BRITISH COLUMBIA

Ministry of Energy & Mines
Energy & Minerals Division
Geological Survey Branch

ASSESSMENT REPORT
TITLE PAGE AND SUMMARY

TITLE OF REPORT [type of survey(s)]	TOTAL COST
Geochemistry and Prospecting on the Thane Mineral Claims	$ 106,331.50

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

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S) YEAR OF WORK 2012

STATEMENT OF WORK - CASH PAYMENT EVENT NUMBER(S)/DATE(S) 5389532

PROPERTY NAME Cathedral

CLAIM NAME(S) (on which work was done) 942662, 942663, 966709

COMMODITIES SOUGHT Copper, gold

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 094C03, 094C04, 094C05

LATITUDE 56 ° 09 ' 30 " LONGITUDE 125 ° 36 37 " (at centre of work)

OWNER(S)

1) Christopher O. Naas 2)

MAILING ADDRESS

2130-21331 Gordon Way

Richmond BC Canada V6W1J9

OPERATOR(S) [who paid for the work]

1) Christopher O. Naas 2)

MAILING ADDRESS

2130-21331 Gordon Way

Richmond BC Canada V6W1J9

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Property is predominantly 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-gold mineralization is documented in many occurrences over much of the Property, typically as 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

Assessment reports: 04599, 14192, 17742, 17743, 21419, 21425, 21426, 26530A, 29112, 32106, 33099

(OVER)

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	1:10,000, ~114 hectares	942662, 942663, 966709	26,265.86
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for ...)			
Soil	146 sampled (analyses pending)	942662	27,533.93
Silt			
Rock	67 samples (analyses pending)	942662, 942663, 966709	26,265.86
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)	1:10,000, ~500 ha	942662, 942663, 966709, 1011480	26,265.86
PREPARATORY/PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST	$ 106,331.50

ASSESSMENT REPORT
GEOCHEMISTRY AND PROSPECTING
on the
Cathedral Mineral Claims
(942662, 942663, 966709)
Omineca Mining Division, British Columbia, Canada

Owner: Christopher O. Naas, *P.Geo.*
Operator: Christopher O. Naas, *P.Geo.*

by
Christopher O. Naas, *P.Geo.*
CME Consultants Inc.
September 27, 2012

NTS 094C03, 094C04, 094C05, 094C06
Latitude: 56°09'30"N
Longitude: 125°36'37"W

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1.0 INTRODUCTION

The Cathedral property (the "Property") is centred at latitude 56° 10' N and longitude 125° 38' W, approximately 65 kilometres northwest of Germansen Landing. The Property is located in the Omineca Mining Division of north-central British Columbia, Canada. (The Property has been previously referred to as the 'Thane' or 'Thane Creek' property.)

This report discusses exploration carried out on the Property between May 16 and June 30, 2012. Exploration focused on the area around the OY showing (Minfile 094C 071) on the north side of Tenakihi Lakes and river. Exploration consisted of geological mapping, prospecting and geochemical sampling. A total of 67 rock samples, and 146 soil samples were collected during this period. Analyses of the rock and soil samples are pending.

Exploration work was carried out on the following tenures: 942662, 942663, 966709. Some exploration work was also performed on ground immediately off the property. Initial results of the exploration resulted in the subsequent staking of three mineral tenures in this area.

A list of definitions, abbreviations and conversion factors are presented in Appendix I.

1.1 ACCESS

Road access to the Property from Prince George, BC is by Highway 97 North to the Finlay Forest Service Road (FSR). At approximately 173 kilometres along the Finlay FSR, continue onto the Finlay-Osilinka FSR for another 46 kilometres that brings to the junction of the Tenakihi and the Osilinka FSR. At this junction is a logging camp. Several kilometres along the Osilinka FSR is Uslika Lake that has a forest recreation campsite. The Tenakihi mainline road continues northward to the Kemess Mine Road. The Kemess mine site is approximately 160 kilometres from the Tenakihi/Osilinka road junction. Alternatively, helicopter charters can be obtained from Smithers or Fort St. James. An airstrip is noted on maps and seen in satellite imagery 3.5 kilometres north of the logging camp along the Tenakihi mainline.

1.2 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.

modified from Hancock *et al*, Open File 2008-1

LEGEND

- Cathedral property (as of June 30, 2012)
- Producing mine
- Proposed mine development
- Major exploration project

THANE MINERALS INC.

PROPERTY LOCATION MAP
Cathedral Property

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

Project No:	C122	By:	TV
Scale:	1:3,000,000	Drawn:	TV
Figure:	1	Date:	September 2012

CME

1.3 PROPERTY

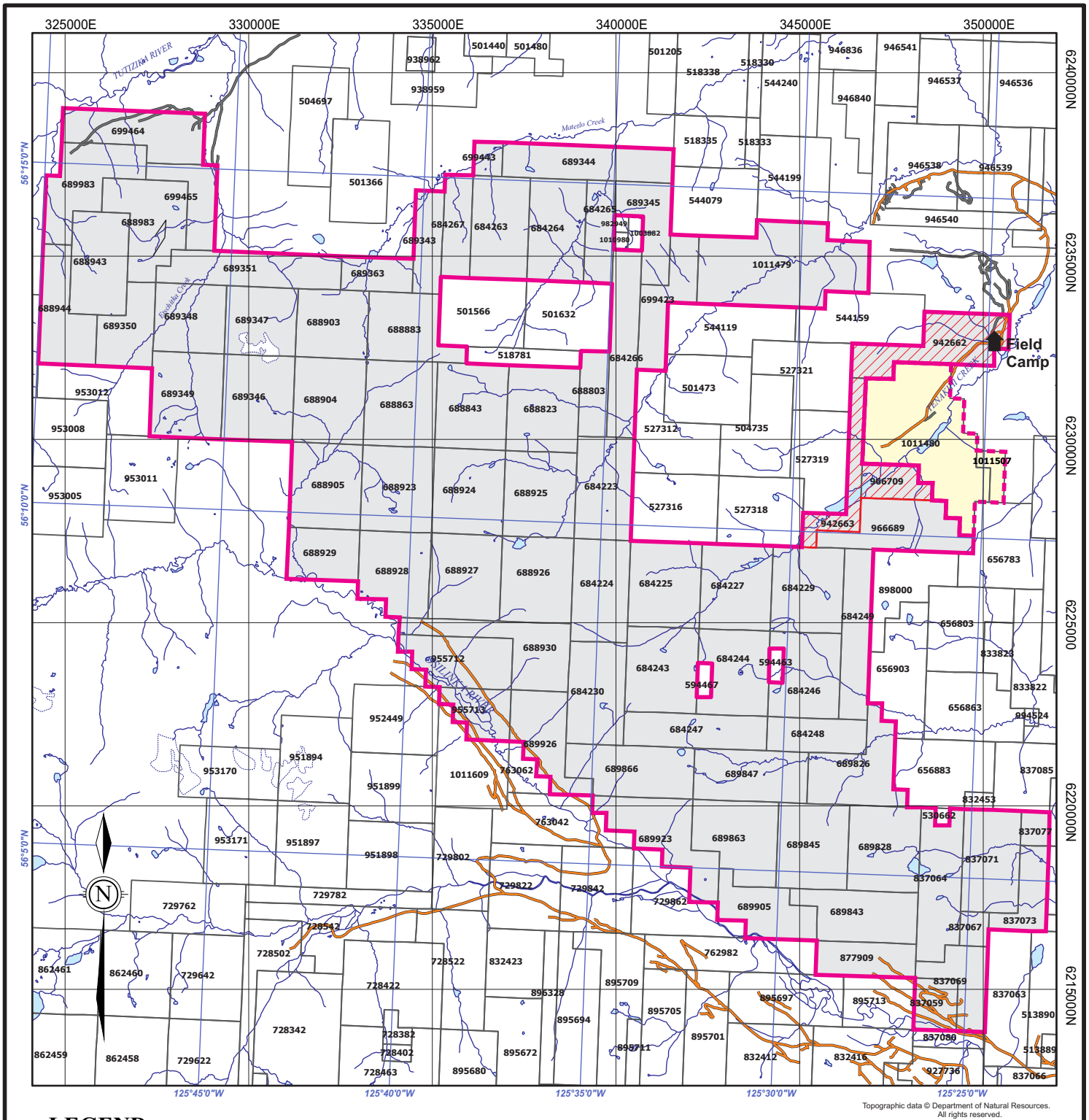
As of June 30, 2012, the Property consists of 75 MTO cell claims covering some 27,369 hectares. All mineral tenures are owned by Christopher O. Naas. A plan map of the mineral tenures is presented in Figure 2. Mineral tenure details, as of June 30, 2012, are listed in Table 1. Additional mineral tenures were staked on July 25 and 26, 2012 based upon the field work described in this report.

Table 1: List of Mineral Tenures

Tenure Number	Area (ha)	Owner	Tenure Type	Good To Date
684223	432.33	Christopher O. Naas	MTO Cell	2013/nov/01
684224	432.60	Christopher O. Naas	MTO Cell	2013/nov/01
684225	450.61	Christopher O. Naas	MTO Cell	2013/nov/01
684227	450.61	Christopher O. Naas	MTO Cell	2013/nov/01
684229	450.59	Christopher O. Naas	MTO Cell	2013/nov/01
684230	432.86	Christopher O. Naas	MTO Cell	2013/nov/01
684243	450.84	Christopher O. Naas	MTO Cell	2013/nov/01
684244	414.77	Christopher O. Naas	MTO Cell	2013/nov/01
684246	414.76	Christopher O. Naas	MTO Cell	2013/nov/01
684247	360.80	Christopher O. Naas	MTO Cell	2013/nov/01
684248	252.56	Christopher O. Naas	MTO Cell	2013/nov/01
684249	360.56	Christopher O. Naas	MTO Cell	2013/nov/01
684263	431.63	Christopher O. Naas	MTO Cell	2013/nov/01
684264	431.62	Christopher O. Naas	MTO Cell	2013/nov/01
684265	215.81	Christopher O. Naas	MTO Cell	2013/nov/01
684266	395.94	Christopher O. Naas	MTO Cell	2013/nov/01
684267	215.81	Christopher O. Naas	MTO Cell	2013/nov/01
688803	180.03	Christopher O. Naas	MTO Cell	2013/nov/01
688823	450.12	Christopher O. Naas	MTO Cell	2013/nov/01
688843	450.12	Christopher O. Naas	MTO Cell	2013/nov/01
688863	450.11	Christopher O. Naas	MTO Cell	2013/nov/01
688883	395.91	Christopher O. Naas	MTO Cell	2013/nov/01
688903	359.91	Christopher O. Naas	MTO Cell	2013/nov/01
688904	450.10	Christopher O. Naas	MTO Cell	2013/nov/01
688905	450.34	Christopher O. Naas	MTO Cell	2013/nov/01
688923	450.35	Christopher O. Naas	MTO Cell	2013/nov/01
688924	450.36	Christopher O. Naas	MTO Cell	2013/nov/01
688925	450.36	Christopher O. Naas	MTO Cell	2013/nov/01
688926	450.58	Christopher O. Naas	MTO Cell	2013/nov/01
688927	450.58	Christopher O. Naas	MTO Cell	2013/nov/01
688928	414.52	Christopher O. Naas	MTO Cell	2013/nov/01
688929	270.31	Christopher O. Naas	MTO Cell	2013/nov/01
688930	432.73	Christopher O. Naas	MTO Cell	2013/nov/01
688943	431.78	Christopher O. Naas	MTO Cell	2013/nov/01

Table 1: List of Mineral Tenures

Tenure Number	Area (ha)	Owner	Tenure Type	Good To Date
688944	359.94	Christopher O. Naas	MTO Cell	2013/nov/01
688983	449.63	Christopher O. Naas	MTO Cell	2013/nov/01
689343	215.83	Christopher O. Naas	MTO Cell	2013/nov/01
689344	431.42	Christopher O. Naas	MTO Cell	2013/nov/01
689345	287.74	Christopher O. Naas	MTO Cell	2013/nov/01
689346	450.11	Christopher O. Naas	MTO Cell	2013/nov/01
689347	359.91	Christopher O. Naas	MTO Cell	2013/nov/01
689348	359.94	Christopher O. Naas	MTO Cell	2013/nov/01
689349	450.15	Christopher O. Naas	MTO Cell	2013/nov/01
689350	287.98	Christopher O. Naas	MTO Cell	2013/nov/01
689351	449.75	Christopher O. Naas	MTO Cell	2013/nov/01
689363	179.90	Christopher O. Naas	MTO Cell	2013/nov/01
689826	433.04	Christopher O. Naas	MTO Cell	2013/nov/01
689828	451.29	Christopher O. Naas	MTO Cell	2013/nov/01
689843	415.33	Christopher O. Naas	MTO Cell	2013/nov/01
689845	451.29	Christopher O. Naas	MTO Cell	2013/nov/01
689847	433.07	Christopher O. Naas	MTO Cell	2013/nov/01
689863	451.28	Christopher O. Naas	MTO Cell	2013/nov/01
689866	451.11	Christopher O. Naas	MTO Cell	2013/nov/01
689905	325.04	Christopher O. Naas	MTO Cell	2013/nov/01
689923	451.28	Christopher O. Naas	MTO Cell	2013/nov/01
689926	360.80	Christopher O. Naas	MTO Cell	2013/nov/01
689983	431.53	Christopher O. Naas	MTO Cell	2013/nov/01
699423	323.86	Christopher O. Naas	MTO Cell	2013/nov/01
699443	71.90	Christopher O. Naas	MTO Cell	2013/nov/01
699464	431.35	Christopher O. Naas	MTO Cell	2013/nov/01
699465	233.77	Christopher O. Naas	MTO Cell	2013/nov/01
837059	162.60	Christopher O. Naas	MTO Cell	2013/nov/01
837064	451.36	Christopher O. Naas	MTO Cell	2013/nov/01
837067	72.23	Christopher O. Naas	MTO Cell	2013/nov/01
837069	252.89	Christopher O. Naas	MTO Cell	2013/nov/01
837071	433.22	Christopher O. Naas	MTO Cell	2013/nov/01
837073	216.64	Christopher O. Naas	MTO Cell	2013/nov/01
837077	72.19	Christopher O. Naas	MTO Cell	2013/nov/01
877909	252.88	Christopher O. Naas	MTO Cell	2013/nov/01
942662	449.89	Christopher O. Naas	MTO Cell	2013/nov/01
942663	234.14	Christopher O. Naas	MTO Cell	2013/nov/01
955712	378.68	Christopher O. Naas	MTO Cell	2013/nov/01
955713	216.45	Christopher O. Naas	MTO Cell	2013/nov/01
966689	432.39	Christopher O. Naas	MTO Cell	2013/nov/01
966709	162.10	Christopher O. Naas	MTO Cell	2013/nov/01



LEGEND

- Cathedral property (as of June 30, 2012)
- Additional staking, July 25/26, 2012
- Work claims
- Tenure boundaries (as of August 3, 2012)
- Gravel road (not all roads and trails shown)
- Watercourse
- Waterbody

0 5km

NAD83 UTM Zone 10 North
NTC 094C03,04,05,06

THANE MINERALS INC.

MINERAL TENURE MAP
Cathedral Property

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

Project No:	C122	By:	TV
Scale:	1:150,000	Drawn:	TV
Figure:	2	Date:	September 2012

CME

The Property lies within a belt of several significant copper and/or copper-gold showings, prospects and deposits including Lorraine, Kemess South and Mt. Milligan. Locations of these and other notable occurrences are shown on Figure 3.

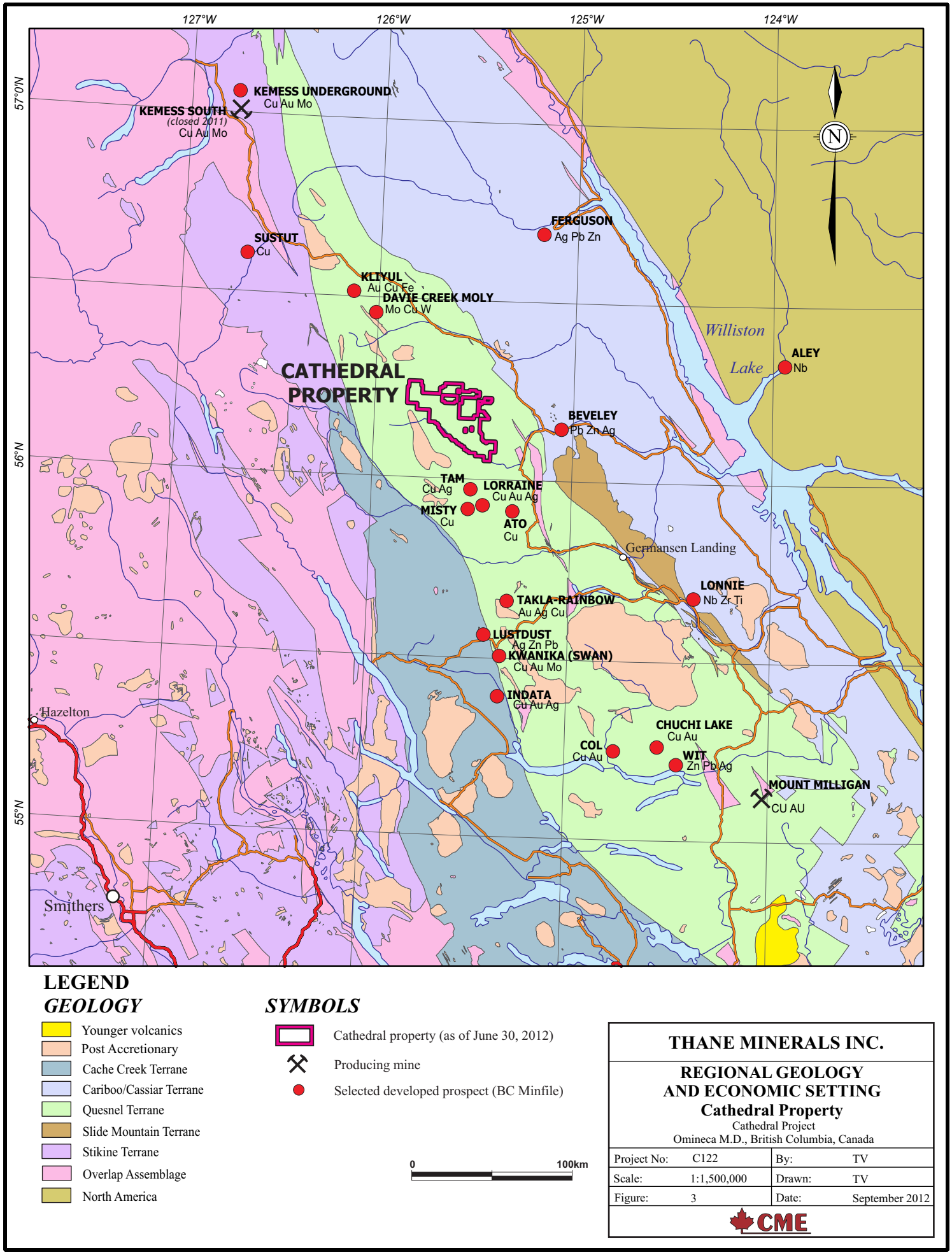
The Lorraine deposit is the closest to the Property, located approximately 16 kilometres south of the southern boundary of the Property (Figure 3). The deposit is hosted within rocks assigned to the Middle Jurassic Duckling Creek Syenite Complex, part of the Hogem intrusive suite. The most recent resource estimate included only the Upper Main and Bishop Zones. The Upper Main zone resource was estimated at 11.89 Mt grading 0.71% copper and 0.26 g/t gold of measured and indicated and 3.96 Mt grading 0.70% copper and 0.25 g/t gold inferred. The Bishop zone resource was estimated at 7.72 Mt grading 0.64% copper and 0.07 g/t gold measured and indicated and 2.87 Mt grading 0.62 % copper and 0.05 g/t gold inferred (Garratt and Lindinger, 2009).

2.0 WORK HISTORY

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 (Kalhert, 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.



LEGEND

GEOLOGY

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

SYMBOLS

- Cathedral property (as of June 30, 2012)
- Producing mine
- Selected developed prospect (BC Minfile)

0 100km

THANE MINERALS INC.

REGIONAL GEOLOGY AND ECONOMIC SETTING
Cathedral Property
Cathedral Project
Omineca M.D., British Columbia, Canada

Project No:	C122	By:	TV
Scale:	1:1,500,000	Drawn:	TV
Figure:	3	Date:	September 2012

CME

Stevenson (1991a) 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 showing (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. A six inch chip sample from a four foot 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 and the Ten prospects and the ET

claims encompassing the ET showing, both on the current Property, as well as the 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 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 (Ferri, 1991) 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.

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, was Swanell Minerals Corporation. 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 (Kula, 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 years 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 Quesnellia 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 Zone and the Link Zone 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 Zone 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 Zone 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.

3.0 GEOLOGY

3.1 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 kilometres 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 Cretaceous Hogem multi-phase batholith is the largest of these intrusions, forming the spine for this island arc allochthonous, intermontane superterrane. The Hogem batholith is composed of a peripheral zone of dioritic plutons, such as the Thane and Detni

intrusives, surrounding a central granodioritic (Hogem granodiorite) and syenitic (Duckling Creek Complex) core. The Hogem is intruded and crosscut by early to mid-Cretaceous granitic plutons, such as the Mesilinka Intrusive and the Osilinka Intrusive. 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.

3.2 PROPERTY GEOLOGY

The Property is predominantly underlain by intrusive rocks of the Hogem Plutonic Suite. Intermediate volcanic rocks of the Takla Group are in contact with the Hogem intrusives in northeastern portion of the Property (Figure 4). Numerous dykes, sills and small stocks are noted in both the main geological units. These small intrusions are generally related to the Hogem intrusive.

Geological mapping is very incomplete over much of the Property, due to limited exposure but also due to very limited prospecting over large areas between the known showings. Geological mapping of the showings is often conflicting, as different unit names or intrusive descriptions may have been applied to similar rocks. Not enough detail is present in the source reports to adequately reconcile these units. The most detailed mapping is from the Ten showing area and the Aten property, north of the Ten showing and off-Property.

Descriptions of the units are presented below. These have been collated from the historical exploration as reported in the assessment reports. Future fieldwork would attempt to identify and reconcile the lithologies to present a unified geological legend for the Property. Whole rock analysis of the major oxides should be considered to assign the correct rock classification for the intrusive units.

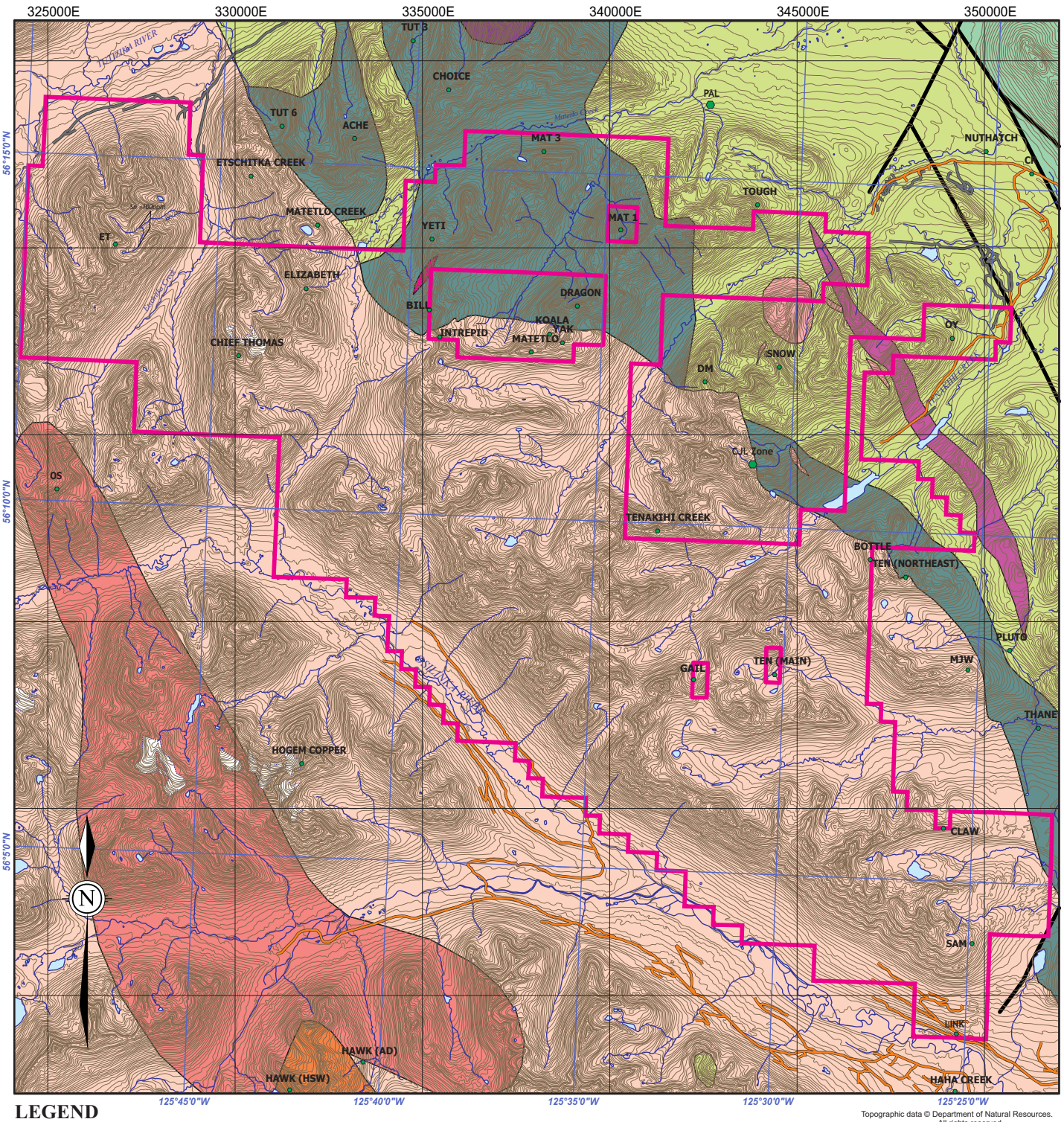
Hogem Plutonic Suite

From historical work done on and around the Property, there are numerous phases of the Hogem batholith including: granite; granodiorite; hornblende granodiorite; quartz diorite; microdiorite; diorite; monzodiorite; quartz monzonite; monzonite; and, syenite.

The dominant intrusives types reported based on field mapping are monzonites, monzodiorites, diorites and syenites. Granites, granodiorites and other intrusives mapped tend to be smaller dyke-like units within the main intrusive types.

Diorite

Diorites are noted over many parts of the property and through review of the geology and results suggest that these intrusives are most intimately tied to copper mineralization.



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LEGEND

GEOLOGY

- Takla Group - sediments; volcanics
- Lay Range Assemblage - volcaniclastics

Hogem Plutonic suite

- Quartz monzonites
- Granite
- Duckling Creek syenite

- Unnamed - quartz monzonitic intrusive rocks (associated with Cu-porphyry systems such as Mt. Milligan, BP-Chuchi, and Tas)
- Tenakihi Intrusive Complex - diorite intrusive rocks
- Aiken Lake Intrusive Complex - gabbro-diorite

SYMBOLS

- GAIL — BC Minfile or other mineral occurrence
- Cathedral property (as of June 30, 2012)
- Gravel road
- Contour (100 foot interval)
- Watercourse
- Waterbody

0 5km

NAD83 UTM Zone 10 North
NTC 094C03,04,05,06

THANE MINERALS INC.

GEOLOGY PLAN MAP
Cathedral Property

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

Project No:	C122	By:	TV
Scale:	1:150,000	Drawn:	TV
Figure:	4	Date:	September 2012

CME

The majority of the OS area (Figure 4) is underlain by diorite. The diorite is coarse grained massive and dark green-black in color. These rocks can host local minor quartz veins and stockworks. Minor malachite was locally observed and alteration consists of none to locally minor epidote and limonite. These rocks also contain minor to locally abundant magnetite (Stevenson, 1991c).

The ET area, currently the very northwest corner of the Property (Figure 4) is entirely underlain by a medium to coarse-grained, massive, dark green-black diorite (Stevenson, 1991b).

In the Ten (or Gail) showing area, diorite observed is fine to coarse-grained, dark grey to black with abundant biotite and hornblende. Minor chloritic, potassic, epidotic and limonitic alteration is present. Very minor disseminated pyrite is present. Magnetite is quite rare to absent (Stevenson, 1991a).

Monzonite

On the current property, monzonites have been mapped in the Ten area (Figure 4). This monzonite is a fine to coarse-grained light grey rock. Compositionally it consists of minor to moderate biotite and hornblende with equal amounts of orthoclase and plagioclase. Minor disseminated magnetite is present (Stevenson, 1991a).

Monzonites are also described from work on the Mate and Aten properties of Commander Resources. The former property is fully encompassed by the Property while the latter borders the eastern edge (Figure 4).

Mapping in the Aten area recognized two monzonitic units:

- a coarse grained monzonite, which weathers to a light brown-pink colour with a rough surface texture. The monzonite is massive with coarse blocky jointing. It is weakly magnetic. Mineral constituents include 80% coarse, milky grey to green, feldspar crystals with interstitial black biotite and amphibole; and,
- a fine-grained monzonite, which is typically light grey to pink and contains equal amounts of fine grained alkali feldspar and plagioclase (85%) with interstitial mafic minerals giving the rock a pepper-like texture (Leriche, 1993).

The monzonite noted in the Mate area is a coarse-grained, equigranular monzonite, which locally may vary as fine or medium grained. The monzonite generally contains 30-50% subhedral to euhedral hornblende, with the remainder being composed of plagioclase and potassium feldspars with minor quartz (Leriche *et al*, 1993).

Monzodiorite

The monzodiorite mapped in the Ten showing area is similar to the monzonite but is coarser grained, light to dark grey and contains a higher percentage of biotite and hornblende. These rocks locally contain minor disseminated and fracture fill pyrite and chalcopyrite. Minor to moderate epidote, chlorite and limonite alteration is observed throughout. Locally, very weak potassic alteration is also present. Magnetite content is very minor (Stevenson, 1991a).

Earlier mapping which appears limited to a cirque by the Gail showing included the following description of the monzodiorites. The predominant rock type in the Gail area is a medium to coarse-grained monzodiorite with varying feldspar/mafics ratios and heterogeneous textures. The mafic mineral in fresh rock is hornblende but complete biotitization and/or chloritization of fresh hornblende crystals have occurred. Locally, intense K-feldspar alteration has affected these rocks giving them a salmon-pink overtone. Through irregular concentration of mafics these rocks grade into hornblende-diorites, appinites, feldspathic hornblendites, and finally, hornblendites. The end product is a holomafic holocrystalline rock containing fine-grained hornblende prisms - some varieties have an almost pure epidote groundmass cementing the hornblende grains together. Epidote is common in all rock types both as fine stringers or irregularly concentrated clots. Fine-grained granitic or syenitic lithologies are present as small dykes. Generally discordant structural relationships exist between all phases and gradations of the Hogem rocks such as breccias, xenoliths and wallrock assimilation, multiphase dyking. Sulphide mineralization consists of pyrite, chalcopyrite, molybdenite, and bornite as irregularly distributed blebs and smears in quartz veins or as sporadic disseminated mineralization adjacent to them (Pearse, 1973).

Quartz Monzodiorite

Recent mapping (2007) in the Aten area (off-Property) identifies the main lithology as being quartz monzodiorite. Earlier work by Leriche (1993) classified the rocks of this area as monzonites (as described above). A geological map of the 2007 work was not included in the report so a comparison of the mapped areas was not possible.

The quartz monzodiorite are described as equigranular and characterized by 2 to 5 mm euhedral to subhedral plagioclase (30-40%), 1 to 3 mm K-feldspar (10-20%), 1 to 4 mm hornblende (20- 40%) and 0.5 to 2 mm quartz (5-15%). Diorites are present locally as are porphyritic varieties of the quartz monzodiorites. Zones of magmatic compositional zoning in the coarse-grained, equigranular quartz monzodiorites are observed apparently due to syn-magmatic segregation of the granitic melt. Strong brick-red colouration of feldspars is typical in all phases of quartz monzodiorites (Mair and Bidwell, 2008).

Syenite

In the Ten area of the Property two syenites are mapped, a leucocratic and mesocratic variety. The former is fine to coarse-grained, massive, and light orange-grey to bright orange in colour. Compositionally it consists of orthoclase with very minor quartz and less than 20% biotite and hornblende. These rocks at times show local intense potassic alteration. No magnetite was observed with these rock types. Local minor disseminated pyrite and chalcopyrite occurs and, along with the monzodiorite (described above), are the likely source for the anomalous copper values that rim the cirque at the Ten showing and the Ten Northeast area. The mesocratic syenite is similar to the leucocratic syenite except being darker in colour, which is likely due to the higher mafic content. This unit also does not exhibit much sulphide mineralization but does contain minor disseminated magnetite (Stevenson, 1991a). Spatially these syenites are mapped near the contact of the Takla volcanics.

Off-property, north of the Ten area, another syenite unit was mapped in limited dyke-like exposures. It appears as a light pink rock, found within both monzonitic units. Mineral constituents include 80% pink alkali feldspars and 20% dark green, fine-grained amphiboles with minor epidote (Leriche, 1993).

Granite

Granite is observed sparingly on the Property. A fine-grained, white to pale pink granite with only a few percent mafic minerals was observed in the northern (Nevin, 1971). On the western boundary of the Property, in the area of the former OS claims, medium grained, massive, light green to white granite intrusives are also noted. These rocks contain locally minor quartz veining and stockworking that may have minor disseminated pyrite, chalcopyrite and bornite. No magnetite was observed in these rocks (Stevenson, 1991c). Further west, off the Property regional mapping notes a large granitic body trending generally N-S along the regional trend (BC Open File 2005-1) (Figure 4). This body appears to be reflective of the OS area granites.

Granodiorite

Granodiorite has been noted around Elizabeth occurrence located in the central-northern portion (Figure 4) of the property but no detailed field description is available.

Hornblende Granodiorite

The area around the head of the south fork of the Matetlo River is underlain by a monotonous hornblende granodiorite. It is coarse-grained (2 mm to 7 mm) and generally equigranular, and contains about 10% ragged hornblende grains and about 1% biotite (Nevin, 1971).

Quartz Diorite

Quartz diorite has been noted at the Chief Thomas and Elizabeth occurrences.

Feldspar Porphyritic Dykes

Feldspar porphyry dykes are noted in the Ten area of the Property. These porphyritic dykes are very fine grained, massive and light grey to chocolate brown in color. Mineralogically they consist of numerous irregular phenocrysts of orthoclase and plagioclase in a groundmass that is too fine grained to be identified. These dykes are less than 2 metres thick and tend to occur in small northerly trending swarms. (Stevenson, 1991a).

To the north of the Ten area, feldspar porphyry occurs as sub-vertical dykes up to 10 metres wide. Dykes consist of light grey to white, medium-grained subhedral plagioclase laths (up to 1 cm) in a light grey, fine-grained silicic matrix (Leriche, 1993). Minor quartz-phyric feldspar porphyry dykes are noted by Mair and Bidwell (2008) and intrude the equigranular quartz monzodiorite. They are characterized by 1 to 3 mm quartz phenocrysts (10-15%) and 2 to 4 mm feldspar phenocrysts (30-40%) in an aphanitic groundmass.

Takla Group - Volcanics

Takla Group volcanics are exposed in outcrop on the northern and northeastern areas of the Property. These volcanics occur as massive andesite, andesite-augite porphyries, andesitic tuffs and breccias, and fragmental volcanics. Brief description are presented below and collated from the various assessment reports. All descriptions are from work carried out on ground not currently part of the Property.

Massive Andesitic Augite Porphyry:

At the Mat 1 showing (BC Minfile 094C 099, Figure 4), a massive, medium-grained augite andesite outcrops below a fragmental volcanic. The augite andesite is very uniform in composition and appearance. The matrix of the rock is pale grey feldspathic in which are randomly distributed crystals of augite about 1 mm by 3 mm to a proportion of about 10% of the rock. The lower reaches of the valley in which most of the showings occur are underlain by this rock type (Weishaupt, 1998). Although not part of the current Property, this area is fully encompassed by the property.

Mapping carried out in the Mate area, notes andesite augite porphyry. The andesite is a fine to medium-grained grey-green to greenish grey rock composed of 15-20% mafics and 80-85% plagioclase. The mafics consist of subhedral to euhedral dark green augite phenocrysts and fine-grained biotite (Leriche *et a*l, 1993). This area is fully encompassed by the current Property.

Over on the Aten area this unit is noted to weather to a dark brown to green color. Mineral constituents include 20% (range 10% to 40%) subhedral to euhedral dark green augite phenocrysts in a fine-grained matrix of plagioclase and biotite. This unit typically occurs as both dykes and flows. Distinctive rusty weathering quartz-ankerite zones are common (Leriche, 1993).

Subsequent work in the Aten area describes these rocks as being characterized by 2-5 mm augite phenocrysts in an aphanitic groundmass and variable strain fabrics. Deformation is characterized by flattened and/or asymmetrically-strained augite phenocrysts as well as localized zones of compositional banding due to mylonitization. (Mair and Bidwell, 2008).

Andesite Tuffs and Breccias

Andesite tuffs are noted on the Mate and Aten areas and described as fine grained, dark green, massive plagioclase crystal ash tuffs with crystals up to 2 mm in length (Leriche and Luckman, 1991a; Leriche *et al*, 1993).

Breccias are noted briefly in the Mate area. At the Aten area, contact zones between andesite and quartz monzodiorite are irregular and characterized by mega-breccias with large fragments of andesite cemented by quartz monzodiorite intrusive. Limited mapping suggests that the zone of contact breccia is 1 to 5 metres in width (Mair and Bidwell, 2008).

Fragmental Volcanics

Fragmental volcanics of the Takla Group are only noted in mapping from the Mat area (Figure 4) and are typically found at higher elevations in this area. Fragments are similar to the matrix material and the fragmental texture being developed by slight compositional and grain size variations. Randomly oriented angular blocks up to 0.5 metres in diameter with much variation in size and ratio of fragments to matrix is noted. Average matrix grain size is fine, compositionally is quite siliceous and colour grades from dark green to greenish white (Weishaupt, 1998).

Takla Group - Sediments

No instances of the sediments of the Takla Group are noted in any reports to date. Regional mapping does show the possibility of the presence of Takla sediments to occur in the northern area of the property (Figure 4).

The sediments are described as mudstones and laminate fine clastic sedimentary rocks (BC GeoFile 2005-1)

4.0 EXPLORATION

4.1 INTRODUCTION

Fieldwork was carried out between May 16 and June 30, 2012. Exploration focused on the area around the OY showing (Minfile 094C 071) on the north side of Tenakihi Lakes and river.

Over the field work period, the exploration crew consisted of seven persons. A field camp was set up in a clearing near the end of the Tenakihi FSR (Figure 2). Field access and camp support during the program was by vehicle.

Exploration consisted of geological mapping, prospecting and rock sampling. An area of covering some 500 ha was prospected, and approximately 110 hectares geologically mapped. A total of 67 rock samples and 146 contour soil samples were collected during the exploration program.

Figure 2 shows the tenures where work was conducted. A geology and sample location map is presented in Figure 5.

4.2 GEOLOGICAL MAPPING AND OBSERVATIONS

4.2.1 Geological Units

Takla Group - Volcanics

Takla Group volcanics are the dominant rock type throughout the Tenakihi area. These volcanics occur primarily as basalts. They are dark grey-green in colour and in the northeast

portion of the Tenakihi area these basalts are olivine and plagioclase-phyric. Olivine phenocrysts are up to 3mm in diameter with white (presumably plagioclase) phenocrysts ranging up to 1mm in size combining to make up approximately 1% of the rock. Moving southwest through the property both olivine and plagioclase phenocrysts decrease in abundance and size with the volcanic becoming aphanitic in texture. Black phenocrysts are noted locally possibly pyroxene and/or amphibole mainly less than 1mm in size but are observed up to 2mm. Vesicles are noted locally less than 1mm in size with quartz amygdules commonly observed ranging from trace amounts to 1% in abundance. Weak effervescence of the groundmass is noted suggesting calcite is present but is not present everywhere. Quartz and calcite veinlets are noted in multiple areas ranging from 0.5-2mm and are rarely observed up to 1cm in size. Magnetite is weakly noted throughout the volcanics generally disseminated and when present up to 1% in abundance.

Alteration is principally chlorite which varies in strength from subtle to moderate. Weak silicification is noted in samples 1035, 1036, and 1037 as well as sporadically noted elsewhere. Calcite is likely secondary and observed in the groundmass and as veinlets with quartz.

Sulphide mineralization is weak throughout the Takla volcanics with very fine grained disseminated pyrite the most common. Pyrite is rarely noted in veinlets. Pyrite ranges from trace to 1% in abundance. Pyrrhotite was observed in a several dozen samples (1029, 1049, 1052, 1056) as very fine grained disseminations ranging from trace to less than 1% in abundance, and on one occasion (sample 1056), as stringers.

Takla Group - Sediments

Sediments of the Takla Group are only noted occurring at sample 1054 along a river to the southwest. These rocks are strongly weathered and gossanous with an orange to brown colouration with a pale green to weakly bluish fresh surface. Texture is obscured throughout the sediments with grains typically ranging from silt- to sand-size. Compositionally quartz primarily the remaining grains in the matrix (due to weathering) with calcite a component of the cement. Quartz and calcite (iron carbonate locally) veins are noted ranging <1mm to 6mm in width. No magnetite is observed in any of the sediment samples.

Sulphide mineralization, where noted, consists primarily of very fine grained disseminated pyrite <1% in abundance.

Hogem Plutonic Suite

From historical work done on and around the Property, there are numerous phases of the Hogem batholith, including: granite; granodiorite; hornblende granodiorite; quartz diorite; microdiorite; diorite; monzodiorite; quartz monzonite; monzonite; and, syenite. The dominant intrusives types reported based on field mapping in the Tenakihi Lakes area are quartz monzonite, diorite, and feldspar porphyry dykes.

Quartz Monzonite

Mapping in the Tenakihi Lakes area identified three locations of quartz monzonite. Sample 1047 is located in the central portion of the map situated within the Tenakihi Intrusive Complex. Sample 1064 is south of the Complex and may be a continuation of the intrusive body but due to the amount of vegetation cover this could not be tested. The quartz monzonite is fine- to medium-grained and - light to medium grey in colour. Compositionally it contains 1-3mm white to pale pink feldspar (60-70%), 1-3mm pale grey quartz (5-20%), and 1-2mm black mafics (10-30%) including amphibole and lesser amounts of biotite. Magnetite (<1-3%) is observed with crystals up to 5mm in size.

Alteration is fairly weak within the quartz monzonite. Subtle to weak potassic alteration along with chlorite and epidote alteration is observed locally. Weak effervescence is noted in the groundmass in sample 1047. No sulphides are observed in this unit.

Diorite

The diorite is part of the Tenakihi Intrusive Complex and is located in the central portion of the mapping area cross-cutting the Takla Group (volcanics and sediments). It is coarse grained and generally equigranular, ranging in colour from a dark grey/black to dark green, depending on strength of alteration. Compositionally it contains 30-40% black to dark green mafics (primarily amphibole), 50-60% plagioclase, and very minor quartz. Magnetite is strong within this unit comprising up to 20%. Quartz veining is noted throughout, typically ranging from <1 to 1mm thick, but may occasionally be up to 4mm.

Alteration includes calcite and epidote. Calcite is generally weak and is observed within quartz veins as well as in the groundmass. Epidote alteration is moderate, locally altering the feldspars.

Pyrite is the dominant sulphide observed within the diorite occurring primarily as very fine grained disseminations (trace to 1%). No copper minerals were noted in any samples.

Feldspar Porphyritic Dykes

Feldspar porphyry dykes are noted in four locations within the Tenakihi Lakes area. These porphyritic dykes are very fine-grained, massive and light grey to dark green-grey in colour. Mineralogically they consist of numerous irregular phenocrysts of orthoclase and plagioclase in a groundmass that is too fine-grained to be identified. These dykes are generally up to 2 metres thick but can be as large as 10 to 15 metres and appear to be north-south trending. These dykes occur in two types: a megacrystic variety; and a feldspar-phyric variety. In the south central portion of the mapping area (sample 1023) the megacrystic type is present. It is medium grey in colour with white feldspar phenocrysts up to 2cm long and 1cm wide comprising 30-40% of the rock. Alteration is not present in this sample. Very fine grained disseminated pyrite (1%) is noted within the groundmass. A contact between the dyke and Takla volcanics is measured at 168°/30°W. To the north, this megacrystic dyke is also present which suggests a possible continuation of the dyke, or perhaps multiple dykes of this nature.

The second type of feldspar porphyry dyke does not contain the megacrysts of feldspar but rather much smaller phenocrysts. These units are located in the southern portion of the mapping area. Composed of black phenocrysts up to 1mm in size (possibly amphibole) along with rectangular to oval, white phenocrysts of feldspar up to 5mm long and 3mm wide are present within a dark green grey aphanitic groundmass. The groundmass contains black mafics and quartz. Weak localized magnetism is observed. Alteration consists of epidote (e.g. sample 1031) and weak chlorite alteration in the groundmass. No effervescence is noted. Sulphide mineralization consists of <1% pyrite as very fine grained disseminations.

4.1.2 Structure

Structure in the Tenakihi Lakes area is generally made up of the intruding Hogem Plutonic Suite with southward trending feldspar porphyritic dykes cross-cutting Takla volcanics and the northwest trending Takla Intrusive Complex.

4.3 ROCK SAMPLING

Rock sampling was carried out in all areas explored. Samples were collected from outcrop wherever possible. A total of 67 samples were collected. Sample descriptions are presented in Appendix II. All samples are currently stored at CME's field office in Vavenby, BC.

Analyses of all rock samples are pending.

4.4 SOIL SAMPLING

A total of 146 soil sample sites were established on four (4) contour soil sample lines in the work area. Two lines, one at 1,400 metres and a second at 1,450 metres elevation tested the hill slopes around the creek draining toward the southeast, over the area of the OY Minfile showing (Figure 5). Historical sampling in the headwaters of this creek identified anomalous copper and gold in silt samples. Geologically, the two lines are located entirely within basalts of the Takla volcanics.

Two other lines, one at 1,450 metres and the second at 1,600 metres elevation, were located to the southwest and designed to traverse the Tenakihi Intrusive Complex diorite (Figure 5).

Sample numbers and location coordinates are presented in Appendix III. Analyses of all soil samples are pending.

5.0 CONCLUSIONS

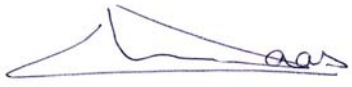
The Cathedral Property is centred at latitude 56° 10' N and longitude 125° 38' W, approximately 65 kilometres northwest of Germansen Landing. The Property is located in the Omineca Mining Division of north-central British Columbia, Canada.

The Property is predominantly underlain by intrusive rocks of the Hogem Plutonic Suite. Intermediate volcanic rocks of the Takla Group are in contact with the Hogem intrusives in northeastern portion of the Property. Numerous dykes, sills and small stocks are noted in both the main geological units. These small intrusions are generally related to the Hogem intrusive.

Historical exploration in the Ten (Gail) showing area and the ET showing area have shown positive results of copper and/or gold mineralization in the Hogem intrusives. The area between the Gail/Ten and ET showings represents an under-explored area almost 20 kilometres long. Recent exploration in 2010 and 2011 was successful in demonstrating excellent potential for the presence of a copper-gold porphyry-style resource in the Cathedral Zone, approximately 12.5 km south of the area discussed in this report. 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; examples include 13.9% copper, 23.6 g/t gold and 3.29% copper and 20.1 g/t gold.

Current exploration of geological mapping, rock sampling, and contour soil sampling investigated the area around in the area north of Tenakihi Lake chain and around the OY showing (Minfile 094C 071). This area is underlain mainly volcanic rocks of the Takla Group. Takla Group sediments are noted in the central portion of the mapping area, generally at higher elevations. The Takla Group is intruded by multiple phases of quartz monzonite, diorite, and feldspar porphyritic dykes of the Hogem Plutonic Suite. The Hogem Plutonic Suite here is primarily composed of the Tenakihi Intrusive Complex (TIC) which includes quartz monzonite and strongly magnetic diorite. The TIC appears to be trending to the northwest intruding the Takla volcanics to the east and the Takla sediments to the west. The quartz monzonite observed may be a different phase of the TIC or a different intrusive body engulfed by the diorite. Feldspar porphyritic dykes are also observed throughout the Tenakihi Lakes area appearing as both a megacrysitic and non-megacrystic variety. One contact is oriented 168°/30°W which suggests a southward trending strike. Sulphide mineralization was sparse with pyrite being the primary sulphide observed.

Respectfully Submitted,



Christopher O. Naas, *P.Geo.*
CME Consultants Inc.
September 27, 2012.

6.0 REFERENCES

Barnett, C.T., Kowalczyk, P.L.
2008. Airborne electromagnetics and air borne gravity in the QUEST Project area, Williams Lake to Mackenzie, British Columbia (parts of NTS 093A, B, G, H, J, K, N, O; 094C, D); *in* Geoscience BC, Summary of Activities 2007, Geoscience BC, Report 2008-1, p. 1–6.

Ethier, D.
1991. Prospecting and Soil Survey, Link Claims, Cat Mountain. Assessment Report 21449.

Garratt, G.L. and Lindinger, J.E.L.
2009. Summary Report on the Lorraine-Jajay-Jan-Tam-Misty Property for Lorraine Copper Corp., September 8, 2009.

Geotech Ltd.
2007. Report on a Helicopter-Borne Versatile Time Domain Electromagnetic (VTEM) Geophysical Survey, QUEST Project for Geoscience BC, November 2007.

Kilby, W.E., Kilby, C.E.
2006. ASTER Imagery for British Columbia – an Online Exploration Resource *in* Geological Fieldwork 2005, British Columbia Geological Survey, Paper 2006-1.

Kulla, G.
2001. Geological and Geochemical Report on the Tenakihi Property; unpublished report for Phelps Dodge Corporation of Canada, Limited. Assessment Report 26530.

Leriche, P.D., Luckman, N.
1991a. Geological and Geochemical Report on the Mate Property, unpublished report for Swannell Minerals Corporation by Reliance Geological Services, November 20, 1991; Assessment Report 22122.
1991b. Geological and Geochemical Report on the Aten Property, unpublished report for Swannell Minerals Corporation by Reliance Geological Services, November 20, 1991; Assessment Report 22123.

Leriche, P.D.
1993. Geological and Geochemical Report on the Aten Property, unpublished report for Swannell Minerals Corporation by Reliance Geological Services, February 23, 1993; Assessment Report 22861.

Leriche, P.D., Faulkner, R., King, G.R.
1993. Geological and Geochemical Report on the Mate Property, unpublished report for Swannell Minerals Corporation by Reliance Geological Services, February 24, 1993; Assessment Report 22859.

Mair, J, and Bidwell, J.
2008. Report on Geological Mapping and Diamond Drill Programs on Prospects in the Mesilinka Project, unpublished report for Geoinformatics Exploration Canada; Assessment Report 29914.

Naas, Christopher O.
2011. Data Compilation, Geological and Prospecting on the Than Creek Mineral Claims, unpublished report, Assessment Report 32106.

Nevin, A.E.
1971. Geological Report, KAM Group, unpublished report for Fortune Island Mines Ltd. Assessment report 3342.

Pearse, A.D.
1973. Geochemistry Report on the Tenakihi Creek Property, Gail Group, unpublished report for Noranda Exploration Company, Ltd., August 30, 1973; Assessment Report 4599.

Snyder, L.D. and Russell, J.K.
1995. Petrogenetic Relationships and Assimilation Processes in the Alkalic Iron Mask batholith, south-central British Columbia; in *Porphyry Deposits of the Northwestern Cordillera of North America*, Schroeter, T.G., E., Canadian Institute of Mining and Metallurgy, Special Volume 46

Stevenson, D.B.
1991a. A Geological, Geochemical and Geophysical Report on the Ten Property, Germansen Landing Area, Central British Columbia; unpublished report for Cyprus Gold (Canada) Ltd., June 6, 1991; Assessment Report 21419.
1991b. A Geological, Geochemical and Geophysical Report on the ET Property, Germansen Landing Area, Central British Columbia; unpublished report for Cyprus Gold (Canada) Ltd., June 7, 1991; Assessment Report 21426.
1991c. A Geological, Geochemical and Geophysical Report on the OS Property, Germansen Landing Area, Central British Columbia; unpublished report for Cyprus Gold (Canada) Ltd., June 10, 1991; Assessment Report 21425.

Streckeisen, A. L.
1974. Classification and Nomenclature of Plutonic Rocks. Recommendations of the IUGS Subcommission on the Systematics of Igneous Rocks. Geologische Rundschau. Internationale Zeitschrift für Geologie. Stuttgart. Vol.63, p. 773-785.

Weishaupt, P.J.
1985. Drilling Report on the MAT Property, unpublished report for Canasil Resources Incorporated; Assessment Report 14192.
1998. Geochemical Survey on the MAT Silver Property, unpublished report for Canasil Resources Inc., December 1998; Assessment Report 25786.

Wardrop Engineering
2007. Technical Report Mt. Milligan Property, Northern BC; report for Terrane Metals Corp., October 2007.

Websites:

Northgate Minerals Corporation www.northgateminerals.com
Terrane Metals Corp. www.terranemetals.com
Geoscience Data Repository, Natural Resources Canada http://gdr.nrcan.gc.ca/index_e.php
GeoGratis http://geogratis.cgdi.gc.ca/geogratis/en/index.html
Assessment Report Index Service http://aris.empr.gov.bc.ca/
BC Minfile http://minfile.gov.bc.ca/searchbasic.aspx
BC Mineral Titles Online https://www.mtonline.gov.bc.ca/mtov/home.do
BC ASTER imagery archive http://webmap.em.gov.bc.ca/mapplace/minpot/aster.asp
Geoscience BC http://www.geosciencebc.com/s/Home.asp
Land and Resource Data Warehouse http://www.lrdw.ca/

7.0 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;

Dated at Richmond, British Columbia, this 27th day of September, 2012.

Christopher O. Naas, *P.Geo.*

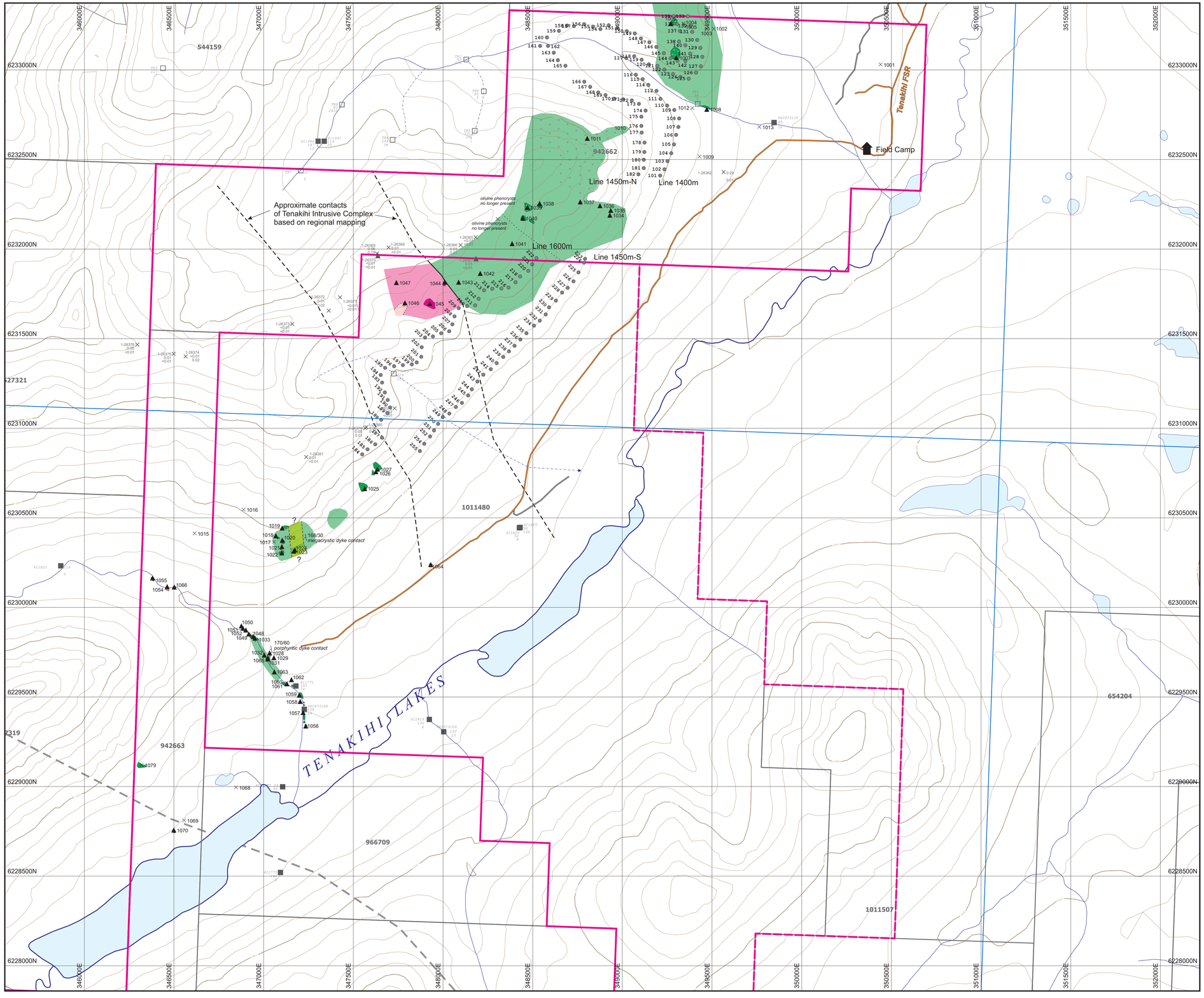
8.0 STATEMENT OF COSTS

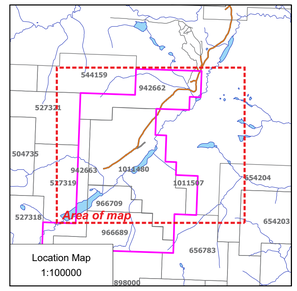
FIELD WORK				
Personnel	Quantity (Days)	Rate	Total	
Chris Naas	3.00	1,000.00	3,000.00	
Alice Brunner	12.00	700.00	8,400.00	
Kyle Gallot	13.00	400.00	5,200.00	
Larry Crittenden	12.00	500.00	6,000.00	
Spencer Plugoway	13.00	400.00	5,200.00	
Ainsley Burrow	13.00	700.00	9,100.00	
Halley Keevil	13.00	700.00	9,100.00	
Matt Osborne	13.00	700.00	9,100.00	
Total Personnel				**$ 55,100.00**
Equipment				
Truck - ED 6208	13.00	140.00	1,820.00	
Truck - DE 8421	12.00	140.00	1,680.00	
Truck - DB 7115	3.00	140.00	420.00	
Utility trailer	13.00	25.00	325.00	
ATV - 400 Artic Cat	8.00	60.00	480.00	
GPS	2.00	105.00	210.00	
Computer - Field	3.00	50.00	150.00	
Total Equipment				**$ 5,085.00**
Expense				
Accommodation & Food			901.83	
Camp Supplies			29,399.88	
Groceries			2,424.36	
Field Supplies			4,144.49	
Fuel - Truck			1,501.46	
Office Supplies			526.21	
Repairs & Maintenance - Vehicle			854.33	
Medical			145.56	
Courier, Shipping & Postage			383.00	
Reproduction & Printing			587.25	
Travel			1,675.60	
Total Expense				**$ 42,543.97**
OFFICE WORK				
Personnel	Quantity (Days)	Rate	Total	
Ted VanderWart	5.00	700.00	3,500.00	
Total Personnel				**$ 3,500.00**
Equipment				
Computer - Office	5.00	60.00	300.00	
Total Equipment				**$ 300.00**
Total				**$ 106,528.97**

9.0 LIST OF SOFTWARE USED

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

Microsoft	Word 2007
	Excel 2007
Corel	CorelDraw x6
Adobe	Acrobat version 10
Micromine	Micromine version 12.5.5





GEOLOGY

Outcrop / Interpreted

- Megacrystic porphyritic feldspar dyke

Hogem Plutonic Suite

- Quartz monzonite
- Granite, granodiorite
- Quartz diorite, diorite
- Monzonite

Tenakihi Intrusive Complex

- Diorite

Takla Group

- Basalt, aphanitic
- Basalt, olivine and plagioclase-phyric
- Sediments, gossanous

SYMBOLS

- Gravel road
- Rough road
- Contour (40 m interval)
- Watercourse
- Lake or pond
- Outcrop/subcrop
- Cathedral property boundary (as of June 30, 2012)
- Cathedral property boundary (current)
- 942662 — Tenure and ID number (as of August 3, 2012)
- Contact: defined; inferred
- Fault with dip (if known)
- Thrust fault
- 248/30 — Lineation with trend and plunge
- Vein
- Schistosity
- Joint/fracture
- 148/90 — Fold with trend and plunge
- Fault
- 080/50 — Strike/dip

GEOCHEMISTRY

Rock samples (black: current samples, grey: historical samples) **(ALL RESULTS PENDING)**

- ▲ Outcrop/sub-crop
- × Float
- 1-28364 — Sample no.
- <0.01 — Cu (ppm)
- <0.01 — Au (ppb)

Soil samples **(ALL RESULTS PENDING)**

- 176 — Contour soil sample location and number

Silt samples (historical)

- ■ □ Conventional silt sample, heavy mineral concentrate sample
- 411819 — Sample no.
- 130 — Cu (ppm)
- E — Au (ppb)

0 500 1000 Metres

NAD83, UTM Zone 10 North
Mapsheets: NTS 094C03

THANE MINERALS INC.

SURFACE GEOLOGICAL AND SAMPLE LOCATION PLAN MAP
Tenakihi Lakes Area

Cathedral Project
Omineca Mining Division, British Columbia, Canada

Project No:	C122	By:	MO, AB
Scale:	1:10,000	Drawn:	TV
Figure No:	5	Date:	September 2012

CME

APPENDIX I

ABBREVIATIONS AND CONVERSION FACTORS

ABBREVIATIONS

Elements		**Abbreviations**	
Ag	Silver	Az	azimuth
As	Arsenic	CDN$	Canadian dollars
Au	Gold	ppm	parts per million
Ba	Barium	ppb	parts per billion
Cd	Cadmium	g/t	grams per metric tonne
Cu	Copper	oz/T	troy ounces per ton
Mo	Molybdenum	tpd	metric tonnes per day
Pb	Lead	Eq. Au	Gold equivalent
Sb	Antimony	UTM	Universal Transverse Mercator
Ti	Titanium	NAD83	North American Datum 1983
Zn	Zinc	°/ ‘ / “	degree/minute/second of arc

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

ROCK SAMPLE DESCRIPTIONS

Rock Sample Descriptions

Sample_ID	UTM_E	UTM_N	Rock_Type	Float/Subcrop/ Outcrop	Alteration	Sulphides (%)	Field Sample Descriptions	Map No.	Date	Sampler
1001	350440	6233030	Quartz Monzonite	Float	none	Mag 1	Large subangular **boulder** (with a smaller one of the same lithology) in the northeast corner of the Tenakihi Creek area. Magnetic – 1% magnetite. Igneous rock with 40-50% feldspar (mostly plagioclase <=40%, some K-spar) 30-40% hornblende with minor biotite.	M09	22-Jun-12	AB
1002	349510	6233230	Granodiorite	Float	none	Mag 3-5	Small subangular **boulder** with ~70% quartz, ~20% mafics (definitely magnetite, likely hornblende, and biotite), ~10% plagioclase. Coarse-grained and equigranular.	M09	22-Jun-12	AB
1003	349970	6233230	Granodiorite	Float	none	Mag 3-5	Small (about 1 foot by 4 feet) subangular **boulder** very similar to 1002. Coarse-grained rock with about 70% quartz, 20-30% mafics, and 5-10% plagioclase. As described in 1002.	M09	22-Jun-12	AB
1004	349340	6233260	Plag-phyric mafic Takla volcanic (basalt)	Float	Chl 2, CaCb 1	none	Due west from sample 1003 – another subangular **boulder** about 1 by 2 feet across, along the 1420m elevation contour. Groundmass is dark green blue with white plagioclase phenocrysts about 1-3mm in size. The groundmass is aphanititc with biotite and olivine phenocrysts. Calcite in veinlets and in the groundmass.	M09	22-Jun-12	AB
1005	349340	6233260	Olivine and plag-phyric Takla volcanic (basalt)	Float	Chl 2, CaCb 2	none	About a foot away from sample 1004 – a **boulder** with a blue-green groundmass with plagioclase phenocrysts up to 1mm (but less abundant than the phenocrysts in sample 1004). This sample also has olivine crystals up to 4mm in size, but otherwise looks like the same rock. There are also rounded amygdules of calcite (as well as little veinlets). It could be the same rock type, possibly Takla volcanics	M09	22-Jun-12	AB
1006	349270	6233260	Olivine and plag-phyric Takla volcanic (basalt)	Outcrop	Chl 2, CaCb 1	none	**Outcrop**, seen on top of the ridge. About 25m across (east-west) and 15m up the ridge. Dark grey-green fine-grained rock with calcite/quartz veinlets up to 4mm wide. There are small clusters of olivine up to 2mm across. Less than 1% olivine phenocrysts, about 5% feldspar grains, and the remainder consists of grey-green aphanitic groundmass. Reddish-brown gossanous weathering surface but no visible sulphides. The outcrop has no distinct form or structure – just blocky/massive and extends up the hill onto the ridge.	M09	22-Jun-12	AB
1007	349300	6233070	Olivine and plag-phyric Takla volcanic (basalt)	Subcrop	Chl 2, CaCb 2	none	Took a sample from a large rock fall area with large boulders about 50m across. It looks to be from the outcrop described in 1006 (it is directly below the ridge the outcrop was on and the rocks look the same). These rocks are all the same lithology and definitely came from a fall. Dark green-grey fine-grained matrix with some tiny white plagioclase crystals about 1mm in size. There is also calcite in this sample, and clusters of sugary olivine about 3mm in diameter.	M09	22-Jun-12	AB
1008	349470	6232780	Olivine-phyric Takla volcanic (basalt)	Outcrop	Chl 2, CaCb 1	none	**Outcrop** along the river, about 20 feet alongside the river and a few feet high. The sample looks very similar to the outcrop on top of the ridge earlier (sample 1006), with a dark green groundmass and a few olivine crystals. This sample has tiny plagioclase phenocrysts but not nearly as many as sample 1006. There is also a vein of quartz-calcite about 1cm through the sample.	M09	22-Jun-12	AB
1009	349430	6232517	Granite	Float	none	Mag 7-15	At 349430E, 6232517N, found a large cluster of subrounded to subangular **boulders** of igneous rock that look similar to samples 1001 and 1002. It is very quartz and magnetite-rich, and contains plagioclase and potassium feldspar as well as hornblende and biotite. Coarse-grained, equigranular rock with 40% quartz, 15% magnetite, 5-10% biotite, 5-10% hornblende, the remainder plagioclase and potassium feldspar.	M09	23-Jun-12	AB
1010	349036	6232671	Takla volcanic (basalt)	Float	Chl 2, CaCb 1	Py <1	At 349036E, 6232671N, found some angular volcanic float and sampled a **boulder**. Dark grey-green volcanic rock, very similar to the volcanics seen the day before except without as much calcite. There are small olivine crystals less than 1mm in size (smaller than the other samples we saw), and less abundant. The groundmass is aphanitic and the rock looks like a basalt in hand sample. Vesicles are visible as well (<1mm in size). Less than half a percent very fine-grained pyrite, about 1% olivine phenocrysts, with the rest of the rock made up of the green groundmass.	M09	23-Jun-12	AB

Rock Sample Descriptions

Sample_ID	UTM_E	UTM_N	Rock_Type	Float/Subcrop/ Outcrop	Alteration	Sulphides (%)	Field Sample Descriptions	Map No.	Date	Sampler
1011	348804	6232618	Takla volcanic (basalt)	Outcrop	Chl 3, CaCb 1	Py <1	Huge **outcrop** on top of the mountain, above the 1600m elevation contour. Took a GPS point where we sampled at 348804E, 6232618N, but the outcrop goes all the way up the mountain as far as we can see. Definitely a volcanic rock and looks like a basalt. There is no quartz in it and it seems to be chlorite altered due to the green colour. There is less than 1% olivine phenocrysts (in small crystals as seen in the other volcanics) and less than 1% of the sample consists of specks of disseminated pyrite. No other visible sulphides. Fizzes locally with acid, likely in the matrix (a tiny bit of calcite).	M09	23-Jun-12	AB
1012	349390	6232787	Takla volcanic (basalt)	Float	Chl 3	Py <1, Mag 3-5	Sampled an angular **boulder** on the side of the river. There was a large mossy mound on the river that looked like it could have outcrop underneath it, but due to a large amount of snow over the river and surrounding the mound, we could not get to it – too dangerous! The boulder sample was taken at 349390E, 6232787N, and it looks exactly like the volcanics that we have been seeing. It is dark green-grey, fine-grained and seems to be chloritized (or the green could possibly be a pyroxene?). It is a pretty weathered sample and it weathers grey-black. It is magnetic as well. 3-5% magnetite, less than 1% very fine-grained pyrite, the rest is an aphanitic green matrix.	M09	23-Jun-12	AB
1013	349763	6232682	Takla volcanic (basalt)	Subcrop	Chl 2, CaCb 2	Py <1, Mag 3-5	Took a sample of angular chunks of rock directly next to the river. The sample is likely **subcrop or float from mountain**, as the rocks along the river are all the same lithology. The sample was taken right at the river's edge at 349763E, 6232682N. It looks like the exact same mafic volcanic dark green-grey rock we have been seeing. There are 0.5-2mm quartz veins with no preference in orientation and a very small amount of calcite in the sample as well. There is no olivine phenocrysts but it is visible in the groundmass (visible under a hand lens), and a lot of very fine disseminated pyrite crystals (<1%) that you can only see with a hand lens. There are also some tiny white amygdules (1%) (plagioclase?) but not as much as in some of the other volcanic rocks we've been seeing. A bit magnetic as well – less than half a percent magnetite.	M09	23-Jun-12	AB
1015	346620	6230413	Quartz diorite	Subcrop	Chl 1	none	Angular boulders on the mountain side in **subcrop** at 346620E, 6230413N. Medium to dark grey igneous rocks. Contain 40-50% mafic minerals, 20-30% plagioclase, 20-30% quartz. Weakly chloritized. This is float and looks like a rockfall area. Boulders are ~1-3ft in size. Walked up to see where rocks fell from but hit snow about 5ft deep so came down to go along contour.	M09	24-Jun-12	MO
1016	346887	6230545	Takla volcanic (basalt)	Float	CaCb 3, FeOxid 2	Mag tr	In the middle of a snow field, there are some angular **boulders** at 346887E, 6230545N. They are 1-3ft in size. Dark grey with dark red weathered surface. Aphanitic, with less than or equal to 0.5mm amygdules of quartz. Fizzes with acid, calcite in the matrix. Not the same as the olivine phyric basalt we have seen. Trace magnetite.	M09	24-Jun-12	MO
1017	347056	6230380	Takla volcanic (basalt)	Subcrop	FeOxid 2, CaCb 3	Mag 1	Rockfall and angular boulders (**subcrop**) seem to be monolithological at 347056E, 6230380N. Sample appears to be volcanic. Aphanitic, dark grey with dark reddish brown weathered surface. Black phenocrysts <1-2mm of possible pyroxene or hornblende. Very similar to 1016. 1% magnetite. Matrix fizzes so contains calcite. Boulders are angular and pebble to boulder sized.	M09	24-Jun-12	MO
1018	347061	6230388	Takla volcanic (basalt)	Outcrop	Chl 1, FeOxid 2	Py <1	**Outcrop** right above fall, under a fallen tree at 347061E, 6230388N. Looks like same thing as rockfall below. Fresh surface is dark grey green. Weathered surface is reddish brown. Once again there are black phenocrysts <= 1mm in size, possibly pyroxene or hornblende. Quartz amygdules <1mm. Disseminated very fine grained pyrite <1%. Aphanitic groundmass with subtle chloritization.	M09	24-Jun-12	MO
1019	347103	6230443	Takla volcanic (basalt)	Outcrop	Chl 2	Py <1	**Outcrop** of volcanic rock at 347103E, 6230443N extends southeast along the ridge along contour (at least 100m wide). Dark green grey, aphanitic rock. There are very few amygdules of quartz <1mm in size. Small black phenocrysts <1mm and <1%. Two cross cutting veinlets that scratch but do not fizz. Veinlets are <1mm wide and dominantly quartz. Very small amount of pyrite, <1%. No olivine noted. Chloritized matrix. There are angular boulders beside and beneath the outcrop cliff.	M09	24-Jun-12	MO
1020	347102	6230375	Takla volcanic (basalt)	Outcrop	Chl 2	Py <1	**Outcrop** at 347102E, 6230375N same as 1019. As described in 1019, but without veinlets and pyrite is slightly larger (up to 1mm in size, <1%).	M09	24-Jun-12	MO

Rock Sample Descriptions

Sample_ID	UTM_E	UTM_N	Rock_Type	Float/Subcrop/ Outcrop	Alteration	Sulphides (%)	Field Sample Descriptions	Map No.	Date	Sampler
1021	347098	6230347	Takla volcanic (basalt)	Outcrop	CaCb 3, Chl 2	none	More **outcrop** coming down the side of the ridge at 347098E, 6230347N. 2m by 1m in size. Most likely the same volcanic rock as 1019 and 1020. Aphanitic groundmass with black 1mm phenocrysts (1%) as in the last ones. Effervesces moderately with acid.	M09	24-Jun-12	MO
1022	347097	6230312	Takla volcanic (basalt)	Outcrop	Chl 2	Py <0.5%	Big **outcrop** at 347097E, 6230312N, probably the same volcanic as the last three. The outcrop is ~20m high. Outcrop extends all along the ridge. Aphanitic, dark green-grey groundmass. Fewer black phenocrysts that the last one (<0.5%). <0.5% quartz amygdules <1mm. Locally weakly magnetitic. One quartz veinlet <1mm. <0.5% disseminated pyrite, also in veinlets. Overall, same volcanic rock as previously described. No reaction to acid.	M09	24-Jun-12	MO
1023	347167	6230314	Megacrystic feldspar porphyritic dyke	Outcrop	FeOxid 2	Py 1	The same **outcrop** but there is a contact here running along the face of the cliff. The contact is at 347167E, 6230314N. Weathered surface is dark reddish brown to weakly orange brown. Gossanous locally. Fresh surface is medium grey. Porphyritic in texture with 2cm long and 1cm wide white likely plagioclase phenocrysts that are ~30-40% of the rock. The groundmass is aphanitic and contains ~1% very fine grained pyrite. Outcrops in an ~10-15m sill(?) along the face of the volcanic cliffs. The contact between the sill and the volcanic rock measures ***168/30*** .	M09	24-Jun-12	MO
1024	347167	6230315	Takla volcanic (basalt)	Outcrop	Chl 2, CaCb 3	Py <1	Volcanic that is cross-cut by 1023. The contact is at 347167E, 6230314N (as in 1023). Aphanitic, dark grey to green colour. Weakly chloritized. Groundmass may be made up of pyroxene, difficult to tell. Non-magnetic. Black phenocrysts occur again. Moderate calcite in matrix and veins. <1% disseminated pyrite.	M09	24-Jun-12	MO
1025	347563	6230663	Takla volcanic (basalt)	Outcrop	FeOxid 1, Chl 1, CaCb 1	Mag <1	**Outcrop** along the same ridge we climbed yesterday at 347563E, 6230663N. Outcrop is ~10x10m in size. Weathered surface is light grey to reddish brown locally. Fresh surface is dark grey to greenish black. There are <=1mm quartz +/- calcite veinlets crosscutting the rock. Quartz amygdules are 0.5mm in size, <1% in abundance. The groundmass is aphanitic. Weak local magnetism.	M09	25-Jun-02	MO
1026	347626	6230758	Takla volcanic (basalt)	Outcrop	none	none	Sample is from an **outcrop** in the forest at 347626E, 6230758N. The outcrop is ~ 1x1m. Outcrop is under a tree and partially moss and dirt covered. Same rock as previously described in 1025 but with very fine grained, disseminated pyrite, <1% in abundance. Non-magnetic. Does not fizz at all, no calcite?	M09	25-Jun-12	MO
1027	347633	6230775	Takla volcanic (basalt)	Outcrop	none	none	**Outcrop** at 347633E, 6230775N is ~20m high but thin, maybe 5 to 10m, in the shape of an upside down and backwards "L". Same as previously described in 1026 with very fine grained disseminated pyrite, <1%. Matrix fizzes a lot, but there are no veinlets. Weak magnetism.	M09	25-Jun-12	MO
1028	347030	6229752	Takla volcanic (basalt)	Outcrop	none	none	Small **outcrop** (possibly subcrop?) on the side of a hill seen as we were walking to the creek at 347030E, 6229752N. 2x2m in size. The rock is very weathered to a red, orangey brown colour. Fresh surface is greenish grey. Rock contains quartz-calcite veinlets <1mm in size. No sulphides noted. Non-magnetic but reacts strongly to acid. Similar to 1027.	M09	25-Jun-12	MO
1029	347050	6229724	Takla volcanic (basalt)	Outcrop	none	none	**Outcrop** just a few meters along the ridge. Approximately 3x2m in size. Contains pyrrhotite! Same volcanic, dark green/grey. Aphanitic groundmass but has quartz amygdules (up to 2mm, subrounded and <1% in abundance). Contains quartz/calcite veinlets. Possible calcite in matrix as well. <1% disseminated pyrite. Pyrite noted in quartz/calcite veinlet. Pyrrhotite is <1% and disseminated with the largest crystal 1x2mm in size.	M09	25-Jun-12	MO
1031	347021	6229719	Feldspar porphyritic dyke	Outcrop	Chl 2, Sil 3, Epi 1	Py <1, Mag <1	Sample of the dyke from **outcrop**. Dark green grey, very fine grained groundmass containing black mafics and quartz (looks pretty siliceous). Black phenocrysts are up to 1mm in size and are likely amphibole. Creamy white phenocrysts could be quartz and feldspar, are up to 5mm long and 3mm wide, and are rectangular to oval/subrounded. Very fine grained disseminated pyrite is <1% in abundance. Possibly epidote altered feldspar crystals (pistachio green coloured, rectangular crystals). No acid reaction. Weak local magnetism.	M09	25-Jun-12	MO
1032	347005	6229741	strongly weathered siliceous rock	Outcrop	FeOxid 4, Sil 4, CaCb 2	Py 1	Gossanous looking **outcrop** just up the canyon from 1030/1031 at 347005E, 6229741N. Very weathered to red brown. Few fresh patches visible are very light green and look siliceous. Finely disseminated sulphides within (1%). Weakly effervescent. Outcrop extends ~10m across to 20m down within the volcanic cliff face.	M09	25-Jun-12	MO

Rock Sample Descriptions

Sample_ID	UTM_E	UTM_N	Rock_Type	Float/Subcrop/ Outcrop	Alteration	Sulphides (%)	Field Sample Descriptions	Map No.	Date	Sampler
1033	346951	6229829	Takla volcanic (basalt)	Outcrop	Chl 2	none	At the top of the giant waterfall the **outcrop** ends at 346951E, 6229829N. Only small outcrops (<1m) stick out above this along the river banks. Sample is dark grey to black, aphanitic but bordering on fine grained with green chloritization. No sulphides noted. Quartz amygdules <1mm in size, <1% in abundance. (bordering on gabbro?)	M09	25-Jun-12	MO
1034	348930	6232190	Olivine-phyric Takla volcanic (basalt)	Subcrop	Chl 1, CaCb 1	Mag <1	**Subcrop** on the side of the ridge west of camp at 348930E, 6232190N. Possible rock fall ~10m wide. Lower down there are multiple lithologies present in subcrop but higher up where the sample is taken the rocks become more monolithologic. Sample is dark grey (slight green/blue hue). Aphanitic, olivine present <0.5mm, unidentifiable black grains. Slight acid reaction, calcite in matrix. Locally weakly magnetic. Chlorite alteration. Secondary quartz amygdules. <1% disseminated pyrite. Could be a very fine grained igneous rock, but possibly too fine grained?? Similar to the samples from the north side of the same ridge, so probably a basalt.	M09	26-Jun-12	HK
1035	348935	6232218	Takla volcanic	Outcrop	FeOxid 2, Chl 2, CaCb 2, Sil 2	Py <1	Slightly further up the hill there is a small **outcrop** at 348935E, 6232218N. The rock outcrops in three places each ~1-1.5m wide and together span ~10m of the hillside. The outcrop is quite weathered and mossy. Weathered surface is reddish brown. Fresh surface is tealy green blue. Can see grains with the naked eye. Weak acid reaction, calcite in matrix. Quartz dominant veins up to 6mm wide, meandering. Non-magnetic. Possible quartz in the matrix (smelled like quartz when hit). Pyrite is very fine grained, disseminated and <1%.	M09	26-Jun-12	HK
1036	348875	6232243	Takla volcanic	Subcrop	FeOxid 2, Chl 2, CaCb 2, Sil 2	Py <1	Further up the ridge there is more **subcrop** (rock fall) at 348875E, 6232243N. Fall is ~15m wide and ~10m tall. No outcrop visible above. Very similar to 1034/1035. Olivine has increased in abundance to ~1% and size up to 2mm. Fine grained pyrite up to 1mm is disseminated. Matrix is greeny grey/blue with possible secondary quartz. Black porphyroblasts, possibly hornblende.	M09	26-Jun-12	HK
1037	348765	6232264	Takla volcanic	Outcrop	FeOxid 2, Chl 2, CaCb 2, Sil 2	Py <0.5	Continuing southwest up the ridge there is an **outcrop** ~5 by 2m at 348765E, 6232264N. Same as previously described in 1034, 1035 and 1036. Less pyrite and finer grained (still <1% but less than in previous sample.	M09	26-Jun-12	HK
1038	348539	6232255	Takla volcanic	Outcrop	Chl 3	none	Small bunch of **outcrops** (some may be subcrop). Outcrop is ~1x1m at 348539E, 6232255N. Similar to 1037, more weathered, greyish green groundmass. Dark green almost black phenocrysts up to 3mm, olive green colour maybe? Possible olivine. No sulphides noted.	M09	26-Jun-12	HK
1039	348471	6232233	Takla volcanic	Outcrop	Chl 3	none	Made it to the top of the hill! Didn't get snowed out! **Outcrop** at 348471E, 6232233N is large with a large talus slope before it in a ravine. Outcrop is ~40m tall and 25m wide. Same rock as before. Black grains again, maybe no olivine. No sulphides. Matrix looks quartz rich.	M09	26-Jun-12	HK
1040	348445	6232174	Takla volcanic	Outcrop	Chl 3	none	On the opposite side of the ravine slightly further down in elevation at 348445E, 6232174N there is another big **outcrop** 5m wide and ~10m tall. Sample looks like it is less aphanitic and finer grained. Probably lots of plagioclase. Possible diorite/basalt? Otherwise same as 1039. Quartz vein ~2mm wide. Black unidentified mafics.	M09	26-Jun-12	HK
1041	348385	6232031	Takla volcanic	Outcrop	Chl 1, CaCb 3	Py <1, Mag <1	Continuing along contour to the southwest, there is an **outcrop** at 348385E, 6232031N, about 2x2m. It contains <1% disseminated pyrite. Greenish grey, weak local magnetism. Calcite in matrix, quite effervescent. Otherwise like the others.	M09	26-Jun-12	HK
1042	348207	6231864	Takla volcanic	Outcrop	Chl 2	none	Further along contour to the southwest at 348207E, 6231864N, **outcrop** is surrounded by a small amount of subcrop (angular boulders up to ~15cm in size). Outcrop is ~1m high by 2m wide. No olivine noted, more euhedral, aphanitic rock. Doesn't have phenocrysts like the others did. Maybe changed phases somewhere? More consistant grain size here. Greyish green in colour. Calcite appears to be gone too. Similar groundmass composition (minus the calcite). Could be a dacite??	M09	26-Jun-12	HK
1043	348087	6231816	Takla volcanic	Outcrop	Chl 2	none	Still southwest along the ridge at 348087E, 6231816N there is another **outcrop**. This outcrop measures ~5m across and 10m up. Same description as 1042 along this ridge. No porphyritic grains, all aphanitic.	M09	26-Jun-12	HK

Rock Sample Descriptions

Sample_ID	UTM_E	UTM_N	Rock_Type	Float/Subcrop/ Outcrop	Alteration	Sulphides (%)	Field Sample Descriptions	Map No.	Date	Sampler
1044	348009	6231819	Diorite	Outcrop	Epi 2	Mag 5-7, Py tr	Have found a new unit! **Outcrop** is at 348009E, 6231819N. Looks possibly dioritic and is magnetic. May be on the contact? To the northeast there is volcanic looking rock that is non-magnetic. Phaneritic, coarse grained, salt and pepper coloured, no calcite noted. Likely epidote altered feldspar. Mafics are magnetite altered. Mafics make up about 40% of the rock (probably 20% have been magnetite altered, also amphibole is included in the mafics). 50-60% feldspar. Pyrite is very fine grained, disseminated and sparse. Quartz veining is <1mm to 1mm with no preference in orientation. Minor quartz is present in the matrix. Not a typical looking diorite, probably because close to the contact.	M09	26-Jun-12	HK
1045	347926	6231697	Diorite	Outcrop	CaCb 1, Epi 2	Mag 5-7	**Outcrop** on the next ridge over to the southwest at 347926E, 6231697N. Big outcrop again ~10x15m in size. 30-40% mafics (20-30% magnetite altered), 50-60% plagioclase (with minor quartz). Rock is strongly magnetic. Subtle calcite in the groundmass. Same as 1044.	M09	26-Jun-12	HK
1046	347787	6231700	Takla volcanic, possible xenolith?	Outcrop	CaCb 2	none	**Outcrop** on the top of ridge looks to be volcanic again at 347787E, 6231700N. Possibly crossing over the finer grained diorite was near the contact? Rock smells like quartz when hit as it did before. No longer magnetic. Calcite in matrix. Light green, fine grained, possibly quartz rich?	M09	26-Jun-12	HK
1047	347740	6231814	Quartz Monzonite	Outcrop	CaCb 2	Mag 1-3	**Outcrop** even higher up at 347740E, 6231814N. 10-20% mafics. 1-3% magnetite, 60-70% plagioclase, 5% quartz. Salt and pepper colouring again (light grey). Fine to medium grained. Weakly effervescent. No sulphides noted.	M09	26-Jun-12	HK
1048	346941	6229839	Takla volcanic	Outcrop	Chl 1	none	Walking up the river above where we were at the waterfall on day 4. At 346941E, 6229839N there is **outcrop** along the edge of the river, on both sides. Outcrop extends ~10m along the river and ~1m high. On the opposite side, outcrop is ~5m tall. Grey green, chloritized. Non-magnetic. ~1mm sized black grains. Not reactive with acid. Slightly porphyritic.	M09	27-Jun-12	HK
1049	346915	6229858	Takla volcanic	Outcrop	Chl 2, Sil 2?	Py <1, Po tr, Sph tr?	Further up along the river at 346915E, 6229858N, **outcrop** is ~10x5m with rock fall below it. Still a slight bit of outcrop on the other side of the river too. Rock is still greeny grey, quartz amygdules 1-2mm and ~10%. Non-magnetic. Pyrite is <1% in abundance, very fine grained and disseminated. Pyrrhotite is present very fine grained and disseminated, <1% in abundance. Possible sphalerite? Looks coarser grained than previous volcanics described. Maybe because of the quartz?	M09	27-Jun-12	HK
1050	346889	6229897	Takla volcanic	Outcrop	CaCb 2	Py <1	**Outcrop** again up the river at 346889E, 6229897N extends probably 20m along and up to 3m high in spots. Barely any along the other side of the river anymore, mostly just boulders. Also beginning to hit more snow. Sample is less quartz phyric, same general description as 1049. Aphanitic. Pyrite noted. Matrix reacts to acid.	M09	27-Jun-12	HK
1051	346889	6229897	Quartz vein	Outcrop		Py <1	Quartz vein within the volcanic rock of 1050. Vein has sulphides along the edge (pyrite).	M09	27-Jun-12	HK
1052	346889	6229897	Takla volcanic	Outcrop	FeOxid 3, Sil 2	Po tr, Py tr	Gossanous, more weathered part of the 1050 outcrop. Appears to have pyrrhotite and pyrite in it. Weak to moderate silicification. Same rock type as 1050.	M09	27-Jun-12	HK
1054	346462	6230116	Takla sediment?	Outcrop	FeOxid 3, Sil 4	Py <1	Very small **outcrop** a little ways up the river at 346462E, 6230116N. Outcrop is ~1x0.5m in size. Outcrop on the other side of the river is ~1x2m. Very weathered as most is in the river. Orange/brown weathered surface. Fresh surface is pale green. Looks very siliceous, does not fizz. Must be very quartz rich. Very fine grained pyrite noted. Almost like a silicified sandstone. Outcrop across the river inferred to be the same rock. Possibly part of Takla sediments?	M09	27-Jun-12	HK
1055	346380	6230165	Takla volcanic	Outcrop	Chl 2	none	**Outcrop** on the other side of the river that Matt climbed over to get at 346380E, 6230165N. Aphanitic, black unidentified grains present.	M09	27-Jun-12	HK
1056	347235	6229338	Takla volcanic	Outcrop	CaCb 2, Chl 2	Po tr, Py 1	**Outcrop** along the lower part of the river at 347235E, 6229338N. Off our map to the south. 1m high by ~4m long. Calcite in matrix. Disseminated pyrite. Pyrrhotite stringers. Aphanitic, grey-green. Chloritization.	M09	27-Jun-12	HK
1057	347219	6229418	Takla volcanic	Outcrop	Pot 2?, Chl 2	Py tr	Another **outcrop** up the river towards the waterfall at 347219E, 6229418N. Extends 20m along the river bank by ~1-2m tall. Same rock as 1055/1056 except sulphide amount has decreased. No pyrrhotite noted. Possible potassic alteration.	M09	27-Jun-12	HK
1058	347203	6229475	Takla volcanic	Outcrop	Chl 2	none	**Outcrop** along the river again at 347203E, 6229475N. ~2x2m. Same stuff as 1057 but no sulphides noted. Black mafic grains as seen before.	M09	27-Jun-12	HK

Rock Sample Descriptions

Sample_ID	UTM_E	UTM_N	Rock_Type	Float/Subcrop/ Outcrop	Alteration	Sulphides (%)	Field Sample Descriptions	Map No.	Date	Sampler
1059	347198	6229510	Takla volcanic	Outcrop	CaCb 1, Chl 1	none	Big **outcrop** on both sides of the river at 347198E, 6229510N. This one is ~3-5m high and ~30m long along the river. (The outcrop on the other side of the river is the same size). 1% black mafic grains 0.5-3mm, aphanitic, sulphides not present. Subtle effervescence.	M09	27-Jun-12	HK
1060	347129	6229574	Takla volcanic	Outcrop	CaCb 1, Chl 2	Py <1	**Outcrop** along the river ~2x3m at 347129E, 6229574N. Appears to be the same rock type. Outcrop across the river is ~5m high by 5m long and another just down from that is the same size. Greeny grey, aphanitic groundmass. <1% disseminated pyrite. Subtle effervescence. Non-magnetic.	M09	27-Jun-12	HK
1061	347129	6229574	Quartz vein	Float	FeOxid 3, Fuchsite 1?	none	**Float** at the bottom of the outcrop. Angular, weathered to red/orange. Silicified Takla Group or possible quartz vein? Fresh surface is blue/grey. There is possibly a mineral that is the colour of fuchsite. Not sure what it is.	M09	27-Jun-12	HK
1062	347155	6229597	Takla volcanic	Outcrop	FeOxid 3, Sil 3, CaCb 3	Py <1	Large **outcrop** ~30m tall by 20m long. Rock type is still volcanic but there are once again gossanous areas. Not too sure if it's just weathering or a different rock type that makes certain parts of the outcrop a reddish orangey brown colour. Sample is very weathered and gossanous. Very siliceous. Very fine grained disseminated pyrite is <1%. Calcite has increased, moderately effervescent.	M09	27-Jun-12	HK
1063	347060	6229641	Takla volcanic	Outcrop	FeOxid 2, CaCb 4, Sil 3	Py <1	**Outcrop** gets slightly higher heading towards the waterfall at 347060E, 6229641N. Some orangey red parts are still present where weathered. Some parts are grey brown when weathered. Strong reaction to acid. Very fine grained, disseminated sulphides (pyrite). Looks like a very weathered, moderately silicified volcanic.	M09	27-Jun-12	HK
1064	347931	6230239	Quartz monzonite/monzonite	Outcrop	Pot 2	Mag, <1	**Outcrop** on the side of the road at 347931E, 6230239N. Looks like the intrusive that we were hoping to find. Lots of angular fragments (pebble-boulder sized) crossing road (**subcrop**). Outcrop in two spots out of the road cut. Fine grained, equigranular intrusive rock. Weathered, peachy pink locally. Fresh surface is light to medium grey. 10-20% quartz, 60-70% feldspar, 20-30% mafics. Mafics include biotite and hornblende. <1% magnetite, up to 5mm crystals. May have subtle to weak potassic alteration. Outcrop is 35m wide by 5m tall along road cut. Walking west along the road all the subcrop looks like the volcanics we were seeing previously.	M09	24-Jun-12	MO
1065	347021	6229719	Takla volcanic	Outcrop	Chl 2, CaCb 1	none	**Outcrop** everywhere! Sample taken on the other side of the ridge from 1029 in a river canyon. Canyon is about 50m deep. There are mainly volcanic rocks but there are also possible sills/dykes of igneous rock. Maybe two or three fairly vertical feldspar porphyritic dykes (***dipping at about 60° to the south (172°)***). The volcanic is a dark grey/green, aphanitic mafic rock. It contains black phenocrysts (amphibole) up to 1mm in size. No sulphides are noted. Calcite and possible quartz present along fracture planes.	M09	25-Jun-12	HK
1066	346501	6230114	Takla volcanic	Outcrop	Chl 1, Sil 3, Epi 2	Py 1	Much farther up the river there is a small **outcrop** ~1x1m at 346501E, 6230114N. There have been a few outcrops on the opposite side of the river on the way up, but so far no place to cross. Also a lot of snow on the other side. Sample is grey to pale green and quite quartz rich. More pyrite that previously seen. Epidote altered feldspar. The rock is very weathered as it has the river running over most of it.	M09	27-Jun-12	MO
1068	346846	6228996	Takla volcanic	Float	none	Py tr	**Boulder** at 346846E, 6228996N. Sub-rounded and about 1x0.5m in size. Volcanic, dark grey rock with quartz amygdules up to 2mm in size. No acid reaction and non-magnetic. Aphanitic groundmass. Trace pyrite, very fine-grained and disseminated.	M09	28-Jun-12	MO
1069	346556	6228811	Takla volcanic	Float	none	none	A patch of sub-angular to angular **boulder**s. Sampled one about 1x1m in size (all around the same size) at 346556E, 6228811N. There are about 8 big boulders very similar to sample 1068 but no sulphides noted. Slightly fewer quartz amygdules as well. All boulders appear to be the same lithology.	M09	28-Jun-12	MO
1070	346499	6228757	Takla volcanic	Outcrop	FeCb 1	Py tr	**Outcrop** in the woods at 346499E, 6228757N. Angular outcrop about 3x2m in size. Rock has large black phenocrysts about 4x2mm, possibly amphibole. No calcite noted and increased number of possible quartz amygdules. Trace sulphides noted. Very fine-grained possible Fe carbonate as well.	M09	28-Jun-12	MO

Rock Sample Descriptions

Sample_ID	UTM_E	UTM_N	Rock_Type	Float/Subcrop/ Outcrop	Alteration	Sulphides (%)	Field Sample Descriptions	Map No.	Date	Sampler
1079	346320	6229120	Volcanic or fine-grained monzonite	Subcrop	CaCb 1	none	**Subcrop** (huge rock-fall) about 50m wide by 35m tall up the mountain on the side of the lake along a ridge. Took a sample at 346320E, 6229120N. Almost looks like an intrusive rock. No acid reaction and doesn't appear to be aphanitic, but it is fine-grained. Could be a monzonite or a quartz monzonite? Quite silicified and non-magnetic. Mafics are present. (Could just be the volcanic with some phenocrysts that make it appear to be coarser grained.) There is a calcite veinlet about 3mm wide. ~20% mafics (less than 1mm in size), ~20% white porphyroblasts (light grey and less than 1mm in size), some tabular and some sub-rounded. 60% grey groundmass. No sulphides noted.	M09	28-Jun-12	MO

APPENDIX III

CONTOUR SOIL SAMPLE LOCATIONS

Appendix III

Contour Soil Sample Numbers and Locations

Location (UTM Zone 10 North)		Contour Sample	Sample	Comments
Easting	Northing	Line		
349210	6232410	1400m	101	start of line
349234	6232445	1400m	102	50m past last sample
349251	6232491	1400m	103	50m past last sample
349299	6232637	1400m	106	50m past last sample
349272	6232535	1400m	104	50m past last sample
349287	6232584	1400m	105	50m past last sample
349312	6232681	1400m	107	50m past last sample
349316	6232729	1400m	108	50m past last sample
349289	6232776	1400m	109	50m past last sample
349249	6232801	1400m	110	50m past last sample
349212	6232838	1400m	111	50m past last sample
349190	6232883	1400m	112	50m past last sample
349144	6232916	1400m	114	50m past last sample
349113	6232948	1400m	115	50m past last sample
349075	6232973	1400m	116	50m past last sample
349021	6233066	1400m	117	100m past last sample
349066	6233076	1400m	118	50m past last sample
349107	6233057	1400m	119	50m past last sample
349147	6233031	1400m	120	50m past last sample
349195	6233022	1400m	121	50m past last sample
349234	6233002	1400m	122	50m past last sample
349282	6232977	1400m	123	50m past last sample
349324	6232961	1400m	124	50m past last sample
349369	6232951	1400m	125	50m past last sample
349410	6232985	1400m	126	50m past last sample
349437	6233020	1400m	127	50m past last sample
349446	6233073	1400m	128	50m past last sample
349435	6233123	1400m	129	50m past last sample
349417	6233167	1400m	130	50m past last sample
349389	6233213	1400m	131	50m past last sample
349379	6233245	1400m	132	50m past last sample
349365	6233299	1400m	133	50m past last sample
348791	6231945	1450m-S	223	50m past last sample
348786	6231924	1450m-S	224	50m past last sample
348755	6231870	1450m-S	225	50m past last sample
348727	6231820	1450m-S	226	50m past last sample
348695	6231783	1450m-S	227	50m past last sample
348664	6231757	1450m-S	228	50m past last sample
348629	6231712	1450m-S	229	50m past last sample
348591	6231675	1450m-S	230	50m past last sample
348572	6231635	1450m-S	231	50m past last sample
348539	6231600	1450m-S	232	50m past last sample
348507	6231572	1450m-S	234	50m past last sample
348465	6231530	1450m-S	235	50m past last sample
348431	6231495	1450m-S	236	50m past last sample
348399	6231460	1450m-S	237	50m past last sample
348367	6231429	1450m-S	238	50m past last sample
348335	6231398	1450m-S	239	50m past last sample
348299	6231363	1450m-S	240	50m past last sample
348266	6231329	1450m-S	241	50m past last sample
348224	6231299	1450m-S	242	50m past last sample
348191	6231261	1450m-S	243	50m past last sample
348160	6231217	1450m-S	244	50m past last sample

Contour Soil Sample Numbers and Locations

Location (UTM Zone 10 North)		Contour Sample Line	Sample	Comments
Easting	Northing			
348140	6231183	1450m-S	245	50m past last sample
348105	6231141	1450m-S	246	50m past last sample
348071	6231118	1450m-S	247	50m past last sample
348035	6231082	1450m-S	248	50m past last sample
347998	6231062	1450m-S	249	50m past last sample
347972	6231024	1450m-S	250	50m past last sample
347949	6230988	1450m-S	251	50m past last sample
347927	6230954	1450m-S	252	50m past last sample
347895	6230913	1450m-S	254	50m past last sample
347871	6230873	1450m-S	255	50m past last sample
349286	6233300	1450m-N	135	50m past last sample
349304	6233255	1450m-N	136	50m past last sample
349320	6233217	1450m-N	137	50m past last sample
349315	6233158	1450m-N	138	50m past last sample
349351	6233137	1450m-N	140	50m past last sample
349377	6233091	1450m-N	141	50m past last sample
349351	6233050	1450m-N	142	50m past last sample
349307	6233050	1450m-N	143	50m past last sample
349268	6233064	1450m-N	144	50m past last sample
349231	6233093	1450m-N	145	50m past last sample
349189	6233128	1450m-N	146	50m past last sample
349150	6233154	1450m-N	147	50m past last sample
349103	6233175	1450m-N	148	50m past last sample
349069	6233203	1450m-N	149	50m past last sample
349024	6233216	1450m-N	150	50m past last sample
348971	6233234	1450m-N	151	50m past last sample
348923	6233249	1450m-N	152	50m past last sample
348877	6233228	1450m-N	154	50m past last sample
348836	6233241	1450m-N	155	50m past last sample
348786	6233255	1450m-N	156	50m past last sample
348730	6233244	1450m-N	157	50m past last sample
348691	6233247	1450m-N	158	50m past last sample
348646	6233218	1450m-N	159	50m past last sample
348579	6233181	1450m-N	160	50m past last sample
348541	6233134	1450m-N	161	100m past last sample
348585	6233134	1450m-N	162	50m past last sample
348617	6233096	1450m-N	163	50m past last sample
348640	6233054	1450m-N	164	50m past last sample
348682	6233023	1450m-N	165	50m past last sample
348787	6232934	1450m-N	166	150m past last sample
348820	6232905	1450m-N	167	50m past last sample
348865	6232874	1450m-N	168	50m past last sample
348906	6232859	1450m-N	169	50m past last sample
348953	6232839	1450m-N	170	50m past last sample
349005	6232836	1450m-N	171	50m past last sample
349052	6232830	1450m-N	172	50m past last sample
349092	6232810	1450m-N	173	50m past last sample
349129	6232773	1450m-N	174	50m past last sample
349105	6232739	1450m-N	175	50m past last sample
349105	6232687	1450m-N	176	50m past last sample
349107	6232650	1450m-N	177	50m past last sample
349123	6232594	1450m-N	178	50m past last sample
349122	6232542	1450m-N	179	50m past last sample

Contour Soil Sample Numbers and Locations

Location (UTM Zone 10 North)		Contour Sample	Sample	Comments
Easting	Northing	Line		
349119	6232498	1450m-N	180	50m past last sample
349119	6232452	1450m-N	181	50m past last sample
349089	6232417	1450m-N	182	50m past last sample
348179	6231686	1600m	211	50m past last sample
347549	6230854	1600m	184	50m past last sample
347579	6230882	1600m	185	50m past last sample
347622	6230910	1600m	186	50m past last sample
347659	6230947	1600m	187	50m past last sample
347655	6231047	1600m	188	100m past last sample
347690	6231084	1600m	189	50m past last sample
347705	6231116	1600m	190	50m past last sample
347691	6231157	1600m	191	50m past last sample
347675	6231200	1600m	192	50m past last sample
347660	6231255	1600m	193	50m past last sample
347652	6231297	1600m	194	50m past last sample
347677	6231337	1600m	195	50m past last sample
347727	6231346	1600m	196	50m past last sample
347776	6231352	1600m	197	50m past last sample
347826	6231356	1600m	199	50m past last sample
347853	6231367	1600m	200	50m past last sample
347878	6231399	1600m	201	50m past last sample
347881	6231452	1600m	202	50m past last sample
347899	6231506	1600m	203	50m past last sample
347943	6231512	1600m	204	50m past last sample
347989	6231530	1600m	205	50m past last sample
348034	6231541	1600m	206	50m past last sample
348052	6231580	1600m	207	50m past last sample
348064	6231624	1600m	208	50m past last sample
348087	6231670	1600m	209	50m past last sample
348134	6231682	1600m	210	50m past last sample
348198	6231722	1600m	212	50m past last sample
348229	6231770	1600m	213	50m past last sample
348274	6231778	1600m	214	50m past last sample
348325	6231780	1600m	215	50m past last sample
348365	6231785	1600m	216	50m past last sample
348404	6231815	1600m	217	50m past last sample
348429	6231847	1600m	218	50m past last sample
348475	6231878	1600m	220	50m past last sample
348497	6231915	1600m	221	50m past last sample
348521	6231949	1600m	222	50m past last sample