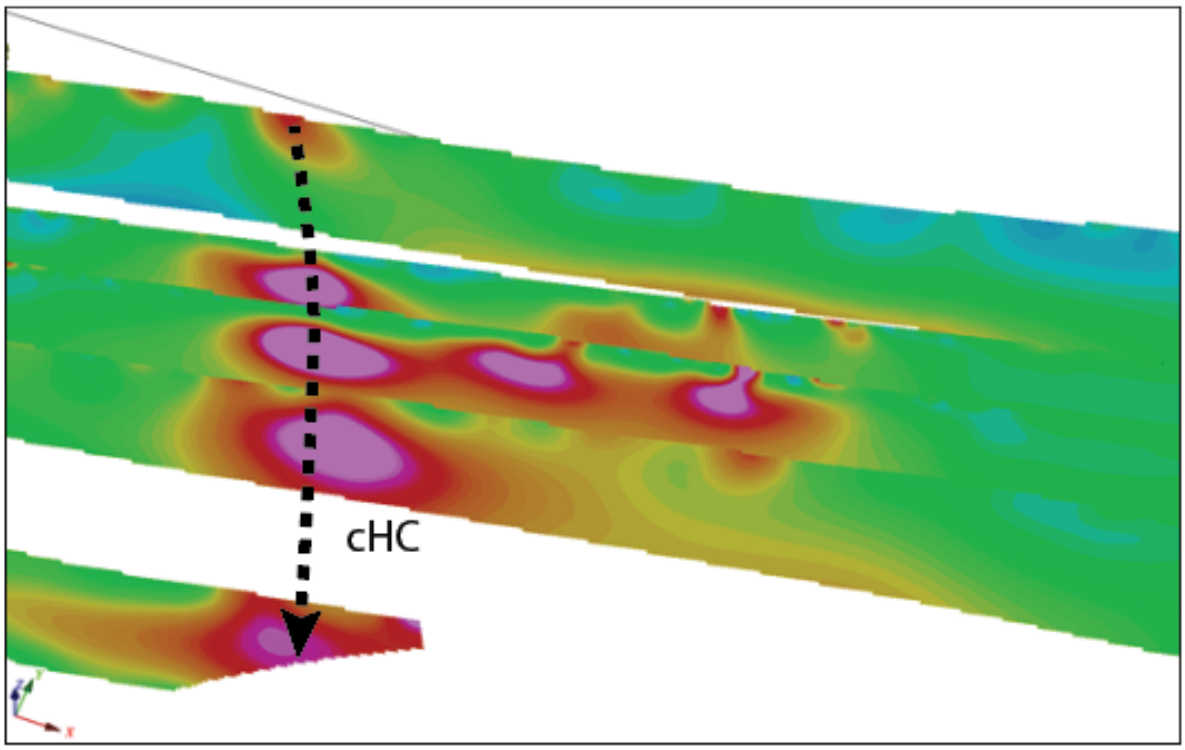
DISCUSSION OF RESULTS cont'd.



Detailed View Anomaly cHB

Anomaly cHC is in the north central portion of the survey area. This north-south trending feature has a strike of some 500 meters and remains open in the south. The anomaly appears to diminish going north. The feature is also associated with broad zone of elevated resistivity and is proximal to known mineralization. The axis illustrated below represents the most intense and continuous feature in what is a likely a series of discrete north south features going to the east.

DISCUSSION OF RESULTS cont'd.



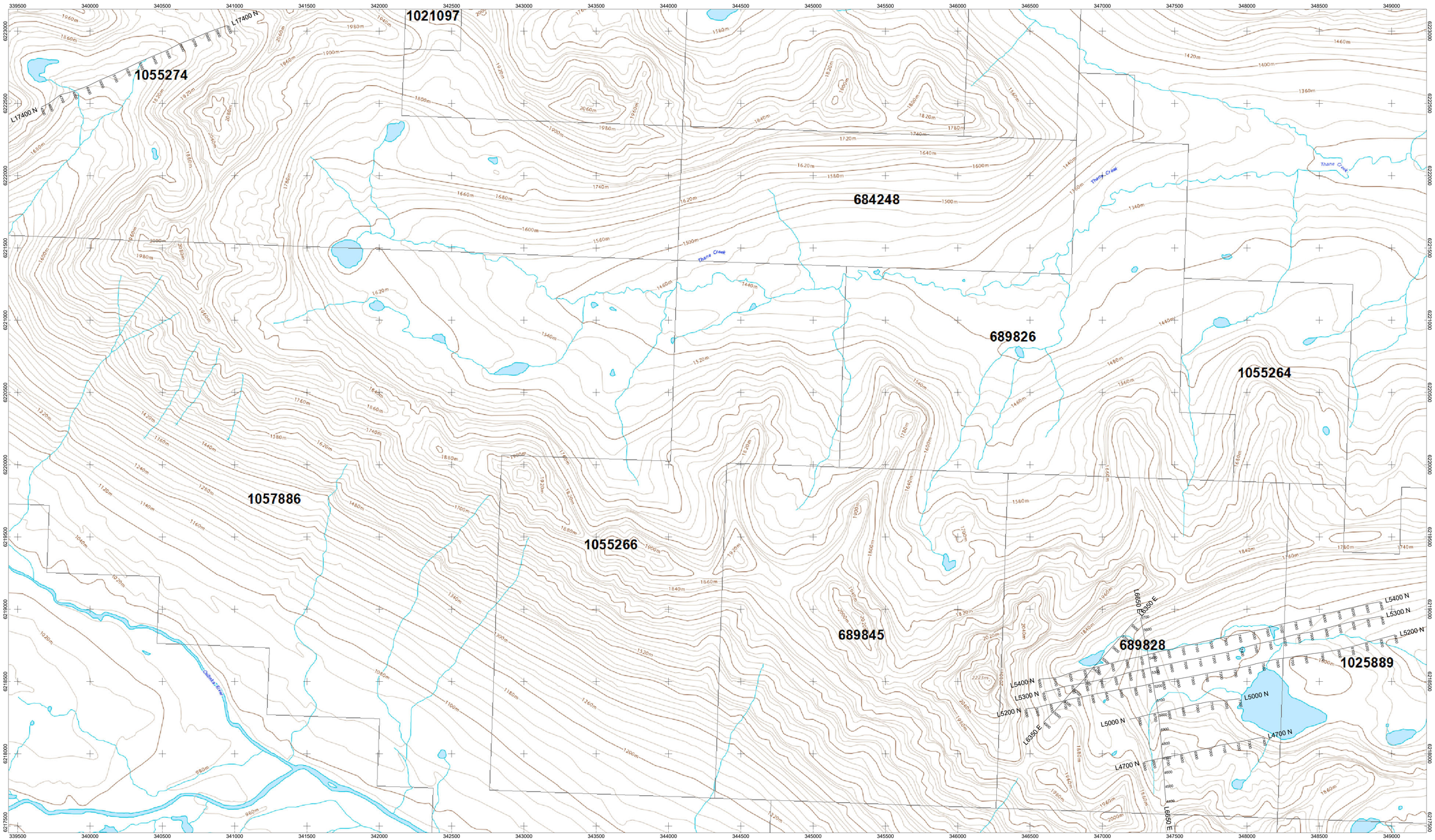
Detailed View Anomaly cHC

In addition to the lines conducted on the main grid a single reconnaissance line was conducted some 8.5 kilometers to the northwest. No significant features of interest were observed.

APPENDIX I

PERSONNEL EMPLOYED ON PROJECT.

Name	Occupation	Address	Dates Worked
Alex Walcott	Geophysicist	17-111 Fawcett Road, Coquitlam, B.C.	Aug 6th-22nd, 2020
J. Cornock	"	"	"
B. Doram	Geophysical Operator	"	"
W. Kennedy	"	"	Aug 14th – 22nd, 2020
B. Hall	Geophysical Helper	"	Aug 6th-22nd, 2020
M. Hall	"	"	Aug 11th-22nd, 2020
Caiden Olund	"	"	Aug 8th-22nd,202
N. Richards	"	"	Aug 6th- 13th, 2020
B. Pius	"	"	Aug 8th-10th, 2020



IMC INTERNATIONAL MINING CORP.

INDUCED POLARIZATION SURVEY
CLAIM AND LINE LOCATION MAP

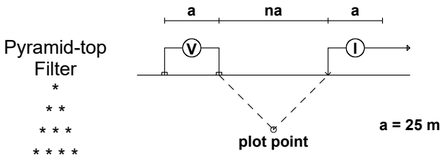
CATHEDRAL PROPERTY
OMINECA MINING DIVISION
BRITISH COLUMBIA
SUMMER 2020

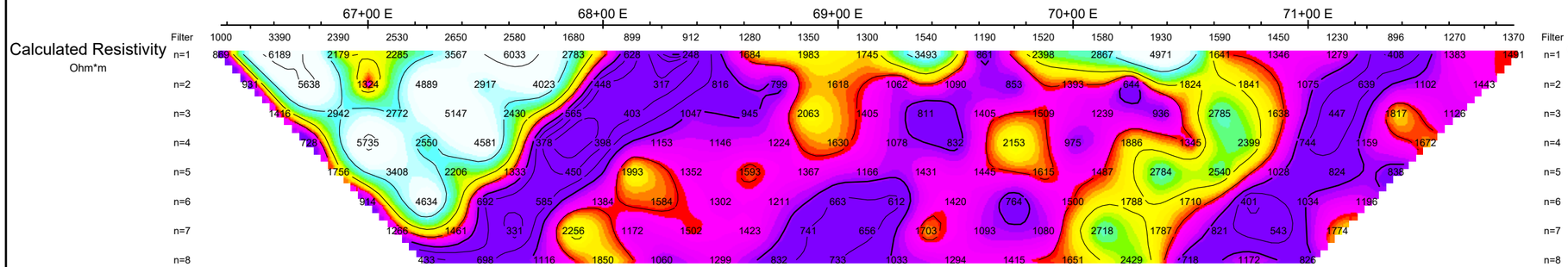
PETER E. WALCOTT & ASSOCIATES LIMITED

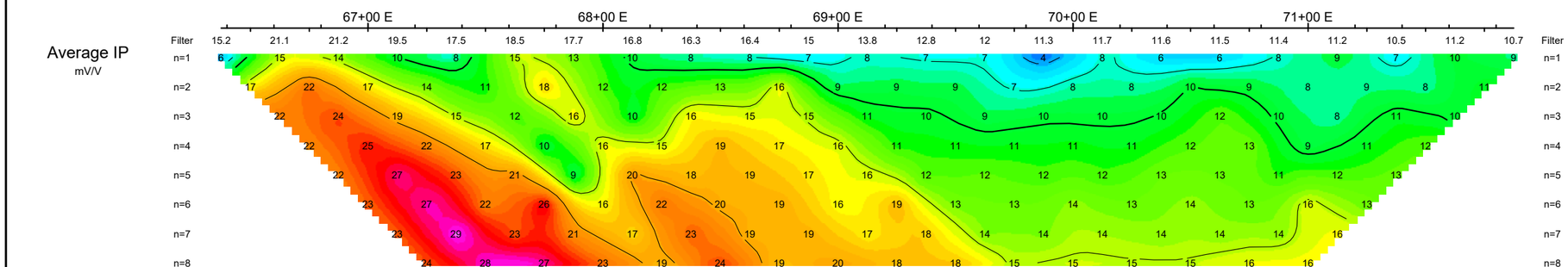
Pseudo Section Plot

47+00 N

Dipole-Pole Array







Logarithmic Contours: 1, 1.5, 2, 3, 5, 7.5, 10,...

Scale 1:2000

25 0 25 50 75 100 125

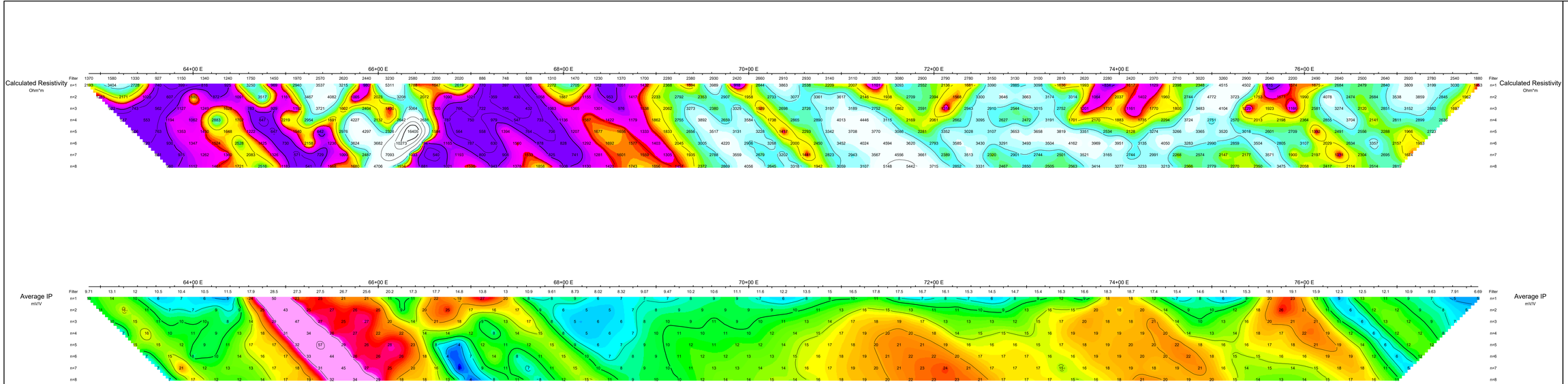
(meters)

IMC INTERNATIONAL MINING CORP.

INDUCED POLARIZATION SURVEY
CATHEDRAL PROPERTY
OMINECA M.D.

Date: SUMMER 2020

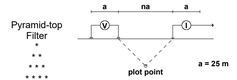
PETER E. WALCOTT & ASSOCIATES LIMITED



Pseudo Section Plot

53+00 N

Dipole-Pole Array



Logarithmic Contours: 1.5, 2, 3, 5, 7.5, 10,...

Scale 1:2000

25 0 25 50 75 100 125

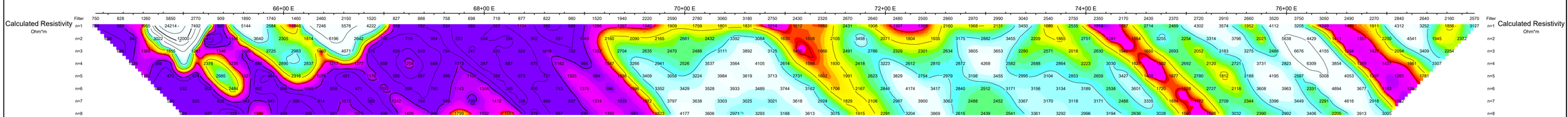
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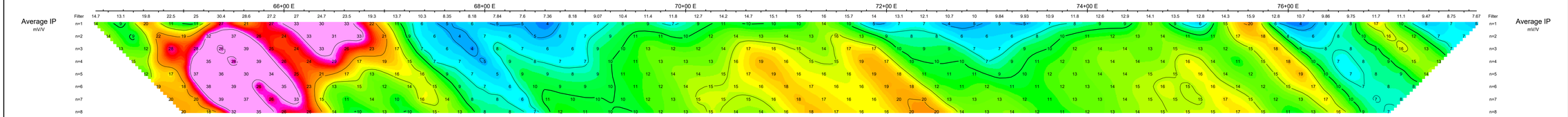
IMC INTERNATIONAL MINING CORP.

INDUCED POLARIZATION SURVEY
CATHEDRAL PROPERTY
OMINECA M.D.

Date: SUMMER 2020

PETER E. WALCOTT & ASSOCIATES LIMITED

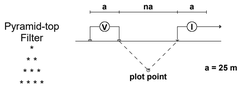




Pseudo Section Plot

54+00 N

Dipole-Pole Array



Logarithmic
Contours 1.5, 2, 3, 5, 7.5, 10,...

Scale 1:2000



IMC INTERNATIONAL MINING CORP.

INDUCED POLARIZATION SURVEY
CATHEDRAL PROPERTY
OMINECA M.D.

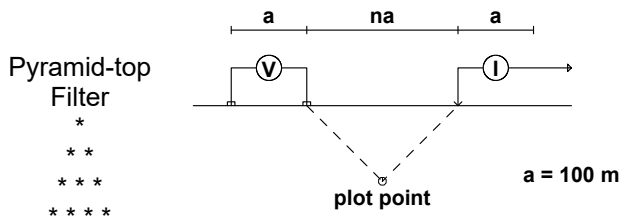
Date: SUMMER 2020

PETER E. WALCOTT & ASSOCIATES LIMITED

Pseudo Section Plot

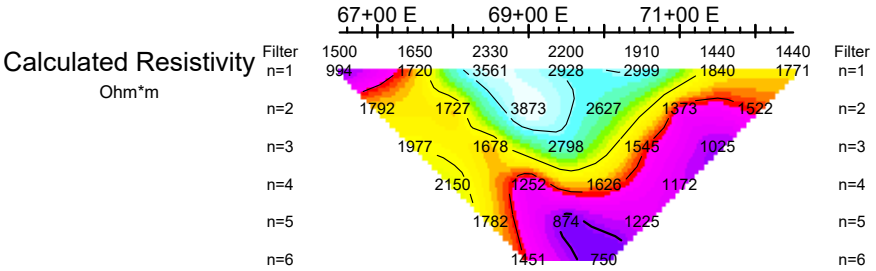
50+00 N

Dipole-Pole Array

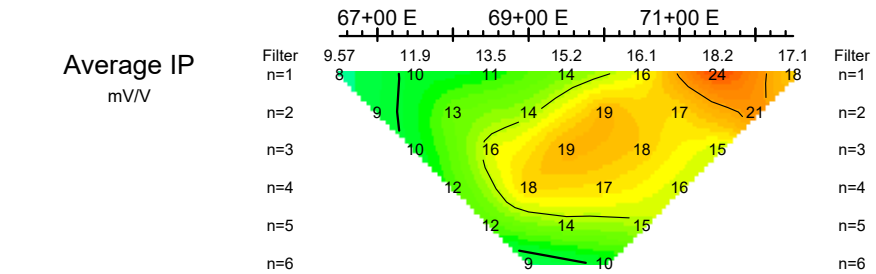


Pyramid-top Filter

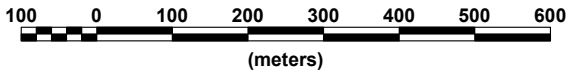
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* *
* * *
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Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...



Scale 1:10000



IMC INTERNATIONAL MINING CORP.

INDUCED POLARIZATION SURVEY
CATHEDRAL PROPERTY
OMINECA M.D.

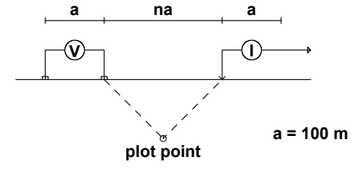
Date: SUMMER 2020

PETER E. WALCOTT & ASSOCIATES LIMITED

Pseudo Section Plot

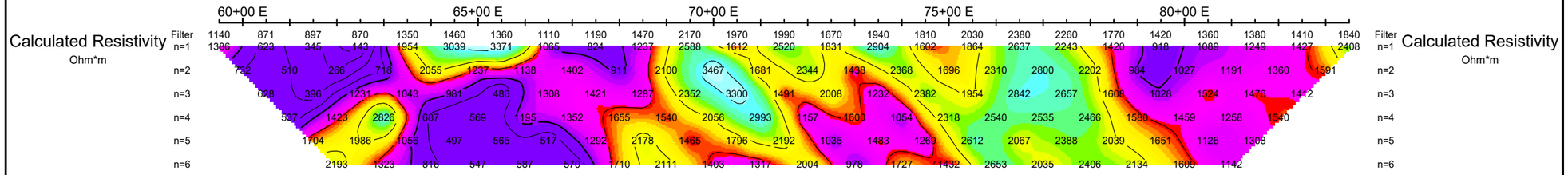
52+00 N

Dipole-Pole Array



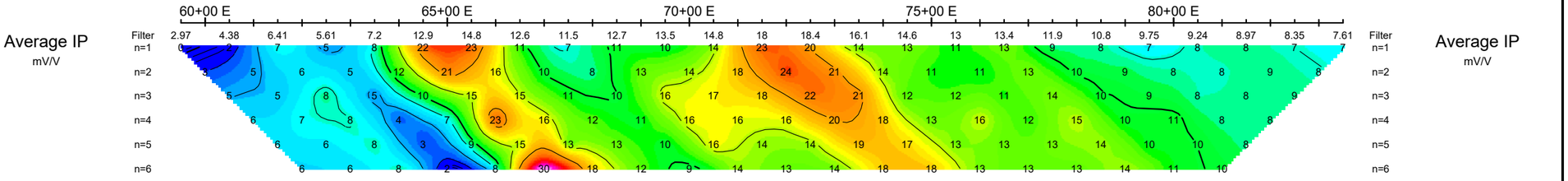
Pyramid-top Filter

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* * * *



Calculated Resistivity
Ohm*m

Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...



Average IP
mV/V

Scale 1:10000

100 0 100 200 300 400 500 600

(meters)

IMC INTERNATIONAL MINING CORP.

INDUCED POLARIZATION SURVEY
CATHEDRAL PROPERTY
OMINECA M.D.

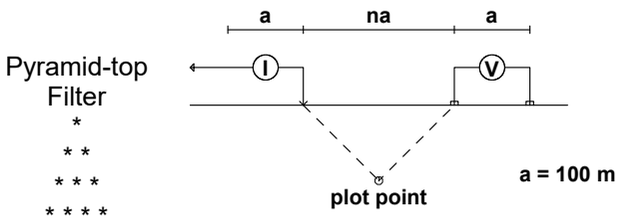
Date: SUMMER 2020

PETER E. WALCOTT & ASSOCIATES LIMITED

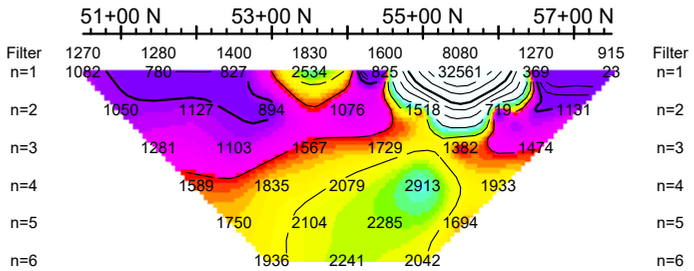
Pseudo Section Plot

63+50 E

Pole-Dipole Array



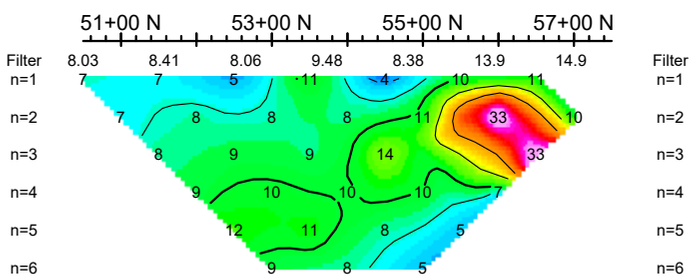
Calculated Resistivity
Ohm*m



Calculated Resistivity
Ohm*m

Logarithmic
Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

Average IP
mV/V



Average IP
mV/V

Scale 1:10000

100 0 100 200 300 400 500 600
(meters)

IMC INTERNATIONAL MINING CORP.

INDUCED POLARIZATION SURVEY
CATHEDRAL PROPERTY
OMINECA M.D.

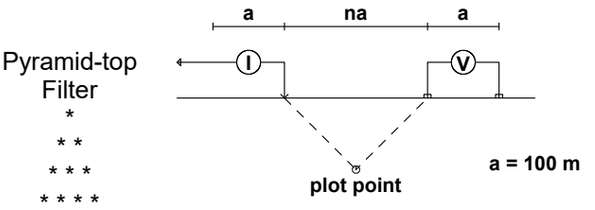
Date: SUMMER 2020

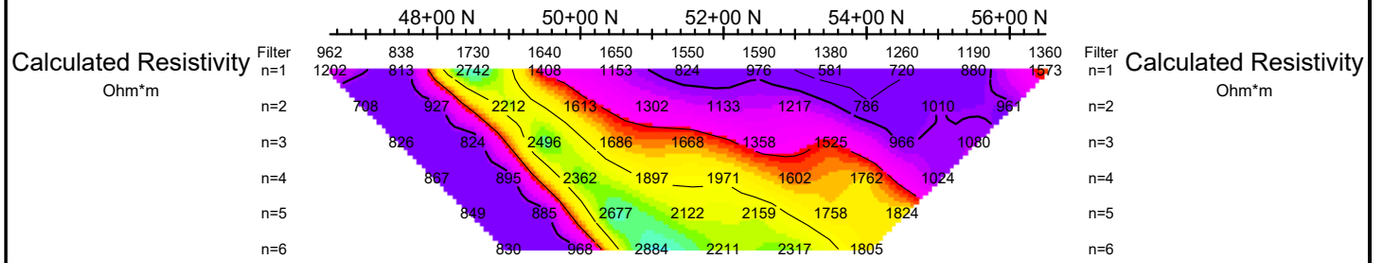
PETER E. WALCOTT & ASSOCIATES LIMITED

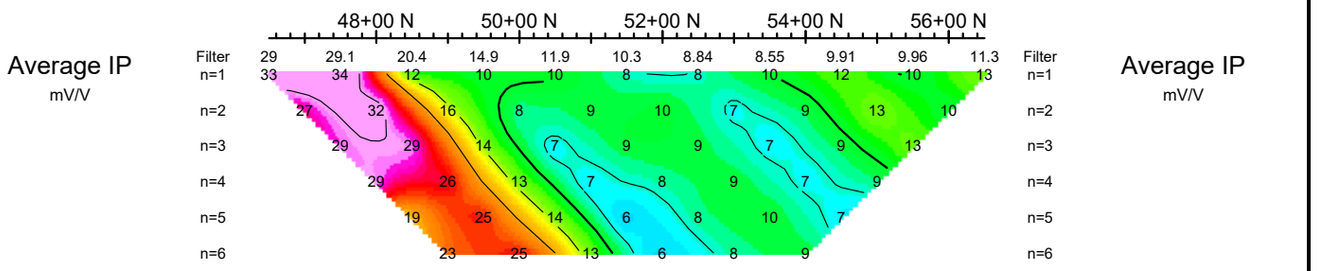
Pseudo Section Plot

66+50 E

Pole-Dipole Array







Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

Scale 1:10000

100 0 100 200 300 400 500 600

(meters)

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INDUCED POLARIZATION SURVEY
CATHEDRAL PROPERTY
OMINECA M.D.

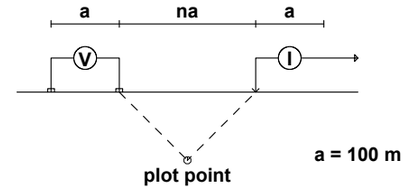
Date: SUMMER 2020

PETER E. WALCOTT & ASSOCIATES LIMITED

Pseudo Section Plot

174+00 N

Dipole-Pole Array



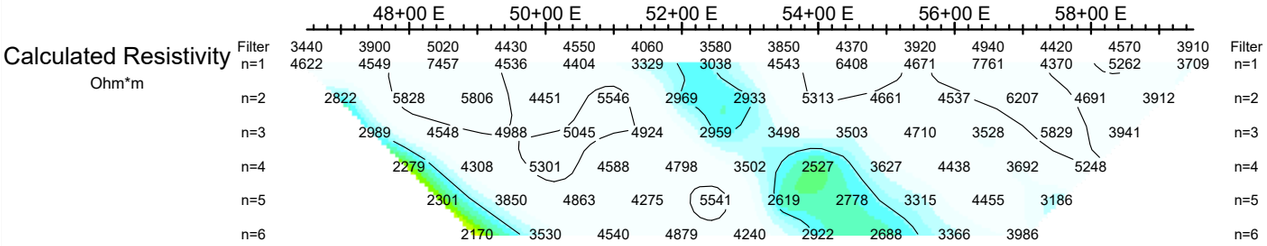
Pyramid-top Filter

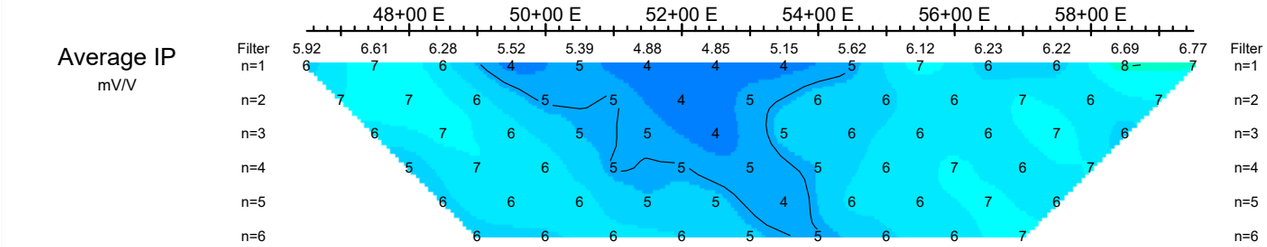
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* * *

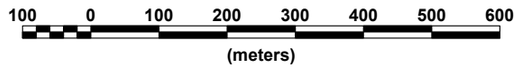
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Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

Scale 1:10000



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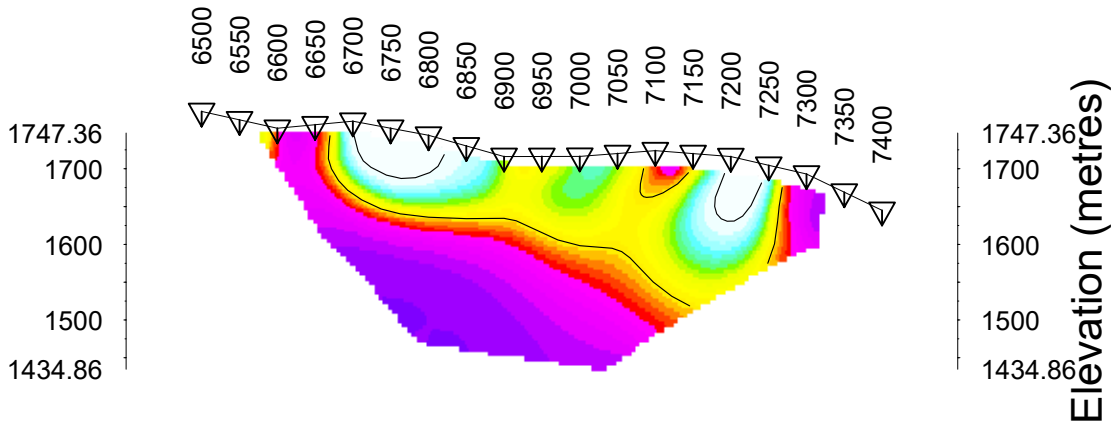
INDUCED POLARIZATION SURVEY
CATHEDRAL PROPERTY
OMINECA M.D.

Date: SUMMER 2020

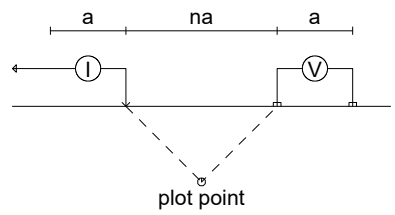
PETER E. WALCOTT & ASSOCIATES LIMITED

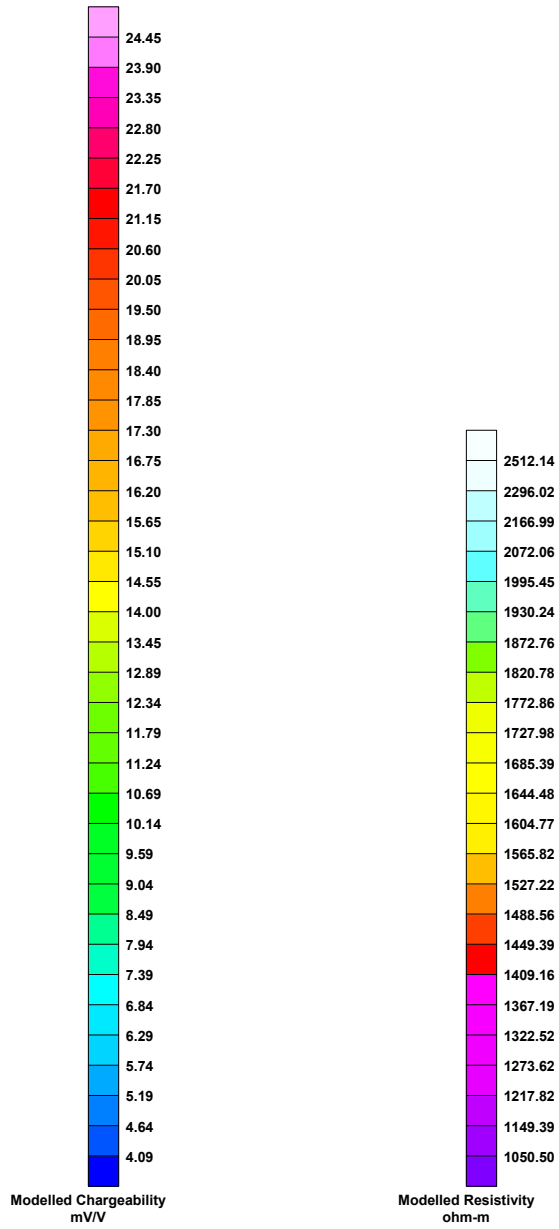
Line 4600

Modelled Resistivity (Ohm-m)

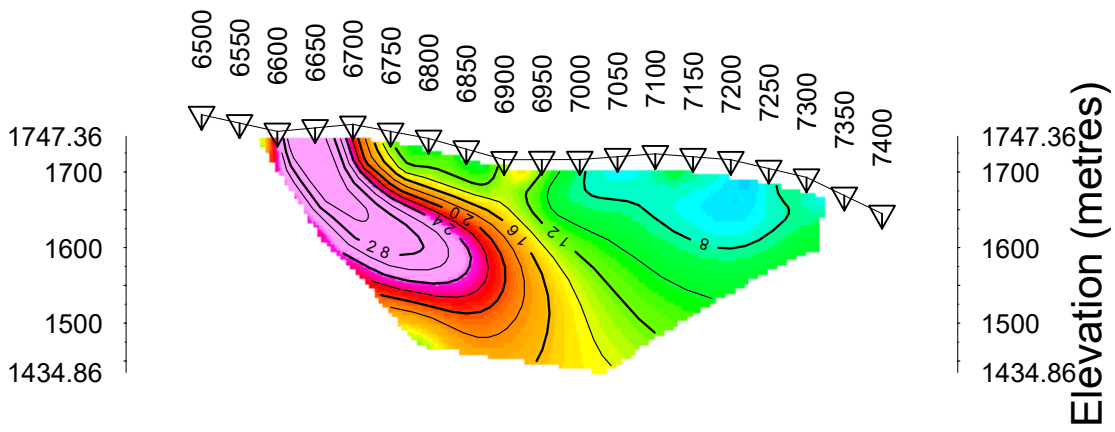


Pole-Dipole Array

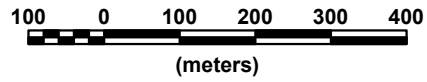




Modelled Chargeability (mV/V)



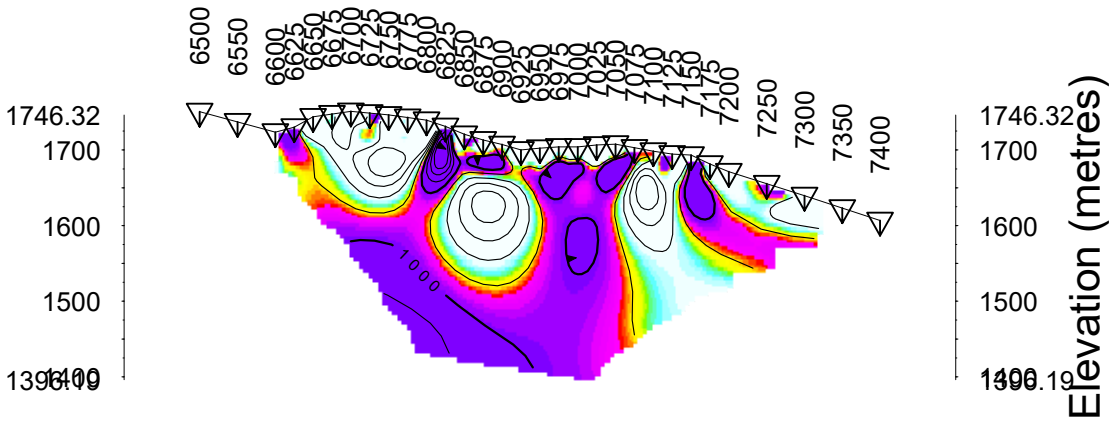
Scale 1:10000



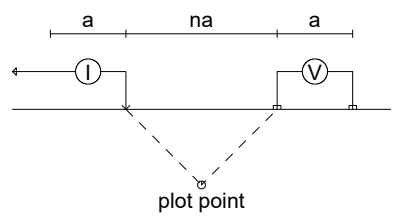
IMC INTERNATIONAL MINING CORP.
INDUCED POLARIZATION SURVEY CATHEDRAL PROJECT
SEPTEMBER 2020 RES2DINV
Inversion By:PETER E. WALCOTT & ASSOCIATES LIMITED

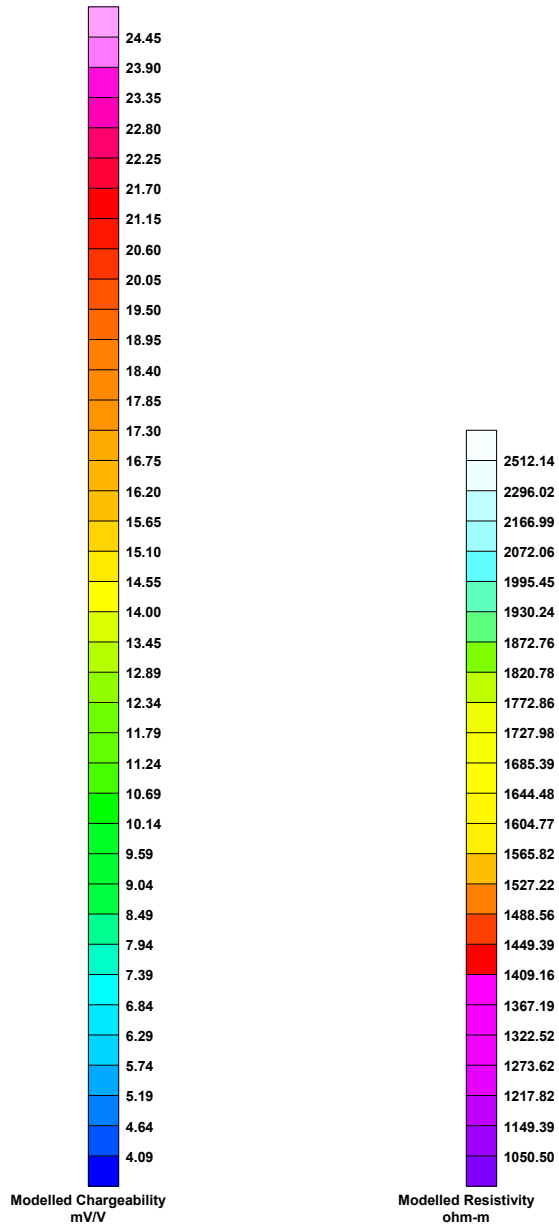
Line 4700

Modelled Resistivity (Ohm-m)

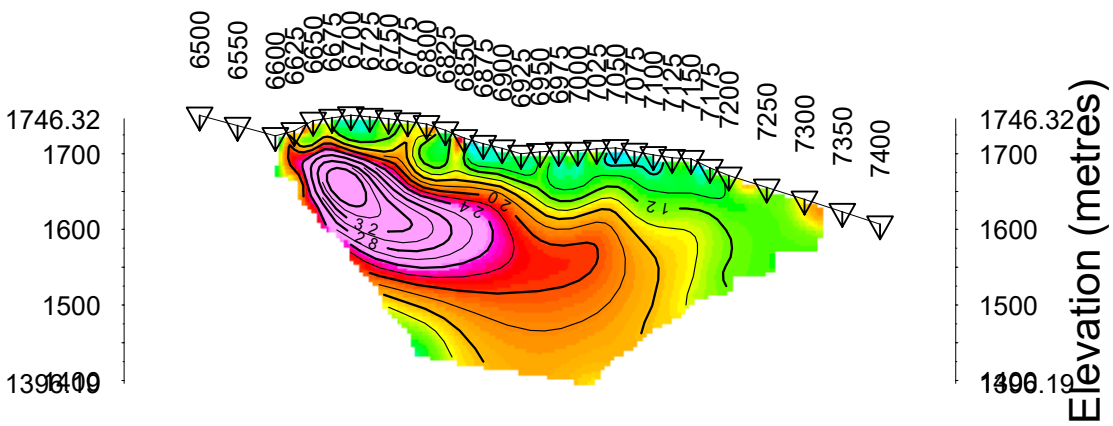


Pole-Dipole Array





Modelled Chargeability (mV/V)



Scale 1:10000

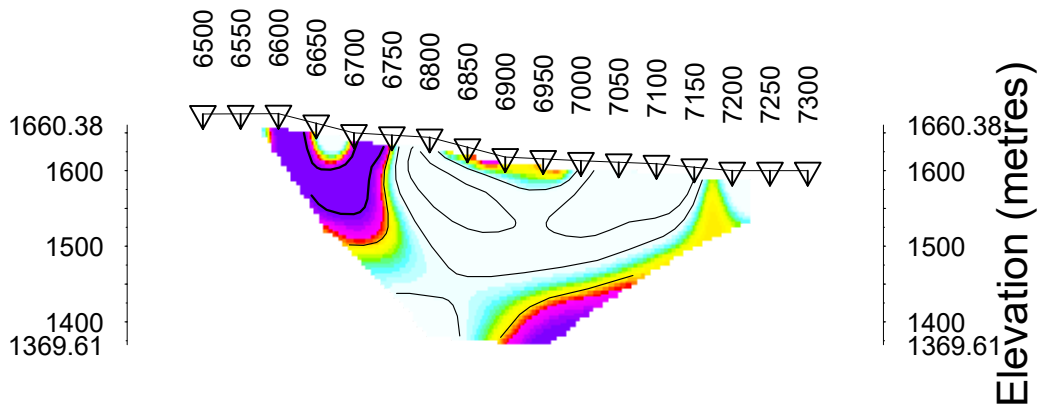
100 0 100 200 300 400

(meters)

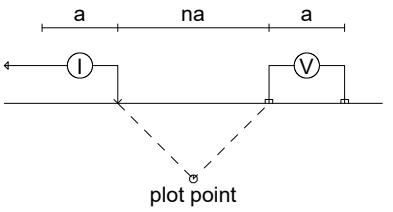
IMC INTERNATIONAL MINING CORP.
INDUCED POLARIZATION SURVEY CATHEDRAL PROJECT
SEPTEMBER 2020 RES2DINV
Inversion By:PETER E. WALCOTT & ASSOCIATES LIMITED

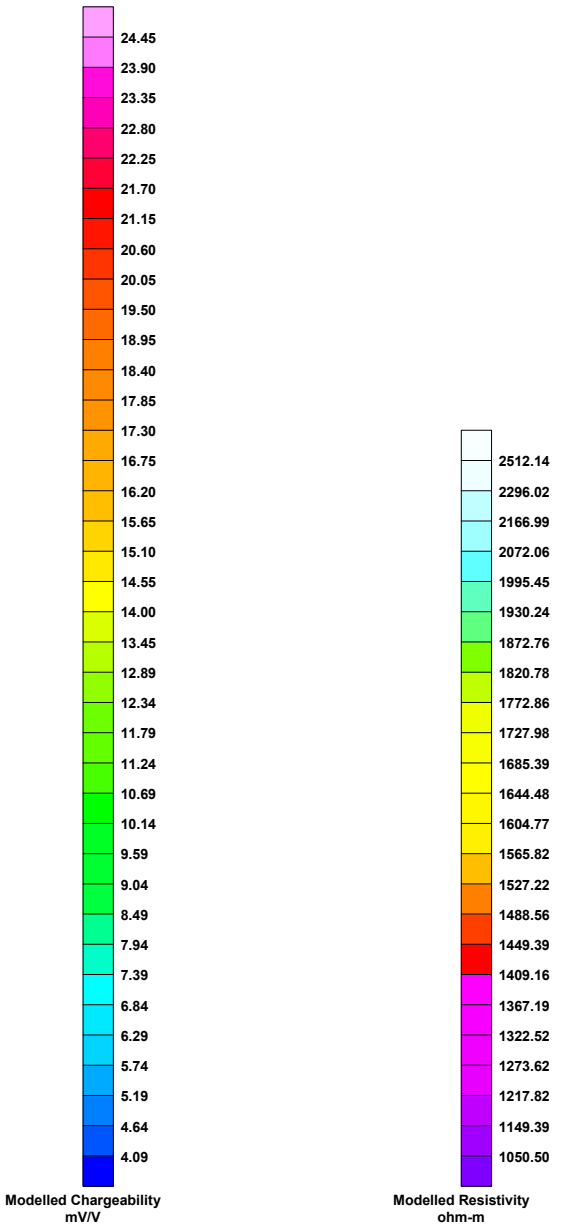
Line 5000

Modelled Resistivity (Ohm-m)

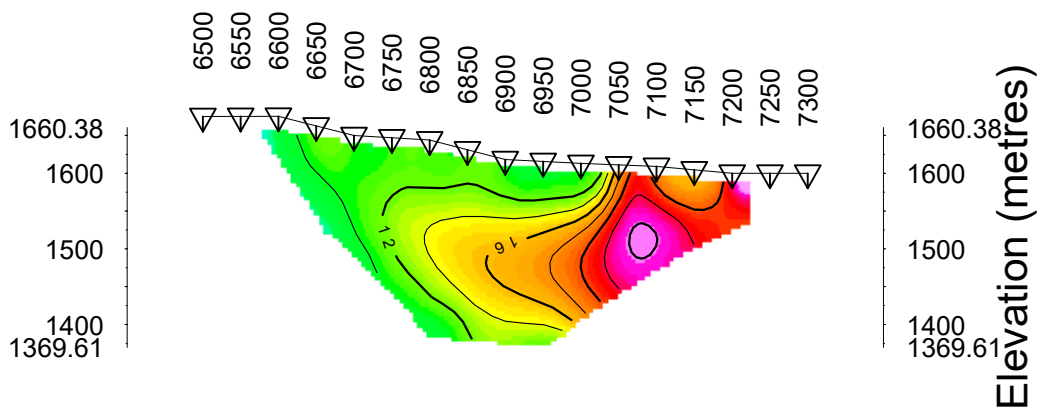


Pole-Dipole Array

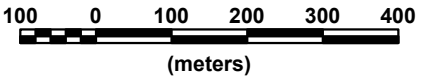




Modelled Chargeability (mV/V)



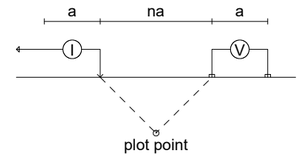
Scale 1:10000



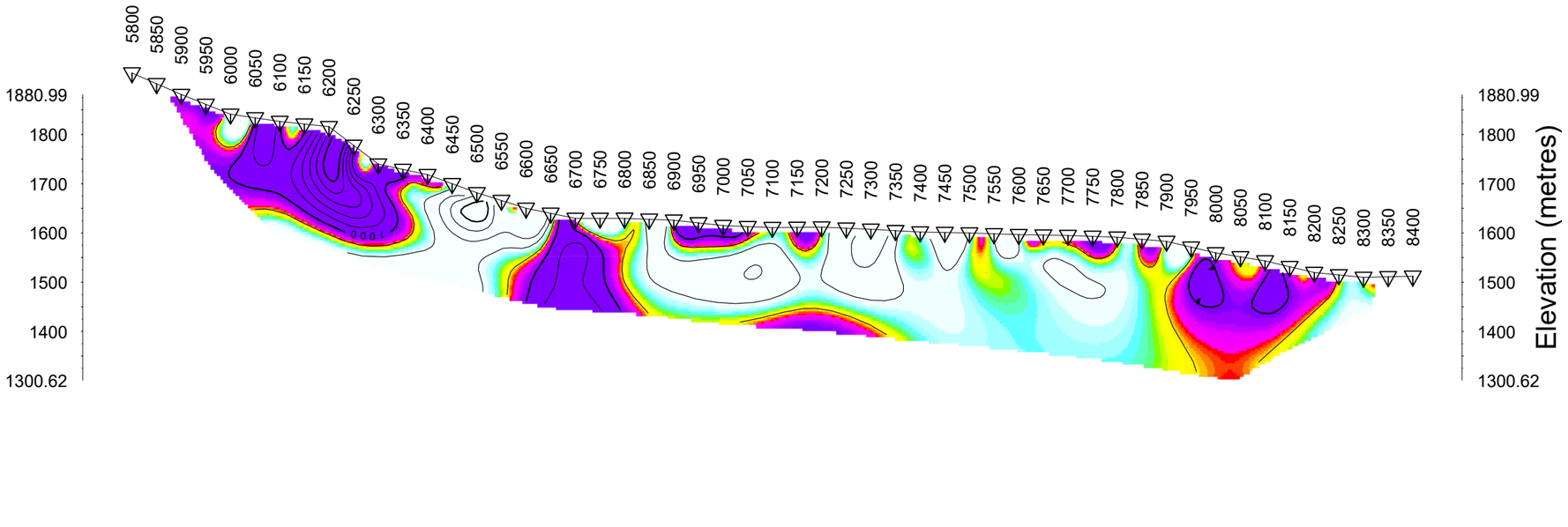
IMC INTERNATIONAL MINING CORP.
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Inversion By:PETER E. WALCOTT & ASSOCIATES LIMITED

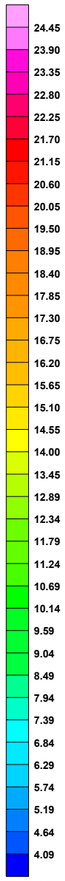
Line 5200

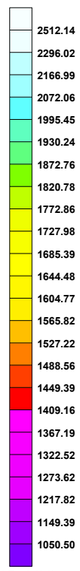
Pole-Dipole Array



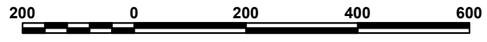
Modelled Resistivity (Ohm-m)



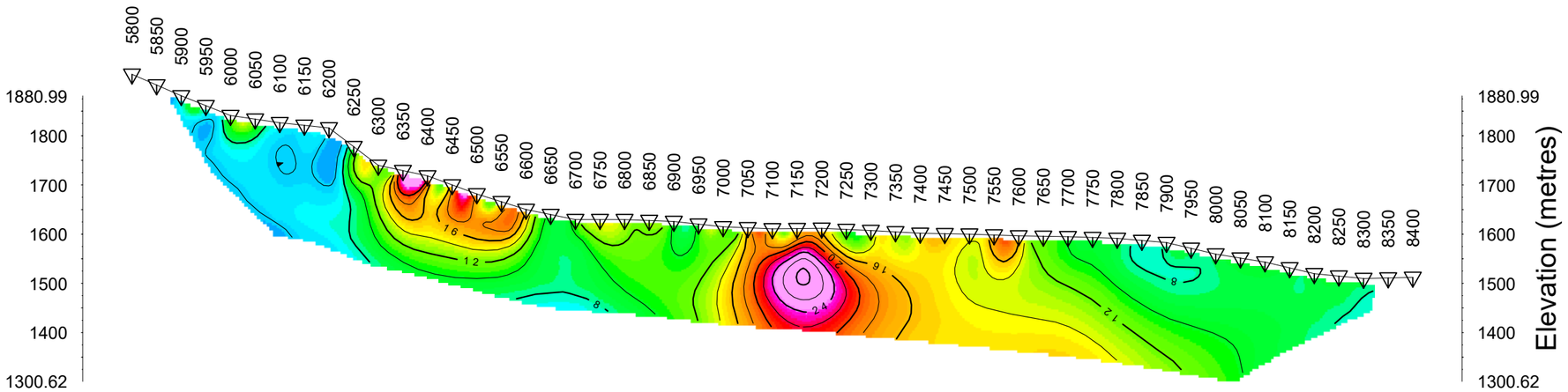




Scale 1:10000



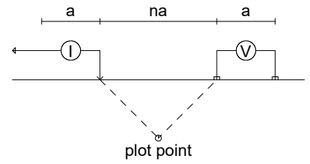
Modelled Chargeability (mV/V)



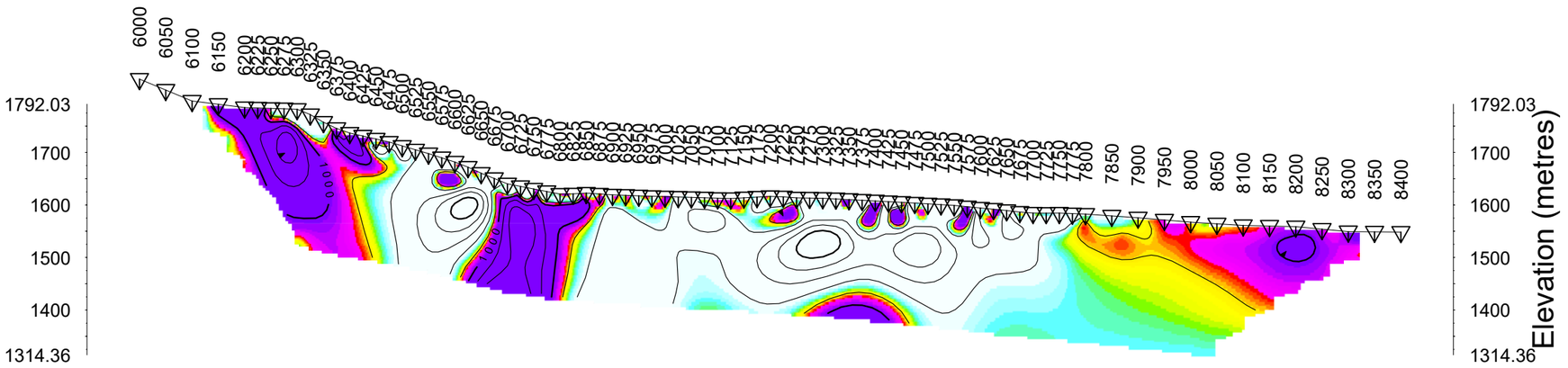
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SEPTEMBER 2020 RES2DINV
Inversion By:PETER E. WALCOTT & ASSOCIATES LIMITED

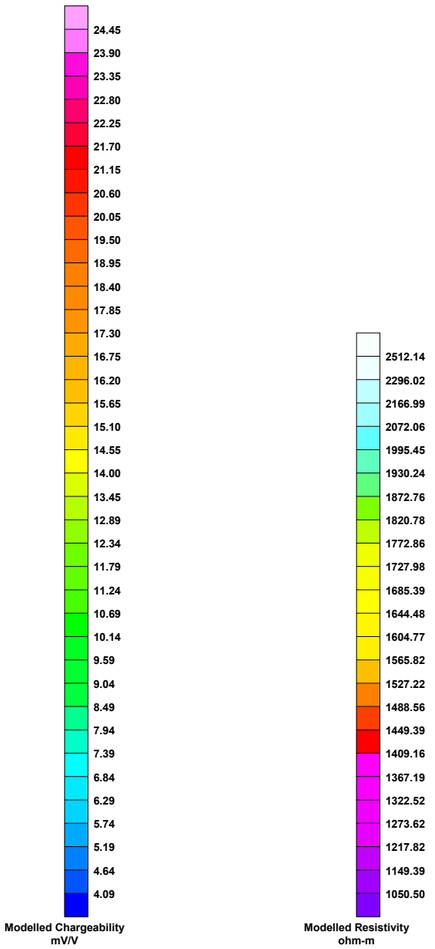
Line 5300

Pole-Dipole Array

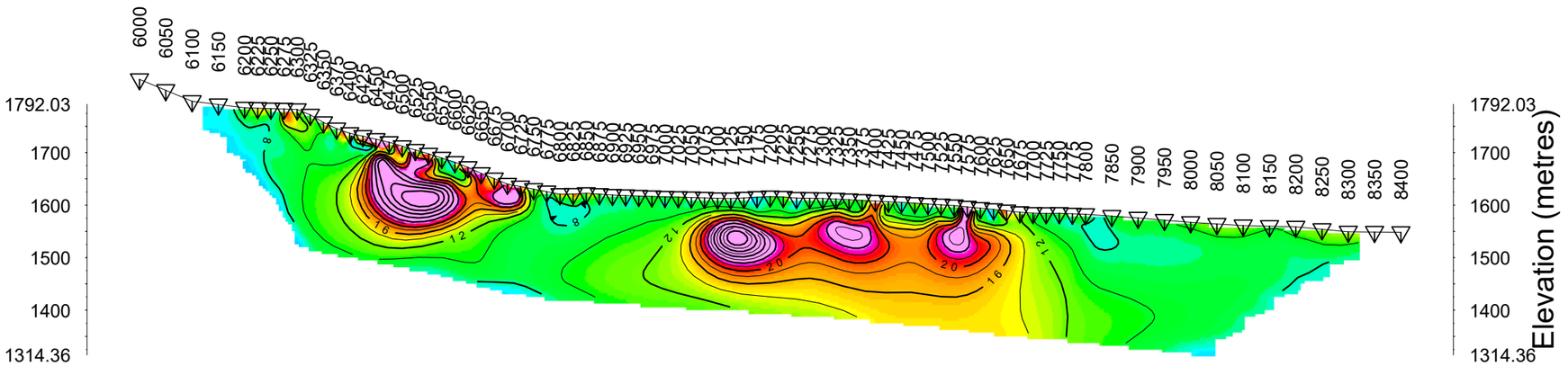


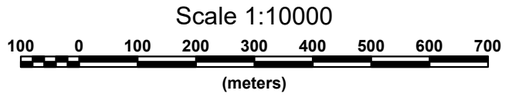
Modelled Resistivity (Ohm-m)





Modelled Chargeability (mV/V)

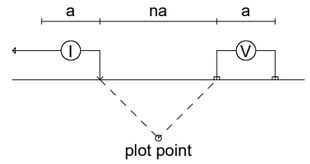




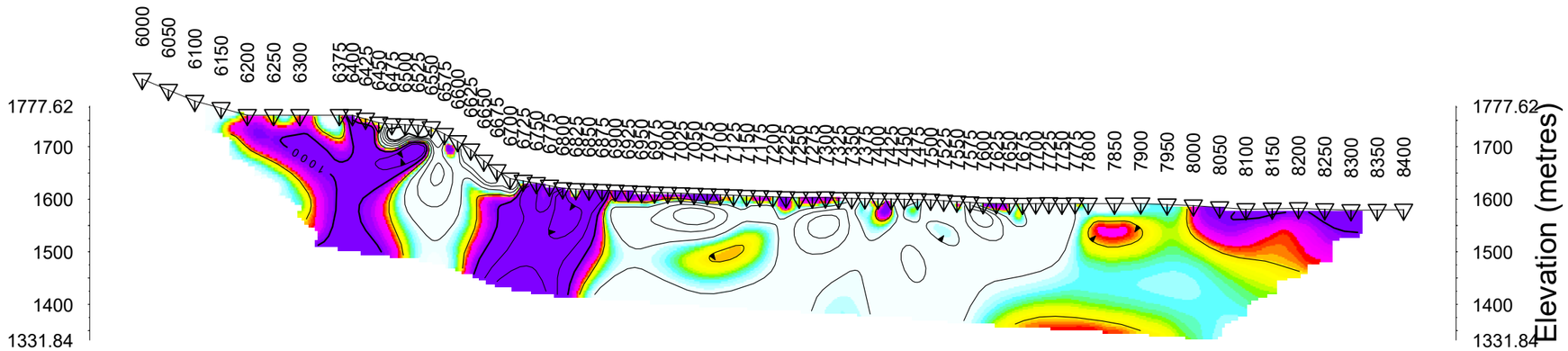
IMC INTERNATIONAL MINING CORP.
INDUCED POLARIZATION SURVEY CATHEDRAL PROJECT
SEPTEMBER 2020 RES2DINV
Inversion By:PETER E. WALCOTT & ASSOCIATES LIMITED

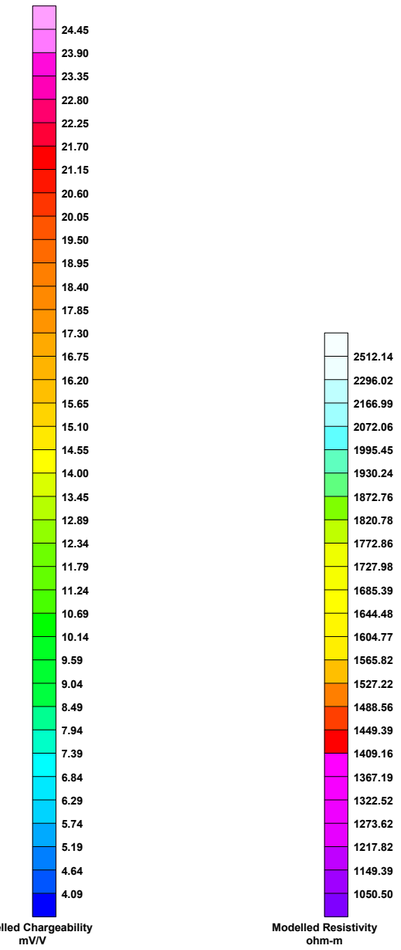
Line 5400

Pole-Dipole Array

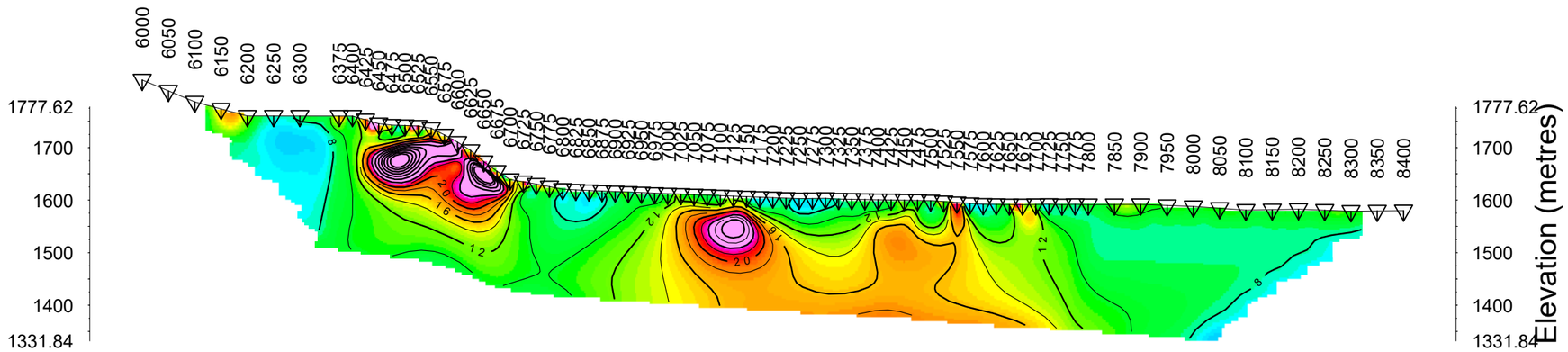


Modelled Resistivity (Ohm-m)





Modelled Chargeability (mV/V)



Scale 1:10000

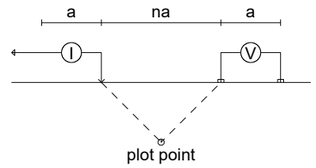
100 0 100 200 300 400 500 600 700

(meters)

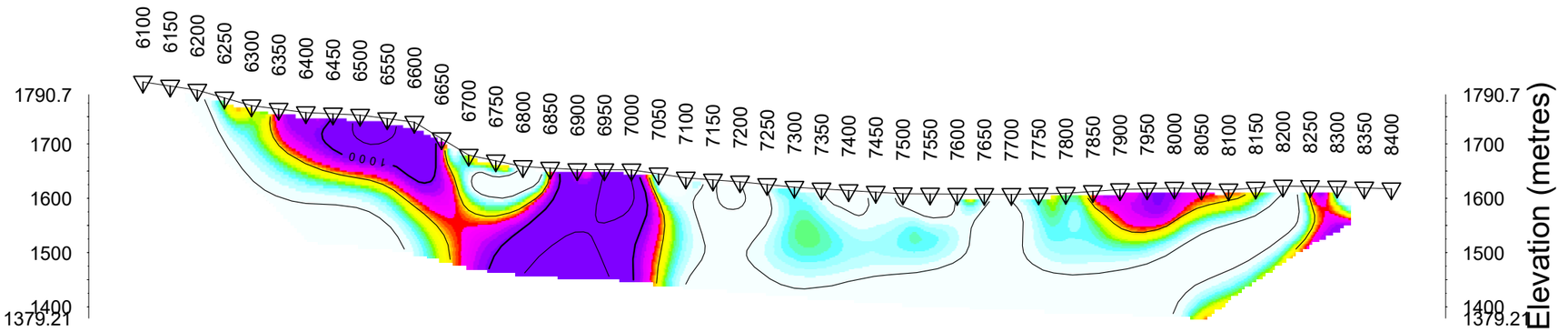
IMC INTERNATIONAL MINING CORP.
INDUCED POLARIZATION SURVEY CATHEDRAL PROJECT
SEPTEMBER 2020 RES2DINV
Inversion By:PETER E. WALCOTT & ASSOCIATES LIMITED

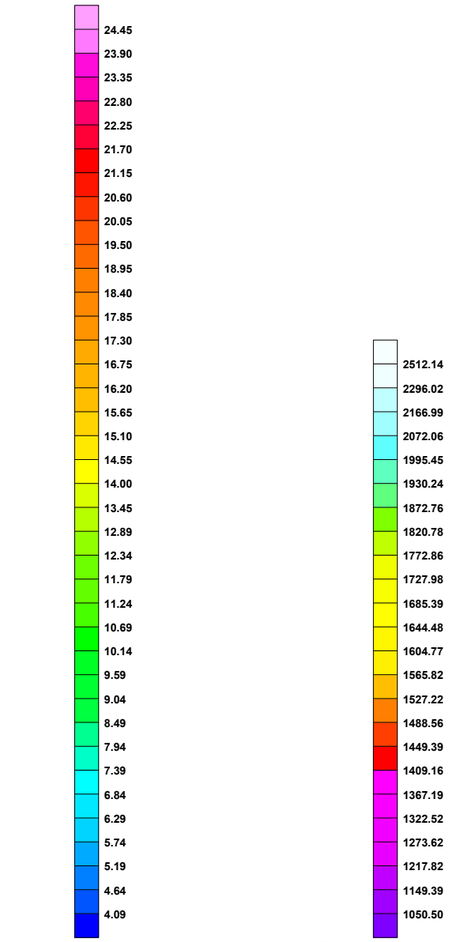
Line 5500

Pole-Dipole Array

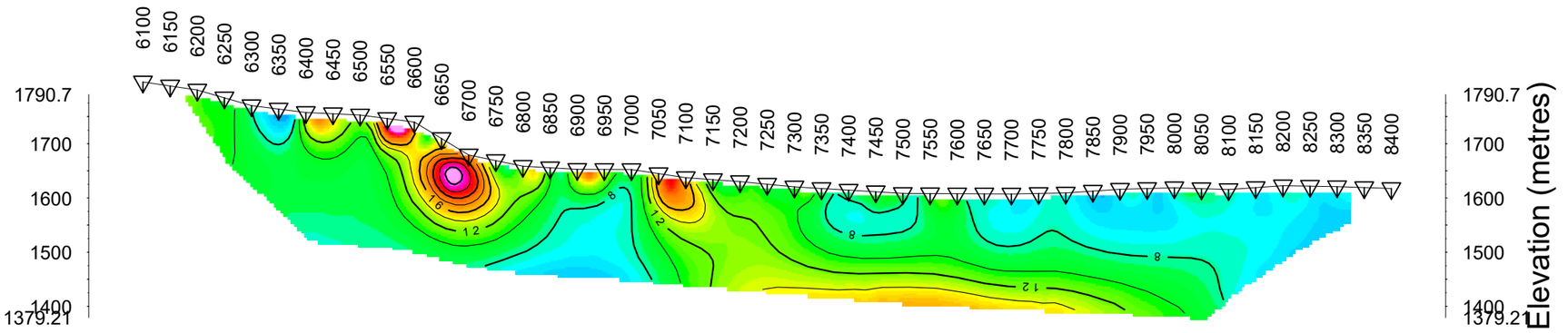


Modelled Resistivity (Ohm-m)





Modelled Chargeability (mV/V)



Scale 1:10000

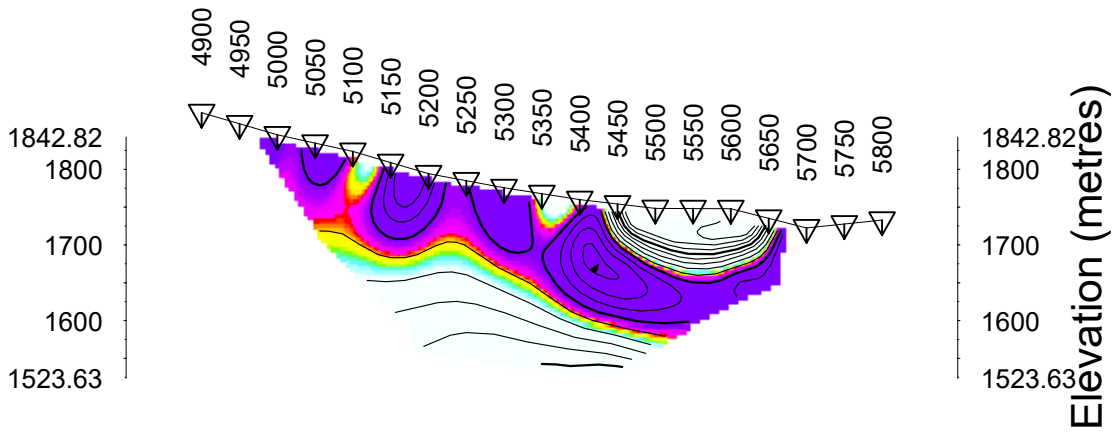
100 0 100 200 300 400 500 600 700

(meters)

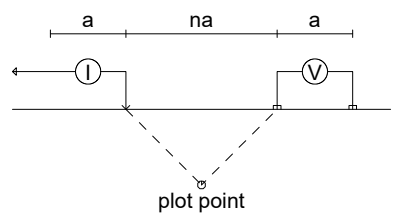
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INDUCED POLARIZATION SURVEY CATHEDRAL PROJECT
SEPTEMBER 2020 RES2DINV
Inversion By:PETER E. WALCOTT & ASSOCIATES LIMITED

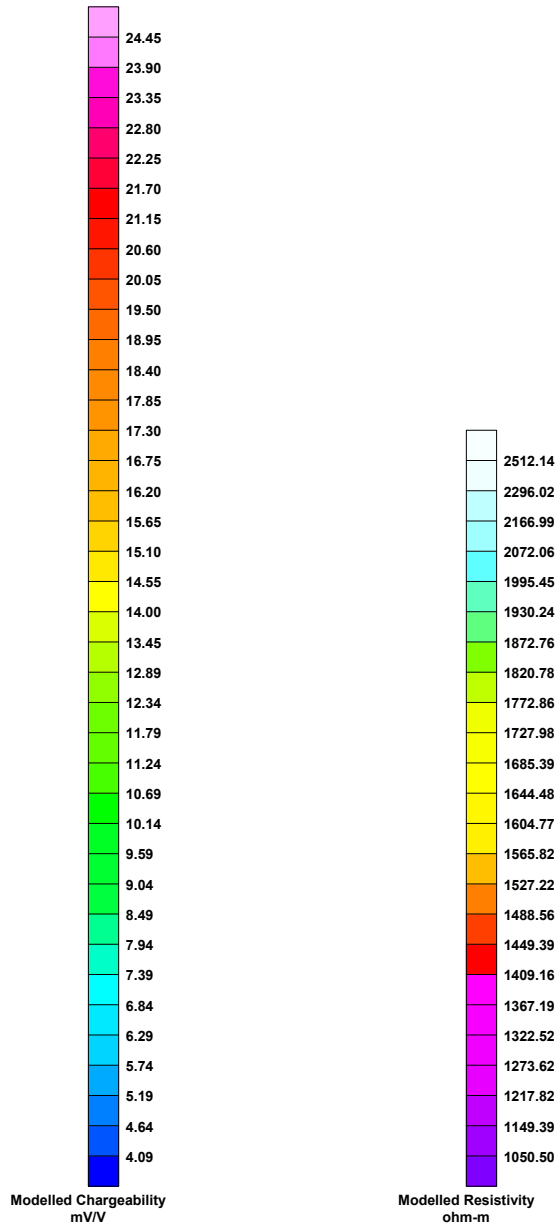
Line 6350

Modelled Resistivity (Ohm-m)

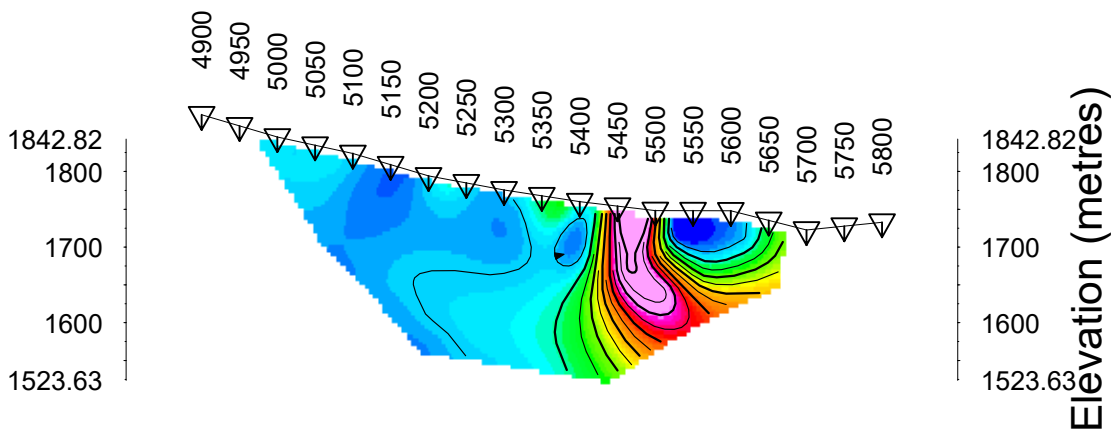


Pole-Dipole Array

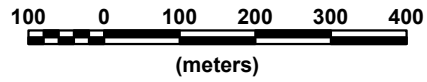




Modelled Chargeability (mV/V)



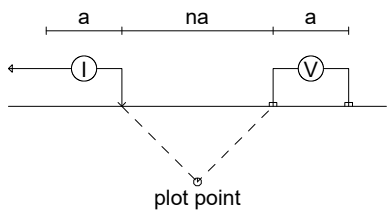
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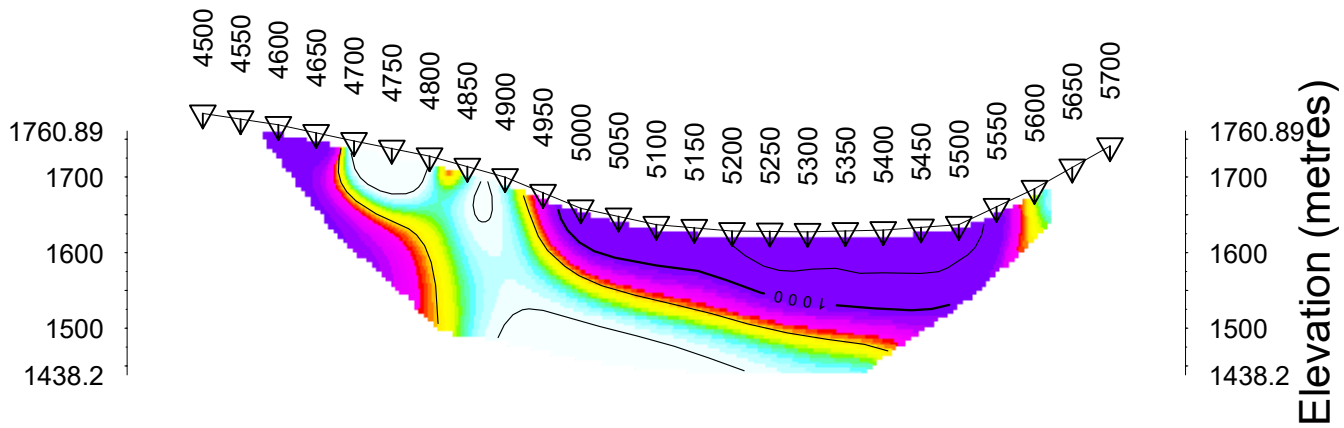
IMC INTERNATIONAL MINING CORP.
INDUCED POLARIZATION SURVEY CATHEDRAL PROJECT
SEPTEMBER 2020 RES2DINV
Inversion By:PETER E. WALCOTT & ASSOCIATES LIMITED

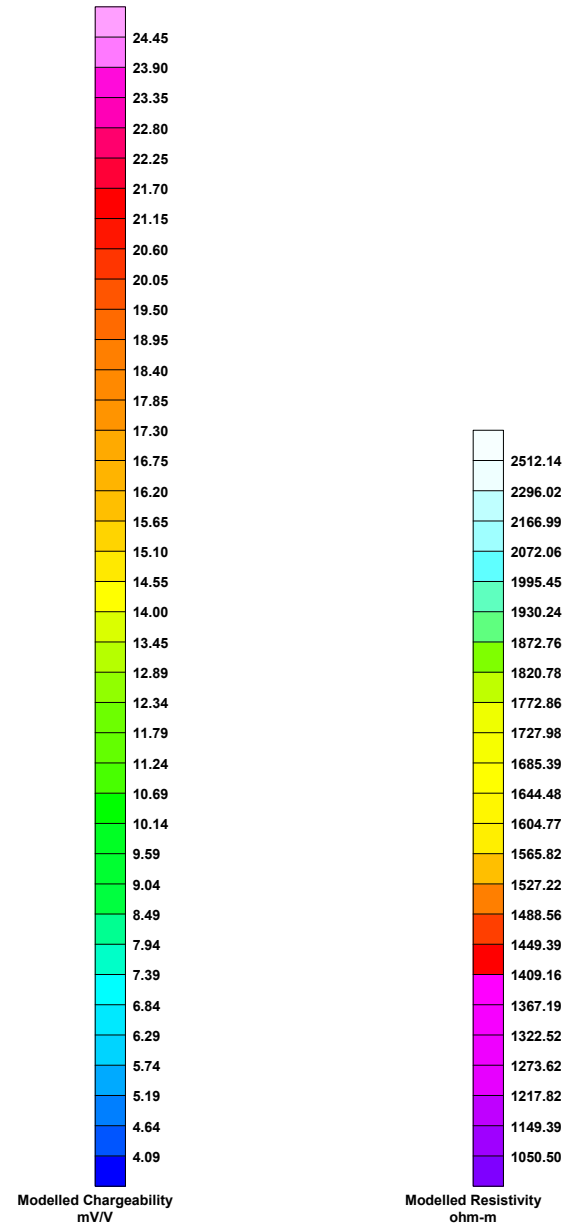
Line 6650

Pole-Dipole Array

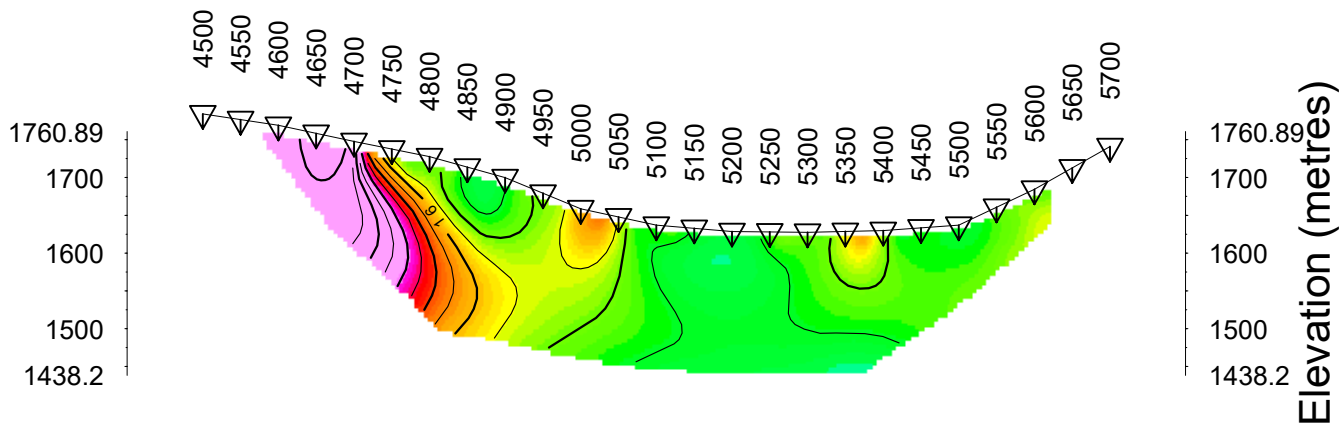


Modelled Resistivity (Ohm-m)

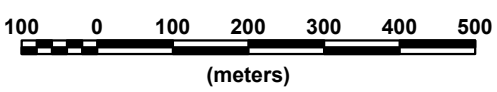




Modelled Chargeability (mV/V)



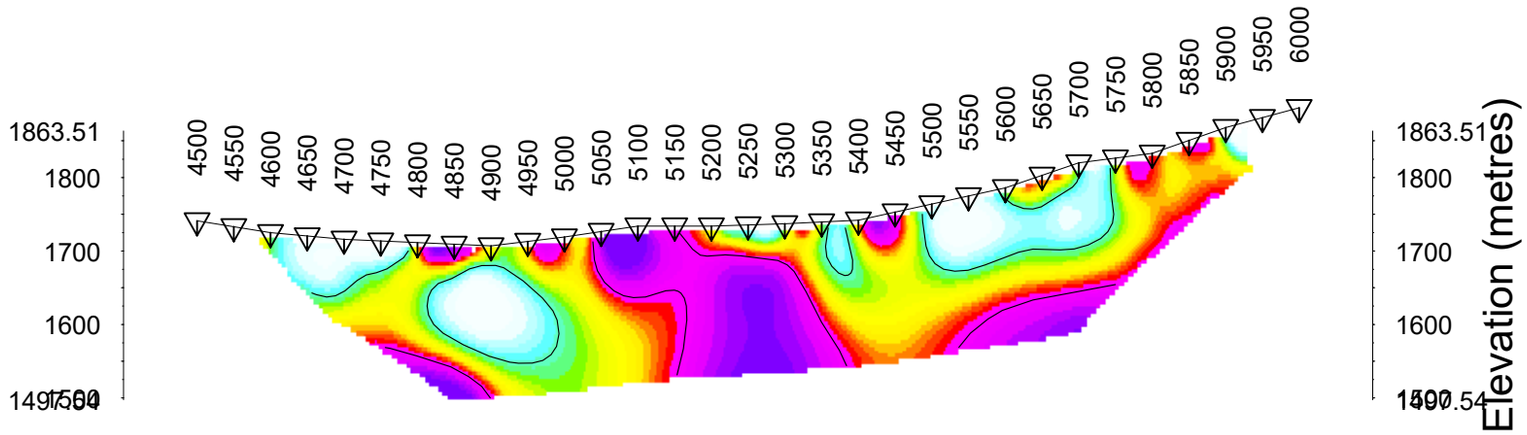
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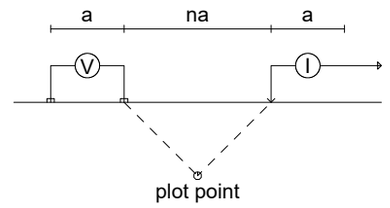
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SEPTEMBER 2020 RES2DINV
Inversion By:PETER E. WALCOTT & ASSOCIATES LIMITED

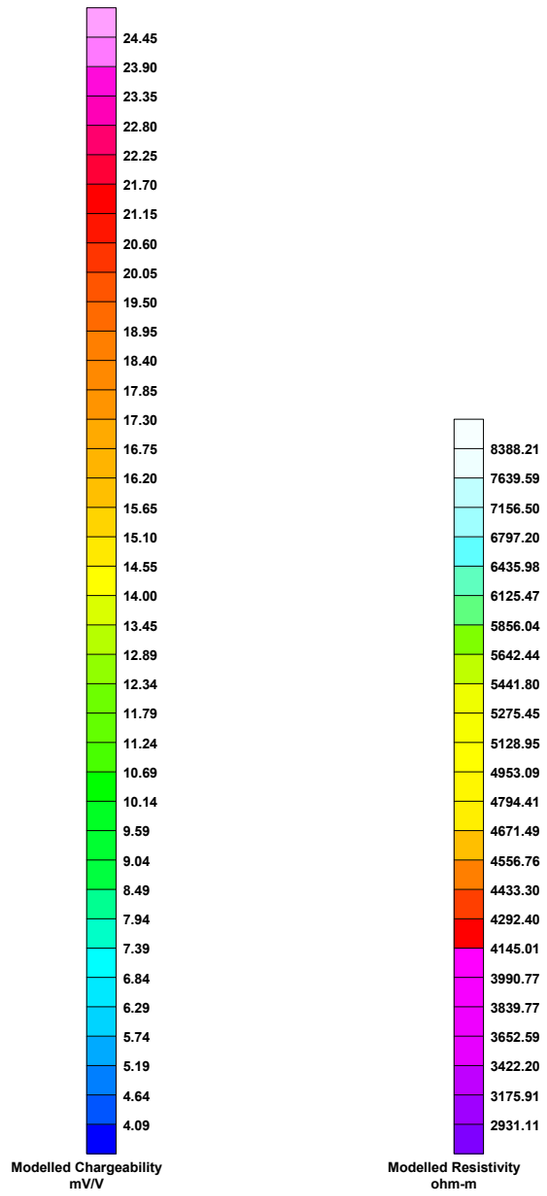
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Modelled Resistivity (Ohm-m)

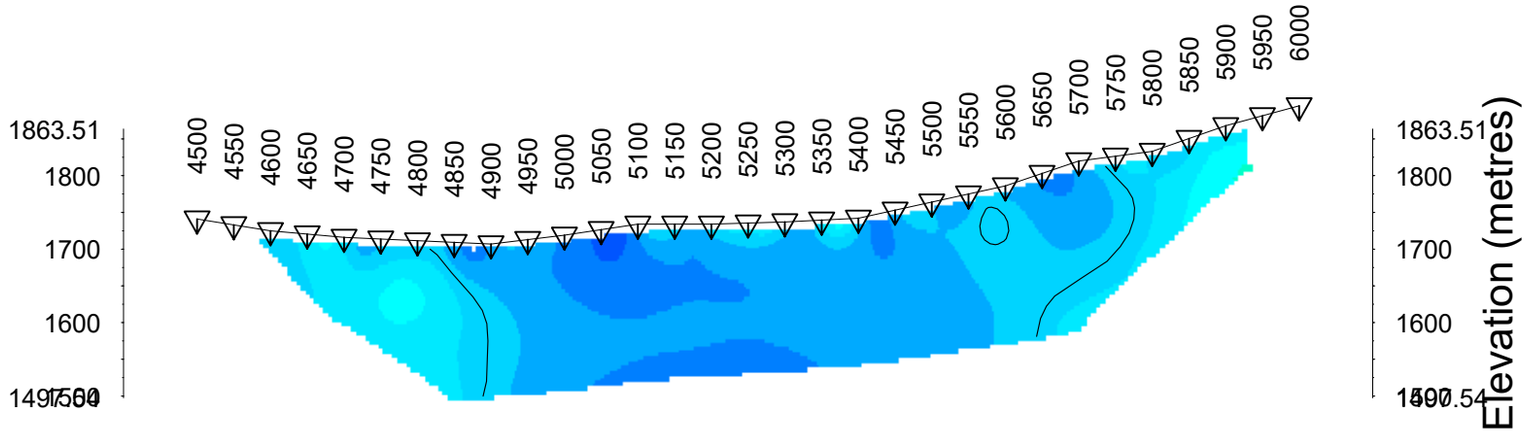


Dipole-Pole Array

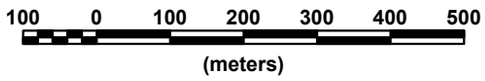




Modelled Chargeability (mV/V)



Scale 1:10000



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APPENDIX V
PETROGRAPHIC REPORTS

APPENDIX V
PETROGRAPHIC REPORTS

a. Pre-Field Work, June 2020

PETROGRAPHIC REPORT ON 24 SAMPLES FROM THANE (CATHEDRAL) PROJECT P71

Report for: Chris Naas
CME Consultants Inc.
P.O. Box 38099 Morgan Heights PO
Surrey, B.C. V3Z 6R3 (604) 248-2993

Invoice 200156

June 26, 2020.

SUMMARY: This is a suite of apparently consanguineous intrusive rocks (mainly plutonic, 20 samples; minor hypabyssal, 3 samples, and one sample of aplite) that range in composition from biotite-(pyroxene)-hornblende diorite (8 samples, 1328, 1467, 1487, 1510, 1564, 1605, 1651, 1825) through monzodiorite (6 samples, 1412, 1715, 1735, 1758, 1832, 1847) and monzonite to syenite (5 samples, 1015, 1239, 1267, 1442, 1811, and 1 sample, 1384, respectively). Quartz is variably present in all of these categories (all told, in 12 samples, commonly at the threshold of definition for quartz-bearing, i.e. 3-5%, in 6 samples, but 7-15% in 5 samples, although locally partly secondary, and 20% in only one sample, the aplite). The mafic assemblage is remarkably similar in all the plutonic rocks, typically comprising pyroxene or relict pyroxene cores to amphibole (8 samples of monzodiorite to monzonite; oddly enough, not in the diorite), amphibole, and biotite. The pyroxene is typically clinopyroxene except in one sample, 1412, where possible orthopyroxene appears to occur as well. Amphibole rimming or replacing pyroxene appears to be mainly hornblende or actinolitic hornblende, itself commonly rimmed or replaced by secondary actinolite or tremolite-actinolite (in one sample, talc-sericite may be after orthopyroxene). Biotite is generally relatively coarse and primary except locally secondary (replacing amphibole at margins in 1015, 1487, especially **1510**, 1825). Although the spatial relations between samples are not given, it may be significant that certain groups of samples are of similar composition (e.g., monzonite/monzodiorite from 1015-1267, 1412-1442, 1715-1758, 1832-1847; and diorite from 1467 to 1651).

Alteration in these samples ranges from deuteric (7 samples, 1015, 1239, 1267, 1384, 1412, 1447 and 1519) to propylitic (1 sample, 1663) or propylitic/phyllic (1 sample, 1467) but is mainly transitional propylitic-potassic (15 samples, 1283, 1328, 1442, **1487**, 1510, 1564, **1605**, **1651**, and 1715-1847 inclusive). These assemblages are characterized by, respectively, weak clay?/sericite-epidote after plagioclase ("saussuritization") and actinolite after amphibole for deuteric, the same minerals plus epidote, chlorite, calcite for propylitic, with the addition of significant sericite for propylitic-phyllic, albite, stronger epidote, actinolite, chlorite, quartz and variable secondary Kspar, local secondary biotite for the transitional propylitic-potassic (especially in samples in bold above, which correspond to the most highly mineralized samples, with Cu contents of 1.2%, 0.7% and 2.5%).

Mineralization is typically chalcopyrite (detected in 13 samples) and lesser pyrite (only 9 samples), suggestive of a chalcopyrite-rich, low total sulfide system. Sulfides are most closely related to (typically surrounded by or intergrown with) epidote and quartz, less directly with actinolite, chlorite, Kspar, albite and biotite; propylitic/sericitic alteration is peripheral. Secondary magnetite is not confirmed or suspected in any of the samples; in fact, potassic alteration appear s to be magnetite/ilmenite destructive, suggesting magnetic lows should correspond to mineralized zones. The mineralization and alteration appear typical of relatively weakly mineralized, plutonic porphyry copper systems, often subtle and mainly controlled along hairline veinlets or microfractures rather than major veins, or significant disseminations.

Capsule descriptions are as follows:

1015: weakly porphyritic, fine-grained hornblende monzonite (accessory apatite-ilmenite-sphene-pyrite oxidized to limonite) with only minor (probably deuteric) alteration to sericite-epidote-actinolite-trace biotite.

1239: coarse pyroxene (?) quartz monzonite (accessory magnetite ±ilmenite-apatite) weakly (deuteric?) altered to sericite-actinolite-epidote-chlorite-prehnite-carbonate-biotite-trace sphene-hematite-chalcopyrite (rarely controlled along veinlets).

1267: biotite?-hornblende quartz monzonite (accessory magnetite, apatite, trace sphene) slightly (deuteric?) altered to chlorite-actinolite-sericite-trace epidote-tourmaline-hematite.

1283: appears to be weakly propylitic (albite-actinolite-chlorite-epidote-calcite-sphene) altered, plagioclase-amphibole?-accessory magnetite phyric andesite; minor incipient potassic (?) alteration may be indicated by Kspar envelopes to chlorite-calcite-epidote veinlets.

1328: biotite?-hornblende? (quartz) diorite with weak transitional propylitic-potassic (albite?-Kspar-actinolite?-sericite-chlorite-calcite-trace epidote-quartz) alteration partly controlled along thin veinlets.

1384: biotite?-hornblende? quartz syenite with accessory magnetite-trace apatite, weakly altered to albite-chlorite-sericite-calcite-hematite-trace chalcopyrite.

1412: biotite-hornblende-pyroxene (quartz) monzodiorite with accessory magnetite-apatite, slightly (deuteric) altered to actinolite-sericite ±epidote.

1442: biotite-hornblende-(relict pyroxene) (quartz) monzonite with accessory magnetite-apatite, weakly (propylitic-potassic) altered to actinolite-chlorite-sericite ±epidote-Kspar-quartz-pyrite ±chalcopyrite-hematite-sphene.

1447: confirmed as aplite of approximately granite composition (major Kspar and quartz, lesser plagioclase slightly/deuteric altered to clay?/sericite-local epidote; rare relict mafics altered to chlorite-epidote, associated with accessory magnetite-trace pyrite/rare chalcopyrite).

1467: appears to be diorite strongly transitional propylitic/phyllic altered (sericite-epidote-albite?-chlorite ±hematite-sphene-chalcopyrite) with significant accessory magnetite-apatite. The minor Kspar appears more likely to be relict primary rather than secondary.

1487: (quartz) diorite, transitional propylitic-potassic altered to albite-epidote-chlorite-quartz-actinolite-biotite?-sphene/rutile, near veins of epidote-chlorite-quartz-chalcopyrite-pyrite oxidized to limonite-malachite.

1510: diorite (<u>significant accessory apatite</u>-magnetite) strongly transitional propylitic/<u>potassic</u> altered (sericite-epidote-albite-<u>Kspar</u>-actinolite-<u>biotite</u>-chlorite ±hematite-sphene) associated with veins of epidote-pyrite-chalcopyrite.

1519: plagioclase-amphibole phyric (accessory magnetite-quartz-trace apatite) latite porphyry (hypabyssal intrusive?) slightly (deuteric?) altered to clay?/sericite-epidote-prehnite associated with thin veinlets of the latter two minerals.

1564: (quartz) diorite (accessory ilmeno-magnetite, apatite), moderately/strongly transitional propylitic-potassic (albite ±Kspar, sericite-chlorite-carbonate-epidote-actinolite-sphene) altered with rare hairline epidote veinlets, but no sulfides.

1605: (biotite?)-hornblende diorite (accessory ilmeno-magnetite, apatite) altered to peripheral albite-sericite-chlorite-actinolite-sphene-hematite adjacent to potassic vein zone (Kspar-epidote-quartz-chalcopyrite ±pyrite-sphene); calcite fractures are not clearly related to mineralization.

1651: moderately propylitic/potassic (albite-chlorite-sericite-rutile, accessory apatite, monazite?) to strongly potassic (Kspar-epidote-quartz-chlorite-chalcopyrite-trace pyrite-rutile) altered (quartz?) diorite, with strongest alteration partly controlled along sub-planar fracture zones that are partly plucked out by section prep.

1663: plagioclase-biotite (relict amphibole?) phyric (accessory magnetite-sphene) latite porphyry (hypabyssal intrusive?) weakly (deuteric?) altered to clay?/sericite-epidote-chlorite.

1715: biotite-hornblende (quartz) monzodiorite with accessory magnetite-apatite, propylitic-potassic altered (albite-Kspar-actinolite-chlorite-sericite-calcite-epidote-sphene) along pyrite-chalcopyrite veinlets/fractures.

1735: biotite-(clinopyroxene)-hornblende (quartz) monzodiorite with accessory magnetite-apatite, propylitic-potassic altered (actinolite-chlorite-sericite-calcite-epidote-sphene) along prehnite veinlets/fractures.

1758: biotite-(clinopyroxene)-hornblende (monzo)diorite with accessory magnetite-apatite, locally slightly propylitic-potassic altered (actinolite-epidote-sericite-chlorite-sphene) associated with traces of chalcopyrite and rare hairline pyrite veinlets/fractures.

1811: biotite-hornblende syenite/monzonite (accessory magnetite-sp0hene-apatite) weakly altered to actinolite-epidote-sericite-chlorite associated with minor chalcopyrite-pyrite part oxidized to limonite.

1825: foliated, somewhat banded biotite-(clinopyroxene)-hornblende diorite (accessory magnetite-apatite), propylitic-potassic altered to sericite-epidote-albite?-Kspar-actinolite-biotite-minor chlorite associated with trace chalcopyrite.

1832: biotite-(clino ±ortho?-pyroxene)-hornblende? monzodiorite with accessory magnetite-apatite, propylitic-potassic altered (tremolite/actinolite-talc?-Kspar?-epidote-chlorite-clay?/sericite), cut by veinlets/fractures of actinolite-epidote-chlorite.

1847: biotite-hornblende (pyroxene?) monzodiorite with accessory magnetite-apatite, weakly propylitic-potassic altered (sericite-actinolite-epidote-chlorite-Kspar?) along hairline veinlets/fractures.

Detailed petrographic descriptions and photomicrographs are appended (on CD/by email attachment). If you have any questions regarding the petrography, please do not hesitate to contact me.

Craig H.B. Leitch, Ph.D., P. Eng. (250) 538-1900 dromore61@gmail.com
124 Vesuvius Bay Road, Salt Spring Island, B.C. Canada V8K 1K3

1015: WEAKLY PORPHYRITIC, FINE-GRAINED HORNBLENDE MONZONITE (ACCESSORY APATITE-ILMENITE-SPHENE-PYRITE OXIDIZED TO LIMONITE) WITH ONLY MINOR (PROBABLY DEUTERIC) ALTERATION TO SERICITE-EPIDOTE-ACTINOLITE-TRACE BIOTITE

Described as quartz diorite/Takla volcanic (basalt), unmineralized, weak/moderate chloritized; hand specimen shows dark grey, fine-grained intermediate-looking intrusive rock (microdiorite?). The rock is not magnetic, and shows no reaction to cold dilute HCl, but there is significant yellow stain for K-feldspar in the etched offcut (as groundmass to small white-etched plagioclase and dark green/black relict mafic phenocrysts). Modal mineralogy in polished thin section is approximately:

Plagioclase (partly relict, replaced by sericite-epidote)	35%
Amphibole (hornblende cores, actinolitic rims?)	25%
K-feldspar (groundmass, likely primary?)	20%
Sericite (after plagioclase)	10%
Epidote (after plagioclase; zoisite/clinozoisite?)	5%
Biotite (secondary, after amphibole?)	1%
Apatite (accessory)	1%
Sphene (partly after ilmenite)	1%
Ilmenite (partly altered to sphene, hematite)	<1%
Limonite (goethite/hematite, after pyrite, some of which remains)	<1%

This sample consists of about 40% small relict (sericite-epidote altered) plagioclase and 25% small amphibole phenocrysts in a groundmass of K-feldspar (no quartz detected), accessory apatite, sphene, ilmenite and limonite after pyrite.

Plagioclase crystals mostly <2 mm (but up to 3 mm where glomeratic) are sub- to euhedral, typically somewhat rounded off or corroded at margins, with random orientations. They locally retain polysynthetic twinning, with extinction on 010 up to 20º suggestive of composition around An_{35} (andesine?), but most are 30-50% replaced, especially at cores, by very fine-grained mixtures of sericite (subhedral flakes mainly <25 μm) and lesser epidote-group mineral (sub/anhedra mainly <35 μm, with low to moderate birefringence suggestive of zoisite/clinozoisite?).

Amphibole crystals rarely to ~3 mm long are randomly oriented, sub- to euhedral, with somewhat corroded outlines. They typically show dark brown cores (primary hornblende?) surrounded by syntaxial rims of dark green, actinolitic hornblende, locally replaced at margins by finer-grained, pale green, fibrous actinolite (euhedra <0.2 mm) or rarely pale brown secondary biotite (subhedral flakes <0.1 mm).

In the groundmass, K-feldspar forming rounded subhedra mainly <0.2 mm is mixed with lesser plagioclase of similar size, amphibole and accessory minerals. Quartz may be present but is difficult to detect or confirm. Apatite forms stubby or rounded euhedra rarely to 0.3 mm long, sphene is relatively common as subhedra mainly <0.2 mm (partly after tabular euhedral ilmenite of similar size) and aggregates of dark red-brown limonite (goethite, hematite?) up to 0.35 mm appear to be partly after ilmenite and partly after pyrite, traces of which remain <25 μm in size within the limonite.

In summary, this would be classed as weakly porphyritic, fine-grained hornblende monzonite (accessory apatite-ilmenite-sphene-pyrite oxidized to limonite) with only minor (probably deuteric) alteration to sericite-epidote-actinolite-trace biotite.

1239: COARSE PYROXENE (?) QUARTZ MONZONITE (ACCESSORY MAGNETITE ±ILMENITE-APATITE) WEAKLY (DEUTERIC?) ALTERED TO SERICITE-ACTINOLITE-EPIDOTE-CHLORITE-PREHNITE-CARBONATE-BIOTITE-TRACE CHALCOPYRITE

Described as quartz monzonite or diorite (?), not mineralized and appears to contain weak to moderate interstitial Kspar alteration related to proximal quartz monzonite intrusive (?); hand specimen shows pale greenish/pinkish grey, medium-coarse grained intermediate plutonic rock with plagioclase megacrysts up to 1.2 cm long and smaller dark green mafics in groundmass of grey quartz and pinkish Kspar. The rock is distinctly magnetic, shows no reaction to cold dilute HCl, and common yellow stain for K-feldspar/white etch for plagioclase in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (andesine, altered to sericite ±epidote)	30%
K-feldspar (microperthite, likely primary?)	20%
Quartz (mainly primary, interstitial)	15%
Amphibole (mainly actinolite, after clinopyroxene)	15%
Relict clinopyroxene (cores mantled by amphibole)	5%
Sericite (after plagioclase)	5%
Magnetite, minor ilmenite (partly altered to hematite, sphene)	3%
Epidote (after plagioclase/mafics/along fractures, with chlorite)	3%
Chlorite (after mafics/along fractures, with epidote)	2%
Prehnite, minor carbonate (veinlets, with chlorite, carbonate)	1%
Apatite (accessory, with magnetite)	<1%
Chalcopyrite (partly fracture controlled, with epidote, prehnite)	<1%

This sample consists of megacrystic plagioclase (part altered to sericite-epidote) and smaller relict mafics (clinopyroxene altered to actinolite, chlorite, epidote, prehnite ±carbonate) with significant accessory magnetite ±ilmenite, apatite ±chalcopyrite (partly veinlet controlled with epidote, prehnite).

Plagioclase crystals with euhedral to subhedral outlines up to 1.2 cm long show random orientations and vary from virtually fresh (unaltered, with extinction Y^010 up to 22º and relief close to that of adjacent quartz indicative of composition near andesine, An_{40}) to partly/largely replaced by very fine-grained sericite (randomly oriented, subhedral flakes mainly<35 μm) and lesser epidote-group mineral (sub/anhedra mainly <50 μm, with low to moderate birefringence suggestive of zoisite/clinozoisite?). Plagioclase does not appear attacked at margins by K-feldspar, which forms subhedra up to 3 mm in diameter (locally glomeratic to ~6 mm) with distinct microperthite texture (minute lamellar inclusions of albite making up to ~50% of the crystal). The Kspar is typically unaltered to sericite compared to plagioclase it adjoins or encloses. Quartz occurs interstitial to or in places poikilitically enclosing feldspars, with skeletal subhedral outlines to ~4 mm; most is likely primary, although it is rarely associated with chalcopyrite-epidote-prehnite-chlorite (see below).

Mafic crystals have subhedral to euhedral outlines mostly <3 mm (glomeratic aggregates to ~6 mm), apparently clinopyroxene relict cores partly to largely replaced by amphibole or locally chlorite, epidote, prehnite and minor carbonate-biotite. Relict pyroxene has large extinction angle and is pale green/non-pleochroic (augite?); mantling/replacing amphibole varies from deep to pale green and is finer-grained and fibrous, suggestive of actinolite mostly <0.5 mm. Chlorite forms subhedral flakes to 0.2 mm with strong green pleochroism and weak, mainly length-slow birefringence suggestive of Fe:Fe+Mg, or F:M, ratio 0.6 (?), associated with epidote (subhedra up to 0.5 mm, bright yellow pleochroism implying high Fe content) or in places prehnite (colourless length-fast sheaf-like subhedra <0.25 mm crystals) or rarely carbonate (subhedra <0.1 mm). All the alteration minerals also locally occur in short, discontinuous veinlets u to 1 mm thick where they may be associated with traces of chalcopyrite (subhedra <0.3 mm, partly oxidized at rims to limonite). Accessory magnetite/ minor ilmenite (part altered to hematite/sphene) and lesser apatite form euhedra to 1 mm.

In summary, this is coarse pyroxene (?) quartz monzonite (accessory magnetite ±ilmenite-apatite) weakly (deuteric?) altered to sericite-actinolite-epidote-chlorite-prehnite-carbonate-biotite-trace sphene-hematite-chalcopyrite.

1267: BIOTITE?-HORNBLENDE QUARTZ MONZONITE (ACCESSORY MAGNETITE, APATITE, TRACE SPHENE) SLIGHTLY (DEUTERIC?) ALTERED TO CHLORITE-ACTINOLITE-SERICITE-TRACE EPIDOTE-TOURMALINE-HEMATITE

Described as monzonite, not mineralized, possible finer-grained variety of quartz monzonite (?); hand specimen shows pinkish grey, medium/fine grained felsic/intermediate plutonic rock with plagioclase and small dark green mafics in groundmass of pink Kspar ±quartz. The rock is weakly magnetic, shows no reaction to cold dilute HCl, and common yellow stain for K-feldspar/minor white etch for plagioclase in the etched offcut. Modal mineralogy in polished thin section is approximately:

K-feldspar (microperthitic microcline, likely primary)	50%
Quartz (mainly primary?)	15%
Plagioclase (andesine, altered to sericite ±epidote)	15%
Amphibole (hornblende, actinolitic hornblende?)	10%
Chlorite (after biotite?)	5%
Magnetite (partly altered to hematite)	2%
Apatite	1%
Sericite (after plagioclase)	1%
Epidote (trace after plagioclase, rare after mafics)	<1%
Tourmaline (Fe-rich schorl?)	<1%
Sphene (after ilmenite?)	<1%

This sample consists of Kspar and lesser quartz and plagioclase plus small mafic crystals (amphibole, chlorite after biotite?) associated with accessory magnetite, apatite, rare tourmaline, epidote and sphene. It could be consanguineous with the quartz monzonite of the previous sample.

Kspar making up the bulk of the section occurs as interlocking, fine- to medium grained subhedral crystals mainly <2 mm in diameter, with random orientations. Internal texture (common "grid" twinning and local lamellar inclusions of albite) suggest it is likely microperthitic microcline. It is relatively unaltered compared to the lesser or minor plagioclase (sub/euhedral crystals mainly <1 mm) poikilitically enclosed in the Kspar, which shows partial replacement by sericite and trace epidote (randomly oriented subhedral flakes and sub/anhedra <20 μm, respectively). Composition of the plagioclase is no longer directly determinable due to destruction of twinning, but slight negative relief compared to quartz suggests it may be albite-oligoclase around An_{10} (?).

Quartz forms subhedral crystals mainly <1 mm, but locally anhedral and up to 2 mm, interstitial to feldspars. It is relatively unstrained and unaltered, likely primary.

Mafic crystals with ragged, subhedral to rarely euhedral outlines up to ~2 mm diameter typically consist of variable mixtures of amphibole (brownish green, possibly hornblende cores mantled/rimmed by green, possibly actinolitic hornblende?) and chlorite (likely after former biotite; subhedral flakes to 0.7 mm with deep green pleochroism and weakly anomalous blue, length-slow birefringence suggestive of F:M 0.5-0.6?). Rare tourmaline associated with the mafic sites forms subhedra to 0.5 mm with deep brown pleochroism suggestive of Fe-rich schorl (F:M 0.8-0.9?).

Accessory opaques associated with mafic sites are mainly magnetite (rounded sub- to rarely euhedra <1 mm, slightly altered at rims/along fractures to minor hematite). The magnetite is locally associated with apatite as euhedral prisms mostly <0.4 mm long, and rare sphene as sub/euhedra to 0.3 mm long.

In summary, this is biotite?-hornblende quartz monzonite (accessory magnetite, apatite, trace sphene) slightly (deuteric?) altered to chlorite-actinolite-sericite-trace epidote-tourmaline-hematite.

1283: WEAKLY PROPYLITIC (ALBITE-ACTINOLITE-CHLORITE-EPIDOTE-CALCITE-SPHENE) ALTERED, PLAGIOCLASE-AMPHIBOLE?-ACCESSORY MAGNETITE PHYRIC ANDESITE; MINOR INCIPIENT POTASSIC (?) ALTERATION MAY BE INDICATED BY KSPAR ENVELOPES TO CHLORITE-CALCITE-EPIDOTE VEINLETS

Described as porphyritic rhyolite, not mineralized but sulfides noted, possibly dyke or chill margin within host quartz monzonite, or less likely altered diorite (?); hand specimen shows medium grey, finely plagioclase-mafic phyric intermediate hypabyssal intrusive cut by a loose network of yellow-green (epidote?)-dark green (chlorite?) fractures/veinlets. The rock is distinctly magnetic, shows minor reaction to cold dilute HCl (fractures and pervasive, and major white etch for plagioclase but only local yellow stain for K-feldspar (related to veinlets, so secondary?) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (phenocrysts/groundmass, saussuritized/albitized)	60%
Chlorite (after actinolite altered amphibole, along veinlets)	10%
K-feldspar (mainly secondary, along veinlet envelopes?)	10%
Amphibole (actinolite, after original hornblende?)	5%
Epidote (relict mafic sites and in veinlets)	5%
Carbonate (relict mafic sites and in veinlets, mainly calcite?)	5%
Magnetite/ilmeno-magnetite (partly altered to sphene, hematite)	3%
Sphene (partly after ilmeno-magnetite)	~1%
Sericite (minor, after plagioclase)	~1%
Apatite (rare accessory)	<1%

This sample consists of about 35-40% saussuritized plagioclase and 15-20% relict (chlorite-carbonate -actinolite-epidote altered) mafic phenocrysts, accessory magnetite and rare apatite microphenocrysts, in a fine-grained but phaneritic groundmass of alkali feldspar (albite, Kspar) and shreddy altered mafics plus magnetite and sphene.

Plagioclase phenocrysts have randomly oriented euhedral tabular outlines up to 3 mm long that are variably replaced by epidote-group mineral (zoisite/clinozoisite, subhedra <35 μm), sericite (randomly oriented subhedral flakes mainly <25 μm), patchy chlorite (subhedral flakes <30 μm in patches to 0.15 mm) and carbonate (sub/anhedra <50 μm, likely calcite?). In addition, remaining plagioclase is likely albitized (vague twinning with extinction Y^010 to 15º, An_{5-10}?) except along and near fracture veinlets, where it may be partly converted to secondary Kspar (see below).

Relict mafic phenocrysts have randomly oriented sub/euhedral outlines mostly <3 mm long, variably pseudomorphed by combinations of actinolitic amphibole (pale green pleochroic, fibrous subhedra to 0.75 mm), chlorite (sub/euhedral flakes to 0.25 mm with bright green pleochroism, length-slow anomalous blue birefringence suggesting F:M 0.6?), carbonate (interlocking sub/anhedra to 0.5 mm, likely mainly calcite to judge by reaction in hand specimen) and epidote (interlocking sub/anhedra <0.2 mm with weak yellow pleochroism, suggesting moderate Fe content).

Significant accessory magnetite (or ilmeno-magnetite?) forms microphenocrysts to ~1 mm that are partly altered to sphene (subhedra <0.2 mm) and hematite (subhedra <0.1 mm), associated with rare apatite forming subhedra <0.6 mm.

In the groundmass, tightly packed randomly oriented subhedral alkali feldspar <0.2 mm in size dominates (quartz is not detected), with lesser actinolite-chlorite altered mafics and accessory magnetite and sphene. The feldspar is mainly plagioclase (albite?) but near veinlets it may be partly replaced by Kspar (as indicated by variable yellow stain in the offcut). In the veinlets, which are planar and mainly <1 mm thick, variable chlorite, carbonate and epidote are intimately mixed, but there is no obvious relation to magnetite (so magnetite is not secondary) and no sulfides are seen.

In summary, this appears to be weakly propylitic (albite-actinolite-chlorite-epidote-calcite-sphene) altered, plagioclase-amphibole?-accessory magnetite phyric andesite; minor incipient potassic (?) alteration may be indicated by Kspar envelopes to chlorite-calcite-epidote veinlets.

1328: BIOTITE?-HORNBLENDE? (QUARTZ) DIORITE WITH WEAK TRANSITIONAL PROPYLITIC-POTASSIC (ALBITE?-KSPAR-ACTINOLITE?-SERICITE-CHLORITE-CALCITE-TRACE EPIDOTE-QUARTZ) ALTERATION PARTLY CONTROLLED ALONG THIN VEINLETS

Described as quartz monzonite or diorite (?) in which plagioclase is altered to albite, mafics to chlorite ±epidote but no mineralization noted; hand specimen shows dark grey, medium/coarse-grained intermediate plutonic rock, partly altered to pink feldspar (albite/Kspar?) along fractures. The rock is distinctly magnetic, shows minor reaction to cold dilute HCl, and major white etch for plagioclase but only local yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (sericite-calcite altered, albitized?)	50%
Amphibole (actinolitic hornblende, actinolite?)	20%
K-feldspar (partly secondary, veinlets/after plagioclase?)	10%
Sericite (after plagioclase)	5%
Quartz (partly interstitial, primary; minor secondary, along veinlets)	3-5%
Chlorite (after amphibole)	3%
Magnetite (mainly primary, partly altered to sphene, hematite)	3%
Carbonate (after mafics, plagioclase, mainly calcite?)	3%
Epidote (after mafics, Fe-rich)	1%
Apatite (accessory in mafic sites)	1%

This sample consists of coarse-grained, interlocking (hypidiomorphic granular textured) plagioclase and amphibole, with minor interstitial Kspar and quartz, accessory magnetite-apatite; it is partly altered to albite-Kspar along and near thin veinlets of Kspar-quartz-epidote-calcite-chlorite, with pervasive sericite-calcite after plagioclase and chlorite-calcite ±epidote after mafics.

Plagioclase forms randomly oriented, sub/euhedral tabular crystals up to 5 mm long that vary from almost fresh with extinction Y^010 <10º and relief almost nil against quartz (oligoclase, An_{15}?) to 10-20% replaced by fine grained sericite (randomly oriented subhedral flakes mostly <35 μm) and carbonate (sub/anhedra mostly <50 μm, likely calcite) plus traces of chlorite (as for sericite), with the remaining plagioclase showing slight negative relief against quartz (albitized?) or in places replaced by Kspar along thin (<0.1 mm) veinlets and at margins (yellow rims exposed on edges of etched offcut). Some Kspar also occurs as interstitial subhedra up to 0.6 mm, and this could be primary (?).

Relict mafic sites have mainly euhedral outlines to ~5 mm, with random orientations. They are mainly amphibole (fibrous subhedra to 1.5 mm with pale green pleochroism and small (<12º) extinction angle, suggestive of actinolitic hornblende or actinolite (secondary after hornblende or possibly original pyroxene?), but in places are mixed with chlorite (patches to 0.5 mm of bright green, near-zero birefringence, F:M 0.5?) that could represent former biotite, plus variable carbonate (sub- to anhedra to 0.35 mm, likely calcite?) and minor epidote (subhedra to 0.2 mm, bright yellow pleochroism suggestive of high Fe content). Accessory magnetite or ilmeno-magnetite forming subhedra to about 1 mm (partly replaced at margins by minor sphene subhedra <0.25 mm/hematite subhedra to 0.15 mm) and apatite as subhedra to 0.7 mm are closely associated with the mafic sites.

Quartz mainly occurs as irregular, skeletal subhedra optically continuous for up to 1.5 mm, interstitial to plagioclase and mafics, so likely mainly primary in origin; it is relatively unstrained. Minor finer-grained (<0.2 mm) quartz occurs with Kspar, epidote, calcite and chlorite of similar size along thin veinlets that cut and replace plagioclase.

In summary, this is biotite?-hornblende? (quartz) diorite with weak transitional propylitic-potassic (albite?-Kspar-actinolite?-sericite-chlorite-calcite-trace epidote-quartz) alteration partly controlled along thin veinlets.

1384: BIOTITE?-HORNBLENDE? QUARTZ SYENITE WITH ACCESSORY MAGNETITE-TRACE APATITE, WEAKLY ALTERED TO ALBITE-CHLORITE-SERICITE-CALCITE-HEMATITE-TRACE CHALCOPYRITE

Described as syenite, fine-grained, possibly potassic altered, with trace sulfides (very fine-grained pyrite); hand specimen shows fine-grained, brick-red felsic intrusive rock lacking obvious altered textures such as veinlets or fractures. The rock is magnetic, shows trace local reaction to cold dilute HCl, and major yellow stain for K-feldspar in the etched offcut (scattered relict plagioclase etched white shows up as pale greenish, saussuritized crystals in hand specimen). Modal mineralogy in polished thin section is approximately:

K-feldspar (interstitial, mainly primary?)	55%
Quartz (interstitial, mainly primary?)	15%
Plagioclase (scattered phenocrysts, saussuritized, albitized)	15%
Chlorite (mafic relics, after biotite and actinolite?)	10%
Sericite (after plagioclase)	2-3%
Magnetite (partly altered to hematite)	1-2%
Carbonate (mainly calcite?)	1%
Apatite (minor accessory)	<1%
Chalcopyrite	trace

This sample consists mainly of fine-grained, interlocking crystals of Kspar, quartz and plagioclase hosting scattered small phenocrystic plagioclase (saussuritized, albitized?) and smaller chloritized mafic relics, associated with accessory magnetite partly altered to hematite, and trace chalcopyrite.

The bulk of the slide consists of Kspar forming randomly oriented, sub- to anhedral crystals mostly <1 mm in diameter. The crystals typically display microperthitic texture due to minute lamellar inclusions of albite that are slightly sericite altered compared to the host Kspar, which is virtually fresh and appears likely to be mainly primary (possibly orthoclase; no grid twinning typical of microcline). Locally, almost megacrystic Kspar up to almost 0.5 cm mantles and overgrows a core tabular crystal of plagioclase, suggesting late-magmatic growth of Kspar.

Quartz displays similar grain size and habit to Kspar, and is therefore also likely primary in origin, although local skeletal intergrowths with Kspar or plagioclase suggest some late-magmatic growth. The crystals are relatively unstrained (show little undulose extinction, sub-grain development, and suturing of grain boundaries)

Plagioclase occurs mainly as scattered relict phenocrysts (tabular sub/euhedra up to 3 mm long, randomly oriented, with centers partly replaced by variable mixtures of sericite (randomly oriented, subhedral flakes mainly <35 μm) and carbonate (sub/anhedra <45 μm, likely mainly calcite?) or plucked out during section preparation. However, there are also smaller subhedral crystals rarely over 1 mm long, mixed with Kspar and quartz. Most show slight negative relief compared to quartz, and thus are likely albite or albitized.

Relict mafic crystals are mostly rounded to subhedral, <1.5 mm across, and mainly chlorite (aggregates of parallel oriented, subhedral flakes <0.5 mm with bright green pleochroism but near-zero birefringence, F:M 0.5?) with minor carbonate (subhedra <0.25 mm, calcite?) but rarely traces of dark brown biotite <0.2 mm, or pale green actinolite (fibrous, up to 0.75 mm) are seen. Traces of apatite are associated with relict mafic sites as minute acicular euhedra <0.1 mm long.

Accessory magnetite loosely associated with the relict mafic sites forms small irregular aggregates to 0.7 mm of subhedra <0.3 mm, partly replaced by hematite (patches <0.15 mm). Rare traces of chalcopyrite form subhedra <0.2 mm, interstitial to Kspar, chlorite and quartz.

In summary, this would be classed as biotite?-hornblende? quartz syenite with accessory magnetite-trace apatite, weakly altered to albite-chlorite-sericite-calcite-hematite-trace chalcopyrite.

1412: BIOTITE-HORNBLENDE-PYROXENE (QUARTZ) MONZODIORITE WITH ACCESSORY MAGNETITE-APATITE, SLIGHTLY (DEUTERIC) ALTERED TO ACTINOLITE-SERICITE ±EPIDOTE

Described as quartz monzodiorite (or moderate to strong chlorite-calcite altered biotite-pyroxene bearing diorite?), no sulfides; hand specimen shows dark grey/black medium-grained intermediate plutonic rock. The rock is distinctly magnetic, and shows no reaction to cold dilute HCl, but extensive white etch for plagioclase and patchy yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (locally saussuritized, andesine?)	50%
K-feldspar (interstitial, primary/late magmatic?)	20%
Pyroxene (ortho and clino?)	12%
Amphibole (hornblende/actinolite, mantling pyroxene)	5%
Quartz (mainly primary)	3-5%
Biotite (intergrown with amphibole/pyroxene)	3-5%
Magnetite	2-3%
Sericite, epidote ("saussuritization" of plagioclase)	1-2%
Apatite (accessory, with magnetite in mafic sites)	1%

This sample consists of hypidiomorphic-granular textured plagioclase (commonly poikilitically enclosed in Kspar, and locally saussuritized) and pyroxene (partly mantled/altered to amphibole, associated with biotite and accessory magnetite and apatite), plus minor interstitial quartz.

Plagioclase forms lath-like to tabular sub/euhedral crystals up to 0.8 cm long with random orientations, locally poikilitically enclosed in extensive K-feldspar that may be optically continuous for up to 1.3 cm. The plagioclase shows extinction Y^0120 up to 22º (suggestive of andesine, An_{40}) and is typically mostly fresh except for local patches of saussuritization (alteration to fine-grained intermixed sericite as randomly oriented, matted subhedral flakes <35 μm plus lesser, variable epidote as subhedra <50 μm). The Kspar is featureless (no twinning) and unaltered, with distinctly defined negative 2V, probably orthoclase.

Mafic crystals generally enclosed in the feldspathic matrix have rounded sub/euhedral outlines mostly <2.5 mm, but may be glomeratic up to almost 0.5 cm. They consist of central cores of pyroxene (typically finely twinned orthopyroxene to judge by sub-parallel extinction; pale green, could be enstatite, but also some examples with higher birefringence, large oblique extinction suggestive of clinopyroxene such as augite?) variably mantled by amphibole (either dark green, subhedral hornblende to 1.5 mm, or pale green, fibrous subhedral <0.5 mm actinolite?), both associated with variable biotite (very dark brown, ragged subhedral flakes to 1.5 mm). Magnetite forms somewhat rounded, fractured sub/euhedra to 1.2 mm typically closely associated with the mafic sites, as is minor apatite as stubby euhedral prisms <0.5 mm long.

Quartz occurs locally as skeletal, interstitial crystals optically continuous for up to 1.7 mm, with relatively little strain, suggestive of primary crystallization.

In summary, this is classed as biotite-hornblende-pyroxene (quartz) monzodiorite with accessory magnetite-apatite, slightly (deuteric) altered to actinolite-sericite ±epidote.

1442: BIOTITE-HORNBLENDE-(RELICT PYROXENE) (QUARTZ) MONZONITE WITH ACCESSORY MAGNETITE-APATITE, WEAKLY (PROPYLITIC-POTASSIC) ALTERED TO ACTINOLITE-CHLORITE-SERICITE ±EPIDOTE-KSPAR-QUARTZ-PYRITE ±CHALCOPYRITE

Described as granodiorite or quartz diorite/monzodiorite with minor pyrite-chalcopyrite, weak silicification, mafics variably chlorite altered; hand specimen shows mottled, buff/pinkish-grey and dark greenish-black, coarse-grained intermediate plutonic rock. The rock is distinctly magnetic, shows no reaction to cold dilute HCl, and major yellow stain for K-feldspar and white etch for plagioclase in the etched offcut. Modal mineralogy in polished thin section is approximately:

K-feldspar (interstitial, primary/late magmatic?)	40%
Plagioclase (locally saussuritized, andesine?)	30%
Amphibole (hornblende/actinolite, mantling pyroxene)	12%
Pyroxene (ortho and clino?)	5%
Quartz (mainly primary; minor secondary along veinlets with sulfides)	3-5%
Chlorite (after biotite intergrown with amphibole/pyroxene)	3-5%
Magnetite (slightly altered to hematite, sphene)	2%
Sericite, epidote ("saussurite" after plagioclase; also after mafics)	1-2%
Apatite (accessory, with magnetite in mafic sites)	1%
Pyrite, trace chalcopyrite (thin veinlets only)	<1%

This sample consists of hypidiomorphic-granular textured plagioclase (typically poikilitically enclosed in Kspar, and locally saussuritized) and pyroxene (mostly mantled/altered to amphibole, associated with chlorite/biotite and accessory magnetite and apatite), plus minor interstitial quartz.

Plagioclase forms lath-like to tabular sub/euhedral crystals up to 0.6 cm long with random orientations, generally poikilitically enclosed in extensive K-feldspar that may extend semi-continuously for almost 2.5 cm. The plagioclase shows extinction Y^0120 up to 21º (suggestive of andesine, An_{40}) and is partly fresh or locally shows patches of saussuritization (alteration to fine-grained intermixed sericite as randomly oriented, matted subhedral flakes <35 μm plus lesser, variable epidote as subhedra <50 μm). The Kspar is featureless (no twinning) and unaltered, with distinctly defined negative 2V, probably orthoclase.

Mafic crystals generally enclosed in the feldspathic matrix have rounded sub/euhedral outlines mostly <2.5 mm, but may be glomeratic up to ~0.7 cm. They consist of central cores of relict pyroxene (finely twinned, some orthopyroxene to judge by sub-parallel extinction; pale green, could be enstatite, but more commonly with higher birefringence, large oblique extinction suggestive of clinopyroxene such as augite?) typically mantled by amphibole (either dark green, subhedral hornblende to 1.7 mm, or pale green, fibrous subhedral <0.9 mm actinolite?), both associated with variable biotite (dark brown, ragged subhedral flakes to 1.8 mm typically replaced by chlorite with deep green pleochroism, near-zero to length-slow, anomalous blue birefringence suggestive of F:M 0.6-0.7?) and epidote (subhedra to 0.5 mm, bright yellow pleochroism indicative of high Fe content). Magnetite forms somewhat rounded, fractured sub/euhedra to 1.1 mm (slightly altered to hematite along fractures and margins, or to sphene near sulfides), typically closely associated with the mafic sites and with minor apatite as stubby euhedral prisms to 0.7 mm long. Traces of chalcopyrite <0.15 mm are found with altered mafic sites, or with pyrite (elongated subhedra to 1.2 mm) along thin veinlets <0.5 mm thick cutting Kspar, but with minor secondary Kspar, quartz and chlorite.

Quartz occurs mainly as skeletal, interstitial crystals optically continuous for up to 1.5 mm, with relatively little strain, suggestive of primary crystallization. However, there are traces of finer-grained, secondary quartz <0.2 mm found with Kspar and chlorite along the sulfide-bearing veinlets.

In summary, this is biotite-hornblende-(relict pyroxene) (quartz) monzonite with accessory magnetite-apatite, weakly (propylitic-potassic) altered to actinolite-chlorite-sericite ±epidote-Kspar-quartz-pyrite ±chalcopyrite-hematite-sphene.

1447: APLITE OF APPROXIMATELY GRANITE COMPOSITION (MAJOR KSPAR AND QUARTZ, LESSER PLAGIOCLASE SLIGHTLY/DEUTERIC ALTERED TO CLAY?/SERICITE-LOCAL EPIDOTE; RARE RELICT MAFICS ALTERED TO CHLORITE-EPIDOTE, ASSOCIATED WITH ACCESSORY MAGNETITE-TRACE PYRITE/RARE CHALCOPYRITE)

Described as aplite (very fine-grained quartz monzonite or alkali feldspar granite?) with trace very fine-grained pyrite; hand specimen shows very fine-grained bright pink leucocratic felsic intrusive rock with local fractures containing traces of pyrite. The rock is weakly magnetic, shows no reaction to cold dilute HCl, but extensive yellow stain for K-feldspar/minor white etch for plagioclase and grey quartz in the etched offcut. Modal mineralogy in polished thin section is approximately:

K-feldspar (orthoclase/local microcline (late-magmatic after plagioclase?)	65%
Quartz (mainly primary?)	20%
Plagioclase (lightly clay?/sericitized, albite?)	10%
Clay?/sericite (after plagioclase)	1-2%
Chlorite	1%
Epidote (moderate Fe)	1%
Magnetite	1%
Pyrite, rare trace chalcopyrite	<1%

This sample consists of sub-equal amounts of fine-grained, intimately intergrown Kspar and quartz, with minor plagioclase (partly sericitized), accessory chlorite, epidote, magnetite, and trace pyrite.

Kspar forms sub- to anhedral crystals mainly <0.15 mm in size that are only readily distinguishable from the quartz they are intergrown with by their distinct negative relief, and from relict plagioclase by the weak sericitization of the latter. The Kspar is mainly relatively featureless and unaltered (orthoclase?) but locally where it appears to be a late-magmatic replacement of plagioclase it may show local “grid” twinning indicative of microcline

Quartz is somewhat coarser than Kspar, forming sub- to anhedral crystals up to 0.5 mm that appear to be mostly primary (relatively unstrained) but in places form skeletal, micrographic or myrmekitic intergrowths with Kspar, suggestive of late-magmatic growth.

Plagioclase is distinguished by the incipient clay?/sericite alteration that clouds it, and generally only slight negative relief against quartz, suggesting it may be albite (?) although twinning is only rarely seen, making determination of composition difficult. Scattered larger relict crystals with euhedral outlines up to 1.5 mm may be more strongly altered to brownish clay?/sericite, minor epidote (subhedra to 0.2 mm) and possibly overgrown/replaced by “wooly”-looking secondary or more likely late-magmatic Kspar.

Only traces of mafic mineral occur in this leucocratic, aplitic rock, typically including chlorite as small subhedral flakes <0.4 mm with pale to distinct green pleochroism and weakly anomalous bluish-grey, length-slow birefringence (suggestive of F:M 0.5-0.6?) and epidote (subhedra to 0.2 mm with weak to distinct yellow colour suggestive of moderate Fe content). The chlorite and epidote also occur along narrow (<0.2 mm), short/discontinuous or poorly defined fracture veinlets, along which clay?/sericite alteration of plagioclase is more common, and these may be loosely associated with traces of pyrite (cubic euhedra to 0.2 mm partly oxidized to limonite) and rare chalcopyrite (subhedra <25 μm). Some of the sulfides could be in part after magnetite and associated with mafic sites. The accessory magnetite forms small sub/euhedra mostly <0.3 mm that do not appear to show alteration to hematite or sphene.

In summary, this is confirmed as aplite of approximately granite composition (major Kspar and quartz, lesser plagioclase slightly/deuteric altered to clay?/sericite-local epidote; rare relict mafics altered to chlorite-epidote, associated with accessory magnetite-trace pyrite/rare chalcopyrite).

1467: DIORITE STRONGLY TRANSITIONAL PROPYLITIC/PHYLLIC ALTERED (SERICITE-EPIDOTE-ALBITE?-CHLORITE ±HEMATITE-SPHENE-CHALCOPYRITE), SIGNIFICANT ACCESSORY MAGNETITE-APATITE; MINOR KSPAR APPEARS MORE LIKELY TO BE RELICT PRIMARY RATHER THAN SECONDARY

Described as granodiorite (or patchy Kspar and selectively epidote altered diorite?), coarse-grained with very fine-grained disseminated chalcopyrite (165 ppm Cu); hand specimen shows coarse-grained, mottled buff and dark blackish green intermediate plutonic intrusive rock. The rock is weakly magnetic, shows no reaction to cold dilute HCl, and major white etch for plagioclase but only minor interstitial yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (relict; sericite-epidote altered, albitized remnants?)	30%
Amphibole (hornblende?), (partly altered to chlorite, after pyroxene?)	25%
Sericite (after plagioclase)	25%
Epidote (zoisite after plagioclase, or Fe-rich with chlorite, after biotite?)	10%
Chlorite (after amphibole, former biotite?)	3%
K-feldspar (interstitial, primary?)	2-3%
Magnetite/ilmeno-magnetite (partly altered to hematite, sphene)	2-3%
Apatite (primary accessory, with mafic sites)	1-2%
Chalcopyrite (partly oxidized to limonite; associated with epidote)	<1%

This sample consists of hypidiomorphic-granular textured, relict (strongly sericite-epidote-albite?) altered plagioclase and mafics (amphibole and likely former biotite, altered to epidote-chlorite), the latter associated with accessory magnetite (altered to hematite, sphene), apatite and chalcopyrite (partly oxidized to limonite). Minor Kspar occurs in interstices, associated with mafic site margins.

Relict plagioclase originally making up ~2/3 of the sample as randomly oriented, interlocking subhedra to ~5 mm is now ~50% converted to sericite (randomly oriented, matted subhedral flakes mainly <50 μm, but locally to 0.12 mm) and lesser epidote-group mineral (typically confined to former crystal cores; ragged patches to 0.7 mm of randomly oriented, subhedra mainly <75 μm, with near-zero to low anomalous birefringence suggestive of zoisite?). Remnant plagioclase locally shows twinning, with extinction Y^010 to ~14º suggestive of albite near An_{5-10} (judging by the level of accompanying sericite-epidote alteration, could be secondary?). K-feldspar is typically difficult to recognize in section, but is indicated by weak yellow stain in interstices/around the contacts between relict plagioclase and mafic crystals, likely indicative of primary origin for Kspar.

Mafic sites with glomeratic outlines are significant (colour index of the rock is about 35), mostly amphibole but with foliated/cleaved aggregates of epidote-chlorite strongly suggestive of former biotite. Amphibole forms subhedra up to ~4 mm diameter, with deep green pleochroism and lack of fibrous texture suggestive of hornblende or actinolitic hornblende (could be late magmatic after former pyroxene?), partly altered to chlorite. Biotite sites have rounded subhedral outlines to 2.2 mm, pseudomorphed by variable mixtures of epidote (subhedra <1.5 mm, bright yellow pleochroic, high Fe content) and chlorite (subhedral flakes from <20 μm to 0.2 mm, length-fast to near-zero birefringence suggestive of F:M 0.4-0.5?). Accessory magnetite forming subhedra to 2.5 mm is partly replaced by hematite (lamellar pseudomorphs likely after ilmenite?) or sphene (subhedra to 0.5 mm; could be primary or after ilmenite), and both are commonly associated with significant apatite as stubby prisms to ~1 mm. Very minor chalcopyrite occurs as sub/anhedra to ~2 mm, partly oxidized at rims to limonite, and closely associated with epidote ±chlorite (after biotite sites?); the sulfide could be replacive of former magnetite sites (?).

In summary, this appears to be diorite strongly transitional propylitic/phyllic altered (sericite-epidote-albite?-chlorite ±hematite-sphene-chalcopyrite) with significant accessory magnetite-apatite. The minor Kspar appears more likely to be relict primary rather than secondary.

1487: (QUARTZ) DIORITE TRANSITIONAL PROPYLITIC-POTASSIC ALTERED TO ALBITE-EPIDOTE-CHLORITE-QUARTZ-ACTINOLITE-BIOTITE?-SPHENE/RUTILE NEAR EPIDOTE-CHLORITE-QUARTZ-CHALCOPYRITE-PYRITE-LIMONITE-MALACHITE VEINS

Described as granodiorite or moderate-strong pervasive albite altered diorite (?) with localized disseminated pyrite-chalcopyrite, or discontinuous hairline fractures of chlorite-actinolite-epidote-sulfides (1.19% Cu); hand specimen shows greenish-grey quartz diorite altered to pinkish albite in envelopes to ~1 cm wide around ~1 cm thick veins of epidote-pyrite-chalcopyrite partly oxidized to limonite and bright green malachite. The rock is not magnetic, shows trace reaction to cold dilute HCl (veins only), and only rare trace stain for K-feldspar (but major white etch for plagioclase) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (partly/largely albitized, replaced by albite, trace Kspar?)	55%
Epidote (mainly veins/veinlets; minor after mafics)	12%
Quartz (partly primary, interstitial; partly secondary, vein)	10%
Chlorite (with actinolite, or after biotite, or in veins)	8%
Amphibole (secondary, actinolitic, with chlorite-epidote)	5%
Chalcopyrite (mainly veins, partly oxidized to limonite)	5%
Pyrite (mainly veins, partly oxidized to limonite)	2%
Apatite (relict primary accessory)	1%
Sphene, rutile (after ilmeno-magnetite)	1%
Malachite (after chalcopyrite)	1%

This sample is (quartz) diorite composed of hypidiomorphic-granular relict plagioclase (albitized, moderately/strongly altered to albite-epidote), relict mafics (altered to actinolite-chlorite-epidote) and minor interstitial (mainly primary?) quartz with accessory apatite and sphene/rutile, cut by significant veins of epidote-chlorite-quartz-sulfides (chalcopyrite>pyrite, both oxidized to limonite-malachite).

In least altered rock furthest from veins, plagioclase forms randomly oriented, tabular laths up to 3.5 mm with mainly vague, altered looking twinning, extinction Y^010 to 15º and relief distinctly negative compared to quartz, indicating composition near albite (An_{0-5}). Near the veins, this albitized plagioclase is replaced by much finer-grained secondary alkali feldspar as granular, anhedral crystals mainly <0.15 mm (likely albite, but may include minor orthoclase molecule (suggested by slight pink colour in hand specimen and faint yellow stain in the offcut; this is distinct from traces of Kspar with bright yellow stain also present near the vein, which could be primary or secondary). Furthest from veins, quartz occurs in ragged aggregates to ~2 mm composed of slightly strained anhedra <1 mm in size, with vaguely interstitial aspect suggestive of former primary quartz possibly recrystallized/modified by secondary alteration. Relict mafic sites with ragged, irregular subhedral or glomeratic outlines to ~ 6 mm consist of fibrous pale green actinolitic amphibole and aggregates of chlorite-epidote (in places with traces of possibly secondary biotite preserved at cores). The actinolitic amphibole crystals are mostly <0.2 mm long and oriented parallel to long axes of the original crystal; chlorite occurs as sub-parallel oriented subhedral flakes <0.15 mm with pale green pleochroism and length-slow, weakly anomalous blue-grey birefringence suggestive of F:M ~0.5-0.6 (?), and relict biotite forming sub/anhedral flakes mainly <0.1 mm with pale brown pleochroism, suggesting possible approach to potassic alteration facies (albite-biotite?-quartz-epidote) Epidote increases from scattered small crystals <0.2 mm in albite to massive concentrations towards the veins.

The veins are up to ~1 cm thick and composed of aggregates of epidote (radiating, sheaf-like or fibrous subhedra to ~1 mm long, with strong yellow colour indicative of high Fe content), local quartz (ragged an- to subhedra <0.5 mm) and chlorite (matted subhedral flakes to 0.7 mm with strong green pleochroism and distinct bluish anomalous length-slow pleochroism, F:M 0.6-0.7?). Pyrite as sub/euhedra to 4 mm and chalcopyrite as subhedral masses to 1.5 cm are oxidized to limonite are associated with sphene ±rutile (after ilmeno-magnetite?), and minor malachite occurs peripherally.

In summary, this is (quartz) diorite, transitional propylitic-potassic altered to albite-epidote-chlorite-quartz-actinolite-biotite?-sphene/rutile, near veins of epidote-chlorite-quartz-chalcopyrite-pyrite oxidized to limonite-malachite.

1510: DIORITE (SIGNIFICANT APATITE-MAGNETITE) STRONGLY TRANSITIONAL PROPYLITIC/POTASSIC ALTERED (SERICITE-EPIDOTE-ALBITE-KSPAR-ACTINOLITE-BIOTITE-CHLORITE ±HEMATITE-SPHENE), VEINS OF EPIDOTE-PYRITE-CHALCOPYRITE

Described as medium-grained quartz diorite with patchy epidote and Kspar and mafic selective chlorite alteration with fine-grained sulfides (1200 ppm Cu) predominately within or on margins of mafic sites, possible very fine-grained muscovite/sericite; hand specimen shows coarse-grained, mottled white and dark blackish green intermediate plutonic intrusive rock cut by local dark green actinolite-epidote vein-like zones with minor sulfides. The rock is weakly magnetic, shows no reaction to cold dilute HCl, and major white etch for plagioclase but only local stain for K-feldspar (secondary?) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (relict; sericite-epidote altered, albite/Kspar altered?)	30%
Amphibole (hornblende?), (partly altered to actinolite?)	25%
Sericite (after plagioclase)	15%
Epidote (zoisite after plagioclase, or Fe-rich with biotite, sulfides)	10%
Secondary biotite (partly chloritized, after amphibole)	5%
K-feldspar (after plagioclase, secondary?)	5%
Apatite (significant accessory, with mafic sites/partly secondary?)	3%
Chlorite (after secondary biotite?)	3%
Magnetite/ilmeno-magnetite (partly altered to hematite, sphene)	2-3%
Chalcopyrite (partly oxidized to limonite; associated with epidote)	<1%
Pyrite (intergrown with chalcopyrite, epidote in vein zone)	<1%

This sample consists of hypidiomorphic-granular textured, relict plagioclase (sericite-epidote-albite-Kspar? altered) and amphibole (actinolite-secondary biotite/chlorite ±epidote altered), the latter associated with significant coarse apatite and accessory magnetite (altered to hematite, sphene). Local pyrite and chalcopyrite (slightly oxidized to limonite) occur with epidote-actinolite veins.

Relict plagioclase originally making up ~60% of the sample as randomly oriented, interlocking subhedra to ~5 mm is now ~40% converted to sericite (randomly oriented, matted subhedral flakes mainly <30 μm, but locally to 50 μm) and lesser epidote-group mineral (typically confined to former crystal cores; ragged patches <0.2 mm of randomly oriented, subhedra mainly <50 μm, with normal/low anomalous birefringence suggestive of zoisite/clinozoisite?). Remnant plagioclase locally shows twinning, with extinction Y^010 to ~22º suggestive of andesine near An_{35} (relict primary?). K-feldspar is typically difficult to recognize in section, but appears to replace the plagioclase locally (indicated by yellow stain especially in the vein envelope or near secondary biotite clots, implying a secondary origin for at least a portion if not most of the Kspar?).

Mafics with glomeratic outlines to 1 cm are significant (colour index of the rock is about 40), mostly hornblende but with local replacement by blue-green, fibrous actinolite or fine, shreddy brown (secondary?) biotite (sub/euhedral flakes mostly <0.2 mm). Original amphibole subhedra up to ~4 mm with deep green pleochroism/lacking fibrous texture suggest hornblende or actinolitic hornblende are replaced at margins by the actinolite(could be late magmatic?), or replaced by the secondary biotite in irregular patches <1 mm across (biotite is partly altered to chlorite). Local variable epidote (subhedra <0.5 mm, bright yellow pleochroic, high Fe content) occurs with biotite and the chlorite (same size as biotite, length-slow birefringence suggestive of F:M 0.4-0.5?). Accessory magnetite forming subhedra to 1.5 mm is partly replaced by hematite (semi-lamellar pseudomorphs after former ilmenite?) or sphene (subhedra to 2.5 mm; also be after ilmenite?), and both are commonly associated with significant coarse apatite as rounded subhedra to ~2 mm. In the vein zone, minor chalcopyrite (sub/anhedra <0.6 mm, with pyrite as subhedra to 1 mm, rarely slightly oxidized at rims to limonite, are closely associated with epidote (sub/euhedra to 0.8 mm, Fe-rich) ±chlorite (after secondary biotite); the sulfide is intergrown with sphene and could replace former magnetite sites (?).

In summary, this appears to be diorite (significant accessory apatite-magnetite) strongly transitional propylitic/potassic altered (sericite-epidote-albite-Kspar-actinolite-biotite-chlorite ±hematite-sphene) associated with veins of epidote-pyrite-chalcopyrite.

1519: PLAGIOCLASE-AMPHIBOLE PHYRIC (ACCESSORY MAGNETITE-QUARTZ-TRACE APATITE) LATITE PORPHYRY (HYPABYSSAL INTRUSIVE?) SLIGHTLY (DEUTERIC?) ALTERED TO CLAY?/SERICITE-EPIDOTE-PREHNITE ASSOCIATED WITH THIN VEINLETS OF THE LATTER TWO MINERALS

Described as dacite with partly flow-textured phenocrysts in aphanitic grey groundmass, fresh, no sulfides noted; hand specimen shows dark grey, plagioclase ±mafic phyric porphyry cut by local thin fractures with pink (hematite-stained albite?) alteration envelopes. The rock is magnetic, shows no reaction to cold dilute HCl, and pervasive major yellow stain for K-feldspar in the etched offcut (groundmass, therefore likely primary), but only minor white etch for plagioclase (phenocrysts). Modal mineralogy in polished thin section is approximately:

K-feldspar (groundmass, primary)	50%
Plagioclase (andesine, partly altered to clay?/sericite, ±epidote)	25%
Amphibole (actinolitic hornblende?)	15%
Epidote (clinozoisite after plagioclase, Fe-rich in veinlets)	3%
Clay?/sericite (after plagioclase)	3%
Magnetite/ilmeno-magnetite (partly altered to sphene)	2%
Quartz (microphenocrysts in groundmass, primary?)	1-2%
Prehnite (local thin veinlets)	<1%
Apatite (accessory)	trace

This sample consists of about 25% plagioclase (partly altered to clay?/sericite, epidote) and 15% amphibole (slightly altered to actinolite) phenocrysts, plus <5% small microphenocrysts of magnetite, quartz, and rare apatite, in aphanitic groundmass of Kspar, minor plagioclase and amphibole, accessory magnetite. It is cut by thin epidote or prehnite-bearing veinlets.

Plagioclase phenocrysts show partial trachytic alignment of sub- to euhedral laths mostly <3 mm long. The crystals are variably partly replaced by very fine-grained clay?/sericite (randomly oriented subhedral flakes mainly <15 μm) and local epidote-group mineral (subhedra <35 μm with low to normal interference colours, possibly clinozoisite?), especially near thin veinlets of epidote (see below). The crystals locally retain twinning and traces of zoning, with composition of the plagioclase estimated as possibly andesine, An_{35}, based on extinction Y^010=18º, Z^001=22º. If hematite-stained albite is present near the thin epidote/prehnite veinlets (see below) it is not identified.

Amphibole phenocrysts have mainly slender acicular euhedral outlines <2 mm long (rarely 4 mm in hand specimen), also somewhat aligned to impart a weak trachytic texture to the sample. The amphibole typically shows dark green pleochroism, or brownish green at cores, but commonly is partly rimmed by pale green fibrous actinolite (or cores are replaced by almost colourless tremolite-actinolite). Biotite and chlorite are not seen.

Quartz occurs as scattered small microphenocrysts or aggregates <0.5 mm (composed of crystals <0.25 mm, with weak strain, but likely primary in origin).

Magnetite or ilmeno-magnetite occurs as microphenocrysts mainly <0.4 mm (glomeratic to 0.7 mm) with traces of alteration to sphene at the margins. Rare apatite forms stubby prisms <0.15 mm long, likely primary accessories.

The groundmass consists of very fine-grained to almost aphanitic, sucrosic textured K-feldspar (interlocking anhedra mainly <25 μm) containing plagioclase of up to 50 μm that is not clearly discernible in the etched offcut, amphibole as acicular subhedra to 0.15 mm, and magnetite as sub/euhedra <35 μm; the plagioclase is typically clay?/sericite altered compared to Kspar.

Thin veinlets mostly <0.2 mm thick consist of either epidote (subhedra <0.1 mm long, with yellow pleochroism indicative of high Fe content) or prehnite (subhedra to 0.2 mm long, distinguished by length-fast character). These are associated with increased clay?/sericite-epidote alteration of adjacent plagioclase crystals, but groundmass is relatively unaffected.

In summary, this is plagioclase-amphibole phyric (accessory magnetite-quartz-trace apatite) latite porphyry (hypabyssal intrusive?) slightly (deuteric?) altered to clay?/sericite-epidote-prehnite associated with thin veinlets of the latter two minerals.

1564: (QUARTZ) DIORITE (ACCESSORY ILMENO-MAGNETITE, APATITE), MODERATELY/STRONGLY TRANSITIONAL PROPYLITIC-POTASSIC (ALBITE ±KSPAR, SERICITE-CHLORITE-CARBONATE-EPIDOTE-ACTINOLITE-SPHENE) ALTERED WITH RARE HAIRLINE EPIDOTE VEINLETS, BUT NO SULFIDES

Described as unmineralized (<20 ppm Cu) monzonite or coarse grained, moderate to strong patchy to pervasive Kspar, sericite and chlorite altered diorite (?); hand specimen shows mottled pale pinkish-buff and dark green coarse-grained felsic plutonic intrusive rock, cut by hairline epidote veinlets. The rock is not magnetic, shows no reaction to cold dilute HCl, and major white etch for plagioclase but only trace weak yellow stain for K-feldspar, minor grey quartz in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (relict, sericite ±epidote altered, albitized?)	60%
Sericite (after plagioclase)	10%
Chlorite (after relict mafic sites, with carbonate)	7%
Carbonate (after relict mafic sites, dolomite/ankerite?)	5%
Epidote (clinozoisite after plagioclase, Fe-rich after mafic sites)	5%
Quartz (mainly primary?)	5%
K-feldspar (partly secondary?)	3%
Actinolite (secondary, after mafic sites)	2-3%
Sphene, rutile (after ilmeno-magnetite?)	1-2%
Apatite (primary accessory?)	1%

This sample consists of hypidiomorphic-granular textured relict plagioclase and amphibole (?) crystals, altered to hematite-stained albite, sericite, chlorite, carbonate, epidote, minor Kspar and actinolite; minor quartz is interstitial, likely primary, and magnetite is altered to sphene/rutile, associated with relict apatite. Thin veinlets are filled with epidote.

Relict plagioclase originally making up ~70% of the sample as randomly oriented, interlocking subhedra to ~5 mm is now ~25% converted to sericite (randomly oriented, matted subhedral flakes mainly <25 μm, but locally to 40 μm) and lesser epidote-group mineral (most common in crystal cores; ragged patches <0.2 mm of randomly oriented, subhedra mainly <50 μm, with normal/low anomalous birefringence suggestive of zoisite/clinozoisite?). Remnant plagioclase only locally shows vague relict twinning, with extinction Y^010 to ~15º and relief distinctly negative compared to quartz suggestive of albite near An_5 (mainly secondary; typical "hematite stained albite"). K-feldspar is typically difficult to recognize in section, but appears to replace the plagioclase locally (indicated by yellow stain in irregular areas or patches, implying a secondary origin for at least a portion if not most of the Kspar?).

Relict mafic sites display ragged, irregular to somewhat rounded outlines up to ~5 mm across, now composed of variable mixtures of chlorite and intimately intermixed carbonate, or epidote, lesser actinolite. Chlorite (matted subhedral flakes mostly <0.2 mm, with pale green colour and near-zero to barely length-fast birefringence suggestive of F:M 0.4-0.5?) and carbonate (elongated, somewhat fibrous subhedra to 0.5 mm, likely dolomite or ankerite to explain the lack of reaction shown in hand specimen) are most abundant, whereas epidote (subhedra to 0.3 mm with distinct yellow pleochroism implying high Fe content) and actinolite (fibrous subhedra <0.5 mm long, pale green pleochroism and small extinction angle) are less common. Relict ilmeno-magnetite sites with subhedral outlines to 2 mm are pseudomorphed by sphene (subhedra <1 mm) locally with included rutile (dark brown subhedra <0.25 mm), locally associated with relict accessory apatite (fractured subhedra <0.7 mm).

Quartz occurs as ragged, irregular sub/anhedra included within or interstitial to plagioclase and mafics, likely mainly primary although some recrystallization may be related to alteration.

The alteration is loosely associated with thin or hairline fracture veinlets mainly <0.2 mm thick filled with epidote (stubby subhedra <0.2 mm, moderate Fe content)

In summary, this is (quartz) diorite (accessory ilmeno-magnetite, apatite), moderately/strongly transitional propylitic-potassic (albite ±Kspar, sericite-chlorite-carbonate-epidote-actinolite-sphene) altered with rare hairline epidote veinlets, but no sulfides.

1605: (BIOTITE?)-HORNBLENDE DIORITE (ACCESSORY ILMENO-MAGNETITE, APATITE) ALTERED TO PERIPHERAL ALBITE-SERICITE-CHLORITE-ACTINOLITE-SPHENE-HEMATITE, ADJACENT TO POTASSIC VEIN ZONE (KSPAR-EPIDOTE-QUARTZ-CHALCOPYRITE ±PYRITE-SPHENE); CALCITE FRACTURES MAY BE UNRELATED

Described as coarse-grained quartz monzonite or medium/coarse-grained diorite (?), locally pervasive and texturally destructive Kspar alteration (possible vein: 7000 ppm Cu/360 ppm Mo) cut by anastamosing epidote-quartz-sulfide fractures/disseminations; hand specimen shows bright salmon-pink Kspar-rich zone in which mafics (blackish green elsewhere) appear to be entirely epidotized, associated with epidote on thin fractures. The rock is weakly magnetic except in the Kspar-rich zone, shows trace reaction to cold dilute HCl along the fractures only, and major yellow stain for K-feldspar in the zone, grading to prominent white etch for plagioclase outside the zone. Modal mineralogy in polished thin section is approximately:

K-feldspar (largely secondary, especially within potassic zone)	35%
Plagioclase (sericitized, then albitized, replaced by Kspar)	20%
Amphibole (actinolitic hornblende, partly altered to actinolite?)	10%
Epidote	12%
Sericite (after plagioclase)	10%
Chlorite (after former primary biotite?)	5%
Quartz (mainly secondary, with epidote-Kspar-sulfides)	2%
Carbonate (mainly in fractures, mostly calcite?)	2%
Chalcopyrite, trace pyrite	2%
Sphene, hematite (after ilmeno-magnetite, some of which remains)	1%
Apatite(relict primary accessory?)	1%

This sample grades across the slide from hypidiomorphic-granular plagioclase (sericite-albite altered) and amphibole-relict biotite (actinolite and chlorite altered), relict ilmeno-magnetite, apatite, to strongly Kspar-epidote-minor quartz-sulfides-sphene altered (calcite fractures occur throughout).

In least altered rock, plagioclase forms randomly oriented subhedra up to ~4 mm, extensively altered to sericite (>50% replaced, randomly oriented sub/euhedral flakes mostly <0.1, but up to 0.2 mm in size) and trace epidote (subhedra <0.1 mm, clinozoisite?); remnant feldspar is progressively partly to largely converted to albite and then Kspar as the potassic zone is approached. Mafic relics with glomeratic outlines to ~6 mm clearly comprise 2-4 mm amphibole (dark green actinolitic hornblende, rimmed/partly altered to pale green, fibrous actinolite) and lesser 1-2 mm former biotite sites now pseudomorphed by chlorite (matted subhedral flakes <0.25 mm, pale green pleochroism and near-zero to weakly length-slow, anomalous blue-grey birefringence suggestive of F:M 0.5?) containing traces of minute ilmenite (acicular subhedra <0.1 mm long, rimmed by sphene) plus local epidote (sub/euhedra to 0.35 mm, moderate Fe content). Relict ilmeno-magnetite to 0.5 mm is partly to largely replaced by sphene (subhedra to 0.5 mm) and lamellar hematite (euhedra to 0.5 mm).

As the ~2-3 cm thick vein (?) zone is entered, albite becomes more prominent (tabular subhedra to 2 mm, vaguely twinned, Y^010=15º, relatively unsericitized) and then is replaced by patchy "wooly" textured to eventually better crystalline Kspar forming subhedra to ~4 mm, lacking twinning, clouded by minute hematite particles (causing the pink colour in hand specimen) and with distinct negative relief against minor quartz (see below) accompanying it, likely secondary since quartz does not occur in the less altered rock. Mafic sites (amphibole and biotite) are progressively replaced by epidote forming interlocking subhedra to ~1 mm with bright yellow colour implying high Fe content, especially near veinlets of epidote that are mainly <3 mm thick and associated with most of the secondary quartz (zones <0.6 mm of sucrosic sub/anhedra <0.2 mm) and chalcopyrite (ragged subhedra <1.2 mm)-trace pyrite (subhedra <0.5 mm) both partly oxidized to limonite, sphene to ~2 mm and apatite <0.5 mm. Calcite occurs as subhedra <0.3 mm along veinlets <0.25 mm thick.

In summary, this is (biotite?)-hornblende diorite (accessory ilmeno-magnetite, apatite) altered to peripheral albite-sericite-chlorite-actinolite-sphene-hematite adjacent to potassic vein zone (Kspar-epidote-quartz-chalcopyrite ±pyrite-sphene); calcite fractures are not clearly related to mineralization.

1651: MODERATELY PROPYLITIC/POTASSIC (ALBITE-CHLORITE-SERICITE-RUTILE, ACCESSORY APATITE, MONAZITE?) TO STRONGLY POTASSIC (KSPAR-EPIDOTE-QUARTZ-CHLORITE-CHALCOPYRITE-TRACE PYRITE-RUTILE) ALTERED (QUARTZ?) DIORITE, WITH STRONGEST ALTERATION PARTLY CONTROLLED ALONG SUB-PLANAR FRACTURE ZONES THAT ARE PARTLY PLUCKED OUT BY SECTION PREP

Described as medium/coarse-grained granodiorite or altered diorite (?), variably Kspar altered, cut by epidote-pyrite-chalcopyrite veins/fractures (strongly mineralized, 2.46% Cu); hand specimen shows bright salmon-pink Kspar-rich zones in which mafics (blackish green elsewhere) appear to be partly epidotized, associated with epidote-sulfides on fractures (partly oxidized to limonite, trace malachite). The rock is not magnetic, shows no reaction to cold dilute HCl, and major yellow stain for K-feldspar, with only minor relict white etch for plagioclase remaining in places. Modal mineralogy in polished thin section is approximately:

K-feldspar (mainly secondary, potassic zone alteration)	60%
Chlorite (after amphibole and biotite?)	15%
Epidote	8%
Quartz (mainly secondary, with epidote-Kspar-sulfides)	7%
Plagioclase (albitized/trace sericitized, replaced by Kspar)	5%
Chalcopyrite/trace pyrite (oxidized to limonite, plucked by section prep)	2-3%
Limonite (mainly after chalcopyrite)	1%
Sericite (after relict plagioclase)	1%
Rutile (after ilmeno-magnetite?)	<1%
Apatite, monazite? (relict primary accessories)	<1%

This sample grades variably across the slide from moderately propylitic/potassic to strongly potassic altered, i.e. from relict plagioclase (albite-trace sericite altered) and relict mafics (chlorite-trace rutile-apatite), to strongly Kspar-epidote-quartz-chlorite-sulfides, in semi-linear fracture-controlled zones.

In least altered rock, vestiges of original hypidiomorphic-granular (quartz?) diorite texture are preserved. Relict plagioclase forming randomly oriented subhedra to about 2 mm with rare vague twinning (probably albite, although no quartz is adjacent to compare refractive indices with) and traces of sericite alteration (randomly oriented subhedral flakes <30 μm). Relict mafics with ragged, irregular (somewhat deformed?) outlines to ~3 mm are entirely chloritized (matted, sub-parallel aligned subhedral flakes mainly <1 mm in diameter, with pale green pleochroism and length-slow, weakly blue-grey anomalous birefringence suggestive of F:M 0.6?), with accessory rutile (dark brown, sub- to euhedral, <50 μm long) and traces of apatite (euhedral prisms <0.12 mm long) plus rare possible monazite (rounded euhedra <0.1 mm, surrounded by radiation-damaged brownish pleochroic haloes in adjacent chlorite). No distinction can be made as to possible former amphibole and/or biotite distribution.

In the strongly altered rock, feldspar is entirely converted to secondary Kspar as interlocking, randomly oriented, sub- to locally euhedral crystals mainly <3 mm, but commonly glomeratic or semi-continuous optically for almost 1 cm; the Kspar is virtually unaltered, with local minor perthitic texture (minute inclusions of albite) suggestive of orthoclase (?). Relict mafic sites are still dominated by chlorite with accessory rutile inclusions, as described above, but epidote is also present, although most common near and along poorly defined veinlets of epidote. The epidote forms interlocking, randomly oriented subhedra rarely over 0.4 mm, with pale yellow colour indicative of moderate Fe content, and is commonly plucked out along the fractures/veinlets, as is quartz (subhedra to ~1 mm, mainly secondary?) and sulfides (mainly chalcopyrite, sub/anhedra <0.5 mm, and trace pyrite, euhedra <0.2 mm) that are both partly to locally largely oxidized to deep red-brown "pitch" limonite (likely mainly after chalcopyrite, explaining the high, ~2.5% Cu in the sample).

In summary, this is moderately propylitic/potassic (albite-chlorite-sericite-rutile, accessory apatite, monazite?) to strongly potassic (Kspar-epidote-quartz-chlorite-chalcopyrite-trace pyrite-rutile) altered (quartz?) diorite, with strongest alteration partly controlled along sub-planar fracture zones that are partly plucked out by section prep.

1663: PLAGIOCLASE-BIOTITE (RELICT AMPHIBOLE?) PHYRIC (ACCESSORY MAGNETITE-SPHENE) LATITE PORPHYRY (HYPABYSSAL INTRUSIVE?) WEAKLY (DEUTERIC?) ALTERED TO CLAY?/SERICITE-EPIDOTE-CHLORITE

Described as possible fine grained dacitic dyke composed of very fine-grained groundmass of quartz, feldspar and mafics with phenocrysts of plagioclase and biotite, no mineralization and no obvious flow textures; hand specimen shows dark grey, fine-grained, plagioclase-biotite phyric, intermediate hypabyssal intrusive rock. The rock is magnetic, shows local minor reaction to cold dilute HCl, and major white etch for plagioclase (phenocrysts and groundmass) plus minor yellow stain for K-feldspar (groundmass only, likely primary) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (phenocrysts/groundmass; partly clay?/sericite altered andesine?)	40%
K-feldspar (groundmass only, primary?)	25%
Biotite (phenocrysts/groundmass, greenish brown, Fe-rich?)	15%
Carbonate (mainly calcite, after mafics?)	10%
Clay?/sericite (after plagioclase)	3%
Epidote (mainly after mafics)	3%
Magnetite (primary accessory)	2-3%
Chlorite (after mafics?)	~1%
Sphene	<1%
Apatite (primary accessory)	trace

This sample consists of about 30-40% partly saussuritized, (i.e. sericite-epidote altered) plagioclase and 15-20% biotite and relict mafic (carbonate-epidote-minor chlorite-sphene altered) phenocrysts, small magnetite microphenocrysts, in a fine groundmass of Kspar, plagioclase, biotite and magnetite.

Plagioclase phenocrysts are randomly oriented, rounded sub- to euhedra mostly <2 mm long. The crystals are variably partly replaced by very fine-grained clay?/sericite (randomly oriented subhedral flakes mainly <15 μm) and rare epidote-group mineral (subhedra <35 μm with low to normal interference colours, possibly clinozoisite?), especially near relict mafics replaced by epidote and carbonate (see below). Plagioclase crystals mostly retain twinning and fine oscillatory zoning, with composition estimated as possibly andesine in the An_{35-45} range, based on extinction Y^010=20º, and X^001 ranging from 17 to 7º.

Biotite phenocrysts have mainly rectangular euhedral outlines <1 mm in diameter (distinct from relict mafic sites up to 2 mm in size, possibly after former hornblende?), both with random orientations. The biotite shows dark brown pleochroic cores (greenish brown rims and groundmass crystals), and may contain trace apatite as minute euhedra <50 μm. Possible former amphibole (?) sites are replaced by variable combinations of carbonate (ragged sub/anhedra to 1.5 mm, likely mainly calcite?) with minor epidote (subhedra <0.25 mm, bright yellow colour indicative of high Fe content) and local traces of chlorite (subhedral flakes <0.15 mm with pale green pleochroism, weak length-fast, anomalous grey-green birefringence, F:M 0.4?).

Magnetite or ilmeno-magnetite occurs as microphenocrysts mainly <0.6 mm (glomeratic to ~2 mm) with traces of alteration to sphene at the margins; local sphene also forms subhedra <0.15 mm long, possibly primary accessories.

The groundmass consists of fine-grained, sucrosic textured K-feldspar (interlocking anhedra mainly <0.1mm) enclosing plagioclase of up to 0.3 mm that is barely discernible in the etched offcut, biotite as sub/euhedra to 0.25 mm, and magnetite as sub/euhedra <0.1 mm; the plagioclase may be slightly clay?/sericite altered compared to Kspar, especially near the altered mafic relics.

In summary, this is plagioclase-biotite (relict amphibole?) phyric (accessory magnetite-sphene) latite porphyry (hypabyssal intrusive?) weakly (deuteric?) altered to clay?/sericite-epidote-chlorite.

1715: BIOTITE-HORNBLENDE (QUARTZ) MONZODIORITE, PROPYLITIC-POTASSIC ALTERED (ALBITE-KSPAR-ACTINOLITE-CHLORITE-SERICITE-CALCITE-EPIDOTE-SPHENE) ALONG PYRITE-CHALCOPYRITE VEINLETS/FRACTURES

Described as coarse-grained granodiorite or monzodiorite with very fine-grained disseminated and hairline fracture-controlled pyrite-chlorite (±actinolite?)-chalcopyrite (165 ppm Cu); hand specimen shows coarse-grained, mottled pinkish-grey and dark green, intermediate plutonic intrusive rock cut by dark hairline veinlets with minor pyrite that appear to be associated with increased Kspar (partly secondary?). The rock is weakly magnetic, shows common rapid reaction to cold dilute HCl, and major white etch for plagioclase but lesser yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (sericite-calcite ±epidote altered, albitized?)	40%
Amphibole (hornblende, partly altered to actinolite?) (rare cores clinopyroxene)	20%
K-feldspar (partly secondary?)	15%
Chlorite (after biotite, some of which remains)	5%
Sericite (after plagioclase)	5%
Quartz (mainly primary, minor secondary/recrystallized?)	3-5%
Carbonate (after plagioclase, mafics; mainly calcite?)	3%
Epidote (clinozoisite after plagioclase, Fe-rich after mafics)	2%
Pyrite, trace chalcopyrite (partly after magnetite)	2%
Magnetite, trace ilmenite (partly replaced by sulfides, hematite)	1%
Sphene (after ilmeno-magnetite?)	1%
] Apatite (primary accessory)	<1%

This sample consists of typical hypidiomorphic-granular plagioclase and mafics (amphibole, biotite) plus minor quartz and accessory magnetite-apatite characteristic of the (quartz) monzodiorite, altered along hairline veinlets to actinolite-albite-Kspar?-chlorite-epidote-quartz-sulfides-sphene.

Plagioclase forms randomly oriented, somewhat rounded-off, tabular sub/euhedra up to ~4 mm long that range from oligoclase (?) furthest from veinlets, to albite near veinlets, based on extinction Y^010 from <10º to 16º (An_{15} to An_{0-5}?) with increasing proximity to veinlets. Also near the veinlets, minor (5-15%) replacement by sericite (randomly oriented, subhedral flakes mostly <35 μm), calcite (ragged sub/anhedra to 0.2 mm) and rare epidote-group mineral (<0.1 mm, clinozoisite?) is common. Along the hairline veinlet, replacement of plagioclase by Kspar is locally present (subhedra <0.5 mm), although the Kspar may be difficult to distinguish from possible primary Kspar forming subhedra to ~3 mm with microperthitic texture (orthoclase?). Minor quartz forms subhedra to 1.5 mm, occupying interstices between plagioclase crystals suggestive of primary origin.

Mafics occur in glomeratic aggregates up to almost 1 cm across, composed of amphibole (subhedra to 4 mm, mainly dark green hornblende with relict cores of clinopyroxene <0.2 mm but optically continuous for up to 2 mm) that are partly mantled or replaced by paler green, finer-grained and fibrous amphibole (actinolite?), and lesser biotite (mainly sub/anhedra to 2 mm with relict, dark brown pleochroism except where commonly pseudomorphed by chlorite as similar-sized crystals with pale bright green pleochroism, near-zero to weakly anomalous, blue-grey birefringence suggesting F:M 0.6?) plus local epidote (mainly sub/anhedra <0.15 mm, but rarely coarse euhedra to ~1 mm, with moderate Fe content indicated by yellow colour). Accessory magnetite (rounded subhedra to 0.7 mm, slightly altered to hematite or locally sphene, or more commonly apparently replaced by pyrite (ragged subhedra to 0.6 mm) and trace chalcopyrite (sub/anhedra <0.1 mm, locally included within pyrite) especially along and near the hairline veinlets. The veinlets are typically <0.2 mm thick, filled by various combinations of actinolite, chlorite, epidote, quartz and local pyrite-chalcopyrite-sphene, but with envelopes up to 0.5 cm in which plagioclase is altered to Kspar, albite and sericite as described above, and mafics are replaced by chlorite and epidote. Accessory apatite is associated with the mafic sites and relict magnetite sites, forming stubby prisms up to ~1 mm long.

In summary, this is biotite-hornblende (quartz) monzodiorite, propylitic-potassic altered (albite-Kspar-actinolite-chlorite-calcite-epidote-sphene) along pyrite-chalcopyrite veinlets/fractures.

1735: BIOTITE-(CLINOPYROXENE)-HORNBLENDE (QUARTZ) MONZODIORITE, PROPYLITIC-POTASSIC ALTERED (ACTINOLITE-CHLORITE-SERICITE-CALCITE-EPIDOTE-SPHENE) ALONG PREHNITE VEINLETS/FRACTURES

Described as medium- to coarse-grained, light grey granodiorite with 10% mafics, 15-20% quartz, 70-75% feldspar (mostly plagioclase?), subtle potassic alteration, no sulfides, magnetite 3-5%; hand specimen shows mottled, light pinkish grey/dark green, medium/coarse-grained intermediate plutonic intrusive rock with pink/bleached feldspathic alteration along cryptic fractures. The rock is magnetic, shows trace reaction to cold dilute HCl, and major white etch for plagioclase/weak yellow stain for K-feldspar (partly secondary, along fractures) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (sericite-calcite ±epidote-albite altered andesine?)	50%
K-feldspar (primary interstitial/minor secondary)	15%
Amphibole (hornblende/actinolite after pyroxene, some of which remains)	7%
Biotite (partly chloritized)	7%
Clinopyroxene (relict cores to amphibole)	5%
Quartz (mainly interstitial, primary?)	3-5%
Magnetite (partly altered to hematite)	3%
Sericite (after plagioclase)	3%
Epidote (after mafics ±plagioclase)	2%
Carbonate (after plagioclase, mainly calcite?)	2%
Prehnite (cryptic veinlets, adjacent replacement of plagioclase)	1%
Apatite, sphene (accessories)	<1% each

This sample consists of hypidiomorphic-granular plagioclase, pyroxene partly replaced by amphibole, biotite largely replaced by chlorite ±epidote, accessory magnetite partly altered to hematite/sphene, and apatite; it is most altered along cryptic fractures to sericite-calcite-albite?-Kspar-epidote-prehnite.

Plagioclase forms randomly oriented, tabular sub/euhedral laths up to ~6 mm long that appear to be mainly andesine (?) based on extinction Y^010 up to 20º (An_{35}?) but are increasingly replaced by fine-grained sericite-calcite ±epidote, possible albite (?) near veinlets. The replacement by sericite (randomly oriented, subhedral flakes mostly <35 μm), calcite (ragged sub/anhedra to 0.2 mm) and rare epidote-group mineral (<0.1 mm, clinozoisite?) is up to 50% near the veinlets. Along the hairline veinlets, replacement of plagioclase by Kspar is also locally present (subhedra <1 mm), although the Kspar may be difficult to distinguish from primary Kspar forming subhedra to ~2.5 mm with microperthitic texture (orthoclase?). Minor quartz forms subhedra <1 mm, occupying interstices between plagioclase crystals mainly suggestive of primary origin, but recrystallized near veinlets.

Mafics occur in glomeratic aggregates to ~5 mm, composed of amphibole (subhedra to 2 mm, dark green hornblende with relict cores of clinopyroxene <0.5 mm but optically continuous for up to 2 mm) that are partly mantled or replaced by paler green, finer-grained and fibrous amphibole (actinolite?), and lesser biotite (mainly sub/anhedra to 2 mm with dark brown pleochroism but commonly pseudomorphed by chlorite as similar-sized crystals with pale green pleochroism, near-zero birefringence suggesting F:M 0.5?) plus local epidote and prehnite (subhedra <0.75 mm, the former with moderate Fe content indicated by yellow colour). Accessory magnetite (subhedra to 1.5 mm) is slightly altered to hematite or locally sphene, and associated with apatite as stubby prisms up to 1 mm long. The veinlets are typically <0.2 mm thick, filled by various combinations of prehnite, chlorite, epidote ±quartz and local sphene, but with envelopes <3 mm in which plagioclase is altered to Kspar-sericite-calcite as described above, and mafics are replaced by chlorite-prehnite ±epidote.

In summary, this is biotite-(clinopyroxene)-hornblende (quartz) monzodiorite with accessory magnetite-apatite, propylitic-potassic altered (actinolite-chlorite-sericite-calcite-epidote-sphene) along prehnite veinlets/fractures.

1758: BIOTITE-(CLINOPYROXENE)-HORNBLENDE (MONZO)DIORITE WITH ACCESSORY MAGNETITE-APATITE, LOCALLY SLIGHTLY PROPYLITIC-POTASSIC ALTERED (ACTINOLITE-EPIDOTE-SERICITE-CHLORITE-SPHENE) ASSOCIATED WITH TRACES OF CHALCOPYRITE AND RARE HAIRLINE PYRITE VEINLETS/FRACTURES

Described as coarse-grained, fairly fresh, slightly deformed, granodiorite or monzonite (?) with <1% disseminated pyrite (150 ppm Cu); hand specimen shows weakly foliated, mottled pale grey-white and dark blackish green, medium/coarse-grained intermediate plutonic intrusive rock. The rock is magnetic, shows no reaction to cold dilute HCl, and major white etch for plagioclase but only minor yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (locally sericitized, andesine?)	55%
Amphibole (actinolitic hornblende, relict cores of clinopyroxene)	20%
Biotite (slightly altered to chlorite)	10%
K-feldspar (mainly interstitial, primary?)	5%
Relict clinopyroxene (cores of amphibole crystals)	2-3%
Magnetite/ilmeno-magnetite (slight alteration to hematite, sphene)	2-3%
Epidote (mainly after mafics, Fe-rich)	2%
Sericite (after plagioclase)	1%
Apatite (primary accessory)	1%
Chlorite (after biotite, with epidote)	<1%
Chalcopyrite, pyrite (slightly oxidized to limonite)	<1% each

This sample consists of hypidiomorphic-granular plagioclase and mafic minerals (amphibole-lesser biotite, relict cores of clinopyroxene), minor interstitial Kspar (no quartz) and accessory magnetite-apatite; it is relatively fresh, only weakly altered to epidote-sericite ±chlorite closely associated with minor disseminated/fracture controlled sulfides.

Plagioclase forms randomly oriented, tabular euhedral laths glomeratic to ~5 mm that appear to be calcic andesine (?) based on extinction Y^010 up to 24º (An_{45}?) but are increasingly replaced by fine-grained sericite ±epidote, but not albite or Kspar near epidote/sulfides. The replacement by sericite (randomly oriented, subhedral flakes mostly <45 μm), and rare epidote-group mineral (<0.1 mm, clinozoisite?) is up to 70% near the epidote and sulfides, but rare anywhere else. No evidence for replacement of plagioclase by Kspar is seen; only local primary Kspar is noted, forming subhedra to ~1.5 mm with microperthitic texture (orthoclase?). No quartz is detected.

Mafics occur in glomeratic aggregates to ~9 mm with weak elongation/preferred orientation marking a poorly defined foliation. They are composed of amphibole (subhedra to 4 mm, very dark green hornblende with relict cores of pale green clinopyroxene <0.5 mm but optically continuous for up to 2 mm), partly mantled/replaced by paler green, finer-grained and fibrous amphibole (actinolite?), and lesser biotite (ragged, irregular sub/anhedra to 3 mm with dark brown pleochroism locally altered to chlorite as subhedral flakes <1.2 mm with bright green pleochroism, anomalous blue length-slow birefringence suggesting F:M 0.7?) plus local epidote (subhedra <0.75 mm with high Fe content indicated by yellow colour). Accessory magnetite (subhedra to almost 2 mm) is slightly altered to hematite (lamellae to 0.5 mm, likely after former ilmenite?) or locally sphene at rims, or rarely by pyrite as subhedra to 0.2 mm near pyrite veinlets typically <50 μm thick; accessory apatite is common and widespread, forming rounded subhedral prisms to 1 mm long. Near local blebs of chalcopyrite forming subhedra to 0.6 mm long are surrounded by epidote ±chlorite, with envelopes <1 mm in which plagioclase is altered to sericite-epidote as described above, and mafics are partly replaced by chlorite ±epidote. These are the only concrete evidence of transitional propylitic/potassic alteration in the sample, associated with the traces of chalcopyrite.

In summary, this is biotite-(clinopyroxene)-hornblende (monzo)diorite with accessory magnetite-apatite, locally slightly propylitic-potassic altered (actinolite-epidote-sericite-chlorite-sphene) associated with traces of chalcopyrite and rare hairline pyrite veinlets/fractures.

1811: BIOTITE-HORNBLENDE SYENITE/MONZONITE (ACCESSORY MAGNETITE-SP0HENE-APATITE) WEAKLY ALTERED TO ACTINOLITE-EPIDOTE-SERICITE-CHLORITE ASSOCIATED WITH MINOR CHALCOPYRITE-PYRITE PARTLY OXIDIZED TO LIMONITE

Described as fine- to medium-grained equigranular (quartz?) monzonite with weakly defined foliation fabric, pervasive Kspar alteration, subtle epidote and sericite, very fine-grained disseminated chalcopyrite and pyrite; hand specimen shows faintly layered/foliated, pink and greenish-grey felsic intrusive rock cut by blackish green, slickensided slip surface (small fault?). The rock is strongly magnetic, shows no reaction to cold dilute HCl, and major yellow stain for K-feldspar/minor white etch for plagioclase in the etched offcut. Modal mineralogy in polished thin section is approximately:

K-feldspar (microcline, late-magmatic/partly secondary?)	50%
Plagioclase (relict, sericite ±epidote altered andesine?)	20%
Amphibole (hornblende, partly altered to actinolite?)	15%
Epidote (after mafics)	3-5%
Sericite (after plagioclase)	3-5%
Magnetite/ilmeno-magnetite (partly secondary?), partly altered to sphene	2-3%
Biotite (partly altered to chlorite, epidote)	2%
Sphene (partly/largely after ilmeno-magnetite)	1-2%
Chlorite (after mafics)	<1%
Apatite (primary accessory)	<1%
Chalcopyrite, pitch limonite after chalcopyrite	<1%
Pyrite (locally oxidized to limonite also)	<1%

This sample consists largely of K-feldspar typically forming a matrix to somewhat coarser, relict (sericite-trace epidote altered) plagioclase, intergrown with amphibole-lesser biotite both partly altered to epidote-chlorite, and accessory magnetite/sphene, apatite and minor sulfides.

Kspar making up the bulk of the section forms interlocking, randomly oriented, sub- to anhedral crystals mostly <2 mm in diameter, typically with "grid" twinning characteristic of microcline. The Kspar typically surrounds and locally mantles the (relict) plagioclase crystals, suggesting mostly late-magmatic origin rather than secondary for the Kspar, but where it is loosely associated with the mineralization, this distinction may be blurred. There is no obvious secondary texture to the Kspar, such as control along veinlets or fractures.

Plagioclase occurs as widely scattered coarser sub/euhedra (almost megacrysts) up to 5 mm long, or more typically smaller sub/anhedral crystals mostly <1 mm, both generally altered to sericite (50% replaced by randomly oriented, matted subhedral flakes mostly 0.15 mm) plus very minor epidote as scattered subhedra <0.1 mm. Locally, remnant plagioclase shows well-defined twinning (Y^010 to 24º, calcic andesine, An_{45}?), but most is so altered to sericite as to destroy twinning.

Mafic aggregates display ragged, somewhat elongated outlines to ~4 mm long (partly with preferred orientation suggesting a faint foliation, oblique to a faint compositional banding defined by slightly darker, more mafic bands<1 cm thick). The aggregates consist of variable mixtures of amphibole (mainly dark green hornblende, but locally cores or in places thin rims are replaced by pale green, fibrous actinolite; the cores have relict Schiller structure, suggestive of former pyroxene) and biotite (ragged subhedra to 3 mm with dark brown pleochroism except where replaced by variable mixtures of epidote (interlocking subhedra <0.4 mm with bright yellow pleochroism indicative of high Fe content) and minor chlorite (subhedral flakes <0.2 mm, bright green, near-zero, F:M 0.5?). Accessory magnetite (subhedra to 1 mm) partly altered to/associated with sphene (to 0.4 mm) and apatite (stubby prisms to 0.8 mm) are locally associated with chalcopyrite/lesser pyrite as subhedra <0.5 mm/to 1 mm respectively, typically surrounded by the epidote-sericite alteration. The chalcopyrite in particular is partly oxidized to "pitch" limonite, which is partly plucked out.

In summary, this is biotite-hornblende syenite/monzonite (accessory magnetite-sphene-apatite) weakly altered to actinolite-epidote-sericite-chlorite associated with minor chalcopyrite-pyrite partly oxidized to limonite.

1825: FOLIATED, SOMEWHAT BANDED BIOTITE-(CLINOPYROXENE)-HORNBLENDE DIORITE (ACCESSORY MAGNETITE-APATITE), PROPYLITIC-POTASSIC ALTERED TO SERICITE-EPIDOTE-ALBITE?-KSPAR-ACTINOLITE-BIOTITE-MINOR CHLORITE ASSOCIATED WITH TRACE CHALCOPYRITE

Described as coarse-grained diorite with moderate foliation fabric defined by plagioclase and mafic crystals aligned parallel, subtle chlorite, Kspar and epidote alteration with disseminated chalcopyrite (450 ppm Cu); hand specimen shows coarse-grained, white/dark greenish-black, weakly foliated mafic/intermediate plutonic intrusive rock. The rock is weakly magnetic, shows no reaction to cold dilute HCl, and major white etch for plagioclase/minor yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (saussuritized, albite/Kspar altered, relict andesine?)	25%
Amphibole (actinolitic hornblende/actinolite; pyroxene cores)	25%
Sericite (after plagioclase, with epidote-group mineral)	15%
Epidote-group (clinozoisite after plagioclase, Fe-rich after mafics)	10%
K-feldspar (secondary, after plagioclase/along fractures)	10%
Biotite (late magmatic/minor secondary; partly altered to chlorite, epidote)	10%
Relict clinopyroxene (cores of amphibole crystals)	2%
Magnetite (slightly altered to sphene/rutile at margins)	2%
Chlorite (after biotite)	<1%
Apatite (primary accessory)	<1%
Chalcopyrite (slightly oxidized to limonite; with epidote/actinolite)	<<1%

This sample consists of somewhat foliated, alternating bands of relict (sericite-epidote-albite?-Kspar altered) plagioclase, amphibole (after clinopyroxene) and biotite (partly altered to epidote, very minor chlorite), accessory magnetite slightly altered to sphene/rutile, apatite and trace chalcopyrite.

In the felsic bands, rarely to ~0.5 cm thick, relict plagioclase dominates, originally forming somewhat glomeratic aggregates to 6 mm composed of subhedral crystals to ~3 mm (difficult to see boundaries due to heavy alteration to sericite as randomly oriented, subhedral flakes mainly <0.2 mm, mixed with variable epidote-group mineral (colourless, low anomalous birefringence, clinozoisite?). Remnant feldspar is locally visible as relict original andesine about An_{40}, based on Y^010 23º, Z^001 28º, local untwinned albite and/or Kspar (secondary as indicated by distribution of yellow stain in etched offcut, either replacing plagioclase cores or along hairline fractures clearly seen at one corner of the etched block, but not cut in the thin section).

Mafic bands, mainly <4 mm thick, consist of more obviously elongated and flattened relict crystals of amphibole (subhedra to 4.5 mm, hornblende or actinolitic hornblende with local relict clinopyroxene cores to 3 mm; all altered to fibrous secondary actinolitic amphibole with paler colours, around margins) and lesser biotite (somewhat aligned to randomly oriented, sub/euhedral flakes to 1.5 mm with deep brown pleochroism except where partly interleaved/replaced by chlorite (very pale green, weakly anomalous greenish grey, length-fast birefringence implying F:M 0.4?). In places, some of the biotite appears to be secondary after amphibole (replaces it as small subhedral flakes <0.2 mm around amphibole margins). Epidote occurs sporadically as subhedra to ~0.5 mm, with bright to intense yellow pleochroism indicative of high Fe content. Accessory magnetite closely associated with the mafic bands forms elongated aggregates to ~2 mm of subhedra <0.5 mm, rarely altered at margins to fine-grained sphene/rutile; apatite forms stubby subhedral prisms to 0.9 mm long. Traces of chalcopyrite (subhedra to 0.2 mm) are closely associated with/surrounded by epidote, and are slightly oxidized to limonite at rims.

In summary, this is foliated, somewhat banded biotite-(clinopyroxene)-hornblende diorite (accessory magnetite-apatite), propylitic-potassic altered to sericite-epidote-albite?-Kspar-actinolite-biotite-minor chlorite associated with trace chalcopyrite.

1832: BIOTITE-(CLINO ±ORTHO?-PYROXENE)-HORNBLENDE? MONZODIORITE WITH ACCESSORY MAGNETITE-APATITE, PROPYLITIC-POTASSIC ALTERED (TREMOLITE/ACTINOLITE-TALC?-KSPAR?-EPIDOTE-CHLORITE-CLAY?/SERICITE), CUT BY VEINLETS/FRACTURES OF ACTINOLITE-EPIDOTE-CHLORITE

Described as coarse-grained, generally unaltered/relatively fresh quartz diorite/monzonite (?) with no sulfides (160 ppm Cu); hand specimen shows dark grey/green, medium/coarse-grained mafic-intermediate plutonic intrusive rock with mostly interstitial Kspar. The rock is magnetic, shows no reaction to cold dilute HCl, and major white etch for plagioclase/significant yellow stain for K-feldspar (partly secondary, after plagioclase?) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (rarely clay?/sericite altered, andesine?)	40%
K-feldspar (primary interstitial/minor late magmatic/secondary?)	15%
Clinopyroxene (partly mantled by amphibole)	15%
Talc/sericite (pseudomorphs after relict mafics)	10%
Amphibole (secondary tremolite-actinolite, rimming pyroxene, in veinlets)	7%
Biotite (partly chloritized)	7%
Magnetite/ilmeno-magnetite (minor ilmenite)	3%
Epidote (mainly in veinlets with actinolite, chlorite)	1%
Chlorite (mostly after biotite, trace in veinlets)	1%
Clay?/sericite (after plagioclase)	<1%
Apatite (accessory)	<1%

This sample consists of hypidiomorphic-granular plagioclase/interstitial K-feldspar, pyroxene partly rimmed/replaced by amphibole, biotite partly replaced by chlorite ±epidote, accessory magnetite and apatite; it is cut by hairline fractures of actinolite-epidote-chlorite.

Plagioclase forms randomly oriented, tabular sub/euhedral laths up to ~8 mm long that appear to be mainly andesine (?) based on extinction Y^010 up to 20º (An_{35}?) but are locally partly replaced by fine-grained clay?/sericite near unknown relict mafics (see below). The replacement by clay?/sericite (randomly oriented, subhedral flakes mostly <15 µm) is up to 50% over patches <1 mm across. Kspar is mainly interstitial to plagioclase (mainly primary forming subhedra to ~3 mm with microperthitic texture suggestive of orthoclase?), but in places is finer-grained (<0.5 mm) and appears to attack/replace margins of plagioclase, suggesting late magmatic/secondary origin. Along the hairline veinlets, local replacement of plagioclase is by dark green actinolite, epidote and chlorite.

Mafics occur in glomeratic aggregates to ~1 cm, composed of cores of clinopyroxene to 5 mm (distinct lamellar cleavage and moderate to large extinction angle, pale colour suggestive of augite?) partly mantled or replaced by very pale green, finer-grained and fibrous amphibole (actinolite?), and intergrown with lesser biotite (ragged sub/anhedra to 5 mm with dark brown pleochroism, rarely interleaved/replaced by chlorite as subhedral flakes with pale green pleochroism, near-zero to slightly length-fast birefringence suggesting F:M 0.45?) plus local epidote (subhedra <0.15 mm, with high Fe content indicated by strong yellow colour). An unknown, separate relict mafic (orthopyroxene?) as subhedra to 3 mm pseudomorphed by very fine-grained, matted randomly oriented talc/sericite (flakes mainly <25 µm with high birefringence suggestive of talc), plus accessory fine-grained or locally skeletal magnetite commonly mantled by actinolite, and fibrous colourless (tremolitic, Mg-rich) amphibole mostly <0.5 mm; the pseudomorphs are partly mantled by amphibole and biotite. Associated accessory magnetite (subhedra to 1.1 mm or finer-grained, skeletal aggregates) is essentially unaltered, and associated with apatite as stubby prisms <0.8 mm long.

In summary, this is biotite-(clino ±ortho?-pyroxene)-hornblende? monzodiorite with accessory magnetite-apatite, propylitic-potassic altered (tremolite/actinolite-talc?-Kspar?-epidote-chlorite-clay?/sericite), cut by veinlets/fractures of actinolite-epidote-chlorite.

1847: BIOTITE-HORNBLENDE (PYROXENE?) MONZODIORITE WITH ACCESSORY MAGNETITE-APATITE, WEAKLY PROPYLITIC-POTASSIC ALTERED (SERICITE-ACTINOLITE-EPIDOTE-CHLORITE-KSPAR?) ALONG HAIRLINE VEINLETS/FRACTURES

Described as coarse-grained quartz monzonite, fairly fresh with possible subtle Kspar alteration, no sulfides (210 ppm Cu); hand specimen shows coarse-grained, mottled pinkish-grey and dark green, intermediate plutonic intrusive rock cut by dark hairline veinlets that appear to be partly associated with increased Kspar (partly secondary?). The rock is distinctly magnetic, shows no reaction to cold dilute HCl, and major white etch for plagioclase but lesser yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (sericite ±epidote altered, andesine)	30%
Amphibole (mainly secondary tremolite-actinolite?)	20%
K-feldspar (orthoclase, microcline, partly secondary?)	15%
Sericite (after plagioclase)	15%
Epidote (clinozoisite after plagioclase, Fe-rich after mafics)	10%
Chlorite (likely after former biotite)	5%
Magnetite, trace ilmenite (partly replaced by hematite)	2%
Clinopyroxene (rare cores to amphibole)	1%
Quartz (interstitial, primary?)	1%
] Apatite (primary accessory)	1%

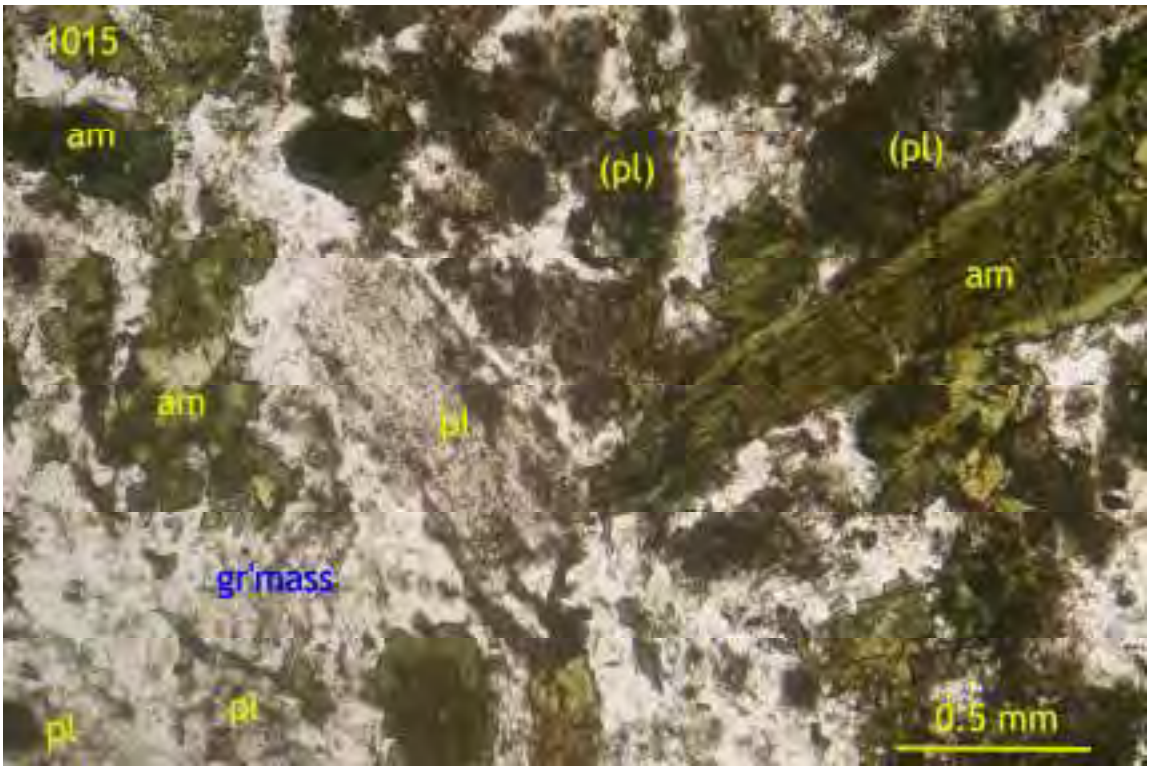
This sample consists of typical hypidiomorphic-granular plagioclase and mafics (amphibole, biotite) plus Kspar, accessory quartz and magnetite-apatite characteristic of the monzodiorite, slightly altered along hairline veinlets to an assemblage of epidote-sericite-chlorite-actinolite ±Kspar (?).

Plagioclase forms randomly oriented, tabular to lath-like sub/euhedra up to 7 mm long that are most likely andesine (?) based on extinction Y^010=22º, Z^001=28º (An_{40}) where preserved. Patchy (25-50%) replacement by sericite (randomly oriented, subhedral flakes mostly <35 µm), and minor epidote-group mineral (<0.1 mm, clinozoisite?) is common. Near interstitial Kspar or along fractures, replacement of plagioclase by Kspar is locally present (subhedra <0.75 mm locally with "grid" twinning of microcline), although this Kspar may be difficult to distinguish from probable primary Kspar forming subhedra to ~3 mm commonly with microperthitic texture (orthoclase?). Quartz is rare, forming sub/anhedra <0.2 mm interstitial to feldspars, suggestive of primary origin.

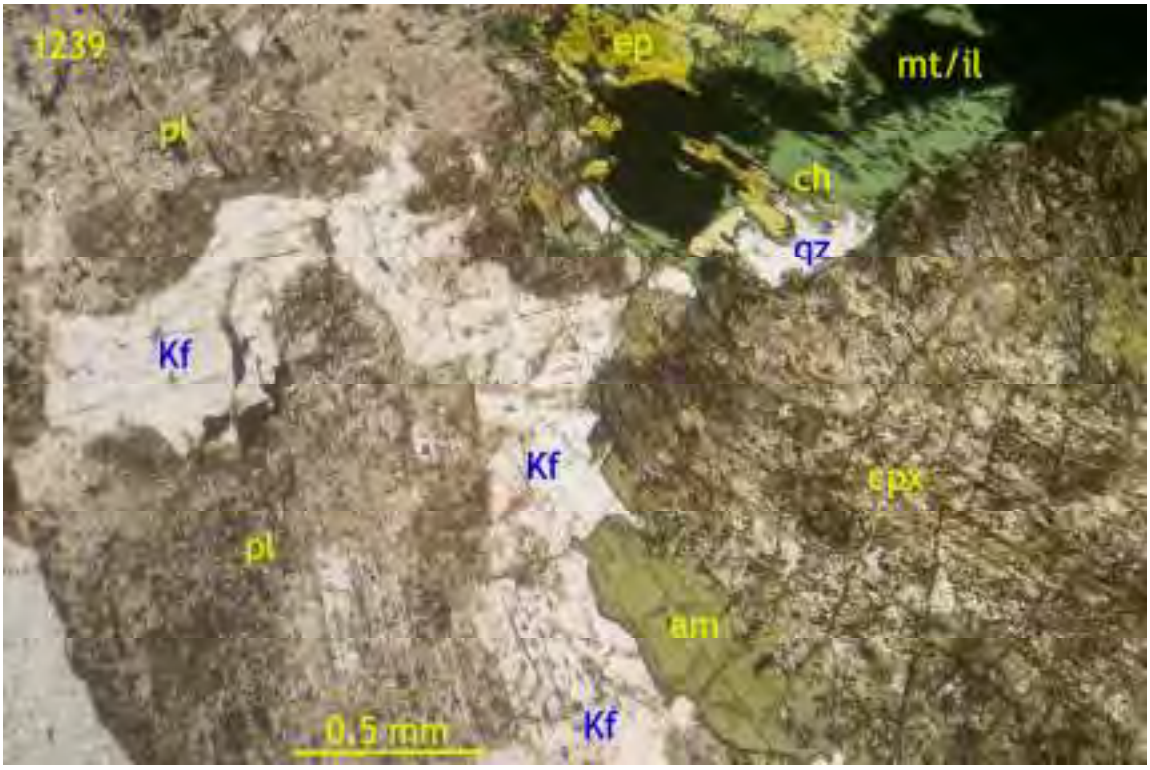
Mafics occur in glomeratic aggregates up to almost 1 cm across, composed of secondary amphibole (rare relict cores of clinopyroxene optically continuous for up to 1 mm). The amphibole comprises both almost colourless (tremolite?) and pale green to brownish (actinolite?), fine-grained and fibrous amphibole. Lesser probable original biotite (mainly sub/anhedra to 2 mm) is completely pseudomorphed by chlorite as similar-sized crystals with pale bright green pleochroism, near-zero to weakly anomalous, blue-grey length-slow birefringence suggesting F:M 0.6?) plus local epidote (mainly sub/anhedra <0.15 mm, but rarely coarse euhedra to ~1 mm, with high Fe content indicated by strong to intense yellow colour). Accessory magnetite (irregular or locally skeletal subhedra to 2 mm, slightly altered to hematite) is closely associated with mafic sites and with apatite (stubby prisms up to ~1 mm long).

Hairline veinlets are typically <0.2 mm thick, filled by various combinations of actinolite, chlorite, and epidote, but with envelopes up to 0.5 cm in which plagioclase is altered to sericite and possible Kspar as described above, and mafics are replaced by tremolite-actinolite, epidote and chlorite; some replacement of plagioclase by Kspar may be present along these.

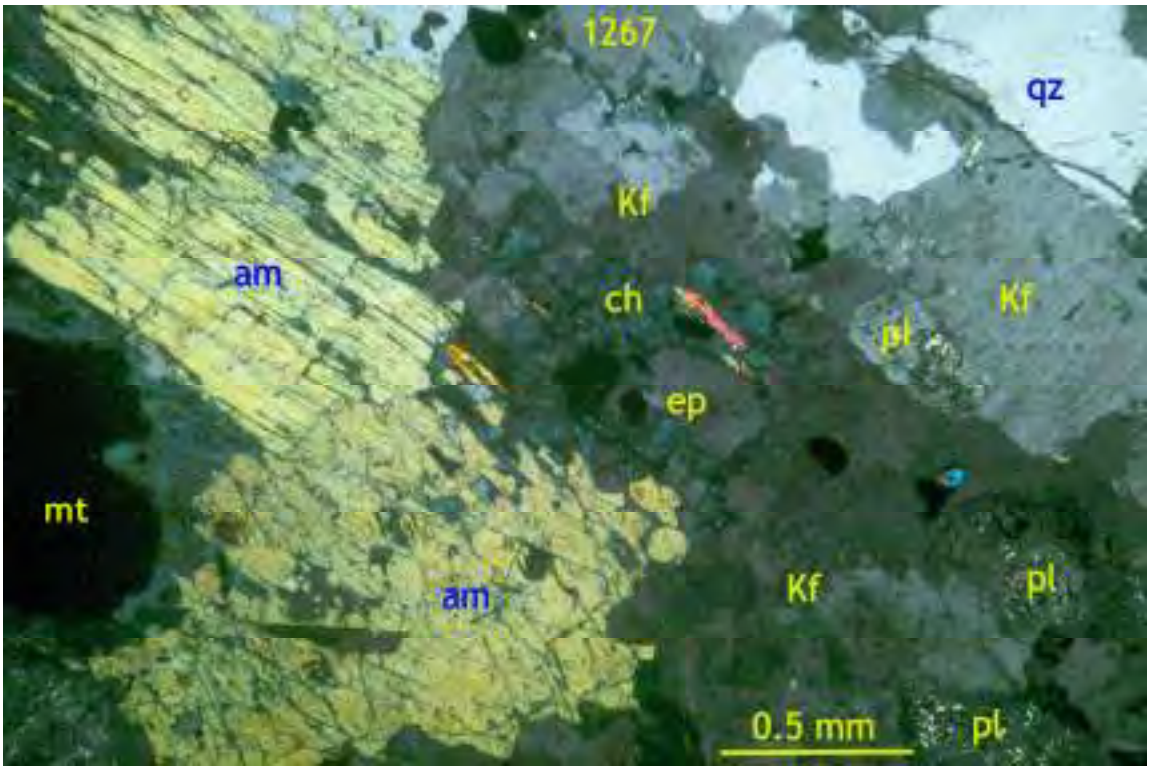
In summary, this is biotite-hornblende (pyroxene?) monzodiorite with accessory magnetite-apatite, weakly propylitic-potassic altered (sericite-actinolite-epidote-chlorite-Kspar?) along hairline veinlets/fractures.



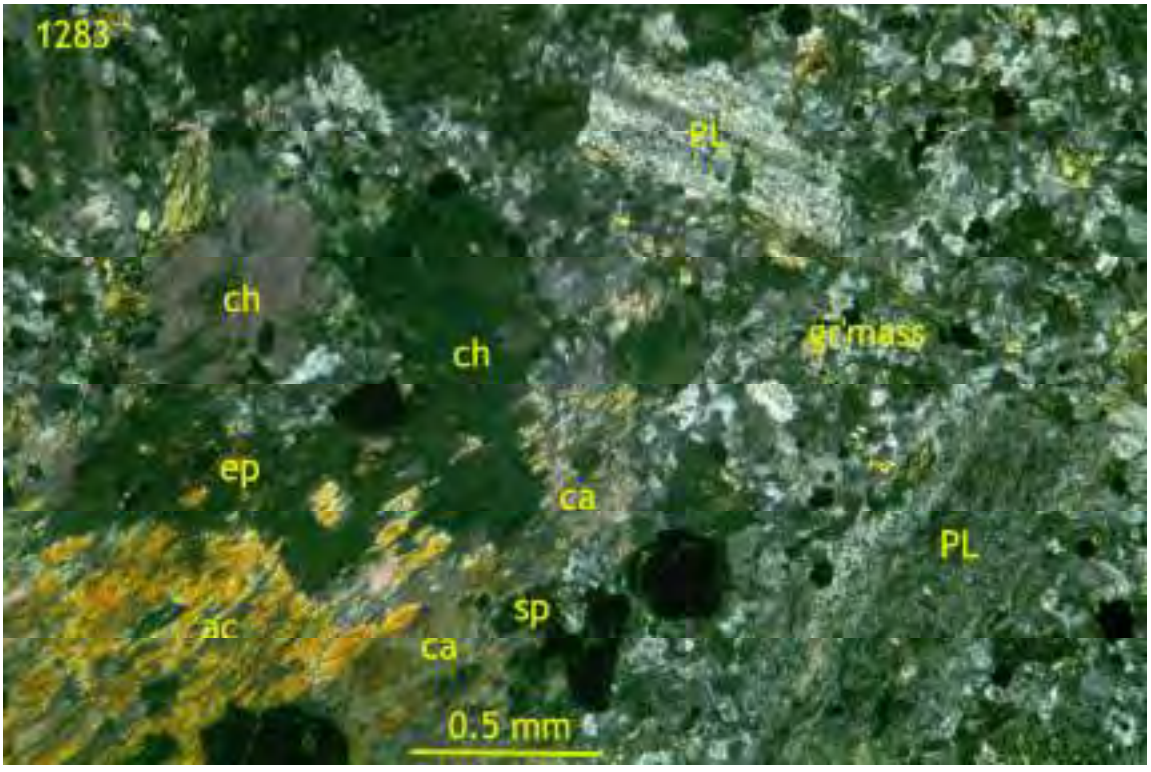
1015: monzonite composed of small relict plagioclase (pl, variably altered especially at cores to brownish sericite-epidote) and amphibole (dark brown cores, green actinolitic rims) in groundmass of Kspar-minor plagioclase and amphibole. Transmitted plane light, field of view ~3 mm wide.



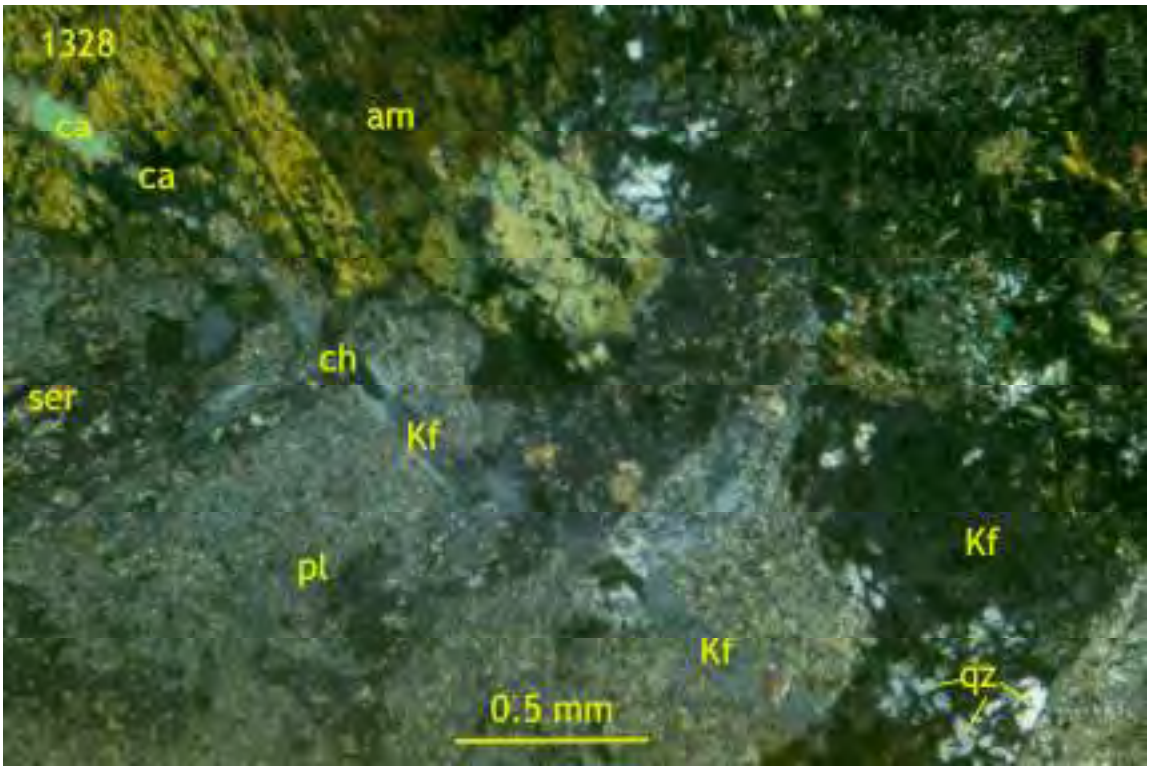
1239: pyroxene quartz monzonite composed of plagioclase (pl, partly altered to sericite-epidote), interstitial Kspar (Kf) and quartz (qz), plus clinopyroxene (cpx, mantled by pale green amphibole, am, or locally yellow Fe-rich epidote, ep and bright green chlorite, ch) associated with magnetite/ilmenite (opaque). Transmitted plane light, field of view ~3 mm wide.



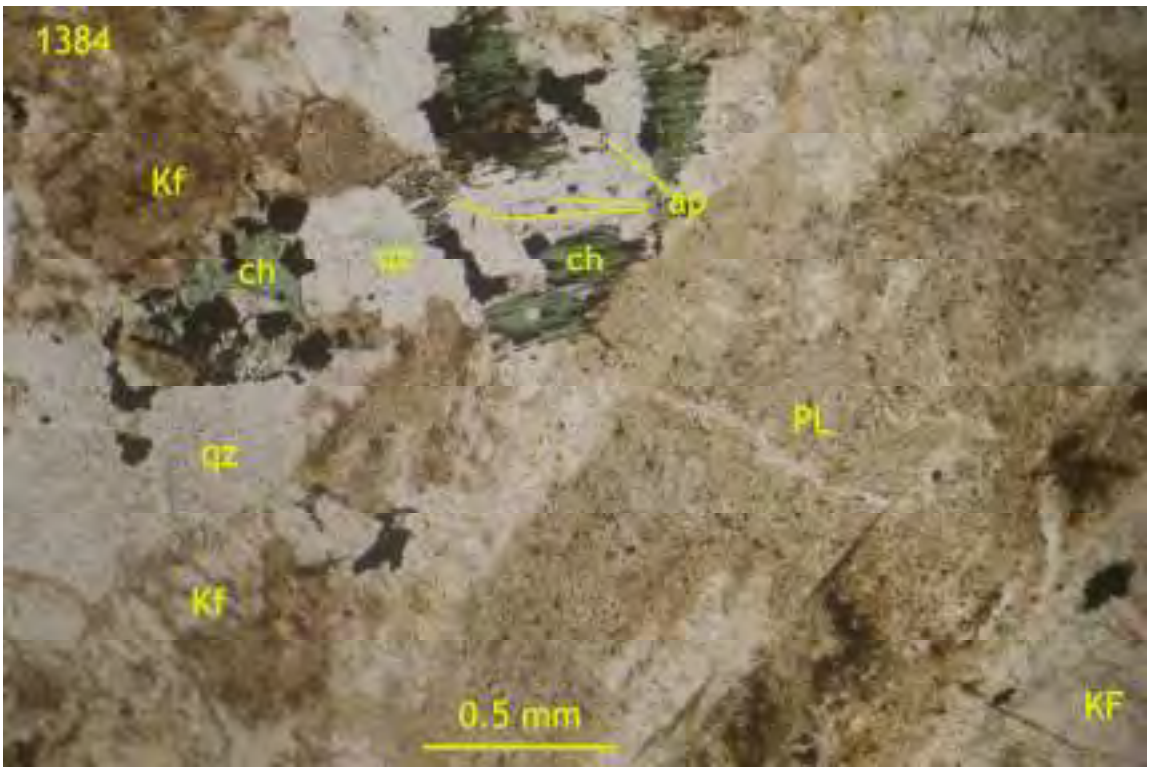
1267: glomeratic amphibole (am) with accessory magnetite (opaque), minor chlorite (ch) ±epidote (ep) likely after biotite, in finer-grained Kspar (Kf)-quartz (qz)-minor plagioclase (pl, sericitized). Transmitted light, crossed polars, field of view ~3 mm wide.



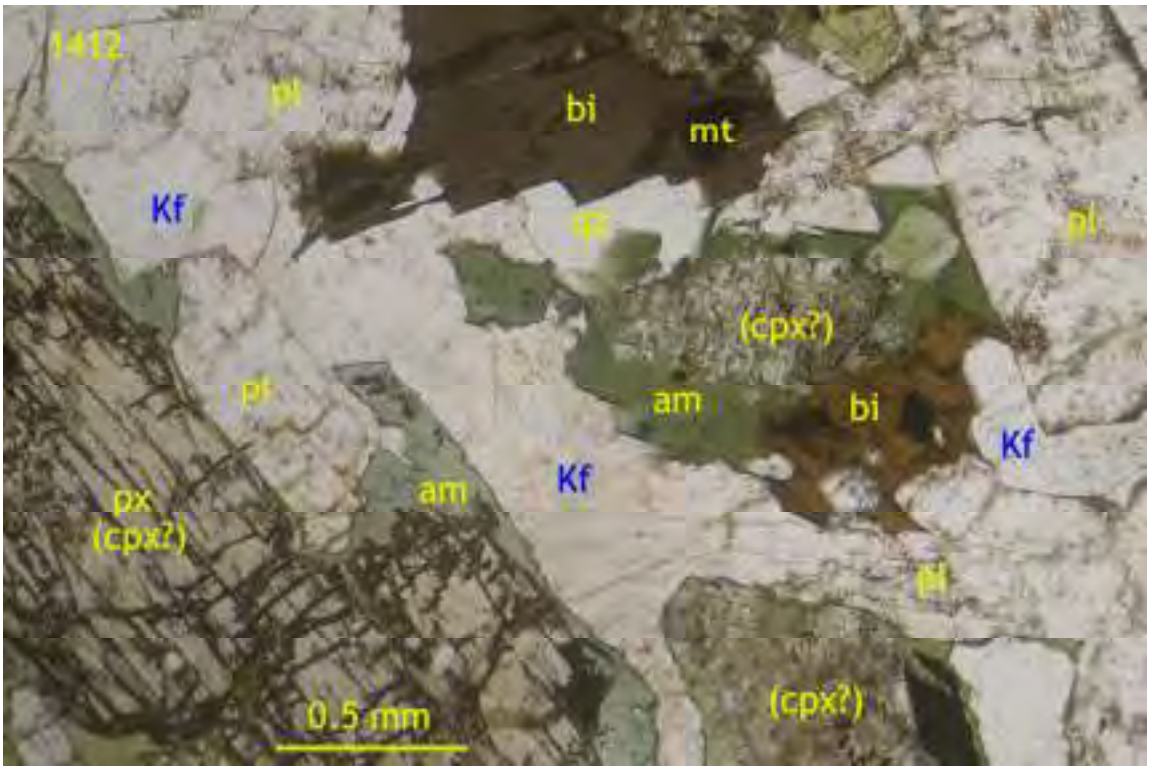
1283: propylitic altered porphyritic andesite (?) composed of relict mafics pseudomorphed by actinolite (ac)-chlorite (ch)-calcite (ca) ±epidote, sphene (partly after opaque ilmeno-magnetite) and albitized/saussuritized plagioclase (PL) set in fine groundmass of alkali feldspar/minor mafics. Transmitted light, crossed polars, field of view ~3 mm wide.



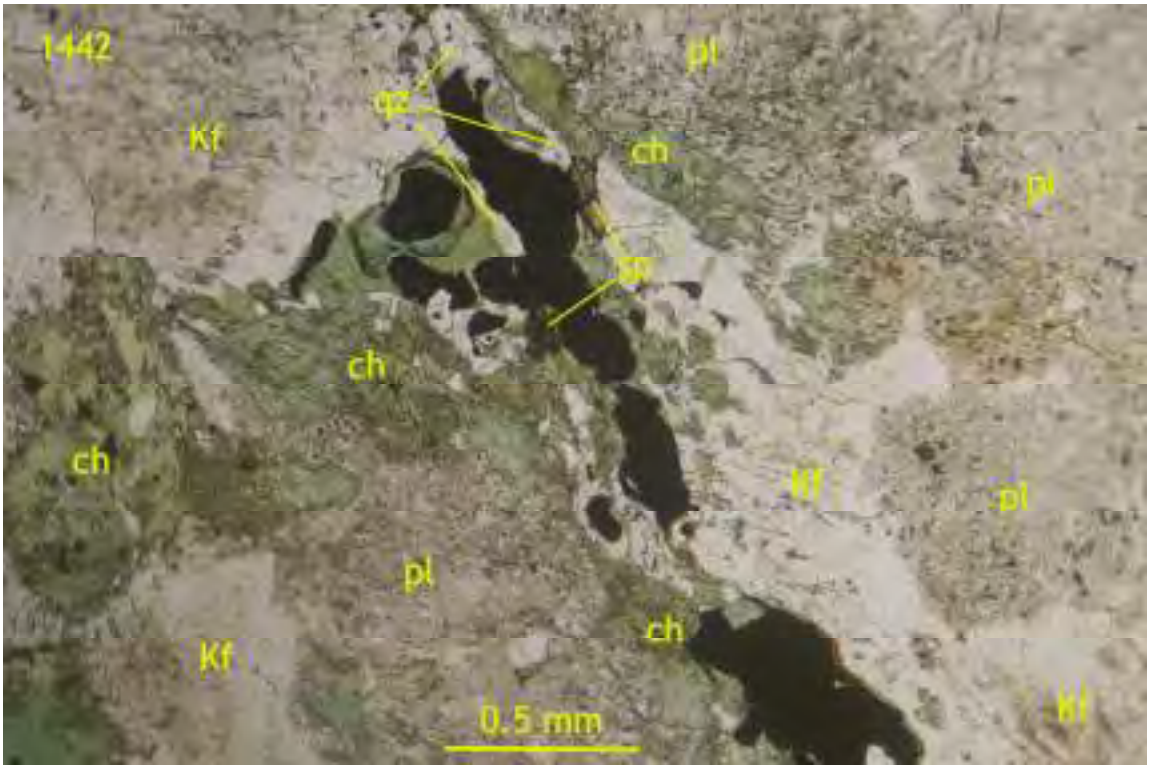
1328: coarse hypidiomorphic-granular textured (quartz) diorite with sericite-calcite altered, albitized plagioclase (pl) cut by thin veinlet of Kspar (Kf) ±quartz (qz), calcite (ca) and chlorite (ch), actinolite altered amphibole (am); interstitial Kspar (KF) may be primary? Transmitted light, crossed polars, field of view ~3 mm wide.



1384: quartz syenite showing phenocryst of zoned relict plagioclase (PL, sericitized) mantled by megacrystic Kspar (KF), mostly out of field of view to right, and chloritized mafic relic associated with accessory magnetite (opaque) and acicular apatite (ap), in mosaic of Kspar (Kf) and quartz (qz). Transmitted plane light, field of view ~3 mm wide.



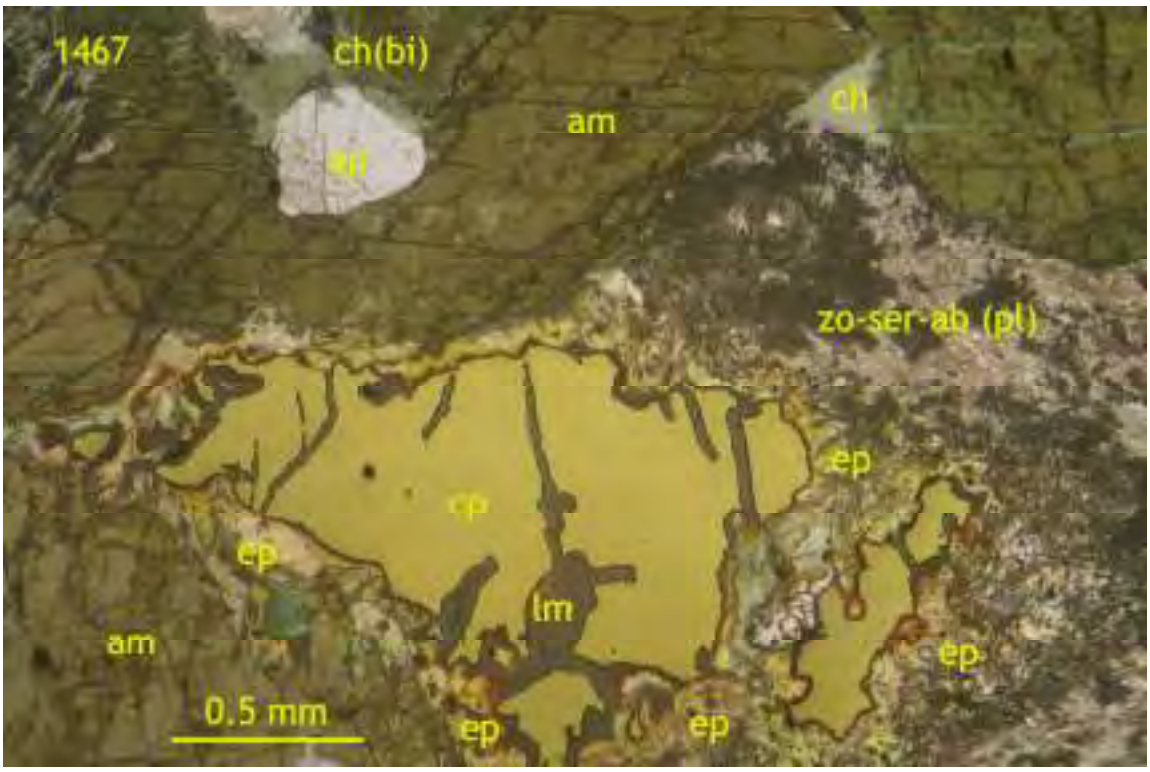
1412: biotite-hornblende-pyroxene (quartz) monzodiorite composed of pyroxene (px) mantled by amphibole (am) and associated with dark brown biotite (bi) and accessory magnetite (opaque) with local interstitial quartz (qz), significant plagioclase (pl) poikilitically enclosed by Kspar (Kf). Transmitted plane light, field of view ~3 mm wide.



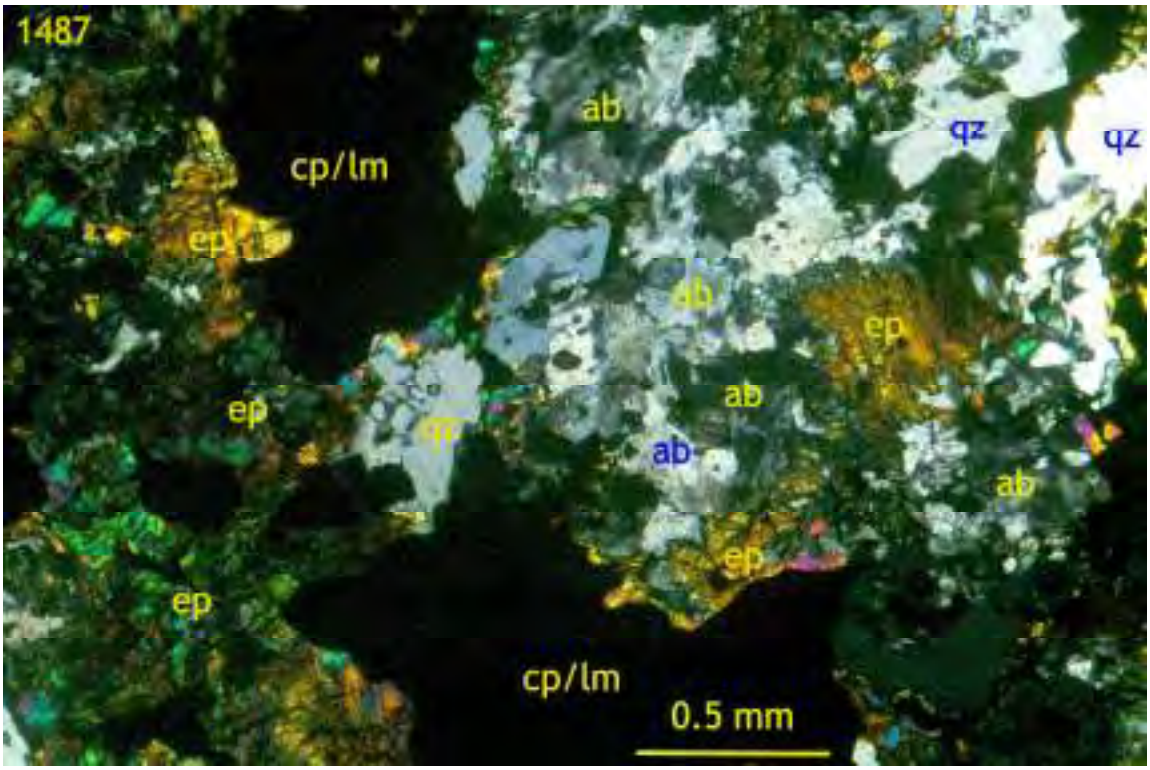
1442: biotite-hornblende-pyroxene (quartz) monzonite composed of sericitized plagioclase (pl) poikilitically enclosed by Kspar (Kf) both altered to secondary Kspar with minor quartz and pale green chlorite (ch, after former mafics) associated with pyrite and trace chalcopyrite (opaques) plus sphene (sp) along veinlet. Transmitted plane light, field of view ~3 mm.



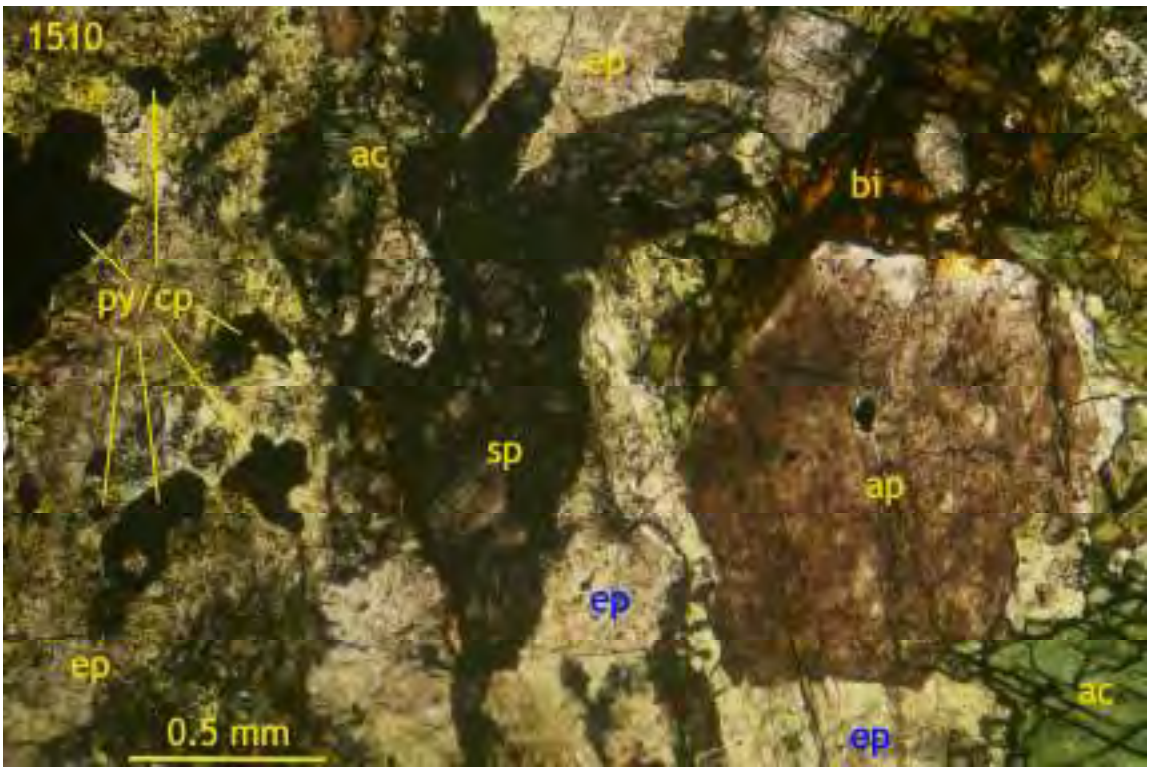
1447: aplite of granitic composition composed of widely scattered relict plagioclase (PL, clouded by clay?/sericite) in matrix of fine-grained Kspar-quartz. Some Kspar and quartz (qz) may be partly secondary or late-magmatic replacement of plagioclase; some epidote (ep)-chlorite (ch) occurs along ill-defined veinlet. Transmitted light, crossed polars, ~3 mm.



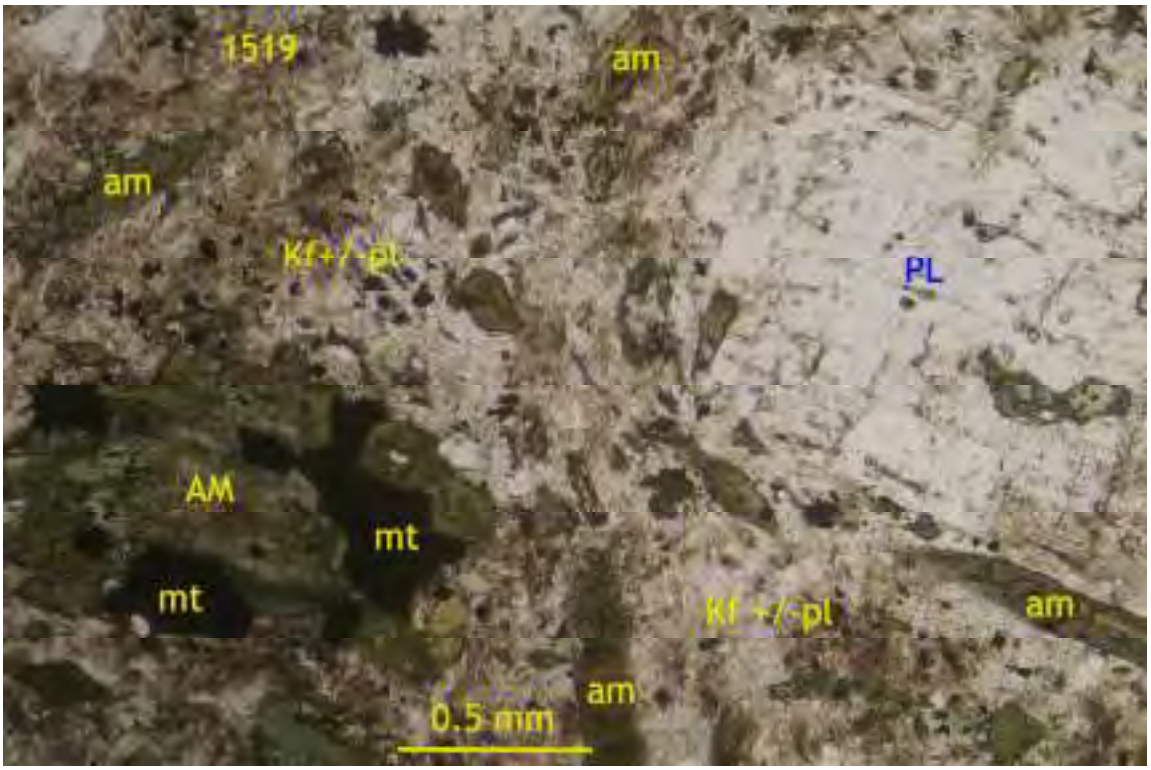
1467: diorite composed of plagioclase altered to sericite-zoisite?-albite?, and amphibole-lesser biotite altered to epidote (ep)-chlorite (ch), closely associated with local chalcopyrite (cp, oxidized at rims to limonite, lm) that may occupy site of former accessory magnetite/ilmenite (local apatite, ap). Transmitted and reflected plane light, field of view ~3 mm wide.



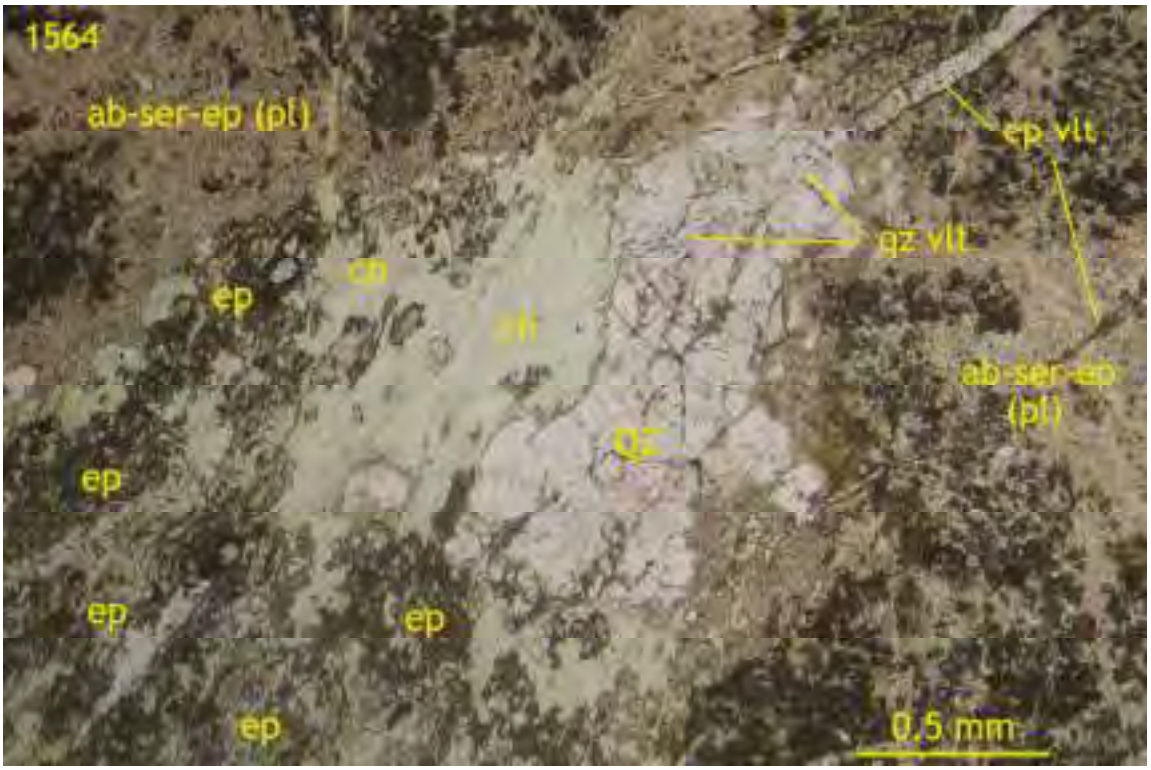
1487: vein assemblage of chalcopyrite (partly oxidized to limonite, cp/lm; both opaque)-epidote (ep)-quartz (qz), associated with strongly developed envelope of fine-grained secondary alkali feldspar (mainly albite, ab). Transmitted light, crossed polars, field of view ~3 mm wide.



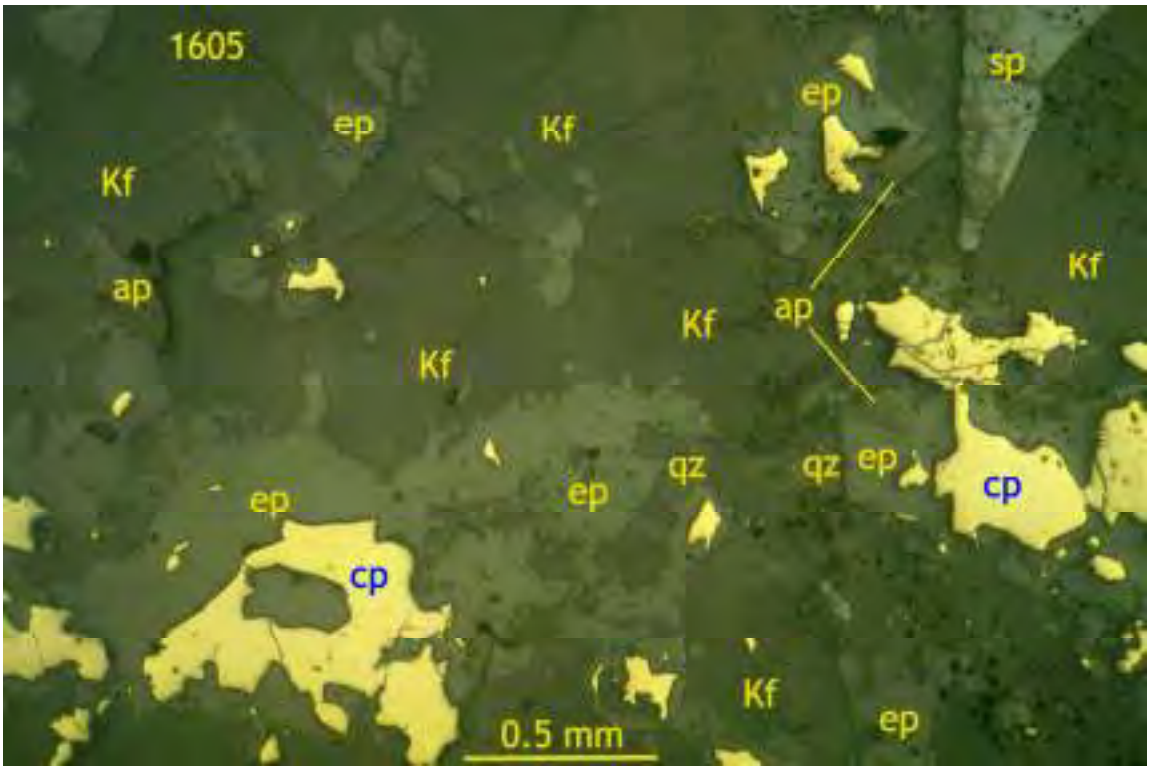
1510: vein of bright yellow (Fe-rich) epidote, ep and blue-green actinolite, ac, local brown secondary biotite (bi) all associated with coarse apatite (ap), sphene (sp, after ilmeno-magnetite?) and local pyrite/chalcopyrite (opaque), in diorite with transitional propylitic/potassic alteration. Transmitted plane light, field of view ~3 mm wide.



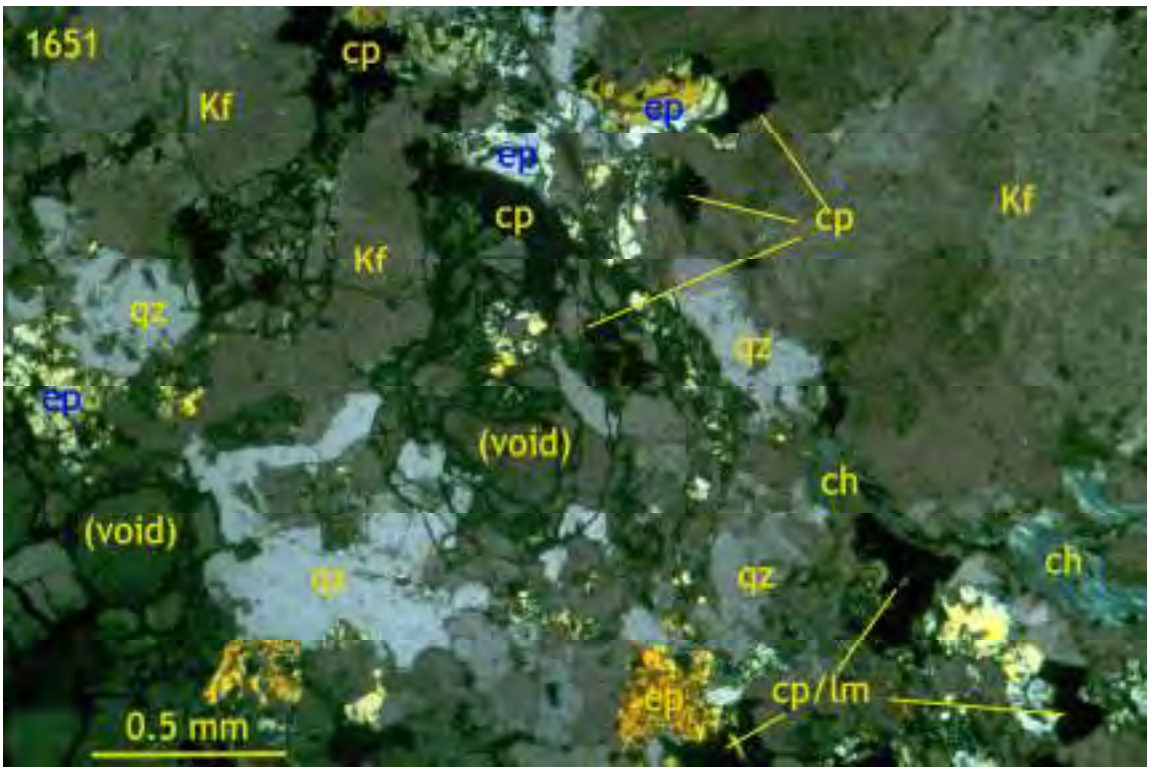
1519: latite porphyry showing somewhat aligned (trachytic textured) phenocrysts of plagioclase (PL, slightly altered to clay?/sericite) and amphibole (AM, possibly actinolitic hornblende?) associated with accessory magnetite (opaque) in aphanitic groundmass of Kspar hosting small plagioclase, amphibole and magnetite crystals. Transmitted plane light, field of view ~3 mm wide.



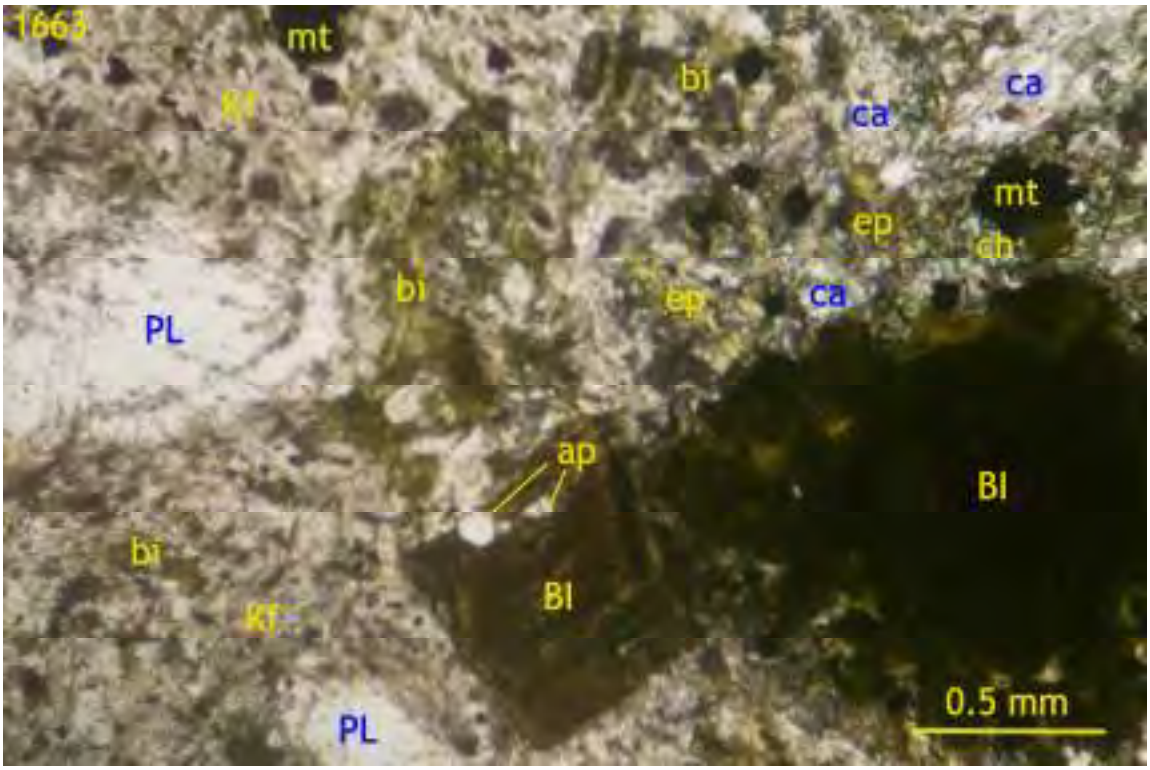
1564: (quartz) diorite in which plagioclase is thoroughly altered to albite, sericite and minor epidote-group mineral, probable former amphibole to chlorite (very pale green, ch), epidote (ep) and carbonate (cb), especially near thin veinlets of epidote (note recrystallized quartz, qz, where veinlets cross primary quartz, QZ). Transmitted plane light, ~3 mm wide.



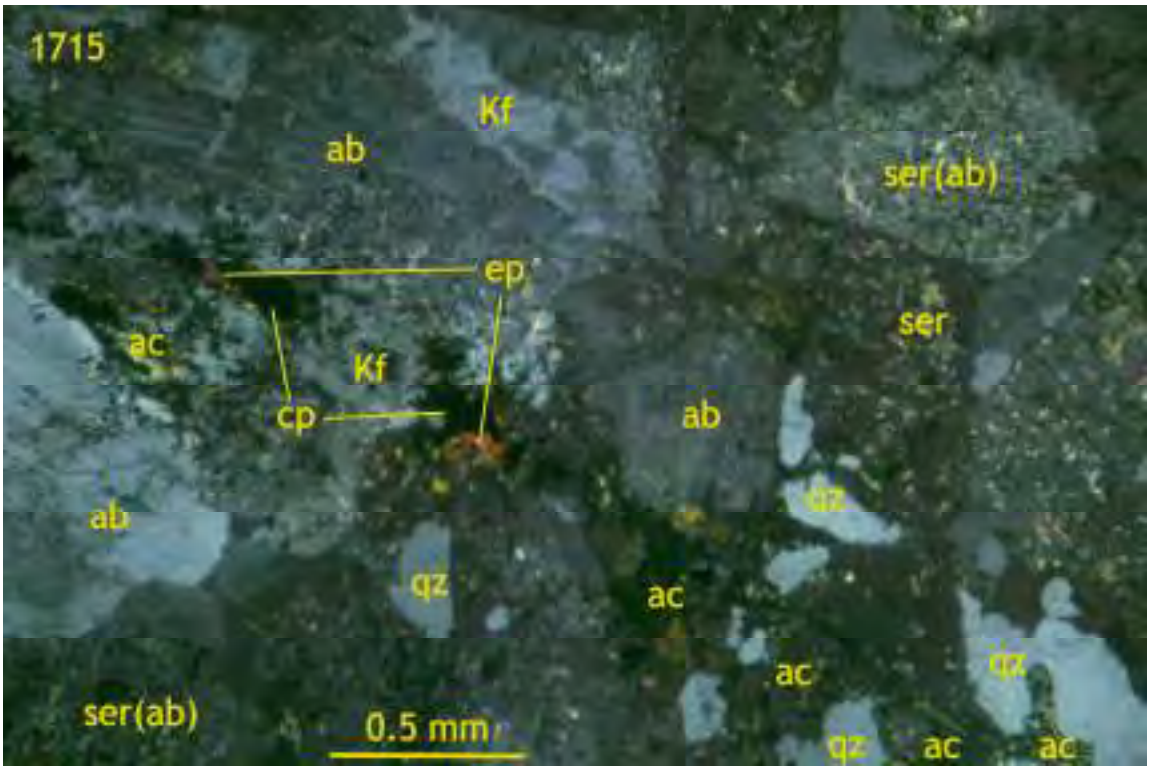
1605: chalcopyrite (cp) mineralization closely associated with strong potassic altered zone of epidote (ep, partly veinlet controlled, locally mixed with minor quartz, qz) and secondary Kspar (Kf) matrix, with euhedral sphene (sp) after former ilmeno-magnetite, remnant accessory apatite (ap). Reflected light, uncrossed polars, field of view ~3 mm wide.



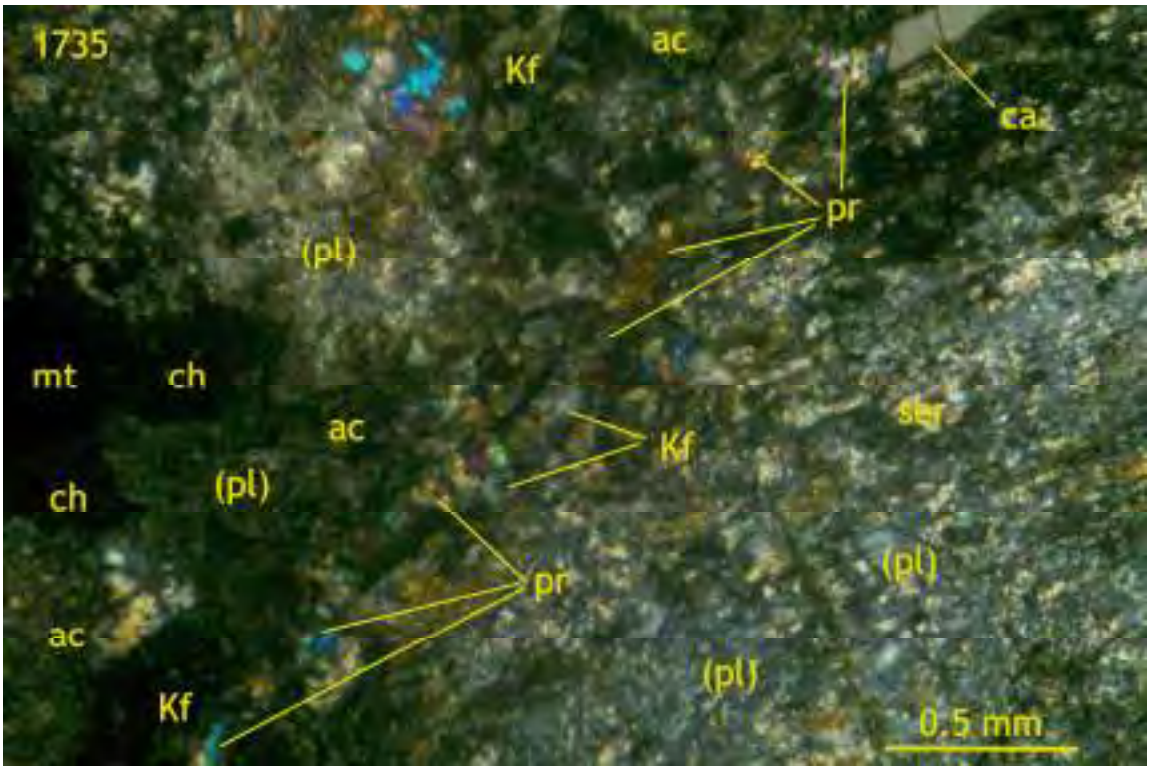
1651: strongly potassic altered (quartz?) diorite, showing sulfides (opaque, chalcopyrite partly oxidized to limonite and partly plucked out by section prep) closely associated with epidote (ep), chlorite (ch) and secondary quartz (qz) controlled along veinlets cutting secondary Kspar (Kf). Transmitted light, partly uncrossed polars, field of view ~3 mm wide.



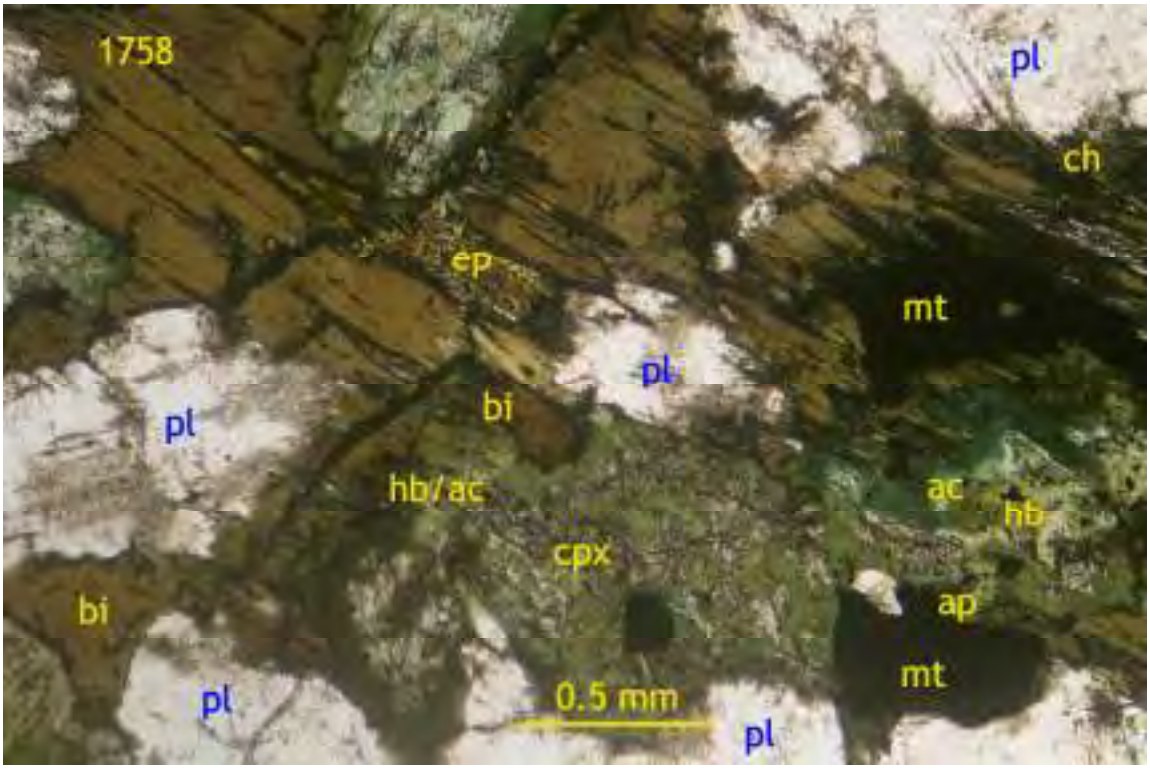
1663: latite porphyry composed of phenocrysts of plagioclase (PL, faintly oscillatory zoned, slightly clay?/sericite altered) biotite (BI, with brown cores, greenish rims similar to groundmass biotite, bi) and relict mafics pseudomorphed by calcite (ca), epidote (ep), minor chlorite (ch), in groundmass of Kspar-plagioclase-biotite-magnetite. Transmitted plane light, field of view ~3 mm wide.



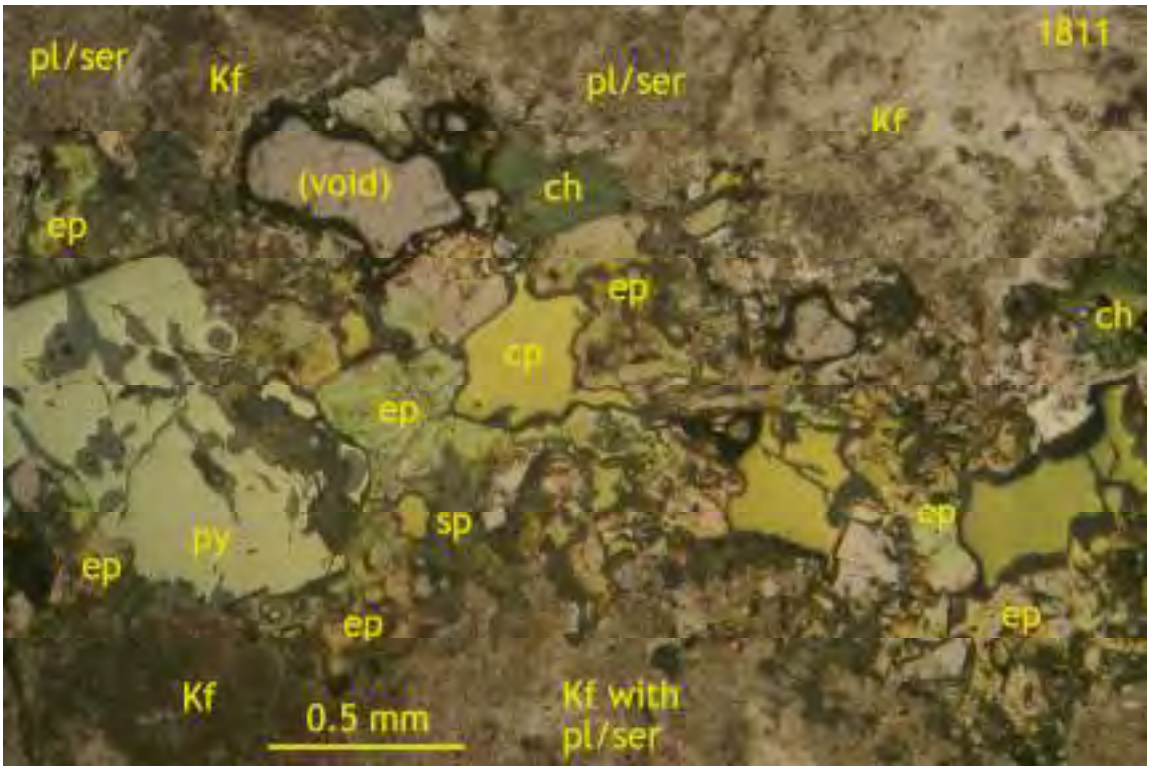
1715: propylitic/potassic alteration (Kspar, minor epidote, quartz, actinolite) associated with sulfides (mainly chalcopyrite, opaque) along narrow fracture veinlets, surrounded by diffuse envelopes of albite-sericite-calcite in (quartz) monzodiorite. Transmitted light, crossed polars, field of view ~3 mm wide.



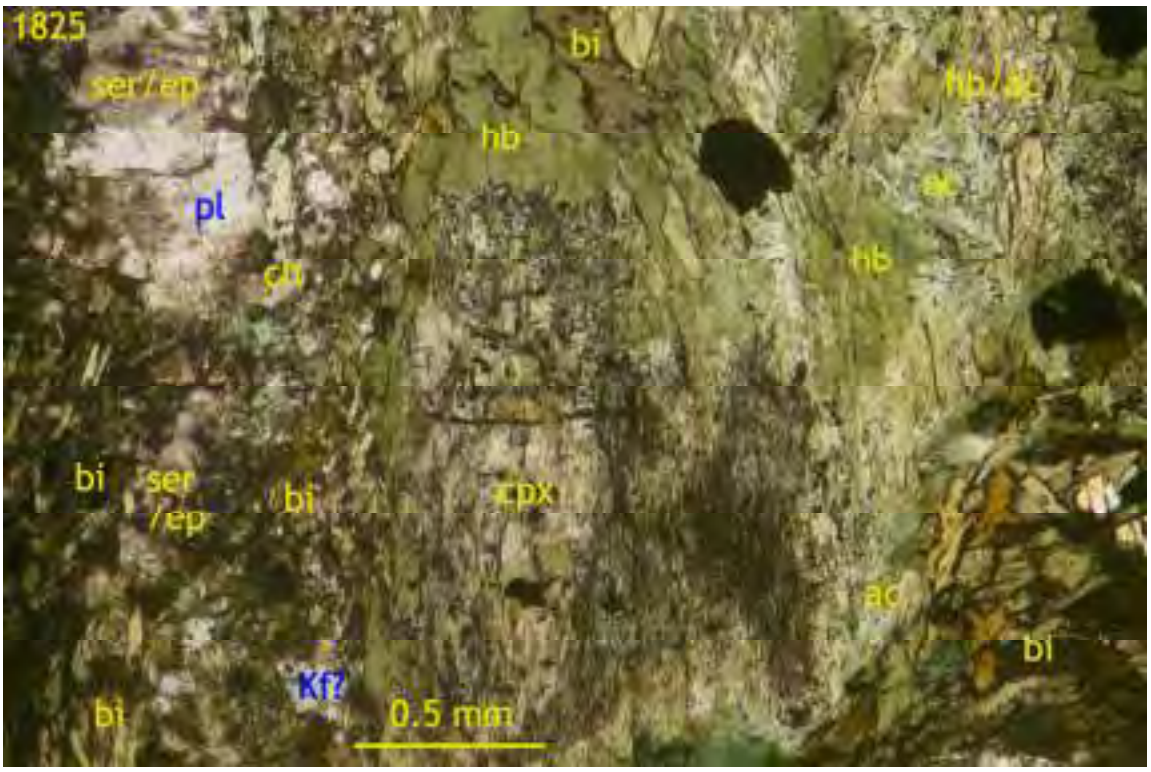
1735: transitional propylitic/potassic alteration of plagioclase (pl) to sericite-carbonate-local albite, biotite to chlorite (ch, associated with accessory magnetite, opaque), amphibole to actinolite (ac), near intersecting narrow, cryptic veinlets of prehnite (pr)-Kspar (Kf)-local calcite (ca). Transmitted light, crossed polars, field of view ~3 mm wide.



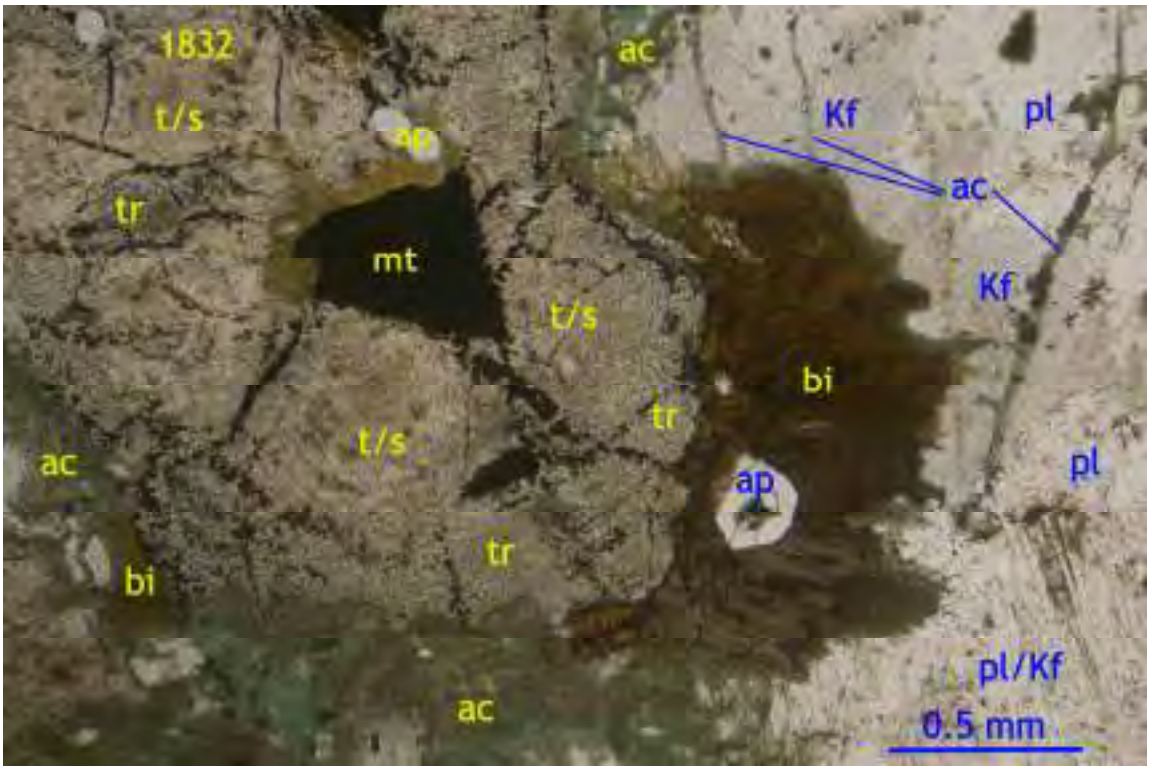
1758: mafic mineral assemblage (relict clinopyroxene cores, cpx, mantled/replaced by dark green/pale green hornblende and/or actinolitic amphibole (hb/ac), surrounded by dark brown biotite slightly altered to Fe-rich epidote (ep) and bright green chlorite (ch), associated with accessory magnetite (opaque)-apatite, in matrix of locally slightly sericitized plagioclase (pl). Transmitted plane light, field of view ~3 mm wide.



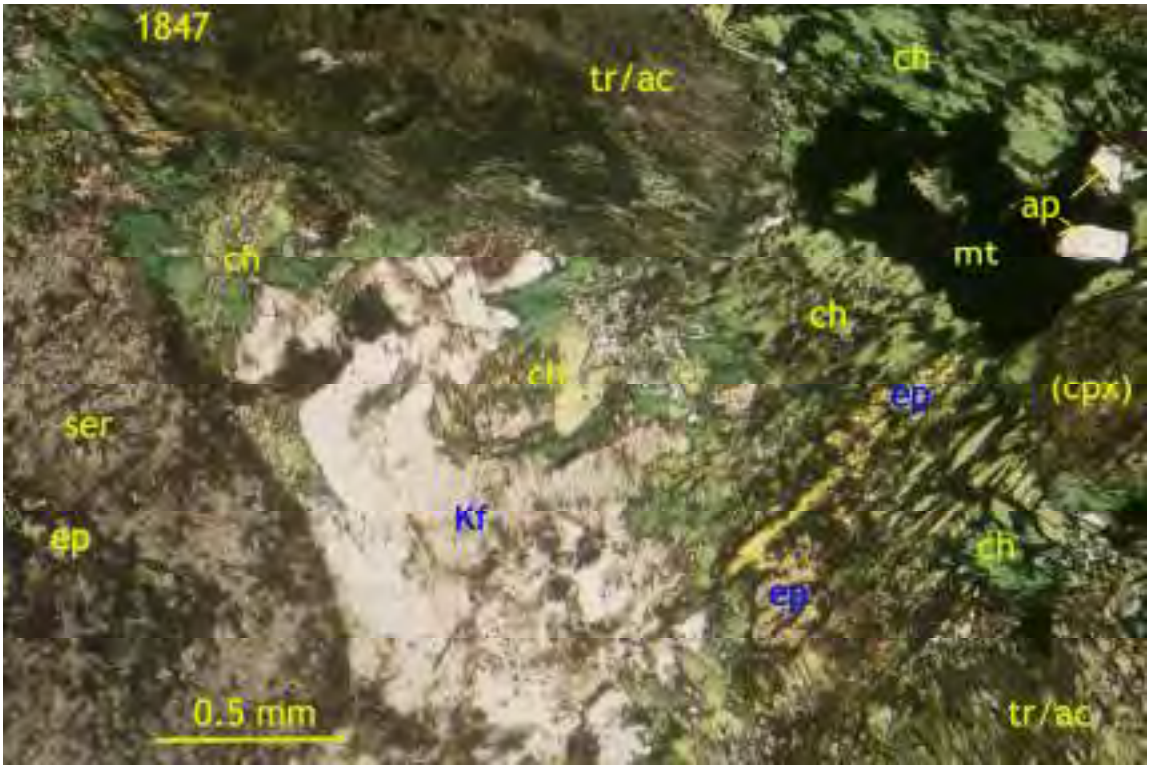
1811: disseminated chalcopyrite (cp) and lesser pyrite (py) partly oxidized to limonite, closely associated with epidote (ep) and minor chlorite (ch), accessory sphene (sp), in matrix of Kspar (Kf) and partly sericitized plagioclase (pl/ser). Reflected and transmitted light, uncrossed polars, field of view ~3 mm wide.



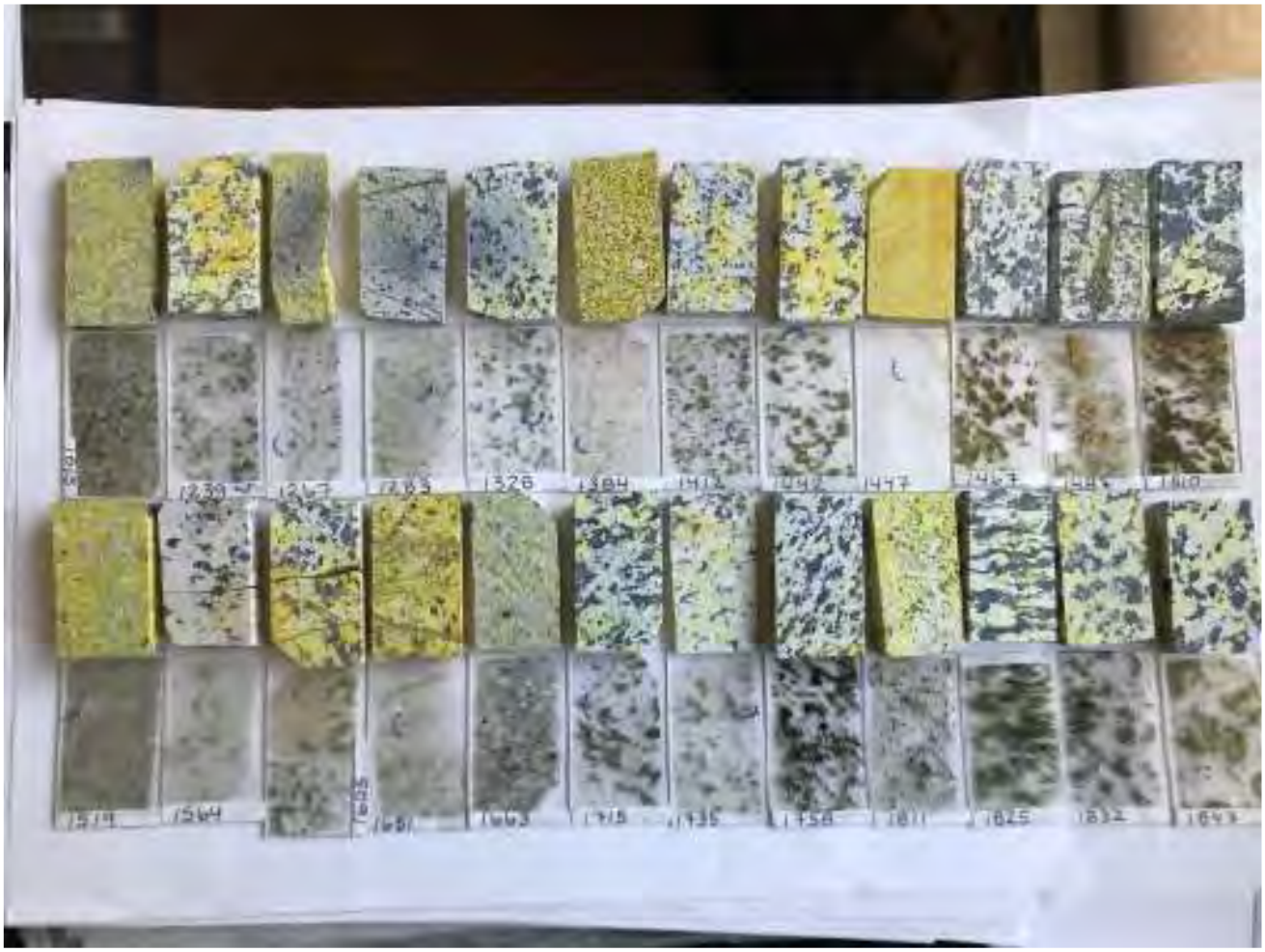
1825: felsic band on left (relict plagioclase, pl, strongly replaced by fine-grained sericite/epidote, ser/ep, probable Kspar) between mafic bands bordered by secondary biotite (bi, partly chloritized) rimming actinolite-hornblende with relict clinopyroxene (cpx) cores, accessory magnetite (mt)-chalcopyrite (cp). Transmitted plane light, field of view ~3 mm wide.



1832: unknown relict mafic pseudomorphed by matted talc/sericite (t/s), tremolite (tr), mantled by pale green actinolite (ac) or brown biotite (bi), associated with accessory magnetite (opaque, coarse- and fine-grained) and apatite (ap), in matrix of plagioclase (pl) and Kspar (Kf) cut by hairline actinolite fractures. Transmitted plane light, ~3 mm wide.



1847: relict monzodiorite altered to tremolite/actinolite (tr/ac, after hornblende/pyroxene?), chlorite (ch, after biotite?), epidote (ep, Fe-rich), associated with magnetite (opaque)-accessory apatite (ap), sericite (ser) after plagioclase, interstitial Kspar (Kf, partly secondary?). Transmitted plane light, field of view ~3 mm wide.



Overview of thin sections and offcuts (blue semi-circles mark photomicrograph locations).

APPENDIX V
PETROGRAPHIC REPORTS

b. Post-Field Work, October 2020

PETROGRAPHIC REPORT ON 17 SAMPLES FROM CATHEDRAL PROJECT

Report for: Chris Naas
CME Consultants Inc.
P.O. Box 38099 Morgan Heights PO
Surrey, B.C. V3Z 6R3 (604) 248-2993

Invoice 200281

Oct. 29, 2020.

SUMMARY: Although primary lithologies are partly to largely obscured by alteration, this appears to be a suite of consanguineous intrusive rocks (mainly plutonic, 15 samples, although two of these, 2314 and 2332, are so highly altered the protolith is unknown), and minor extrusive rocks (2424, andesite, and 3150, latite-andesite crystal-lithic tuff?). The intrusive rocks range in composition from feldspar-rich clinopyroxenite/hornblendite (1 sample, 2369) to biotite-hornblende (pyroxene) diorite/gabbro (3 samples, 2323, 2422, 3308) through biotite-hornblende (pyroxene) (quartz) monzodiorite (6 samples, 2316, 2364, 2368, 2405, 3107, 3136) and biotite-hornblende (quartz) monzonite (2 samples, 2309, 2334) to granodiorite (1 sample, 3112). Quartz is variably present in many but not all of the intrusive rocks (all told, in 11 samples, below/at the threshold of definition for quartz-bearing, i.e. 3-5%, in 4 samples, but 10-15% in 5 samples, and 20% in three samples of quartz monzonite and granodiorite; but note that in two of the latter, 2314 and 2424, the quartz is largely secondary). The mafic assemblage is similar in many of the samples, typically comprising pyroxene or relict pyroxene cores to amphibole (7 samples, feldspar pyroxenite through diorite/gabbro to monzodiorite), or amphibole-lesser biotite in the more felsic rocks (6 samples, quartz monzonite to granodiorite). The pyroxene is typically clinopyroxene except in one sample, 2405, where relict possible orthopyroxene sites may occur as well. Amphibole rimming or replacing pyroxene appears to be mainly hornblende or actinolitic hornblende, itself commonly rimmed or replaced by secondary actinolite (in one sample, also after orthopyroxene?). Biotite is generally minor where primary.

Alteration in these samples is mainly either transitional propylitic-potassic (12 samples, 2316, 2323, **2364**, 2368, **2369**, 2405, **2422**, **2424**, 3107, **3136**, and 3150), or potassic (5 samples, **2309**, **2314**, 2332, 2334, **3308**). These assemblages are characterized by, respectively, sericite-epidote after plagioclase ("saussuritization"), albitization/minor Kspar alteration of plagioclase, actinolite plus epidote, chlorite, carbonate after mafics, quartz and variable secondary Kspar, local secondary biotite for the transitional propylitic-potassic, grading to significant secondary Kspar, quartz, biotite (replacing mafics/more commonly along veinlets in 2309, especially **2314**, **2332**, and 2334, **3308**)and local magnetite with actinolite-epidote-chlorite for potassic (especially in samples in bold above, which correspond to the most highly mineralized samples, with elevated chalcopyrite contents).

Mineralization is typically chalcopyrite (detected in at least trace amounts in 14 samples) and lesser pyrite (only 9 samples), rare bornite (one sample, 3308), suggestive of a chalcopyrite-rich, low total sulfide system. Sulfides are most closely related to (typically surrounded by or intergrown with) epidote, quartz and biotite, less directly with actinolite, chlorite, Kspar, albite and carbonate; sericitic alteration is peripheral or an overprint (with chlorite, carbonate). Secondary magnetite is likely in at least 7 of the samples (especially **3308**; also 2332, 2422, possibly 2369, 2424, 3136, 3150), variably associated with the potassic alteration. The mineralization and alteration appear typical of relatively weakly mineralized, plutonic porphyry copper systems, often subtle and mainly controlled along veinlets or microfractures rather than major veins, or in significant disseminations.

Capsule descriptions are as follows:

2309: “syenitic”, strongly altered intrusive rock of uncertain protolith (possibly monzonite?) with classic potassic assemblage of Kspar-chlorite (relict secondary biotite)-carbonate-quartz-pyrite-minor chalcopyrite-rutile-apatite controlled along veinlets, minor oxidation to limonite and malachite.

2314: confirmed as strong/intense potassic (quartz-alkali feldspar-biotite-minor sericite-chlorite-epidote) altered rock of uncertain derivation (felsic plutonic?) associated with strong vein controlled chalcopyrite-pyrite mineralization.

2316: appears to represent strongly transitional propylitic/potassic (albite-epidote-Kspar-chlorite-minor carbonate-sphene/rutile) altered, possibly originally monzonitic/dioritic, intrusive rock in which the alteration is typically controlled along veinlets and microveinlets.

2323: transitional propylitic-potassic (albite-chlorite-carbonate-sericite-minor Kspar-epidote-sphene/rutile-trace pyrite/chalcopyrite) altered, sheared/crushed probable diorite with accessory magnetite, minor veining of carbonate-chlorite ±epidote.

3308: strong potassic (biotite-magnetite-minor Kspar) altered, heavily chlorite-carbonate ±sericite overprinted, possible pyroxene-amphibole-biotite diorite; chalcopyrite-bornite mineralization is closely associated with biotite ±epidote but not later chlorite-carbonate ±sericite.

3107: biotite-hornblende quartz monzodiorite, transitional propylitic-potassic altered to chlorite-sericite-carbonate-epidote-trace Kspar; accessory magnetite ±ilmenite is altered to sphene-hematite-trace chalcopyrite, and apatite is recrystallized.

3112: (biotite)-hornblende granodiorite with accessory magnetite, transitional propylitic-potassic altered to sericite-chlorite-epidote-sphene associated with thin veinlets of epidote-minor Kspar, but no sulfides.

2364: moderately propylitic/potassic (albite-quartz-Kspar-chlorite-sericite-epidote-sphene) altered quartz monzodiorite?, cut by veinlets of quartz-epidote-chalcopyrite (part oxidized to pitch limonite-trace malachite).

2368: sub-megacrystic clinopyroxene monzodiorite (plagioclase/late-magmatic Kspar phyric) with significant accessory magnetite-apatite, altered to transitional propylitic/potassic assemblage (albite ±Kspar, sericite, epidote, actinolite, chlorite, sphene, trace chalcopyrite).

2369: feldspar-rich clinopyroxenite (altered to hornblende and actinolitic amphibole, trace epidote; plagioclase saussuritized and replaced at margins by orthoclase and peripheral microcline ±quartz) with abundant accessory magnetite-apatite-sphene associated with disseminated chalcopyrite partly oxidized to pitch limonite. Lack of pyrite indicates low total sulfide, high Cu:Fe ratio system.

2332: strong/intense potassic (alkali feldspar, including albite?-Kspar, biotite, magnetite altered possibly originally felsic intrusive rock of uncertain identity, with minor pyrite mostly controlled along biotite bearing veinlets/fractures, and partly oxidized to limonite.

2334: likely represents quartz monzonite so strongly potassic (Kspar-albite-quartz-chlorite after secondary biotite?-minor carbonate-rutile) altered as to resemble syenite; it is cut by crush zones and later veinlets of carbonate-quartz-chlorite-limonite (after sulfides?).

2405: (biotite)-pyroxene monzonite/monzodiorite with accessory magnetite-ilmenite-apatite-quartz showing weak transitional propylitic-potassic alteration to actinolite-Kspar-chlorite-sericite-carbonate-epidote-trace chalcopyrite.

2422: diorite/gabbro strongly transitional propylitic/potassic altered to albite-carbonate-chlorite-magnetite?-sphene/rutile-allanite? in association with veinlets of quartz-pyrite-chalcopyrite, later carbonate-chlorite.

2424: appears to represent plagioclase-minor mafic phyric andesite porphyry intensely fractured and altered to albite-quartz-epidote-chlorite-minor magnetite?-sphene/rutile and cut by a network of veinlets of epidote-chlorite-local quartz-pyrite-chalcopyrite (both oxidized to limonite).

3136: strongly propylitic/potassic (albite-carbonate-chlorite-sericite-epidote-magnetite?-sphene/rutile) altered quartz monzodiorite, cut by carbonate-epidote-chalcopyrite-pyrite veinlets.

3150: clinopyroxene-minor plagioclase phyric, likely fragmental, latite-andesite (crystal-lithic tuff?) variably transitional propylitic/potassic altered to actinolite-chlorite-minor epidote-magnetite?-sericite-trace pyrite-chalcopyrite-carbonate.

Detailed petrographic descriptions and photomicrographs are appended (on CD/by email attachment). If you have any questions regarding the petrography, please do not hesitate to contact me.

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2309: "SYENITIC", STRONGLY ALTERED INTRUSIVE ROCK (POSSIBLY MONZONITE?) WITH CLASSIC POTASSIC ASSEMBLAGE OF KSPAR-CHLORITE (RELICT SECONDARY BIOTITE)-CARBONATE-QUARTZ-PYRITE-MINOR CHALCOPYRITE-RUTILE-APATITE CONTROLLED ALONG VEINLETS, MINOR OXIDATION TO LIMONITE AND MALACHITE

Described as syenite or possible Kspar altered monzonite from Cathedral zone, with 1% chalcopyrite, 2% pyrite; hand specimen shows brick red, felsic plutonic rock cut by a network of irregular pyrite-minor chalcopyrite veinlets loosely associated with poorly defined concentrations of mafics. The rock is not magnetic, shows minor reaction to cold dilute HCl (especially along veinlets), and pervasive yellow stain for K-feldspar (most intense along veinlets) in the etched offcut. Modal mineralogy in polished thin section is approximately:

K-feldspar (partly to largely secondary)	75%
Chlorite (partly after secondary biotite, traces of which remain)	7%
Carbonate (largely along veinlets, mainly calcite?)	5%
Quartz (mainly along veinlets, secondary)	3-5%
Pyrite (mainly controlled along veinlets)	3-5%
Chalcopyrite (with/peripheral to pyrite, along veinlets)	1-2%
Rutile (after former ilmeno-magnetite?)	1-2%
Apatite (associated with/controlled by veinlets)	~1%
Malachite, limonite (after chalcopyrite)	<1%
Hematite, clay? (minute particles in Kspar)	<1%

This sample consists mainly of Kspar (probably largely secondary) with only minor amounts of chlorite (in part after secondary biotite, some of which remains), carbonate, quartz, sulfides, rutile, apatite and traces of malachite/limonite all mostly controlled along sub-planar veinlets.

The bulk of the slide is composed of randomly oriented, somewhat rounded, subhedral K-feldspar crystals mostly <1mm, but locally up to 3.5 mm in diameter that could represent the sites of former plagioclase (?) crystals (the larger examples may have been phenocrysts), although there is no direct evidence to demonstrate this. The cores of these crystals are typically strongly clouded by minute particles (hematite and clay?) imparting the red colour in hand specimen, and are commonly partly rimmed, or in many places veined, by what is relatively clear, distinctly secondary Kspar of finer grain size (mainly <0.2 mm; veinlets mainly <0.1 mm thick). The clear, secondary Kspar is also found along and in the quartz-carbonate-sulfide-chlorite bearing veinlets. Relict mafic sites are very difficult to define, locally suggested by patches up to 2.5 mm across of increased chlorite (with remnant traces of secondary biotite included) ±Kspar-carbonate-limonite (in part after chalcopyrite)-rutile-apatite. However, much of the chlorite is found along (remobilized into?) the veinlets.

Veinlets are an important control on alteration and sulfides. They are relatively poorly defined and range from sub-planar microveinlets <50 μm thick to irregular major veinlets up to 0.5 cm thick. Variable pyrite occurs as irregular, ill-defined clotty aggregates up to 0.8 cm across composed of interlocking sub/euhedra to ~2 mm, locally surrounded by or associated with much lesser chalcopyrite as irregular sub/anhedra mainly <1 mm that is typically closely associated with the secondary quartz (sub/anhedra mostly <0.25 mm) and relatively clear Kspar (similar to quartz in habit), local chlorite (sub/euhedral flakes to 0.0.j5 mm with bright green pleochroism/anomalous blue-grey, length-slow birefringence indicative of F:M 0.6,±local cores of relict secondary biotite <0.1 mm with dark brown pleochroism), less so with carbonate (irregular sub/anhedra mainly <0.2 mm, likely mainly calcite to judge by reaction in hand specimen), rutile (irregular aggregates <0.5 mm of yellow-brown sub/euhedra <0.1 mm, likely after ilmeno-magnetite?) and apatite as clusters of stubby prisms mostly <0.2 mm long (both rutile and apatite may be remobilized by alteration). Locally, minor malachite and lesser limonite occur as elongated aggregates to 0.7 mm long.

In summary, this is "syenitic", strongly altered intrusive rock of uncertain protolith (possibly monzonite?) with classic potassic assemblage of Kspar-chlorite (relict secondary biotite)-carbonate-quartz-pyrite-minor chalcopyrite-rutile-apatite controlled along veinlets, minor oxidation to limonite and malachite.

2314: STRONG/INTENSE POTASSIC (QUARTZ-ALKALI FELDSPAR-BIOTITE-MINOR SERICITE-CHLORITE-EPIDOTE) ALTERED ROCK OF UNCERTAIN DERIVATION (FELSIC PLUTONIC?) ASSOCIATED WITH STRONG VEIN CONTROLLED CHALCOPYRITE-PYRITE MINERALIZATION

Described as diorite from Cirque zone altered to quartz and biotite, with 3% chalcopyrite, 3% pyrite and 0.5% molybdenite; hand specimen shows strongly altered/veined/fractured, fine/medium-grained grey/buff rock of uncertain derivation with abundant vein controlled sulfides associated with dark (biotitic?) veinlets/fractures. The rock is not magnetic and shows no reaction to cold dilute HCl, but there is extensive yellow stain for K-feldspar (apparently replacing white-etched plagioclase) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Alkali feldspar (largely secondary, Kspar, albite?)	35%
Quartz (mainly secondary, partly vein controlled)	20%
Chalcopyrite (semi-massive, with lesser pyrite)	20%
Pyrite (intergrown with/included in chalcopyrite)	10%
Secondary biotite (vein controlled, partly chlorite/sericite altered)	10%
Sericite (after biotite, feldspars)	~3%
Chlorite (after secondary biotite)	1%
Epidote (closely associated with biotite, sulfides)	1%
Limonite (transported stains along open fractures)	<1%

This sample is so strongly fractured, veined, altered and sulfide mineralized that the protolith is obscured (but likely was felsic plutonic). Remnant islands of alkali feldspar-minor biotite/chlorite-sericite-epidote altered rock are enclosed in a pervasive network of secondary quartz-biotite-chalcopyrite-pyrite veining, slightly oxidized along fractures to trace limonite.

Remnant alkali feldspar-dominant areas have subrounded/subangular outlines mostly <1-2 cm in size. The distinction in thin section between plagioclase and Kspar is not readily made since both form interlocking, intermixed, sub/anhedral crystals mainly <1 mm in diameter essentially lack twinning and showing negative relief compared to quartz. Thus albite is inferred from white etched areas, and Kspar from yellow stained areas in the etched offcut. Minor relict mafic sites are poorly preserved as ragged aggregates <1 mm across of chlorite/biotite/sericite (all subhedral flakes mostly <0.25 mm; chlorite shows pale green pleochroism and variable, near-zero to either length-slow blue-grey or length-fast purplish anomalous birefringence (F:M 0.5?)

Silicification is strong, represented by abundant secondary quartz mainly controlled by veins, forming interlocking sub/anhedra mainly <2 mm long (some is bladed, randomly oriented) that mainly lack indications of strain such as undulose extinction, sub-grain development, or suturing of grain boundaries.

Sulfide mineralization closely associated with silicification comprises masses of chalcopyrite up to ~1.5 cm across, typically with variable, but lesser pyrite included as fractured sub/euhedra to ~2 mm (typically oxidized along microfractures to dark red-brown limonite). Pyrite also occurs as highly irregular, almost vermiform inclusions within the chalcopyrite, suggesting replacement of pyrite by chalcopyrite. Magnetite is absent from the sample, and molybdenite is not seen.

Well-defined secondary biotite is also closely related to sulfides, either intimately intergrown with the sulfides or controlled along anastamosing, irregular veinlets or fractures zones mostly <2 mm wide. The biotite forms matted, aligned or bent (deformed) sub- to euhedral flakes mostly <0.5 mm in diameter that are variably retrograded to similar-sized sericite or chlorite (as described above). Minor epidote closely associated with sulfides occurs as subhedra <0.25 mm with bright yellow colour suggestive of high Fe content.

In summary, this is confirmed as strong/intense potassic (quartz-alkali feldspar-biotite-minor sericite-chlorite-epidote) altered rock of uncertain derivation (felsic plutonic?) associated with strong vein controlled chalcopyrite-pyrite mineralization.

2316: STRONGLY TRANSITIONAL PROPYLITIC/POTASSIC (ALBITE-EPIDOTE-KSPAR-CHLORITE-MINOR CARBONATE-SPHENE/RUTILE) ALTERED, POSSIBLY ORIGINALLY MONZONITIC/DIORITIC, INTRUSIVE ROCK IN WHICH THE ALTERATION IS TYPICALLY CONTROLLED ALONG VEINLETS AND MICROVEINLETS

Described as quartz monzonite (or possibly quartz altered monzonite?) from Cirque zone, no pyrite or chalcopyrite; hand specimen shows pale pinkish/buff-greenish, altered felsic plutonic rock cut by a network of sub-planar buff-white/locally pink veinlets (much harder than steel, epidote/local Kspar?). The rock is not magnetic, shows no reaction to cold dilute HCl (even along veinlets), and extensive white etch for plagioclase but only local yellow stain for Kspar (interstitial/partly along microveinlets?) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (albite/albitized)	60%
Epidote-group (zoisite, clinozoisite, Fe-rich epidote)	20%
K-feldspar (along veinlets replacing plagioclase?)	10%
Chlorite (with Fe-rich epidote, after mafic sites)	5%
Carbonate (with chlorite, epidote-group along veinlets, ankerite?)	2-3%
Sphene, lesser rutile (after ilmeno-magnetite?)	1-2%
Apatite (accessory)	<1%

This sample retains relict texture of a monzonite, composed of interlocking plagioclase (albitized, partly altered to epidote-group mineral and Kspar near and along poorly defined network of epidote-carbonate veinlets) with poorly defined relict mafic sites (altered to chlorite-Fe rich epidote-accessory sphene/rutile-trace apatite). Quartz is not seen; the epidote has probably been misidentified as quartz.

Plagioclase forming the framework of the sample occurs as randomly oriented, tabular sub- to euhedral crystals mainly <1 mm in diameter, with sharply to vaguely defined polysynthetic twinning showing extinction Y^010=15º, typical of albite (probably largely secondary, after former more calcic plagioclase) although there is no quartz to compare refractive indices with. However, where said plagioclase is adjacent to untwinned, likely secondary Kspar forming rounded sub/anhedra <1 mm in size along the poorly defined veinlets, there is little relief difference apparent, supporting the identification of albite for plagioclase. In places, especially near the veinlets or relict mafic sites, the plagioclase is further altered to fine-grained epidote-group mineral (subhedra mainly <35 µm, variable mainly low to locally moderate birefringence suggestive of zoisite/clinozoisite?).

Relict mafic sites are poorly defined clusters or concentrations with irregular outlines mainly <2 mm, but locally to 4 mm, of chlorite (partly aligned to randomly oriented, subhedral flakes <1 mm with pale green pleochroism/near zero birefringence suggestive of F:M 0.5?), epidote (typically sub- to euhedral, bright yellow pleochroic, i.e. high Fe content), accessory sphene (subhedra to 0.2 mm, locally altered to or intergrown with minor rutile as dark brown subhedra <25 µm) and apatite (prismatic euhedra to 0.3 mm long).

Veinlets controlling the bulk of the alteration range from planar examples from 1 mm to 0.5 cm thick (hand specimen only; not seen in section) to common/abundant poorly defined, irregular concentrations of epidote-group mineral (typically randomly oriented, interlocking sub/euhedra <0.7 mm with low to moderate birefringence, suggestive of zoisite to clinozoisite, distinctly Fe-poor compared to that in relict mafic sites immediately adjacent to it), local chlorite (as above), carbonate (clusters of very fine sub/anhedra mainly <25 µm, possibly ankerite to explain the lack of reaction to HCl in hand specimen) but no sulfides. The probably mainly secondary Kspar is loosely associated with the margins of the poorly defined veinlets, where it appears to replace adjacent plagioclase.

In summary, this appears to represent strongly transitional propylitic/potassic (albite-epidote-Kspar-chlorite-minor carbonate-sphene/rutile) altered, possibly originally monzonitic/dioritic, intrusive rock in which the alteration is typically controlled along veinlets and microveinlets.

2323: TRANSITIONAL PROPYLITIC-POTASSIC (ALBITE-CHLORITE-CARBONATE-SERICITE-MINOR KSPAR-EPIDOTE-SPHENE/RUTILE-TRACE PYRITE/CHALCOPYRITE) ALTERED, SHEARED/CRUSHED PROBABLE DIORITE WITH ACCESSORY MAGNETITE, MINOR VEINING OF CARBONATE-CHLORITE ±EPIDOTE

Described as shear (in diorite?) from Cirque zone, with 0.1% chalcopyrite and 0.5% pyrite; hand specimen shows fine-grained, dark green rock of uncertain derivation, probably sheared and chloritized, with disseminated magnetite (?) and local minor pyrite. The rock is distinctly magnetic, shows minor reaction to cold dilute HCl, and extensive white etch for plagioclase, only minor local stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (crushed/granulated, sericite-albite altered)	65%
Chlorite (after mafic sites, intimately mixed with carbonate)	15%
Carbonate (mainly mafic sites, calcite?)	10%
Sericite (after plagioclase)	3-5%
K-feldspar (secondary?)	1-2%
Epidote-group (clinozoisite, Fe-rich epidote)	1-2%
Magnetite (relict, primary?)	1-2%
Sphene, rutile	1-2%
Pyrite, trace chalcopyrite (partly oxidized to limonite at rims)	<1%

This sample is extensively crushed/granulated and altered to chlorite-carbonate, essentially now consisting of rounded-off "clasts" of (sericitized, albitized?) plagioclase and relict (chlorite-carbonate ±epidote-sphene/rutile altered) mafics with accessory magnetite, in a comminuted matrix of the same infilled by very fine-grained chlorite-carbonate, cut by local veinlets of carbonate-chlorite ±epidote

Plagioclase occurs as randomly oriented, commonly abraded-looking subhedral crystals mostly in the <0.5 mm to 1.5 mm range, but locally, larger, fractured remnants up to 2.5 mm are present (in part associated with mafic relics, suggesting comminution of an originally dioritic rock). The plagioclase typically shows vaguely to locally sharply defined twinning with extinction Y^010 to 15º, suggestive of albite (likely secondary). Although there is no quartz to compare refractive indices with, lack of relief difference against presumed minor Kspar (poorly seen in thin section, but indicated by yellow staining on the side of the offcut block) supports the interpretation of plagioclase as albite or albitized, presumably originally more calcic in composition. Minor sericite is common replacing 5-10% of the plagioclase as randomly oriented, subhedral flakes mainly <15 μm in size.

Relict mafic sites have dismembered or rounded/locally subhedral outlines up to ~3 mm (glomeratic) composed of fine-grained, intimately intermixed chlorite and carbonate, local minor epidote, and accessory sphene/rutile (typically associated with much of the accessory magnetite). Chlorite forms subhedral flakes mainly <0.15 mm with pale green pleochroism and near-zero/weakly length-slow, anomalous blue-grey birefringence suggestive of F:M 0.5 (?), poikilitically including or intergrown with carbonate as subhedra mainly <25 μm (locally to 50 μm), probably mainly calcite to judge by the reaction to HCl in hand specimen. Locally seen epidote-group mineral forms stubby subhedra <0.2 mm, with either low to moderate birefringence and no colour (clinozoisite?) or moderate to high birefringence and yellow pleochroism (Fe-rich epidote); accessory (relict primary?) magnetite forms subhedra mainly <0.2 mm, associated with similar-sized aggregates of brown sphene with cores of finer-grained semi-opaque rutile. Rare sulfides (mainly pyrite, euhedra to 0.4 mm; trace chalcopyrite, subhedra <40 μm) are associated with the sites, and are partly oxidized to limonite.

Local, poorly defined, sub-planar veinlets mainly <0.5 mm thick consist of variable carbonate (slender anhedral crystals up to 1.25 mm long, clear calcite), chlorite (aggregates to ~1 mm of fine flakes as described above, likely representing sheared mafic sites) and local epidote (as described above for mafic sites); it appears that magnetite and sphene/rutile found along them is likely merely accidentally included, rather than added. Sulfides are not obviously associated with the veinlets.

In summary, this is transitional propylitic-potassic (albite-chlorite-carbonate-sericite-minor Kspar-epidote-sphene/rutile-trace pyrite/chalcopyrite) altered, sheared/crushed probable diorite with accessory magnetite, minor veining of carbonate-chlorite ±epidote.

3308: STRONG POTASSIC (BIOTITE-MAGNETITE-MINOR KSPAR) ALTERED, CHLORITE-CARBONATE ±SERICITE OVERPRINTED, POSSIBLE PYROXENE-AMPHIBOLE-BIOTITE DIORITE; CHALCOPYRITE-BORNITE MINERALIZATION IS CLOSELY ASSOCIATED WITH BIOTITE ±EPIDOTE BUT NOT LATER CHLORITE-CARBONATE ±SERICITE

Described as potassic (biotite dominant with chlorite ±sericite overprint) altered diorite from Cirque zone with 2% chalcopyrite, 0.5% pyrite and 4% bornite; hand specimen shows fine-grained, strongly fractured and altered dark grey-green rock of uncertain derivation mineralized with magnetite-chalcopyrite and minor bornite. The rock is strongly magnetic, shows major reaction to cold dilute HCl, widespread white etch for plagioclase, locally cut by thin fractures which stain yellow for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is roughly:

Plagioclase (altered to carbonate-sericite along microfractures)	35%
Chlorite (with carbonate, after mafics)	20%
Carbonate (mainly calcite)	20%
Biotite (primary and secondary?)	5%
Relict clinopyroxene, amphibole (altered to chlorite-carbonate)	5%
K-feldspar (associated with fractures, secondary)	3-5%
Magnetite (partly secondary; minor ilmenite part altered to hematite)	3-5%
Chalcopyrite	2-3%
Bornite (slightly altered to covellite at margins)	1-2%
Sericite (with carbonate, along microfractures in plagioclase)	1-2%
Apatite (primary accessory or partly secondary?)	<1%
Epidote (Fe-rich, closely associated with Cu-sulfides)	<1%

This sample consists of shattered plagioclase altered to carbonate-sericite along microfractures, relict pyroxene and amphibole heavily altered to chlorite-carbonate, biotite that is more or less fresh (partly secondary?), closely associated with abundant magnetite-lesser chalcopyrite-bornite-minor apatite. Fractures filled with chlorite-carbonate are cut by planar Kspar-carbonate fractures; however, Cu mineralization appears most closely related to earlier biotite-magnetite alteration.

Plagioclase occurs as highly fractured, randomly oriented subhedra mainly <2 mm in size, relatively fresh (primary twinned, with extinction Y^010 to 23º suggestive of andesine about An_{40}). The crystals are 10-20% replaced along randomly oriented, closely spaced microfractures by variable combinations of carbonate and sericite both as subhedra mainly <30 μm and <15 μm respectively, and are cut by local irregular fractures <0.1 mm thick along which they are replaced by Kspar as sub/anhedra <0.2 mm (stained yellow in the offcut).

Relict mafic sites are abundant, indicating a significantly more mafic rock than any of the preceding samples, with ragged to subhedral outlines up to ~5 mm across; they apparently include clinopyroxene and lesser amphibole, both now extensively replaced by fine-grained, intimately mixed chlorite and carbonate, and associated with variable biotite mostly <1 mm that may be partly primary where brown, but probably secondary where distinctly greenish-brown and closely associated with magnetite-Cu sulfides-minor apatite. Chlorite forms subhedral flakes mostly <0.35 mm with pale green pleochroism and variable length-fast to slow birefringence (F:M 0.4-0.5?), amphibole is pale green and shows small extinction angle (actinolite?). Carbonate forms ragged subhedra up to 0.5 mm locally poikilitically enclosing magnetite and sulfides, or rimmed by sericite as subhedra to 0.2 mm.

Magnetite occurs in coarse clotty masses up to 0.5 cm or skeletal intergrowths with carbonate, probably partly primary and partly secondary, intergrown with/partly replace by chalcopyrite (mainly fine-grained, anhedra <0.2 mm but locally to 0.5 mm) and lesser bornite (subhedra to ~1 mm, partly intergrown with chalcopyrite and with rare bright yellow Fe-rich epidote subhedra <0.15 mm). Apatite forming stubby prisms to 0.5 mm appears related to the magnetite and sulfides, but not to the extensive system of fine-grained chlorite-carbonate fractures and later planar carbonate-Kspar veins.

In summary, this is strong potassic (biotite-magnetite-minor Kspar) altered, heavily chlorite-carbonate ±sericite overprinted, possible pyroxene-amphibole-biotite diorite; chalcopyrite-bornite mineralization is closely associated with biotite ±epidote but not later chlorite-carbonate ±sericite.

3107: BIOTITE-HORNBLENDE QUARTZ MONZODIORITE, TRANSITIONAL PROPYLITIC-POTASSIC ALTERED TO CHLORITE-SERICITE-CARBONATE-EPIDOTE-TRACE KSPAR; ACCESSORY MAGNETITE ±ILMENITE IS ALTERED TO SPHENE-HEMATITE-TRACE CHALCOPYRITE, AND APATITE IS RECRYSTALLIZED

Described as diorite from Cirque zone (0.1% chalcopyrite); hand specimen shows medium-grained, fractured and altered greenish-grey rock composed of plagioclase, mafics, Kspar and quartz. The rock is distinctly magnetic, shows trace reaction to cold dilute HCl, widespread white etch for plagioclase, and common yellow stain for K-feldspar (partly interstitial/partly along fractures?) in the etched offcut. Modal mineralogy in polished thin section is roughly:

Plagioclase (partly altered to sericite ±carbonate, albite)	45%
K-feldspar (interstitial primary, fracture secondary)	15%
Quartz (mainly interstitial, primary)	10%
Amphibole (slightly altered to chlorite, carbonate, epidote)	10%
Chlorite (mainly after primary biotite)	10%
Sericite (with trace carbonate, replacing plagioclase)	5%
Magnetite (mainly primary; minor ilmenite part altered to hematite)	2-3%
Carbonate (calcite, ankerite?)	1-2%
Epidote (Fe-rich, closely associated with chlorite, sphene)	<1%
Sphene (after ilmenite)	<1%
Apatite (primary accessory or partly secondary?)	<1%
Chalcopyrite	trace

This sample consists of plagioclase (partly altered to sericite ±carbonate, albite), interstitial Kspar, quartz and mafics (altered to chlorite ±carbonate-epidote, amphibole and former biotite?), accessory magnetite-ilmenite (altered to sphene, hematite) and apatite, with thin veinlets of Kspar ±carbonate.

Plagioclase crystals forming the framework of the rock occur as randomly oriented, stubby tabular to lath-shaped sub/euhedra mostly <2.5 mm long (but glomeratic to ~5 mm in places). The crystals vary from partly fresh to as much as 50% replaced by a variable mixture of sericite (randomly oriented, subhedral flakes mostly <50 μm, but up to 0.15 mm) and minor carbonate (ragged anhedra <0.1 mm, likely mostly calcite). Composition of remnant primary plagioclase local preserved zoning) is difficult to determine precisely due to alteration and lack of suitably oriented crystals, but may be about An_{27} (calcic oligoclase) based on extinction on 010 ~10º; relief similar to quartz; minor albite (An_5, Y^010=15º) appears to be developed in smaller crystals around margins.

K-feldspar mainly forms subhedra up to 2.5 mm across interstitial to plagioclase, where it appears to be mostly primary (only slightly affected by sericite-carbonate alteration). It is intergrown with quartz of similar size (but glomeratic locally to 3 mm) also in interstitial position, and also likely mainly primary. Rare secondary Kspar occurs along veinlets <0.1 mm thick, with trace carbonate.

Mafics occur as irregular shaped aggregates to 2.5 mm across composed of mixed amphibole (subhedral lath-shaped to tabular crystals <1.5 mm, dark green pleochroism, hornblende or actinolitic hornblende?) and probable relict biotite sites (now chlorite as subhedral flakes to 1 mm with bright green pleochroism and length-fast or slow, anomalous purplish interference colours suggestive of F:M 0.5-0.6?). Locally, the amphibole is pseudomorphed by fine-grained mixtures of chlorite and carbonate (subhedra <35 μm, possibly ankerite?), and in places minor epidote forming subhedra to 0.4 mm with strong yellow pleochroism (Fe-rich) accompanies chlorite in biotite sites. The epidote is intergrown with sphene as subhedra to 0.3 mm coating or replacing ilmenite cores. Accessory magnetite forms subhedra to 1.5 mm (with minor ilmenite partly altered to hematite), apatite forms stubby subhedra to almost 1 mm that may be recrystallized primary, and rare traces of chalcopyrite mostly <20 μm in size are associated with altered mafic sites.

In summary, this represents biotite-hornblende quartz monzodiorite, transitional propylitic-potassic altered to chlorite-sericite-carbonate-epidote-trace Kspar; accessory magnetite ±ilmenite is altered to sphene-hematite-trace chalcopyrite, and apatite is recrystallized.

3112: (BIOTITE)-HORNBLENDE GRANODIORITE WITH ACCESSORY MAGNETITE, TRANSITIONAL PROPYLITIC-POTASSIC ALTERED TO SERICITE-CHLORITE-EPIDOTE-SPHENE ASSOCIATED WITH THIN VEINLETS OF EPIDOTE-MINOR KSPAR-NO SULFIDES

Described as tonalite from Cirque zone with acicular amphibole (allanite?) but no sulfides; hand specimen shows light/medium grey, fine/medium grained felsic plutonic rock cut by local pale pinkish (Kspar?) fractures. The rock is distinctly magnetic, shows no reaction to cold dilute HCl, and extensive white etch for plagioclase/mainly interstitial yellow stain for K-feldspar (also locally along fractures) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (zoned andesine-oligoclase, locally saussuritized/albitized)	45%
K-feldspar (interstitial primary, minor veinlet secondary)	20%
Quartz (interstitial, primary)	20%
Amphibole (slightly altered to chlorite ±epidote)	5%
Sericite (replacing plagioclase, with zoisite)	3%
Chlorite (mainly after biotite, less after amphibole)	3%
Epidote (Fe-rich with chlorite, sphene); zoisite (after plagioclase); veinlets	2%
Magnetite (mainly primary; partly rimmed by sphene)	1-2%
Sphene (after ilmenite?)	<1%
Biotite (primary brown, with amphibole, altered to chlorite ±epidote)	<1%
Apatite (primary accessory)	trace

This sample consists of weakly phyric plagioclase and lesser amphibole, set in finer groundmass of plagioclase-Kspar-quartz-amphibole ±biotite, accessory magnetite ±sphene; variable alteration to sericite-zoisite after plagioclase, chlorite-epidote after mafics (especially biotite) occurs as envelopes loosely associated with thin epidote-minor secondary Kspar veinlets.

Plagioclase occurs as both tabular sub/euhedral phenocrysts up to 2.5 mm long (random orientations) and as smaller crystals in the poorly defined groundmass with Kspar, quartz and mafics plus accessory magnetite. Plagioclase crystals vary across the slide from almost fresh (with well-defined twinning and zoning from cores of andesine, An_{45}, to thinner rims of oligoclase, An_{25}, based on extinction Y^010 of 24º and 8º respectively, relief near or above that of quartz, to ~35% replaced by variable combinations of fine-grained sericite (randomly oriented subhedral flakes mainly <65µm) and zoisite (minute crystallites <15 µm with very low birefringence but high relief). The latter is mainly concentrated in poorly defined zones up to 1.5 cm wide associated with thin (<0.2 mm) planar veinlets of epidote-group mineral (sub/euhedra <0.2 mm, low to moderate birefringence) and Kspar (difficult to define in section, but linear distribution shown by yellow stain in etched offcut).

Amphibole crystals making up 5-7% of the section show a similar distribution, with scattered acicular euhedra to 3.5 mm long and smaller subhedra mainly <0.7 mm in the poorly defined groundmass; deep green pleochroism and moderate extinction angle suggest hornblende. Minor primary biotite <0.75 mm locally associated with the amphibole rarely retains dark brown pleochroism; most is pseudomorphed by mixtures of chlorite (subhedral flakes <0.5 mm with bright green pleochroism, near zero birefringence suggestive of F:M 0.5?) and epidote (subhedra to 0.6 mm with bright yellow pleochroism indicative of high Fe content) associated with sphene (subhedra to 0.5 mm that partly rims/replaces accessory magnetite (ragged aggregates <1 mm of subhedra <0.5 mm) and traces of apatite (stubby subhedra <0.1 mm).

In the poorly defined "groundmass", plagioclase, Kspar and quartz crystals are mostly <1 mm in diameter, sub- to anhedral, with random orientations. Plagioclase is as described above; Kspar shows no "grid" twinning typical of microcline, so is likely orthoclase. Quartz locally aggregates to 2 mm and displays weak strain (weak undulose extinction, little sub-grain development, no suturing of grain boundaries).

In summary, this is (biotite)-hornblende granodiorite with accessory magnetite, transitional propylitic-potassic altered to sericite-chlorite-epidote-sphene associated with thin veinlets of epidote-minor Kspar, but no sulfides.

2364: MODERATELY PROPYLITIC/POTASSIC (ALBITE-QUARTZ-KSPAR-CHLORITE-SERICITE-EPIDOTE-SPHENE) ALTERED QUARTZ MONZODIORITE?, CUT BY VEINLETS OF QUARTZ-EPIDOTE-CHALCOPYRITE (PART OXIDIZED TO PITCH LIMONITE-TRACE MALACHITE)

Described as tonalite from Cirque zone with 1% chalcopyrite, 1% pyrite; hand specimen shows pale greenish grey, fine-grained weakly plagioclase phyric felsic intrusive cut by a loose network of pyrite ±chalcopyrite veinlets, partly oxidized to limonite ±malachite. The rock is not magnetic, and shows no reaction to cold dilute HCl, but there is extensive white etch for plagioclase and yellow stain for K-feldspar (some of which suggests secondary origin) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (relict, sericitized/albitized, part altered to Kspar)	35%
K-feldspar (interstitial primary and secondary after plagioclase?)	20%
Quartz (interstitial primary, secondary in and near veinlets)	20%
Chlorite	10%
Sericite (after plagioclase)	10%
Epidote (especially in/near veinlets, enclosing sulfides)	2-3%
Chalcopyrite (veinlets only, rimmed/oxidized to pitch limonite)	1-2%
Limonite, trace malachite (after chalcopyrite)	<1%
Sphene (with epidote, in relict mafic sites)	<1%

This sample retains weakly plagioclase phyric character (small sericitized/albitized crystals in poorly defined groundmass of quartz-Kspar-chlorite ±epidote after mafics) but in detail is moderately altered (quartz-albite-Kspar-chlorite-sericite-epidote-sphene) in association with veinlets of quartz-epidote-chalcopyrite partly oxidized to pitch limonite-trace malachite.

Sub-phyric plagioclase forms randomly oriented, tabular sub/euhedra up to 3.5 mm long that are typically 10-40% replaced by sericite (randomly oriented, subhedral flakes mainly <0.1 mm) and lesser, variable epidote-group mineral (sub/anhedra <20 μm, low birefringence suggests zoisite). The remaining feldspar appears to be albitized (extinction Y^010=15º, negative relief compared to quartz; An_{5-10}) and/or replaced by Kspar near and around Kspar interstitial to plagioclase (that may be largely primary). The distinction between albite and adjacent Kspar (both untwinned, partly sericitized) is difficult to make, but most Kspar appears to be quite fine-grained (sub/anhedra <0.2 mm), suggesting secondary or at least recrystallized origin.

In the "groundmass, quartz dominates as interlocking, sub/anhedral crystals mainly <1 mm (but locally aggregating to almost 2 mm), with somewhat decussate margins that suggest attack of adjacent feldspar; this and its abundance, plus distribution in sulfide-bearing veins, indicates that part of the quartz is likely secondary, associated with so-called "Kspar flooding" of the groundmass. Lesser mafics with ragged, irregular outlines mainly <1.2 mm are pseudomorphed by variable combinations of chlorite (subhedral flakes mainly <0.65 mm, pale bright green pleochroism/near zero birefringence suggestive of F:M 0.5?) and lesser epidote (sub/euhedra <0.45 mm, bright yellow colour implying high Fe content), associated with accessory sphene (subhedra <0.2 mm).

Veinlets are poorly defined, sub-planar, up to ~2 mm thick, composed of variable mixtures of quartz (subhedra to 0.8 mm, mild strain indicated by weak undulose extinction, minor sub-grain development, rare suturing of grain boundaries), epidote (subhedra to 0.5 mm, high Fe as above) and chalcopyrite (irregular anhedral aggregates to ~1 mm, commonly rimmed or partly to largely replaced by botryoidal "pitch" limonite, associated with traces of malachite). Pyrite is absent, implying high Cu:Fe ratio (low total sulfide) regime in mineralizing fluids.

In summary, this is moderately propylitic/potassic (albite-quartz-Kspar-chlorite-sericite-epidote-sphene) altered quartz monzodiorite?, cut by veinlets of quartz-epidote-chalcopyrite (part oxidized to pitch limonite-trace malachite).

2368: SUB-MEGACRYSTIC CLINOPYROXENE MONZODIORITE (PLAGIOCLASE/LATE-MAGMATIC KSPAR PHYRIC) WITH SIGNIFICANT ACCESSORY MAGNETITE-APATITE, ALTERED TO TRANSITIONAL PROPYLITIC/POTASSIC ASSEMBLAGE (ALBITE ±KSPAR, SERICITE, EPIDOTE, ACTINOLITE, CHLORITE, SPHENE, TRACE CHALCOPYRITE)

Described as monzodiorite from the Lake zone with 0.1% chalcopyrite, 0.1% pyrite; hand specimen shows coarse-grained (almost feldspar megacrystic) felsic plutonic intrusive with cm-sized feldspar crystals that grade from white to brick- red across the sample, and lesser, somewhat smaller interstitial mafic relics. The rock is strongly magnetic, shows no reaction to cold dilute HCl, and varies from extensive white etch for plagioclase to yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (relict, saussuritized, albitized/attacked at rims by Kspar)	45%
K-feldspar (interstitial primary, late magmatic replacing plagioclase)	20%
Clinopyroxene (augite?) part altered to amphibole	15%
Sericite (after plagioclase, minor after Kspar)	10%
Magnetite (mainly primary?)	5%
Epidote (after mafics), zoisite (after plagioclase)	2%
Amphibole (after pyroxene)	1%
Chlorite (after biotite?) intergrown with pyroxene	1%
Apatite (coarse, abundant accessory)	~1%
Sphene (after ilmenite?)	<1%
Pyrite, chalcopyrite	traces

This sample consists of sub-megacrystic feldspar (mainly sericitized/albitized plagioclase, but locally Kspar or converted to Kspar, as indicated at one end of the etched offcut?), lesser, mainly interstitial Kspar and smaller clinopyroxene (partly altered to amphibole, with minor included chlorite and epidote possibly after biotite?) plus significant accessory magnetite, lesser apatite and sphene.

Relict plagioclase forming tabular sub- to euhedra up to almost 1.5 cm long, with random orientations; although barely scratched by steel in hand specimen, in thin section they are seen to be heavily (20-50%?) replaced by fine-grained sericite (randomly oriented subhedral flakes mainly <50 μm) and lesser, variable epidote-group mineral (fine-grained zoisite/clinozoisite with low to moderate birefringence and lacking colour, coarser Fe-rich, yellow epidote as subhedra to 0.25 mm). Remnant feldspar is generally twinned, with extinction Y010 to 15º, suggestive of albite An_{5-10}, but at one end of the section, it appears to be largely to almost completely overgrown/replaced by sub-megacrystic Kspar with "wooly" or clouded character typical of late-magmatic origin, as sub/euhedral crystals up to almost 1 cm long. This Kspar is typically heavily stained by minute particles of hematite (±clay?), causing its reddish colour in hand specimen, distinct from the almost clear, interstitial, likely primary Kspar of smaller grain size (sub/anhedra mainly <1 mm) in the rest of the section, which shows moderate negative 2V suggestive of orthoclase.

Clinopyroxene occurs as irregular aggregates up to almost 1 cm across composed of variably oriented sub/euhedral crystals to 3.5 mm diameter, with pale green colour but no pleochroism and large (~40º) extinction angle, suggestive of augite (?). They are partly replaced in places by minor amphibole (aggregates <1.5 mm of subhedra <0.5 mm, pale or dark green pleochroism, moderate extinction angle suggestive of actinolite/actinolitic hornblende?), and locally contain minor chlorite (subhedral flakes <0.65 mm, yellow-green pleochroism/near-zero birefringence suggesting F:M 0.5?) and/or epidote (subhedra to 0.4 mm with bright yellow pleochroism indicative of high Fe content).

Significant accessory magnetite intergrown or closely associated with the mafics forms loose aggregates to ~3 mm of subhedra to ~1.5 mm, fractured but not altered. The magnetite is associated with significant, coarse apatite as rounded, stubby subhedra to ~1 mm diameter, and minor sphene as subhedra <0.5 mm or replacing magnetite on fractures , but only traces of chalcopyrite <0.25 mm

In summary, this is sub-megacrystic clinopyroxene monzodiorite (plagioclase/late-magmatic Kspar phyric) with significant accessory magnetite-apatite, altered to transitional propylitic/potassic assemblage (albite ±Kspar, sericite, epidote, actinolite, chlorite, sphene, trace chalcopyrite).

2369: Feldspar-Rich Clinopyroxenite (Altered To Actinolitic Amphibole, Trace Epidote; Plagioclase Saussuritized/Replaced At Margins By Orthoclase/Peripheral Microcline-Quartz); Accessory Magnetite-Apatite-Sphene Associated With Disseminated Chalcopyrite Partly Oxidized To Limonite

Described as hornblendite from Lake zone, with 1% chalcopyrite/1% pyrite; hand specimen shows coarse-grained, dark green-black, mafic plutonic intrusive rock with local clotty pink/buff feldspar aggregates, trace sulfides. The rock is strongly magnetic, shows no reaction to cold dilute HCl, and interstitial yellow stain for K-feldspar (replacing white etched plagioclase which remains in relict cores) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Clinopyroxene (partly replaced by amphibole)	55%
Amphibole (actinolite/actinolitic hornblende?)	20%
K-feldspar (interstitial microcline, partly secondary after plagioclase?)	10%
Plagioclase (sericitized, attacked by Kspar at margins)	5%
Magnetite (primary and secondary?)	3%
Quartz (interstitial, with Kspar)	1-2%
Chalcopyrite (slightly oxidized to pitch limonite)	1-2%
Sericite (after plagioclase, with trace zoisite)	1-2%
Apatite (accessory, primary/secondary?)	1-2%
Sphene (accessory, with magnetite/apatite)	1%
Limonite (after chalcopyrite)	<1%
Epidote (plus trace zoisite in plagioclase)	<1%

This sample consists mainly of clinopyroxene partly altered to dark green amphibole-trace epidote, with lesser interstitial feldspar (plagioclase sericitized, partly replaced at margins by Kspar ±quartz), accessory magnetite, apatite, sphene, and associated chalcopyrite (partly oxidized to pitch limonite).

Clinopyroxene forms somewhat rounded, sub- to euhedral crystals up to at least 3.5 mm in maximum dimension, with random orientations. The crystals are pale green but non-pleochroic, with large extinction angle around 45º, suggestive of augite (?). They are extensively replaced by amphibole, partly in parallel position in the cores, and partly as separate, randomly oriented sub- to euhedral crystals up to 2.5 mm in diameter. The latter show dark green pleochroism and moderate (20º) extinction angle, and are likely late-magmatic hornblende or actinolitic hornblende; the former tend to display variable either pale green (at cores) or darker green (at rims) pleochroism, with small extinction angle <13º, and are likely actinolite of late-magmatic or secondary origin.

Feldspar commonly interstitial to, or poikilitically including, pyroxene/amphibole, varies from cores of plagioclase (large subhedra up to at least 5 mm, partly to largely saussuritized) to rims of Kspar (with textures suggestive of corrosion/attack of plagioclase; essentially unaltered by sericite). Saussuritization consists mainly of sericite (randomly oriented, matted subhedral flakes to 0.1 mm) and minor zoisite (colourless anhedra mainly <25 μm). The interstitial feldspar is most commonly relatively clear Kspar, with local "grid" twinning typical of microcline, but the mantling Kspar is slightly clouded, perthitic orthoclase (?), locally intergrown with quartz (subhedra <1 mm) of possible late-magmatic origin (?).

Significant accessory magnetite is abundant enough and associated with copper sulfides to suggest it may be partly secondary; it forms disseminated sub/euhedra mainly <0.7 mm closely associated with mafic minerals, and with abundant accessory apatite (stubby sub/euhedral prisms to almost 1 mm) and lesser sphene (ragged sub/anhedra to 0.75 mm). Chalcopyrite typically closely associated with the magnetite, but not generally obviously replacing it, forms subhedra mainly <0.6 mm that are commonly partly oxidized at rims to pitch limonite, and in places intergrown with minor epidote (subhedra <0.25 mm, yellow pleochroism indicative of moderate Fe content).

In summary, this is feldspar-rich pyroxenite (clinopyroxene altered to hornblende and actinolitic amphibole, trace epidote; plagioclase saussuritized and attacked at margins by replacing orthoclase and peripheral microcline ±quartz) with abundant accessory magnetite-apatite-sphene associated with disseminated chalcopyrite partly oxidized to pitch limonite; lack of pyrite indicates low total sulfide, high Cu:Fe ratio system.

2332: STRONG/INTENSE POTASSIC (ALKALI FELDSPAR, INCLUDING ALBITE?-KSPAR, BIOTITE, MAGNETITE ALTERED POSSIBLY ORIGINALLY FELSIC INTRUSIVE ROCK OF UNCERTAIN IDENTITY, WITH MINOR PYRITE MOSTLY CONTROLLED ALONG BIOTITE BEARING VEINLETS/FRACTURES, AND PARTLY OXIDIZED TO LIMONITE

Described as Kspar-magnetite altered monzonite (or syenite?) from Cathedral zone, with 0.5% pyrite; hand specimen shows pale grey-white to pinkish (partly limonite-stained), fine-grained, altered rock of uncertain derivation cut by a system of sub-parallel, darker fractures associated with trace sulfides. The rock is strongly magnetic, shows no reaction to cold dilute HCl, and extensive white etch for plagioclase/local fracture controlled yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Secondary alkali feldspar (albite?)	70%
(K-feldspar)	20%
Secondary biotite (partly retrograded to chlorite/sericite)	5%
Magnetite (partly secondary?)	3-5%
Pyrite (partly oxidized to limonite)	<1%
Limonite (goethite, jarosite, mainly after pyrite?)	<1%

The mineralogy of this highly altered sample is relatively simple: secondary alkali feldspar-biotite-magnetite associated with thin veinlets of pyrite partly oxidized to limonite; the protolith is obscured by the alteration and veining.

Secondary alkali feldspar occurs as tightly interlocking, randomly oriented, sub- to anhedral crystals mainly <2 mm in maximum dimension, but typically finer-grained looking due to the common development of irregular-shaped sub-domains mainly <1 mm. There appears to be no quartz present to compare refractive indices with, but the intensely altered nature of the sample strongly suggests that all the white-etched (plagioclase) areas are likely albite (untwinned, probably An_0?) and the yellow-stained areas (commonly controlled/distributed along cryptic fracture systems) are Kspar. The secondary alkali feldspar is variably clouded by minute particles of hematite (and clay?) mostly <5 microns in size, leading to the pinkish cast of certain areas.

Secondary biotite is principally controlled along well-defined fractures and veinlets up to about 1.5 mm thick, where it occurs as matted, randomly oriented, sub- to euhedral flakes mostly <0.1 mm (rarely to 0.2 mm) in diameter, with faint brownish yellow pleochroism likely indicative of partial retrograding to chlorite/sericite.

Magnetite is abundant enough and variably distributed (heavy disseminations and/or fracture controlled) to be likely largely secondary; this is supported by the presence of significant potassic alteration in the form of secondary alkali feldspar and biotite.

Most of the minor sulfide is not associated with the magnetite (pyrite rarely occurs disseminated as euhedra to 0.3 mm rimmed by or possibly replacing the core of euhedral magnetite); instead, pyrite is largely controlled along the secondary biotite-bearing fractures/veinlets, where it occurs as elongated aggregates up to several mm long composed of relict sub/euhedra to 0.3 mm that are oxidized at rims to limonite, or plucked out due to section preparation. The resulting limonite varies from bright red-brown (goethite) to bright yellow (jarosite?) in aggregates the size of the former pyrite crystals. Minor limonite is also transported along open fractures as pale-coloured stains.

In summary, this is strong/intense potassic (alkali feldspar, including albite?-Kspar, biotite, magnetite altered possibly originally felsic intrusive rock of uncertain identity, with minor pyrite mostly controlled along biotite bearing veinlets/fractures, and partly oxidized to limonite.

2334: QUARTZ MONZONITE SO STRONGLY POTASSIC (KSPAR-ALBITE-QUARTZ-CHLORITE AFTER SECONDARY BIOTITE?-MINOR CARBONATE-RUTILE) ALTERED AS TO RESEMBLE SYENITE; IT IS CUT BY CRUSH ZONES AND LATER VEINLETS OF CARBONATE-QUARTZ-CHLORITE-LIMONITE (AFTER SULFIDES?)

Described as syenite (or Kspar altered quartz monzonite?) from Cathedral zone, with 1% chalcopyrite, 2% pyrite; hand specimen shows fine-grained, brick-red, altered-looking felsic intrusive rock, lacking obvious veining or sulfides. The rock is distinctly magnetic, shows no reaction to cold dilute HCl, but there is pervasive yellow stain for K-feldspar/lesser white etch for plagioclase in the etched offcut. Modal mineralogy in polished thin section is approximately:

K-feldspar (microcline, orthoclase; largely secondary?)	55%
Plagioclase (remnant albite, partly/largely altered to Kspar)	20%
Quartz (mainly interstitial, primary; minor secondary in veinlets)	15%
Chlorite (relict mafic sites/veinlets, after secondary biotite?)	5%
Carbonate (mainly in veinlets, mafic sites; ankerite?)	2-3%
Limonite (goethite/local jarosite, after pyrite, traces of which remain)	1%
Rutile (after ilmenite, some of which remains)	1%
Apatite (primary accessory)	<1%

This sample is weakly plagioclase phyric, with widely scattered, randomly oriented phenocrysts in a much finer grained groundmass of Kspar, quartz, and small relict mafics altered to chlorite-carbonate and accessory rutile. Sub-planar fracture/crush zones are variably filled with comminuted Kspar, quartz, or somewhat later chlorite, carbonate and limonite (after pyrite, traces of which remain).

Plagioclase phenocrysts show tabular sub- to euhedral outlines up to almost 5 mm long (partly broken ,slightly deformed) with negative relief compared to quartz but generally twinned, extinction Y^010 to 15º, suggestive of An_{5-10} (albite, likely secondary in view of the extensive replacement by Kspar). Only traces of sericite accompany the albitization; Kspar appears to attack the margins of these largest plagioclase crystals, or in places may replace whole crystals resulting in tabular euhedral Kspar up to 2 mm long that show either grid twinning of microcline, or are microperthitic orthoclase (?). However, in the adjacent groundmass, fine-grained albite and Kspar are intergrown without any obvious replacement textures. Apatite as acicular euhedra <0.15 mm typically occurs in feldspars.

The groundmass consists of randomly oriented, subhedral Kspar, quartz and lesser albite all mainly <1 mm in size, developing a somewhat seriate texture as opposed to a clearly phyric texture. Kspar locally shows grid twinning of microcline, or microperthitic texture of orthoclase; it may be partly to largely secondary. Most quartz is likely primary, but in places, especially within fracture zones or along narrow veinlets, some is clearly secondary. Relict mafic sites show ragged, irregular outlines mainly <1 mm but rarely to almost 2 mm, pseudomorphed by chlorite (subhedral flakes to 0.7 mm with bright green pleochroism, weakly length-slow anomalous blue birefringence, F:M 0.6?) and variable carbonate (subhedra <0.15 mm, ankerite?) plus accessory rutile (aggregates to 0.2 mm of dark brown sub/euhedra mainly <30 μm, after ilmenite which locally remains at cores) and traces of apatite as subhedra <0.1 mm. Minor limonite is also locally associated with mafic sites (see below).

Crush or fracture zones up to 2-3 mm wide make up 10-15% of the sample; within these zones, secondary Kspar and quartz are common, carbonate and chlorite less so except where later planar veinlets to 0.5 mm thick appear to cut the fracture zones. In the latter, carbonate forms elongate anhedra up to 0.9 mm long that may be mostly clear dolomite and somewhat Fe-stained ankerite (?). Limonite commonly associated with the veinlets is generally bright red-brown (goethite after pyrite; rare trace pyrite occurs in one case, but elsewhere could be “pitch” limonite after chalcopyrite) but where best developed, aggregates to 0.8 mm of yellow jarosite are likely after pyrite.

In summary, this likely represents quartz monzonite so strongly potassic (Kspar-albite-quartz-chlorite after secondary biotite?-minor carbonate-rutile) altered as to resemble syenite; it is cut by crush zones and later veinlets of carbonate-quartz-chlorite-limonite (after sulfides?).

2405: (BIOTITE)-PYROXENE MONZONITE/MONZODIORITE WITH ACCESSORY MAGNETITE-ILMENITE-APATITE-QUARTZ SHOWING WEAK TRANSITIONAL PROPYLITIC-POTASSIC ALTERATION TO ACTINOLITE-KSPAR-CHLORITE-SERICITE-CARBONATE-EPIDOTE-TRACE CHALCOPYRITE

Described as quartz diorite from Cathedral zone, with no sulfides; hand specimen shows relatively coarse-grained, dark pinkish grey and black coloured, intermediate/mafic plutonic intrusive rock cut by local open fractures, some of which may have mafic minerals concentrated along them. The rock is distinctly magnetic, shows trace reaction to cold dilute HCl, and moderate yellow stain for K-feldspar (mostly interstitial to, but partly replacing margins of white etched plagioclase?) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (andesine, partly altered to sericite/attacked by Kspar)	45%
K-feldspar (part primary/part late-magmatic/secondary after plagioclase?)	25%
Amphibole (late-magmatic hornblende, later actinolite, after pyroxene)	10%
Clinopyroxene (relict, extensively altered to amphibole)	10%
Chlorite (after primary biotite, some of which remains)	3%
Magnetite, local ilmenite (slight alteration to hematite; trace chalcopyrite)	3%
Sericite (mainly after plagioclase)	1-2%
Carbonate (mostly in veinlets, calcite?)	1%
Apatite (primary accessory)	1%
Quartz (local interstitial, primary?)	<1%
Epidote (mostly in veinlets)	trace

This sample consists of fairly coarse plagioclase (slightly sericitized, attacked by Kspar interstitial to plagioclase) and relict pyroxene (replaced by amphibole) associated with chloritized biotite, accessory magnetite ±ilmenite and apatite, cut by local veinlets of carbonate ±chlorite-epidote.

Plagioclase forms randomly oriented, tabular to lath-shaped sub/euhedra up to 5 mm long (to 8 mm where glomeratic) that are typically only locally weakly sericite altered along microfractures (subhedral flakes mostly <20 μm) whereas the bulk remain relatively fresh, with extinction Y^010 to 22º suggestive of sodic andesine (An_{40}), likely a primary composition. The plagioclase crystals are poikilitically enclosed/partly attacked at margins by interstitial Kspar up to 3 mm across presumably largely primary except for late-magmatic where it replaces plagioclase margins. Rarely, thin veinlets <0.1 mm thick of secondary Kspar cut plagioclase. Rare interstitial quartz is <0.5 mm long.

Mafics occur as somewhat smaller aggregates to ~6 mm long composed of relict pyroxene (somewhat rounded cores mainly <2 mm rimed/replaced by amphibole of two varieties, or slender euhedra of similar size replaced by possible amphibole?), with minor local chloritized biotite intergrown. The clinopyroxene in cores shows oblique extinction and is mantled by dark green to locally brownish late-magmatic amphibole (hornblende?) to 1.5 mm, or replaced by fibrous, pale green actinolite of later origin. The slender euhedra show sub-parallel extinction, with faintly green colour suggestive of actinolitic amphibole ("uralite"), possibly after orthopyroxene (?). Chlorite forms subhedral flakes to ~1 mm (green pleochroism and weakly length-slow blue anomalous birefringence suggest F:M 0.5?) locally with relict cores of dark brown, likely primary biotite of similar size. Epidote is only rarely found as an alteration product of biotite or pyroxene.

Accessory magnetite forming somewhat rounded sub/euhedra <2 mm (locally intergrown with ilmenite <1 mm, both slightly oxidized to hematite) is typically closely associated with the mafic sites, as is accessory apatite forming stubby euhedral prisms to ~1 mm. Traces of extremely fine chalcopyrite (anhedra <25 μm) rarely occur near magnetite in mafic sites.

Thin fracture veinlets mostly <0.25 mm thick are variably filled with carbonate (sub/anhedra <0.7 mm long, mainly calcite?), chlorite (brownish-green, F:M as above but partly stained by traces of limonite?) and rare epidote (subhedra to 0.25 mm, yellow colour implies high Fe content).

In summary, this is (biotite)-pyroxene monzonite/monzodiorite with accessory magnetite-ilmenite-apatite-quartz showing weak transitional propylitic-potassic alteration to actinolite-Kspar-chlorite-sericite-carbonate-epidote-trace chalcopyrite.

2422: DIORITE/GABBRO STRONGLY TRANSITIONAL PROPYLITIC/POTASSIC ALTERED TO ALBITE-CARBONATE-CHLORITE-MAGNETITE?-SPHENE/RUTILE-ALLANITE? IN ASSOCIATION WITH VEINLETS OF QUARTZ-PYRITE-CHALCOPYRITE, LATER CARBONATE-CHLORITE

Described as diorite from Cathedral zone altered to albite-actinolite-magnetite with 1% chalcopyrite, 3% pyrite; hand specimen shows medium-grained, medium grey (greenish) altered intermediate intrusive rock cut by scattered dark coloured veinlets with blebby pyrite-chalcopyrite. The rock is distinctly magnetic, shows intense reaction to cold dilute HCl, and no stain for K-feldspar (but extensive white etch for plagioclase) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (albitized, minor carbonate-sericite altered)	45%
Carbonate (with chlorite, pseudomorphs after pyroxene?)	30%
Chlorite (with carbonate, pseudomorphs after pyroxene?)	15%
Magnetite (partly secondary, in mafic relics)	3-5%
Sphene, rutile (pseudomorphs after ilmenite?)	3-5%
Pyrite (veinlets, with secondary quartz, later carbonate)	1%
Chalcopyrite (with pyrite, in/along veinlets only)	<1%
Quartz (secondary, veinlets only, closely associated with chalcopyrite)	<1%
Apatite (relict accessory)	<1%
Allanite (?), local accessory	<1%

This sample consists of relict plagioclase (strongly albitized, minor carbonate-sericite altered) and probable pyroxene (pseudomorphed by intimately intermixed carbonate-chlorite-magnetite-sphene-rutile, with accessory apatite and possible allanite?), cut by veinlets of pyrite-quartz-chalcopyrite.

Relict plagioclase forming originally sub/euhedral tabular crystals up to ~6 mm (partly glomeratic) has been thoroughly recrystallized to finer-grained albite that occurs as either tabular to lath-shaped sub/euhedra mostly <2.5 mm long with twinning (extinction Y^010=16º, An_5?), or granular/sucrosic textured anhedra <0.5 mm, untwinned, An_0?). Minor alteration to carbonate and trace sericite (both mostly <30 μm. along microfractures, near carbonate altered mafic sites). Both Kspar and quartz appear to be essentially absent from this sample.

Relict mafic sites are common to abundant (colour index of the rock about 40-45, verging on gabbro?). They are now unidentifiable, but similarity in habit to the preceding sample suggests they probably represent former pyroxene (?) as aggregates up to ~8 mm across composed of smaller, interlocking, randomly oriented subhedra <2-3 mm in size. They are pseudomorphed by variable mixtures of carbonate (granular, spindle-shaped subhedra mainly <0.5 mm, probably mainly calcite) and chlorite (interleaved subhedral flakes mostly <0.25 mm, pale green pleochroism and length-slow, anomalous blue-grey birefringence indicative of F:M 0.5?) plus variable, significant accessory magnetite (rounded, subhedral crystals mainly <0.3 mm but in aggregates to ~2 mm) associated with relict ilmenite (euhedra to 1.5 mm, pseudomorphed by sphene with minute inclusions rutile <20 μm). Locally, accessory apatite forms rounded/stubby sub/euhedra to 0.75 mm, and rarely, possible allanite (?) occurs as clusters to 1.25 mm of dark brown pleochroic sub/euhedra <0.35 mm.

Veinlets up to ~2 mm thick consist of secondary quartz (subhedra to 0.7 mm), pyrite (euhedra to ~1 mm) and lesser chalcopyrite (subhedra <0.5 mm), loosely associated with magnetite (secondary, as described above) and chlorite (as above) where the veinlet crosses former mafic sites. Later thin carbonate-chlorite veinlets appear to cut the sulfide-bearing veinlets.

In summary, this is diorite/gabbro strongly transitional propylitic/potassic altered to albite-carbonate-chlorite-magnetite?-sphene/rutile-allanite? in association with veinlets of quartz-pyrite-chalcopyrite, later carbonate-chlorite.

2424: PLAGIOCLASE-MINOR MAFIC PHYRIC ANDESITE PORPHYRY INTENSELY FRACTURED AND ALTERED TO ALBITE-QUARTZ-EPIDOTE-CHLORITE-MINOR MAGNETITE?-SPHENE/RUTILE AND CUT BY A NETWORK OF VEINLETS OF EPIDOTE-CHLORITE-LOCAL QUARTZ-PYRITE-CHALCOPYRITE (BOTH OXIDIZED TO LIMONITE)

Described as latite porphyry from Cathedral with albite-actinolite-late epidote alteration, 1% chalcopyrite, 2% pyrite; hand specimen shows pale/medium grey, very fine-grained/highly fractured and epidote veined, altered felsic-looking rock of uncertain derivation. The rock is locally magnetic, shows no reaction to cold dilute HCl, and no yellow stain for K-feldspar (but extensive white etch for plagioclase) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (intensely albitized)	65%
Quartz (mainly secondary, veinlet and matrix)	15%
Epidote (mainly veinlets, with chlorite, minor quartz)	10%
Chlorite (veins with epidote, small mafic relics)	5%
Pyrite, lesser chalcopyrite (both partly/largely oxidized to limonite)	1-2%
Magnetite (slight oxidation to hematite, disseminated; partly secondary?)	1%
Limonite (after sulfides, mainly along veinlets)	1%
Sphene/rutile (after ilmenite)	1%
Apatite (accessory)	<1%

This sample retains weakly plagioclase phyric texture in spite of extensive, texture-obscuring fracturing/shattering and alteration to albite-quartz-epidote-chlorite-magnetite?-sphene/rutile associated with a network of veinlets of epidote-chlorite-quartz-pyrite ±chalcopyrite (strongly oxidized to limonite).

Plagioclase phenocrysts have sub/euhedral (somewhat broken, slightly deformed) tabular shapes up to ~3 mm long, with more or less random orientations. Due to the intense shattering and attendant comminution, there is a tendency to seriate texture, with gradually diminishing sized sub/anhedral broken clasts grading to matrix where grain size is mostly <0.25 mm (and lesser quartz is presumed to be mixed with the plagioclase). Composition of the remnant plagioclase appears to be albite (An_{0-5}?), based on relief against quartz distinctly negative, and extinction Y^010 to 16º even in the relict phenocrysts which retain well-defined twinning.

Smaller, relict mafic sites have poorly defined, ragged/irregular outlines mostly <1.5 mm, composed of chlorite (subhedral flakes <0.2 mm with pale bright green pleochroism, near-zero to weakly length-slow anomalous blue birefringence suggestive of F:M 0.5?), minor epidote (subhedra <0.2 mm with high Fe content indicated by yellow colour) and variable accessory magnetite (small rounded subhedra mainly <0.s2 mm partly oxidized to minute flakes of hematite at margins) and ilmenite (aggregates to 0.25 mm largely altered to sphene with minute included rutile mainly <25 μm) plus local apatite (small rounded subhedra mainly <0.15 mm).

The "groundmass" is poorly defined due to the intense brecciation which confuses the distinction between it and comminuted relict phenocrysts, as described above, but in general it consists essentially of fine-grained albite and probable variable quartz (mainly <0.1 mm in size), scattered chlorite, magnetite, epidote and sphene/rutile all mostly <0.15 mm. Secondary quartz as anhedra to 0.35 mm is also observed in the "groundmass", likely due to the intense fracturing.

Veinlets are planar/sub-planar, up to 2.5 mm thick, and mostly filled by epidote (interlocking, randomly oriented sub/euhedra to about 1 mm, with strong yellow colour indicative of high Fe content although this is partly obscured by limonite staining), variable chlorite (possibly after biotite?, euhedral flakes mostly <0.2 mm, F:M as above), quartz (sub/anhedra to 0.35 mm) and minor sulfides (aggregates to 3 mm long of pyrite sub/euhedra to 0.5 mm, highly fractured/replaced by limonite; trace chalcopyrite <0.15 mm, also oxidized to limonite). Transported limonite coats open fractures.

In summary, this appears to represent plagioclase-minor mafic phyric andesite porphyry intensely fractured and altered to albite-quartz-epidote-chlorite-minor magnetite?-sphene/rutile and cut by a network of veinlets of epidote-chlorite-local quartz-pyrite-chalcopyrite (both oxidized to limonite).

3136: STRONGLY PROPYLITIC/POTASSIC (ALBITE-CARBONATE-CHLORITE-SERICITE-EPIDOTE-MAGNETITE?-SPHENE/RUTILE) ALTERED QUARTZ MONZODIORITE, CUT BY CARBONATE-EPIDOTE-CHALCOPYRITE-PYRITE VEINLETS

Described as diorite from Cirque zone, possibly quartz, albite or actinolite altered with late epidote , chalcopyrite and trace pyrite mineralization; hand specimen shows fine- to medium-grained, dark greenish-grey, strongly fractured and altered intermediate-looking intrusive rock cut by thin planar quartz and epidote veinlets, and fractures coated with limonite and malachite. The rock is weakly magnetic, shows vigorous reaction to cold dilute HCl, and pervasive white etch for plagioclase but only minor/modest yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (albitized, sericite-carbonate altered)	35%
K-feldspar (interstitial/poikilitically encloses plagioclase, primary?)	15%
Quartz (interstitial primary; no secondary identified)	15%
Carbonate (veinlets, after plagioclase, mafics; mainly calcite?)	15%
Chlorite (relict mafic sites)	7%
Sericite (after plagioclase)	5%
Epidote (veinlets, with carbonate, around sulfides)	3%
Chalcopyrite (veinlets, disseminated in relict mafic sites)	1%
Magnetite (primary and secondary?)	1%
Sphene, rutile	1%
Pyrite (veinlets, rare in relict mafic sites)	<1%
Limonite (pitch limonite, after chalcopyrite along fractures/veinlets)	<1%

This sample consists mainly of strongly albite-sericite/carbonate altered plagioclase poikilitically enclosed by interstitial Kspar and quartz (both likely primary), with scattered mafic relics altered to chlorite-carbonate-magnetite-sphene/rutile-sulfides, cut by veinlets of carbonate-epidote-sulfides.

Plagioclase forms randomly oriented, sub/euhedral tabular/lath-shaped relict crystals up to about 3 mm long that are albitized (converted to somewhat rounded/decussate crystals with either vague twinning or lacking twinning, rarely well-defined twinning with Y^010=16º, negative relief compared to quartz, An_{0-5}?), accompanied by 20-50% replacement by sericite as matted, randomly oriented subhedral flakes mainly <0.1 mm, variable carbonate as ragged anhedra mainly <0.2 mm, likely mostly calcite.

K-feldspar enclosing plagioclase forms skeletal sub/anhedra up to 2.5 mm across that are almost fresh, only slightly dusted by clay?/sericite compared to adjacent plagioclase; large 2V suggests orthoclase, likely mainly primary by the distribution.

Quartz is intergrown with Kspar in interstitial position, forming sub/anhedra mainly <1.5 mm in diameter that generally show almost no strain (primary); no quartz was identified in the veinlets.

Relict mafic sites have irregular, ragged outlines rarely to 1.5 mm in size, pseudomorphed by chlorite (subhedral flakes mostly <0.5 mm, bright green pleochroism but near-zero birefringence, F:M 0.5?), carbonate (interlocking ragged sub/anhedra to 0.35 mm, likely mostly calcite?), rare epidote (subhedra <0.25 mm, likely moderate Fe as in the veinlets?). The sites are associated with magnetite (rounded subhedra mainly <0.2 mm, could be partly secondary?), sphene as subhedra to 0.3 mm containing variable minute dark brown rutile <25 μm, and local sulfides (mainly chalcopyrite as subhedra <0.25 mm, rare pyrite to 0.2 mm).

Veinlets up to about 2.5 mm thick consist largely of carbonate (interlocking subhedra to 1.5 mm, mainly calcite) with lesser, variable epidote (stubby sub/euhedra mainly <0.25 mm with pale yellow colour, likely moderate Fe?) and local poddy/blebby sulfides (mainly chalcopyrite, masses to 5 mm long locally containing minor pyrite as cubic euhedra <1 mm). Open fractures are partly coated with limonite or show “pitch” limonite on rims of chalcopyrite.

In summary, this is propylitic/potassic (albite-carbonate-chlorite-sericite-epidote-magnetite?-sphene/rutile) altered quartz monzodiorite, cut by carbonate-epidote-chalcopyrite-pyrite veinlets.

3150: CLINOPYROXENE-MINOR PLAGIOCLASE PHYRIC, LIKELY FRAGMENTAL, LATITE-ANDESITE (CRYSTAL-LITHIC TUFF?) VARIABLY TRANSITIONAL PROPYLITIC/POTASSIC ALTERED TO ACTINOLITE-CHLORITE-MINOR EPIDOTE-MAGNETITE?-SERICITE-TRACE PYRITE-CHALCOPYRITE-CARBONATE

Described as andesite from Mat zone, no sulfides; hand specimen shows dark green, crowded mafic phyric porphyry with somewhat variable texture suggestive of fragmental rock (crystal-lithic tuff or breccia?), and the rock appears closely fractured. The rock is weakly magnetic, shows only trace reaction to cold dilute HCl, and interstitial white etch for plagioclase/minor yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Clinopyroxene (phenocrysts, altered to amphibole)	40%
Amphibole (actinolite/actinolitic hornblende, after pyroxene)	30%
Plagioclase (small phenocrysts; sericitized; groundmass microlites)	15%
Chlorite (matrix in some areas)	7%
K-feldspar (groundmass, intimately mixed with plagioclase)	5%
Epidote (with actinolite or chlorite, in some matrix areas)	1%
Magnetite (coarser primary, local finer secondary?)	1%
Sericite (after plagioclase)	<1%
Pyrite, trace chalcopyrite (with epidote, actinolite in certain clasts?)	<1%
Carbonate (mainly calcite, with epidote, chlorite)	trace

This sample appears to consist of closely packed, poorly defined lithic clasts mostly of 1-2 cm size and almost indistinguishable composition (large clinopyroxene-minor small plagioclase phyric) from matrix/groundmass similarly phyric but variably altered to chlorite-epidote-local trace carbonate ±magnetite-sulfides. Pyroxene is variably altered to amphibole ±chlorite, and plagioclase to sericite.

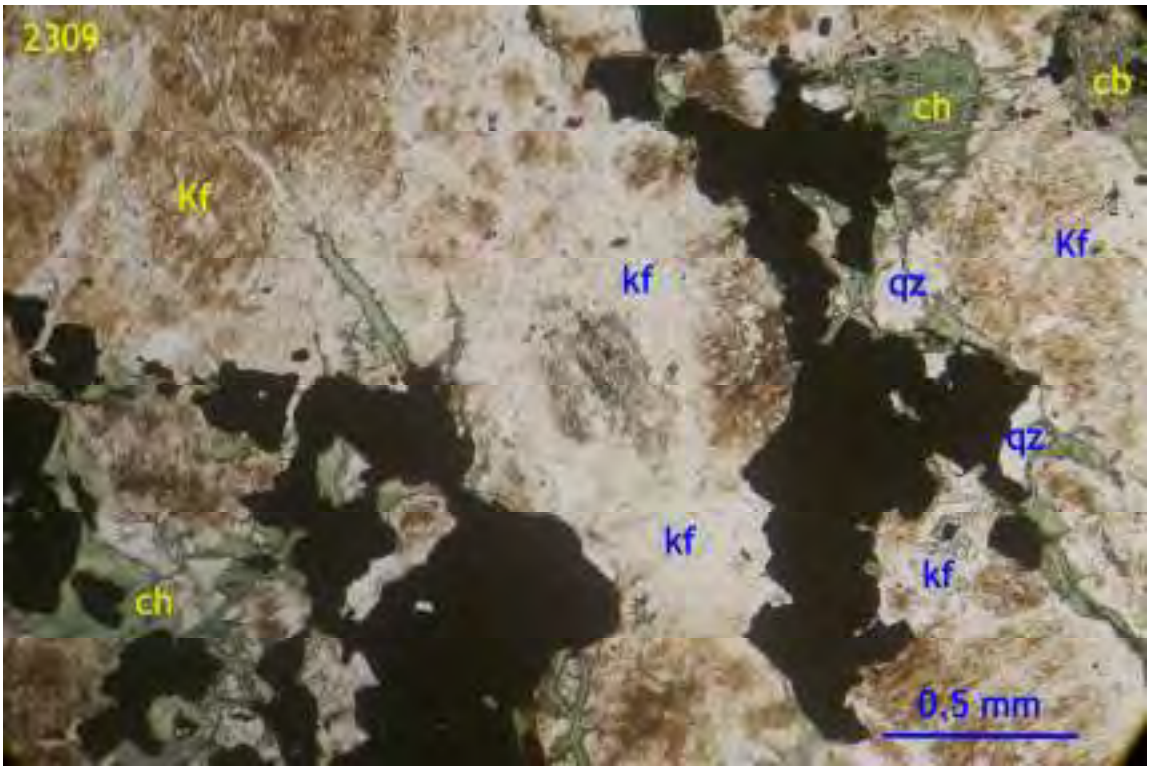
Clinopyroxene phenocrysts are mainly euhedral, although locally embayed at margins by replacing amphibole, and average around 3 mm (range 1-4 mm) in diameter, commonly glomeratic. The crystals are almost colourless, with large extinction angle near 40º, suggestive of augite. They are typically 10-25% replaced, principally around margins, by amphibole that is either dark green and coarser-grained, in parallel position on the pyroxene (subhedra to 1.5 mm, actinolitic hornblende?) or paler green and finer, fibrous, more randomly oriented (<0.75 mm, actinolite?), or in some places, by chlorite as aggregates to 1.25 mm of matted, aligned, subhedral flakes mainly <0.2 mm with pale green colour, near-zero to weakly length-slow, anomalous bluish grey birefringence (F:M 0.5?).

Plagioclase crystals are typically euhedral, slender laths mostly <1 mm long with random orientations; original composition is obscured by thorough (15-30%) replacement by sericite (randomly oriented sub/euhedral flakes <50 μm), but it likely was calcic.

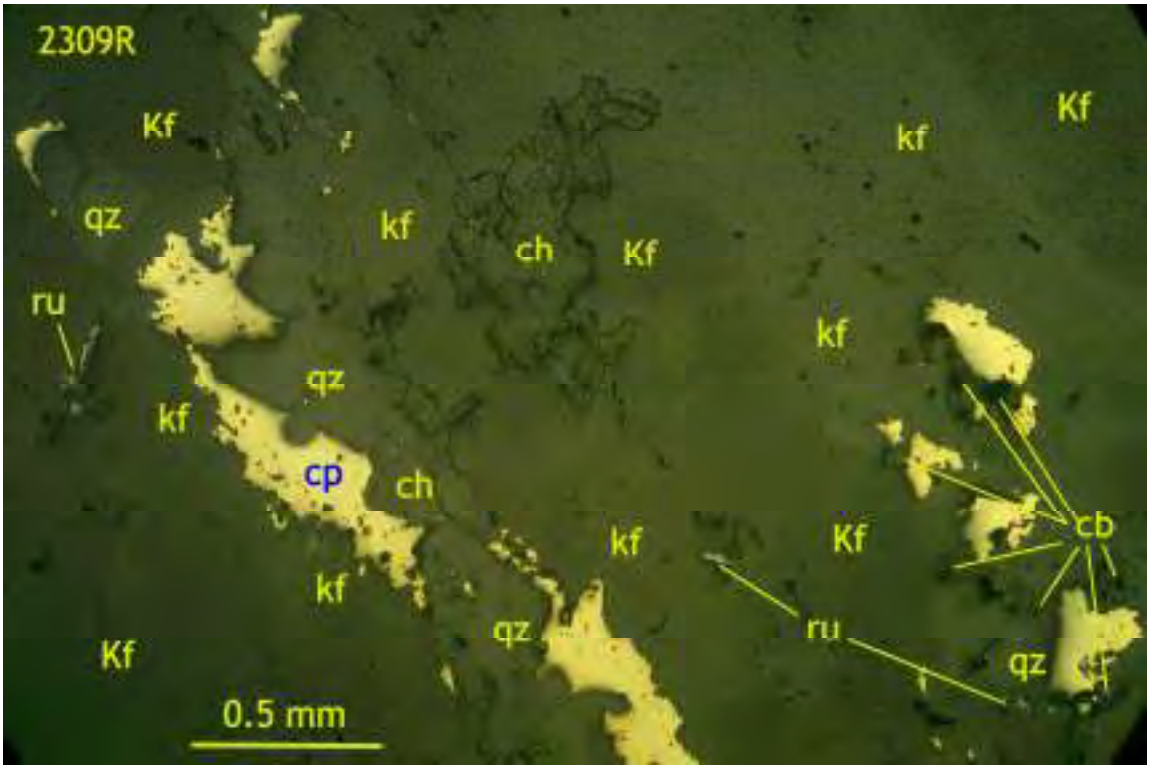
Groundmass in the (poorly defined) clasts typically consists of interlocking, randomly oriented, fibrous laths of amphibole and microlitic to interstitial feldspar (both mainly <0.2 mm long). The feldspar is mainly plagioclase, but appears to include some Kspar to judge by the yellow stain in the offcut (not distinguishable in thin section). It is not clear if this Kspar is primary or secondary, but in one clast, alteration of mafics to epidote is accompanied by minor possibly secondary magnetite and pyrite-trace chalcopyrite (all mainly <0.1 mm). One well-defined 2 cm clast shows extensive, intense replacement of the groundmass by very fine-grained dark amphibole. Generally, magnetite occurs as scattered sub/euhedra to 0.2 mm in both groundmass and phenocrysts, and is likely mainly primary.

Variable matrix is locally strongly altered to chlorite (matted subhedral flakes <35 μm), associated with increased epidote (aggregates to 0.4 mm of subhedra <0.2 mm, bright yellow colour indicative of high Fe content) and local trace carbonate (subhedra <0.15 mm, calcite?). The stronger alteration in the matrix may be related to increased fracturing.

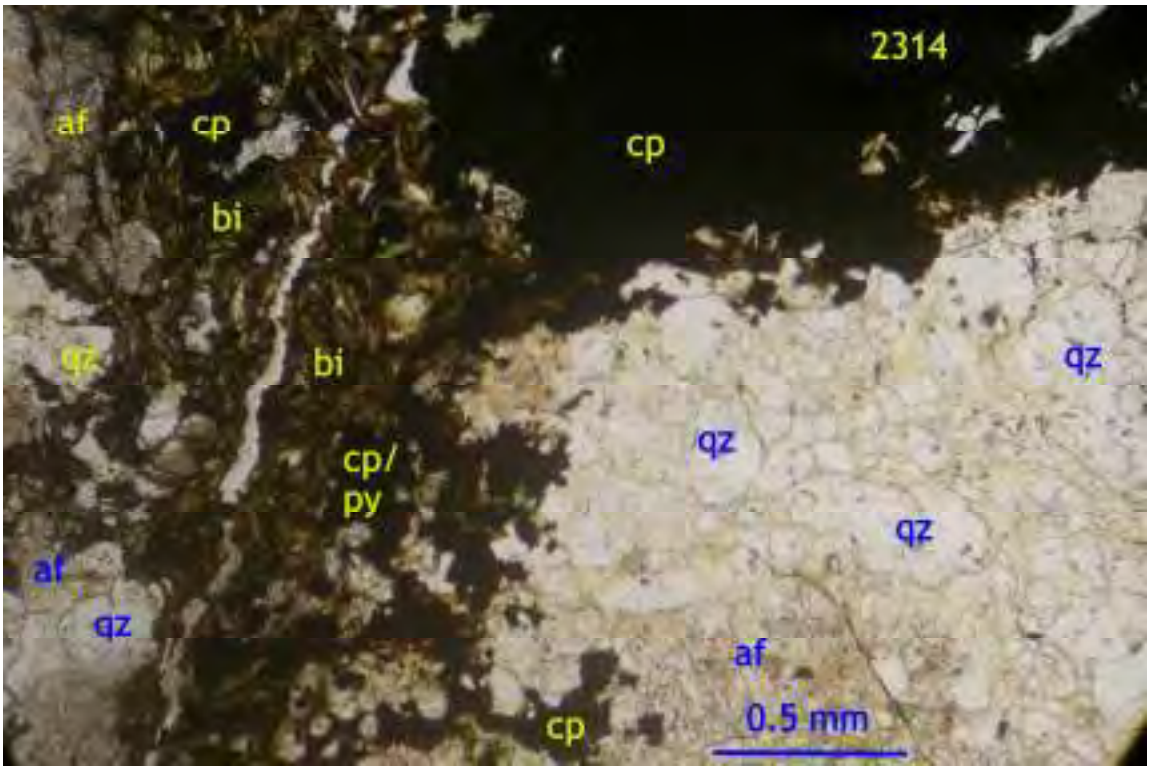
In summary, this is clinopyroxene-minor plagioclase phyric, likely fragmental, latite-andesite (crystal-lithic tuff?) variably transitional propylitic/potassic altered to actinolite-chlorite-minor epidote-magnetite?-sericite-trace pyrite-chalcopyrite-carbonate.



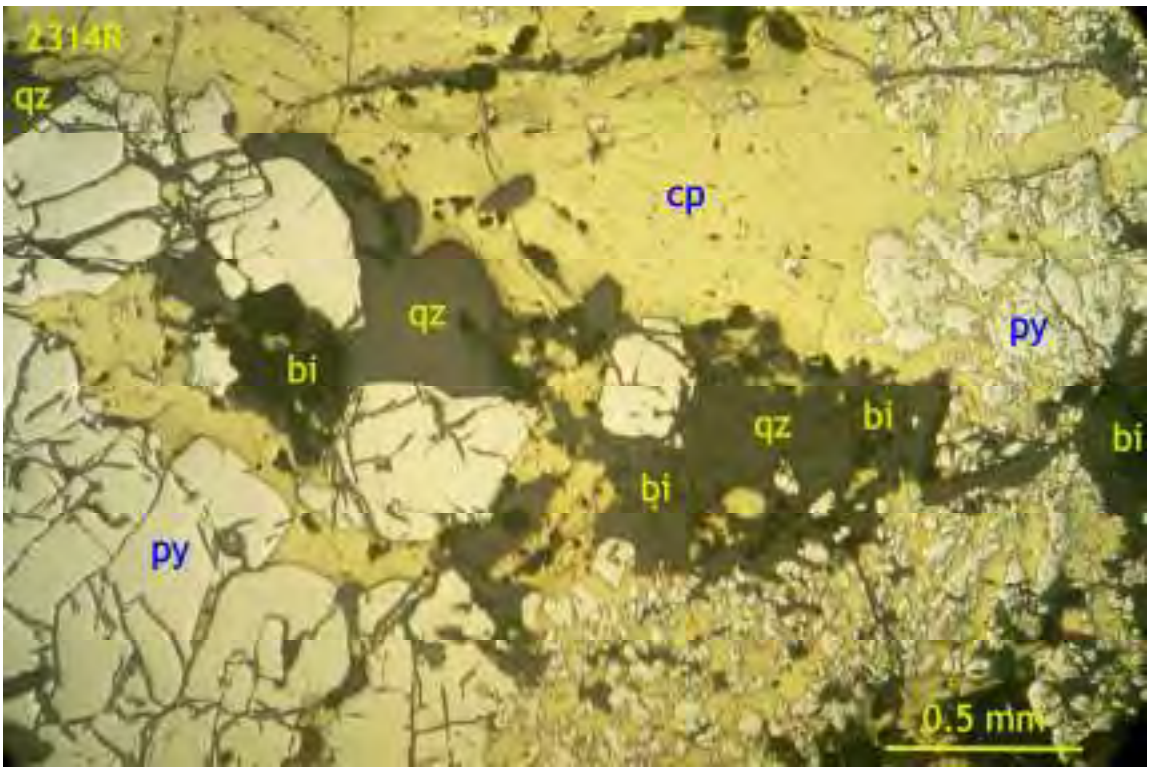
2309: irregular veinlets of sulfide (opaque, mainly pyrite), minor green chlorite (ch)-trace carbonate (cb), local quartz (qz) and common relatively clear secondary Kspar (kf) replacing coarser, hematite-stained Kspar (KF) that may be after former plagioclase (?). Transmitted plane light, field of view ~3 mm wide.



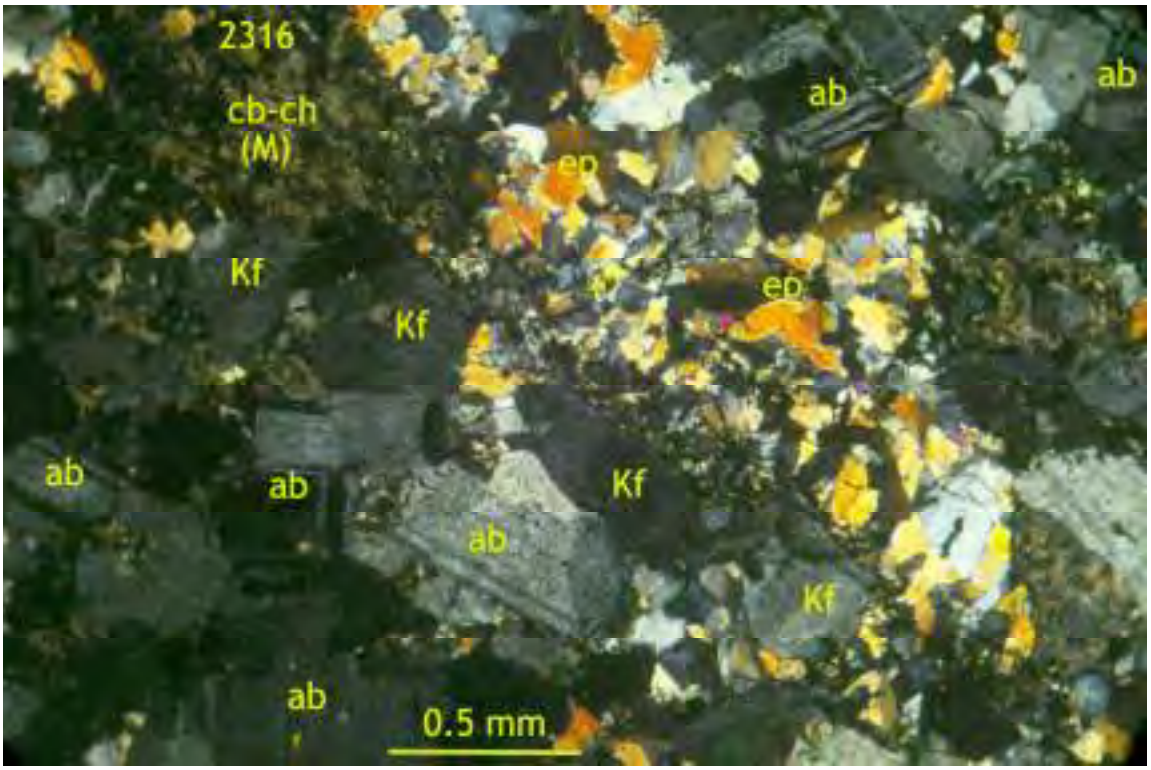
2309R: chalcopyrite (cp) closely associated with sub-planar to irregular poorly defined veinlets of secondary Kspar (kf) replacing darker cores of Kspar clouded by hematite/clay (Kf), variable quartz (qz), chlorite (ch), minor carbonate (cb) and rutile (ru). Reflected light, uncrossed polars, field of view ~3 mm wide.



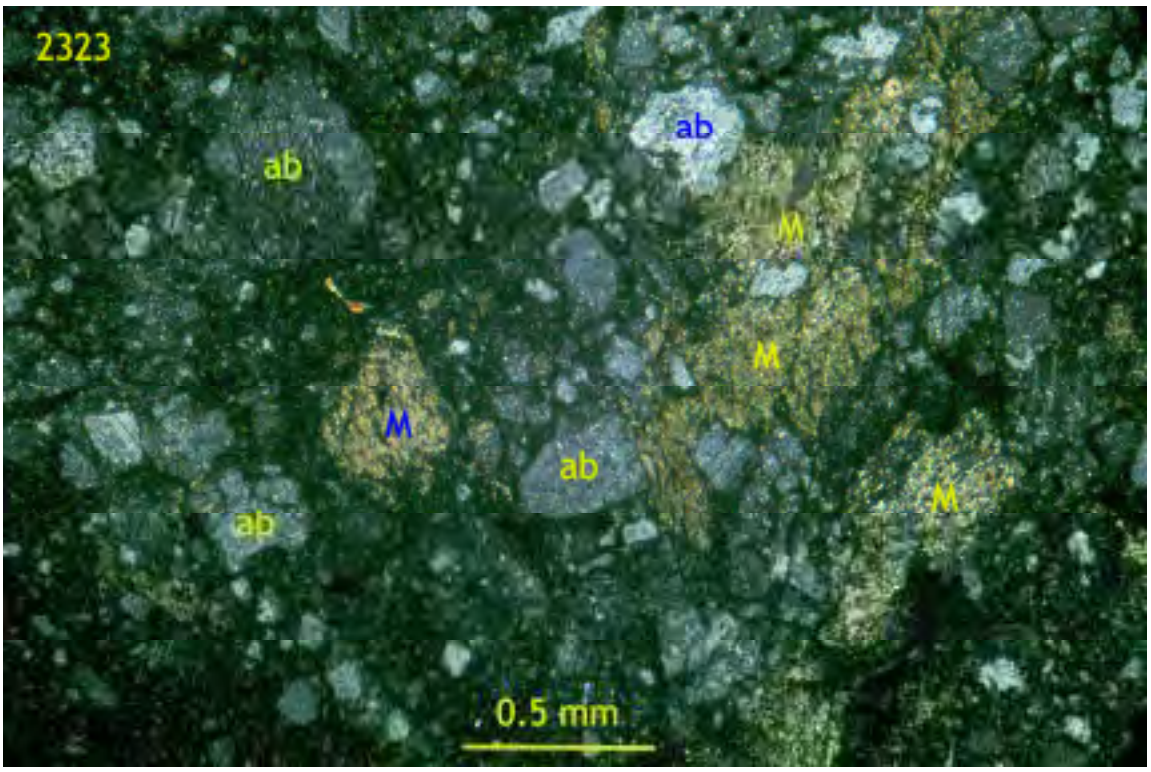
2314: strong/intense, vein/fracture controlled potassic alteration comprising secondary quartz (qz), alkali feldspar (af), and biotite (bi, partly retrograded to sericite, chlorite) closely associated with major sulfides (opaque; mostly chalcopyrite, minor pyrite). Transmitted plane light, field of view ~3 mm wide.



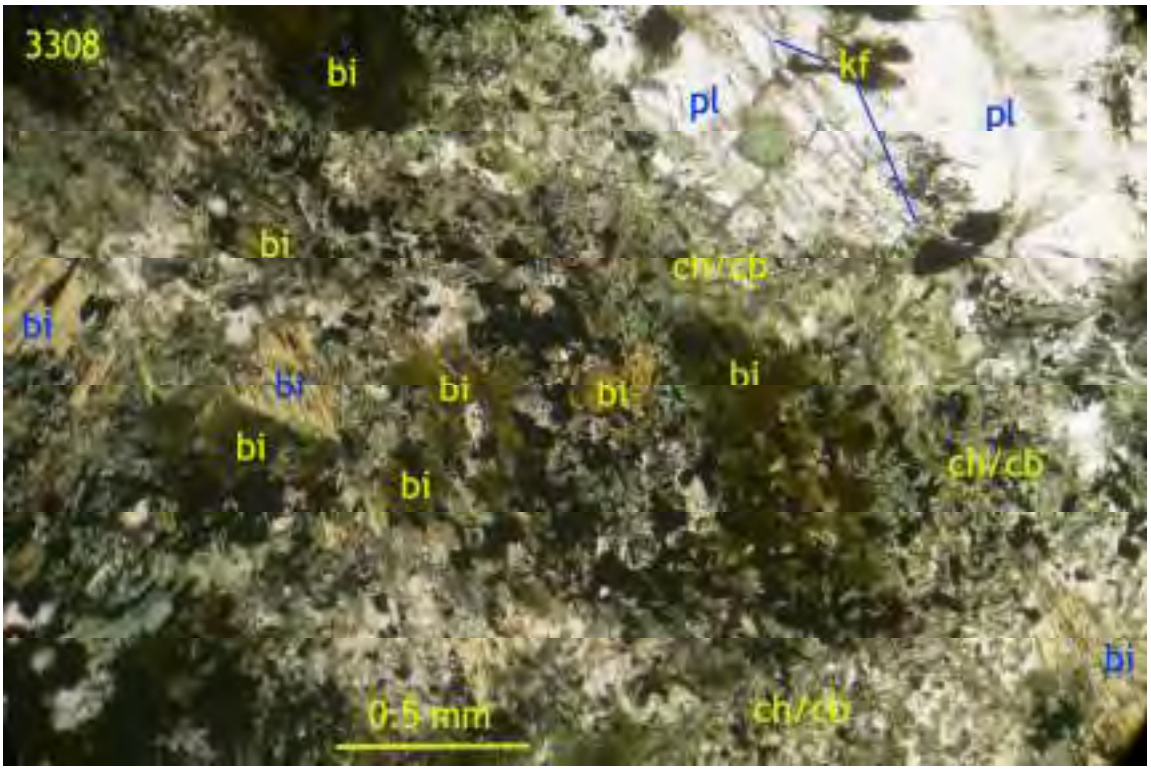
2314R: semi-massive chalcopyrite (cp) containing included pyrite (py) as either fractured euhedra or highly irregular fine-grained aggregates. Gangue areas are mostly secondary quartz (qz) or intermixed biotite-sericite-chlorite (bi). Reflected light, uncrossed polars, field of view ~3 mm wide.



2316: poorly defined veinlet of epidote-group mineral (bright colours, zoisite/clinozoisite?)-minor carbonate (cb) and chlorite, the latter possibly representing former mafic sites (?), with local secondary Kspar (kf) partly replacing adjacent plagioclase (ab, twinned, likely albitized). Transmitted light, crossed polars, field of view~3 mm wide.



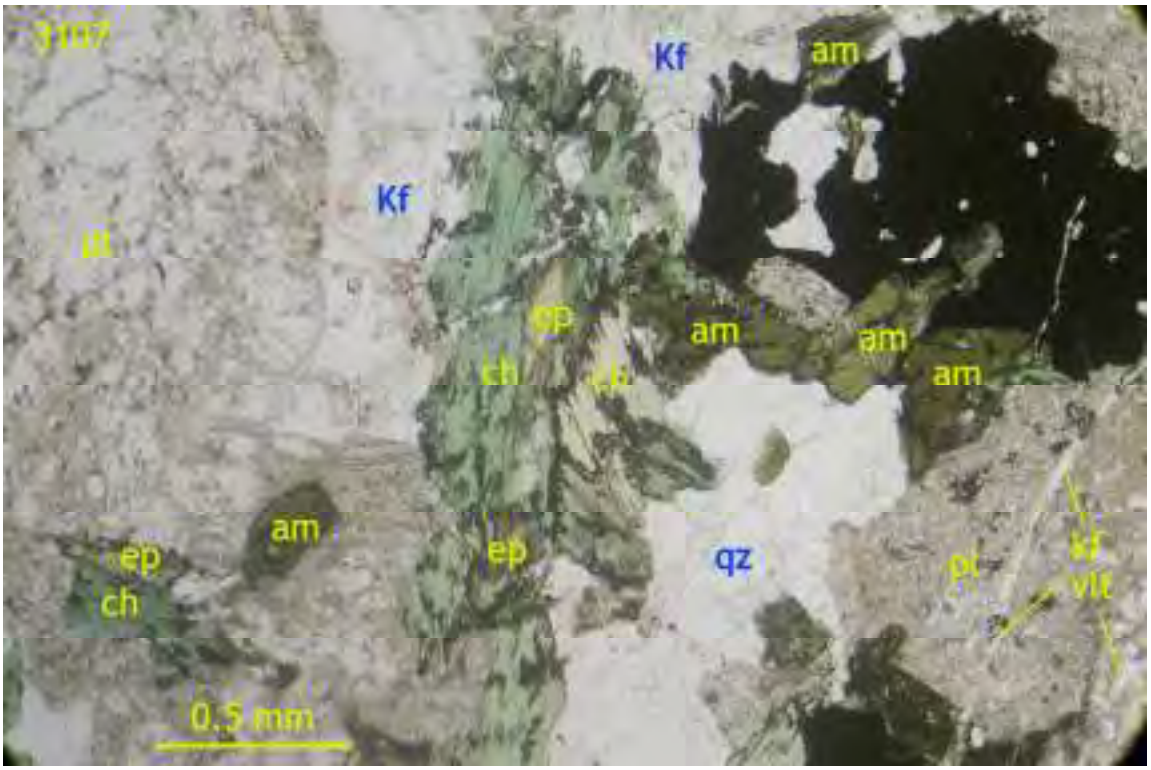
2323: sheared, crushed diorite (?) composed of rounded, comminuted plagioclase (ab; albitized, weakly sericitized) and relict mafic sites (M, pseudomorphed by fine-grained, intimately mixed chlorite and carbonate, accessory magnetite and sphene/rutile) in comminuted matrix of albite-chlorite-carbonate. Transmitted light, crossed polars, field of view~3 mm.



3308: fine-grained chalcopyrite/lesser bornite-local magnetite (opaques) associated with greenish brown, likely secondary biotite (bi) within relict mafic site heavily altered to fine-grained chlorite-carbonate ±sericite that also attacks adjacent plagioclase (pl), cut by hairline carbonate-Kspar (kf) fracture. Transmitted plane light, field of view ~3 mm wide.



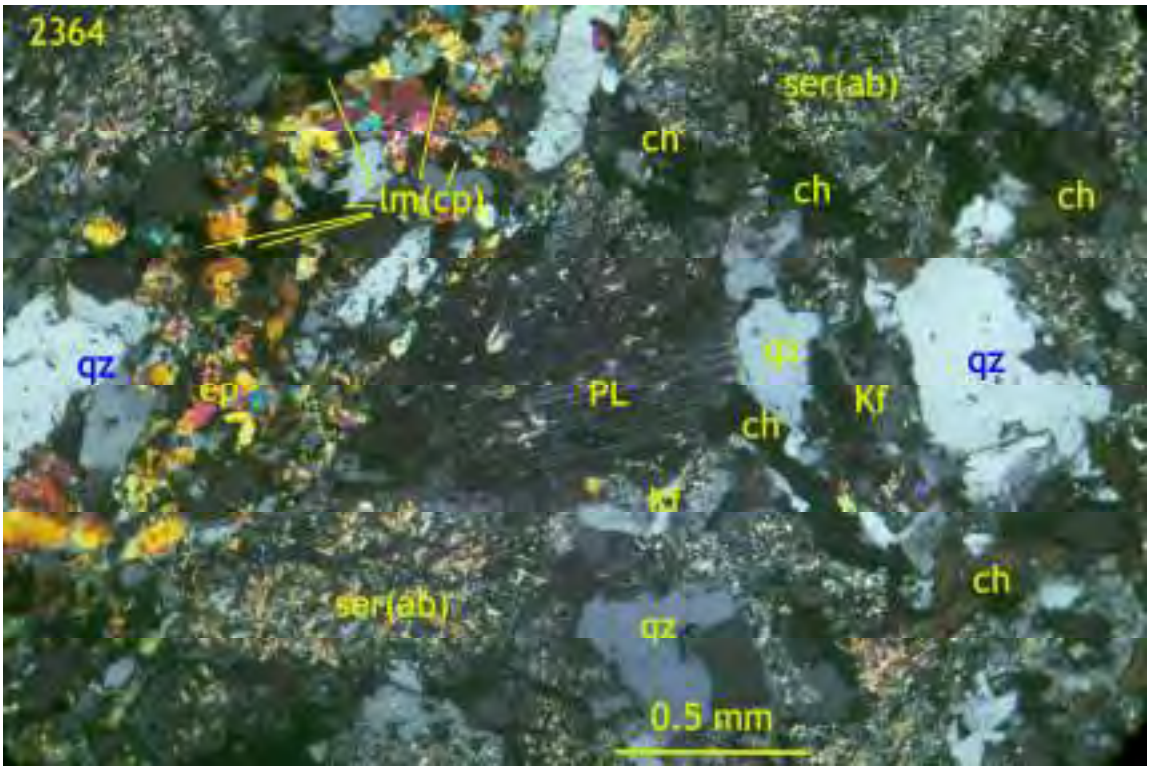
3308R: chalcopyrite (cp) and bornite (bn) associated with/replacing magnetite (mt) and secondary biotite (bi) or rimming epidote (ep)-chlorite (ch); adjacent chlorite-carbonate altered relict mafic (M) is not closely associated with Cu mineralization. Reflected light, uncrossed polars, field of view ~3 mm wide.



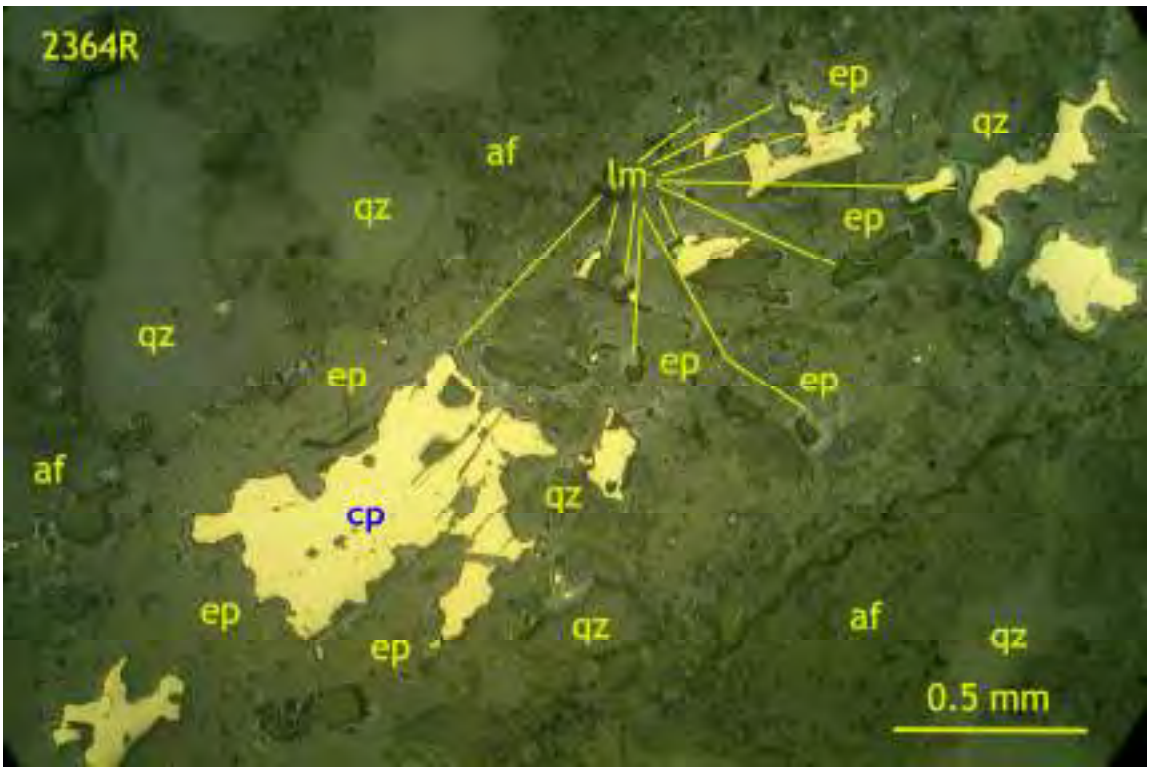
3107: quartz monzodiorite composed of plagioclase (pl, sericite altered, cut by thin secondary Kspar veinlet), interstitial primary quartz (qz) and Kspar (Kf), variable mafics (dark green amphibole, am; bright green chlorite-epidote after biotite) associated with magnetite ±ilmenite (opaques). Transmitted plane light, field of view ~3 mm wide.



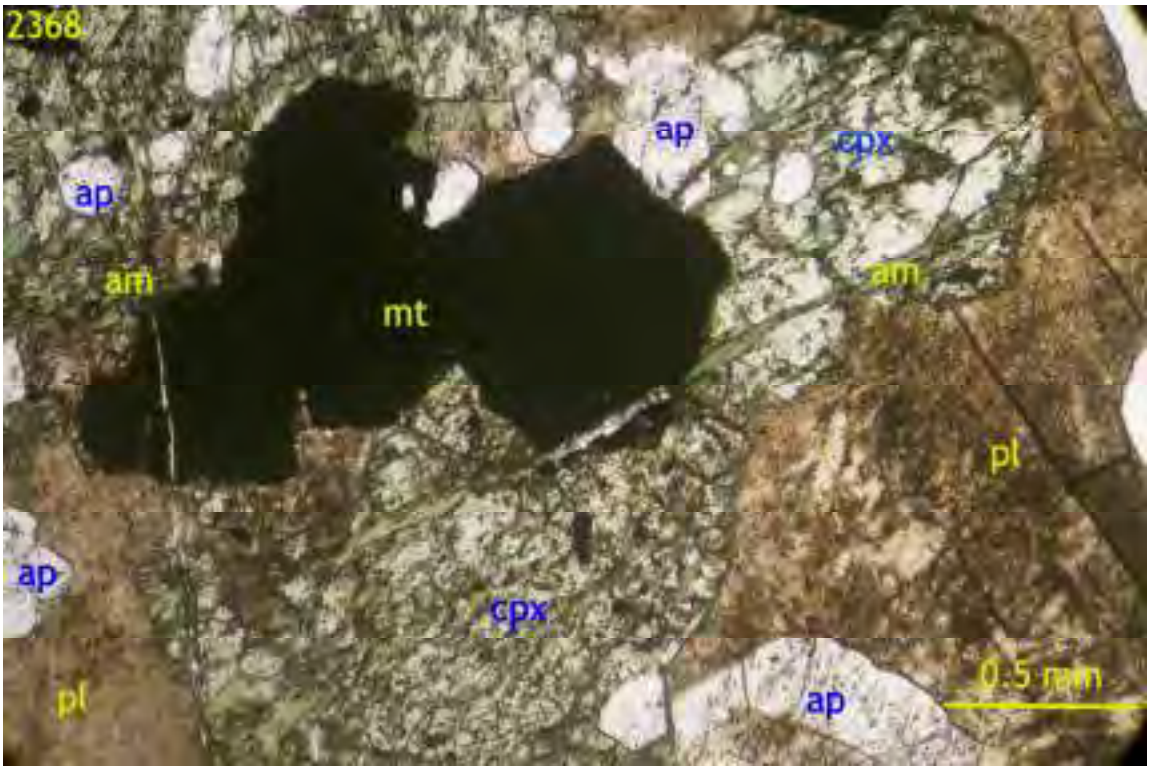
3112: weakly porphyritic granodiorite with phenocrysts of plagioclase (PL) and acicular amphibole (am) in finer-grained groundmass of plagioclase-Kspar-quartz-amphibole-magnetite (opaque); minor alteration to sericite, chlorite and epidote. Transmitted light, crossed polars, field of view ~3 mm wide.



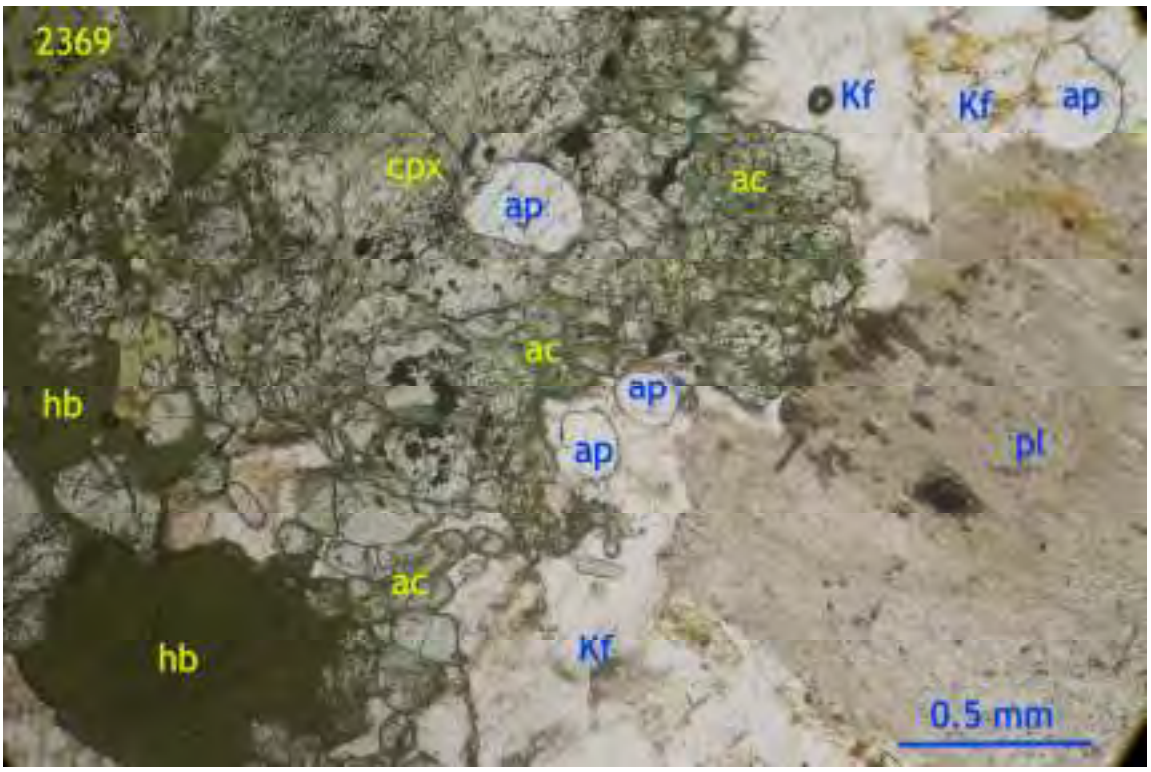
2364: small, rounded/corroded plagioclase phenocryst (PL) altered to albite, sericite ±zoisite, attacked by groundmass of quartz (qz), Kspar (kf), chlorite (ch) after mafics, adjacent to veinlet of quartz, epidote (ep) and pitch limonite (lm) after chalcopyrite. Transmitted light, crossed polars, field of view ~3 mm wide.



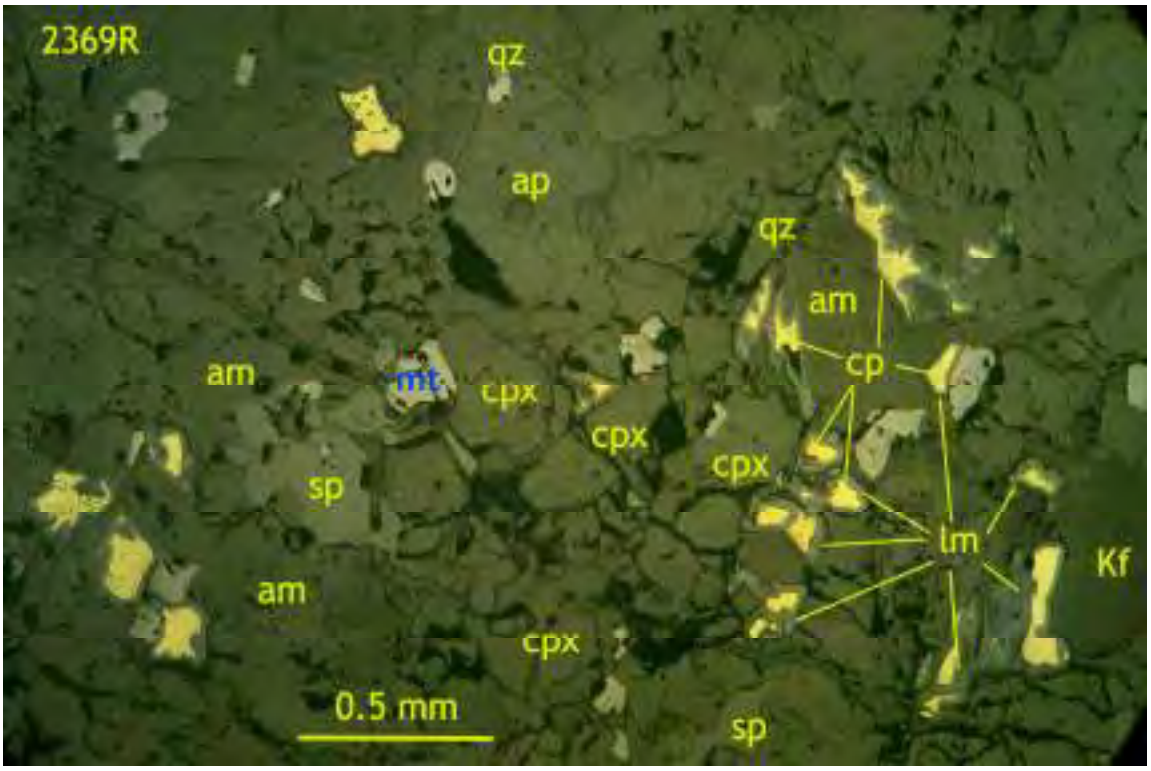
2364R: well-defined veinlet of epidote (ep) and quartz (qz) mineralized with chalcopyrite (cp) partly rimmed and/or replaced by pitch limonite (lm); note abundant quartz and sericitized, albite/Kspar altered alkali feldspar (af) in immediate envelope. Reflected light, uncrossed polars, field of view ~3 mm wide.



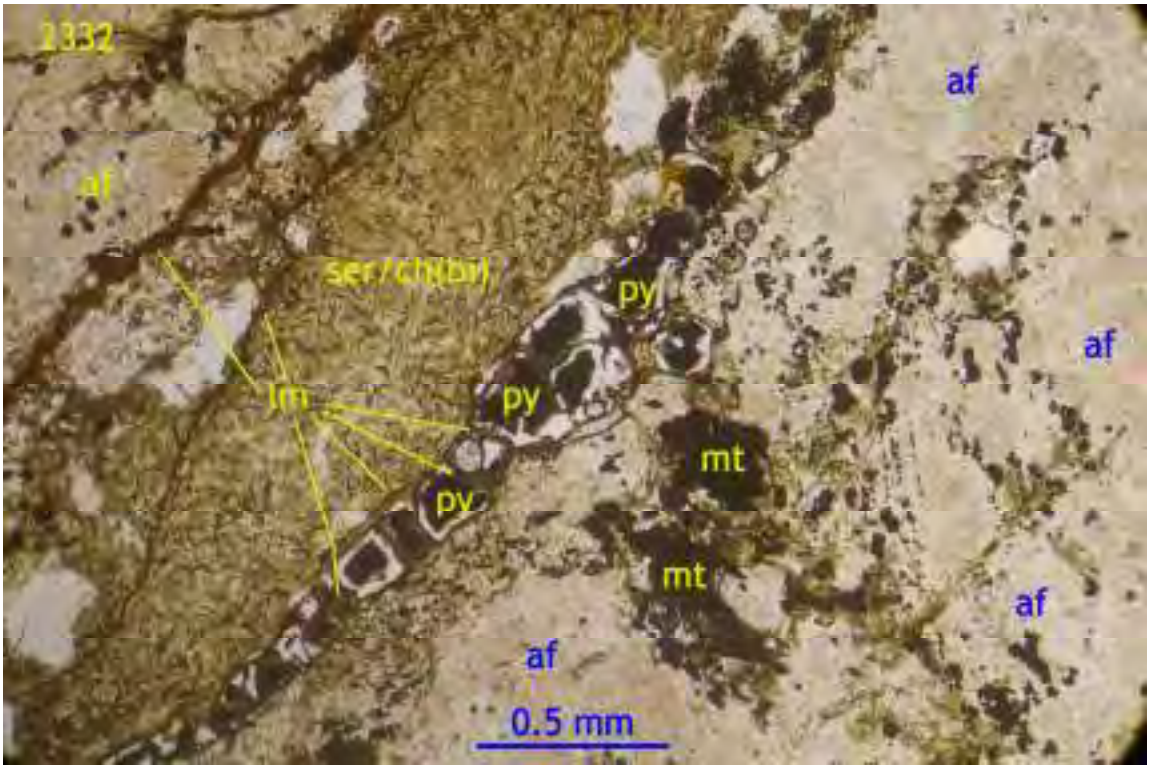
2368: coarse monzodiorite composed of saussuritized plagioclase (pl, locally largely replaced by late-magmatic Kspar e.g. out of view to the right), pale greenish clinopyroxene (cpx) partly altered to darker green amphibole (am) along fractures, significant accessory magnetite (opaque) and apatite (ap). Transmitted plane light, field of view ~3 mm wide.



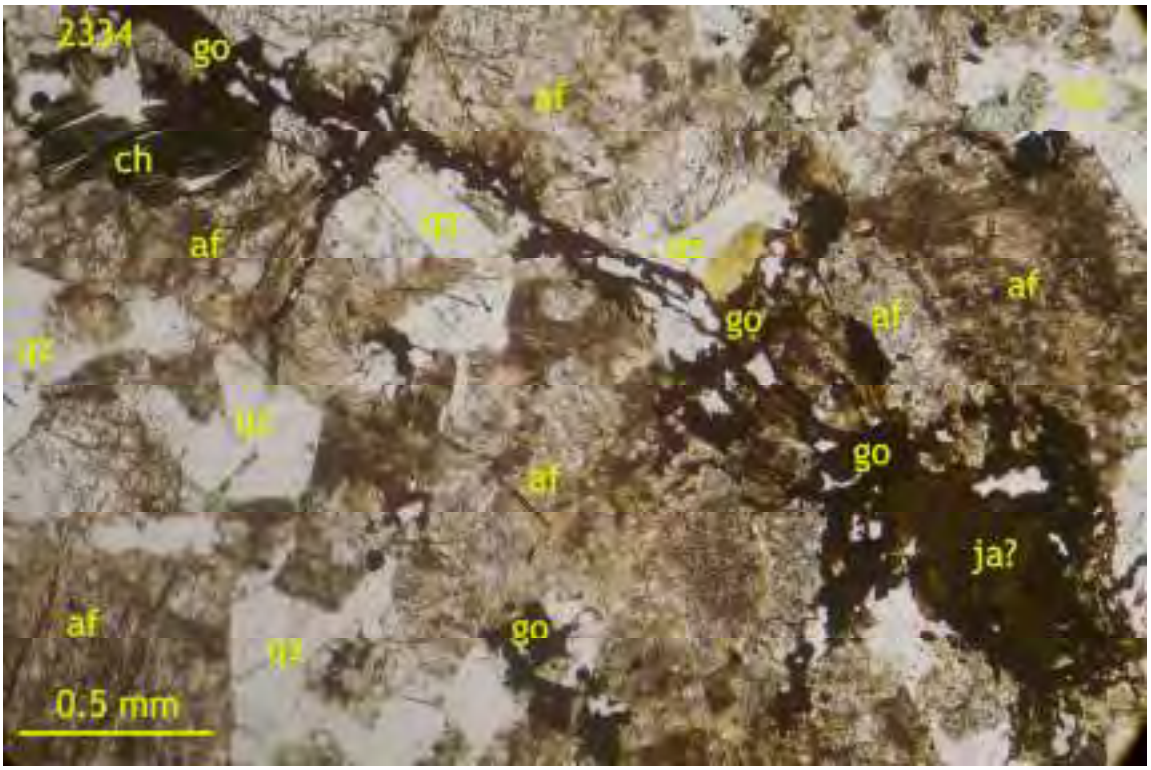
2369: margin of clinopyroxene-rich area (cpx, partly replaced by dark green, late-magmatic hornblende, hb, and pale green fibrous actinolite, ac) with feldspar-rich area (central saussuritized plagioclase, pl, replaced at margins by Kspar, Kf); note accessory magnetite (opaque), apatite (ap). Transmitted plane light, field of view ~3 mm wide.



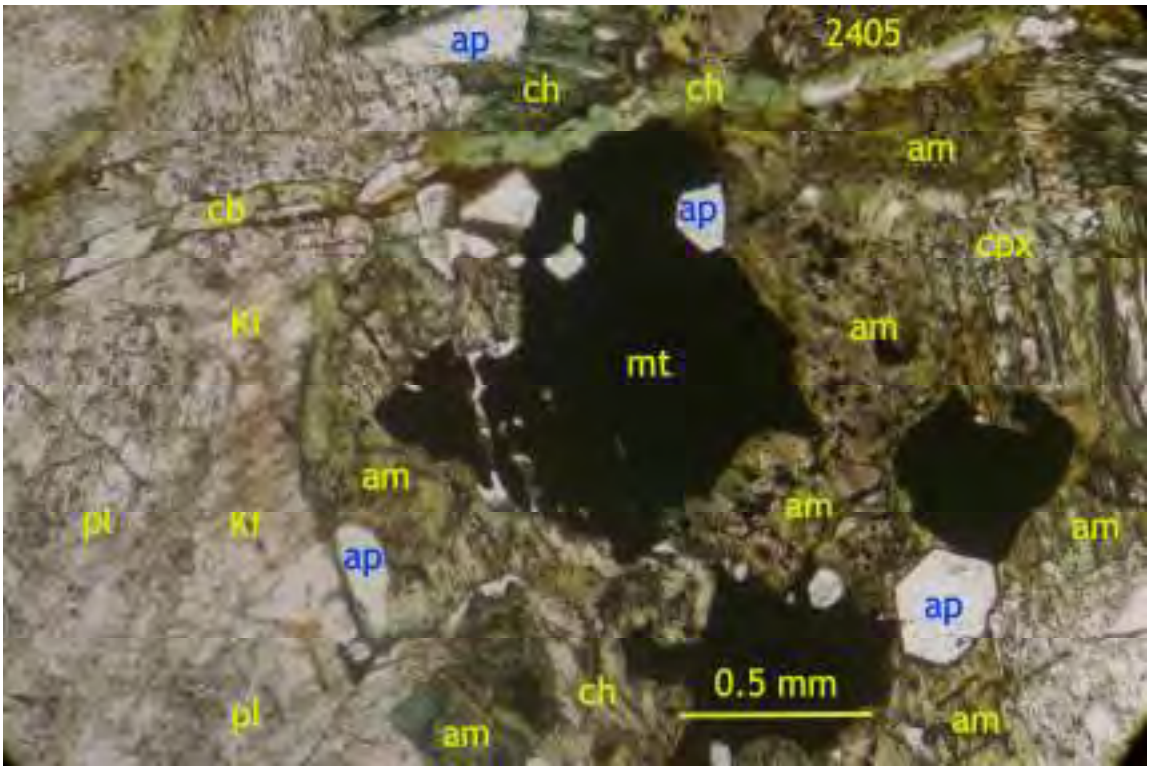
2369R: intergrown clinopyroxene (cpx), amphibole (am), Kspar (Kf), quartz (qz), apatite (ap), sphene (sp) and magnetite (mt) closely associated with disseminated chalcopyrite (cp) partly oxidized at rims to pitch limonite (lm). Reflected light, uncrossed polars, field of view ~3 mm wide.



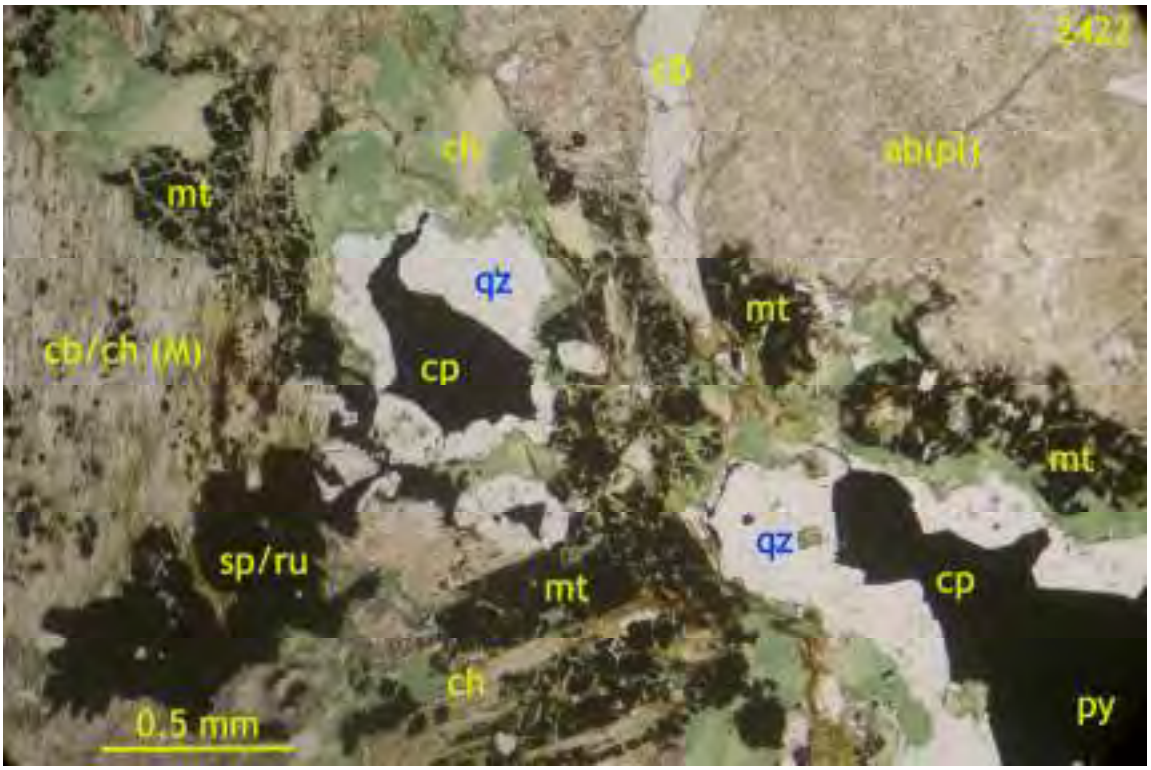
2332: strong/intense potassic altered rock of uncertain origin, composed of secondary alkali feldspar (af, including albite?-Kspar) cut by veinlet of secondary biotite (bi, part retrograded to sericite-chlorite), secondary magnetite (mt, most opaques) and minor pyrite (py, along veinlet, part oxidized to limonite, lm). Transmitted plane light, field of view ~3 mm.



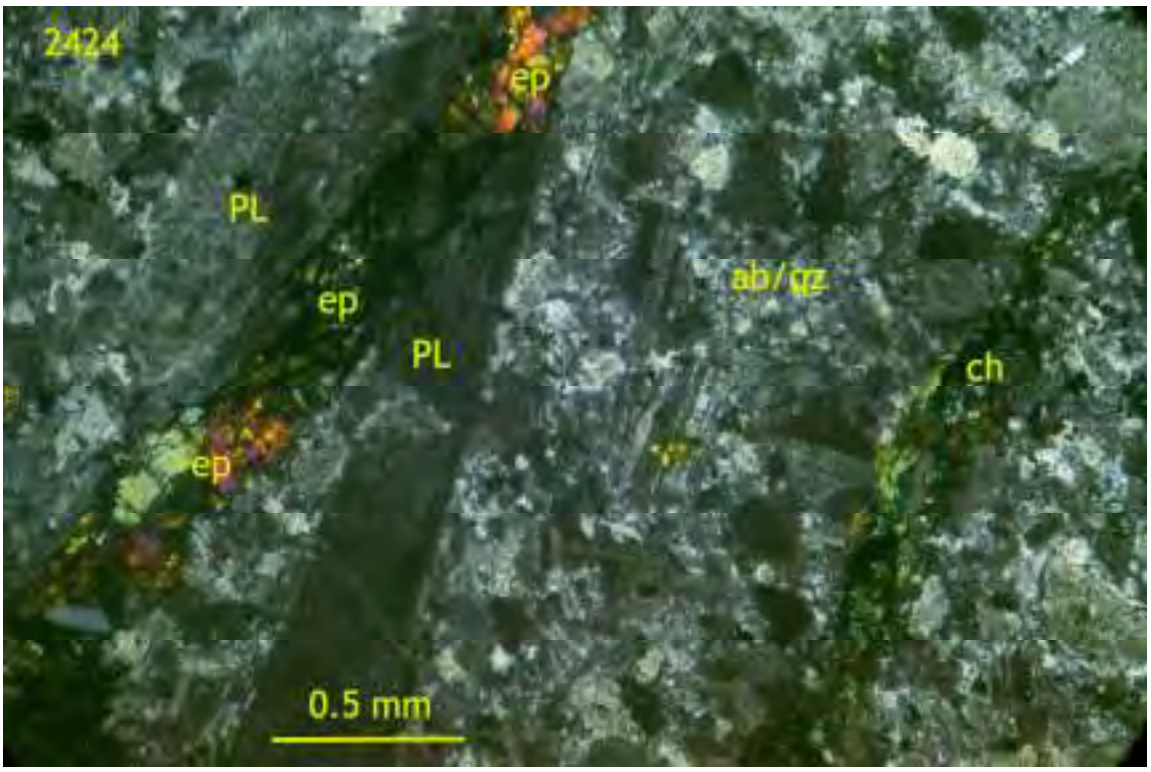
2334: possible quartz monzonite so strongly potassic altered to alkali feldspar (af, Kspar ±albite), local quartz (qz, mainly primary except along veinlets), minor chlorite (ch, relict mafics, former biotite?) to resemble syenite. Limonite (reddish goethite, go; local yellow jarosite, ja?) is mainly found along thin veinlets with carbonate, and likely represents oxidized sulfides that could include pyrite and possible chalcopyrite. Transmitted plane light, field of view ~3 mm wide.



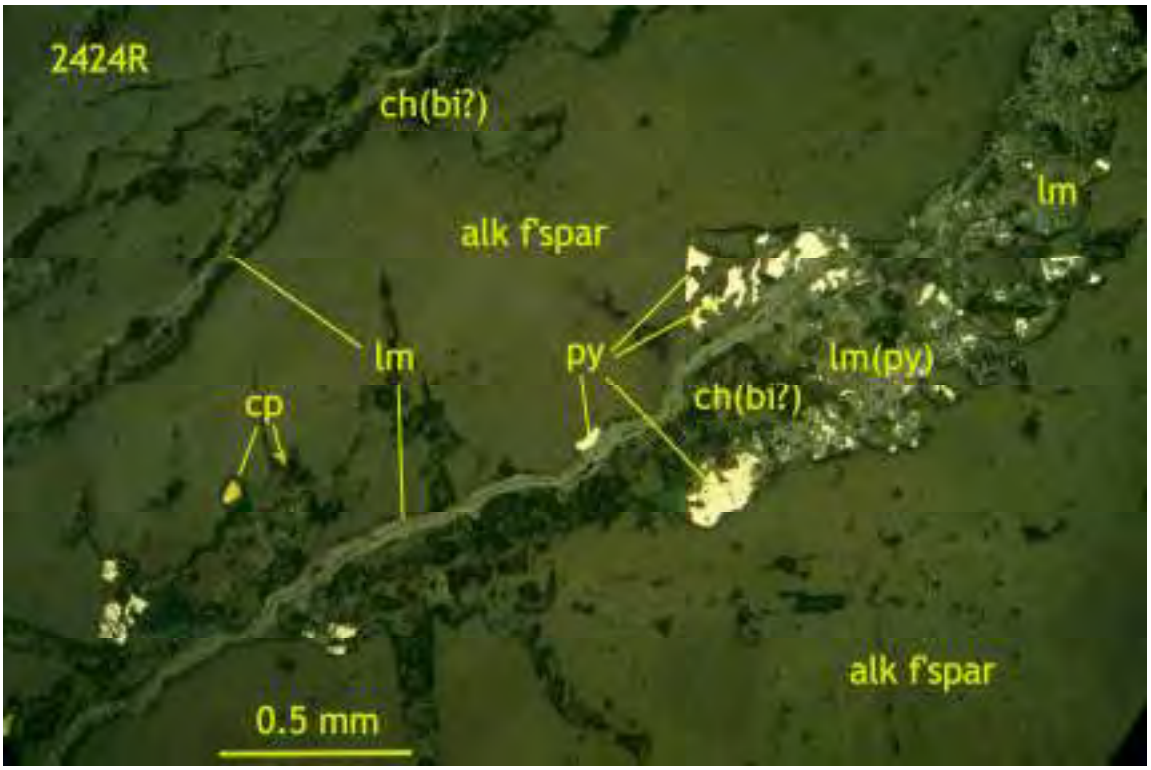
2405: monzodiorite composed of plagioclase (pl) partly overgrown by interstitial Kspar (Kf), relict clinopyroxene (cpx) partly replaced by amphibole (am) and associated with local chlorite (ch, after biotite?), accessory magnetite (opaque) and apatite (ap), cut by carbonate-chlorite veinlet. Transmitted plane light, field of view ~3 mm wide.



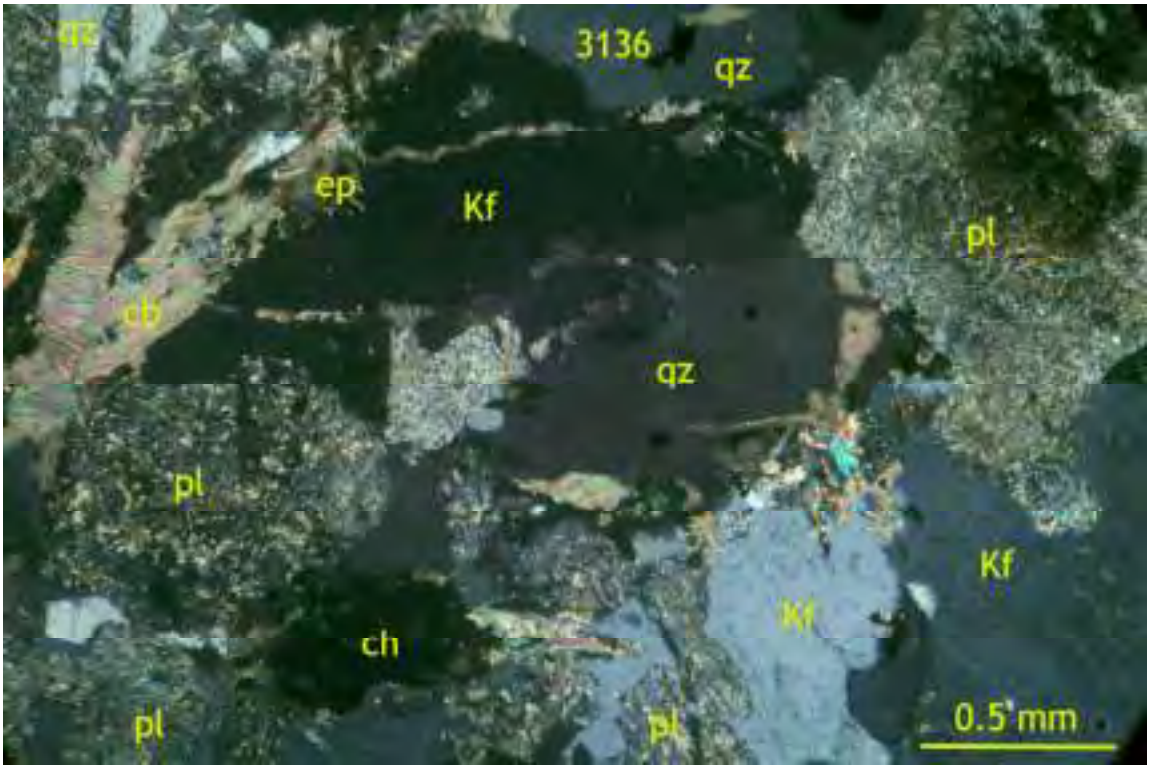
2422: diorite/gabbro composed of albite (ab, after plagioclase) and carbonate-chlorite (cb/ch, after pyroxene?) with associated magnetite (mt) and sphene/rutile (sp/ru), cut by veinlets of quartz (qz)-chalcopyrite (cp)-pyrite (py), later carbonate-chlorite. Transmitted plane light, field of view ~3 mm wide.



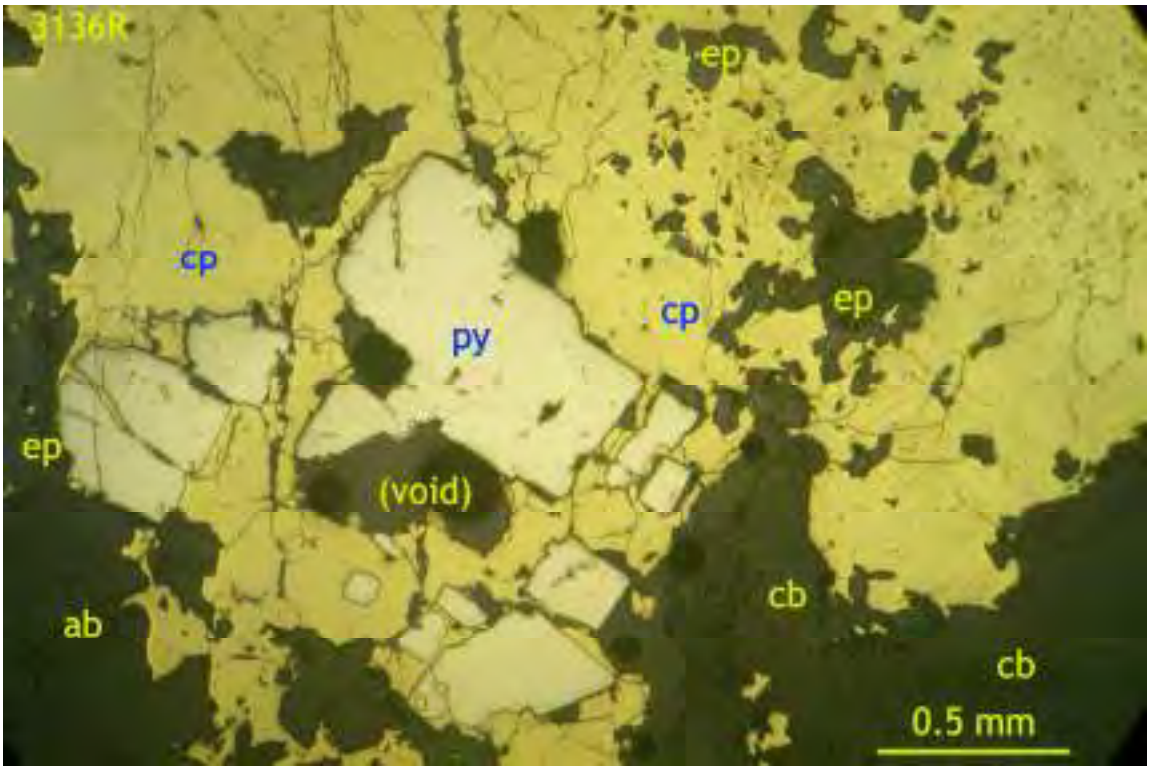
2424: partly comminuted, relict (albitized) plagioclase phenocrysts (PL) in groundmass of (secondary) albite and lesser quartz, cut by planar veinlets of epidote (ep) and chlorite (possibly after former secondary biotite?). Transmitted light, crossed polars, field of view ~3 mm wide.



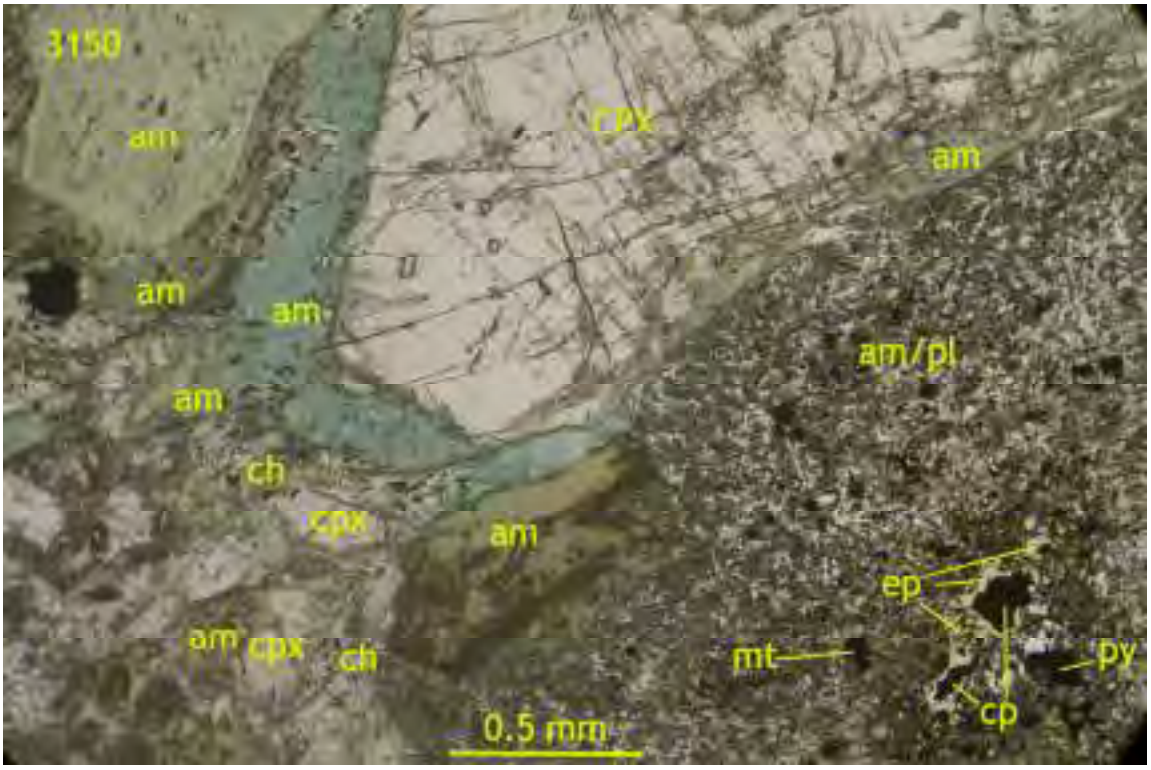
2424R: veinlets of chlorite (ch) and limonite (lm) partly to largely replacing pyrite (py) and much lesser chalcopyrite (cp). Reflected light, uncrossed polars, field of view ~3 mm wide.



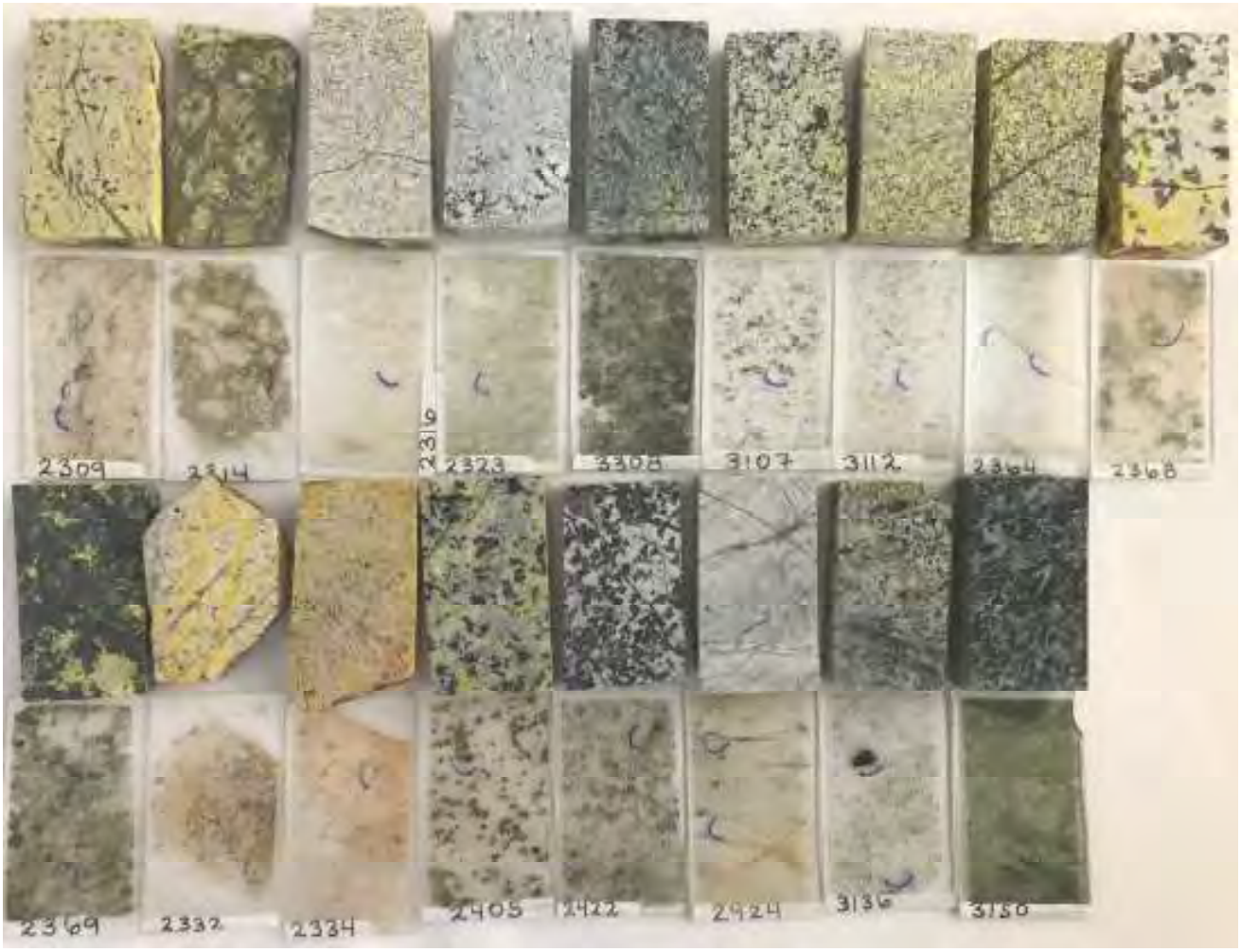
3136: quartz monzodiorite composed of sericitized, albitized plagioclase (pl) poikilitically enclosed in interstitial Kspar (Kf) and quartz (qz) plus local chlorite-carbonate-trace sulfide altered mafic relics (ch), cut by veinlets of carbonate (cb)-minor epidote. Transmitted light, crossed polars, field of view ~3 mm wide.



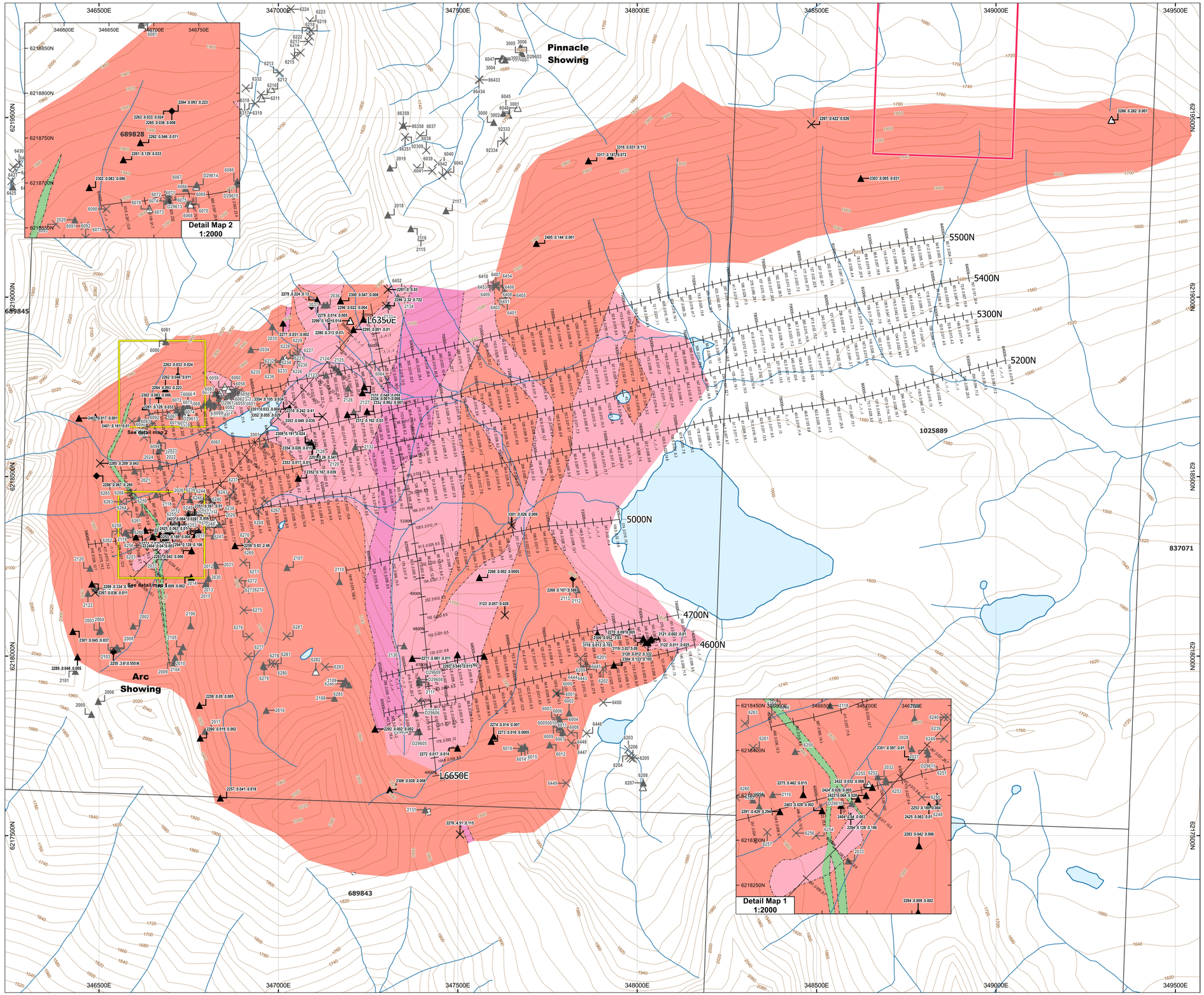
3136R: large bleb of chalcopyrite (cp) with lesser included euhedral pyrite (py), minor epidote (ep), associated with albite (ab) altered plagioclase, and with adjacent carbonate (cb) vein. Reflected light, uncrossed polars, field of view ~3 mm wide.

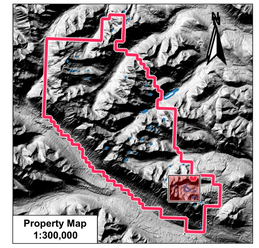


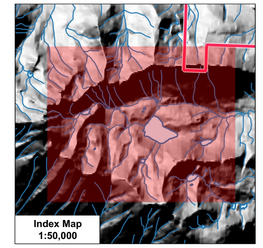
3150: coarse clinopyroxene (CPX) phyric, latite-andesite crystal-lithic tuff (?) in which pyroxene is variably amphibole (am) altered, matrix/groundmass is variably chlorite (ch) or amphibole altered, the latter with local epidote (ep) associated with minor secondary magnetite-pyrite (py)-chalcopyrite (cp); some magnetite elsewhere, mt, may be primary). Transmitted plane light, field of view ~3 mm wide.



Overview of thin sections and offcuts (blue semi-circles mark photomicrograph locations).







LEGEND

GEOCHEMISTRY

Rock samples (2020, historical)
- Chip
- Grab-Float
- Grab-Outcrop
- Grab-Subcrop

Soil samples
- 2020 grid lines
- 87.5, 0.005, 1.7 Cu (ppm), Au (ppm), As (ppm), (-1 :No sample collected)
- Historical contour samples

3359, 0.032, 0.002 Sample, Cu (%), Au (ppm) - only 2020 results shown

GEOLOGY

Interpreted Structure
- Fault
- Thrust
- Contacts

Lithology (inferred)
- Latite porphyry
- Mafic dyke
- Aplite
- Syenite
- Monzonite
- Quartz monzonite
- Quartz diorite, quartz monzodiorite
- Diorite

TOPOGRAPHY
- Watercourse
- Waterbody
- Contours (20m interval)

TENURES
- Property boundary
- Mineral tenures

N

0 250 500 m

NAD 83, UTM Zone 10 North
NTS 94C, TRIM 094C003

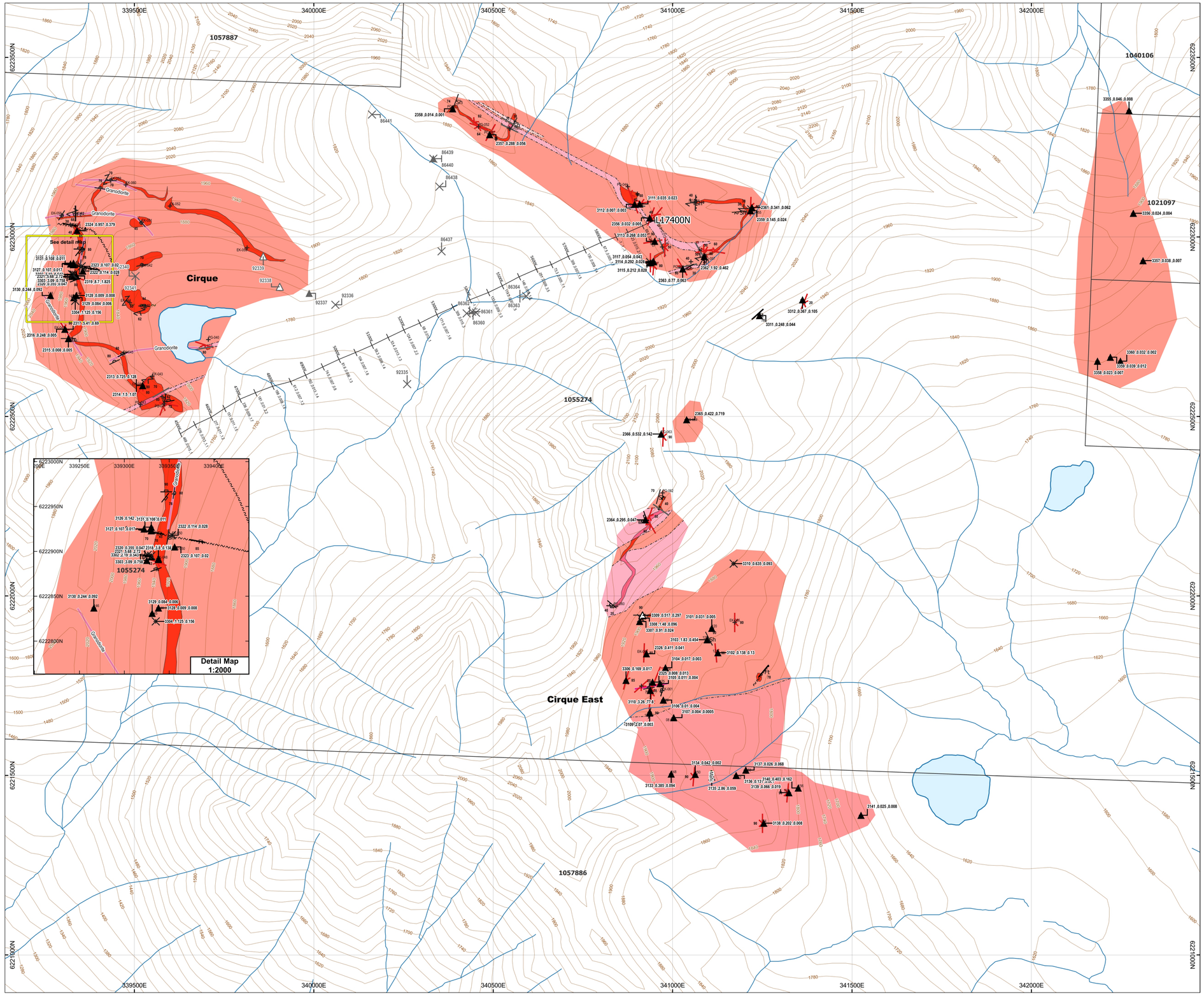
IMC INTERNATIONAL MINING CORP.

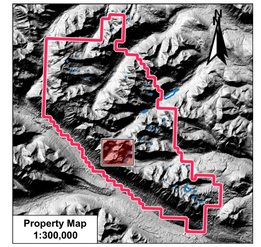
SOIL AND ROCK GEOCHEMISTRY CATHEDRAL AREA

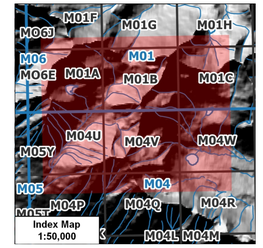
Thane Project
Omineca Mining Division, British Columbia, Canada

Project No.:	P71	By:	PG, EK, TV
Scale:	1:5,000	Drawn:	TV
Figure No.:	10	Date:	December 2020

CME







LEGEND

GEOCHEMISTRY

Rock samples (2020, historical)

- Chip
- Grab-Float
- Grab-Outcrop
- Grab-Subcrop

Soil samples

- 2020 grid lines
- 309, 0.007, 2.04 Cu (ppm), Au (ppm), Mo (ppm), (-1 :No sample collected)
- Historical contour samples

3102, 0.138, 0.13, 160.5 Sample, Cu (%), Au (ppm), Mo (ppm) - only 2020 results shown

GEOLOGY

- Field station

Structure Symbols

- Vein
- Fault
- Shear
- Breccia
- Joint, fracture
- Dyke
- Contact

Structures

- Breccia
- Chlorite shear
- Fault
- Shear

Dykes

- Aplite
- Granodiorite
- Kspar-quartz
- Quartz-plagioclase phyric
- Mafic
- Latite porphyry
- Syenite

Interpreted Structure

- Fault
- Thrust
- Contacts

Lithology (outcrop / inferred)

- Latite porphyry
- Mafic dyke
- Aplite
- Syenite
- Monzonite
- Quartz monzonite
- Quartz diorite, quartz monzodiorite
- Diorite

TOPOGRAPHY

- Watercourse
- Waterbody
- Contours (20m interval)

TENURES

- Property boundary
- Mineral tenures

N

0 250 500 m

NAD 83, UTM Zone 10 North
NTS 94C, TRIM 094C013

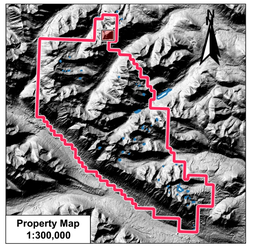
IMC INTERNATIONAL MINING CORP.

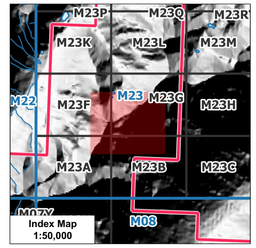
GEOLOGY AND GEOCHEMISTRY CIRQUE AREA

Cathedral Project
Omineca Mining Division, British Columbia, Canada

Project No.:	P71	By:	PG, EK
Scale:	1:5,000	Drawn:	TV
Figure No.:	12	Date:	December 2020

CME





LEGEND

GEOCHEMISTRY

Rock samples (2020, historical)

- Chip
- Grab-Float
- Grab-Outcrop
- Grab-Subcrop

Soil samples

- 2020 grid lines
- 87.5, 0.005, 1.7 Cu (ppm), Au (ppm), As (ppm), (-1 :No sample collected)
- Historical contour samples

3150, 0.013, 0.002 Sample, Cu (%), Au (ppm) - only 2020 results shown

TOPOGRAPHY

- Watercourse
- Waterbody
- Contours (20m interval)

TENURES

- Property boundary
- Mineral tenures



0 100 200 m

NAD 83, UTM Zone 10 North
NTS 94C, TRIM 094C023

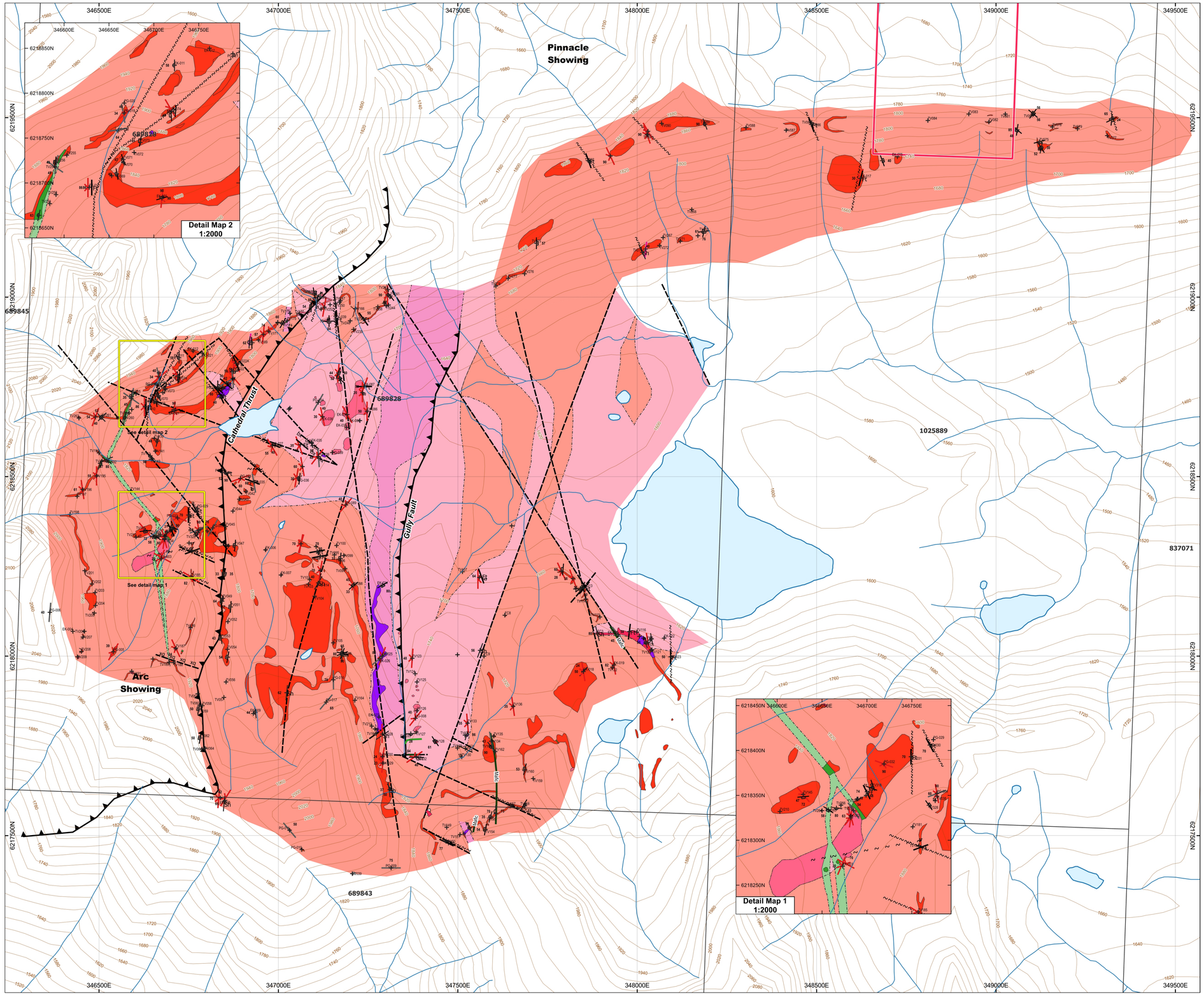
IMC INTERNATIONAL MINING CORP.

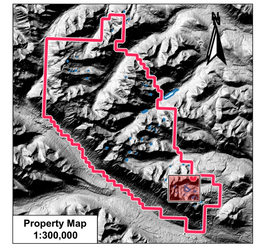
SOIL AND ROCK GEOCHEMISTRY MAT AREA

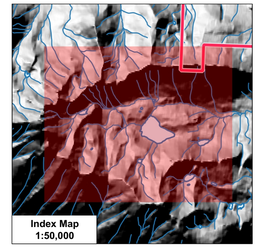
Thane Project
Omineca Mining Division, British Columbia, Canada

Project No.:	P71	By:	CN, FC
Scale:	1:2,000	Drawn:	TV
Figure No.:	14	Date:	December 2020

CME







LEGEND

GEOLOGY

+ Field station

Structure Symbols

- Vein
- Fault
- Shear
- Breccia
- Joint, fracture
- Dyke
- Contact

Structures

- Breccia
- Fault
- Chlorite shear
- Shear

Dykes

- Aplite
- Granodiorite
- Kspar-quartz
- Quartz-plagioclase phyric
- Mafic
- Latite porphyry
- Syenite

Interpreted Structure

- Fault
- Thrust
- Contacts

Lithology (outcrop / inferred)

- Latite porphyry
- Mafic dyke
- Aplite
- Syenite
- Monzonite
- Quartz monzonite
- Quartz diorite, quartz monzodiorite
- Diorite

TOPOGRAPHY

- Watercourse
- Waterbody
- Contours (20m interval)

TENURES

- Property boundary
- Mineral tenures

N

0 250 500 m

NAD 83, UTM Zone 10 North
NTS 94C, TRIM 094C003

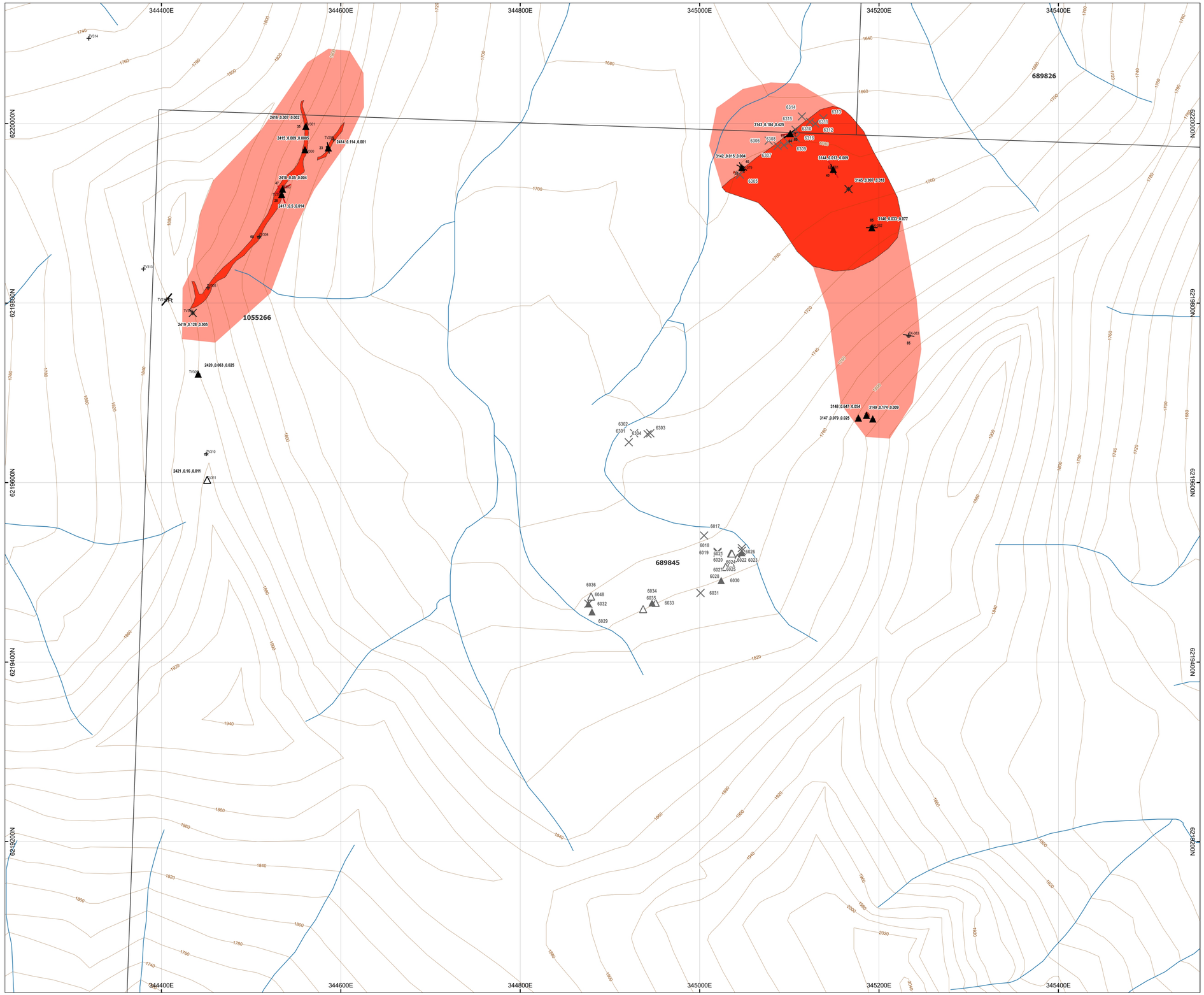
IMC INTERNATIONAL MINING CORP.

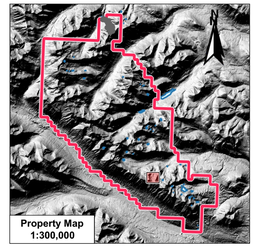
GEOLOGY
CATHEDRAL AREA

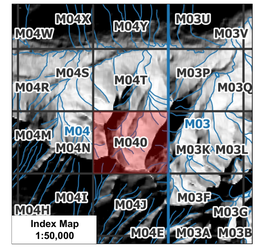
Thane Project
Omineca Mining Division, British Columbia, Canada

Project No.:	P71	By:	PG, EK, TV
Scale:	1:5,000	Drawn:	TV
Figure No.:	19	Date:	December 2020

CME







LEGEND

GEOCHEMISTRY

Rock samples (2020, historical)

- Chip
- Grab-Float
- Grab-Outcrop
- Grab-Subcrop

2367, 0.003, 0.004 Sample, Cu (%), Au (ppm) - only 2020 results shown

GEOLOGY

- Field station

Structure Symbols

- Vein
- Fault
- Shear
- Breccia
- Joint, fracture
- Dyke
- Contact

Structures

- Breccia
- Chlorite shear
- Fault
- Shear

Dykes

- Aplite
- Granodiorite
- Kspar-quartz
- Quartz-plagioclase phyric
- Mafic
- Latite porphyry
- Syenite

Interpreted Structure

- Fault
- Thrust
- Contacts

Lithology (outcrop / inferred)

- Latite porphyry
- Mafic dyke
- Aplite
- Syenite
- Monzonite
- Quartz monzonite
- Quartz diorite, quartz monzodiorite
- Diorite

TOPOGRAPHY

- Watercourse
- Waterbody
- Contours (20m interval)

TENURES

- Property boundary
- Mineral tenures

N

0 100 200 m

NAD 83, UTM Zone 10 North
NTS 94C, TRIM 094C003, 013

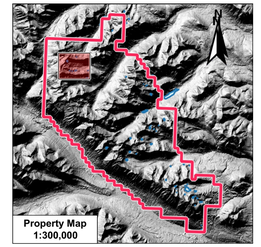
IMC INTERNATIONAL MINING CORP.

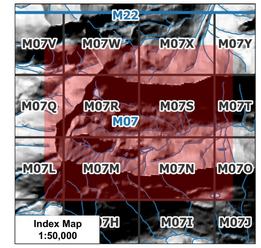
GEOLOGY AND ROCK GEOCHEMISTRY MAPSHEET M04O

Thane Project
Omineca Mining Division, British Columbia, Canada

Project No.:	P71	By:	EK, TV
Scale:	1:2,000	Drawn:	TV
Figure No.:	20	Date:	December 2020

CME





LEGEND

GEOCHEMISTRY

Rock samples (2020, historical)

- Chip
- Grab-Float
- Grab-Outcrop
- Grab-Subcrop

2367, 0.003, 0.004 Sample, Cu (%), Au (ppm) - only 2020 results shown

GEOLOGY

- Field station

Structure Symbols

- Vein
- Fault
- Shear
- Breccia
- Joint, fracture
- Dyke
- Contact

Structures

- Breccia
- Fault
- Chlorite shear
- Shear

Dykes

- Aplite
- Granodiorite
- Kspar-quartz
- Quartz-plagioclase phyric
- Mafic
- Latite porphyry
- Syenite

Interpreted Structure

- Fault
- Thrust
- Contacts

Lithology (outcrop / inferred)

- Latite porphyry
- Mafic dyke
- Aplite
- Syenite
- Monzonite
- Quartz monzonite
- Quartz diorite, quartz monzodiorite
- Diorite

TOPOGRAPHY

- Watercourse
- Waterbody
- Contours (20m interval)

TENURES

- Property boundary
- Mineral tenures



0 250 500 m

NAD 83, UTM Zone 10 North
NTS 94C, TRIM 094C012, 0224

IMC INTERNATIONAL MINING CORP.

GEOLOGY AND GEOCHEMISTRY
LAKE AREA

Thane Project
Omineca Mining Division, British Columbia, Canada

Project No.:	P71	By:	PG, EK, TV
Scale:	1:5,000	Drawn:	TV
Figure No.:	24	Date:	December 2020

CME