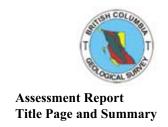


### Ministry of Energy, Mines & Petroleum Resources Mining & Minerals Division BC Geological Survey



**TOTAL COST:** \$10,570.00

TYPE OF REPORT [type of survey(s)]: Geochemical

UTHOR(S): Peter Holbek and Richard Joyes		SIGNATURE(S):	
OTICE OF WORK PERMIT NUMBER(S)/DATE(S): N/A		YEAR OF WORK:	201
TATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S)	5480	80774 (Dec 13/13); 5474905 (Oct 31/13)	
481320 (Dec 16/13).			
ROPERTY NAME: MOT			
LAIM NAME(S) (on which the work was done): MOT 1A, MOT 13, M	IOT 1	11, MOT 18	
DMMODITIES SOUGHT: Au			
INERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 94D 001			
INING DIVISION: Omenica		NTS/BCGS: 094D 03E	
ATITUDE: 56 ° 05 '00 " LONGITUDE: 127	0	o 06 '00 " (at centre of work)	
		(at define of worth)	
Electrum Resource Corporation	_ 2)		
AILING ADDRESS: 904-1050 West Hastings Street, Vancouver, B.C.			
PERATOR(S) [who paid for the work]:			
Copper Mountain Mining Corp.	_ 2)		
All INC ADDRESS.			
AlLING ADDRESS:  1700-700 West Pender Street, Vancouver, B.C. V6C 1G8			
ROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure rgillite, Orthoclase megacrystic porphyry monzonite, quartz die			ora
ossans, hornfelsing, mesothermal quartz veins, pyrite, base m		· · · · · · · · · · · · · · · · · · ·	eigi

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres) Ground			
Magnetic			
Padiametria			
Solomio			
Other			
Airhorne			
GEOCHEMICAL (number of samples analysed for)			
<b>Soil</b> <u>33</u>		MOT 1A, MOT 13, MOT 11, MOT 18	2990
Silt 32		MOT 1A, MOT 13, MOT 11, MOT 18	2899
Rock 6		MOT 1A, MOT 13, MOT 11, MOT 18	544
Other 7 moss mats		MOT 1A, MOT 13, MOT 11, MOT 18	945
DRILLING (total metres; number of holes, size)			
Core		_	
Non-core		_	
RELATED TECHNICAL			
Sampling/assaying		_	
Petrographic		_	
Mineralographic		_	
Metallurgic		_	
PROSPECTING (scale, area) 1: 5,000	0, 20km2	MOT 1A, MOT 13, MOT 11, MOT 18	3500
PREPARATORY / PHYSICAL			
		_	
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)		_	
Road, local access (kilometres)/t	rail		
Trench (metres)		_	
Underground dev. (metres)		_	_
Other			
		TOTAL COST:	\$10,570

## **Geochemical Program**

on the

## **MOT Property**

Omineca Mining Division, British Columbia

NTS 94D /3

UTM: 607,500E; 6,230,000N (Zone 10, NAD 83)

#### Owner:

Electrum Resource Corporation
904-1050 West Hastings Street,
Vancouver, BC.

## **Operator:**

Copper Mountain Mining Corp.

1700-700 West Pender Street,

Vancouver, B.C. V6C 1G8

#### **Authors:**

Peter Holbek & Richard Joyes,
January, 2014

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### 1. Introduction

#### 1.1 Introduction and Exploration Objectives

The MOT property is one of a number of properties in the Bear Lake area that are under option to Copper Mountain Mining from Electrum Resource Corporation. Work was done collectively on all properties over the period of October 6<sup>th</sup> to 12<sup>th</sup>, 2013, although each property in the package is reported on separately. The MOT property has been the subject of numerous exploration programs dating back the 1940's but the most significant was undertaken during 1987 when nine holes were drilled. Prior to initiating a field based exploration program, Copper Mountain commissioned PhotoSat to obtain and process Spot Satellite imagery of the claim areas, and also obtained TRIM topographic data from the Government of BC, in order to provide base maps and to assist with a regional geological study and data compilation (Holbek and Joyes, 2012). Compilation of historical data and subsequent field examinations were conducted in 2012 (Holbek and Joyes, 2013), with a follow up geochemical sampling being the subject of this report.

The MOT property has more than 65 years of exploration history, changing owners many times. Significant gold values are associated with base metal sulphide minerals within mesothermal style quartz veins. The veining appears to be related to a dyke swarm of orthoclase, megacrystic monzonite intruding argillite, sandstone and conglomerate of the Bowser Lake Group. A large pluton or small batholith of quartz diorite is situated to the south and west of the property and forms the southwestern third of the property area. Four areas of mineralization and associated anomalous soil geochemistry have been defined, which are somewhat zoned from Mo-Cu-Au-Ag-W in the north and Au-Ag +/-Cu-Pb-Zn to the south. A majority of significant assays have come from the Huestis zone and a majority of the advanced exploration has been undertaken there. There is no documentation of large scale geophysical surveys having been undertaken on the property, which is not unreasonable in light of the exploration focus on gold and silver in quartz veins hosted by carbonaceous shale and as such, the mineralization is not well suited for most geophysical techniques. Two, relatively small, drill programs have been undertaken exploring gold bearing veins in the Huestis zone and another drill program exploring for porphyry Mo-Cu mineralization. The initial drill program involved very short holes (likely with very small diameter core) testing directly below relatively high-grade surface mineralization at shallow depths and yielded a 9m (~6m true) intersection grading 9.1g/t Au. A more extensive drill program in 1987 tested a larger area of mineralization and fortunately almost all of the core was split and assayed allowing for a better understanding of the distribution of gold mineralization. The results of this program together with the large area yielding significant gold assays in rock samples suggested that there may be some potential for a bulk tonnage, low-grade gold deposit.

The 2012 program was designed to carry out a preliminary investigation into the nature of the mineralization and determine potential for either bulk mineable low-grade type of deposit or a high-grade vein deposit. Examination of the geology, drill core and long chip samples of the outcrop in the Huestis zone indicate that gold is hosted within relatively coarse grained base metal sulphide clusters within white "bull" quartz veins and that areas peripheral to the veins do not carry significant gold

values. Drill-hole data also indicates a capricious nature to the gold, with no continuity of mineralized areas between adjacent drill holes. The cumulative length of the gold bearing intersections within the drill holes and surface samples are insufficient to support the concept of bulk tonnage style deposit.

The purpose of the 2013 exploration program was to extend the geological evaluation beyond the areas of historical exploration. Due to unexpected snow cover, the prospecting and mapping program was switched to a somewhat abbreviated program of geochemical sampling; primarily silt samples, supplemented with rocks and soils where available. The results of this program form the basis for this report.

#### 1.2 Location and Access

The general location of the Bear Lake area is presented on the BC map of Figure 1.1 and the actual claims are shown on figure 1.2. A more regional perspective of the claim location is given on the regional geological plan, Figure 2.1. The approximate center of the property is situated at UTM coordinates of 604000mE and 6,232,000mN, on the NTS map sheet 94D/2W and 3E, and is located

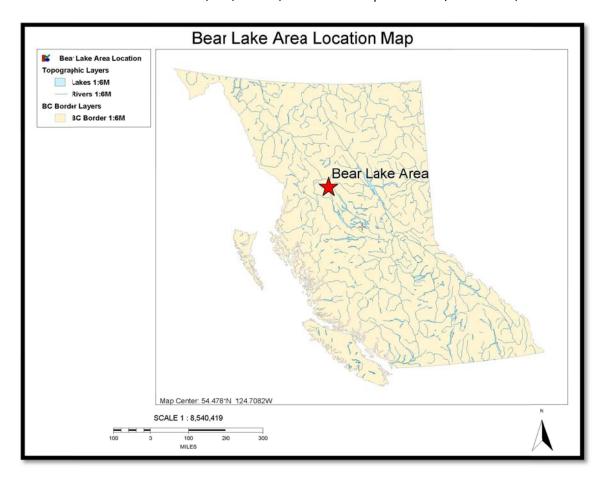


Figure 1.1 Location of the Bear Lake Project Area.

3.5km northwest of Motase Lake, 16km due west of the widest part of Bear Lake, and 143km north of the town of Smithers. Currently, the property is not road accessible and requires helicopter access, with the nearest helicopter based in Smithers. However, logging operations are being carried out just to the south of Bear Lake via road networks extending south to the Babine Lake area, and current cut blocks are within 25km of the property, to the east-southeast.

#### 1.3 Property Status and Ownership

There are 4 properties within the study area, all of which are made up of multiple claims. Claims that comprise the MOT property are listed below in Table 1.1 and illustrated in figure 1.2. All claims are owned by Electrum Resource Corporation of Vancouver.

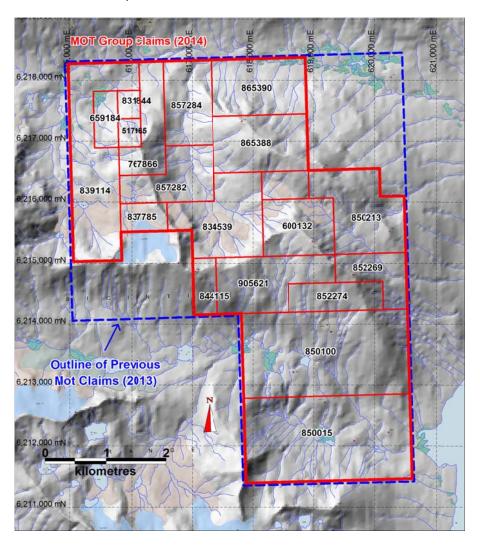


Figure 1.2 MOT Claims and Detailed Location

#### 1.4 Physiography and Climate

The properties cover a wide variety of terrain, but are generally centered on ridges or mountain tops and are large enough to incorporate adjacent valley bottoms. Elevations on the properties range from 2,300m to 1,100m. Tree-line is generally at, or around the 1,500m elevation. The properties to the west have higher elevations and more rugged terrain whereas the eastern properties are lower with slightly more subdued terrain due to rounded-off ridges due to large ice-sheet type glaciation. More recent alpine glaciation has created small cirques. A strong northwest-southeast orientation of the drainages and ridges on the eastern part of the study area is a relic of continental glaciation.

Forest cover at lower elevations consists of relatively mature stands of pine and spruce, although tree size is limited due to the average elevation. Swamps are common in the rounded valley bottoms and

**Table 1.1 Mineral Tenure Details** 

Tenure Number	Claim Name/Property	Issue Date	Good To Date	New Good To Date	Area in Ha
831844	MOT 12	2010/aug/19	2014/may/18	2015/may/18	18.05
517965		2005/jul/18	2014/may/30	2015/may/30	18.05
865388	MOT 2B	2011/jul/10	2014/jan/27	2015/jan/27	144.42
865390	MOT 2A	2011/jul/10	2012/jul/10	2013/oct/31	144.39
659184	мот 3	2009/oct/25	2014/may/19	2015/may/19	36.10
600132	MOT 11	2009/feb/28	2012/jun/15	2015/apr/26	108.35
767866	MOT 1	2010/may/05	2012/jun/15	2015/jan/15	90.26
834539	MOT 13	2010/sep/29	2012/jun/15	2015/jan/17	162.52
837032	MOT 4	2010/oct/31	2012/jun/15	2013/oct/31	108.31
837785	MOT 5	2010/nov/06 2012/jun		2015/jan/19	90.29
839114	MOT 15	2010/nov/29	2012/jun/15	2013/oct/31	234.70
843388	MOT 16	2011/jan/18	2012/jun/15	2015/may/21	36.11
844115	MOT 6	2011/jan/23	2012/jun/15	2013/oct/31	36.13
845748	MOT 7	2011/feb/08	2012/jun/15	2013/oct/31	180.63
846142	MOT 8	2011/feb/11	2012/jun/15	2013/oct/31	198.56
850015	MOT 17	2011/mar/29	2012/jun/15	2013/oct/31	379.53
850100	MOT 10	2011/mar/30	2012/jun/15	2013/oct/31	379.41
850213	MOT 18	2011/mar/31	2012/jun/15	2015/jan/16	162.52
852274	MOT 9B	2011/apr/22	2012/jun/15	2013/oct/31	72.25
857282	MOT 1A	2009/oct/26	2012/jun/15	2015/jan/20	108.33
857284	MOT 1B	2011/jun/19	2012/jun/15	2015/jan/26	108.3
905621	MOT 14	2011/jun/19	2012/jun/15	2015/feb/09	144.50

large numbers of avalanche chutes, filled with slide alder and devil's club attest to relatively high snow loads during the winter. Proximity of the area to the Skeena River valley, to the north, allows an influence of coastal climate to sneak into the area, resulting in higher precipitation than one would normally expect at this easting on the lee side of the coast range.

#### 1.5 Exploration History

The mountainous region near the center of the northern half of British Columbia has historically been relatively inaccessible. A placer gold discovery in 1899 on McConnell Creek marked the first interest in mining in the area and subsequent discoveries resulted in wide-spread prospecting in the region during the years 1907-1908. Geological mapping in the region by the Geological Survey of Canada was undertaken during the years 1941 to 1948 and a number of precious & base-metals, coal and other mineral occurrences were tabulated during this period (Sheppard, 1973).

Possibly the earliest exploration in the Motase Lake area, and perhaps the district, was noted by Lord (1949), who documented claim staking and work by Yukon Northwest Explorations Limited, in 1945 which consisted of prospecting, geological mapping, and sampling. However based on the description of geology and mineralized showings (containing bornite and chalcocite with minor associated galena, pyrite, chalcopyrite, and possibly tetrahedrite within minute fractures and as disseminations adjacent to fractures in andesitic volcanic rocks), it seems likely that this work was undertaken within rocks of the Hazelton Group, possibly on the north side of the property, or even closer to the western shoreline of Motase Lake. Gold bearing mineralization was discovered in the MOT claim area in 1948 by H.H. (Spud) Huestis (one of the founders of Bethlehem Copper Corporation) which held claims in the area until 1982, when the property was inherited by Cominco from Bethlehem. Subsequent to discovery, three areas with gold showings were identified on the property and are named the 'Huestis', 'Goudridge', and 'Moran' with the majority of the work having been carried out on the Huestis zone. The initial diamond drilling was carried out by Noranda in 1962, who drilled 4 holes, all of which yielded significant intersections (however, the low gold price at the time and the remoteness of the claim area discouraged Noranda from pursuing exploration on the property).

Noranda's best intersection was of 0.32 oz/T Au over 30 feet (estimated to be 20 feet true but this would also depend upon the azimuth). Two of the other drill holes (#2 and #2A) which were in close proximity (figure 3.1) returned intervals of 0.6 oz/T and 9.4 oz/T Ag over 4.9 feet and 1.2 oz/T Au and 2.0 oz/T Ag over 2.6 feet. The Huestis zone consists of a series of quartz veins, hosted by "altered" sediments, and feldspar porphyry intrusive rocks.

In 1983, Cominco carried out surface rock sampling which yielded 2m of 0.27oz/T Au and 2.5 oz/T Ag from the outcrop a few metres above Noranda's DH 2 and 2A (Pauwels & Wiley, 1983). The Goudridge zone was reported by Cominco to consist of quartz within an alteration envelope at the contact between feldspar porphyry and sedimentary rocks. Here, a 3m chip sample yielded 0.346 oz/T Au, 0.47 oz/T Ag, and low values for base metals. Sampling was limited by the extreme ruggedness of the terrain

(Pauwels, 1983). Cominco also named the Moran zone, which occurs near the ridge top to the southeast of the Huestis area. Sample values were significantly lower than the Huestis zone with the best sample being within a quartz vein and assaying 0.77 oz/T Au over 0.1m. Cominco allowed all of the claims to lapse with the exception of the two core claims covering the Huestis zone.

In 1981 Amoco Canada staked claims over the Mot area and conducted soil geochemical sampling, rock sampling, geological mapping and diamond drilling. Amoco defined a sizeable geochemical anomaly (Cu, Mo, Au, Ag, W) covering a northwest trending area about 2500m by 750m which included the Huestis zone. 916m of drilling was completed in four holes, targeting potential porphyry style mineralization to the east of the Huestis zone, with negative results. The claims were once again allowed to lapse.

The Horn claims, located about 3km north of the Huestis zone, were staked to cover a large colour anomaly and zone of pyrtization at the contact between Bowser sediments and elongate quartz diorite porphyry, by Canadian Superior in 1973 (Baker and Rainboth, 1973). Soil sampling indicated a 2km long Mo anomaly, with scattered anomalous values in Au and Cu. The intrusion consisted of two phases: a feldspar-phyric quartz diorite and a mega-crystic pink (K-spar) porphyry quartz monzonite, neither of which displayed any alteration in outcrop (similar to the intrusions on the MOT claims).

The most significant work on the MOT claim area was undertaken in 1987 by Prolific Resources, who conducted a 10 hole, 976m drill program together with extensive prospecting and surface geochemical surveys, and is well documented by Davis (1988). The 10 drill holes from this program are distributed along 3 fences spaced from 20 to 60m apart and that straddle the original Noranda drilling. Unfortunately most of the holes were drilled in opposing directions from the same collar location which covers a wider area but makes correlation of the veins more difficult; in a few areas holes were drilled off the same collar at -45 and -60 degrees and these holes demonstrated poor correlation between grade bearing intersections. Some of the veins appear to be correlative along strike but only to the next closest drill-hole. All of the drill holes intersected mineralized material with 6 of the 10 holes intersecting at least one intersection greater than 1 foot and 0.1 oz/T gold. There were a total of four intersections greater than 3 feet in thickness and greater than 0.25 oz/T gold. A table of the most significant intersections is attached below.

Table 1.2: Summary of Significant Drill Results from Prolific Resources' 1987 Program

<u>Drill Hole</u>	From (ft)	<u>To (ft)</u>	<u>Thickness</u>	Au oz/T	Ag oz/T
87-01	310	313	3	0.26	0.09
87-03	45.9	53.0	7.1	0.26	0.45
87-04	44.5	45.3	0.8	0.14	6.83
	130.3	134.2	3.9	0.26	0.70
87-05	258	259	1	0.15	2.68
87-09	19	22	3	0.13	0.70
87-10	81	83.4	2.4	1.72	1.34
	138.5	141.0	2.5	0.10	1.55

As much (but not all) of the drill holes were split and assayed an average value for the assays was also estimated and is given in the table below:

Table 1.3: Compilation of all Assay Data from Prolific Resources' 1987 Drill Program

<u>Drill Hole</u>	Total depth	# of samples	Au ppb	Ag ppb
87-01	313	104	231	508
87-02	308	79	60	790
87-03	305	103	738	2230
87-04	313	87	369	5260
87-05	313	64	171	3420
87-06	338	50	155	1120
87-07	313	59	78	930
87-08	313	60	56	1020
87-09	338	68	223	1340
87-10	343	52	1724	12540

It should be noted that the average values are with uncut samples and most of the higher values would be much lower if the extreme highs were cut, additionally not all of the unsampled material would carry grade so if the entire drill hole was analyzed the overall averages would be somewhat lower.

Work on the property subsequent to the 1987 drill program has been relatively minor, usually consisting of additional prospecting and some soil geochemistry.

#### 1.6 Current Program

A four (some days five) person geology and sampling crew was based out of the Sharp Lake Ranch, just outside of Hazelton, for the period of October 6 through October 11, 2013, and flew into the Bear Lake area on a daily basis with an A-star helicopter chartered from Silver King Helicopters based in Smithers, BC. Exploration work was hampered by an early snow fall (>30cm accumulation at higher elevations). Weather conditions (visibility) prevented accessing the property area on one day, and forced a shortened time in the field on another day. Including travel time, total man-days were 26, with a total of 20 man-days of field time.

The objective of the 2013 exploration program for the MOT property was to examine the northern parts of the property that had not been examined in 2012. Plans for prospecting and mapping were modified to primarily geochemical sampling due to unexpected snow cover. The two main drainages, one to the northeast and one to the northwest of the Huestis zone were sampled, primarily with detailed stream geochemistry, but also with soil samples (where streams were unavailable) and prospecting of float boulders within the streams. A total of 5 man-days were expended on this survey.

## 2. Geology and Mineralization

#### 2.1 Regional Geological Setting

The project area is situated near the central-eastern edge of the Bowser Basin, a large sedimentary basin that was deposited on Jurassic volcanic rocks of the Stikine terrane. The basin was uplifted and deformed to form the Skeena Fold Belt in Cretaceous time and, within the project area is intruded by Tertiary to Cretaceous intrusive rocks of the Katsberg and Babine plutonic suites. Source of the sediments within the Bowser stratigraphy is believed to be from the obduction of the Cache Creek terrane over Stikinia in the early middle Jurassic (Gagnon, 2010).

Rocks of the Bowser Basin are primarily middle Jurassic to mid-Cretaceous sediments deposited in wide range of environments ranging from deep-water marine to deltaic and lacustrine. Shale and argillite with interbedded sandstone form a thick succession in the western part of the project area and overlie coarse sandstone, minor conglomerate and possibly some tuffaceous rocks that may be transitional into the underlying Hazelton Group volcanic rocks, in the eastern project area. The Hazelton Group rocks within the project area are probably part of the upper Hazelton Group which is dominated by fine grained clastic rocks and lesser bi-modal rift-related volcanic rocks.

Structurally, the Bowser Basin is dominated by contractional folding and faulting (Evanchick *et. al.*, 2009). Within the project area, folds generally have a northwesterly orientation, and may be accompanied by similarly oriented thrust faults. Observed folds vary from open to tight and can be recumbent. In general, within the area of the map below, the intensity of folding appears to increase in a westerly direction or "up-section", and/or is more visible within the Bowser sediments than the underlying Hazelton Group rocks.

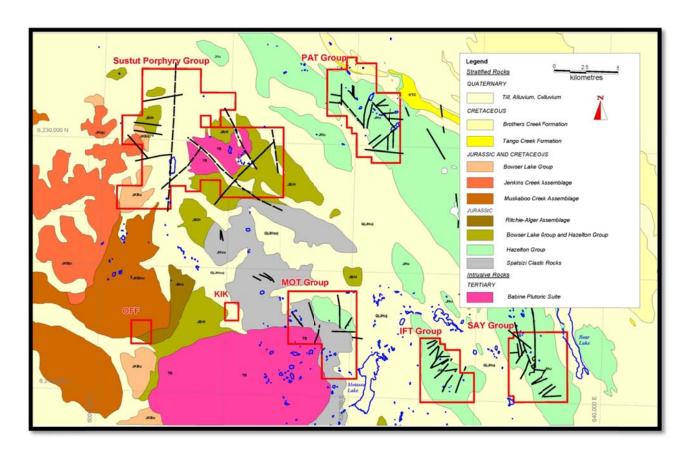


Figure 2.1 Regional Geology and Claim Group Locations (as at Oct/13).

The project area geology was determined by compiling information from published maps and digitizing it onto a GIS. The most current source of geology is GSC open file 5571 (Evanchick, 2007). Simplified geology is shown on Figure 2.1. The three easternmost properties are entirely underlain by undivided, lower to lower-middle Jurassic Hazelton Group rocks, consisting of: subaerial and marine, mafic, pyroclastic to epiclastic, and minor flow, volcanic rocks; with lessor felsic volcanic rocks, which include sills, dykes and welded and non-welded ignimbrite, airfall tuff breccias; epiclastic and bioclastic rocks, including volcanic debris flow, breccias, conglomerate, siltstone, shale and limestone. The western properties are more complex with rocks of both the Hazelton and Bowser Lake Groups and intrusions of the Babine Plutonic Suite. Areas of intrusion and perhaps, of iron-rich Hazelton Group rocks, are indicated on the regional aeromagnetic data (Figure 2.2). On the western side of the magnetic image (Fig. 2.2) the magnetic highs (red-yellow) colours correlate well with the presence of intrusive rocks on the regional geology map and as observed in the field. It also appears that the green colour also correlates to intrusive rocks as exposed in stream gullies (lowest elevations) and from a few spot observations it appears likely that the two magnetic highs are part of the same pluton or batholith (herein referred to as the Motase Pluton). On the eastern side of the mag image, the extreme magnetic highs (magenta) correlate with exposed intrusive rock, but high magnetic susceptibility is also indicated for the sub-areal (oxidized reddish brown) pyroclastic rocks of the Hazelton Group, and more surprisingly, flat lying sediments of the Brothers Creek Formation which forms extensive cover to the east of Bear Lake.

The Bowser Lake Group has been subdivided into eight lithological Assemblages, four each in the upper Jurassic to lower Cretaceous and Upper Middle to Upper Jurassic age ranges (Evanchick. In the vicinity of the project area the lower three of the younger four assemblages and the older part of the Bowser Lake Group consisting of the one Formation and three Assemblages that we would expect to encounter. A brief description taken from OF5571 is given below:

Jenkins Creek Assemblage (JKBjc): (non-marine assemblage) mudstone, siltstone, fine to medium grained sandstone, rare conglomerate and coal, commonly arranged in fining upwards cycles, sandstone is grey, green and brown weathering and fossil plants are abundant.

Skelhorne Assemblage (JKBs): (deltaic assemblage) thinly intermixed and varicoloured siltstone, sandstone and conglomerate (with or without coal), commonly arranged in coarsening and thickening upward cycles, and featuring sandstone with cross-bedding, ripples, burrows, and fossils and conglomerate that is rusty and grey weathering but constitutes a lower proportion of the sequence (15-30%) than in the Eaglenest Assemblage.

Muskaboo Assemblage (JKBmc): (shelf assemblage) sandstone, siltstone and conglomerate; primary lithofacies is sandstone forming laterally continuous thin to thick bedded sheets, less common is sandstone interbedded with siltstone and lenses of conglomerate. Sandstone is green, grey to brown weathering, thin to thick bedded and arranged in coarsening upwards cycles, abundant marine fossils; conglomerate increases in proportion and thickness upsection.

Netalzul Formation (JBn): feldspar-hornblende-porphyritic andesite flow, breccia and tuff, intercalated volcaniclastic sedimentary rocks, including volcanic debris flow. (The rocks of this formation could easily be mis-classified as part of the Hazelton Group if observed in isolation and/or after alteration, and may be present on the northern side of the MOT claim area.)

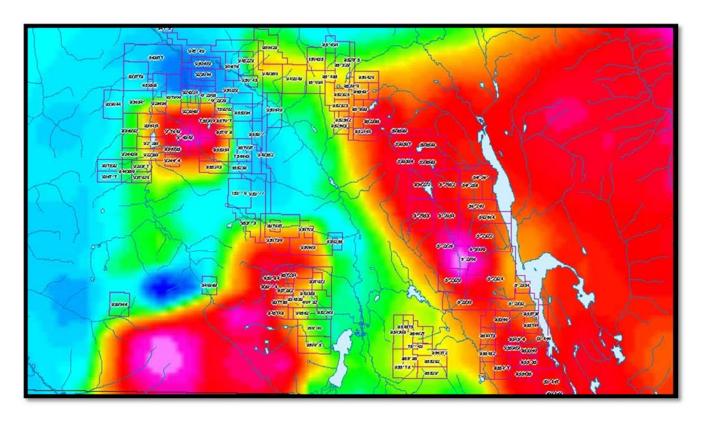


Figure 2.2: Aeromagnetic image for the Bear Lake Region

Eaglenest Assemblage (JBe): (deltaic assemblage) conglomerate, sandstone, siltstone, mudstone, and rare coal, arranged in a coarsening- and fining-upward cycles of mudstone to pebble or cobble conglomerate, prominently rusty weathering: 30 to 80% conglomerate; sheets of conglomerate up to 50m thick.

Todagin Assemblage (JBt): (slope assemblage) siltstone, fine-grained sandstone, and conglomerate; mainly laminated siltstone and/or fine-grained sandstone which is dark grey to black weathering and includes thin, orange weathering claystone beds and syndepositional faults and folds; chert pebble conglomerate occurs as lenses.

Ritchie-Alger Assemblage (JBra): (submarine fan assemblage) sandstone, siltstone, and rare conglomerate; approximately equal proportions of sheet-like intervals up to 50m thick, dominated either by siltstone, shale or very fine grained sandstone, or by medium-grained sandstone; siltstone and/or fine grained sandstone is dark grey and black weathering, sandstone is medium and light grey weathering: abundant turbidite features.

The overall similarity of rocks within the Bowser Group makes it difficult to impossible to assign Assemblages or Formations based on local traverses and/or rock descriptions found within Min-file or Assessment Reports, and requires detailed mapping of significantly thick stratigraphic sections. Limited bedrock exposure at lower elevations restricts good exposures to ridge tops, which do not expose a

great deal of stratigraphy where bedding is flat to gently dipping. In general, the actual assemblage of the Bowser Group is probably irrelevant to the potential for mineralization, however, as one or more of the Assemblages is noted to have rusty weathering, this may well impact selection of areas for investigation through the use of both colour and FeO spectral imagery.

#### 2.2 Regional Alteration and Mineralization

A variety of mineralization has been discovered, explored and documented in the region, but most of the observed mineralization appears to be either directly related to proximal intrusions or related to some form of inferred intrusive activity. The intrusive rocks observed in the areas of mineralization exhibit a wide range of textures and possibly also composition, but are thought to be either be part of the Eocene Katsberg Plutonic Suite or older Babine Intrusions. Babine Intrusions are associated with porphyry copper deposits situated approximately 100km to the southeast along the regional northwest-southeast structural trend. The outcrop pattern as shown on the geological map suggests that the Babine intrusions in project area are early in the erosional process of being "unroofed" and therefore there may additional areas that are underlain by intrusive rocks at relatively shallow depths. The Bear property (Roste, 2008) and possibly the Jake property (Ronning, 2007; and Smith, 1999) provide evidence of the potential for copper (+/- Mo or Au) porphyry style mineralization within the district.

Mineralization in the district appears to fall into four groups: 1) copper, usually associated with relatively high silver values disseminated or as fracture fillings in Hazelton volcanic or epiclastic rocks, 2) porphyry Cu + Mo hosted in or related to feldspar or quartz-feldspar intrusions; 3) porphyry Cu-Au mineralization associated with possibly more alkaline intrusions and 4) gold vein and vein stockwork deposits. The most advanced projects in the district are the two Tommy Jack properties on the western side of the district and the Bear property on the eastern side of the district. The Tommy Jack property (reference) has been extensively drill tested and appears to be comprised of numerous narrow to broad zones of gold mineralization associated with sulphidization of sediments adjacent to a complex intrusive dyke swarm. The Bear property (Roste, 2008) has a relatively long history of drilling and has numerous drill holes with relatively long intersections of potentially economic grades within quartz and feldspar phyric intrusive rocks.

Colour anomalies (iron oxidation) are commonly associated with hornfelsing and pyritization of the Bowser Group sediments along contact zones with intrusions. In many areas examined in the course of this work the intrusive rock is well exposed and appears to be relatively pristine (unaltered) including at the contacts with the intruded rocks. Hornfelsing of the sediments, which may include pyritization - particularly in sandstone units and finely interbedded shale and sandstone units, can extend for 10's to 100's of metres into the sedimentary rocks. No significant mineralization was discovered, and only rare geochemically enriched samples have been obtained from these areas. The more significant mineralization (historical showings/properties) may be related to specific phases of intrusion, as it was noted that coarse-grained porphyritic phases, commonly occurring as relatively small volume dykes or,

possibly, as sills, are present within or in close proximity to the better known showings and deposits within the district.

### 3. MOT Property

#### 3.1 MOT Property Geology

At a large scale, the geology of the MOT property is relatively simple. A homoclinal sequence beginning with Hazelton volcanic and volcaniclastic rocks at the base of the sequence, which are exposed at lower elevations on the north side of the property, and transitioning upwards into a thick sedimentary package of interbedded black shale, sandstone and lesser conglomerates of the Bowser Lake Group. All of the the stratified rocks dip gently to the west (Figure 2.1). It is possible that recumbent folds exist, as these are evident elsewhere in the region, but none were observed on the well exposed, steep north faces of the alpine ridges on the property. A relatively large pluton or small batholith ("Motase Pluton") intrudes this package and forms the southwestern third of the property area. The contact of the batholith is not well exposed, most commonly being covered with talus from slopes above, but based on the general outcrop pattern is presumed to have shallow to moderate dips to the east. A much smaller intrusive or perhaps better described as an intrusive complex appears to transect the center of the property along a northwesterly trend although few actual contacts were observed and the northwesterly trend is suggested by the trend in gossans, as well as the geochemically anomalous areas/mineralized zones. The complex appears to be formed from a series of small dykes exposed as scattered, irregularly-shaped outcrops, but could be a single larger body with very irregular (inferred) contacts. The dyke rocks range from slightly porphyritic, fine to medium grained monzonite to orthoclase mega-crystic porphyries; quartz grains were only rarely observed. Possibly the largest area of intrusion occurs along the southwest facing slope of the southern ridge on the property which is composed a large rusty talus slope with about 20-30% of the talus being made up of intrusive rocks and the remainder rusty shale and lesser sandstone, and based on the volume of talus it would be expected that intrusive rocks would have a combined thickness in excess of 30m.

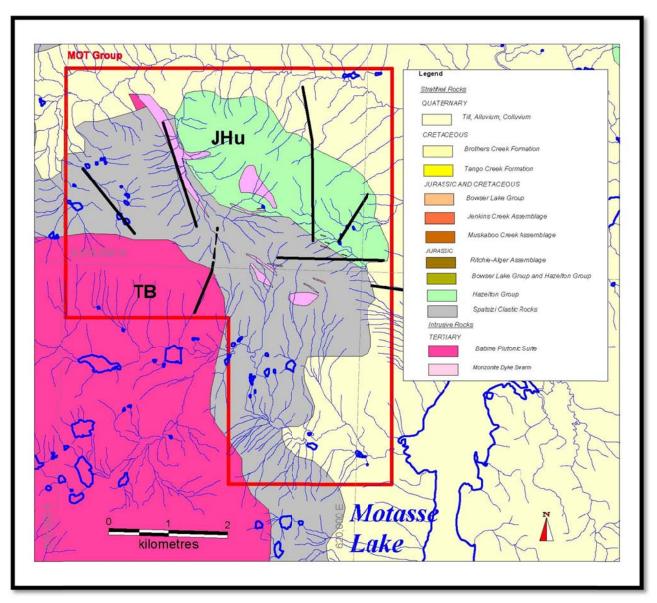


Figure 3.1: MOT Claim area simplified Geology

#### 3.2 Mineralization and Alteration

Mineralization consists of disseminated to fracture controlled pyrite within sedimentary and intrusive rocks and quartz veining with or without associated sulphide mineralization. Results of 2012 sampling are in general agreement with results in previous sampling and drilling, whereby sulphide minerals appear to be critical for hosting precious metal mineralization and the best grades are obtained from quartz veins with abundant base metal sulphide minerals. Quartz veining without sulphide mineralization does not appear to carry significant; and sulphide minerals (generally just pyrite) as fracture fill within black shales is similarly barren but can carry anomalous to low grade (>1g)

mineralization, when adjacent to quartz veins. The main quartz veins of the Huestis zone strike northeasterly (20-30 degrees) appear to be vertical and have strike length of more than 60m. There are 3 major veins and large number of subordinate veins with the main veins having thickness' ranging from 1 to a maximum of 3m on surface. Intrusive dykes appear to have a similar orientation to the veins within the Huestis zone but this is a bit uncertain due to limited outcrop and is perpendicular to the interpreted property scale trend of porphyritic monzonite.

Talus fine samples collected in 2012 from the large gossanous talus slope to the southeast of the Huestis zone and below the Moran zone did not yield any significant metal values. Chip samples, collected from the Huestis zone, as continuous to semi-continuous samples of material between the veins, were also mostly barren or at best moderately anomalous. Therefore it would appear that although sampling targeting sulphide bearing quartz veins, on surface or with drilling, will yield sporadic but impressive assays; the mineralization is not particularly wide-spread. Extensive talus cover does make evaluation difficult and admittedly could cover some mineralized zones, however, it would be expected that if there were a large area of mineralization, that some of this mineralized material would be detectable within talus fines samples.

## **4. Geochemical Program**

#### 4.1 Methods

A series of traverses were run in areas that were either northwest or northeast of the Huestis zone as both of the these directions were thought to be possible structural extensions of the Huestis zone mineralization. The focus was to evaluate the areas for hosting mineralization through thorough sampling of streams; but additional time was spent collecting soil, rock or talus fine samples in areas with gossans or exposed rock. A total of 41 stream sediment samples (including 7 moss mats), 31 soil or talus fines samples and 7 rock samples were collected.

Soil samples were collected from the B horizon (depths of ~15-40cm) where possible, but in general soil development was relatively poor and there was no A horizon to speak of and most samples were in actuality talus fines collected from 10-20cm depth (away from surface disturbance). Sample holes were dug with mattocks (geo-tuls), and stations were determined with hand held GPS units. Stream sediment samples were collected with plastic trowels from back eddies, or locations where hydraulic conditions permitted the deposition of silt material. Silts and soils were placed into standard kraft bags, which were labelled by felt pen. Sample bags were air-dried and taken to Acme's prep lab in Smithers approximately one week after collection. Moss mat samples were placed into kraft bags and after drying were sieved at the lab to collect the -80 mesh fraction prior to analysis.

Further drying of the samples (at  $60^{\circ}$ C) took place at the prep-lab and then samples were sieved and the -80 mesh fraction was retained for analysis. A 0.5g subsample of the -80mesh fraction is separated from the sample and leached in hot (95°C) Aqua Regia, and then analyzed by ICP-MS methods for 32 elements including Au.

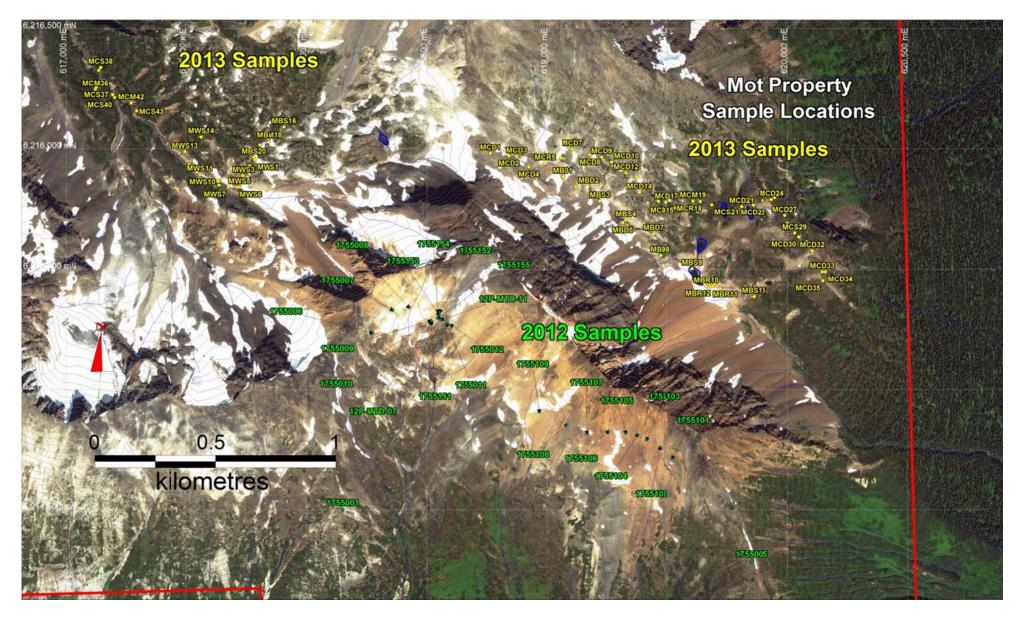


Figure 4.1.: Sample locations 2012 and 2013.

#### 4.2 Data and Interpretation

The laboratory analytical reports can be found in Appendix IV, and Table 3.1 contains a summary of the analytical data for the elements of interest with anomalous values highlighted in yellow and red.

Due the relatively small number of samples, anomalous values were selected by inspection (and experience), primarily for comparison purposes. Significantly anomalous values were deemed to be: Au >50ppb and 100ppb; Mo>10ppm; Cu >100 and 200ppm; Pb>100 and 200; Zn>200 and 400; As > 100 and 400ppm; and are mostly highlighted in Table 3.1 for quick reference. Sample locations and element plots are presented as Figures 3.1 to 3.4. The multi-element data indicates two primary groupings of anomalous results: the first is a Mo-Cu-Pb-Zn-As-Au +/-W cluster of samples from around the top of the drainage to the northwest of the Huestis zone and the second is a non-clustered collection of Cu-As-Au +/- (W, Pb and Zn) anomalies from the drainage to the northeast of the Huestis zone. The geochemical differences are not particularly significant and are likely more a function of sample media as opposed to different types of mineralization, and all anomalies appear to be reflective of the type of mineralization observed in the drill core, white quartz veins with coarse clots of pyrite with base metal sulphide minerals. However, the Mo-W association is unusual for precious metal bearing quartz veins and may be an overlapping geochemical signature related to the megacrystic, monzonite porphyry. Silver values appear to be systematically depressed everywhere.

Distribution of values, and the general tenor of the samples, particularly Au, suggests either new areas of mineralization occur within the adjacent drainages or that the Huestis zone mineralization extends far enough to 'poke through' the ridges separating the drainages. In either case, this is positive, suggesting a much larger area of mineralization than documented or tested by historical drilling. However, due to the relatively close spacing of the sampling, within in a recently glaciated area, it is possible that the samples reflect material from a few well-mineralized veins that have been extensively dispersed by glaciation and gravity, and more work, particularly detailed geological mapping, would be required to better assess the potential indicated by the current sampling.

A rock sample of megacrystic monzonite (plate 4.1) containing 2.4g/t Au (sample BR10) from the northeast drainage is likely float derived from the Moran zone along the ridge top to the southeast of the Huestis zone. This sample is significant in that in indicates that mineralization is associated with or post-dates emplacement of the megacrystic porphyry; an association also suggested by the Mo-W correlation with gold values. The general trend of the megacrystic porphyry is inferred from a combination of the location of talus, gossanous areas and rare outcrop but the actual size and nature of the intrusion is largely unknown. The lack of alteration observed within the megacrystic porphyry, both in talus and outcrop, and the nature of the quartz veining suggests that the distribution of veining within the intrusion may be controlled by late structures. It appears that pyrite and other sulphide minerals are concentrated in areas of veining and therefore IP geophysics may be an appropriate tool for identifying target areas.

**Table 4.1: Analytical results for sample data** Note: Sample number sequence is as follows: year (13), location (MT), sampler (W=Wiess, B=Benoit, C= Coggins, D=Daubeny), sample type (D= soil, S = silt, R= rock, M = moss mat), plus sample number. All values in ppm unless otherwise specified.

ACME ANALY	TICAL L	ABORA					opin ume		, 						
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Sample	Туре	Мо	Cu	Pb	Zn	Ag	Mn	Fe%	As	Auppb	Sb	Ca%	Ва	W	S%
13MTCS21	Silt	2.2	129.1	12.5	87	0.2	1209	4.22	14.3	7.6	0.5	0.41	90	0.4	0.05
13MTCS26	Silt	1.7	45.9	15.7	109	0.4	2409	4.62	13.6	4.8	0.7	0.31	230	0.2	0.05
13MTCS29	Silt	1.5	38.0	15.3	130	0.5	1301	4.55	13.1	48.7	0.6	0.39	173	0.4	0.06
13MTCS37	Silt	4.8	52.2	105.1	307	2.6	988	3.72	57.1	27.8	2.4	0.24	180	0.9	0.05
13MTCS38	Silt	3.1	147.4	100.5	326	1.9	2331	10.55	117.4	2.3	6.8	0.40	120	0.5	0.36
13MTCS39	Silt	4.2	45.1	51.5	134	1.4	412	3.08	75.9	16.7	1.9	0.38	114	7.0	0.07
13MTCS40	Silt	2.1	24.8	23.4	81	0.4	377	2.03	56.1	8.2	1.3	0.48	135	0.4	0.09
13MTCS41	Silt	1.8	18.5	10.8	54	0.2	355	1.68	16.8	44.3	0.5	0.54	150	0.3	0.05
13MTCS43	Silt	12.9	127.4	97.2	272	2.5	784	4.39	222.4	93.2	3.1	0.31	123	37.3	0.11
13MTBS3	Silt	8.3	133.4	67.8	203	0.9	2292	5.68	76.5	16.6	1.6	0.34	262	1.6	0.05
13MTBS4	Silt	7.4	89.0	43.9	212	0.7	1754	5.43	88.0	14.1	1.0	0.31	215	1.8	0.05
13MTBS6	Silt	6.1	144.1	96.9	362	3.1	1598	6.06	226.7	87.5	2.2	0.31	300	12.6	0.05
13MTBS9	Silt	4.8	83.2	45.4	231	1.3	1455	5.11	122.9	20.3	1.3	0.26	208	7.3	0.05
13MTBS15	Silt	2.1	61.5	54.3	373	3.6	1871	4.83	28.8	18.4	1.4	0.45	501	2.1	0.08
13MTBS16	Silt	2.9	98.0	17.5	91	0.3	1602	4.60	29.3	6.7	1.2	0.61	176	0.4	0.07
13MTBS17	Silt	1.8	65.2	17.3	82	0.3	853	3.43	21.6	3.5	0.5	0.55	144	0.4	0.07
13MTBS19	Silt	5.6	129.9	19.4	154	0.5	1993	9.10	81.7	7.4	2.1	0.63	165	0.4	0.13
13MTBS20	Silt	7.4	119.5	21.0	162	0.6	1944	9.06	100.2	8.4	1.9	0.46	152	0.7	0.08
13MTWS01	Silt	16.5	130.6	130.1	299	2.9	718	3.86	248.7	205.2	2.7	0.30		>100.0	0.05
13MTWS02	Silt	8.7	104.4	65.5	199	1.6	946	4.74	128.5	410.9	1.9	0.38	99	36.7	0.06
13MTWS03	Silt	15.2	125.1	116.2	267	2.3	1078	3.83	180.7	578.7	2.2	0.28	90	61.0	0.05
13MTWS04	Silt	14.8	131.0	102.4	292	3.0	709	3.66	221.4	282.0	2.8	0.33		>100.0	0.09
13MTWS05	Silt	14.6	138.7	101.5	274	3.2	665	3.69	256.0	408.8	2.6	0.35		>100.0	0.06
13MTWS06	Silt	14.2	117.6	87.1	254	2.8	612	3.43	188.5	458.2	2.6	0.32	65	97.5	0.08
13MTWS07	Silt	17.3	168.9	133.2	339	4.9	777	4.30	274.4	653.5	3.2	0.32		>100.0	0.13
13MTWS08	Silt	27.5	197.9	152.0	409	3.4	952	5.16	261.2	66.4	4.0	0.36	134	32.8	0.05
13MTWS09	Silt	14.8	135.9	99.7	294	2.7	685	3.38	233.1	136.0	2.5	0.28	61	42.4	0.06
13MTWS10	Silt	17.2	144.0	116.4	305	3.3	680	3.88	252.0	518.2	2.8	0.34		>100.0	0.08
13MTWS10	Silt	15.1	131.5	111.7	294	3.0	748	3.72	249.7	307.6	2.7	0.29		>100.0	0.06
13MTWS12	Silt	14.9	141.7	121.3	331	2.7	920	4.25	294.3	50.7	2.9	0.27	87	52.1	0.09
13MTWS12	Silt	6.1	52.9	76.3	228	1.3	4676	4.29	588.8	34.0	1.6	0.27	100	10.2	0.03
13MTWS14	Silt	2.5	31.4	29.7	77	0.7	3304	1.44	32.7	84.6	0.9	0.47	62	1.1	0.14
13MTCD1	Soil	3.6	101.1	22.2	171	0.6	2861	6.13	53.2	7.1	1.7	0.32	33	0.8	0.05
13MTCD1	Soil	4.7	89.9	28.0	210	0.6	2541	5.21	53.1	3.5	1.7	0.10	40		0.05
13MTCD3	Soil Soil	3.7 4.2	58.6 101.2	45.4 43.6	143 317	0.5	1547 3474	5.13 6.09	68.6 96.7	5.7 11.7	1.3	0.07	89 77	1.2 5.7	0.05
13MTCD4															
13MTCD6	Soil	2.4	325.6	32.8	87	0.5	1028	3.09	48.5	45.0	0.7	1.01	134	2.3	0.14
13MTCD7	Soil	2.7	100.4	24.3	106	0.2	2268	4.55	69.3	11.6	0.5	0.07	64		0.05
13MTCD8	Soil	1.3	12.8	15.6	91	0.2	2665	3.04	12.8	4.6	0.4	0.21	172	2.2	0.08
13MTCD9	Soil	3.0	15.6	15.0	47	0.2	453	2.02	14.8	2.1	0.3	0.05	50		0.07
13MTCD10	Soil	2.8	283.5	12.3	93	1.0	1942	3.56	32.3	84.8	0.5	0.22	122	0.3	0.05
13MTCD11	Soil	3.3	202.2	19.2	99	0.6	1167	4.27	20.4	13.1	0.5	0.11	45		0.05
13MTCD12	Soil	1.6	46.2	20.0	75	0.4	1111	3.16	29.3	11.8	0.4	0.16	330		0.10
13MTCD13	Soil	1.8	58.1	19.3	89	0.2	2056	3.54	24.2	5.0	0.5	0.09	67	0.8	0.05
13MTCD14	Soil	3.3	24.8	21.2	47	0.3	956	1.72	15.2	14.7	0.3	0.07	71		0.09
13MTCD15	Soil	1.7	13.2	9.8	48	0.3	270	1.82	14.3	5.0	0.4	0.03	80	1.4	0.09
13MTCD16	Soil	1.0	7.2	7.6	19	0.2	92	1.16	6.4	2.9	0.3	0.05	43		0.06
13MTCD17	Soil	1.3	17.2	11.1	55	0.2	526	2.32	11.1	10.4	0.3	0.08	54	0.5	0.07

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Sample	Туре	Мо	Cu	Pb	Zn	Ag	Mn	Fe%	As	Auppb	Sb	Ca%	Ва	W	S%
13MTCD21B	Soil	1.7	15.8	11.2	47	0.2	1337	2.29	11.7	0.9	0.4	0.04	78	0.5	0.06
13MTCD22	Soil	1.1	84.6	8.3	76	0.2	417	2.86	9.8	51.9	0.4	0.05	40	0.4	0.05
13MTCD23	Soil	1.0	11.4	11.3	43	0.2	785	1.73	7.1	10.2	0.3	0.06	51	3.3	0.06
13MTCD24	Soil	1.1	21.4	7.4	69	0.3	1311	3.05	9.3	1.6	0.5	0.06	54	0.5	0.07
13MTCD27	Soil	0.9	5.2	14.6	14	0.9	27	0.44	5.4	7.2	0.2	0.03	34	0.2	0.10
13MTCD28	Soil	1.2	14.1	16.7	68	0.3	681	2.36	9.8	3.0	0.2	0.17	73	0.4	0.10
13MTCD30	Soil	0.6	9.6	8.8	30	0.4	100	0.87	3.8	1.6	0.2	0.03	66	0.3	0.06
13MTCD32	Soil	1.4	25.4	19.3	111	0.1	1826	3.99	14.8	6.8	0.9	0.09	89	0.5	0.05
13MTCD33	Soil	1.3	13.0	13.2	39	0.5	331	0.86	7.6	8.6	0.2	0.05	37	0.6	0.08
13MTCD34	Soil	0.9	6.4	8.7	33	0.3	740	0.84	3.7	4.2	0.2	0.04	38	0.1	0.05
13MTCD35	Soil	1.6	23.8	16.6	78	0.3	547	2.12	38.0	24.8	0.4	0.22	170	1.0	0.05
13MTBD01	Soil	2.0	48.2	31.7	133	0.5	1202	3.94	43.4	56.6	0.7	0.15	214	1.1	0.05
13MTBD02	Soil	3.3	66.0	61.7	127	0.8	540	2.85	61.6	45.4	0.7	0.12	283	3.3	0.05
13MTBD05	Soil	6.9	110.9	26.0	186	0.7	1305	7.87	65.2	<0.5	0.9	0.05	440	0.2	0.05
13MTBD07	Soil	4.4	44.1	40.9	158	0.7	993	3.30	64.4	7.8	0.7	0.33	330	0.9	0.06
13MTBD08	Soil	4.2	29.9	39.7	130	1.1	451	2.68	154.6	59.7	0.4	0.49	374	2.2	0.08
13MTBD14	Soil	6.2	63.8	42.3	124	0.9	1037	3.80	63.4	104.7	0.8	0.07	120	6.3	0.05
13MTCS19	Moss	1.6	273.2	11.0	85	0.2	1563	3.87	13.6	7.2	0.4	0.38	76	0.2	0.05
13MTCS20	Moss	1.7	117.2	13.1	90	0.3	1314	3.54	10.5	4.1	0.4	0.55	98	0.2	0.05
13MTCS25	Moss	1.7	47.6	14.4	90	0.3	2539	2.71	10.1	1.3	0.4	0.67	179	0.4	0.11
13MTCS31	Moss	1.1	39.5	21.6	97	1.2	2081	1.78	10.1	3.9	0.8	0.87	470	0.3	0.14
13MTCS36	Moss	6.6	42.3	81.0	188	5.3	277	2.69	35.3	15.4	1.0	0.22	158	0.9	0.05
13MTCS42	Moss	4.0	106.5	41.8	256	1.2	3471	8.02	338.6	6.5	2.3	0.51	100	0.4	0.06
13MTBS18	Moss	1.9	77.4	14.4	74	0.4	563	2.58	24.6	2.4	0.8	1.07	143	0.9	0.25
13MTBR10	Rock	26.7	157.9	73.7	154	3.5	88	1.75	161.8	2440.4	0.9	0.10	58	>100.0	0.09
13MTBR11	Rock	8.3	152.7	12.0	85	4.6	709	3.67	6.0	5.8	1.6	1.25	51	>100.0	3.40
13MTBR12	Rock	16.5	298.5	8.6	321	1.3	734	3.12	103.3	73.2	2.1	1.45	37	7.3	1.45
13MTBR13	Rock	5.7	180.0	4.4	18	2.1	96	4.11	41.2	25.6	1.6	0.03	10	32.7	3.30
13MTCR5	Rock	0.5	13.3	44.5	84	1.2	193	1.66	45.4	32.6	0.4	0.02	51	0.5	0.14
13MTCR18	Rock	0.2	4.4	2.6	22	0.1	663	1.29	5.2	2.3	0.4	0.66	76	0.2	0.05
13JKDR152	Rock	1.2	1.5	10.0	234	<0.1	385	2.46	5.1	1.6	1.3	0.10	80	<0.1	0.05

#### **5. Conclusions and Recommendations**

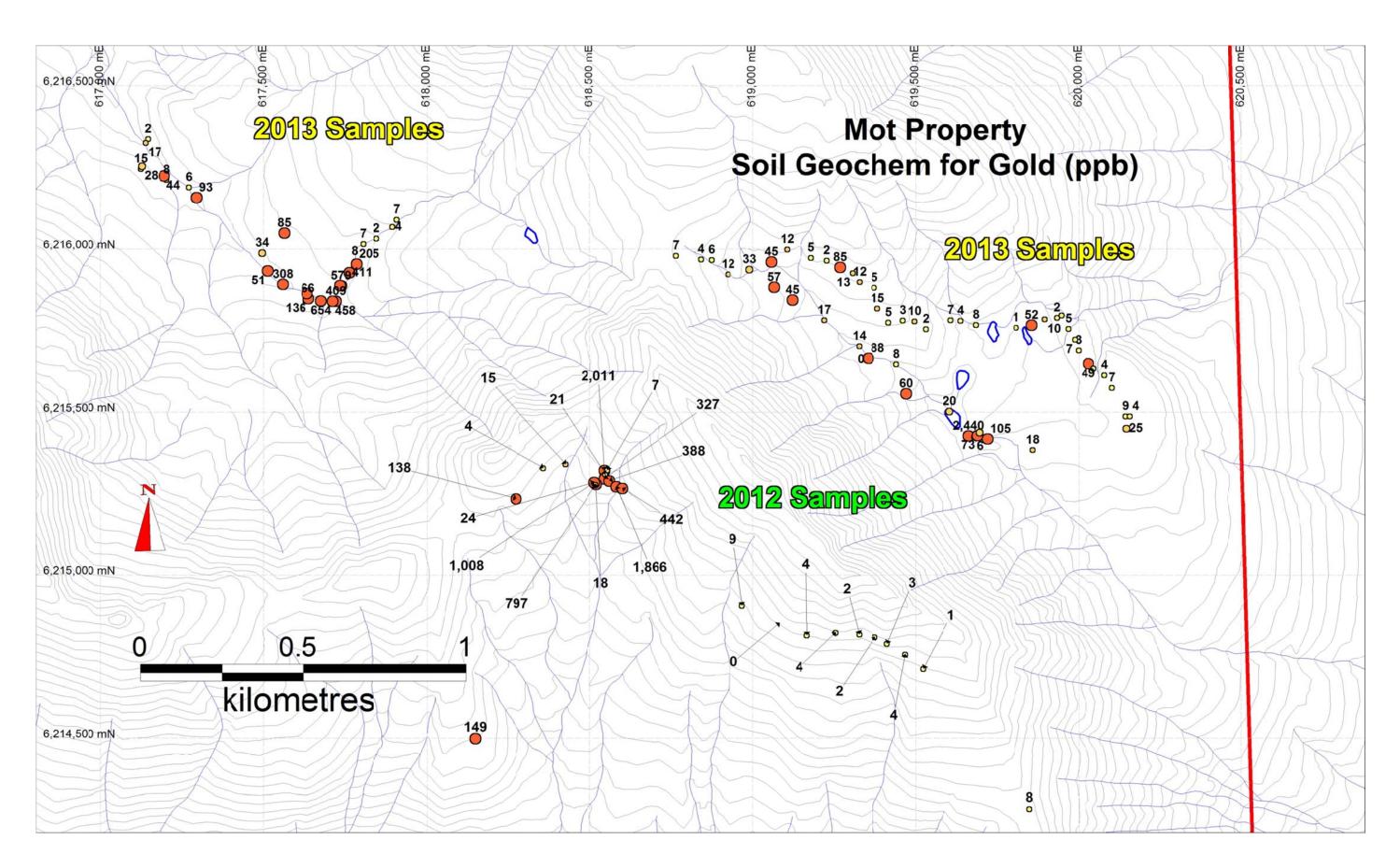
Historical drill and sampling results indicate that precious metal grades are associated with base metal sulphide minerals within quartz veins and to a lesser extent, within sulphide fracture fill adjacent to quartz veins. Drilling and surface sampling data from the Huestis zone, where quartz veins are hosted in hornfelsed shale, suggest that distribution of mineralization is inconsistent and although very high gold grades can be achieved they cannot be assigned any volume with a degree of surety. This inconsistency of gold distribution may not be as strong a characteristic in other mineralized areas as there are only two drill holes (which may not have successfully penetrated the talus in the Moran zone) which is insufficient to draw conclusions from. A favourable structural zone within the monzonite may provide a better host for a quartz vein stockwork than the shale rock in the Huestis zone and thus there remains undetermined exploration potential on the property.

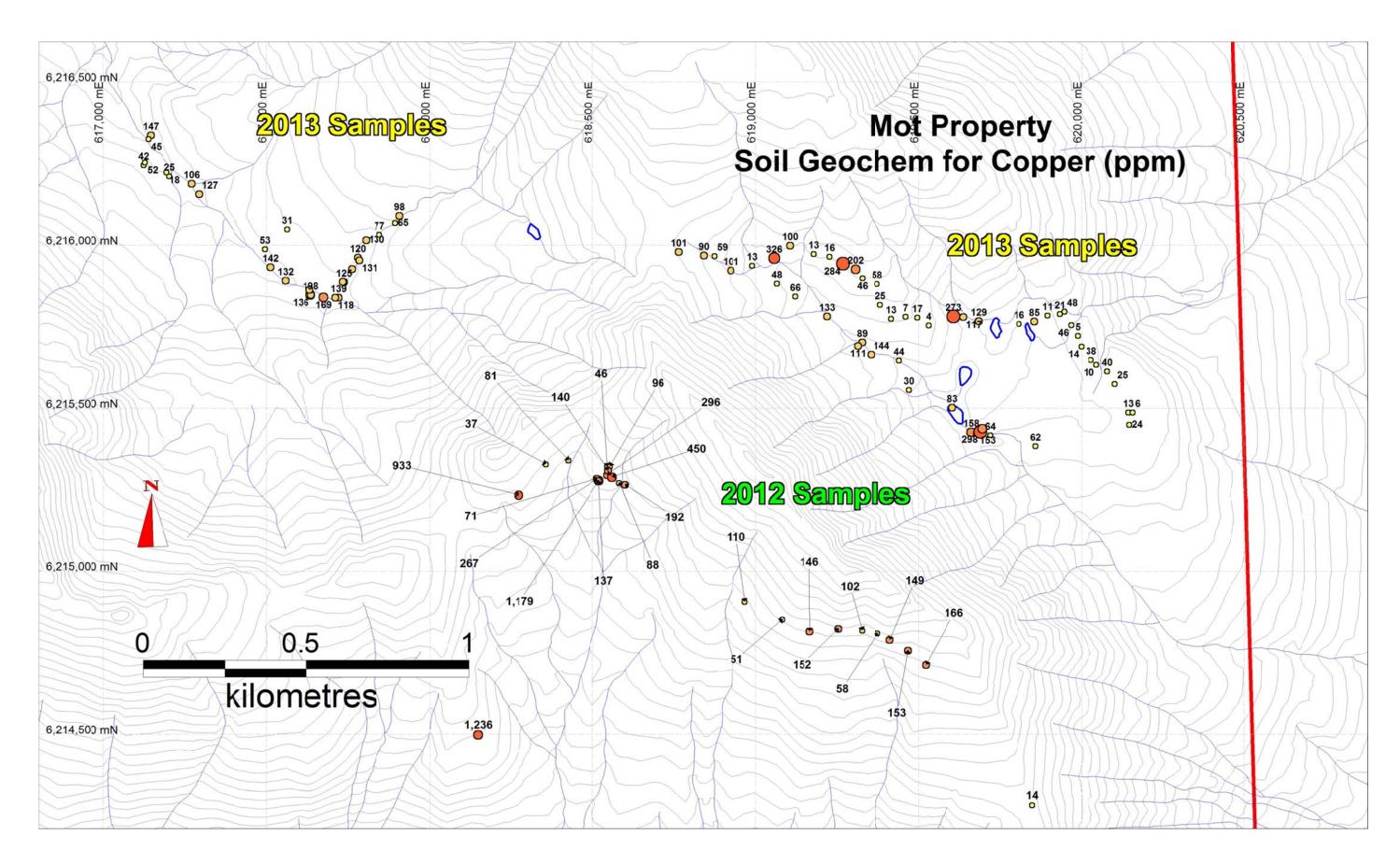
The property has a number of not yet fully defined zones with anomalous geochemistry and mineralized samples that have not been subject to as much intense investigation as the Huestis zone. The general concentration of pyrite and other sulphide mineralization in areas of gold bearing quartz veining suggests that IP geophysical surveys could be an appropriate technique to define drill targets following more extensive geological mapping and geochemical sampling.

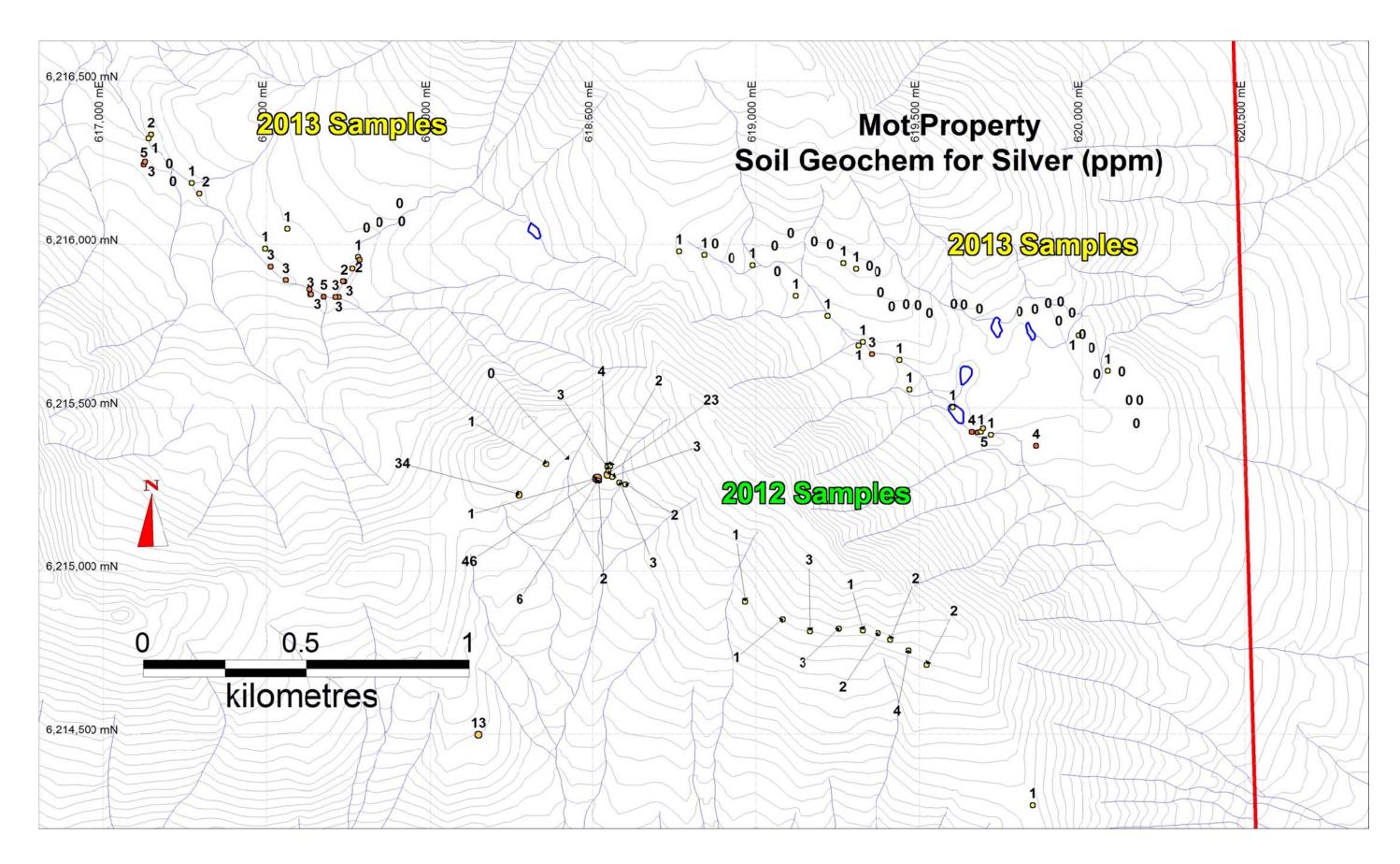


Plate 3.1: Megacrystic monzonite porphyry cut by sulphide bearing quartz vein. This is our first observed instance of the mesothermal quartz veins within the monzonite.

Due to high elevations, semi-permanent snow packs cover a considerable amount of ground and conducting field investigations in late August to early September will provide the best exposure.







#### **References:**

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EMR NMI/094D3\_Cu2 (1976) Copper, Magnum property

http://www.em.gov.bc.ca/dl/PropertyFile/NMI/094D3\_Cu2.pdf

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## **APPENDIX I: Sample Descriptions**

Sample Number	Easting	Northing	Comments
13MTBD-01	619066	6215884	25cm, fine talus + some brown soil
13MTBd-02	619122	6215844	15cm, dark brown soil underneath talus
13MTBS-03	619221	6215783	silt from icy stream
13MTBS-04	619327	6215703	fine pebbles + silt
13MTBD-05	619314	6215692	15cm, fine dark grey talus
13MTBS-06	619355	6215666	Frozen stream silt with abundant pebbles, dark brown-grey
13MTBD-07	619441	6215647	15cm dark brown soil under talus
13MTBD-08	619471	6215557	25-30cm, dark brown soil
13MTBS-09	619605	6215503	Frozen stream just above lake, Qtz, Volc, and intrusive floats, sample is in silt with pebbles, brown-grey
13MTBR-10	619663	6215428	float pieces with hematite and manganese staining with minor pyrite
13MTBR-11	619680	6215426	2cm qz vein with iron staining and py within qz/fsp porphyry float
13MTBR-12	619690	6215429	silicified qz/fsp porphyry float with diss py and mm py veinlets and manganese and iron staining
13MTBR-13	619697	6215439	qz/fsp porphyry float with stockwork qz veins with py
13MTBD-14	619720	6215419	15cm, brown soil
13MTBS-15	619860	6215385	Frozen stream at tree line, pebbles in silt
13MTBS-16	617909	6216091	stream silt with pebbles, black and dark grey
13MTBS-17	617896	6216069	brownish grey, silt and pebbles with root and moss
13MTBS-18	617847	6216033	moss carrying silt in frozen stream
13MTBS-19	617806	6216017	silt under rocks
13MTBS-20	617780	6215964	Just above fork, silt and pebbles, greyish brown, abundant shales
13MTWS-01	617785	6215955	Other creek in fork with 13MTBS-20, smaller creek, further south, slow water, silt and pebbles, brn-gry
13MTWS-02	617763	6215929	silt with pebbles, saw a small qz float in the river
13MTWS-03	617738	6215888	main creek above where small tributary joins fine silt with pebbles, brown and grey
13MTWS-04	617735	6215889	silt and sand with lots of pebbles
13MTWS-05	617722	6215841	3 streams meeting, center stream, smallest stream of 3, light brown silt and pebbles
13MTWS-06	617712	6215841	center stream before they join, pebbles with sand and silt
13MTWS-07	617676	6215842	sand and silt, small qz float in the river
13MTWS-08	617636	6215849	dark brown silt, tributary below 13MTWS-07, to north of main creek
13MTWS-09	617637	6215849	fine silt, center channel

13MTWS-10	617633	6215865	light brown silt, slow moving tributary south of main creek in 13MTWS-09
13MTWS-11	617559	6215893	fine grained light brown silt
13MTWS-12	617513	6215934	Mainly gravel, minor quartz, roots and organics, light brown.
13MTWS-13	617496	6215989	mainly chips and some moss
13MTWS-14	617563	6216050	mainly moss and silt
13MTBD-01	619066	6215884	25cm, fine talus + some brown soil
13MTBd-02	619122	6215844	15cm, dark brown soil underneath talus
13MTBS-03	619221	6215783	silt from icy stream
13MTBS-04	619327	6215703	fine pebbles + silt
13MTBD-05	619314	6215692	15cm, fine dark grey talus
13MTBS-06	619355	6215666	Frozen stream silt with abundant pebbles, dark brown-grey
13MTBD-07	619441	6215647	15cm dark brown soil under talus
13MTBD-08	619471	6215557	25-30cm, dark brown soil
13MTBS-09	619605	6215503	Frozen stream just above lake, Qtz, Volc, and intrusive floats, sample is in silt with pebbles, brown-grey
13MTBR-10	619663	6215428	float pieces with hematite and manganese staining with minor pyrite
13MTBR-11	619680	6215426	2cm qz vein with iron staining and py within qz/fsp porphyry float
13MTBR-12	619690	6215429	silicified qz/fsp porphyry float with diss py and mm py veinlets and manganese and iron staining
13MTBR-13	619697	6215439	qz/fsp porphyry float with stockwork qz veins with py
13MTBD-14	619720	6215419	15cm, brown soil
13MTBS-15	619860	6215385	Frozen stream at tree line, pebbles in silt
13MTBS-16	617909	6216091	stream silt with pebbles, black and dark grey
13MTBS-17	617896	6216069	brownish grey, silt and pebbles with root and moss
13MTBS-18	617847	6216033	moss carrying silt in frozen stream
13MTBS-19	617806	6216017	silt under rocks
13MTBS-20	617780	6215964	Just above fork, silt and pebbles, greyish brown, abundant shales
13MTWS-01	617785	6215955	Other creek in fork with 13MTBS-20, smaller creek, further south, slow water, silt and pebbles, brn-grey
13MTWS-02	617763	6215929	silt with pebbles, saw a small qz float in the river
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13MTWS-05	617722	6215841	3 streams meeting, center stream, smallest stream of 3, light brown silt and pebbles
13MTWS-06	617712	6215841	center stream before they join, pebbles with sand and silt
13MTWS-07	617676	6215842	sand and silt, small qz float in the river
13MTWS-08	617636	6215849	dark brown silt, tributary below 13MTWS-07, to north of main creek
13MTWS-09	617637	6215849	fine silt, center channel
13MTWS-10	617633	6215865	light brown silt, slow moving tributary south of main creek in 13MTWS-09

13MTWS-11	617559	6215893	fine grained light brown silt
13MTWS-12	617513	6215934	Mainly gravel, minor quartz, roots and organics, light brown.
13MTWS-13	617496	6215989	mainly chips and some moss
13MTWS-14	617563	6216050	mainly moss and silt

## **Appendix II: Statement of Costs**

1.) Professional Services: (Oct 6 <sup>th</sup> to 0ct 12 <sup>th</sup> , 2013)	
P. Daubeny: 6 Days @ 500/day	\$3,000.00
A. Wiess: 5.2 Days, @ 400/day (+180.40 for mileage)	\$2,260.40
B. Benoit: 7 Days @375/day	\$2,625.00
P. Holbek: 2.5 days @ 1100/day	\$2,750.00
R. Coggins (sampler): 7 days @ 275/day	\$1,925.00
Sub total	\$12,560.40
2.) Travel:	
Airfare: 2 Smithers –Vancouver return, 1 flight Kelowna-Van-Smithers Return:	2,807.60
Truck rental and milage:	980.00
3.) Food and Accommodation	
Sharp Creek Ranch: 24 mandays @ \$80/day	1,920.00
4.) Analytical	
Acme Analytical	4,116.49
5.) Helicopter	
Silver King Helicopters (Smithers) 11.6 hrs	18,840.18
Sub total	41,224.27
22% of costs allocated to MOT Property =	9,069.43
Report Preparation	_1,500.00
Total Expenditures:	\$10,569.00

### **Appendix III:** Certificate of Qualifications

I, Peter M. Holbek with a business address of 1700 – 700 West Pender Street, Vancouver, British Columbia, V6C 1G8, do hereby certify that:

- 1. I am a professional geologist registered under the <u>Professional Engineers and Geoscientists Act</u> of the Province of British Columbia and a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
- 2. I am a graduate of The University of British Columbia with a B.Sc. in geology 1980 and an M.Sc. in geology, 1988.
- 3. I have practiced my profession continuously since 1980.
- 4. I am Vice President, Exploration for Copper Mountain Mining Corp. having a business address as given above.
- 5. I supervised and directed the work program on the Bear Lake properties, including research and compilation, field preparation, field work and report preparation.

<u>Signed</u>	
Peter Holbek, M.Sc., P.Geo.	

I, Richard J Joyes with a business address of 1700 – 700 West Pender Street, Vancouver, British Columbia, V6C 1G8, do hereby certify that:

- 1. I am a graduate of The University of Tasmania with a B.Sc. in geology 2000
- 2. I have practiced my profession continuously since 2000.
- 3. I am an exploration geologist, for Copper Mountain Mining Corp. having a business address as given above.
- 4. I assisted in supervising and conducting the work programs on the Bear Lake properties, and assisted in preparing this report.

Signed
Richard J Joyes B.Sc Geo.

# **Appendix IV: Assay Certificates**



Acme Analytical Laboratories (Vancouver) Ltd. 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158 Client: Copper Mountain Mining Corporation

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Submitted By: Peter Holbek
Receiving Lab: Canada-Smithers
Received: October 15, 2013
Report Date: November 04, 2013

Page: 1 of 2

### **CERTIFICATE OF ANALYSIS**

### SMI13000387.1

#### **CLIENT JOB INFORMATION**

Project: None Given

Shipment ID: P.O. Number

Number of Samples:

#### **SAMPLE DISPOSAL**

RTRN-PLP Return

DISP-RJT-SOIL Immediate Disposal of Soil Reject

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

Invoice To: Copper Mountain Mining Corporation

1700 - 700 West Pender St. Vancouver BC V6G 1G8

CANADA

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	7	Dry at 60C			SMI
SS80	7	Dry at 60C sieve 100g to -80 mesh			SMI
1DX1	7	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

#### **ADDITIONAL COMMENTS**



CC:

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.

"\*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Acme Analytical Laboratories (Vancouver) Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client:

**Copper Mountain Mining Corporation** 

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Project:

None Given

Report Date:

November 04, 2013

Page:

2 of 2

Part: 1 of 2

CERTIFIC	CATE OF AN	IALY	'SIS													SIV	11130	0003	387.	1	
	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
13MTCS19	Moss	1.6	273.2	11.0	85	0.2	44.0	20.6	1563	3.87	13.6	7.2	0.4	14	0.3	0.4	0.2	48	0.38	0.099	8
13MTCS20	Moss	1.7	117.2	13.1	90	0.3	31.5	18.9	1314	3.54	10.5	4.1	0.2	19	0.3	0.4	0.2	51	0.55	0.098	10
13MTCS25	Moss	1.7	47.6	14.4	90	0.3	24.2	15.2	2539	2.71	10.1	1.3	<0.1	33	0.5	0.4	0.2	54	0.67	0.120	8
13MTCS31	Moss	1.1	39.5	21.6	97	1.2	24.7	9.4	2081	1.78	10.1	3.9	0.1	54	8.0	8.0	0.4	32	0.87	0.230	18
13MTCS36	Moss	6.6	42.3	81.0	188	5.3	27.3	12.7	277	2.69	35.3	15.4	0.2	63	1.6	1.0	8.0	42	0.22	0.088	16
13MTCS42	Moss	4.0	106.5	41.8	256	1.2	43.9	37.0	3471	8.02	338.6	6.5	0.8	26	2.3	2.3	0.3	31	0.51	0.177	9
13MTBS18	Moss	1.9	77.4	14.4	74	0.4	19.6	11.3	563	2.58	24.6	2.4	0.1	90	0.5	8.0	0.2	30	1.07	0.203	8



Acme Analytical Laboratories (Vancouver) Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: **Copper Mountain Mining Corporation** 

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Project: None Given

Report Date: November 04, 2013

2 of 2 Page:

# **CERTIFICATE OF ANALYSIS**

### SMI13000387.1

Part: 2 of 2

	Method Analyte	1DX Cr	1DX	1DX Ba	1DX Ti	1DX B	1DX	1DX Na	1DX K	1DX W	1DX	1DX	1DX	1DX S	1DX Ga	1DX	1DX Te
	Unit	ppm	Mg %	ррт	%	ррm	AI %	<b>N</b> а %	%	ppm	Hg ppm	Sc ppm	ppm	s %	ppm	Se ppm	ppm
	MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
13MTCS19	Moss	55	1.23	76	0.014	<20	1.82	0.005	0.04	0.2	0.02	3.7	<0.1	<0.05	4	2.1	<0.2
13MTCS20	Moss	51	1.30	98	0.018	<20	1.87	0.007	0.05	0.2	0.03	3.5	<0.1	<0.05	4	3.4	<0.2
13MTCS25	Moss	45	0.83	179	0.015	<20	1.33	0.009	0.07	0.4	0.06	2.4	<0.1	0.11	4	3.9	<0.2
13MTCS31	Moss	68	0.42	470	0.006	<20	1.55	0.009	0.07	0.3	0.06	1.8	0.1	0.14	4	2.1	<0.2
13MTCS36	Moss	24	0.47	158	0.011	<20	2.12	0.007	0.08	0.9	0.06	1.6	0.2	<0.05	5	1.4	<0.2
13MTCS42	Moss	10	0.43	100	0.005	<20	1.43	0.005	0.03	0.4	0.05	3.9	0.1	0.06	3	5.9	<0.2
13MTBS18	Moss	22	0.57	143	0.010	<20	1.18	0.052	0.40	0.9	0.06	1.3	<0.1	0.25	3	9.1	<0.2



Acme Analytical Laboratories (Vancouver) Ltd. 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158

Client: **Copper Mountain Mining Corporation** 

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Project: None Given

Report Date: November 04, 2013

Page: 1 of 1 Part: 1 of 2

QUALITY COI	NTROL	REP	POR	Т												SM	I130	003	887.	1	
	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	٧	Ca	Р	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
Reference Materials																					
STD DS10	Standard	12.4	143.1	144.5	343	2.0	69.8	12.2	799	2.51	45.3	73.1	6.5	55	2.2	6.0	9.1	41	0.95	0.069	14
STD OREAS45EA	Standard	1.3	569.0	12.2	25	0.2	313.6	43.7	338	20.97	7.8	48.5	9.0	3	<0.1	0.1	0.2	250	0.03	0.024	5
STD DS10 Expected		14.69	154.61	150.55	352.9	1.96	74.6	12.9	861	2.7188	43.7	91.9	7.5	67.1	2.48	9.51	11.65	43	1.0355	0.073	17.5
STD OREAS45EA Expected		1.39	709	14.3	28.9	0.26	381	52	400	23.51	9.1	53	10.7	3.5	0.02	0.2	0.26	303	0.036	0.029	6.57
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1



Client:

**Copper Mountain Mining Corporation** 

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Project:

None Given

Report Date:

November 04, 2013

Acme Analytical Laboratories (Vancouver) Ltd. 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158

Page:

1 of 1

Part: 2 of 2

### **ALITY CONTROL REPORT**

	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Cr	Mg	Ва	Ti	В	ΑI	Na	K	W	Hg	Sc	TI	s	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Reference Materials																	
STD DS10	Standard	50	0.72	362	0.062	<20	0.91	0.059	0.31	2.5	0.27	2.6	4.9	0.23	4	2.2	4.3
STD OREAS45EA	Standard	751	0.08	122	0.070	<20	2.44	0.017	0.04	<0.1	0.01	68.7	<0.1	<0.05	10	<0.5	<0.2
STD DS10 Expected		54.6	0.7651	349	0.0817		1.0259	0.0638	0.3245	3.34	0.289	2.8	4.79	0.2743	4.3	2.3	4.89
STD OREAS45EA Expected		849	0.095	148	0.0875		3.13	0.02	0.053			78	0.072	0.036	11.7	0.6	0.07
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2

www.acmelab.com



Acme Analytical Laboratories (Vancouver) Ltd. 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158 Client: Copper Mountain Mining Corporation

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Submitted By: Peter Holbek
Receiving Lab: Canada-Smithers
Received: October 15, 2013
Report Date: November 02, 2013

Page: 1 of 2

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

**Code Description** 

Number of

Procedure

### **CERTIFICATE OF ANALYSIS**

### SMI13000391.1

Test

Report

Lab

#### **CLIENT JOB INFORMATION**

Project: None Given

Shipment ID:

P.O. Number

Number of Samples:

RTRN-PLP Return

PICKUP-RJT Client to Pickup Rejects

SAMPLE DISPOSAL

one in the interpretation

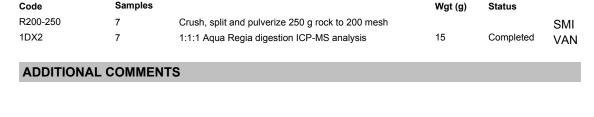
Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Copper Mountain Mining Corporation

1700 - 700 West Pender St. Vancouver BC V6G 1G8

CANADA

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Acme Analytical Laboratories (Vancouver) Ltd.

PHONE (604) 253-3158

www.acmelab.com

Client: Coppe

**Copper Mountain Mining Corporation** 

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Project:

None Given

Report Date:

November 02, 2013

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Part: 1 of 2

CERTIFICATE OF ANALYSIS

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

CERTIFIC	CATE O	F AN	IALY	'SIS													SN	/II13	000	391.	1	
		Method	WGHT	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15										
		Analyte	Wgt	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р
		Unit	kg	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%							
		MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
13MTBR10	Rock			26.7	157.9	73.7	154	3.5	2.5	1.3	88	1.75	161.8	2440.4	4.5	13	0.3	0.9	17.8	13	0.10	0.060
13MTBR11	Rock			8.3	152.7	12.0	85	4.6	2.4	9.6	709	3.67	6.0	5.8	1.8	76	0.6	1.6	62.3	5	1.25	0.024
13MTBR12	Rock			16.5	298.5	8.6	321	1.3	12.3	13.5	734	3.12	103.3	73.2	5.2	80	6.3	2.1	8.7	5	1.45	0.098
13MTBR13	Rock			5.7	180.0	4.4	18	2.1	4.1	12.1	96	4.11	41.2	25.6	0.3	3	0.1	1.6	30.2	3	0.03	0.003
13MTCR5	Rock			0.5	13.3	44.5	84	1.2	7.5	2.3	193	1.66	45.4	32.6	1.8	7	0.4	0.4	1.0	3	0.02	0.025
13MTCR18	Rock			0.2	4.4	2.6	22	0.1	1.3	2.3	663	1.29	5.2	2.3	0.9	12	<0.1	0.4	0.7	3	0.66	0.028
13JKDR152	Rock			1.2	1.5	10.0	234	<0.1	5.3	6.3	385	2.46	5.1	1.6	6.0	21	0.2	1.3	0.1	20	0.10	0.094



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Project: None Given

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Part: 2 of 2

# CERTIFICATE OF ANALYSIS

### SMI13000391.1

		Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
		Analyte	La	Cr	Mg	Ва	Ti	В	Al	Na	K	W	Hg	Sc	TI	s	Ga	Se	Те
		Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
		MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
13MTBR10	Rock		11	6	0.17	58	0.020	1	0.55	0.040	0.20	>100	<0.01	0.8	0.2	0.09	2	<0.5	6.0
13MTBR11	Rock		6	4	0.11	51	0.010	<1	0.21	0.036	0.15	>100	<0.01	0.3	0.1	3.40	1	2.1	31.4
13MTBR12	Rock		10	2	0.28	37	<0.001	2	0.34	0.027	0.23	7.3	<0.01	1.1	0.2	1.45	1	<0.5	3.4
13MTBR13	Rock		1	3	0.01	10	<0.001	<1	0.06	0.006	0.05	32.7	<0.01	0.2	<0.1	3.30	<1	1.7	20.3
13MTCR5	Rock		8	4	<0.01	51	<0.001	1	0.20	0.004	0.15	0.5	<0.01	0.7	<0.1	0.14	<1	<0.5	0.3
13MTCR18	Rock		8	3	0.11	76	<0.001	<1	0.28	0.044	0.10	0.2	<0.01	0.7	<0.1	<0.05	<1	<0.5	<0.2
13JKDR152	Rock		32	2	0.02	80	<0.001	2	0.45	0.018	0.26	<0.1	0.42	2.6	0.2	<0.05	1	<0.5	<0.2



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Project: None Given

Report Date: November 02, 2013

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QUALITY CC	NTROL	REP	OR	Т												SM	II130	0003	91.	1	
	Method	WGHT	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
	Analyte	Wgt	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
Pulp Duplicates																					
13JKDR152	Rock		1.2	1.5	10.0	234	<0.1	5.3	6.3	385	2.46	5.1	1.6	6.0	21	0.2	1.3	0.1	20	0.10	0.094
REP 13JKDR152	QC		1.1	1.5	10.2	231	<0.1	5.2	6.3	386	2.46	5.0	<0.5	6.2	21	0.3	1.2	0.1	20	0.09	0.090
Reference Materials																					
STD DS10	Standard		15.0	148.7	141.5	342	2.1	76.3	12.9	870	2.72	44.6	85.8	6.3	60	2.5	8.4	10.6	44	1.07	0.074
STD OXC109	Standard		1.5	32.3	8.8	35	<0.1	69.3	19.4	401	2.82	0.7	193.7	1.1	134	<0.1	<0.1	<0.1	48	0.67	0.101
STD DS10 Expected			14.69	154.61	150.55	352.9	1.96	74.6	12.9	861	2.7188	43.7	91.9	7.5	67.1	2.48	9.51	11.65	43	1.0355	0.073
STD OXC109 Expected													201								
BLK	Blank		<0.1	0.2	<0.1	2	<0.1	0.4	<0.1	1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001
Prep Wash																					
G1-SMI	Prep Blank		<0.1	2.1	2.0	41	<0.1	3.9	4.3	548	2.06	<0.5	<0.5	3.8	48	<0.1	<0.1	<0.1	36	0.46	0.069



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Project: None Given

Report Date: November 02, 2013

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# QUALITY CONTROL REPORT

### SMI13000391.1

Part: 2 of 2

	Method	1DX15	1DX15 Cr	1DX15	1DX15 Ba	1DX15 Ti	1DX15 B	1DX15	1DX15 Na	1DX15 K	1DX15 W	1DX15	1DX15 Sc	1DX15	1DX15 S	1DX15 Ga	1DX15 Se	1DX15 Te
	Analyte	La		Mg			_					Hg			_			1
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																		
13JKDR152	Rock	32	2	0.02	80	<0.001	2	0.45	0.018	0.26	<0.1	0.42	2.6	0.2	<0.05	1	<0.5	<0.2
REP 13JKDR152	QC	33	2	0.02	85	<0.001	2	0.44	0.018	0.26	<0.1	0.46	2.7	0.2	<0.05	1	<0.5	<0.2
Reference Materials																		
STD DS10	Standard	16	56	0.77	345	0.078	7	1.05	0.066	0.33	3.7	0.29	2.7	5.0	0.28	5	2.6	5.2
STD OXC109	Standard	11	59	1.43	51	0.369	<1	1.49	0.680	0.42	0.2	<0.01	1.0	<0.1	<0.05	5	<0.5	<0.2
STD DS10 Expected		17.5	54.6	0.7651	349	0.0817		1.0259	0.0638	0.3245	3.34	0.289	2.8	4.79	0.2743	4.3	2.3	4.89
STD OXC109 Expected																		
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
Prep Wash																		
G1-SMI	Prep Blank	9	9	0.53	191	0.106	<1	0.96	0.087	0.47	<0.1	<0.01	2.2	0.3	<0.05	5	<0.5	<0.2



Acme Analytical Laboratories (Vancouver) Ltd. 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158 Client: Copper Mountain Mining Corporation

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Submitted By: Peter Holbek
Receiving Lab: Canada-Smithers
Received: October 15, 2013
Report Date: October 31, 2013

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### **CERTIFICATE OF ANALYSIS**

# SMI13000395.1

#### **CLIENT JOB INFORMATION**

Project: None Given

Shipment ID: P.O. Number

Number of Samples: 32

#### SAMPLE DISPOSAL

RTRN-PLP Return

DISP-RJT-SOIL Immediate Disposal of Soil Reject

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

Invoice To: Copper Mountain Mining Corporation

1700 - 700 West Pender St. Vancouver BC V6G 1G8

CANADA

# SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	32	Dry at 60C			SMI
SS80	32	Dry at 60C sieve 100g to -80 mesh			SMI
1DX1	32	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

#### **ADDITIONAL COMMENTS**







Acme Analytical Laboratories (Vancouver) Ltd. 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158

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Project: None Given

Report Date: October 31, 2013

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CERTIFIC	ATE OF A	NAL	YSIS													SIV	11130	0003	395.	1	
	Metho	d 1D	( 1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analy	te M	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Ur	it ppr	n ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MC	L 0.	1 0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
13MTCS21	Silt	2.	2 129.1	12.5	87	0.2	31.8	18.3	1209	4.22	14.3	7.6	0.2	15	0.2	0.5	0.2	51	0.41	0.101	9
13MTCS26	Silt	1.	7 45.9	15.7	109	0.4	35.1	18.1	2409	4.62	13.6	4.8	0.3	20	0.6	0.7	0.4	76	0.31	0.103	17
13MTCS29	Silt	1.	38.0	15.3	130	0.5	32.2	14.7	1301	4.55	13.1	48.7	0.3	25	0.3	0.6	0.3	59	0.39	0.149	14
13MTCS37	Silt	4.	3 52.2	105.1	307	2.6	34.1	16.7	988	3.72	57.1	27.8	0.7	30	4.1	2.4	0.9	49	0.24	0.083	11
13MTCS38	Silt	3.	1 147.4	100.5	326	1.9	79.3	40.3	2331	10.55	117.4	2.3	0.9	14	3.1	6.8	0.2	29	0.40	0.177	10
13MTCS39	Silt	4.	2 45.1	51.5	134	1.4	24.8	10.5	412	3.08	75.9	16.7	3.4	47	1.3	1.9	1.2	39	0.38	0.133	12
13MTCS40	Silt	2.	1 24.8	23.4	81	0.4	18.4	9.8	377	2.03	56.1	8.2	3.1	79	0.6	1.3	0.3	41	0.48	0.129	12
13MTCS41	Silt	1.	3 18.5	10.8	54	0.2	14.9	8.7	355	1.68	16.8	44.3	3.4	113	0.5	0.5	0.1	40	0.54	0.124	13
13MTCS43	Silt	12.	9 127.4	97.2	272	2.5	36.0	17.4	784	4.39	222.4	93.2	3.3	29	2.9	3.1	2.8	35	0.31	0.111	13
13MTBS3	Silt	8.	3 133.4	67.8	203	0.9	70.5	26.4	2292	5.68	76.5	16.6	1.1	33	1.3	1.6	8.0	57	0.34	0.119	17
13MTBS4	Silt	7.	4 89.0	43.9	212	0.7	60.0	25.2	1754	5.43	88.0	14.1	0.7	24	2.0	1.0	0.7	50	0.31	0.117	15
13MTBS6	Silt	6.	1 144.1	96.9	362	3.1	55.4	28.2	1598	6.06	226.7	87.5	2.2	32	2.6	2.2	2.3	42	0.31	0.125	20
13MTBS9	Silt	4.	83.2	45.4	231	1.3	35.7	19.6	1455	5.11	122.9	20.3	1.4	25	2.1	1.3	1.6	35	0.26	0.105	14
13MTBS15	Silt	2.	1 61.5	54.3	373	3.6	38.1	16.4	1871	4.83	28.8	18.4	0.3	49	2.7	1.4	1.0	43	0.45	0.145	16
13MTBS16	Silt	2.	98.0	17.5	91	0.3	26.9	23.5	1602	4.60	29.3	6.7	0.4	46	0.4	1.2	0.2	56	0.61	0.118	10
13MTBS17	Silt	1.	65.2	17.3	82	0.3	21.7	14.7	853	3.43	21.6	3.5	0.3	45	0.4	0.5	0.2	40	0.55	0.111	9
13MTBS19	Silt	5.	129.9	19.4	154	0.5	53.8	35.6	1993	9.10	81.7	7.4	0.7	49	0.7	2.1	0.2	57	0.63	0.226	8
13MTBS20	Silt	7.	119.5	21.0	162	0.6	62.3	33.9	1944	9.06	100.2	8.4	0.9	36	0.9	1.9	0.2	61	0.46	0.209	9
13MTWS01	Silt	16.	130.6	130.1	299	2.9	23.6	16.0	718	3.86	248.7	205.2	4.9	17	3.5	2.7	3.7	25	0.30	0.126	16
13MTWS02	Silt	8.	7 104.4	65.5	199	1.6	25.7	18.0	946	4.74	128.5	410.9	1.9	26	1.5	1.9	2.4	41	0.38	0.144	11
13MTWS03	Silt	15.	2 125.1	116.2	267	2.3	24.3	17.8	1078	3.83	180.7	578.7	3.7	19	4.2	2.2	3.5	31	0.28	0.113	15
13MTWS04	Silt	14.	3 131.0	102.4	292	3.0	22.1	14.5	709	3.66	221.4	282.0	3.5	19	4.2	2.8	4.2	25	0.33	0.127	14
13MTWS05	Silt	14.	3 138.7	101.5	274	3.2	20.5	14.9	665	3.69	256.0	408.8	4.2	21	3.5	2.6	4.1	23	0.35	0.142	16
13MTWS06	Silt	14.	2 117.6	87.1	254	2.8	20.6	13.3	612	3.43	188.5	458.2	3.8	19	2.5	2.6	3.0	24	0.32	0.123	14
13MTWS07	Silt	17.	3 168.9	133.2	339	4.9	24.5	17.5	777	4.30	274.4	653.5	4.0	27	4.5	3.2	5.9	29	0.41	0.158	17
13MTWS08	Silt	27.	197.9	152.0	409	3.4	30.8	17.9	952	5.16	261.2	66.4	3.0	46	3.9	4.0	4.8	40	0.36	0.126	17
13MTWS09	Silt	14.	3 135.9	99.7	294	2.7	20.5	14.0	685	3.38	233.1	136.0	3.4	21	4.0	2.5	3.3	22	0.28	0.109	13
13MTWS10	Silt	17.	2 144.0	116.4	305	3.3	22.8	15.7	680	3.88	252.0	518.2	3.7	22	3.8	2.8	5.1	24	0.34	0.142	16
13MTWS11	Silt	15.	1 131.5	111.7	294	3.0	23.5	15.2	748	3.72	249.7	307.6	3.1	22	3.5	2.7	3.4	24	0.29	0.121	14
13MTWS12	Silt	14.	141.7	121.3	331	2.7	29.5	17.9	920	4.25	294.3	50.7	3.0	22	4.1	2.9	3.5	25	0.27	0.115	14



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Project: None Given

Report Date: October 31, 2013

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# CERTIFICATE OF ANALYSIS

# SMI13000395.1

	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Cr	Mg	Ва	Ti	В	ΑI	Na	K	w	Hg	Sc	TI	s	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
13MTCS21 Silt		49	1.15	90	0.016	<20	1.82	0.005	0.03	0.4	0.02	3.4	<0.1	<0.05	5	1.7	<0.2
13MTCS26 Silt		59	1.03	230	0.063	<20	2.34	0.009	0.04	0.2	0.02	4.7	0.1	<0.05	8	0.5	<0.2
13MTCS29 Silt		55	0.81	173	0.069	<20	2.55	0.009	0.05	0.4	0.05	3.9	0.1	0.06	8	1.0	<0.2
13MTCS37 Silt		29	0.55	180	0.028	<20	2.09	0.009	0.12	0.9	0.06	3.7	0.2	<0.05	6	0.9	0.2
13MTCS38 Silt		8	0.38	120	0.001	<20	0.94	0.006	0.03	0.5	0.10	5.7	0.1	0.36	2	5.6	<0.2
13MTCS39 Silt		17	0.39	114	0.031	<20	1.02	0.012	0.13	7.0	<0.01	2.7	0.1	0.07	3	<0.5	<0.2
13MTCS40 Silt		18	0.43	135	0.058	<20	1.10	0.020	0.19	0.4	<0.01	2.5	0.2	0.09	4	<0.5	<0.2
13MTCS41 Silt		15	0.47	150	0.077	<20	1.10	0.020	0.23	0.3	<0.01	2.4	0.2	<0.05	4	<0.5	<0.2
13MTCS43 Silt		17	0.40	123	0.021	<20	1.02	0.009	0.12	37.3	<0.01	3.3	0.2	0.11	3	0.8	1.0
13MTBS3 Silt		68	0.84	262	0.015	<20	1.96	0.012	0.08	1.6	0.07	5.0	0.1	<0.05	5	1.2	0.2
13MTBS4 Silt		65	0.99	215	0.016	<20	1.97	0.012	0.06	1.8	0.03	4.4	0.1	<0.05	5	<0.5	<0.2
13MTBS6 Silt		28	0.69	300	0.009	<20	1.79	0.011	0.09	12.6	0.04	4.4	0.1	<0.05	4	1.5	0.2
13MTBS9 Silt		22	0.63	208	0.007	<20	1.72	0.008	0.05	7.3	0.03	3.7	0.1	<0.05	4	1.1	0.4
13MTBS15 Silt		48	0.80	501	0.023	<20	2.63	0.012	0.07	2.1	0.08	4.1	0.1	0.08	6	1.9	0.3
13MTBS16 Silt		30	1.20	176	0.037	<20	2.00	0.009	0.11	0.4	0.03	2.5	<0.1	0.07	5	2.8	<0.2
13MTBS17 Silt		28	0.96	144	0.025	<20	1.63	0.008	0.06	0.4	0.03	2.1	<0.1	0.07	4	2.5	<0.2
13MTBS19 Silt		51	0.79	165	0.018	<20	2.21	0.008	0.05	0.4	0.05	3.4	<0.1	0.13	4	5.5	<0.2
13MTBS20 Silt		59	0.91	152	0.021	<20	2.41	0.007	0.05	0.7	0.05	3.7	<0.1	0.08	5	3.6	<0.2
13MTWS01 Silt		13	0.37	62	0.010	<20	0.85	0.008	0.06	>100	0.05	2.0	0.1	<0.05	2	0.6	1.6
13MTWS02 Silt		20	0.65	99	0.018	<20	1.33	0.008	0.06	36.7	0.03	2.6	<0.1	0.06	4	2.4	0.7
13MTWS03 Silt		15	0.44	90	0.014	<20	1.00	0.009	0.06	61.0	0.05	2.7	0.2	<0.05	3	<0.5	1.0
13MTWS04 Silt		13	0.39	95	0.012	<20	0.78	0.009	0.06	>100	0.04	2.1	0.1	0.09	2	0.6	1.4
13MTWS05 Silt		11	0.34	77	0.009	<20	0.75	0.008	0.06	>100	*	1.6	0.1	0.06	2	<0.5	1.0
13MTWS06 Silt		11	0.35	65	0.011	<20	0.75	0.008	0.06	97.5	0.04	1.7	0.1	0.08	2	<0.5	1.1
13MTWS07 Silt		14	0.42	95	0.012	<20	0.93	0.010	0.07	>100	*	1.7	0.2	0.13	3	0.6	1.3
13MTWS08 Silt		22	0.68	134	0.021	<20	1.51	0.010	0.12	32.8	0.03	3.7	0.2	<0.05	5	1.0	1.7
13MTWS09 Silt		11	0.32	61	0.011	<20	0.71	0.009	0.06	42.4	0.02	1.9	0.1	0.06	2	<0.5	1.3
13MTWS10 Silt		12	0.35	71	0.011	<20	0.78	0.008	0.06	>100	0.07	1.8	0.2	0.08	2	<0.5	1.2
13MTWS11 Silt		11	0.36	75	0.011	<20	0.83	0.008	0.06	>100	0.02	1.9	0.2	0.06	2	<0.5	0.9
13MTWS12 Silt		13	0.39	87	0.010	<20	0.91	0.008	0.07	52.1	0.02	2.2	0.1	0.09	2	<0.5	1.2



Acme Analytical Laboratories (Vancouver) Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client:

**Copper Mountain Mining Corporation** 

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

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CERTIFIC	ATE OF AN	IALY	SIS													SM	11130	0003	395.	1	
	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
13MTWS13	Silt	6.1	52.9	76.3	228	1.3	37.4	28.7	4676	4.29	588.8	34.0	0.3	28	5.5	1.6	0.9	21	0.47	0.152	10
13MTWS14	Silt	2.5	31.4	29.7	77	0.7	20.6	23.6	3304	1.44	32.7	84.6	<0.1	32	6.8	0.9	0.2	7	0.82	0.142	10



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Project: None Given

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CERTIFICA	ATE O	F AN	IALY	SIS													SM	1113	000395.1
		Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
		Analyte	Cr	Mg	Ва	Ti	В	Al	Na	K	w	Hg	Sc	TI	s	Ga	Se	Te	
		Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
		MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	
13MTWS13	Silt		9	0.36	100	0.007	<20	1.44	0.010	0.08	10.2	0.06	1.6	0.1	0.14	3	3.7	<0.2	
13MTWS14	Silt		6	0.13	62	0.004	<20	0.77	0.014	0.09	1.1	0.12	0.9	0.1	0.35	1	7.8	<0.2	



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Project: None Given

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QUALITY CO	NTROL	REP	'OR'	Т												SM	1130	003	95.	1	
	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
Pulp Duplicates																					
13MTWS11	Silt	15.1	131.5	111.7	294	3.0	23.5	15.2	748	3.72	249.7	307.6	3.1	22	3.5	2.7	3.4	24	0.29	0.121	14
REP 13MTWS11	QC	16.0	136.9	111.0	302	2.9	25.0	16.3	760	3.93	252.8	130.4	3.2	21	3.5	2.7	3.6	25	0.31	0.122	15
Reference Materials																					
STD DS10	Standard	12.7	144.7	144.3	343	1.7	71.1	12.6	821	3.06	42.8	70.3	6.5	50	2.4	8.2	8.7	41	0.97	0.067	15
STD OREAS45EA	Standard	1.4	649.1	13.5	27	0.3	337.1	50.6	332	27.52	10.3	55.1	9.4	3	<0.1	0.3	0.2	276	0.03	0.029	6
STD DS10 Expected		14.69	154.61	150.55	352.9	1.96	74.6	12.9	861	2.7188	43.7	91.9	7.5	67.1	2.48	9.51	11.65	43	1.0355	0.073	17.5
STD OREAS45EA Expected		1.39	709	14.3	28.9	0.26	381	52	400	23.51	9.1	53	10.7	3.5	0.02	0.2	0.26	303	0.036	0.029	6.57
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1



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9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158

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# QUALITY CONTROL REPORT

### SMI13000395.1

	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Cr	Mg	Ва	Ti	В	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																	
13MTWS11	Silt	11	0.36	75	0.011	<20	0.83	0.008	0.06	>100	0.02	1.9	0.2	0.06	2	<0.5	0.9
REP 13MTWS11	QC	12	0.37	70	0.011	<20	0.82	0.008	0.06	99.9	0.04	2.0	0.1	0.05	3	0.6	1.0
Reference Materials																	
STD DS10	Standard	53	0.74	357	0.066	<20	0.94	0.060	0.30	2.7	0.29	2.5	4.7	0.25	4	2.5	4.7
STD OREAS45EA	Standard	896	0.09	135	0.086	<20	2.76	0.021	0.05	<0.1	0.02	73.9	<0.1	<0.05	11	0.6	<0.2
STD DS10 Expected		54.6	0.7651	349	0.0817		1.0259	0.0638	0.3245	3.34	0.289	2.8	4.79	0.2743	4.3	2.3	4.89
STD OREAS45EA Expected		849	0.095	148	0.0875		3.13	0.02	0.053			78	0.072	0.036	11.7	0.6	0.07
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2



Acme Analytical Laboratories (Vancouver) Ltd. 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158

Client: **Copper Mountain Mining Corporation** 

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Submitted By: Peter Holbek Receiving Lab: Canada-Smithers Received: October 15, 2013 Report Date: October 30, 2013

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### **CERTIFICATE OF ANALYSIS**

### SMI13000396.1

#### **CLIENT JOB INFORMATION**

None Given Project:

Shipment ID: P.O. Number

Number of Samples: 33

#### SAMPLE DISPOSAL

RTRN-PLP Return

**DISP-RJT-SOIL** Immediate Disposal of Soil Reject

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

Copper Mountain Mining Corporation Invoice To:

> 1700 - 700 West Pender St. Vancouver BC V6G 1G8

CANADA

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	33	Dry at 60C			SMI
SS80	33	Dry at 60C sieve 100g to -80 mesh			SMI
1DX1	33	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

#### **ADDITIONAL COMMENTS**



CC:

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.

"\*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Acme Analytical Laboratories (Vancouver) Ltd. 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158

Client: **Copper Mountain Mining Corporation** 

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Project: None Given

Report Date: October 30, 2013

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CERTIFIC	ATE OF AN	VALY	′SIS													SM	1113	0003	396	.1	
	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
13MTCD1	Soil	3.6	101.1	22.2	171	0.6	31.5	31.8	2861	6.13	53.2	7.1	0.7	6	0.6	1.7	0.3	52	0.16	0.212	6
13MTCD2	Soil	4.7	89.9	28.0	210	0.6	59.2	44.9	2541	5.21	53.1	3.5	8.0	10	0.9	1.2	0.4	35	0.17	0.150	10
13MTCD3	Soil	3.7	58.6	45.4	143	0.5	27.8	17.4	1547	5.13	68.6	5.7	0.3	7	0.6	1.3	0.4	38	0.07	0.120	10
13MTCD4	Soil	4.2	101.2	43.6	317	0.5	66.9	54.7	3474	6.09	96.7	11.7	0.7	17	1.9	1.2	0.6	36	0.29	0.177	12
13MTCD6	Soil	2.4	325.6	32.8	87	0.5	17.6	12.4	1028	3.09	48.5	45.0	0.4	48	0.3	0.7	1.0	35	1.01	0.176	33
13MTCD7	Soil	2.7	100.4	24.3	106	0.2	24.1	21.7	2268	4.55	69.3	11.6	0.5	8	0.3	0.5	8.0	45	0.07	0.169	12
13MTCD8	Soil	1.3	12.8	15.6	91	0.2	6.5	15.7	2665	3.04	12.8	4.6	0.2	13	0.3	0.4	0.3	17	0.21	0.161	8
13MTCD9	Soil	3.0	15.6	15.0	47	0.2	6.7	5.4	453	2.02	14.8	2.1	<0.1	8	0.2	0.3	0.7	29	0.05	0.094	8
13MTCD10	Soil	2.8	283.5	12.3	93	1.0	24.3	16.6	1942	3.56	32.3	84.8	0.7	10	0.5	0.5	0.2	39	0.22	0.052	13
13MTCD11	Soil	3.3	202.2	19.2	99	0.6	35.0	14.5	1167	4.27	20.4	13.1	0.7	7	0.3	0.5	0.5	31	0.11	0.101	24
13MTCD12	Soil	1.6	46.2	20.0	75	0.4	14.5	10.9	1111	3.16	29.3	11.8	0.1	13	0.2	0.4	0.6	34	0.16	0.133	13
13MTCD13	Soil	1.8	58.1	19.3	89	0.2	19.1	17.5	2056	3.54	24.2	5.0	0.7	7	0.2	0.5	0.4	35	0.09	0.114	14
13MTCD14	Soil	3.3	24.8	21.2	47	0.3	7.3	6.1	956	1.72	15.2	14.7	<0.1	11	0.2	0.3	0.6	38	0.07	0.107	8
13MTCD15	Soil	1.7	13.2	9.8	48	0.3	6.1	4.5	270	1.82	14.3	5.0	<0.1	7	0.2	0.4	0.5	33	0.03	0.128	7
13MTCD16	Soil	1.0	7.2	7.6	19	0.2	3.2	2.0	92	1.16	6.4	2.9	<0.1	12	0.1	0.3	0.3	31	0.05	0.056	5
13MTCD17	Soil	1.3	17.2	11.1	55	0.2	14.6	7.9	526	2.32	11.1	10.4	<0.1	7	0.1	0.3	0.3	36	0.08	0.113	6
13MTCD21B	Soil	1.7	15.8	11.2	47	0.2	9.8	6.4	1337	2.29	11.7	0.9	<0.1	7	0.3	0.4	0.4	46	0.04	0.113	7
13MTCD22	Soil	1.1	84.6	8.3	76	0.2	26.6	10.5	417	2.86	9.8	51.9	0.2	4	0.1	0.4	0.4	53	0.05	0.074	8
13MTCD23	Soil	1.0	11.4	11.3	43	0.2	10.8	6.7	785	1.73	7.1	10.2	<0.1	8	0.2	0.3	0.4	35	0.06	0.108	5
13MTCD24	Soil	1.1	21.4	7.4	69	0.3	26.3	13.8	1311	3.05	9.3	1.6	<0.1	6	0.3	0.5	0.2	60	0.06	0.163	5
13MTCD27	Soil	0.9	5.2	14.6	14	0.9	3.2	0.9	27	0.44	5.4	7.2	<0.1	7	0.2	0.2	0.4	24	0.03	0.087	4
13MTCD28	Soil	1.2	14.1	16.7	68	0.3	16.6	7.9	681	2.36	9.8	3.0	<0.1	13	0.2	0.2	0.5	49	0.17	0.172	8
13MTCD30	Soil	0.6	9.6	8.8	30	0.4	9.3	3.3	100	0.87	3.8	1.6	<0.1	5	0.1	0.2	0.2	22	0.03	0.101	6
13MTCD32	Soil	1.4	25.4	19.3	111	0.1	67.7	22.4	1826	3.99	14.8	6.8	0.4	10	0.1	0.9	0.4	69	0.09	0.111	12
13MTCD33	Soil	1.3	13.0	13.2	39	0.5	23.0	6.4	331	0.86	7.6	8.6	<0.1	12	0.2	0.2	0.8	25	0.05	0.143	7
13MTCD34	Soil	0.9	6.4	8.7	33	0.3	8.3	3.7	740	0.84	3.7	4.2	0.1	11	0.1	0.2	0.3	18	0.04	0.077	10
13MTCD35	Soil	1.6	23.8	16.6	78	0.3	17.1	8.0	547	2.12	38.0	24.8	<0.1	19	0.4	0.4	0.5	35	0.22	0.110	9
13MTBD01	Soil	2.0	48.2	31.7	133	0.5	21.4	14.2	1202	3.94	43.4	56.6	2.0	9	0.5	0.7	0.4	33	0.15	0.102	22
13MTBD02	Soil	3.3	66.0	61.7	127	0.8	23.3	9.9	540	2.85	61.6	45.4	0.5	19	0.4	0.7	0.9	32	0.12	0.137	16
13MTBD05	Soil	6.9	110.9	26.0	186	0.7	60.3	28.1	1305	7.87	65.2	<0.5	1.9	10	0.5	0.9	0.4	36	0.05	0.146	10



Acme Analytical Laboratories (Vancouver) Ltd. 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA PHONE (604) 253-3158 Client: Copper Mountain Mining Corporation

1700 - 700 West Pender St. Vancouver BC V6G 1G8 CANADA

Project: None Given

Report Date: October 30, 2013

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# CERTIFICATE OF ANALYSIS

# SMI13000396.1

	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Cr	Mg	Ва	Ti	В	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
13MTCD1 Soil		13	0.79	33	0.030	<20	2.10	0.005	0.03	8.0	0.04	4.7	<0.1	<0.05	5	1.3	<0.2
13MTCD2 Soil		20	0.81	40	0.015	<20	1.94	0.006	0.04	0.7	0.03	3.3	<0.1	<0.05	4	1.2	<0.2
13MTCD3 Soil		18	0.63	89	0.020	<20	2.01	0.004	0.03	1.2	0.04	2.4	<0.1	<0.05	5	8.0	0.3
13MTCD4 Soil		20	0.67	77	0.011	<20	2.09	0.008	0.04	5.7	0.05	3.3	<0.1	0.05	5	1.8	<0.2
13MTCD6 Soil		31	0.63	134	0.010	<20	1.69	0.010	0.06	2.3	0.06	2.6	<0.1	0.14	4	2.0	0.2
13MTCD7 Soil		27	0.91	64	0.025	<20	2.16	0.004	0.05	2.2	0.06	2.8	<0.1	<0.05	6	<0.5	0.4
13MTCD8 Soil		6	0.18	172	0.003	<20	1.01	0.003	0.04	2.2	0.04	1.1	0.1	0.08	2	<0.5	<0.2
13MTCD9 Soil		10	0.24	50	0.013	<20	1.44	0.006	0.04	1.1	0.07	0.4	<0.1	0.07	6	<0.5	<0.2
13MTCD10 Soil		26	1.12	122	0.012	<20	1.85	0.004	0.03	0.3	0.04	7.8	<0.1	<0.05	4	<0.5	<0.2
13MTCD11 Soil		21	0.53	45	0.008	<20	1.14	0.004	0.04	2.2	0.05	3.8	<0.1	<0.05	3	<0.5	<0.2
13MTCD12 Soil		15	0.53	330	0.010	<20	2.11	0.006	0.04	1.0	0.07	0.9	0.1	0.10	5	<0.5	<0.2
13MTCD13 Soil		19	0.78	67	0.024	<20	1.74	0.005	0.04	0.8	0.03	2.7	<0.1	<0.05	4	<0.5	<0.2
13MTCD14 Soil		15	0.31	71	0.013	<20	1.24	0.006	0.05	0.7	0.05	1.2	0.1	0.09	5	<0.5	<0.2
13MTCD15 Soil		9	0.18	80	0.004	<20	1.16	0.005	0.04	1.4	0.08	0.4	<0.1	0.09	4	<0.5	<0.2
13MTCD16 Soil		6	0.09	43	0.035	<20	0.59	0.008	0.02	0.4	0.05	8.0	<0.1	0.06	4	<0.5	<0.2
13MTCD17 Soil		22	0.55	54	0.008	<20	1.37	0.005	0.06	0.5	0.12	0.6	<0.1	0.07	5	<0.5	<0.2
13MTCD21B Soil		31	0.27	78	0.010	<20	1.36	0.003	0.04	0.5	0.07	0.6	<0.1	0.06	6	<0.5	<0.2
13MTCD22 Soil		56	0.87	40	0.027	<20	2.94	0.005	0.03	0.4	0.05	2.0	<0.1	<0.05	8	<0.5	<0.2
13MTCD23 Soil		23	0.38	51	0.012	<20	0.94	0.005	0.07	3.3	0.06	0.4	<0.1	0.06	4	<0.5	<0.2
13MTCD24 Soil		53	0.69	54	0.013	<20	1.43	0.005	0.04	0.5	0.08	1.4	<0.1	0.07	5	<0.5	<0.2
13MTCD27 Soil		10	0.04	34	0.064	<20	0.79	0.004	0.03	0.2	0.09	0.5	<0.1	0.10	6	<0.5	<0.2
13MTCD28 Soil		36	0.51	73	0.024	<20	1.54	0.006	0.07	0.4	0.08	1.1	0.1	0.10	7	<0.5	<0.2
13MTCD30 Soil		22	0.29	66	0.004	<20	1.04	0.005	0.04	0.3	0.07	0.4	<0.1	0.06	4	<0.5	<0.2
13MTCD32 Soil		114	1.28	89	0.027	<20	1.84	0.007	0.05	0.5	0.03	6.4	<0.1	<0.05	7	<0.5	<0.2
13MTCD33 Soil		43	0.62	37	0.011	<20	1.46	0.005	0.04	0.6	0.09	0.6	<0.1	0.08	5	<0.5	<0.2
13MTCD34 Soil		13	0.21	38	0.014	<20	0.52	0.005	0.08	0.1	0.04	0.9	<0.1	<0.05	3	<0.5	<0.2
13MTCD35 Soil		26	0.52	170	0.010	<20	1.70	0.006	0.05	1.0	0.06	0.9	0.1	<0.05	6	<0.5	<0.2
13MTBD01 Soil		17	0.71	214	0.034	<20	1.58	0.009	0.07	1.1	0.03	3.6	<0.1	<0.05	5	<0.5	<0.2
13MTBD02 Soil		16	0.44	283	0.007	<20	1.72	0.008	0.06	3.3	0.10	1.5	0.1	0.05	4	0.9	0.2
13MTBD05 Soil		18	0.70	440	0.002	<20	1.92	0.006	0.04	0.2	0.03	4.6	0.1	<0.05	4	4.0	0.2



Acme Analytical Laboratories (Vancouver) Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

www.acmelab.com

Client:

**Copper Mountain Mining Corporation** 

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Project:

None Given

Report Date:

October 30, 2013

PHONE (604) 253-	-3158											Page:		3 of 3					Pa	art: 1 c	of 2
CERTIFIC	CATE OF AN	IALY	SIS													SM	1113	0003	396.	.1	
	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
13MTBD07	Soil	4.4	44.1	40.9	158	0.7	22.9	12.4	993	3.30	64.4	7.8	0.4	24	0.7	0.7	0.7	34	0.33	0.149	14
13MTBD08	Soil	4.2	29.9	39.7	130	1.1	13.9	7.5	451	2.68	154.6	59.7	0.7	73	0.9	0.4	1.3	30	0.49	0.141	14
13MTBD14	Soil	6.2	63.8	42 3	124	0.9	18 4	12.6	1037	3 80	63 4	104 7	0.6	9	0.6	0.8	3.0	53	0.07	0 105	15



0.36

120

0.075

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9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

13MTBD07

13MTBD08

13MTBD14

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Project: None Given

Report Date: October 30, 2013

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0.1

< 0.05

10

< 0.5

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0.6

# CERTIFICATE OF ANALYSIS

Soil

Soil Soil

Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
Analyte	Cr	Mg	Ва	Ti	В	ΑI	Na	K	w	Hg	Sc	TI	s	Ga	Se	Те
Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
	22	0.60	330	0.009	<20	1.66	0.006	0.08	0.9	0.07	2.4	<0.1	0.06	4	0.7	<0.2
	12	0.48	374	0.002	<20	1.56	0.007	0.06	2.2	0.05	1.6	0.1	0.08	5	<0.5	0.2

0.05

6.3

0.04

2.13

0.008



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QUALITY COI	NTROL	REP	'OR'	Т												SM	1130	0003	96.	1	
	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Мо	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	Р	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
Pulp Duplicates																					
13MTBD14	Soil	6.2	63.8	42.3	124	0.9	18.4	12.6	1037	3.80	63.4	104.7	0.6	9	0.6	0.8	3.0	53	0.07	0.105	15
REP 13MTBD14	QC	6.2	63.9	42.0	120	0.8	17.8	12.5	1074	3.84	61.1	17.6	0.6	9	0.5	0.7	2.9	52	0.06	0.102	15
Reference Materials																					
STD DS10	Standard	11.8	147.3	145.5	346	2.5	71.8	12.5	824	2.51	43.8	212.6	6.5	52	2.5	5.7	9.3	40	0.97	0.070	15
STD OREAS45EA	Standard	1.2	588.7	12.6	27	0.3	312.3	45.9	364	21.18	7.6	49.2	9.0	3	<0.1	0.2	0.2	256	0.03	0.026	6
STD DS10 Expected		14.69	154.61	150.55	352.9	1.96	74.6	12.9	861	2.7188	43.7	91.9	7.5	67.1	2.48	9.51	11.65	43	1.0355	0.073	17.5
STD OREAS45EA Expected		1.39	709	14.3	28.9	0.26	381	52	400	23.51	9.1	53	10.7	3.5	0.02	0.2	0.26	303	0.036	0.029	6.57
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1



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Project: None Given

Report Date: October 30, 2013

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# QUALITY CONTROL REPORT

### SMI13000396.1

Part: 2 of 2

	Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
	Analyte	Cr	Mg	Ва	Ti	В	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Те
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																	
13MTBD14	Soil	27	0.36	120	0.075	<20	2.13	0.008	0.05	6.3	0.04	2.8	0.1	<0.05	10	<0.5	0.6
REP 13MTBD14	QC	26	0.36	121	0.073	<20	1.99	0.007	0.04	5.8	0.05	2.7	<0.1	<0.05	10	<0.5	0.5
Reference Materials																	
STD DS10	Standard	49	0.71	346	0.063	<20	0.94	0.060	0.29	2.4	0.28	2.5	4.6	0.26	4	1.8	4.4
STD OREAS45EA	Standard	807	0.08	128	0.077	<20	2.50	0.019	0.04	<0.1	<0.01	66.1	<0.1	<0.05	10	<0.5	<0.2
STD DS10 Expected		54.6	0.7651	349	0.0817		1.0259	0.0638	0.3245	3.34	0.289	2.8	4.79	0.2743	4.3	2.3	4.89
STD OREAS45EA Expected		849	0.095	148	0.0875		3.13	0.02	0.053			78	0.072	0.036	11.7	0.6	0.07
BLK	Blank	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2