



ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE: Diamond Drilling and Geological Mapping Report on the Rateria Property

TOTAL COST: \$421,753.74

AUTHOR(S): Dan Meldrum, M.Sc., GIT

SIGNATURE(S): "Dan Meldrum"

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): 08-1620473-0616 (MX-4-402)

STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): 4435308 (2009 /Aug 10 – 2009 Nov 5)

YEAR OF WORK: 2009

PROPERTY NAME: Rateria

CLAIM NAMES (on which work was done): 511809, 513870, 522356, 528775, 528778, 529011, 529013, 563796, 571030, 571031, 572518, 572519, 572520, 573338, 591057, 591058

COMMODITIES SOUGHT: Copper, Molybdenum, Gold, Rhenium

MINFILE NUMBERS: 092ISE017, 018, 020, 060, 062, 071, 092, 126, 150

MINING DIVISION: Kamloops

NTS / BCGS: 092I.036

LATITUDE: 50° 21' 59" North **LONGITUDE:** 120° 57' 27" West (at centre of work)

UTM: 646000E; 5583000N Zone 10

OWNER(S): Happy Creek Minerals Ltd. (FMC 203169)

MAILING ADDRESS: #460 – 789 West Pender St.; Vancouver, B.C.; V6C 1H2

OPERATOR(S) [who paid for the work]: Same as above

MAILING ADDRESS: Same as above

REPORT KEYWORDS: . Recent and historical drilling indicates the Rateria property is underlain by granodiorite, quartz diorite, quartz monzonite, and crowded quartz feldspar porphyry dykes. These lithologies are tentatively assigned to the Bethsaida, Skeena and Chataway phases of the Upper Triassic - Lower Jurassic Guichon Creek batholith, a multi-phase calc-alkaline intrusion which hosts the Valley Copper and Lornex deposits to the northwest.

PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 1829, 1881, 3709, 9211, 10139, 26409, 27785, 28094, 28878, 30067, 30822

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping	1:30,000 5,275.7 hectares	all	\$10,614.48
Photo interpretation	0 km		
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic	0 km		
Induced Polarization			
Radiometric	0 km		
Seismic	0 km		
Other	0 km		
Airborne	0 km		
GEOCHEMICAL			
Soil			
Silt			
Rock	5 samples	522356, 513870	\$3,260.97
Other	0		
DRILLING (total metres, number of holes, size, storage location)			
	2,026 m 9 holes NQ Core on claims		
Core	2026m	522356, 513870	\$288,783.09
Non-core	0		
RELATED TECHNICAL			
Sampling / Assaying		511809, 513870, 522356, 528775, 528778, 529011, 529013, 571031	\$99,699.04
Petrographic	0		
Mineralographic	0		
Metallurgic	0		
PROSPECTING (scale/area)	5,275.7 hectares	all	\$19,396.16
PREPATORY / PHYSICAL			
Line/grid (km)	0		
Topo/Photogrammetric (scale, area)	0		
Legal Surveys (scale, area)	0		
Road, local access (km)/trail	0		
Trench (number/metres)			
Underground development (metres)	0		
Other	0		
		Total Cost	\$421,753.74



BC Geological Survey
Assessment Report
31424

DIAMOND DRILLING
AND GEOLOGICAL MAPPING
REPORT

ON THE

RATERIA PROPERTY

KAMLOOPS MINING DIVISION
BCGS: 092I.036

PREPARED FOR

HAPPY CREEK MINERALS LTD.
SUITE 460 – 789 WEST PENDER STREET
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BY

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2010 FEBRUARY 15

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1. Summary

The Rateria property is situated within the Highland Valley copper belt, approximately 40 kilometres northwest of Merritt, B.C. Recently updated logging roads, as well as the 10 kilometre proximity to the Valley Copper mine and operating mill, provide reasonable access and infrastructure to the area. The property is comprised of 16 claims totalling 5,275.7 hectares and is owned 100% by Happy Creek Minerals Ltd.

Recent and historical drilling indicates the Rateria property is underlain by granodiorite, quartz diorite, quartz monzonite, and crowded quartz feldspar porphyry dykes. These lithologies are tentatively assigned to the Bethsaida, Skeena and Chataway phases of the Upper Triassic - Lower Jurassic Guichon Creek batholith, a multi-phase calc-alkaline intrusion which hosts the Valley Copper and Lornex deposits to the northwest.

During 2009, a nine hole, 2,026 metre, diamond drill program as well as a prospecting and geological mapping program was conducted at the Rateria property. The drill program has confirmed the presence of copper between widely spaced 2008 drillholes. Diamond drill hole R09-07 returned 48.0 metres grading 0.30% copper. Total cost of the combined geological mapping, prospecting and drill program was \$421,753.74.

Geology and analytical results suggest a linkage between higher grade copper mineralization and a north trending fault structure on the property. A large high resistivity feature was also drilled with encouraging results (trace but persistent native copper throughout). Future exploration should further focus on structural controls on mineralization. The 3D-IP technique has proved a valuable tool in locating areas of prospective copper mineralization. Refinement to the geophysical interpretation, including integrating the electrical properties of various lithologies into the geophysics to allow for more precise modelling should be done.

2. Introduction and Terms of Reference

This report has been written in order to satisfy assessment requirements. It describes the geology, work history and the 2009 exploration program conducted on the Rateria property owned by Happy Creek Minerals Ltd. of Vancouver, B.C.

The information for the accompanying report was obtained from sources cited under references and from the results of the exploration program.

The author wishes to acknowledge the contributions from Sassan Liaghat for his field management, performing the quick-logs, database creation and preparing maps and figures and Paul Reynolds who prepared AR 30822 from which this report has borrowed extensively from.

3. Location and Access

The Rateria property consists of a total of 16 contiguous claims covering 5,275.7 hectares in the Kamloops Mining Division. The property is located approximately 40 kilometres northwest of Merritt, British Columbia, and 10 kilometres southeast of the Valley Copper mine (Figure 1). The property is centred on $120^{\circ} 57' 27''$ West longitude and $50^{\circ} 21' 59''$ North latitude on BCGS map sheet 092I036. Access to the property from Merritt, B.C., is via highway 8 to Lower Nicola, then north along Aberdeen Road which turn into the Pimainus Forest Service road at kilometre eight. This all-weather logging road and recently built secondary logging roads transect the property in and around kilometre 24. With relative proximity to the Valley Copper Mine and mill, infrastructure in the surrounding area is excellent.

The property lies within a gently rolling upland plateau area of approximately 1,400 to 1,600 metres elevation and is underlain by a thick blanket of glacio-fluvial sand and gravel. Small lakes, swamps and seasonal creeks occur throughout the property. Adequate water for drilling purposes is available from these sources. Forested areas are dominated by Lodgepole Pine and Mountain Pine Beetle infestation encourages the ongoing, high paced logging activity. The area is characterized by a dry interior climate. Temperatures range from -30 to $+40$ degrees centigrade, and 50 - 100 centimetres annual precipitation occurs primarily as snow during the winter.

Supplies, labour and rental equipment are available at Kamloops and Merritt. Daily freight and bus service is scheduled to both Kamloops and Merritt. Daily scheduled air service is available in Kamloops.

4. Claim Status

The Rateria property is composed of 16 claims totalling approximately 5,275.7 hectares. The claims are registered in the name of Happy Creek Minerals Ltd., (Figure 2, Table 1).

Table 1: Claim List

Tenure Number	Claim Name	Owner	Map Number	Good To Date	Area (ha)
511809	NEW RATERIA	203169 (100%)	092I	2019/dec/31	144.3
513870		203169 (100%)	092I	2019/dec/31	1,154.2
522356	RATERIA NE	203169 (100%)	092I	2019/dec/31	494.4
528775	MAL	203169 (100%)	092I	2019/dec/31	494.4
528778	MAL 2	203169 (100%)	092I	2019/dec/31	514.9
529011	RATERIA NORTH	203169 (100%)	092I	2019/dec/31	514.8
529013	RATERIA NORTH-2	203169 (100%)	092I	2019/dec/31	515.1
563796	SHO	203169 (100%)	092I	2019/dec/31	989.9
571030		203169 (100%)	092I	2019/dec/31	20.6
571031		203169 (100%)	092I	2019/dec/31	82.4
572518	SHO 2	203169 (100%)	092I	2019/dec/31	20.6
572519		203169 (100%)	092I	2019/dec/27	20.6
572520		203169 (100%)	092I	2019/dec/27	20.6
573338	COPPER 16	203169 (100%)	092I	2019/dec/31	165.0
591057	COPPER CONNECTOR	203169 (100%)	092I	2019/dec/31	82.5
591058	COPPER CONNECTOR 2	203169 (100%)	092I	2019/dec/31	41.3
Total					5,275.7

5. History

Between 1968 and 1974, the area which presently covers the Rateria property was subject to regional geochemical surveys, soil sampling, geological mapping, induced polarization surveys, bulldozer trenching, road building, and percussion and minor diamond drilling. During 1970, Asarco drilled percussion holes on a 2,000-foot grid pattern to test up to 100 feet of bedrock typically with a total depth of approximately 90-120 feet, and locally to a depth of 200 feet or more (Bayley, 1970; Blann, 2007). Percussion hole 70-D8c returned 0.57% copper in the bottom 30 feet of the hole. Two additional percussion holes were drilled 285 metres southwest and 312 metres northeast of 70-D8c to depths of 120 and 200 feet respectively; however, these did not intersect encouraging values (Bayley, 1970; Blann, 2007).

During 1972, International Mogul Mines Ltd. drilled four diamond drill holes on the Chataway Exploration Co. property. Drill hole M72-4 was located 45 metres west of 70-D8c and drilled eastward at -45 degrees to a depth of 225 feet (Willars, 1972). The deepest sample contained 0.06% copper and strong oxidation as noted in drill logs, indicating that M72-4 may have stopped short of intersecting the mineralized zone noted in 70-D8c (Willars, 1972; Blann, 2007).

Mineral claims in the Roscoe Lake area lapsed, and in 1976 the Roscoe 1 claim was staked by Highmont Operating Corporation for National Trust Company Ltd., and remains in good standing. Cominco Ltd. carried out reconnaissance induced polarization surveys over the Gump

property located north and east of the Three Creeks prospect (Klein, 1981, Scott, 1981, 1982). Highmont Operating Corporation performed 123.4 metres of diamond drilling on the Yubet north prospect for National Trust Company (Sanford, 1983). In 1984, Highmont drilled 8 percussion holes, including three holes on the Yubet south prospect, returning 0.40% copper, 0.005% molybdenum, and 4.2 g/t silver over the final 24.4 metres of drill hole RL-84-8 (Tsang, L., 1985).

By 1999 a large number of claims in the area had lapsed and Brian Malahoff staked the Rateria property.

Cominco Ltd. optioned the Rateria property in 2000 and hired Scott Geophysics of Vancouver, B.C., to conduct an induced polarization survey on the property. Grid lines were oriented east - west with 300 metre spacing. A pole-dipole array was used with an "a" spacing of 100 metres and "n" separations of 1 to 6. The north and south portions of the property were not covered by the survey, however, several strong through-going structural features comprising weakly anomalous chargeability and resistivity values were identified (Bond, 2000).

The Rateria property was optioned to Happy Creek Minerals Ltd. in December of 2004. Silt geochemistry as well as GPS surveying of topographic and historical features was completed in 2004 and early 2005. During 2005, property work included a 341 metre, two hole, diamond drill program, 13.5 kilometres of line cutting, and a subsequent 3D-IP survey. The two drill holes tested IP anomalies from the 2000 geophysical survey, and consequently DDH05-2 returned 13.8 metres of 0.071% copper and 9.7 metres of 0.063% copper. North of these drill holes, the 2005 IP survey identified an anomaly approximately 1.6 kilometres by 600 metres in dimension (Blann, 2006).

During 2006, a 2,400 metre diamond drill program was completed in the area of the 2005 induced polarization anomaly. The 14 diamond drill holes were designed to test the central portion of the IP anomaly from west to east (Blann, 2007). Diamond drill holes R06-08 returned 32.0 metres grading 0.24% copper and R06-14 returned 94 metres grading 0.15% copper. Locally higher grade intervals include up to 1.0 metre containing 3.88% copper and 126.0 g/t silver.

During 2007 Happy Creek Minerals Ltd., completed 14 diamond drill holes totalling 3,082 metres. From drill hole R07-13, which intersected over 189 metres of 0.22% copper, mineralization was traced north for approximately 600 metres along strike. This mineralized zone is referred to as Zone 1 and may coincide with large-scale regional structures trending north to northwest.

During the period January to May 2008 Happy Creek Minerals completed a 91 line kilometre 3D-IP survey on the Rateria property. This program expanded upon the 2005 IP grid. The results of this survey were used to guide the 2008 drill program. Later in 2008 a nine hole, 3,072 metre, diamond drill program was conducted on the Rateria property. Some highlights include hole R08-01 intersecting 103.25m of 0.335% Cu and R08-05 intersecting 177.00m of 0.366% Cu.

6. Geology of Rateria Property

6.1 Regional Geology

The Rateria property is underlain by the Upper Triassic - Lower Jurassic Guichon Creek batholith (198 +/- 8 my; McMillan, CIM Special Volume 15, 1976). This multi - phase calc - alkaline intrusion extends over an area of approximately 1,000 square kilometres and is elongated in a north-northwesterly direction. The nearly concentric phases have contacts ranging from gradational to locally sharp or partially brecciated, and are progressively younger and more felsic toward the central core of the batholith, as indicated by cross cutting relationships (Figure 3). Textural and compositional criteria have been used to characterize the various intrusive phases after Northcote, 1969 (McMillan, 1976).

The oldest phase of the Guichon Creek batholith is the Border or Hybrid phase, a fine to medium grained, mafic rich diorite to quartz diorite, which locally contains xenoliths of amphibolite and monzonite.

The Highland Valley phase consists of Guichon and Chataway varieties. The Guichon variety is a quartz diorite to granodiorite, typically containing 15% mafic minerals of uneven distribution. The Chataway variety is a hornblende granodiorite normally containing 12% evenly distributed mafic minerals.

The Bethlehem phase, a fine to medium grained granodiorite with approximately 8% mafic minerals, is characterized by amoeboid quartz crystals and several percent poikilitic hornblende crystals. The Skeena variety of granodiorite is texturally similar to the Bethlehem phase, but is distinguished by its coarser grain size, slightly lower mafic content, and subhedral to anhedral quartz.

The youngest intrusive phase of the Guichon Creek batholith is the Bethsaida, having a biotite +/- hornblende quartz monzonite to granodiorite composition, and containing approximately 6% mafic minerals, predominantly coarse-grained euhedral biotite books. The core of the Guichon Creek batholith is within a regional magnetic low.

A porphyry dyke swarm extending northward from Highland Valley cuts Bethlehem granodiorite and to the south dykes and small plugs of porphyry cut the Skeena variety. Some of these porphyries appear to be offshoots or derivatives of the Bethsaida phase (McMillan, 1976).

Alkaline and felsic volcanic dikes, flows and tuffs of Eocene - Miocene age cut the Guichon Creek batholith rocks. During glaciation, portions of the Tertiary and older rocks were eroded, and between one and upwards of 30 metres thickness of till, glaciofluvial and lacustrine cover was deposited toward a 165⁰ azimuth.

North of Highland Valley, the large copper +/- molybdenum deposits are generally associated with the dyke swarm or occur within the contact zone of Bethsaida phase and related dykes. South of Highland Valley, however, deposits appear to post date the Bethsaida phase rocks.

Dominant ore controlling fracture sets at the Valley and Lornex deposits trend north - northwest to northeast and locally east - southeast. The north trending Lornex Fault cuts the length of the Guichon Creek batholith with a moderate to steep west dip and has a dextral sense slip. This fault apparently truncates the Lornex and Valley Copper deposits on the west and east respectively. Sulphide mineralization is strongly associated with veins, fractures, faults and/or breccias.

In Highland Valley deposits, potassic alteration is variably developed and hydrothermal biotite or k-feldspar may be fracture controlled, flooded and veined. Phyllic alteration is typified by quartz and flakey sericite (2M₁ muscovite; McMillan, 1976) occurring in fracture-associated zones or as vein envelopes. In argillic zones, which often extend beyond the mineralized zones, feldspars and locally mafic minerals are altered to sericite and kaolinite +/- montmorillonite. Sericite, carbonate and clay alteration of feldspars, as well as chlorite - carbonate alteration of mafic minerals is characteristic of propylitic alteration. Calcite and zeolites occur primarily as late-stage veins and fracture coatings.

Sulphide zoning is common in Highland Valley deposits with bornite as the predominant sulphide, followed by chalcopyrite, and then outward to pyrite. Main hypogene copper sulphides include chalcopyrite, bornite and minor digenite. Topographically above hypogene mineralization, supergene enriched zones may contain limonite, malachite, chalcocite, native copper and occasionally tenorite. Pyrite occurs in a propylitic fringe to the potassic alteration zone generally in concentrations less than 1%. Distribution and concentration of molybdenite is highly variable throughout the Highland Valley deposits.

6.2 Property Geology

Rock outcrops comprise less than 5% of the Rateria property and occur in limited exposures such as creek beds, abandoned melt water channels and locally flanks and crests of hills. Although bulldozer trenching was apparently widespread during the 1970's, the seven to 30 metre thickness of glacial deposits limited trenching effectiveness, therefore property geology is largely derived from recent and historical drilling and from scattered outcrops.

The western portion of the property is underlain by quartz rich, mafic poor intrusive rocks of quartz diorite, granodiorite and quartz monzonite composition, likely of the Bethsaida phase. Adjacent to these rocks, along a northerly trending contact to the east, are medium-grained granodiorite and biotite quartz diorite interpreted as the Skeena variety. Further east, a north striking contact occurs between the Skeena variety and medium to coarse grained granodiorite of the Chataway variety. Dykes and small plugs of quartz monzonite, aplite, quartz and feldspar porphyry, and crowded quartz - K-feldspar porphyry occur locally.

Detailed logging of drill core has revealed areas of strong to intense fracturing and shearing over intervals of 10 to 100 metres. Strong alteration is widespread in intensely fractured zones, however, alteration intensity is locally independent of the degree of fracturing. Trace to local 5% bornite, chalcocite and lesser chalcopyrite occur in moderately to strongly sericitized zones, commonly with kaolinite, calcite and quartz flooding.

7. 2009 Exploration

During 2009, Happy Creek Minerals conducted an exploration program consisting of geological mapping, prospecting and diamond drilling.

7.1 Geological Mapping and Prospecting

113 stations were recorded over much of the property during the period of August to October 2009. Location of samples were taken using Garmin GPS, notes were taken on lithology, alteration, mineralogy, mineralization and structure. Several samples were sent to the laboratory for analysis (Table 2).

Table 2: Assays from 2009 Prospecting Program

Sample	Lab	Au ppb	Cu (%)	East (m)*	North (m)*
1002	12303	<2	<0.002	646640	5582931
1003	12304	83	0.487	646635	5583067
12305	12305	12	0.018	649283	5584729
12306	12306	6	0.03	646802	5582492
R16-04	12309	3	0.034	646824	5582465

* Datum: NAD 83, UTM Zone 10

7.2 Diamond Drilling

During 2009 a nine hole, 2,026 metre, diamond drill program was conducted on the Rateria property. This program was designed to test geophysical targets generated during the 2008 3D-IP program and to follow up 2008 drilling. All nine diamond drill holes were angled holes with dips ranging from -60° to -90° and were NQ-sized. Drill core logs are included in Appendix D and certificates of analyses are included in Appendix C. Cross sections of diamond drill holes are displayed in Figures 5 - 13 of Appendix E. The following table gives the details of the drill locations.

Table 3: 2009 Diamond Drill hole Collars

Hole ID	East (m)*	North (m) *	Elev (m)	Azimuth	Dip	Length
R09-01	647460	5583830	1505	270	-60	209.40
R09-02	647200	5583555	1525	0	-90	200.86
R09-03	646625	5583100	1545	270	-60	163.68
R09-04	646300	5582275	1550	0	-90	205.13
R09-05	646365	5581200	1525	0	-90	337.41
R09-06	647370	5584301	1515	270	-65	252.10
R09-07	647425	5584100	1505	270	-60	200.25
R09-08	649428	5583766	1435	90	-65	203.30
R09-09	647548	5584014	1500	0	-90	254.20
Total						2026.33

* Datum: NAD 83, UTM Zone 10, all holes logged by Dan Meldrum

Drill sites were generally located in open cut blocks and very minor clearing occurred to prepare drill sites. Water was pumped to the drills from nearby water sources or trucked from local lakes. Drill core was logged and sampled on site by Happy Creek Minerals personnel..

Core was picked up from the drill by Happy Creek personnel or delivered to the core shack by the drillers. Two locked sea containers were located at the core shack and core was stored inside them until it was ready to be logged. Core was split in half using a manual core splitter. After splitting, core samples along with sample tags were placed in plastic sample bags, sealed with zap straps and placed inside a rice bag. All the sample numbers were recorded on a sample shipment form. The samples were stored in the locked containers until they were shipped to the lab by Greyhound Courier (bus). Once the sampling was completed, the core was stored in a locked sea container.

There are no obvious drilling, sampling or recovery factors that would impact the reliability of the core samples.

7.3 Analytical Protocol

Analyses were completed at Acme Analytical Laboratories Ltd. (“Acme”) in Vancouver. Analysis at Acme was done using an aqua regia digest with an ICP-ES analysis.

The split drill core samples were crushed in their entirety to 80% passing -10 mesh (2 millimetres) and the crusher was cleaned with barren rock between samples. From the coarse rejects a sub-sample of 250 grams was pulverized to 85% passing -200 mesh (0.074 millimetres). The pulveriser was cleaned with silica sand between samples.

Acme’s quality system is compliant with the ISO 9001:2000 Model for Quality Assurance.

Copper, (in addition to 22 other elements) was determined using Geochemical Procedure 7AR, (Acme internal code). This method uses an aqua regia solution to digest the sample, followed by ICP-ES analysis.

7.4 Quality Control Program

Happy Creek implemented a full quality control (“QC”) program which involved the insertion of certified reference material (1 for every 40 samples), blank material a bright white marble cobbles obtained from Landscaping supply store (1 for every 20 samples) and field (1/4 core) duplicates (1 for every 20 samples). In a group of 40 samples there were 2 duplicates, 2 blanks and 1 standard. The author examined the performance of the blanks, field duplicates and standard reference material.

Two reference material were used, WCM Cu 116 (9 samples) and CDN CM-5 (11 samples). Of the 11 data points for the CDN CM-5 reference material none fell outside the tolerance limits supplied by CDN Resource Laboratories Ltd., the supplier of the certified reference material. Of the 9 data points for WCM Cu 116 reference material none fell outside the tolerance limits supplied by WCM Minerals.

The performance of the blanks was very good with only one data point out of 39 exceeding the detection limit tolerance for Cu. This relatively high blank value immediately followed 2 very high grade samples (>1% Cu) so the elevated copper in this sample may be caused by contamination during the crushing process or perhaps contamination in the actual analytical equipment. No action was taken.

The field duplicates performed well. Only one pair had significant (0.036% Cu) difference between duplicates. The drill log for that interval (R09-07 145-147m) states that a small vein of chalcocite was observed running 5 degrees to the core axis. This suggests that there is a reasonable likelihood that one ¼ of the core could have significantly more copper than another ¼. No action was taken.

8. Discussion of Results

The 2009 drill program focussed on expanding and infilling 2008 drilling in and around Zone 2, and testing geophysical targets distal to areas of known mineralization. Significant drill results from the 2009 program are listed in Table 3.

Table 4: Significant 2009 Drill hole Intersections

Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Ag (g/t)
R09-01 including including	11.28 111.78 140.28	209.40 114.78 149.28	198.12 3.00 9.00	0.01	0.05 1.29 0.104	8.0
R09-06 and and	75.30 112.80 155.70	93.30 117.50 167.70	18.00 4.70 12.00	0.06	0.22 0.37 0.29	
R09-07 including including and	99.00 122.50 130.00 189.50	147.00 139.00 139.00 191.75	48.00 16.50 9.00 2.25	0.01 0.02	0.30 0.48 0.66 0.28	3.0
R09-08 and	29.00 132.00	31.00 133.50	2.00 1.50		0.14 0.13	
R09-09 and	146.00 202.00	148.00 205.00	2.00 3.00		0.37 0.27	

The 2009 diamond drill program has confirmed the presence of copper within Zone 2 and extended the limits of known mineralization to the north some 125m and 150m south. Zone 2 remains open to the north, south and to depth.

Results from drilling and the geophysical surveys suggest a north trending potentially mineralized corridor that can be traced by geophysics for approximately five kilometres. This corridor is interpreted to comprise the district scale contact between two dominant phases of the Guichon batholith. It is postulated that in proximity to the major geological contacts a large scale, northerly trending fault zone occurs.

Copper mineralization in drill core is strongly associated with pervasive white to green sericite-clay alteration, commonly within fault zones containing intermittent gouge. Chalcocite and bornite generally occur as fine-grained disseminations having ubiquitous mixing with alteration minerals (sericite – clay +/- hematite). Less frequently, chalcocite, bornite and lesser chalcopyrite

occur as blebs within or associated with quartz veins, or are fracture controlled. Where alteration is intense, primary textures become obliterated by quartz flooding and sericitization. A potassic overprint forming salmon pink fracture halos and pervasive alteration occurs locally. Late hematite occurs as coatings on fractures and as granular specularite replacing magnetite.

Mineralized quartz veins and fractures dip gently to steeply, are sheeted to cross-cutting and contain, or are enveloped by, quartz, k-feldspar, biotite, chlorite, epidote, carbonate, sericite/muscovite, hematite and kaolin/clay alteration minerals. Quartz veins range from 1.0 millimetre to 0.50 metres in thickness and contain dominantly bornite and chalcocite, with trace molybdenite.

The magnetic survey was useful for mapping the contacts between phases of the intrusive.

The geology, alteration and mineralization on the Rateria property are interpreted to be consistent with a deeper-seated porphyry copper system and share similarities with other deposits in the Highland Valley.

9. Conclusions and Recommendations

The Rateria property is situated in the southeast portion of the Guichon Creek batholith and underlain by granodiorite, quartz diorite, quartz monzonite, and dykes and small plugs of crowded quartz feldspar porphyry. Lithologies encountered in recent drilling are consistent with the lithologic descriptions in historical literature of Bethsaida and Skeena phases of the intrusion (McMillan, 1976). These are the host lithologies for the Valley and Lornex copper deposits found approximately 10 kilometres northwest of Rateria.

Geological mapping and prospecting resulted in a better understanding of the local geology and specifically a better understanding of the various phases of the batholiths. Surface mineralization was also observed and will be considered in future drilling.

The 2009 diamond drill program has confirmed the presence of copper within the well mineralized area known as Zone 2 (R09-1, 7 and 9) and extended the strike of known mineralization by some 125m to the north (R09-6). Geology and analytical results suggest a linkage between high - grade copper mineralization and a north trending fault structure on the property. Future exploration should further focus on structural controls on mineralization. A large resistivity high was drilled (R09-08) with encouraging results – a close analysis of this and geophysically similar areas should be examined.

Electrical and magnetic properties of the core, rock samples and outcrops should be measured using the best technology available. This information can be used to refine geophysical models and better delineate regions of anomalous rock.

10. References

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Willars, Jack G., P.Eng. (1972). Report on the Geological Survey and Diamond Drilling on the Property of Chataway Explorations Co. Ltd., for International Mogul Mines Limited, AR04050.

Appendix A - Writer's Certificate

DAN MELDRUM, M.Sc. GIT

#460 - 789 West Pender Street, Vancouver, BC, V6C 1H2

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E-mail: dan.g.meldrum@gmail.com

CERTIFICATE OF AUTHOR

I, Dan Meldrum, of Port Coquitlam, British Columbia, do hereby certify that:

1. I am a geologist with an office at #460 - 789 West Pender Street, Vancouver, BC, V6C 1H2
 2. I graduated from the University of Alberta with a Masters of Science degree in Geology in 1997 and I have practiced my profession continuously since 1992.
 3. I am a Geologist in Training with the Association of Professional Engineers and Geoscientists of British Columbia.
 4. Since 1997, I have been involved in mineral exploration for base and precious metals. I have conducted this work in Canada, Mongolia, China, and Vietnam.
 5. I am presently a contract geologist and have been so since 2003.
 6. I managed the 2009 exploration programs on the Rateria property.
 7. I am the author of the report titled "*Diamond Drilling and Geological Mapping Report on the Rateria Property*" dated 2010 February 24.
 8. I have been granted Share options of Happy Creek Minerals Ltd.
- Dated at Vancouver, British Columbia, this 24th day of February, 2010.

"Dan Meldrum" (Signed)

Dan Meldrum, M.Sc. GIT.

Appendix A - Writer's Certificate

DAN MELDRUM, M.Sc. GIT

#460 - 789 West Pender Street, Vancouver, BC, V6C 1H2

Ph: (604) 681-9996

E-mail: dan.g.meldrum@gmail.com

CERTIFICATE OF AUTHOR

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1. I am a geologist with an office at #460 - 789 West Pender Street, Vancouver, BC, V6C 1H2
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Dated at Vancouver, British Columbia, this 24th day of February, 2010.

"Dan Meldrum" (Signed)

Dan Meldrum, M.Sc. GIT.

Appendix B

Statement of Costs

Shipping

Greyhound Courier Express	\$	2,842.30
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Acme Analytical Laboratories Ltd.

	\$	20,789.38
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Drill core analyses and repeats

Wages and Consulting- Geology

	Days	\$/Day	
Meridian Mapping Ltd- Rob Montgomery, P.Geo Geology	17.25	\$ 875.00	\$ 15,093.75
Westview Consulting Ltd. Paul Reynolds, P.Geo. Permitting, Geol			\$ 5,200.00
David Blann, P.Eng. Project Supervision and Geology	30	\$ 500.00	\$ 15,000.00
Trevor Ridley Core splitting	48	\$ 225.00	\$ 10,800.00
Sassan Liaghat, PhD.Geology	59	\$ 350.00	\$ 20,650.00
Meldrum Geological Contracting Dan Meldrum, MSc. Geology	55.5	\$ 600.00	\$ 33,300.00
Dan Meldrum, MSc. Geology	16	\$ 350.00	\$ 5,600.00
Graden Geosciences	1	\$ 725.00	\$ 725.00
Darin Black + Truck	3.0	\$ 400.00	\$ 1,200.00

Heavy Equipment and Contractors

LNB construction- Water Truck	\$	26,944.00
Glen's Drilling Ltd. 1588 metres NQ Core in 9 holes	\$	197,781.95

Field Supplies

Travel and Accomodation	\$	19,342.65
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Communications- VHF Radios and satelight and cell phone

	\$	765.25
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Printing, Reproductions, report

	\$	389.86
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Subtotal	\$	383,412.49
Overhead @10%	\$	<u>38,341.25</u>
total	\$	421,753.74

Appendix C

Lab Certificates



Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada
Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Happy Creek Minerals Ltd.**
Suite 2300 - 1066 W. Hastings St.
Vancouver BC V6E 3X2 Canada

Submitted By: David Blann
Receiving Lab: Canada-Vancouver
Received: September 28, 2009
Report Date: November 11, 2009
Page: 1 of 4

CERTIFICATE OF ANALYSIS

VAN09004527.2

CLIENT JOB INFORMATION

Project: RATERIA
Shipment ID:
P.O. Number
Number of Samples: 78

SAMPLE DISPOSAL

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

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: Happy Creek Minerals Ltd.
Suite 2300 - 1066 W. Hastings St.
Vancouver BC V6E 3X2
Canada

CC: Paul Reynold

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200	76	Crush split and pulverize 250g drill core to 200 mesh			VAN
7AR	78	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN
G601	5	Fire Assay fusion Au by ICP-ES	30	Completed	VAN

ADDITIONAL COMMENTS

Version 2: Group 6 Au included



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



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 Suite 2300 - 1066 W. Hastings St.
 Vancouver BC V6E 3X2 Canada

Project: RATERIA
 Report Date: November 11, 2009

Page: 2 of 4 Part 1

CERTIFICATE OF ANALYSIS

VAN09004527.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.001	0.001	0.01	0.01	0.01	
015951	Drill Core	5.79	<0.001	0.036	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.11	<0.01	0.005	<0.001	<0.001	<0.01	1.21	0.049	<0.001	0.69	1.10
015952	Drill Core	6.87	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.97	<0.01	0.005	<0.001	<0.001	<0.01	0.82	0.044	<0.001	0.50	0.94
015953	Drill Core	5.74	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.06	<0.01	0.004	<0.001	<0.001	<0.01	0.73	0.049	<0.001	0.52	0.78
015954	Drill Core	6.57	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.06	<0.01	0.003	<0.001	<0.001	<0.01	0.67	0.049	<0.001	0.52	0.79
015955	Drill Core	5.47	<0.001	0.033	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.18	<0.01	0.004	<0.001	<0.001	<0.01	0.76	0.051	<0.001	0.56	0.78
015956	Drill Core	5.45	<0.001	0.019	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.23	<0.01	0.005	<0.001	<0.001	<0.01	1.04	0.050	0.001	0.60	0.91
015957	Rock	0.49	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.43	<0.01	0.003	<0.001	<0.001	<0.01	21.16	0.015	<0.001	11.47	0.02
015958	Drill Core	5.36	<0.001	0.034	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.28	<0.01	0.005	<0.001	<0.001	<0.01	0.83	0.050	0.001	0.65	0.89
015959	Drill Core	3.90	<0.001	0.019	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.06	<0.01	0.004	<0.001	<0.001	<0.01	0.72	0.045	0.001	0.61	0.87
015960	Drill Core	3.15	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.04	<0.01	0.004	<0.001	<0.001	<0.01	0.70	0.046	0.001	0.58	0.83
015961	Drill Core	6.80	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.21	<0.01	0.005	<0.001	<0.001	<0.01	0.70	0.055	0.001	0.56	0.83
015962	Drill Core	4.28	<0.001	0.133	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.15	<0.01	0.005	<0.001	<0.001	<0.01	1.05	0.050	0.001	0.70	1.00
015963	Drill Core	6.55	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.26	<0.01	0.006	<0.001	<0.001	<0.01	1.26	0.051	0.001	0.78	1.14
015964	Drill Core	6.37	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.76	<0.01	0.004	<0.001	<0.001	<0.01	0.89	0.038	<0.001	0.53	0.87
015965	Rock Pulp	0.04	0.049	0.315	<0.01	<0.01	<2	0.002	0.002	0.06	4.74	<0.01	0.014	<0.001	<0.001	<0.01	3.98	0.108	0.002	1.26	1.42
015966	Drill Core	6.26	<0.001	0.020	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.85	<0.01	0.004	<0.001	<0.001	<0.01	0.67	0.039	<0.001	0.48	0.79
015967	Drill Core	5.81	<0.001	0.020	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.20	<0.01	0.005	<0.001	<0.001	<0.01	1.04	0.047	0.001	0.71	1.12
015968	Drill Core	6.99	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.96	<0.01	0.007	<0.001	<0.001	<0.01	1.41	0.044	<0.001	0.52	1.04
015969	Drill Core	5.92	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.80	<0.01	0.005	<0.001	<0.001	<0.01	1.16	0.039	<0.001	0.55	0.85
015970	Drill Core	6.50	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.98	<0.01	0.006	<0.001	<0.001	<0.01	1.17	0.047	<0.001	0.68	1.09
015971	Drill Core	6.78	<0.001	0.059	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.25	<0.01	0.006	<0.001	<0.001	<0.01	1.47	0.052	<0.001	0.81	1.34
015972	Drill Core	6.73	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.005	<0.001	<0.001	<0.01	1.38	0.051	<0.001	0.63	1.15
015973	Drill Core	6.83	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.03	<0.01	0.004	<0.001	<0.001	<0.01	0.86	0.049	0.001	0.55	0.87
015974	Drill Core	6.02	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.13	<0.01	0.005	<0.001	<0.001	<0.01	0.87	0.051	<0.001	0.62	0.90
015975	Drill Core	6.51	0.001	0.086	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.37	<0.01	0.005	<0.001	<0.001	<0.01	1.42	0.047	0.001	0.82	1.24
015976	Drill Core	7.13	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.33	<0.01	0.004	<0.001	<0.001	<0.01	0.96	0.048	0.001	0.79	1.00
015977	Drill Core	6.12	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.12	<0.01	0.006	<0.001	<0.001	<0.01	1.47	0.046	0.001	0.72	0.84
015978	Drill Core	5.63	0.002	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.16	<0.01	0.005	<0.001	<0.001	<0.01	1.59	0.048	0.001	0.79	1.00
015979	Drill Core	7.14	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.35	<0.01	0.005	<0.001	<0.001	<0.01	1.08	0.050	0.001	0.75	1.00
015980	Rock	0.49	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.38	<0.01	0.004	<0.001	<0.001	<0.01	20.38	0.014	<0.001	10.99	0.01

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.



Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada
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Client: **Happy Creek Minerals Ltd.**
Suite 2300 - 1066 W. Hastings St.
Vancouver BC V6E 3X2 Canada

Project: RATERIA
Report Date: November 11, 2009

Page: 2 of 4 Part 2

CERTIFICATE OF ANALYSIS

VAN09004527.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
015951	Drill Core	0.06	0.18	<0.001	<0.001	<0.05	N.A.
015952	Drill Core	0.10	0.24	<0.001	<0.001	<0.05	N.A.
015953	Drill Core	0.09	0.28	<0.001	<0.001	<0.05	N.A.
015954	Drill Core	0.10	0.26	<0.001	<0.001	<0.05	N.A.
015955	Drill Core	0.10	0.30	<0.001	<0.001	<0.05	N.A.
015956	Drill Core	0.09	0.22	<0.001	<0.001	<0.05	N.A.
015957	Rock	<0.01	0.01	<0.001	<0.001	<0.05	N.A.
015958	Drill Core	0.08	0.24	<0.001	<0.001	<0.05	N.A.
015959	Drill Core	0.09	0.27	<0.001	<0.001	<0.05	N.A.
015960	Drill Core	0.09	0.25	<0.001	<0.001	<0.05	N.A.
015961	Drill Core	0.10	0.28	<0.001	<0.001	<0.05	N.A.
015962	Drill Core	0.08	0.16	<0.001	<0.001	<0.05	N.A.
015963	Drill Core	0.08	0.19	<0.001	<0.001	<0.05	N.A.
015964	Drill Core	0.09	0.20	<0.001	<0.001	<0.05	N.A.
015965	Rock Pulp	0.08	0.30	<0.001	<0.001	1.76	N.A.
015966	Drill Core	0.09	0.23	<0.001	<0.001	<0.05	N.A.
015967	Drill Core	0.08	0.21	<0.001	<0.001	<0.05	N.A.
015968	Drill Core	0.10	0.19	<0.001	<0.001	<0.05	N.A.
015969	Drill Core	0.07	0.18	<0.001	<0.001	<0.05	N.A.
015970	Drill Core	0.08	0.18	<0.001	<0.001	<0.05	N.A.
015971	Drill Core	0.08	0.16	<0.001	<0.001	<0.05	N.A.
015972	Drill Core	0.08	0.18	<0.001	<0.001	<0.05	N.A.
015973	Drill Core	0.09	0.24	<0.001	<0.001	<0.05	N.A.
015974	Drill Core	0.09	0.23	<0.001	<0.001	<0.05	N.A.
015975	Drill Core	0.07	0.18	<0.001	<0.001	<0.05	N.A.
015976	Drill Core	0.08	0.25	<0.001	<0.001	<0.05	N.A.
015977	Drill Core	0.06	0.16	<0.001	<0.001	<0.05	N.A.
015978	Drill Core	0.06	0.15	<0.001	<0.001	<0.05	N.A.
015979	Drill Core	0.08	0.20	<0.001	<0.001	<0.05	N.A.
015980	Rock	<0.01	0.01	<0.001	<0.001	<0.05	N.A.



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Client: **Happy Creek Minerals Ltd.**
 Suite 2300 - 1066 W. Hastings St.
 Vancouver BC V6E 3X2 Canada

Project: RATERIA
 Report Date: November 11, 2009

Page: 3 of 4 Part 1

CERTIFICATE OF ANALYSIS

VAN09004527.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
015981	Drill Core	7.17	<0.001	0.018	<0.01	<0.01	<2	0.001	<0.001	0.04	2.32	<0.01	0.007	<0.001	<0.001	<0.01	1.45	0.054	0.001	0.78	1.35
015982	Drill Core	2.74	<0.001	0.038	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.23	<0.01	0.009	<0.001	<0.001	<0.01	2.17	0.055	<0.001	0.96	1.28
015983	Drill Core	3.01	<0.001	0.026	<0.01	<0.01	<2	0.001	<0.001	0.04	2.25	<0.01	0.009	<0.001	<0.001	<0.01	1.69	0.055	<0.001	0.79	1.25
015984	Drill Core	6.58	<0.001	0.036	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.12	<0.01	0.009	<0.001	0.001	<0.01	1.73	0.054	<0.001	0.70	0.98
015985	Drill Core	6.51	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.35	<0.01	0.010	<0.001	<0.001	<0.01	1.75	0.055	<0.001	0.72	0.83
015986	Drill Core	5.46	<0.001	0.023	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.20	<0.01	0.009	<0.001	<0.001	<0.01	1.03	0.058	<0.001	0.50	0.78
015987	Drill Core	6.51	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.02	<0.01	0.006	<0.001	<0.001	<0.01	0.86	0.045	<0.001	0.50	0.80
015988	Drill Core	6.98	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.77	<0.01	0.005	<0.001	<0.001	<0.01	0.91	0.037	<0.001	0.41	0.72
015989	Drill Core	2.95	<0.001	0.030	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.79	<0.01	0.004	<0.001	<0.001	<0.01	0.72	0.036	<0.001	0.34	0.60
015990	Drill Core	3.18	0.024	1.313	<0.01	<0.01	9	<0.001	<0.001	0.03	1.92	<0.01	0.005	<0.001	<0.001	<0.01	1.84	0.016	<0.001	0.35	0.58
015991	Drill Core	3.42	0.002	1.269	<0.01	<0.01	7	<0.001	<0.001	0.03	1.51	<0.01	0.005	<0.001	<0.001	<0.01	2.11	0.031	<0.001	0.30	0.59
015992	Rock	0.49	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.01	0.24	<0.01	0.258	<0.001	<0.001	<0.01	30.28	0.008	<0.001	6.24	0.02
015993	Drill Core	3.07	<0.001	0.035	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.07	<0.01	0.007	<0.001	0.001	<0.01	1.62	0.043	<0.001	0.54	0.80
015994	Drill Core	6.29	<0.001	0.129	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.12	<0.01	0.007	<0.001	0.001	<0.01	1.45	0.045	<0.001	0.75	1.15
015995	Drill Core	5.77	<0.001	0.031	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.49	<0.01	0.009	<0.001	<0.001	<0.01	1.97	0.055	0.001	0.88	1.30
015996	Drill Core	5.80	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.24	<0.01	0.010	<0.001	<0.001	<0.01	2.18	0.055	<0.001	0.71	1.13
015997	Drill Core	5.29	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.06	<0.01	0.008	<0.001	<0.001	<0.01	1.24	0.051	<0.001	0.52	0.90
015998	Drill Core	6.26	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.19	<0.01	0.006	<0.001	<0.001	<0.01	1.30	0.054	<0.001	0.52	0.85
015999	Drill Core	5.51	<0.001	0.005	<0.01	<0.01	<2	0.001	<0.001	0.03	2.18	<0.01	0.010	<0.001	<0.001	<0.01	1.45	0.050	0.001	0.76	0.88
016000	Drill Core	7.00	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.16	<0.01	0.006	<0.001	<0.001	<0.01	0.95	0.056	<0.001	0.55	0.95
016701	Drill Core	2.60	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.06	<0.01	0.019	<0.001	<0.001	<0.01	2.13	0.053	<0.001	0.58	1.24
016702	Drill Core	2.82	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.08	<0.01	0.018	<0.001	<0.001	<0.01	1.94	0.054	<0.001	0.54	1.20
016703	Drill Core	4.96	<0.001	0.117	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.54	<0.01	0.016	<0.001	<0.001	<0.01	2.35	0.056	<0.001	1.08	1.71
016704	Drill Core	5.79	<0.001	0.023	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.43	<0.01	0.013	<0.001	<0.001	<0.01	2.11	0.058	0.001	0.87	1.48
016705	Drill Core	5.65	0.006	0.171	<0.01	<0.01	<2	0.001	<0.001	0.05	2.61	<0.01	0.014	<0.001	<0.001	<0.01	2.41	0.060	<0.001	1.03	1.75
016706	Drill Core	5.48	<0.001	0.071	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.28	<0.01	0.019	<0.001	<0.001	<0.01	3.45	0.055	<0.001	0.68	1.27
016707	Rock Pulp	0.04	0.050	0.316	<0.01	<0.01	3	0.002	0.002	0.06	5.07	<0.01	0.014	<0.001	0.001	<0.01	4.19	0.109	0.002	1.27	1.48
016708	Drill Core	6.05	<0.001	0.030	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.39	<0.01	0.010	<0.001	<0.001	<0.01	1.53	0.058	<0.001	0.74	1.26
016709	Drill Core	6.86	<0.001	0.090	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.45	<0.01	0.009	<0.001	<0.001	<0.01	1.65	0.057	<0.001	0.80	1.36
016710	Drill Core	6.07	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.29	<0.01	0.009	<0.001	<0.001	<0.01	1.52	0.056	0.001	0.78	1.38

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.



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Project: RATERIA
Report Date: November 11, 2009

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CERTIFICATE OF ANALYSIS

VAN09004527.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
015981	Drill Core	0.11	0.20	<0.001	<0.001	<0.05	N.A.
015982	Drill Core	0.10	0.17	<0.001	<0.001	<0.05	N.A.
015983	Drill Core	0.10	0.17	<0.001	<0.001	<0.05	N.A.
015984	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	N.A.
015985	Drill Core	0.07	0.12	<0.001	<0.001	<0.05	N.A.
015986	Drill Core	0.09	0.17	<0.001	<0.001	<0.05	N.A.
015987	Drill Core	0.09	0.20	0.001	<0.001	<0.05	N.A.
015988	Drill Core	0.08	0.17	<0.001	<0.001	<0.05	N.A.
015989	Drill Core	0.08	0.18	<0.001	<0.001	<0.05	<0.01
015990	Drill Core	0.02	0.16	0.003	<0.001	0.39	0.04
015991	Drill Core	0.02	0.28	<0.001	<0.001	0.36	0.04
015992	Rock	<0.01	<0.01	<0.001	<0.001	<0.05	N.A.
015993	Drill Core	0.06	0.15	<0.001	<0.001	<0.05	<0.01
015994	Drill Core	0.09	0.20	<0.001	<0.001	<0.05	0.01
015995	Drill Core	0.09	0.18	<0.001	<0.001	<0.05	N.A.
015996	Drill Core	0.08	0.14	<0.001	<0.001	<0.05	N.A.
015997	Drill Core	0.08	0.16	<0.001	<0.001	<0.05	N.A.
015998	Drill Core	0.08	0.24	<0.001	<0.001	<0.05	N.A.
015999	Drill Core	0.08	0.23	<0.001	<0.001	<0.05	N.A.
016000	Drill Core	0.11	0.19	<0.001	<0.001	<0.05	N.A.
016701	Drill Core	0.07	0.13	<0.001	<0.001	<0.05	N.A.
016702	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	N.A.
016703	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	N.A.
016704	Drill Core	0.09	0.15	<0.001	<0.001	<0.05	N.A.
016705	Drill Core	0.10	0.15	<0.001	<0.001	0.06	N.A.
016706	Drill Core	0.07	0.25	<0.001	<0.001	<0.05	N.A.
016707	Rock Pulp	0.09	0.33	<0.001	<0.001	1.90	N.A.
016708	Drill Core	0.10	0.13	<0.001	<0.001	<0.05	N.A.
016709	Drill Core	0.08	0.13	<0.001	<0.001	<0.05	N.A.
016710	Drill Core	0.09	0.13	<0.001	<0.001	<0.05	N.A.



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CERTIFICATE OF ANALYSIS

VAN09004527.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
016711	Drill Core	5.56	0.001	0.053	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.30	<0.01	0.011	<0.001	<0.001	<0.01	2.07	0.058	<0.001	0.81	1.19
016712	Drill Core	6.25	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.24	<0.01	0.011	<0.001	<0.001	<0.01	1.35	0.057	<0.001	0.63	0.98
016713	Drill Core	6.53	<0.001	0.061	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.39	<0.01	0.009	<0.001	<0.001	<0.01	1.47	0.059	<0.001	0.69	1.10
016714	Drill Core	6.72	<0.001	0.050	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.24	<0.01	0.013	<0.001	<0.001	<0.01	1.80	0.056	<0.001	0.84	1.33
016715	Drill Core	5.56	<0.001	0.034	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.41	<0.01	0.012	<0.001	<0.001	<0.01	2.05	0.057	<0.001	0.72	1.20
016716	Drill Core	6.13	<0.001	0.058	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.23	<0.01	0.011	<0.001	<0.001	<0.01	2.05	0.053	<0.001	0.70	0.91
016717	Drill Core	5.91	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.17	<0.01	0.014	<0.001	<0.001	<0.01	2.28	0.056	<0.001	0.93	1.04
016718	Drill Core	7.15	<0.001	0.043	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.09	<0.01	0.014	<0.001	<0.001	<0.01	1.95	0.060	<0.001	0.66	0.97
016719	Drill Core	6.64	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.31	<0.01	0.011	<0.001	<0.001	<0.01	1.30	0.062	<0.001	0.66	1.02
016720	Rock	0.54	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	0.15	<0.01	0.380	<0.001	<0.001	<0.01	31.13	0.010	<0.001	4.14	0.07
016721	Drill Core	6.50	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.48	<0.01	0.018	<0.001	<0.001	<0.01	2.02	0.068	<0.001	0.75	1.12
016722	Drill Core	6.21	<0.001	0.024	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.31	<0.01	0.014	<0.001	<0.001	<0.01	1.58	0.061	<0.001	0.64	1.03
016723	Drill Core	3.56	0.004	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.13	<0.01	0.016	<0.001	<0.001	<0.01	1.70	0.061	<0.001	0.64	1.12
016724	Drill Core	3.11	0.010	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.16	<0.01	0.014	<0.001	<0.001	<0.01	1.51	0.060	<0.001	0.65	1.08
016725	Drill Core	6.28	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.12	<0.01	0.016	<0.001	<0.001	<0.01	2.51	0.058	<0.001	0.71	1.07
016726	Drill Core	5.87	<0.001	0.035	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.16	<0.01	0.015	<0.001	<0.001	<0.01	2.47	0.055	<0.001	0.63	1.17
016727	Drill Core	5.92	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.00	<0.01	0.015	<0.001	<0.001	<0.01	1.98	0.059	<0.001	0.71	0.99
016728	Drill Core	6.16	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.84	<0.01	0.014	<0.001	<0.001	<0.01	1.83	0.056	<0.001	0.57	0.74



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Project: RATERIA
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CERTIFICATE OF ANALYSIS

VAN09004527.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
016711	Drill Core	0.06	0.22	<0.001	<0.001	<0.05	N.A.
016712	Drill Core	0.08	0.19	<0.001	<0.001	<0.05	N.A.
016713	Drill Core	0.08	0.16	<0.001	<0.001	<0.05	N.A.
016714	Drill Core	0.06	0.23	<0.001	<0.001	<0.05	N.A.
016715	Drill Core	0.07	0.17	<0.001	<0.001	<0.05	N.A.
016716	Drill Core	0.06	0.15	<0.001	<0.001	<0.05	N.A.
016717	Drill Core	0.06	0.14	<0.001	<0.001	<0.05	N.A.
016718	Drill Core	0.07	0.15	<0.001	<0.001	<0.05	N.A.
016719	Drill Core	0.08	0.17	<0.001	<0.001	<0.05	N.A.
016720	Rock	<0.01	<0.01	<0.001	<0.001	<0.05	N.A.
016721	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	N.A.
016722	Drill Core	0.08	0.18	<0.001	<0.001	<0.05	N.A.
016723	Drill Core	0.08	0.14	<0.001	<0.001	<0.05	N.A.
016724	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	N.A.
016725	Drill Core	0.07	0.18	<0.001	<0.001	<0.05	N.A.
016726	Drill Core	0.09	0.13	<0.001	<0.001	<0.05	N.A.
016727	Drill Core	0.06	0.11	<0.001	<0.001	<0.05	N.A.
016728	Drill Core	0.07	0.12	<0.001	<0.001	<0.05	N.A.



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Project: RATERIA
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QUALITY CONTROL REPORT

VAN09004527.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
Pulp Duplicates																					
015977	Drill Core	6.12	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.12	<0.01	0.006	<0.001	<0.001	<0.01	1.47	0.046	0.001	0.72	0.84
REP 015977	QC		<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.13	<0.01	0.006	<0.001	<0.001	<0.01	1.48	0.046	0.001	0.73	0.86
016702	Drill Core	2.82	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.08	<0.01	0.018	<0.001	<0.001	<0.01	1.94	0.054	<0.001	0.54	1.20
REP 016702	QC		<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.08	<0.01	0.018	<0.001	<0.001	<0.01	1.94	0.054	<0.001	0.55	1.24
016727	Drill Core	5.92	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.00	<0.01	0.015	<0.001	<0.001	<0.01	1.98	0.059	<0.001	0.71	0.99
REP 016727	QC		<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.00	<0.01	0.015	<0.001	<0.001	<0.01	1.96	0.057	<0.001	0.71	0.99
Core Reject Duplicates																					
015972	Drill Core	6.73	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.005	<0.001	<0.001	<0.01	1.38	0.051	<0.001	0.63	1.15
DUP 015972	QC		<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.005	<0.001	<0.001	<0.01	1.34	0.050	<0.001	0.63	1.15
Reference Materials																					
STD OXH55	Standard																				
STD OXK69	Standard																				
STD R4A	Standard		0.061	0.497	1.40	3.22	83	0.339	0.039	0.06	23.22	0.02	0.004	0.017	0.013	<0.01	0.94	0.042	0.012	0.84	1.25
STD R4A	Standard		0.063	0.506	1.48	3.29	85	0.357	0.040	0.06	23.68	0.02	0.004	0.017	0.013	<0.01	0.96	0.043	0.012	0.86	1.28
STD R4A	Standard		0.063	0.505	1.54	3.28	89	0.357	0.040	0.06	23.55	0.02	0.004	0.018	0.015	<0.01	0.96	0.043	0.013	0.87	1.28
STD R4A	Standard		0.062	0.500	1.50	3.23	87	0.349	0.040	0.06	23.23	0.02	0.004	0.018	0.014	<0.01	0.95	0.043	0.013	0.86	1.27
STD R4A	Standard		0.063	0.498	1.46	3.27	86	0.349	0.039	0.06	22.87	0.02	0.004	0.017	0.017	<0.01	0.95	0.041	0.012	0.85	1.29
STD R4A	Standard		0.063	0.506	1.48	3.27	87	0.350	0.040	0.06	22.88	0.02	0.004	0.017	0.017	<0.01	0.96	0.043	0.012	0.85	1.29
STD R4A Expected			0.062	0.502	1.5	3.31	86	0.334	0.04	0.06	23.38	0.023	0.004	0.017	0.0135	0.0024	0.94	0.042	0.012	0.83	1.25
STD OXH55 Expected																					
STD OXK69 Expected																					
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.85	<0.01	0.006	<0.001	<0.001	<0.01	0.50	0.066	<0.001	0.54	0.98

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 Suite 2300 - 1066 W. Hastings St.
 Vancouver BC V6E 3X2 Canada

Project: RATERIA
Report Date: November 11, 2009

Page: 1 of 2 **Part** 2

QUALITY CONTROL REPORT

VAN09004527.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
Pulp Duplicates							
015977	Drill Core	0.06	0.16	<0.001	<0.001	<0.05	N.A.
REP 015977	QC	0.06	0.16	<0.001	<0.001	<0.05	
016702	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	N.A.
REP 016702	QC	0.07	0.14	<0.001	<0.001	<0.05	
016727	Drill Core	0.06	0.11	<0.001	<0.001	<0.05	N.A.
REP 016727	QC	0.06	0.11	<0.001	<0.001	<0.05	
Core Reject Duplicates							
015972	Drill Core	0.08	0.18	<0.001	<0.001	<0.05	N.A.
DUP 015972	QC	0.08	0.17	<0.001	<0.001	<0.05	N.A.
Reference Materials							
STD OXH55	Standard						1.36
STD OXK69	Standard						3.74
STD R4A	Standard	0.06	0.49	<0.001	<0.001	15.74	
STD R4A	Standard	0.06	0.50	<0.001	0.001	15.99	
STD R4A	Standard	0.07	0.52	<0.001	0.001	15.97	
STD R4A	Standard	0.07	0.51	<0.001	0.001	15.85	
STD R4A	Standard	0.08	0.50	<0.001	<0.001	16.07	
STD R4A	Standard	0.07	0.51	<0.001	<0.001	16.04	
STD R4A Expected		0.07	0.51	0.0011	0.001	16.7	
STD OXH55 Expected							1.282
STD OXK69 Expected							3.583
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank						<0.01
BLK	Blank						<0.01
Prep Wash							
G1	Prep Blank	0.11	0.49	<0.001	<0.001	<0.05	N.A.



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Project: RATERIA
Report Date: November 11, 2009

Page: 2 of 2 **Part** 1

QUALITY CONTROL REPORT

VAN09004527.2

	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
G1	Prep Blank	<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.98	<0.01	0.006	<0.001	<0.001	<0.01	0.54	0.072	<0.001	0.55	1.03



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Page: 2 of 2 **Part** 2

QUALITY CONTROL REPORT

VAN09004527.2

	7AR	7AR	7AR	7AR	7AR	G6	
	Na	K	W	Hg	S	Au	
	%	%	%	%	%	gm/mt	
	0.01	0.01	0.001	0.001	0.05	0.01	
G1	Prep Blank	0.12	0.52	<0.001	<0.001	<0.05	N.A.



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Suite 2300 - 1066 W. Hastings St.
Vancouver BC V6E 3X2 Canada

Submitted By: David Blann

Receiving Lab: Canada-Vancouver

Received: October 02, 2009

Report Date: October 14, 2009

Page: 1 of 4

CERTIFICATE OF ANALYSIS

VAN09004676.1

CLIENT JOB INFORMATION

Project: RATERIA
Shipment ID:
P.O. Number
Number of Samples: 74

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200	72	Crush split and pulverize 250g drill core to 200 mesh			VAN
7AR	74	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN

SAMPLE DISPOSAL

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

ADDITIONAL COMMENTS

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: Happy Creek Minerals Ltd.
Suite 2300 - 1066 W. Hastings St.
Vancouver BC V6E 3X2
Canada

CC: Paul Reynold



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



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Page: 2 of 4 Part 1

CERTIFICATE OF ANALYSIS

VAN09004676.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
016729	Drill Core	5.99	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.89	<0.01	0.006	<0.001	0.001	<0.01	1.24	0.047	<0.001	0.74	1.06
016730	Drill Core	5.24	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.20	<0.01	0.006	<0.001	<0.001	<0.01	1.56	0.050	<0.001	0.77	1.18
016731	Drill Core	4.60	<0.001	0.018	<0.01	<0.01	<2	0.001	0.001	0.07	3.21	<0.01	0.008	<0.001	<0.001	<0.01	2.16	0.063	0.002	1.02	1.40
016732	Drill Core	5.93	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.45	<0.01	0.007	<0.001	<0.001	<0.01	1.42	0.062	<0.001	0.83	1.25
016733	Drill Core	6.43	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.40	<0.01	0.008	<0.001	0.001	<0.01	1.50	0.060	0.001	0.77	1.33
016734	Drill Core	5.40	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.18	<0.01	0.004	<0.001	<0.001	<0.01	1.00	0.048	<0.001	0.66	0.88
016735	Drill Core	5.25	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.08	<0.01	0.005	<0.001	<0.001	<0.01	1.15	0.053	<0.001	0.56	0.80
016736	Drill Core	6.85	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.19	<0.01	0.003	<0.001	<0.001	<0.01	0.68	0.054	<0.001	0.56	0.79
016737	Drill Core	6.93	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.16	<0.01	0.004	<0.001	<0.001	<0.01	1.03	0.055	<0.001	0.59	0.85
016738	Drill Core	4.55	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.32	<0.01	0.007	<0.001	<0.001	<0.01	1.74	0.056	<0.001	0.73	1.07
016739	Drill Core	5.64	0.002	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.21	<0.01	0.006	<0.001	0.001	<0.01	1.54	0.057	<0.001	0.75	1.25
016740	Drill Core	6.32	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.26	<0.01	0.006	<0.001	<0.001	<0.01	1.35	0.056	<0.001	0.74	1.17
016741	Drill Core	5.93	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.22	<0.01	0.006	<0.001	<0.001	<0.01	1.65	0.064	<0.001	0.96	1.37
016742	Drill Core	5.03	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.20	<0.01	0.006	<0.001	<0.001	<0.01	1.14	0.055	<0.001	0.63	1.03
016743	Rock	0.39	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	0.03	<0.01	0.478	<0.001	<0.001	<0.01	36.18	0.003	<0.001	1.39	0.01
016744	Drill Core	6.33	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.17	<0.01	0.006	<0.001	0.001	<0.01	1.30	0.054	<0.001	0.70	1.08
016745	Drill Core	5.87	0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.14	<0.01	0.006	<0.001	<0.001	<0.01	1.14	0.056	<0.001	0.70	1.12
016746	Rock Pulp	0.06	0.047	0.316	<0.01	<0.01	<2	0.002	0.002	0.06	4.86	<0.01	0.014	<0.001	0.002	<0.01	4.12	0.111	<0.002	1.26	1.41
016747	Drill Core	4.08	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.21	<0.01	0.007	<0.001	<0.001	<0.01	1.21	0.055	<0.001	0.66	1.01
016748	Drill Core	3.14	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.25	<0.01	0.017	<0.001	0.001	<0.01	1.35	0.055	<0.001	0.68	1.22
016749	Drill Core	3.43	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.22	<0.01	0.014	<0.001	<0.001	<0.01	1.16	0.055	<0.001	0.69	1.13
016750	Drill Core	5.45	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.21	<0.01	0.011	<0.001	<0.001	<0.01	1.85	0.056	<0.001	0.71	1.38
016751	Drill Core	5.71	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.20	<0.01	0.008	<0.001	<0.001	<0.01	1.78	0.060	<0.001	0.82	1.43
016752	Drill Core	5.93	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.06	<0.01	0.007	<0.001	<0.001	<0.01	1.32	0.058	<0.001	0.59	1.16
016753	Drill Core	6.77	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.008	<0.001	<0.001	<0.01	1.33	0.056	<0.001	0.67	1.34
016754	Drill Core	6.37	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.15	<0.01	0.006	<0.001	<0.001	<0.01	1.55	0.057	<0.001	0.72	1.16
016755	Drill Core	6.76	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.87	<0.01	0.007	<0.001	<0.001	<0.01	1.54	0.054	<0.001	0.76	1.29
016756	Drill Core	6.06	<0.001	0.020	<0.01	<0.01	<2	<0.001	0.001	0.05	2.63	<0.01	0.009	<0.001	<0.001	<0.01	2.15	0.069	<0.001	1.12	1.61
016757	Rock	0.33	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	0.05	<0.01	0.445	<0.001	<0.001	<0.01	36.92	0.005	<0.001	1.61	0.01
016758	Drill Core	5.45	<0.001	0.006	<0.01	<0.01	<2	<0.001	0.001	0.05	1.93	<0.01	0.022	<0.001	<0.001	<0.01	2.33	0.055	<0.001	0.96	1.88

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Project: RATERIA
Report Date: October 14, 2009

Page: 2 of 4 Part 2

CERTIFICATE OF ANALYSIS

VAN09004676.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
016729	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
016730	Drill Core	0.07	0.17	<0.001	<0.001	<0.05
016731	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
016732	Drill Core	0.08	0.14	<0.001	<0.001	<0.05
016733	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
016734	Drill Core	0.08	0.24	<0.001	<0.001	<0.05
016735	Drill Core	0.07	0.22	<0.001	<0.001	<0.05
016736	Drill Core	0.11	0.24	<0.001	<0.001	<0.05
016737	Drill Core	0.08	0.19	<0.001	<0.001	<0.05
016738	Drill Core	0.06	0.16	<0.001	<0.001	<0.05
016739	Drill Core	0.08	0.13	<0.001	<0.001	<0.05
016740	Drill Core	0.08	0.14	<0.001	<0.001	<0.05
016741	Drill Core	0.06	0.14	<0.001	<0.001	<0.05
016742	Drill Core	0.11	0.15	<0.001	<0.001	<0.05
016743	Rock	<0.01	<0.01	<0.001	<0.001	<0.05
016744	Drill Core	0.06	0.14	<0.001	<0.001	<0.05
016745	Drill Core	0.10	0.12	0.008	<0.001	<0.05
016746	Rock Pulp	0.08	0.29	<0.001	<0.001	1.80
016747	Drill Core	0.09	0.13	<0.001	<0.001	<0.05
016748	Drill Core	0.11	0.18	<0.001	<0.001	<0.05
016749	Drill Core	0.11	0.18	<0.001	<0.001	<0.05
016750	Drill Core	0.09	0.15	<0.001	<0.001	<0.05
016751	Drill Core	0.07	0.12	<0.001	<0.001	<0.05
016752	Drill Core	0.11	0.15	<0.001	<0.001	<0.05
016753	Drill Core	0.13	0.16	<0.001	<0.001	<0.05
016754	Drill Core	0.06	0.14	<0.001	<0.001	<0.05
016755	Drill Core	0.08	0.16	<0.001	<0.001	<0.05
016756	Drill Core	0.08	0.14	<0.001	<0.001	<0.05
016757	Rock	<0.01	<0.01	<0.001	<0.001	0.06
016758	Drill Core	0.06	0.19	<0.001	<0.001	<0.05

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Client: **Happy Creek Minerals Ltd.**
 Suite 2300 - 1066 W. Hastings St.
 Vancouver BC V6E 3X2 Canada

Project: RATERIA
 Report Date: October 14, 2009

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CERTIFICATE OF ANALYSIS

VAN09004676.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.001	0.001	0.001	0.01	0.01	
016759	Drill Core	5.02	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.08	<0.01	0.008	<0.001	<0.001	<0.01	1.96	0.056	<0.001	0.71	1.16
016760	Drill Core	5.46	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.87	<0.01	0.009	<0.001	<0.001	<0.01	2.07	0.051	<0.001	0.64	0.94
016761	Drill Core	3.99	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.91	<0.01	0.009	<0.001	<0.001	<0.01	1.44	0.052	<0.001	0.51	0.68
016762	Drill Core	5.12	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.99	<0.01	0.007	<0.001	<0.001	<0.01	1.07	0.053	<0.001	0.44	0.85
016763	Drill Core	4.98	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.71	<0.01	0.006	<0.001	<0.001	<0.01	1.44	0.040	<0.001	0.38	0.66
016764	Drill Core	5.70	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.94	<0.01	0.007	<0.001	<0.001	<0.01	1.47	0.051	<0.001	0.47	0.90
016765	Drill Core	5.49	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.53	<0.01	0.007	<0.001	<0.001	<0.01	1.49	0.044	<0.001	0.41	0.70
016766	Drill Core	6.17	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.83	<0.01	0.005	<0.001	<0.001	<0.01	0.93	0.041	<0.001	0.51	0.81
016767	Drill Core	5.45	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.91	<0.01	0.007	<0.001	<0.001	<0.01	1.75	0.050	<0.001	0.56	0.96
016768	Drill Core	6.49	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.15	<0.01	0.009	<0.001	<0.001	<0.01	1.60	0.056	<0.001	0.75	1.44
016769	Drill Core	1.65	<0.001	0.004	<0.01	<0.01	<2	<0.001	0.001	0.05	2.40	<0.01	0.010	<0.001	<0.001	<0.01	2.43	0.064	<0.001	0.87	1.42
016770	Drill Core	1.60	<0.001	0.005	<0.01	<0.01	<2	<0.001	0.001	0.05	2.40	<0.01	0.009	<0.001	<0.001	<0.01	2.31	0.064	<0.001	0.92	1.53
016771	Drill Core	4.74	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.26	<0.01	0.009	<0.001	<0.001	<0.01	1.64	0.055	<0.001	0.79	1.43
016772	Drill Core	6.01	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.13	<0.01	0.009	<0.001	<0.001	<0.01	1.56	0.052	<0.001	0.66	1.31
016773	Drill Core	7.14	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.12	<0.01	0.009	<0.001	<0.001	<0.01	1.92	0.059	<0.001	0.40	0.91
016774	Drill Core	6.59	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.25	<0.01	0.010	<0.001	<0.001	<0.01	1.81	0.059	<0.001	0.54	0.81
016775	Rock	0.53	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.46	<0.01	0.003	<0.001	<0.001	<0.01	21.56	0.019	<0.001	11.81	0.03
016776	Drill Core	6.39	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.31	<0.01	0.011	<0.001	<0.001	<0.01	2.37	0.060	<0.001	0.73	0.76
016777	Drill Core	5.59	<0.001	0.019	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.17	<0.01	0.006	<0.001	<0.001	<0.01	1.18	0.059	<0.001	0.53	0.81
016778	Drill Core	4.64	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.14	<0.01	0.010	<0.001	<0.001	<0.01	2.35	0.059	<0.001	0.52	0.94
016779	Drill Core	5.34	<0.001	0.022	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.61	<0.01	0.008	<0.001	<0.001	<0.01	2.47	0.043	<0.001	0.28	0.58
016780	Drill Core	4.72	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.71	<0.01	0.007	<0.001	<0.001	<0.01	1.16	0.041	<0.001	0.26	0.62
016781	Rock Pulp	0.06	0.048	0.313	<0.01	<0.01	<2	0.002	0.002	0.06	4.79	<0.01	0.014	<0.001	0.001	<0.01	4.00	0.108	0.002	1.26	1.42
016782	Drill Core	3.90	<0.001	0.020	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.76	<0.01	0.006	<0.001	<0.001	<0.01	1.67	0.042	<0.001	0.47	0.78
016783	Drill Core	1.83	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.68	<0.01	0.006	<0.001	<0.001	<0.01	2.02	0.043	<0.001	0.49	0.80
016784	Drill Core	1.67	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.73	<0.01	0.005	<0.001	<0.001	<0.01	1.85	0.042	<0.001	0.49	0.79
016785	Drill Core	4.64	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.72	<0.01	0.006	<0.001	<0.001	<0.01	1.30	0.043	<0.001	0.58	0.83
016786	Drill Core	4.40	<0.001	0.025	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.93	<0.01	0.005	<0.001	<0.001	<0.01	1.21	0.045	<0.001	0.67	0.91
016787	Drill Core	5.84	<0.001	0.035	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.91	<0.01	0.008	<0.001	0.001	<0.01	1.63	0.046	<0.001	0.64	0.96
016788	Drill Core	4.95	<0.001	0.041	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.87	<0.01	0.008	<0.001	<0.001	<0.01	1.58	0.045	<0.001	0.62	0.92

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.



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Project: RATERIA
Report Date: October 14, 2009

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CERTIFICATE OF ANALYSIS

VAN09004676.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
016759	Drill Core	0.09	0.16	<0.001	<0.001	<0.05
016760	Drill Core	0.07	0.18	<0.001	<0.001	<0.05
016761	Drill Core	0.07	0.16	<0.001	<0.001	<0.05
016762	Drill Core	0.10	0.17	<0.001	<0.001	<0.05
016763	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
016764	Drill Core	0.10	0.17	<0.001	<0.001	<0.05
016765	Drill Core	0.06	0.14	<0.001	<0.001	<0.05
016766	Drill Core	0.08	0.18	<0.001	<0.001	<0.05
016767	Drill Core	0.09	0.15	<0.001	<0.001	<0.05
016768	Drill Core	0.12	0.18	<0.001	<0.001	<0.05
016769	Drill Core	0.07	0.20	<0.001	<0.001	<0.05
016770	Drill Core	0.08	0.21	<0.001	<0.001	<0.05
016771	Drill Core	0.11	0.16	<0.001	<0.001	<0.05
016772	Drill Core	0.13	0.19	<0.001	<0.001	<0.05
016773	Drill Core	0.08	0.16	<0.001	<0.001	<0.05
016774	Drill Core	0.08	0.11	<0.001	<0.001	<0.05
016775	Rock	<0.01	0.02	<0.001	<0.001	<0.05
016776	Drill Core	0.07	0.09	<0.001	<0.001	<0.05
016777	Drill Core	0.08	0.14	<0.001	<0.001	<0.05
016778	Drill Core	0.07	0.12	<0.001	<0.001	<0.05
016779	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
016780	Drill Core	0.07	0.10	<0.001	<0.001	<0.05
016781	Rock Pulp	0.08	0.30	<0.001	<0.001	1.79
016782	Drill Core	0.05	0.23	<0.001	<0.001	<0.05
016783	Drill Core	0.04	0.27	<0.001	<0.001	<0.05
016784	Drill Core	0.05	0.26	<0.001	<0.001	<0.05
016785	Drill Core	0.06	0.19	<0.001	<0.001	<0.05
016786	Drill Core	0.07	0.16	<0.001	<0.001	<0.05
016787	Drill Core	0.05	0.19	<0.001	<0.001	<0.05
016788	Drill Core	0.06	0.14	<0.001	<0.001	<0.05

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CERTIFICATE OF ANALYSIS

VAN09004676.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
016789	Drill Core	5.38	<0.001	0.040	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.77	<0.01	0.013	<0.001	<0.001	<0.01	2.25	0.044	<0.001	0.54	1.03
016790	Drill Core	4.34	<0.001	0.040	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.91	<0.01	0.009	<0.001	<0.001	<0.01	1.64	0.044	<0.001	0.51	0.90
016791	Drill Core	3.67	<0.001	0.041	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.98	<0.01	0.007	<0.001	<0.001	<0.01	1.63	0.045	<0.001	0.74	1.03
016792	Drill Core	5.31	<0.001	0.051	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.99	<0.01	0.009	<0.001	0.001	<0.01	1.68	0.046	<0.001	0.76	1.14
016793	Drill Core	5.33	<0.001	0.033	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.84	<0.01	0.011	<0.001	<0.001	<0.01	1.62	0.050	<0.001	0.79	1.24
016794	Drill Core	5.87	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.86	<0.01	0.013	<0.001	<0.001	<0.01	2.39	0.048	<0.001	0.81	1.32
016795	Drill Core	6.21	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.77	<0.01	0.015	<0.001	<0.001	<0.01	2.29	0.047	<0.001	0.70	1.20
016796	Drill Core	5.52	<0.001	0.038	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.93	<0.01	0.008	<0.001	<0.001	<0.01	1.42	0.047	<0.001	0.62	0.99
016797	Drill Core	4.80	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.04	<0.01	0.009	<0.001	<0.001	<0.01	1.86	0.053	<0.001	0.67	1.10
016798	Rock	0.62	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.46	<0.01	0.004	<0.001	<0.001	<0.01	20.88	0.014	<0.001	12.19	0.06
016799	Drill Core	3.33	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.02	<0.01	0.008	<0.001	<0.001	<0.01	1.54	0.051	<0.001	0.63	1.20
016800	Drill Core	6.03	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.91	<0.01	0.007	<0.001	<0.001	<0.01	0.98	0.045	<0.001	0.54	0.87
016801	Drill Core	5.40	<0.001	0.019	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.87	<0.01	0.008	<0.001	<0.001	<0.01	1.36	0.047	<0.001	0.56	1.14
016802	Drill Core	2.84	<0.001	0.027	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.008	<0.001	<0.001	<0.01	1.18	0.050	<0.001	0.62	1.16



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Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
016789	Drill Core	0.07	0.13	<0.001	<0.001	<0.05
016790	Drill Core	0.07	0.16	<0.001	<0.001	<0.05
016791	Drill Core	0.05	0.16	<0.001	<0.001	<0.05
016792	Drill Core	0.07	0.19	<0.001	<0.001	<0.05
016793	Drill Core	0.08	0.18	<0.001	<0.001	<0.05
016794	Drill Core	0.06	0.22	<0.001	<0.001	<0.05
016795	Drill Core	0.06	0.18	<0.001	<0.001	<0.05
016796	Drill Core	0.07	0.19	<0.001	<0.001	<0.05
016797	Drill Core	0.06	0.20	<0.001	<0.001	<0.05
016798	Rock	<0.01	0.01	<0.001	<0.001	<0.05
016799	Drill Core	0.13	0.21	<0.001	<0.001	<0.05
016800	Drill Core	0.09	0.27	<0.001	<0.001	<0.05
016801	Drill Core	0.11	0.22	<0.001	<0.001	<0.05
016802	Drill Core	0.12	0.23	<0.001	<0.001	<0.05



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QUALITY CONTROL REPORT

VAN09004676.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR		
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al		
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%		
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01		
Pulp Duplicates																						
016733	Drill Core	6.43	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.40	<0.01	0.008	<0.001	0.001	<0.01	1.50	0.060	0.001	0.77	1.33	
REP 016733	QC		<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.42	<0.01	0.008	<0.001	<0.001	<0.01	1.51	0.061	0.001	0.78	1.35	
016784	Drill Core	1.67	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.73	<0.01	0.005	<0.001	<0.001	<0.01	1.85	0.042	<0.001	0.49	0.79	
REP 016784	QC		<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.73	<0.01	0.005	<0.001	<0.001	<0.01	1.86	0.044	<0.001	0.49	0.79	
Core Reject Duplicates																						
016763	Drill Core	4.98	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.71	<0.01	0.006	<0.001	<0.001	<0.01	1.44	0.040	<0.001	0.38	0.66	
DUP 016763	QC		<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.80	<0.01	0.006	<0.001	<0.001	<0.01	1.47	0.041	<0.001	0.39	0.69	
016798	Rock	0.62	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.46	<0.01	0.004	<0.001	<0.001	<0.01	20.88	0.014	<0.001	12.19	0.06	
DUP 016798	QC		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.45	<0.01	0.004	<0.001	<0.001	<0.01	20.86	0.014	<0.001	12.35	0.06	
Reference Materials																						
STD R4A	Standard		0.062	0.505	1.49	3.27	87	0.349	0.039	0.06	23.48	0.02	0.004	0.018	0.013	<0.01	0.96	0.044	0.012	0.85	1.27	
STD R4A	Standard		0.062	0.507	1.50	3.28	87	0.356	0.039	0.06	23.56	0.02	0.004	0.018	0.013	<0.01	0.96	0.044	0.012	0.85	1.27	
STD R4A	Standard		0.062	0.499	1.47	3.26	86	0.344	0.039	0.06	23.03	0.03	0.004	0.017	0.017	<0.01	0.95	0.043	0.012	0.84	1.26	
STD R4A	Standard		0.062	0.505	1.48	3.26	85	0.348	0.039	0.06	23.18	0.03	0.004	0.017	0.017	<0.01	0.96	0.043	0.012	0.85	1.27	
STD R4A	Standard		0.062	0.510	1.51	3.32	87	0.361	0.040	0.06	23.54	0.02	0.004	0.018	0.014	<0.01	0.97	0.042	0.012	0.86	1.28	
STD R4A	Standard		0.062	0.512	1.52	3.32	87	0.365	0.040	0.06	23.66	0.02	0.004	0.018	0.014	<0.01	0.97	0.043	0.013	0.87	1.28	
STD R4A Expected			0.062	0.502	1.5	3.31	86	0.334	0.04	0.06	23.38	0.023	0.004	0.017	0.0135	0.0024	0.94	0.042	0.012	0.83	1.25	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
Prep Wash																						
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.12	<0.01	0.008	<0.001	<0.001	<0.01	0.59	0.076	<0.001	0.53	1.09
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.00	<0.01	0.008	<0.001	0.001	<0.01	0.59	0.073	<0.001	0.50	1.06



Acme Analytical Laboratories (Vancouver) Ltd.

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 Suite 2300 - 1066 W. Hastings St.
 Vancouver BC V6E 3X2 Canada

Project: RATERIA
Report Date: October 14, 2009

Page: 1 of 1 Part 2

QUALITY CONTROL REPORT

VAN09004676.1

Method		7AR	7AR	7AR	7AR	7AR
Analyte		Na	K	W	Hg	S
Unit		%	%	%	%	%
MDL		0.01	0.01	0.001	0.001	0.05
Pulp Duplicates						
016733	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
REP 016733	QC	0.08	0.15	<0.001	<0.001	<0.05
016784	Drill Core	0.05	0.26	<0.001	<0.001	<0.05
REP 016784	QC	0.05	0.27	<0.001	<0.001	<0.05
Core Reject Duplicates						
016763	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
DUP 016763	QC	0.08	0.15	<0.001	<0.001	<0.05
016798	Rock	<0.01	0.01	<0.001	<0.001	<0.05
DUP 016798	QC	<0.01	0.01	<0.001	<0.001	<0.05
Reference Materials						
STD R4A	Standard	0.06	0.51	<0.001	0.001	15.98
STD R4A	Standard	0.06	0.51	<0.001	0.001	16.02
STD R4A	Standard	0.06	0.49	<0.001	<0.001	15.97
STD R4A	Standard	0.06	0.50	<0.001	<0.001	16.06
STD R4A	Standard	0.06	0.51	<0.001	0.001	16.06
STD R4A	Standard	0.06	0.51	<0.001	<0.001	16.08
STD R4A Expected		0.07	0.51	0.0011	0.001	16.7
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
Prep Wash						
G1	Prep Blank	0.16	0.59	<0.001	<0.001	<0.05
G1	Prep Blank	0.15	0.55	<0.001	<0.001	<0.05



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Submitted By: David Blann
 Receiving Lab: Canada-Vancouver
 Received: October 08, 2009
 Report Date: October 21, 2009
 Page: 1 of 4

CERTIFICATE OF ANALYSIS

VAN09004850.1

CLIENT JOB INFORMATION

Project: RATERIA
 Shipment ID:
 P.O. Number
 Number of Samples: 61

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200	59	Crush split and pulverize 250g drill core to 200 mesh			VAN
7AR	61	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN

SAMPLE DISPOSAL

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

ADDITIONAL COMMENTS

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: Happy Creek Minerals Ltd.
 Suite 2300 - 1066 W. Hastings St.
 Vancouver BC V6E 3X2
 Canada

CC: Paul Reynold



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



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Project: RATERIA
 Report Date: October 21, 2009

Page: 2 of 4 Part 1

CERTIFICATE OF ANALYSIS

VAN09004850.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
016803	Drill Core	6.66	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.99	<0.01	0.004	<0.001	<0.001	<0.01	0.78	0.059	<0.001	0.34	0.84
016804	Drill Core	3.65	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.87	<0.01	0.004	<0.001	<0.001	<0.01	0.95	0.055	<0.001	0.40	0.83
016805	Drill Core	3.13	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.85	<0.01	0.004	<0.001	<0.001	<0.01	1.05	0.053	<0.001	0.40	0.89
016806	Drill Core	6.92	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.85	<0.01	0.005	<0.001	<0.001	<0.01	1.27	0.055	<0.001	0.45	1.04
016807	Drill Core	7.03	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.90	<0.01	0.006	<0.001	<0.001	<0.01	1.35	0.057	<0.001	0.49	1.11
016808	Drill Core	6.25	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.95	<0.01	0.007	<0.001	<0.001	<0.01	1.13	0.058	<0.001	0.44	1.14
016809	Drill Core	6.02	<0.001	0.157	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.00	<0.01	0.010	<0.001	<0.001	<0.01	1.38	0.059	<0.001	0.44	1.09
016810	Drill Core	6.99	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.99	<0.01	0.005	<0.001	<0.001	<0.01	0.87	0.057	<0.001	0.36	0.88
016811	Drill Core	7.57	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.98	<0.01	0.005	<0.001	<0.001	<0.01	0.96	0.058	<0.001	0.33	0.95
016812	Drill Core	6.89	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.94	<0.01	0.005	<0.001	<0.001	<0.01	1.02	0.058	<0.001	0.38	0.90
016813	Drill Core	7.02	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.92	<0.01	0.006	<0.001	<0.001	<0.01	0.89	0.059	<0.001	0.36	0.83
016814	Drill Core	7.53	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.00	<0.01	0.004	<0.001	<0.001	<0.01	0.73	0.059	<0.001	0.34	0.70
016815	Drill Core	6.88	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.96	<0.01	0.004	<0.001	<0.001	<0.01	0.52	0.058	<0.001	0.34	0.64
016816	Rock	0.41	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	0.07	<0.01	0.410	<0.001	<0.001	<0.01	34.87	0.004	<0.001	1.53	0.02
016817	Drill Core	6.75	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.98	<0.01	0.004	<0.001	<0.001	<0.01	0.70	0.058	<0.001	0.33	0.74
016818	Drill Core	6.70	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.02	<0.01	0.005	<0.001	<0.001	<0.01	0.78	0.060	<0.001	0.35	0.73
016819	Drill Core	6.87	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.01	<0.01	0.006	<0.001	<0.001	<0.01	0.80	0.060	<0.001	0.38	0.78
016820	Drill Core	6.96	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.96	<0.01	0.008	<0.001	<0.001	<0.01	1.40	0.057	<0.001	0.51	1.19
016821	Drill Core	6.76	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.99	<0.01	0.006	<0.001	<0.001	<0.01	0.81	0.057	<0.001	0.37	0.78
016822	Drill Core	7.23	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.006	<0.001	<0.001	<0.01	0.76	0.059	<0.001	0.35	0.77
016823	Drill Core	7.35	<0.001	0.027	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.007	<0.001	<0.001	<0.01	1.09	0.059	<0.001	0.44	0.98
016824	Rock Pulp	0.03	0.022	0.471	<0.01	<0.01	42	<0.001	<0.001	0.02	1.41	<0.01	0.017	<0.001	0.009	<0.01	0.99	0.029	0.002	0.07	0.33
016825	Drill Core	6.33	<0.001	0.026	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.011	<0.001	<0.001	<0.01	1.18	0.058	<0.001	0.46	1.11
016826	Drill Core	6.11	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.03	<0.01	0.011	<0.001	<0.001	<0.01	1.26	0.059	<0.001	0.39	0.87
016827	Drill Core	7.42	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.98	<0.01	0.008	<0.001	<0.001	<0.01	1.17	0.059	<0.001	0.37	0.82
016828	Drill Core	5.57	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.07	1.80	<0.01	0.017	<0.001	<0.001	<0.01	3.90	0.045	<0.001	0.32	0.87
016829	Drill Core	2.59	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.95	<0.01	0.013	<0.001	<0.001	<0.01	1.88	0.056	<0.001	0.22	0.78
016830	Drill Core	3.17	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.87	<0.01	0.012	<0.001	<0.001	<0.01	1.87	0.058	<0.001	0.20	0.83
016831	Drill Core	5.83	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.88	<0.01	0.010	<0.001	<0.001	<0.01	1.82	0.057	<0.001	0.51	1.25
016832	Drill Core	7.02	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.90	<0.01	0.010	<0.001	<0.001	<0.01	1.68	0.058	<0.001	0.56	1.23

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Project: RATERIA
Report Date: October 21, 2009

Page: 2 of 4 Part 2

CERTIFICATE OF ANALYSIS

VAN09004850.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
016803	Drill Core	0.09	0.11	<0.001	<0.001	<0.05
016804	Drill Core	0.07	0.13	<0.001	<0.001	<0.05
016805	Drill Core	0.07	0.13	<0.001	<0.001	<0.05
016806	Drill Core	0.07	0.15	<0.001	<0.001	<0.05
016807	Drill Core	0.07	0.12	<0.001	<0.001	<0.05
016808	Drill Core	0.10	0.10	<0.001	<0.001	<0.05
016809	Drill Core	0.08	0.10	<0.001	<0.001	0.05
016810	Drill Core	0.10	0.12	<0.001	<0.001	<0.05
016811	Drill Core	0.10	0.12	<0.001	<0.001	<0.05
016812	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
016813	Drill Core	0.08	0.10	<0.001	<0.001	<0.05
016814	Drill Core	0.08	0.14	<0.001	<0.001	<0.05
016815	Drill Core	0.11	0.19	<0.001	<0.001	<0.05
016816	Rock	<0.01	<0.01	<0.001	<0.001	<0.05
016817	Drill Core	0.10	0.13	<0.001	<0.001	<0.05
016818	Drill Core	0.09	0.14	<0.001	<0.001	<0.05
016819	Drill Core	0.10	0.11	<0.001	<0.001	<0.05
016820	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
016821	Drill Core	0.09	0.13	<0.001	<0.001	<0.05
016822	Drill Core	0.09	0.12	<0.001	<0.001	<0.05
016823	Drill Core	0.09	0.12	<0.001	<0.001	<0.05
016824	Rock Pulp	0.03	0.22	<0.001	<0.001	0.71
016825	Drill Core	0.11	0.13	<0.001	<0.001	<0.05
016826	Drill Core	0.10	0.14	<0.001	<0.001	<0.05
016827	Drill Core	0.08	0.13	<0.001	<0.001	<0.05
016828	Drill Core	0.05	0.14	<0.001	<0.001	<0.05
016829	Drill Core	0.05	0.16	<0.001	<0.001	<0.05
016830	Drill Core	0.06	0.16	<0.001	<0.001	<0.05
016831	Drill Core	0.07	0.16	<0.001	<0.001	<0.05
016832	Drill Core	0.08	0.14	<0.001	<0.001	<0.05

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Project: RATERIA
 Report Date: October 21, 2009

Page: 3 of 4 Part 1

CERTIFICATE OF ANALYSIS

VAN09004850.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
016833	Drill Core	6.47	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.91	<0.01	0.010	<0.001	<0.001	<0.01	1.22	0.058	<0.001	0.50	1.04
016834	Drill Core	6.30	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.96	<0.01	0.007	<0.001	<0.001	<0.01	1.07	0.061	<0.001	0.46	0.87
016835	Rock	0.44	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.51	<0.01	0.003	<0.001	<0.001	<0.01	21.63	0.015	<0.001	11.44	0.03
016836	Drill Core	7.29	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.95	<0.01	0.006	<0.001	<0.001	<0.01	0.80	0.059	<0.001	0.42	0.91
016837	Drill Core	6.95	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.92	<0.01	0.007	<0.001	<0.001	<0.01	0.89	0.059	<0.001	0.43	1.06
016838	Drill Core	6.94	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.86	<0.01	0.009	<0.001	<0.001	<0.01	1.01	0.060	<0.001	0.46	1.05
016839	Drill Core	7.06	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.91	<0.01	0.007	<0.001	<0.001	<0.01	0.74	0.060	<0.001	0.38	0.86
016840	Drill Core	7.56	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.91	<0.01	0.006	<0.001	<0.001	<0.01	0.89	0.059	<0.001	0.42	0.89
016841	Drill Core	5.96	<0.001	0.020	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.79	<0.01	0.017	<0.001	<0.001	<0.01	1.71	0.054	<0.001	0.42	0.94
016842	Drill Core	5.70	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.72	<0.01	0.017	<0.001	<0.001	<0.01	1.44	0.053	<0.001	0.44	1.06
016843	Drill Core	5.23	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.36	<0.01	0.014	<0.001	<0.001	<0.01	1.68	0.055	<0.001	0.49	1.08
016844	Drill Core	2.69	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.04	<0.01	0.025	<0.001	<0.001	<0.01	3.86	0.064	<0.001	0.24	1.25
016845	Drill Core	2.76	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.05	0.98	<0.01	0.024	<0.001	<0.001	<0.01	3.47	0.062	<0.001	0.20	1.09
016846	Drill Core	6.49	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.31	<0.01	0.012	<0.001	<0.001	<0.01	2.42	0.061	<0.001	0.44	1.16
016847	Drill Core	7.69	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.83	<0.01	0.017	<0.001	<0.001	<0.01	2.91	0.061	<0.001	0.40	1.29
016848	Drill Core	6.05	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.89	<0.01	0.014	<0.001	<0.001	<0.01	1.29	0.056	<0.001	0.47	0.97
016849	Drill Core	6.25	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.88	<0.01	0.015	<0.001	<0.001	<0.01	1.30	0.059	<0.001	0.40	0.82
016850	Drill Core	5.45	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.91	<0.01	0.019	<0.001	<0.001	<0.01	0.97	0.057	<0.001	0.40	0.91
016851	Drill Core	7.13	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.83	<0.01	0.011	<0.001	<0.001	<0.01	0.95	0.060	<0.001	0.37	0.83
016852	Drill Core	6.38	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.34	<0.01	0.012	<0.001	<0.001	<0.01	2.10	0.045	<0.001	0.28	0.83
016853	Drill Core	6.40	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.78	<0.01	0.017	<0.001	<0.001	<0.01	2.44	0.055	<0.001	0.44	0.95
016854	Drill Core	6.18	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.57	<0.01	0.019	<0.001	<0.001	<0.01	2.31	0.051	<0.001	0.31	0.93
016855	Drill Core	5.53	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.85	<0.01	0.015	<0.001	<0.001	<0.01	1.36	0.061	<0.001	0.41	0.90
016856	Drill Core	6.60	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.72	<0.01	0.019	<0.001	<0.001	<0.01	1.97	0.058	<0.001	0.37	1.53
016857	Drill Core	6.43	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.69	<0.01	0.015	<0.001	<0.001	<0.01	2.76	0.058	<0.001	0.45	0.71
016858	Drill Core	6.59	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.81	<0.01	0.027	<0.001	<0.001	<0.01	1.93	0.060	<0.001	0.43	1.00
016859	Rock	0.46	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.49	<0.01	0.004	<0.001	<0.001	<0.01	20.81	0.014	<0.001	12.23	0.02
016860	Drill Core	6.56	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.80	<0.01	0.023	<0.001	<0.001	<0.01	2.43	0.059	<0.001	0.66	1.56
016861	Drill Core	7.01	<0.001	<0.001	<0.01	0.01	<2	<0.001	<0.001	0.10	2.96	<0.01	0.041	<0.001	<0.001	<0.01	2.34	0.106	<0.001	0.73	2.05
016862	Rock Pulp	0.06	0.051	0.317	<0.01	<0.01	<2	0.002	0.002	0.06	5.12	<0.01	0.015	<0.001	<0.001	<0.01	4.30	0.112	0.002	1.28	1.59

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Project: RATERIA
Report Date: October 21, 2009

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CERTIFICATE OF ANALYSIS

VAN09004850.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
016833	Drill Core	0.08	0.09	<0.001	<0.001	<0.05
016834	Drill Core	0.08	0.13	<0.001	<0.001	<0.05
016835	Rock	<0.01	0.01	<0.001	<0.001	<0.05
016836	Drill Core	0.14	0.17	<0.001	<0.001	<0.05
016837	Drill Core	0.18	0.20	<0.001	<0.001	<0.05
016838	Drill Core	0.16	0.18	<0.001	<0.001	<0.05
016839	Drill Core	0.13	0.18	<0.001	<0.001	<0.05
016840	Drill Core	0.12	0.15	<0.001	<0.001	<0.05
016841	Drill Core	0.09	0.19	<0.001	<0.001	<0.05
016842	Drill Core	0.10	0.14	<0.001	<0.001	<0.05
016843	Drill Core	0.09	0.12	<0.001	<0.001	<0.05
016844	Drill Core	0.08	0.29	<0.001	<0.001	<0.05
016845	Drill Core	0.06	0.25	<0.001	<0.001	<0.05
016846	Drill Core	0.08	0.22	<0.001	<0.001	<0.05
016847	Drill Core	0.06	0.24	<0.001	<0.001	<0.05
016848	Drill Core	0.10	0.12	<0.001	<0.001	<0.05
016849	Drill Core	0.09	0.13	<0.001	<0.001	<0.05
016850	Drill Core	0.09	0.13	<0.001	<0.001	<0.05
016851	Drill Core	0.09	0.14	<0.001	<0.001	<0.05
016852	Drill Core	0.08	0.15	<0.001	<0.001	<0.05
016853	Drill Core	0.08	0.13	<0.001	<0.001	<0.05
016854	Drill Core	0.07	0.17	<0.001	<0.001	<0.05
016855	Drill Core	0.09	0.12	<0.001	<0.001	<0.05
016856	Drill Core	0.16	0.21	<0.001	<0.001	<0.05
016857	Drill Core	0.07	0.12	<0.001	<0.001	<0.05
016858	Drill Core	0.09	0.15	<0.001	<0.001	<0.05
016859	Rock	<0.01	<0.01	<0.001	<0.001	<0.05
016860	Drill Core	0.10	0.16	<0.001	<0.001	<0.05
016861	Drill Core	0.08	0.23	<0.001	<0.001	<0.05
016862	Rock Pulp	0.09	0.34	<0.001	<0.001	2.00

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Project: RATERIA
Report Date: October 21, 2009

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CERTIFICATE OF ANALYSIS

VAN09004850.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
016863	Drill Core	8.48	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.10	3.19	<0.01	0.036	<0.001	<0.001	<0.01	2.27	0.102	<0.001	0.86	2.17



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CERTIFICATE OF ANALYSIS

VAN09004850.1

Method	7AR	7AR	7AR	7AR	7AR
Analyte	Na	K	W	Hg	S
Unit	%	%	%	%	%
MDL	0.01	0.01	0.001	0.001	0.05
016863 Drill Core	0.08	0.21	<0.001	<0.001	<0.05



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Project: RATERIA
Report Date: October 21, 2009

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QUALITY CONTROL REPORT

VAN09004850.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR		
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al		
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%		
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01		
Pulp Duplicates																						
016817	Drill Core	6.75	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.98	<0.01	0.004	<0.001	<0.001	<0.01	0.70	0.058	<0.001	0.33	0.74	
REP 016817	QC		<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.96	<0.01	0.005	<0.001	<0.001	<0.01	0.72	0.058	<0.001	0.32	0.74	
016853	Drill Core	6.40	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.78	<0.01	0.017	<0.001	<0.001	<0.01	2.44	0.055	<0.001	0.44	0.95	
REP 016853	QC		<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.79	<0.01	0.017	<0.001	<0.001	<0.01	2.48	0.056	<0.001	0.44	0.97	
Core Reject Duplicates																						
016810	Drill Core	6.99	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.99	<0.01	0.005	<0.001	<0.001	<0.01	0.87	0.057	<0.001	0.36	0.88	
DUP 016810	QC		<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.95	<0.01	0.005	<0.001	<0.001	<0.01	0.90	0.057	<0.001	0.34	0.91	
016845	Drill Core	2.76	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.05	0.98	<0.01	0.024	<0.001	<0.001	<0.01	3.47	0.062	<0.001	0.20	1.09	
DUP 016845	QC		<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.10	<0.01	0.028	<0.001	<0.001	<0.01	4.28	0.065	<0.001	0.22	1.23	
Reference Materials																						
STD R4A	Standard		0.063	0.515	1.56	3.32	88	0.364	0.041	0.07	23.14	0.02	0.004	0.018	0.014	<0.01	1.01	0.043	0.013	0.90	1.31	
STD R4A	Standard		0.062	0.510	1.53	3.27	89	0.355	0.040	0.06	22.89	0.02	0.004	0.018	0.015	<0.01	0.98	0.043	0.012	0.87	1.29	
STD R4A	Standard		0.065	0.519	1.62	3.40	95	0.383	0.042	0.06	23.54	0.03	0.004	0.018	0.014	<0.01	0.98	0.043	0.014	0.88	1.43	
STD R4A	Standard		0.064	0.512	1.57	3.30	89	0.368	0.041	0.06	23.27	0.02	0.004	0.018	0.014	<0.01	0.99	0.043	0.014	0.87	1.39	
STD R4A Expected			0.062	0.502	1.5	3.31	86	0.334	0.04	0.06	23.38	0.023	0.004	0.017	0.0135	0.0024	0.94	0.042	0.012	0.83	1.25	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01		
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01		
Prep Wash																						
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.08	<0.01	0.006	<0.001	<0.001	<0.01	0.50	0.076	<0.001	0.51	0.91
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.16	<0.01	0.006	<0.001	<0.001	<0.01	0.52	0.077	<0.001	0.51	0.93



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Project: RATERIA
Report Date: October 21, 2009

Page: 1 of 1 Part 2

QUALITY CONTROL REPORT

VAN09004850.1

Method		7AR	7AR	7AR	7AR	7AR
Analyte		Na	K	W	Hg	S
Unit		%	%	%	%	%
MDL		0.01	0.01	0.001	0.001	0.05
Pulp Duplicates						
016817	Drill Core	0.10	0.13	<0.001	<0.001	<0.05
REP 016817	QC	0.10	0.13	<0.001	<0.001	<0.05
016853	Drill Core	0.08	0.13	<0.001	<0.001	<0.05
REP 016853	QC	0.09	0.13	<0.001	<0.001	<0.05
Core Reject Duplicates						
016810	Drill Core	0.10	0.12	<0.001	<0.001	<0.05
DUP 016810	QC	0.10	0.12	<0.001	<0.001	<0.05
016845	Drill Core	0.06	0.25	<0.001	<0.001	<0.05
DUP 016845	QC	0.06	0.27	<0.001	<0.001	<0.05
Reference Materials						
STD R4A	Standard	0.07	0.52	<0.001	<0.001	16.34
STD R4A	Standard	0.06	0.51	<0.001	<0.001	16.10
STD R4A	Standard	0.08	0.52	<0.001	<0.001	16.35
STD R4A	Standard	0.08	0.51	<0.001	0.001	15.92
STD R4A Expected		0.07	0.51	0.0011	0.001	16.7
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
Prep Wash						
G1	Prep Blank	0.09	0.52	<0.001	<0.001	<0.05
G1	Prep Blank	0.10	0.52	<0.001	<0.001	<0.05



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Submitted By: David Blann

Receiving Lab: Canada-Vancouver

Received: October 13, 2009

Report Date: October 22, 2009

Page: 1 of 4

CERTIFICATE OF ANALYSIS

VAN09004905.1

CLIENT JOB INFORMATION

Project: RATERIA
Shipment ID:
P.O. Number
Number of Samples: 73

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200	72	Crush split and pulverize 250g drill core to 200 mesh			VAN
7AR	73	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN

SAMPLE DISPOSAL

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

ADDITIONAL COMMENTS

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: Happy Creek Minerals Ltd.
Suite 2300 - 1066 W. Hastings St.
Vancouver BC V6E 3X2
Canada

CC: Paul Reynold



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



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Project: RATERIA
 Report Date: October 22, 2009

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CERTIFICATE OF ANALYSIS

VAN09004905.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
16864	Drill Core	3.34	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.68	<0.01	0.006	<0.001	<0.001	<0.01	1.48	0.056	<0.001	0.28	0.53
16865	Drill Core	4.79	<0.001	0.001	<0.01	0.01	<2	<0.001	<0.001	0.05	1.51	<0.01	0.005	<0.001	<0.001	<0.01	1.45	0.051	<0.001	0.34	0.49
16866	Drill Core	2.66	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.57	<0.01	0.006	<0.001	<0.001	<0.01	1.88	0.055	<0.001	0.37	0.54
16867	Drill Core	2.71	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.66	<0.01	0.007	<0.001	<0.001	<0.01	2.80	0.056	<0.001	0.46	0.53
16868	Drill Core	3.20	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.47	<0.01	0.008	<0.001	<0.001	<0.01	2.17	0.046	<0.001	0.56	0.50
16869	Drill Core	4.14	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.07	1.63	<0.01	0.009	<0.001	0.001	<0.01	2.38	0.060	<0.001	0.55	0.53
16870	Drill Core	5.38	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.40	<0.01	0.007	<0.001	<0.001	<0.01	2.14	0.055	<0.001	0.31	0.53
16871	Drill Core	5.91	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.07	1.38	<0.01	0.013	<0.001	<0.001	<0.01	5.07	0.046	<0.001	0.34	0.60
16872	Drill Core	3.92	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.33	<0.01	0.008	<0.001	<0.001	<0.01	2.64	0.050	<0.001	0.30	0.50
16873	Drill Core	6.07	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.44	<0.01	0.011	<0.001	<0.001	<0.01	2.80	0.050	<0.001	0.38	0.49
16874	Drill Core	4.32	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.38	<0.01	0.009	<0.001	<0.001	<0.01	2.76	0.047	<0.001	0.58	0.45
16875	Drill Core	2.97	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.43	<0.01	0.008	<0.001	<0.001	<0.01	2.38	0.048	<0.001	0.37	0.47
16876	Drill Core	3.02	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.37	<0.01	0.008	<0.001	<0.001	<0.01	1.85	0.046	<0.001	0.40	0.48
16877	Drill Core	3.83	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.81	<0.01	0.009	<0.001	<0.001	<0.01	1.53	0.046	<0.001	0.46	0.59
16878	Drill Core	2.73	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.62	<0.01	0.010	<0.001	<0.001	<0.01	2.27	0.044	<0.001	0.67	0.48
16879	Drill Core	2.83	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.84	<0.01	0.011	<0.001	<0.001	<0.01	2.69	0.049	<0.001	0.70	0.54
16880	Drill Core	6.44	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.09	1.38	<0.01	0.020	<0.001	0.001	<0.01	3.64	0.055	<0.001	0.40	0.84
16881	Drill Core	4.99	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	0.76	<0.01	0.015	<0.001	<0.001	<0.01	2.73	0.039	<0.001	0.20	0.68
16882	Drill Core	4.33	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.41	<0.01	0.008	<0.001	<0.001	<0.01	1.82	0.008	<0.001	0.12	0.30
16883	Drill Core	5.39	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.66	<0.01	0.006	<0.001	<0.001	<0.01	1.29	0.008	<0.001	0.20	0.39
16884	Drill Core	6.07	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.61	<0.01	0.007	<0.001	<0.001	<0.01	1.39	0.009	<0.001	0.18	0.45
16885	Drill Core	4.56	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.52	<0.01	0.008	<0.001	<0.001	<0.01	1.97	0.012	<0.001	0.14	0.40
16886	Rock	0.51	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.01	0.21	<0.01	0.285	<0.001	<0.001	<0.01	33.34	0.007	<0.001	5.25	0.03
16887	Drill Core	5.50	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.55	<0.01	0.008	<0.001	<0.001	<0.01	1.48	0.010	<0.001	0.13	0.40
16888	Drill Core	4.43	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.60	<0.01	0.008	<0.001	<0.001	<0.01	1.37	0.008	<0.001	0.15	0.46
16889	Drill Core	4.61	<0.001	0.001	<0.01	<0.01	3	<0.001	<0.001	0.02	0.55	<0.01	0.010	<0.001	<0.001	<0.01	1.24	0.013	<0.001	0.12	0.45
16890	Drill Core	4.52	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.54	<0.01	0.010	<0.001	<0.001	<0.01	2.24	0.013	<0.001	0.18	0.42
16891	Drill Core	5.09	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.90	<0.01	0.026	<0.001	<0.001	<0.01	3.06	0.051	<0.001	0.58	0.91
16892	Drill Core	4.74	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.68	<0.01	0.023	<0.001	<0.001	<0.01	2.08	0.044	<0.001	0.46	0.78
16893	Drill Core	3.80	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.83	<0.01	0.012	<0.001	<0.001	<0.01	1.53	0.052	<0.001	0.42	0.80

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Project: RATERIA
Report Date: October 22, 2009

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CERTIFICATE OF ANALYSIS

VAN09004905.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
16864	Drill Core	0.06	0.10	<0.001	<0.001	<0.05
16865	Drill Core	0.05	0.11	<0.001	<0.001	<0.05
16866	Drill Core	0.05	0.15	<0.001	<0.001	<0.05
16867	Drill Core	0.04	0.15	<0.001	<0.001	<0.05
16868	Drill Core	0.05	0.11	<0.001	<0.001	<0.05
16869	Drill Core	0.05	0.12	<0.001	<0.001	<0.05
16870	Drill Core	0.06	0.10	<0.001	<0.001	<0.05
16871	Drill Core	0.02	0.14	<0.001	<0.001	<0.05
16872	Drill Core	0.04	0.11	<0.001	<0.001	<0.05
16873	Drill Core	0.04	0.12	<0.001	<0.001	<0.05
16874	Drill Core	0.04	0.14	<0.001	<0.001	<0.05
16875	Drill Core	0.05	0.15	<0.001	<0.001	<0.05
16876	Drill Core	0.05	0.11	<0.001	<0.001	<0.05
16877	Drill Core	0.06	0.10	<0.001	<0.001	<0.05
16878	Drill Core	0.06	0.08	<0.001	<0.001	<0.05
16879	Drill Core	0.06	0.08	<0.001	<0.001	<0.05
16880	Drill Core	0.04	0.10	<0.001	<0.001	<0.05
16881	Drill Core	0.05	0.12	<0.001	<0.001	<0.05
16882	Drill Core	0.04	0.14	<0.001	<0.001	<0.05
16883	Drill Core	0.06	0.12	<0.001	<0.001	<0.05
16884	Drill Core	0.05	0.19	<0.001	<0.001	<0.05
16885	Drill Core	0.04	0.24	<0.001	<0.001	<0.05
16886	Rock	<0.01	<0.01	<0.001	<0.001	<0.05
16887	Drill Core	0.04	0.26	<0.001	<0.001	<0.05
16888	Drill Core	0.04	0.24	<0.001	<0.001	<0.05
16889	Drill Core	0.04	0.26	<0.001	<0.001	<0.05
16890	Drill Core	0.04	0.28	<0.001	<0.001	<0.05
16891	Drill Core	0.02	0.33	<0.001	<0.001	<0.05
16892	Drill Core	0.03	0.23	<0.001	<0.001	<0.05
16893	Drill Core	0.07	0.17	<0.001	<0.001	<0.05

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Project: RATERIA
 Report Date: October 22, 2009

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CERTIFICATE OF ANALYSIS

VAN09004905.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
16894	Drill Core	7.18	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.09	<0.01	0.013	<0.001	<0.001	<0.01	1.94	0.036	<0.001	0.23	0.56
16895	Rock Pulp	0.01	0.021	0.451	<0.01	<0.01	40	<0.001	<0.001	0.02	1.38	<0.01	0.016	<0.001	0.009	<0.01	0.97	0.029	0.002	0.07	0.37
16896	Drill Core	5.61	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.04	0.57	<0.01	0.011	<0.001	<0.001	<0.01	1.99	0.023	<0.001	0.07	0.44
16897	Drill Core	5.40	<0.001	0.023	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.03	<0.01	0.022	<0.001	<0.001	<0.01	2.35	0.027	<0.001	0.27	0.71
16898	Drill Core	5.74	<0.001	0.022	<0.01	<0.01	<2	<0.001	<0.001	0.05	0.89	<0.01	0.015	<0.001	<0.001	<0.01	1.90	0.029	<0.001	0.19	0.59
16899	Drill Core	5.85	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.47	<0.01	0.021	<0.001	<0.001	<0.01	2.02	0.036	<0.001	0.37	1.09
16900	Drill Core	5.62	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.42	<0.01	0.014	<0.001	<0.001	<0.01	1.73	0.037	<0.001	0.20	0.72
16901	Drill Core	5.81	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.40	<0.01	0.011	<0.001	<0.001	<0.01	1.62	0.038	<0.001	0.26	0.73
16902	Rock	0.49	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.46	<0.01	0.004	<0.001	<0.001	<0.01	22.94	0.016	<0.001	12.20	0.02
16903	Drill Core	6.30	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.44	<0.01	0.009	<0.001	<0.001	<0.01	1.68	0.038	<0.001	0.34	0.76
16904	Drill Core	6.27	<0.001	0.023	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.58	<0.01	0.009	<0.001	<0.001	<0.01	0.99	0.038	<0.001	0.33	0.67
16905	Drill Core	6.02	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.52	<0.01	0.010	<0.001	<0.001	<0.01	1.29	0.038	<0.001	0.30	0.61
16906	Drill Core	6.90	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.04	<0.01	0.007	<0.001	<0.001	<0.01	0.94	0.025	<0.001	0.16	0.51
16907	Drill Core	2.60	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.61	<0.01	0.005	<0.001	<0.001	<0.01	0.90	0.014	<0.001	0.07	0.34
16908	Drill Core	2.60	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.65	<0.01	0.005	<0.001	<0.001	<0.01	0.88	0.013	<0.001	0.07	0.37
16909	Drill Core	5.76	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.37	<0.01	0.005	<0.001	<0.001	<0.01	1.28	0.012	<0.001	0.03	0.31
16910	Drill Core	6.37	<0.001	0.023	<0.01	<0.01	<2	<0.001	<0.001	0.01	0.50	<0.01	0.003	<0.001	<0.001	<0.01	0.63	0.009	<0.001	0.03	0.30
16911	Drill Core	4.77	<0.001	0.039	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.45	<0.01	0.008	<0.001	<0.001	<0.01	1.29	0.007	<0.001	0.03	0.44
16912	Drill Core	4.06	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.06	0.92	<0.01	0.014	<0.001	<0.001	<0.01	2.90	0.014	<0.001	0.04	0.67
16913	Drill Core	4.60	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.82	<0.01	0.009	<0.001	<0.001	<0.01	1.08	0.022	<0.001	0.16	0.57
16914	Drill Core	7.17	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.11	<0.01	0.007	<0.001	<0.001	<0.01	0.75	0.023	<0.001	0.26	0.74
16915	Rock	0.38	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	0.06	<0.01	0.400	<0.001	<0.001	<0.01	38.09	0.002	<0.001	1.48	0.02
16916	Drill Core	6.88	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.16	<0.01	0.007	<0.001	<0.001	<0.01	0.63	0.027	<0.001	0.28	0.71
16917	Drill Core	5.98	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.11	<0.01	0.009	<0.001	<0.001	<0.01	0.86	0.024	<0.001	0.28	0.76
16918	Drill Core	6.90	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.97	<0.01	0.007	<0.001	<0.001	<0.01	0.60	0.023	<0.001	0.24	0.53
16919	Drill Core	6.34	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.96	<0.01	0.005	<0.001	<0.001	<0.01	0.58	0.025	<0.001	0.22	0.53
16920	Drill Core	5.78	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.03	<0.01	0.011	<0.001	<0.001	<0.01	0.92	0.027	<0.001	0.27	0.64
16921	Drill Core	5.44	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.94	<0.01	0.017	<0.001	<0.001	<0.01	0.90	0.027	<0.001	0.27	0.62
16922	Drill Core	5.97	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.86	<0.01	0.012	<0.001	<0.001	<0.01	1.17	0.030	<0.001	0.30	0.70
16923	Drill Core	2.45	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	0.96	<0.01	0.011	<0.001	<0.001	<0.01	2.21	0.034	<0.001	0.34	0.69

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Project: RATERIA
Report Date: October 22, 2009

Page: 3 of 4 Part 2

CERTIFICATE OF ANALYSIS

VAN09004905.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
16894	Drill Core	0.05	0.26	<0.001	<0.001	<0.05
16895	Rock Pulp	0.04	0.23	<0.001	<0.001	0.68
16896	Drill Core	0.04	0.34	<0.001	<0.001	<0.05
16897	Drill Core	0.03	0.25	<0.001	<0.001	<0.05
16898	Drill Core	0.04	0.28	<0.001	<0.001	<0.05
16899	Drill Core	0.04	0.22	<0.001	<0.001	<0.05
16900	Drill Core	0.05	0.20	<0.001	<0.001	<0.05
16901	Drill Core	0.06	0.29	<0.001	<0.001	<0.05
16902	Rock	<0.01	0.01	<0.001	<0.001	<0.05
16903	Drill Core	0.06	0.29	<0.001	<0.001	<0.05
16904	Drill Core	0.07	0.19	<0.001	<0.001	<0.05
16905	Drill Core	0.07	0.16	<0.001	<0.001	<0.05
16906	Drill Core	0.07	0.18	<0.001	<0.001	<0.05
16907	Drill Core	0.05	0.18	<0.001	<0.001	<0.05
16908	Drill Core	0.06	0.19	<0.001	<0.001	<0.05
16909	Drill Core	0.05	0.24	<0.001	<0.001	<0.05
16910	Drill Core	0.07	0.21	<0.001	<0.001	<0.05
16911	Drill Core	0.04	0.22	<0.001	<0.001	<0.05
16912	Drill Core	0.03	0.29	<0.001	<0.001	<0.05
16913	Drill Core	0.06	0.17	<0.001	<0.001	<0.05
16914	Drill Core	0.09	0.13	<0.001	<0.001	<0.05
16915	Rock	<0.01	<0.01	<0.001	<0.001	<0.05
16916	Drill Core	0.09	0.14	<0.001	<0.001	<0.05
16917	Drill Core	0.10	0.15	<0.001	<0.001	<0.05
16918	Drill Core	0.08	0.11	<0.001	<0.001	<0.05
16919	Drill Core	0.08	0.12	<0.001	<0.001	<0.05
16920	Drill Core	0.07	0.11	<0.001	<0.001	<0.05
16921	Drill Core	0.06	0.11	<0.001	<0.001	<0.05
16922	Drill Core	0.06	0.14	<0.001	<0.001	<0.05
16923	Drill Core	0.05	0.18	<0.001	<0.001	<0.05

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 Suite 2300 - 1066 W. Hastings St.
 Vancouver BC V6E 3X2 Canada

Project: RATERIA
 Report Date: October 22, 2009

Page: 4 of 4 Part 1

CERTIFICATE OF ANALYSIS

VAN09004905.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
16924	Drill Core	2.37	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	0.94	<0.01	0.011	<0.001	<0.001	<0.01	2.54	0.034	<0.001	0.34	0.70
16925	Drill Core	5.26	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.95	<0.01	0.011	<0.001	<0.001	<0.01	1.21	0.030	<0.001	0.29	0.68
16926	Drill Core	3.36	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.16	<0.01	0.019	<0.001	<0.001	<0.01	0.92	0.032	<0.001	0.29	0.65
16927	Drill Core	3.20	<0.001	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.21	<0.01	0.008	<0.001	<0.001	<0.01	0.65	0.031	<0.001	0.30	0.62
16928	Drill Core	5.55	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.24	<0.01	0.010	<0.001	<0.001	<0.01	0.87	0.032	<0.001	0.33	0.73
16929	Drill Core	5.48	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.12	<0.01	0.008	<0.001	<0.001	<0.01	1.13	0.034	<0.001	0.27	0.62
16930	Drill Core	5.94	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.22	<0.01	0.009	<0.001	<0.001	<0.01	0.89	0.033	<0.001	0.29	0.64
16931	Drill Core	6.21	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.30	<0.01	0.006	<0.001	<0.001	<0.01	0.61	0.033	<0.001	0.29	0.61
16932	Drill Core	6.86	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.33	<0.01	0.006	<0.001	<0.001	<0.01	0.61	0.033	<0.001	0.31	0.63
16933	Drill Core	6.97	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.20	<0.01	0.008	<0.001	<0.001	<0.01	1.02	0.035	<0.001	0.30	0.66
16934	Rock	0.41	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.41	<0.01	0.004	<0.001	<0.001	<0.01	20.59	0.012	<0.001	11.91	0.05
16935	Drill Core	5.67	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.03	<0.01	0.010	<0.001	<0.001	<0.01	1.32	0.035	<0.001	0.26	0.62
16936	Drill Core	3.75	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.28	<0.01	0.008	<0.001	<0.001	<0.01	0.51	0.032	<0.001	0.31	0.62



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Project: RATERIA
Report Date: October 22, 2009

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CERTIFICATE OF ANALYSIS

VAN09004905.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
16924	Drill Core	0.05	0.19	<0.001	<0.001	<0.05
16925	Drill Core	0.06	0.13	<0.001	<0.001	<0.05
16926	Drill Core	0.06	0.08	<0.001	<0.001	<0.05
16927	Drill Core	0.07	0.13	<0.001	<0.001	<0.05
16928	Drill Core	0.07	0.12	<0.001	<0.001	<0.05
16929	Drill Core	0.06	0.17	<0.001	<0.001	<0.05
16930	Drill Core	0.07	0.16	<0.001	<0.001	<0.05
16931	Drill Core	0.09	0.15	<0.001	<0.001	<0.05
16932	Drill Core	0.08	0.13	<0.001	<0.001	<0.05
16933	Drill Core	0.07	0.15	<0.001	<0.001	<0.05
16934	Rock	<0.01	0.01	<0.001	<0.001	<0.05
16935	Drill Core	0.06	0.21	<0.001	<0.001	<0.05
16936	Drill Core	0.07	0.12	<0.001	<0.001	<0.05



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Project: RATERIA
 Report Date: October 22, 2009

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QUALITY CONTROL REPORT

VAN09004905.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR		
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al		
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%		
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01		
Pulp Duplicates																						
16871	Drill Core	5.91	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.07	1.38	<0.01	0.013	<0.001	<0.001	<0.01	5.07	0.046	<0.001	0.34	0.60	
REP 16871	QC		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.07	1.39	<0.01	0.013	<0.001	<0.001	<0.01	5.01	0.047	<0.001	0.33	0.59	
16908	Drill Core	2.60	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.65	<0.01	0.005	<0.001	<0.001	<0.01	0.88	0.013	<0.001	0.07	0.37	
REP 16908	QC		<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.65	<0.01	0.005	<0.001	<0.001	<0.01	0.87	0.012	<0.001	0.07	0.36	
REP 16918	QC		<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.94	<0.01	0.007	<0.001	<0.001	<0.01	0.60	0.024	<0.001	0.23	0.52	
Core Reject Duplicates																						
16883	Drill Core	5.39	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.66	<0.01	0.006	<0.001	<0.001	<0.01	1.29	0.008	<0.001	0.20	0.39	
DUP 16883	QC		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.66	<0.01	0.006	<0.001	<0.001	<0.01	1.31	0.008	<0.001	0.21	0.33	
16918	Drill Core	6.90	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.97	<0.01	0.007	<0.001	<0.001	<0.01	0.60	0.023	<0.001	0.24	0.53	
DUP 16918	QC		<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.03	<0.01	0.008	<0.001	<0.001	<0.01	0.60	0.025	<0.001	0.24	0.56	
Reference Materials																						
STD R4A	Standard		0.064	0.513	1.53	3.33	87	0.363	0.041	0.07	23.69	0.02	0.004	0.018	0.016	<0.01	1.06	0.044	0.014	0.95	1.39	
STD R4A	Standard		0.064	0.513	1.53	3.33	87	0.364	0.041	0.07	23.62	0.03	0.004	0.018	0.014	<0.01	1.07	0.044	0.015	0.96	1.41	
STD R4A	Standard		0.063	0.504	1.48	3.31	88	0.360	0.040	0.06	23.44	0.02	0.004	0.018	0.013	<0.01	0.96	0.043	0.012	0.85	1.26	
STD R4A	Standard		0.062	0.505	1.47	3.27	86	0.348	0.039	0.06	23.15	0.02	0.003	0.018	0.013	<0.01	0.94	0.042	0.012	0.84	1.24	
STD R4A	Standard		0.063	0.512	1.55	3.32	87	0.361	0.040	0.06	23.18	0.03	0.004	0.017	0.018	<0.01	0.97	0.043	0.012	0.86	1.27	
STD R4A	Standard		0.063	0.511	1.54	3.31	86	0.360	0.040	0.06	23.13	0.03	0.004	0.017	0.018	<0.01	0.97	0.044	0.012	0.86	1.28	
STD R4A Expected			0.062	0.502	1.5	3.31	86	0.334	0.04	0.06	23.38	0.023	0.004	0.017	0.0135	0.0024	0.94	0.042	0.012	0.83	1.25	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
Prep Wash																						
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.06	<0.01	0.007	<0.001	<0.001	<0.01	0.54	0.078	<0.001	0.53	1.06
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.02	<0.01	0.005	<0.001	<0.001	<0.01	0.48	0.080	<0.001	0.51	0.87

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 Vancouver BC V6E 3X2 Canada

Project: RATERIA
Report Date: October 22, 2009

Page: 1 of 1 Part 2

QUALITY CONTROL REPORT

VAN09004905.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
Pulp Duplicates						
16871	Drill Core	0.02	0.14	<0.001	<0.001	<0.05
REP 16871	QC	0.02	0.14	<0.001	<0.001	<0.05
16908	Drill Core	0.06	0.19	<0.001	<0.001	<0.05
REP 16908	QC	0.06	0.18	<0.001	<0.001	<0.05
REP 16918	QC	0.07	0.10	<0.001	<0.001	<0.05
Core Reject Duplicates						
16883	Drill Core	0.06	0.12	<0.001	<0.001	<0.05
DUP 16883	QC	0.05	0.10	<0.001	<0.001	<0.05
16918	Drill Core	0.08	0.11	<0.001	<0.001	<0.05
DUP 16918	QC	0.08	0.11	<0.001	<0.001	<0.05
Reference Materials						
STD R4A	Standard	0.07	0.52	<0.001	0.002	16.34
STD R4A	Standard	0.07	0.52	<0.001	0.001	16.34
STD R4A	Standard	0.05	0.50	<0.001	<0.001	16.11
STD R4A	Standard	0.05	0.50	<0.001	<0.001	15.94
STD R4A	Standard	0.06	0.51	<0.001	<0.001	16.23
STD R4A	Standard	0.07	0.51	<0.001	<0.001	16.22
STD R4A Expected		0.07	0.51	0.0011	0.001	16.7
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
Prep Wash						
G1	Prep Blank	0.13	0.57	<0.001	<0.001	<0.05
G1	Prep Blank	0.07	0.50	<0.001	<0.001	<0.05



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Submitted By: David Blann

Receiving Lab: Canada-Vancouver

Received: October 19, 2009

Report Date: October 26, 2009

Page: 1 of 6

CERTIFICATE OF ANALYSIS

VAN09005050.1

CLIENT JOB INFORMATION

Project: RATERIA
Shipment ID:
P.O. Number
Number of Samples: 123

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200	120	Crush split and pulverize 250g drill core to 200 mesh			VAN
7AR	123	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN

SAMPLE DISPOSAL

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

ADDITIONAL COMMENTS

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: Happy Creek Minerals Ltd.
Suite 2300 - 1066 W. Hastings St.
Vancouver BC V6E 3X2
Canada

CC: Paul Reynold



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.

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



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Project: RATERIA
 Report Date: October 26, 2009

Page: 2 of 6 Part 1

CERTIFICATE OF ANALYSIS

VAN09005050.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
016937	Drill Core	2.94	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.49	<0.01	0.036	<0.001	<0.001	<0.01	4.04	0.043	<0.001	0.53	2.46
016938	Drill Core	2.49	<0.001	0.019	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.82	<0.01	0.013	<0.001	<0.001	<0.01	3.80	0.047	<0.001	0.72	0.48
016939	Rock Pulp	0.04	0.049	0.314	<0.01	<0.01	2	0.002	0.002	0.06	4.97	<0.01	0.014	<0.001	<0.001	<0.01	4.22	0.108	0.002	1.29	1.44
016940	Drill Core	3.15	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.66	<0.01	0.009	<0.001	<0.001	<0.01	2.37	0.054	<0.001	0.60	0.47
016941	Drill Core	5.59	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.54	<0.01	0.009	<0.001	<0.001	<0.01	2.20	0.039	<0.001	0.63	0.51
016942	Drill Core	5.07	<0.001	0.043	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.90	<0.01	0.013	<0.001	<0.001	<0.01	2.10	0.056	<0.001	0.74	0.75
016943	Drill Core	6.94	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.07	<0.01	0.012	<0.001	<0.001	<0.01	1.82	0.060	<0.001	0.74	1.07
016944	Drill Core	5.61	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.87	<0.01	0.010	<0.001	<0.001	<0.01	1.56	0.059	<0.001	0.61	0.88
016945	Drill Core	6.69	<0.001	0.072	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.00	<0.01	0.011	<0.001	<0.001	<0.01	2.02	0.057	<0.001	0.61	1.07
016946	Drill Core	3.15	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.91	<0.01	0.010	<0.001	<0.001	<0.01	1.39	0.057	<0.001	0.60	0.95
016947	Drill Core	3.56	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.01	<0.01	0.009	<0.001	<0.001	<0.01	1.25	0.062	<0.001	0.64	0.97
016948	Drill Core	6.47	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.87	<0.01	0.009	<0.001	<0.001	<0.01	2.30	0.061	<0.001	0.69	0.98
016949	Drill Core	5.99	<0.001	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.89	<0.01	0.013	<0.001	<0.001	<0.01	2.03	0.055	<0.001	0.70	1.20
016950	Drill Core	7.52	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.02	<0.01	0.010	<0.001	<0.001	<0.01	1.15	0.060	<0.001	0.65	1.24
016951	Drill Core	6.89	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.80	<0.01	0.007	<0.001	<0.001	<0.01	1.48	0.055	<0.001	0.61	1.10
016952	Drill Core	7.10	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.94	<0.01	0.007	<0.001	<0.001	<0.01	1.02	0.058	<0.001	0.50	1.03
016953	Drill Core	7.17	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.92	<0.01	0.010	<0.001	<0.001	<0.01	1.55	0.050	<0.001	0.62	1.17
016954	Drill Core	6.56	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.07	<0.01	0.010	<0.001	<0.001	<0.01	1.67	0.062	<0.001	0.82	1.46
016955	Drill Core	7.18	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.04	<0.01	0.007	<0.001	<0.001	<0.01	0.96	0.063	<0.001	0.53	1.12
016956	Drill Core	7.68	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.19	<0.01	0.011	<0.001	<0.001	<0.01	1.68	0.061	<0.001	0.74	1.57
016957	Rock	0.72	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.46	<0.01	0.004	<0.001	<0.001	<0.01	21.55	0.016	<0.001	11.62	0.03
016958	Drill Core	7.36	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.08	<0.01	0.008	<0.001	<0.001	<0.01	1.24	0.063	<0.001	0.58	1.27
016959	Drill Core	6.79	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.95	<0.01	0.007	<0.001	<0.001	<0.01	1.19	0.064	<0.001	0.55	1.22
016960	Drill Core	7.18	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.91	<0.01	0.009	<0.001	<0.001	<0.01	1.28	0.063	<0.001	0.64	1.28
016961	Drill Core	7.38	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.08	<0.01	0.008	<0.001	<0.001	<0.01	1.63	0.064	<0.001	0.74	1.48
016962	Drill Core	6.90	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.10	<0.01	0.008	<0.001	<0.001	<0.01	1.37	0.067	<0.001	0.70	1.16
016963	Drill Core	7.35	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.08	<0.01	0.010	<0.001	<0.001	<0.01	1.47	0.063	<0.001	0.66	1.23
016964	Drill Core	7.66	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.006	<0.001	<0.001	<0.01	1.03	0.064	<0.001	0.58	1.00
016965	Drill Core	5.90	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.77	<0.01	0.009	<0.001	<0.001	<0.01	1.34	0.053	<0.001	0.60	1.09
016966	Drill Core	6.06	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.008	<0.001	<0.001	<0.01	1.23	0.063	<0.001	0.64	1.11

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Project: RATERIA
Report Date: October 26, 2009

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CERTIFICATE OF ANALYSIS

VAN09005050.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
016937	Drill Core	0.02	0.23	<0.001	<0.001	<0.05
016938	Drill Core	0.03	0.28	<0.001	<0.001	<0.05
016939	Rock Pulp	0.09	0.30	<0.001	<0.001	1.89
016940	Drill Core	0.02	0.32	<0.001	<0.001	<0.05
016941	Drill Core	0.03	0.26	<0.001	<0.001	<0.05
016942	Drill Core	0.04	0.17	<0.001	<0.001	<0.05
016943	Drill Core	0.06	0.12	<0.001	<0.001	<0.05
016944	Drill Core	0.05	0.16	<0.001	<0.001	<0.05
016945	Drill Core	0.07	0.15	<0.001	<0.001	<0.05
016946	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
016947	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
016948	Drill Core	0.04	0.29	<0.001	<0.001	<0.05
016949	Drill Core	0.05	0.14	<0.001	<0.001	<0.05
016950	Drill Core	0.08	0.17	<0.001	<0.001	<0.05
016951	Drill Core	0.05	0.18	<0.001	<0.001	<0.05
016952	Drill Core	0.09	0.18	<0.001	<0.001	<0.05
016953	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
016954	Drill Core	0.07	0.16	<0.001	<0.001	<0.05
016955	Drill Core	0.12	0.19	<0.001	<0.001	<0.05
016956	Drill Core	0.09	0.15	<0.001	<0.001	<0.05
016957	Rock	<0.01	0.01	<0.001	<0.001	<0.05
016958	Drill Core	0.09	0.15	<0.001	<0.001	<0.05
016959	Drill Core	0.10	0.15	<0.001	<0.001	<0.05
016960	Drill Core	0.11	0.17	<0.001	<0.001	<0.05
016961	Drill Core	0.07	0.13	<0.001	<0.001	<0.05
016962	Drill Core	0.07	0.13	<0.001	<0.001	<0.05
016963	Drill Core	0.06	0.14	<0.001	<0.001	<0.05
016964	Drill Core	0.07	0.17	<0.001	<0.001	<0.05
016965	Drill Core	0.07	0.13	<0.001	<0.001	<0.05
016966	Drill Core	0.07	0.13	<0.001	<0.001	<0.05

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CERTIFICATE OF ANALYSIS

VAN09005050.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
016967	Drill Core	3.77	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.97	<0.01	0.009	<0.001	<0.001	<0.01	1.12	0.062	<0.001	0.66	1.13
016968	Drill Core	3.44	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.02	<0.01	0.008	<0.001	<0.001	<0.01	1.09	0.062	<0.001	0.64	1.12
016969	Drill Core	6.71	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.90	<0.01	0.008	<0.001	<0.001	<0.01	1.30	0.053	<0.001	0.61	1.16
016970	Drill Core	5.78	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.12	<0.01	0.011	<0.001	<0.001	<0.01	1.75	0.059	<0.001	0.80	1.25
016971	Drill Core	5.89	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.23	<0.01	0.012	<0.001	<0.001	<0.01	2.08	0.059	<0.001	0.86	1.37
016972	Drill Core	6.67	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.92	<0.01	0.018	<0.001	<0.001	<0.01	2.99	0.054	<0.001	0.70	1.38
016973	Drill Core	6.25	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.01	<0.01	0.021	<0.001	<0.001	<0.01	2.27	0.058	<0.001	0.72	1.40
016974	Drill Core	5.33	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.16	<0.01	0.019	<0.001	<0.001	<0.01	2.23	0.057	<0.001	0.83	1.46
016975	Drill Core	6.11	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.19	<0.01	0.017	<0.001	<0.001	<0.01	2.30	0.062	<0.001	0.94	1.48
016976	Rock	0.54	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.01	0.31	<0.01	0.296	<0.001	<0.001	<0.01	31.10	0.010	<0.001	5.21	0.14
016977	Drill Core	6.60	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.16	<0.01	0.012	<0.001	<0.001	<0.01	1.79	0.058	<0.001	0.86	1.49
016978	Drill Core	6.46	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.11	<0.01	0.018	<0.001	<0.001	<0.01	2.08	0.055	<0.001	0.62	1.31
016979	Drill Core	6.34	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.11	<0.01	0.015	<0.001	<0.001	<0.01	1.94	0.056	<0.001	0.73	1.39
016980	Drill Core	6.37	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.95	<0.01	0.012	<0.001	<0.001	<0.01	1.69	0.052	<0.001	0.85	1.39
016981	Drill Core	6.86	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.93	<0.01	0.011	<0.001	<0.001	<0.01	1.65	0.050	<0.001	0.83	1.42
016982	Rock Pulp	0.02	0.021	0.456	<0.01	<0.01	40	<0.001	<0.001	0.02	1.30	<0.01	0.016	<0.001	0.009	<0.01	0.97	0.028	0.002	0.07	0.30
016983	Drill Core	6.76	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.05	<0.01	0.014	<0.001	<0.001	<0.01	2.22	0.056	<0.001	0.85	1.41
016984	Drill Core	7.42	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.04	<0.01	0.013	<0.001	<0.001	<0.01	1.86	0.056	<0.001	0.82	1.45
016985	Drill Core	6.97	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.02	<0.01	0.017	<0.001	<0.001	<0.01	1.99	0.052	<0.001	0.66	1.19
016986	Drill Core	7.02	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.03	<0.01	0.011	<0.001	<0.001	<0.01	1.52	0.053	<0.001	0.71	1.19
016987	Drill Core	6.60	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.81	<0.01	0.006	<0.001	<0.001	<0.01	0.94	0.049	<0.001	0.52	0.91
016988	Drill Core	3.18	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.03	<0.01	0.008	<0.001	<0.001	<0.01	1.20	0.057	<0.001	0.59	1.08
016989	Drill Core	3.10	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.02	<0.01	0.007	<0.001	<0.001	<0.01	1.09	0.055	<0.001	0.55	0.97
016990	Drill Core	6.93	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.15	<0.01	0.010	<0.001	<0.001	<0.01	1.39	0.058	<0.001	0.58	1.09
016991	Drill Core	7.36	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.42	<0.01	0.008	<0.001	<0.001	<0.01	1.48	0.040	<0.001	0.41	0.69
016992	Drill Core	6.68	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.51	<0.01	0.011	<0.001	<0.001	<0.01	2.38	0.043	<0.001	0.44	0.83
016993	Drill Core	6.86	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.45	<0.01	0.012	<0.001	<0.001	<0.01	2.57	0.043	<0.001	0.46	0.80
016994	Drill Core	5.61	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.24	<0.01	0.012	<0.001	<0.001	<0.01	2.64	0.040	<0.001	0.43	0.73
016995	Drill Core	4.29	<0.001	0.030	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.37	<0.01	0.010	<0.001	<0.001	<0.01	2.60	0.046	<0.001	0.45	0.79
016996	Drill Core	5.95	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.84	<0.01	0.009	<0.001	<0.001	<0.01	2.69	0.034	<0.001	0.17	0.48

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Project: RATERIA
Report Date: October 26, 2009

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CERTIFICATE OF ANALYSIS

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Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
016967	Drill Core	0.07	0.15	<0.001	<0.001	<0.05
016968	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
016969	Drill Core	0.08	0.14	<0.001	<0.001	<0.05
016970	Drill Core	0.07	0.15	<0.001	<0.001	<0.05
016971	Drill Core	0.06	0.17	<0.001	<0.001	<0.05
016972	Drill Core	0.04	0.22	<0.001	<0.001	<0.05
016973	Drill Core	0.05	0.22	<0.001	<0.001	<0.05
016974	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
016975	Drill Core	0.05	0.15	<0.001	<0.001	<0.05
016976	Rock	<0.01	0.02	<0.001	<0.001	0.13
016977	Drill Core	0.06	0.14	<0.001	<0.001	<0.05
016978	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
016979	Drill Core	0.07	0.15	<0.001	<0.001	<0.05
016980	Drill Core	0.06	0.13	<0.001	<0.001	<0.05
016981	Drill Core	0.07	0.12	<0.001	<0.001	<0.05
016982	Rock Pulp	0.03	0.20	<0.001	<0.001	0.67
016983	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
016984	Drill Core	0.06	0.17	<0.001	<0.001	<0.05
016985	Drill Core	0.05	0.15	<0.001	<0.001	<0.05
016986	Drill Core	0.07	0.15	<0.001	<0.001	<0.05
016987	Drill Core	0.07	0.21	<0.001	<0.001	<0.05
016988	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
016989	Drill Core	0.07	0.13	<0.001	<0.001	<0.05
016990	Drill Core	0.07	0.11	<0.001	<0.001	<0.05
016991	Drill Core	0.05	0.23	<0.001	<0.001	<0.05
016992	Drill Core	0.04	0.25	<0.001	<0.001	<0.05
016993	Drill Core	0.04	0.27	<0.001	<0.001	<0.05
016994	Drill Core	0.03	0.29	<0.001	<0.001	<0.05
016995	Drill Core	0.03	0.34	<0.001	<0.001	<0.05
016996	Drill Core	0.03	0.31	<0.001	<0.001	<0.05

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VAN09005050.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
016997	Drill Core	7.09	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.72	<0.01	0.007	<0.001	<0.001	<0.01	1.34	0.043	<0.001	0.53	0.87
016998	Drill Core	7.13	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.61	<0.01	0.007	<0.001	<0.001	<0.01	1.28	0.028	<0.001	0.28	0.61
016999	Drill Core	6.36	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.29	<0.01	0.007	<0.001	<0.001	<0.01	1.45	0.037	<0.001	0.50	0.86
017000	Drill Core	6.83	<0.001	<0.001	<0.01	<0.01	2	<0.001	<0.001	0.03	1.05	<0.01	0.006	<0.001	<0.001	<0.01	1.38	0.031	<0.001	0.29	0.49
007201	Drill Core	7.08	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	0.99	<0.01	0.009	<0.001	<0.001	<0.01	1.97	0.025	<0.001	0.32	0.41
007202	Rock	0.33	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	0.03	<0.01	0.430	<0.001	<0.001	<0.01	38.90	0.005	<0.001	1.14	0.02
007203	Drill Core	7.07	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.44	<0.01	0.011	<0.001	<0.001	<0.01	2.85	0.037	<0.001	0.56	0.46
007204	Drill Core	6.16	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.66	<0.01	0.011	<0.001	<0.001	<0.01	2.31	0.050	<0.001	0.49	0.74
007205	Drill Core	6.79	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.80	<0.01	0.010	<0.001	<0.001	<0.01	2.95	0.053	<0.001	0.51	0.81
007206	Drill Core	6.85	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.53	<0.01	0.010	<0.001	<0.001	<0.01	2.70	0.051	<0.001	0.35	0.61
007207	Drill Core	3.21	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.07	2.34	<0.01	0.019	<0.001	<0.001	<0.01	3.58	0.068	<0.001	0.61	0.81
007208	Drill Core	3.03	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.84	<0.01	0.017	<0.001	<0.001	<0.01	3.06	0.061	<0.001	0.50	0.65
007209	Drill Core	6.86	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.71	<0.01	0.011	<0.001	<0.001	<0.01	1.44	0.050	<0.001	0.42	0.56
007210	Drill Core	6.59	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.73	<0.01	0.013	<0.001	<0.001	<0.01	1.24	0.046	<0.001	0.42	0.62
007211	Drill Core	6.74	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.89	<0.01	0.011	<0.001	<0.001	<0.01	1.63	0.050	<0.001	0.46	0.67
007212	Drill Core	6.32	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.03	<0.01	0.008	<0.001	<0.001	<0.01	1.32	0.058	<0.001	0.44	0.55
007213	Drill Core	7.20	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.73	<0.01	0.008	<0.001	<0.001	<0.01	1.13	0.047	<0.001	0.39	0.57
007214	Drill Core	7.22	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.74	<0.01	0.009	<0.001	<0.001	<0.01	1.66	0.049	<0.001	0.45	0.56
007215	Drill Core	5.82	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.59	<0.01	0.010	<0.001	<0.001	<0.01	2.27	0.046	<0.001	0.49	0.54
007216	Drill Core	3.10	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.69	<0.01	0.009	<0.001	<0.001	<0.01	1.60	0.047	<0.001	0.48	0.77
007217	Drill Core	3.12	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.64	<0.01	0.009	<0.001	<0.001	<0.01	1.64	0.046	<0.001	0.44	0.72
007218	Drill Core	6.87	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.38	<0.01	0.010	<0.001	<0.001	<0.01	1.34	0.063	<0.001	0.54	0.77
007219	Drill Core	6.95	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.89	<0.01	0.011	<0.001	<0.001	<0.01	1.08	0.049	<0.001	0.46	0.96
007220	Drill Core	6.85	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.79	<0.01	0.009	<0.001	<0.001	<0.01	1.19	0.052	<0.001	0.43	0.81
007221	Drill Core	7.10	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.61	<0.01	0.011	<0.001	<0.001	<0.01	2.38	0.048	<0.001	0.46	0.45
007222	Drill Core	6.38	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.73	<0.01	0.011	<0.001	<0.001	<0.01	1.27	0.049	<0.001	0.42	0.56
007223	Drill Core	6.96	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.88	<0.01	0.011	<0.001	<0.001	<0.01	1.53	0.050	<0.001	0.46	0.54
007224	Rock	0.40	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.50	<0.01	0.004	<0.001	<0.001	<0.01	20.86	0.014	<0.001	11.61	0.05
007225	Drill Core	5.94	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.86	<0.01	0.011	<0.001	<0.001	<0.01	2.15	0.037	<0.001	0.54	0.56
007226	Drill Core	6.85	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.01	<0.01	0.010	<0.001	<0.001	<0.01	2.02	0.046	<0.001	0.57	0.57

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Project: RATERIA
Report Date: October 26, 2009

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CERTIFICATE OF ANALYSIS

VAN09005050.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
016997	Drill Core	0.06	0.16	<0.001	<0.001	<0.05
016998	Drill Core	0.04	0.19	<0.001	<0.001	<0.05
016999	Drill Core	0.05	0.18	<0.001	<0.001	<0.05
017000	Drill Core	0.05	0.14	<0.001	<0.001	<0.05
007201	Drill Core	0.05	0.24	<0.001	<0.001	<0.05
007202	Rock	<0.01	<0.01	<0.001	<0.001	<0.05
007203	Drill Core	0.03	0.30	<0.001	<0.001	<0.05
007204	Drill Core	0.04	0.26	<0.001	<0.001	<0.05
007205	Drill Core	0.04	0.29	<0.001	<0.001	<0.05
007206	Drill Core	0.03	0.33	<0.001	<0.001	<0.05
007207	Drill Core	0.03	0.32	<0.001	<0.001	<0.05
007208	Drill Core	0.03	0.28	<0.001	<0.001	<0.05
007209	Drill Core	0.05	0.21	<0.001	<0.001	<0.05
007210	Drill Core	0.04	0.19	<0.001	<0.001	<0.05
007211	Drill Core	0.05	0.19	<0.001	<0.001	<0.05
007212	Drill Core	0.04	0.15	<0.001	<0.001	<0.05
007213	Drill Core	0.06	0.13	<0.001	<0.001	<0.05
007214	Drill Core	0.04	0.14	<0.001	<0.001	<0.05
007215	Drill Core	0.05	0.19	<0.001	<0.001	<0.05
007216	Drill Core	0.05	0.16	<0.001	<0.001	<0.05
007217	Drill Core	0.05	0.15	<0.001	<0.001	<0.05
007218	Drill Core	0.06	0.13	<0.001	<0.001	<0.05
007219	Drill Core	0.08	0.14	<0.001	<0.001	<0.05
007220	Drill Core	0.05	0.12	<0.001	<0.001	<0.05
007221	Drill Core	0.04	0.22	<0.001	<0.001	<0.05
007222	Drill Core	0.05	0.13	<0.001	<0.001	<0.05
007223	Drill Core	0.06	0.13	<0.001	<0.001	<0.05
007224	Rock	<0.01	0.03	<0.001	<0.001	<0.05
007225	Drill Core	0.04	0.18	<0.001	<0.001	<0.05
007226	Drill Core	0.05	0.15	<0.001	<0.001	<0.05

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Project: RATERIA
 Report Date: October 26, 2009

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CERTIFICATE OF ANALYSIS

VAN09005050.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
007227	Drill Core	5.45	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.56	<0.01	0.012	<0.001	<0.001	<0.01	2.17	0.041	<0.001	0.45	0.50
007228	Rock Pulp	0.04	0.049	0.314	<0.01	<0.01	2	0.002	0.002	0.06	5.07	<0.01	0.014	<0.001	<0.001	<0.01	4.23	0.108	0.002	1.28	1.40
007229	Drill Core	5.28	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.08	<0.01	0.013	<0.001	<0.001	<0.01	2.22	0.030	<0.001	0.52	0.57
007230	Drill Core	6.82	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.57	<0.01	0.012	<0.001	<0.001	<0.01	2.16	0.051	<0.001	0.41	0.72
007231	Drill Core	5.93	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.59	<0.01	0.012	<0.001	<0.001	<0.01	2.03	0.050	<0.001	0.41	0.70
007232	Drill Core	6.81	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.67	<0.01	0.013	<0.001	<0.001	<0.01	1.39	0.053	<0.001	0.47	0.87
007233	Drill Core	6.60	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.72	<0.01	0.013	<0.001	<0.001	<0.01	2.36	0.080	<0.001	0.81	1.12
007234	Drill Core	7.31	<0.001	<0.001	<0.01	<0.01	<2	<0.001	0.001	0.08	3.07	<0.01	0.016	<0.001	<0.001	<0.01	4.75	0.089	<0.001	0.81	0.72
007235	Drill Core	5.74	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.28	<0.01	0.013	<0.001	<0.001	<0.01	2.69	0.066	<0.001	0.53	0.70
007236	Drill Core	6.71	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	3.25	<0.01	0.014	<0.001	<0.001	<0.01	2.20	0.093	<0.001	0.82	1.16
007237	Rock	0.44	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.46	<0.01	0.004	<0.001	<0.001	<0.01	20.81	0.014	<0.001	11.24	0.03
007238	Drill Core	5.96	<0.001	0.084	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.42	<0.01	0.013	<0.001	<0.001	<0.01	2.00	0.050	<0.001	0.42	0.84
007239	Drill Core	5.99	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.59	<0.01	0.013	<0.001	<0.001	<0.01	1.26	0.051	<0.001	0.49	0.91
007240	Drill Core	6.74	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.52	<0.01	0.010	<0.001	<0.001	<0.01	2.00	0.039	<0.001	0.50	0.49
007241	Drill Core	6.10	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.64	<0.01	0.011	<0.001	<0.001	<0.01	1.56	0.045	<0.001	0.51	0.58
007242	Drill Core	6.47	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.70	<0.01	0.010	<0.001	<0.001	<0.01	1.61	0.047	<0.001	0.49	0.56
007243	Drill Core	7.10	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.79	<0.01	0.010	<0.001	<0.001	<0.01	1.57	0.046	<0.001	0.46	0.61
007244	Drill Core	6.09	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.70	<0.01	0.012	<0.001	<0.001	<0.01	1.98	0.050	<0.001	0.39	0.57
007245	Drill Core	5.37	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.05	1.35	<0.01	0.012	<0.001	<0.001	<0.01	3.35	0.030	<0.001	0.46	0.41
007246	Drill Core	2.79	0.014	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.35	<0.01	0.005	<0.001	<0.001	<0.01	1.60	0.006	<0.001	0.03	0.26
007247	Drill Core	2.58	0.010	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.01	0.38	<0.01	0.005	<0.001	<0.001	<0.01	1.55	0.007	<0.001	0.02	0.28
007248	Drill Core	6.99	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.30	<0.01	0.005	<0.001	<0.001	<0.01	1.23	0.004	<0.001	0.04	0.27
007249	Drill Core	5.84	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.35	<0.01	0.005	<0.001	<0.001	<0.01	1.09	0.002	<0.001	0.09	0.30
007250	Drill Core	6.03	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.60	<0.01	0.005	<0.001	<0.001	<0.01	1.23	0.002	<0.001	0.22	0.37
007251	Drill Core	6.42	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.48	<0.01	0.005	<0.001	<0.001	<0.01	1.10	0.002	<0.001	0.14	0.32
007252	Drill Core	6.64	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.01	0.48	<0.01	0.004	<0.001	<0.001	<0.01	0.85	0.009	<0.001	0.08	0.29
007253	Drill Core	5.20	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.52	<0.01	0.004	<0.001	<0.001	<0.01	1.10	0.004	<0.001	0.13	0.32
007254	Drill Core	3.61	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.44	<0.01	0.004	<0.001	<0.001	<0.01	0.92	<0.001	<0.001	0.10	0.40
007255	Drill Core	6.25	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.40	<0.01	0.005	<0.001	<0.001	<0.01	1.21	0.002	<0.001	0.11	0.38
007256	Drill Core	5.13	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.01	0.33	<0.01	0.004	<0.001	<0.001	<0.01	0.97	0.002	<0.001	0.05	0.31

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Project: RATERIA
Report Date: October 26, 2009

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CERTIFICATE OF ANALYSIS

VAN09005050.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
007227	Drill Core	0.04	0.19	<0.001	<0.001	<0.05
007228	Rock Pulp	0.08	0.29	<0.001	<0.001	1.91
007229	Drill Core	0.05	0.12	<0.001	<0.001	<0.05
007230	Drill Core	0.04	0.14	<0.001	<0.001	<0.05
007231	Drill Core	0.05	0.15	<0.001	<0.001	<0.05
007232	Drill Core	0.06	0.17	<0.001	<0.001	<0.05
007233	Drill Core	0.04	0.27	<0.001	<0.001	<0.05
007234	Drill Core	0.03	0.38	<0.001	<0.001	<0.05
007235	Drill Core	0.04	0.25	<0.001	<0.001	<0.05
007236	Drill Core	0.05	0.13	<0.001	<0.001	<0.05
007237	Rock	<0.01	0.02	<0.001	<0.001	<0.05
007238	Drill Core	0.04	0.19	<0.001	<0.001	<0.05
007239	Drill Core	0.06	0.16	<0.001	<0.001	<0.05
007240	Drill Core	0.06	0.12	<0.001	<0.001	<0.05
007241	Drill Core	0.05	0.12	<0.001	<0.001	<0.05
007242	Drill Core	0.05	0.11	<0.001	<0.001	<0.05
007243	Drill Core	0.05	0.20	<0.001	<0.001	<0.05
007244	Drill Core	0.05	0.14	<0.001	<0.001	<0.05
007245	Drill Core	0.04	0.15	<0.001	<0.001	<0.05
007246	Drill Core	0.03	0.19	<0.001	<0.001	<0.05
007247	Drill Core	0.04	0.18	<0.001	<0.001	<0.05
007248	Drill Core	0.03	0.25	<0.001	<0.001	<0.05
007249	Drill Core	0.02	0.23	<0.001	<0.001	<0.05
007250	Drill Core	0.02	0.13	<0.001	<0.001	<0.05
007251	Drill Core	0.02	0.14	<0.001	<0.001	<0.05
007252	Drill Core	0.04	0.16	<0.001	<0.001	<0.05
007253	Drill Core	0.04	0.17	<0.001	<0.001	<0.05
007254	Drill Core	0.02	0.17	<0.001	<0.001	<0.05
007255	Drill Core	0.02	0.27	<0.001	<0.001	<0.05
007256	Drill Core	0.03	0.21	<0.001	<0.001	<0.05

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.



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 Vancouver BC V6E 3X2 Canada

Project: RATERIA
 Report Date: October 26, 2009

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CERTIFICATE OF ANALYSIS

VAN09005050.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
007257	Drill Core	7.07	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.41	<0.01	0.005	<0.001	<0.001	<0.01	1.23	0.004	<0.001	0.06	0.30
007258	Rock	0.61	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.35	<0.01	0.121	<0.001	<0.001	<0.01	25.13	0.014	<0.001	9.31	0.10
007259	Drill Core	3.32	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.01	0.46	<0.01	0.005	<0.001	<0.001	<0.01	0.90	0.006	<0.001	0.05	0.32



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Project: RATERIA

Report Date: October 26, 2009

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CERTIFICATE OF ANALYSIS

VAN09005050.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
007257	Drill Core	0.04	0.14	<0.001	<0.001	<0.05
007258	Rock	<0.01	0.07	<0.001	<0.001	<0.05
007259	Drill Core	0.04	0.10	<0.001	<0.001	<0.05



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Project: RATERIA
 Report Date: October 26, 2009

Page: 1 of 2 Part 1

QUALITY CONTROL REPORT

VAN09005050.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
Pulp Duplicates																					
016959	Drill Core	6.79	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.95	<0.01	0.007	<0.001	<0.001	<0.01	1.19	0.064	<0.001	0.55	1.22
REP 016959	QC		<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.93	<0.01	0.007	<0.001	<0.001	<0.01	1.16	0.063	<0.001	0.53	1.18
016979	Drill Core	6.34	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.11	<0.01	0.015	<0.001	<0.001	<0.01	1.94	0.056	<0.001	0.73	1.39
REP 016979	QC		<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.09	<0.01	0.015	<0.001	<0.001	<0.01	1.94	0.054	<0.001	0.73	1.37
REP 007215	QC		<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.64	<0.01	0.010	<0.001	<0.001	<0.01	2.34	0.047	<0.001	0.50	0.56
Core Reject Duplicates																					
016945	Drill Core	6.69	<0.001	0.072	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.00	<0.01	0.011	<0.001	<0.001	<0.01	2.02	0.057	<0.001	0.61	1.07
DUP 016945	QC		<0.001	0.085	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.97	<0.01	0.011	<0.001	<0.001	<0.01	1.99	0.058	<0.001	0.61	1.03
016980	Drill Core	6.37	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.95	<0.01	0.012	<0.001	<0.001	<0.01	1.69	0.052	<0.001	0.85	1.39
DUP 016980	QC		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.00	<0.01	0.013	<0.001	<0.001	<0.01	1.71	0.052	<0.001	0.88	1.46
007215	Drill Core	5.82	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.59	<0.01	0.010	<0.001	<0.001	<0.01	2.27	0.046	<0.001	0.49	0.54
DUP 007215	QC		<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.58	<0.01	0.010	<0.001	<0.001	<0.01	2.31	0.045	<0.001	0.50	0.51
007250	Drill Core	6.03	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.60	<0.01	0.005	<0.001	<0.001	<0.01	1.23	0.002	<0.001	0.22	0.37
DUP 007250	QC		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.53	<0.01	0.005	<0.001	<0.001	<0.01	1.15	<0.001	<0.001	0.20	0.30
Reference Materials																					
STD R4A	Standard		0.063	0.505	1.55	3.29	87	0.355	0.040	0.06	23.60	0.02	0.004	0.018	0.018	<0.01	0.96	0.042	0.012	0.86	1.27
STD R4A	Standard		0.063	0.510	1.56	3.32	88	0.360	0.041	0.07	23.76	0.02	0.004	0.018	0.018	<0.01	0.97	0.044	0.012	0.86	1.28
STD R4A	Standard		0.062	0.509	1.56	3.30	87	0.357	0.040	0.06	23.14	0.03	0.004	0.018	0.014	<0.01	0.97	0.043	0.012	0.85	1.27
STD R4A	Standard		0.062	0.508	1.55	3.29	88	0.356	0.040	0.06	23.12	0.02	0.004	0.018	0.014	<0.01	0.96	0.043	0.013	0.85	1.27
STD R4A	Standard		0.061	0.506	1.54	3.25	87	0.347	0.040	0.06	23.15	0.03	0.003	0.018	0.014	<0.01	0.95	0.043	0.012	0.84	1.25
STD R4A	Standard		0.062	0.508	1.55	3.27	86	0.352	0.040	0.06	23.26	0.03	0.004	0.017	0.014	<0.01	0.96	0.043	0.012	0.85	1.27
STD R4A	Standard		0.063	0.517	1.61	3.35	89	0.369	0.041	0.06	23.41	0.03	0.004	0.018	0.015	<0.01	0.98	0.044	0.013	0.87	1.28
STD R4A	Standard		0.063	0.512	1.60	3.33	87	0.364	0.041	0.06	23.36	0.02	0.003	0.018	0.014	<0.01	0.96	0.044	0.013	0.86	1.27
STD R4A Expected			0.062	0.502	1.5	3.31	86	0.334	0.04	0.06	23.38	0.023	0.004	0.017	0.0135	0.0024	0.94	0.042	0.012	0.83	1.25
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01



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Project: RATERIA
Report Date: October 26, 2009

Page: 1 of 2 **Part** 2

QUALITY CONTROL REPORT

VAN09005050.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
Pulp Duplicates						
016959	Drill Core	0.10	0.15	<0.001	<0.001	<0.05
REP 016959	QC	0.08	0.14	<0.001	<0.001	<0.05
016979	Drill Core	0.07	0.15	<0.001	<0.001	<0.05
REP 016979	QC	0.07	0.15	<0.001	<0.001	<0.05
REP 007215	QC	0.05	0.20	<0.001	<0.001	<0.05
Core Reject Duplicates						
016945	Drill Core	0.07	0.15	<0.001	<0.001	<0.05
DUP 016945	QC	0.06	0.14	<0.001	<0.001	<0.05
016980	Drill Core	0.06	0.13	<0.001	<0.001	<0.05
DUP 016980	QC	0.07	0.14	<0.001	<0.001	<0.05
007215	Drill Core	0.05	0.19	<0.001	<0.001	<0.05
DUP 007215	QC	0.04	0.19	<0.001	<0.001	<0.05
007250	Drill Core	0.02	0.13	<0.001	<0.001	<0.05
DUP 007250	QC	0.02	0.12	<0.001	<0.001	<0.05
Reference Materials						
STD R4A	Standard	0.06	0.51	<0.001	<0.001	16.35
STD R4A	Standard	0.06	0.52	<0.001	0.001	16.28
STD R4A	Standard	0.07	0.50	<0.001	<0.001	16.32
STD R4A	Standard	0.07	0.51	<0.001	<0.001	16.35
STD R4A	Standard	0.07	0.51	<0.001	<0.001	16.13
STD R4A	Standard	0.07	0.50	<0.001	0.001	16.33
STD R4A	Standard	0.07	0.52	<0.001	<0.001	16.43
STD R4A	Standard	0.07	0.51	<0.001	0.001	16.39
STD R4A Expected		0.07	0.51	0.0011	0.001	16.7
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05



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Project: RATERIA
Report Date: October 26, 2009

Page: 2 of 2 **Part** 1

QUALITY CONTROL REPORT

VAN09005050.1

		WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR		
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
		kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
		0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
Prep Wash																						
G1	Prep Blank	<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.01	<0.01	0.007	<0.001	<0.001	<0.01	0.67	0.080	<0.001	0.69	1.06	
G1	Prep Blank	<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.12	<0.01	0.007	<0.001	<0.001	<0.01	0.62	0.080	<0.001	0.66	1.05	



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Project: RATERIA

Report Date: October 26, 2009

Page: 2 of 2 Part 2

QUALITY CONTROL REPORT

VAN09005050.1

		7AR	7AR	7AR	7AR	7AR
		Na	K	W	Hg	S
		%	%	%	%	%
		0.01	0.01	0.001	0.001	0.05
Prep Wash						
G1	Prep Blank	0.09	0.57	<0.001	<0.001	<0.05
G1	Prep Blank	0.09	0.58	<0.001	<0.001	<0.05



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Submitted By: David Blann
 Receiving Lab: Canada-Vancouver
 Received: October 26, 2009
 Report Date: November 23, 2009
 Page: 1 of 5

CERTIFICATE OF ANALYSIS

VAN09005200.2

CLIENT JOB INFORMATION

Project: RATERIA
 Shipment ID:
 P.O. Number
 Number of Samples: 106

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200	103	Crush split and pulverize 250g drill core to 200 mesh			VAN
7AR2	106	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN
G601	48	Fire Assay fusion Au by ICP-ES	30	Completed	VAN

SAMPLE DISPOSAL

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

ADDITIONAL COMMENTS

Version 2: Group 6 Au included

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: Happy Creek Minerals Ltd.
 Suite 2300 - 1066 W. Hastings St.
 Vancouver BC V6E 3X2
 Canada

CC: Paul Reynold



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



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Project: RATERIA
Report Date: November 23, 2009

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CERTIFICATE OF ANALYSIS

VAN09005200.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
007260	Drill Core	6.03	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.97	<0.01	0.004	<0.001	<0.001	<0.01	0.69	0.043	0.001	0.59	0.88
007261	Drill Core	5.06	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.93	<0.01	0.004	<0.001	<0.001	<0.01	0.81	0.045	0.001	0.57	0.89
007262	Rock Pulp	0.02	0.022	0.466	<0.01	<0.01	42	<0.001	<0.001	0.02	1.27	<0.01	0.016	<0.001	0.009	<0.01	0.93	0.028	0.002	0.07	0.32
007263	Drill Core	4.69	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.06	<0.01	0.004	<0.001	<0.001	<0.01	0.74	0.048	<0.001	0.60	0.87
007264	Drill Core	3.33	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.02	<0.01	0.006	<0.001	<0.001	<0.01	1.08	0.053	<0.001	0.60	0.95
007265	Drill Core	6.14	<0.001	0.022	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.22	<0.01	0.004	<0.001	<0.001	<0.01	0.77	0.052	0.001	0.62	0.86
007266	Drill Core	2.25	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.03	<0.01	0.007	<0.001	<0.001	<0.01	1.07	0.048	0.001	0.66	1.04
007267	Drill Core	2.53	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.19	<0.01	0.006	<0.001	<0.001	<0.01	0.91	0.048	0.001	0.67	1.02
007268	Drill Core	5.07	<0.001	0.039	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.07	<0.01	0.006	<0.001	<0.001	<0.01	1.09	0.050	<0.001	0.59	0.96
007269	Drill Core	6.27	<0.001	0.027	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.007	<0.001	<0.001	<0.01	1.24	0.048	0.001	0.72	1.15
007270	Drill Core	6.51	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.08	<0.01	0.006	<0.001	<0.001	<0.01	1.15	0.049	<0.001	0.60	0.93
007271	Drill Core	7.89	0.002	0.096	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.006	<0.001	<0.001	<0.01	1.44	0.048	0.001	0.55	0.92
007272	Drill Core	5.40	0.005	0.155	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.63	<0.01	0.009	<0.001	<0.001	<0.01	2.48	0.049	<0.001	0.30	0.70
007273	Drill Core	6.15	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.91	<0.01	0.005	<0.001	<0.001	<0.01	0.90	0.047	<0.001	0.52	0.86
007274	Drill Core	5.65	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.89	<0.01	0.006	<0.001	<0.001	<0.01	0.98	0.048	<0.001	0.55	0.95
007275	Drill Core	7.31	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.87	<0.01	0.005	<0.001	<0.001	<0.01	0.91	0.051	<0.001	0.49	0.93
007276	Rock	0.49	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.55	<0.01	0.004	<0.001	<0.001	<0.01	21.72	0.019	<0.001	11.57	0.02
007277	Drill Core	6.53	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.86	<0.01	0.008	<0.001	<0.001	<0.01	1.21	0.052	<0.001	0.61	1.20
007278	Drill Core	7.01	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.13	<0.01	0.006	<0.001	<0.001	<0.01	0.95	0.055	<0.001	0.55	0.88
007279	Drill Core	7.23	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.006	<0.001	<0.001	<0.01	1.01	0.058	<0.001	0.59	1.10
007280	Drill Core	7.19	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.72	<0.01	0.004	<0.001	<0.001	<0.01	0.66	0.044	<0.001	0.43	0.71
007281	Drill Core	7.12	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.84	<0.01	0.005	<0.001	<0.001	<0.01	1.04	0.050	<0.001	0.53	0.86
007282	Drill Core	5.48	<0.001	0.054	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.82	<0.01	0.010	<0.001	<0.001	<0.01	1.42	0.049	<0.001	0.72	1.25
007283	Drill Core	3.24	0.014	1.929	<0.01	<0.01	9	0.001	<0.001	0.05	2.71	<0.01	0.009	<0.001	<0.001	<0.01	2.15	0.070	<0.001	1.10	1.47
007284	Drill Core	3.00	<0.001	0.114	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.16	<0.01	0.007	<0.001	<0.001	<0.01	1.46	0.057	<0.001	0.69	1.06
007285	Drill Core	7.38	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.88	<0.01	0.005	<0.001	<0.001	<0.01	0.82	0.051	<0.001	0.51	0.77
007286	Drill Core	7.88	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.005	<0.001	<0.001	<0.01	0.94	0.054	<0.001	0.49	0.76
007287	Drill Core	3.32	<0.001	0.168	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.009	<0.001	<0.001	<0.01	1.76	0.052	<0.001	0.51	0.88
007288	Drill Core	6.76	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.96	<0.01	0.004	<0.001	<0.001	<0.01	0.78	0.050	<0.001	0.52	0.88
007289	Drill Core	6.87	<0.001	0.032	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.00	<0.01	0.005	<0.001	<0.001	<0.01	0.83	0.048	<0.001	0.53	0.83



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Project: RATERIA
Report Date: November 23, 2009

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CERTIFICATE OF ANALYSIS

VAN09005200.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
007260	Drill Core	0.07	0.30	<0.001	<0.001	<0.05	N.A.
007261	Drill Core	0.07	0.26	<0.001	<0.001	<0.05	N.A.
007262	Rock Pulp	0.03	0.21	<0.001	<0.001	0.70	N.A.
007263	Drill Core	0.07	0.25	<0.001	<0.001	<0.05	N.A.
007264	Drill Core	0.06	0.14	<0.001	<0.001	<0.05	N.A.
007265	Drill Core	0.07	0.26	<0.001	<0.001	<0.05	N.A.
007266	Drill Core	0.06	0.16	<0.001	<0.001	<0.05	N.A.
007267	Drill Core	0.06	0.17	<0.001	<0.001	<0.05	N.A.
007268	Drill Core	0.06	0.16	<0.001	<0.001	<0.05	<0.01
007269	Drill Core	0.05	0.16	<0.001	<0.001	<0.05	<0.01
007270	Drill Core	0.06	0.17	<0.001	<0.001	<0.05	<0.01
007271	Drill Core	0.05	0.21	<0.001	<0.001	<0.05	0.06
007272	Drill Core	0.04	0.19	<0.001	<0.001	0.06	0.05
007273	Drill Core	0.07	0.16	<0.001	<0.001	<0.05	<0.01
007274	Drill Core	0.07	0.21	<0.001	<0.001	<0.05	N.A.
007275	Drill Core	0.09	0.20	<0.001	<0.001	<0.05	N.A.
007276	Rock	<0.01	0.02	<0.001	<0.001	<0.05	N.A.
007277	Drill Core	0.08	0.17	<0.001	<0.001	<0.05	N.A.
007278	Drill Core	0.08	0.19	<0.001	<0.001	<0.05	N.A.
007279	Drill Core	0.08	0.22	<0.001	<0.001	<0.05	N.A.
007280	Drill Core	0.07	0.18	<0.001	<0.001	<0.05	N.A.
007281	Drill Core	0.07	0.17	<0.001	<0.001	<0.05	N.A.
007282	Drill Core	0.05	0.14	<0.001	<0.001	<0.05	0.01
007283	Drill Core	0.04	0.13	<0.001	<0.001	0.54	0.53
007284	Drill Core	0.07	0.12	<0.001	<0.001	<0.05	0.01
007285	Drill Core	0.09	0.20	<0.001	<0.001	<0.05	<0.01
007286	Drill Core	0.08	0.16	<0.001	<0.001	<0.05	<0.01
007287	Drill Core	0.05	0.09	<0.001	<0.001	0.05	0.05
007288	Drill Core	0.10	0.23	<0.001	<0.001	<0.05	0.02
007289	Drill Core	0.08	0.22	<0.001	<0.001	<0.05	0.03



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CERTIFICATE OF ANALYSIS

VAN09005200.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
007290	Drill Core	3.16	0.002	0.325	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.93	<0.01	0.009	<0.001	<0.001	<0.01	1.31	0.047	<0.001	0.57	0.96
007291	Drill Core	3.51	<0.001	0.050	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.15	<0.01	0.007	<0.001	<0.001	<0.01	0.91	0.053	<0.001	0.58	1.03
007292	Rock	0.59	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.50	<0.01	0.004	<0.001	<0.001	<0.01	20.72	0.015	<0.001	11.67	0.02
007293	Drill Core	6.66	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.88	<0.01	0.004	<0.001	<0.001	<0.01	0.70	0.044	<0.001	0.48	0.80
007294	Drill Core	6.88	<0.001	0.074	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.98	<0.01	0.005	<0.001	<0.001	<0.01	0.82	0.049	<0.001	0.55	0.87
007295	Drill Core	6.98	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.09	<0.01	0.005	<0.001	<0.001	<0.01	0.67	0.049	<0.001	0.59	0.90
007296	Drill Core	7.04	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.11	<0.01	0.004	<0.001	<0.001	<0.01	0.71	0.051	<0.001	0.55	0.86
007297	Drill Core	7.19	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.18	<0.01	0.005	<0.001	<0.001	<0.01	0.95	0.050	0.001	0.56	0.82
007298	Drill Core	6.74	<0.001	0.062	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.39	<0.01	0.009	<0.001	<0.001	<0.01	1.55	0.052	0.001	0.68	0.98
007299	Drill Core	3.35	<0.001	0.128	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.27	<0.01	0.010	<0.001	<0.001	<0.01	1.96	0.053	<0.001	0.56	1.05
007300	Drill Core	2.79	<0.001	0.611	<0.01	<0.01	3	<0.001	<0.001	0.04	2.31	<0.01	0.008	<0.001	<0.001	<0.01	2.46	0.051	<0.001	0.58	1.02
007301	Drill Core	4.07	<0.001	0.369	<0.01	<0.01	<2	<0.001	<0.001	0.04	3.37	<0.01	0.006	<0.001	<0.001	<0.01	1.32	0.075	<0.001	0.99	1.29
007302	Drill Core	6.59	<0.001	0.021	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.18	<0.01	0.007	<0.001	<0.001	<0.01	1.60	0.049	<0.001	0.55	0.83
007303	Drill Core	7.32	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.15	<0.01	0.010	<0.001	<0.001	<0.01	1.79	0.049	<0.001	0.74	1.16
007304	Drill Core	6.89	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.10	<0.01	0.005	<0.001	<0.001	<0.01	0.92	0.052	<0.001	0.55	0.86
007305	Rock Pulp	0.02	0.021	0.463	<0.01	<0.01	39	<0.001	<0.001	0.02	1.26	<0.01	0.015	<0.001	0.008	<0.01	0.98	0.027	0.002	0.07	0.31
007306	Drill Core	6.87	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.33	<0.01	0.006	<0.001	<0.001	<0.01	0.94	0.058	0.001	0.57	0.88
007307	Drill Core	7.46	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.17	<0.01	0.005	<0.001	<0.001	<0.01	0.98	0.052	<0.001	0.58	1.00
007308	Drill Core	7.60	0.002	0.058	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.36	<0.01	0.006	<0.001	<0.001	<0.01	1.01	0.047	0.001	0.68	1.05
007309	Drill Core	3.20	<0.001	0.046	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.21	<0.01	0.010	<0.001	<0.001	<0.01	1.55	0.050	<0.001	0.69	1.19
007310	Drill Core	3.26	<0.001	0.050	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.01	<0.01	0.010	<0.001	<0.001	<0.01	1.48	0.048	0.001	0.67	1.18
007311	Drill Core	7.28	<0.001	0.085	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.28	<0.01	0.006	<0.001	<0.001	<0.01	0.90	0.049	<0.001	0.57	0.84
007312	Drill Core	7.45	<0.001	0.044	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.19	<0.01	0.008	<0.001	<0.001	<0.01	1.23	0.052	<0.001	0.53	0.85
007313	Drill Core	6.77	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.14	<0.01	0.008	<0.001	<0.001	<0.01	2.53	0.050	<0.001	0.80	0.78
007314	Drill Core	4.76	0.021	0.029	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.12	<0.01	0.010	<0.001	<0.001	<0.01	2.88	0.049	<0.001	0.66	0.87
007315	Drill Core	4.87	0.092	0.002	<0.01	<0.01	<2	<0.001	0.001	0.09	3.16	<0.01	0.030	<0.001	<0.001	<0.01	5.50	0.046	<0.001	1.21	2.11
007316	Rock	0.68	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.45	<0.01	0.003	<0.001	<0.001	<0.01	20.98	0.015	<0.001	11.30	0.01
007317	Drill Core	7.04	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.16	<0.01	0.005	<0.001	<0.001	<0.01	1.24	0.047	0.001	0.67	0.86
007318	Drill Core	3.43	0.013	0.093	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.16	<0.01	0.005	<0.001	<0.001	<0.01	2.24	0.046	<0.001	0.74	0.96
007319	Drill Core	3.66	0.008	0.166	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.20	<0.01	0.005	<0.001	<0.001	<0.01	1.57	0.048	<0.001	0.81	1.01

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.



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Report Date: November 23, 2009

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CERTIFICATE OF ANALYSIS

VAN09005200.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
007290	Drill Core	0.06	0.16	<0.001	<0.001	0.11	0.06
007291	Drill Core	0.08	0.20	<0.001	<0.001	<0.05	0.02
007292	Rock	<0.01	0.01	<0.001	<0.001	<0.05	N.A.
007293	Drill Core	0.10	0.23	<0.001	<0.001	<0.05	<0.01
007294	Drill Core	0.09	0.20	<0.001	<0.001	<0.05	0.01
007295	Drill Core	0.10	0.28	<0.001	<0.001	<0.05	<0.01
007296	Drill Core	0.11	0.26	<0.001	<0.001	<0.05	<0.01
007297	Drill Core	0.11	0.31	<0.001	<0.001	<0.05	<0.01
007298	Drill Core	0.06	0.18	<0.001	<0.001	<0.05	0.01
007299	Drill Core	0.08	0.16	<0.001	<0.001	<0.05	0.02
007300	Drill Core	0.05	0.14	<0.001	<0.001	0.20	0.05
007301	Drill Core	0.07	0.15	<0.001	<0.001	0.11	0.09
007302	Drill Core	0.06	0.15	<0.001	<0.001	<0.05	<0.01
007303	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	<0.01
007304	Drill Core	0.08	0.21	<0.001	<0.001	<0.05	<0.01
007305	Rock Pulp	0.03	0.20	<0.001	<0.001	0.67	N.A.
007306	Drill Core	0.11	0.25	<0.001	<0.001	<0.05	<0.01
007307	Drill Core	0.09	0.21	<0.001	<0.001	<0.05	<0.01
007308	Drill Core	0.07	0.21	<0.001	<0.001	<0.05	<0.01
007309	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	<0.01
007310	Drill Core	0.08	0.14	<0.001	<0.001	<0.05	0.02
007311	Drill Core	0.08	0.21	<0.001	<0.001	<0.05	0.02
007312	Drill Core	0.08	0.18	<0.001	<0.001	<0.05	0.01
007313	Drill Core	0.04	0.15	<0.001	<0.001	<0.05	<0.01
007314	Drill Core	0.03	0.18	<0.001	<0.001	<0.05	<0.01
007315	Drill Core	0.02	0.37	<0.001	<0.001	0.06	<0.01
007316	Rock	<0.01	<0.01	<0.001	<0.001	<0.05	N.A.
007317	Drill Core	0.07	0.20	<0.001	<0.001	<0.05	<0.01
007318	Drill Core	0.06	0.16	<0.001	<0.001	<0.05	0.03
007319	Drill Core	0.05	0.14	<0.001	<0.001	0.06	0.03

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Project: RATERIA
 Report Date: November 23, 2009

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CERTIFICATE OF ANALYSIS

VAN09005200.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
007320	Drill Core	3.62	0.008	0.123	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.27	<0.01	0.010	<0.001	<0.001	<0.01	2.52	0.045	<0.001	0.97	0.90
007321	Drill Core	3.37	0.010	0.278	<0.01	<0.01	<2	0.001	<0.001	0.03	2.11	<0.01	0.007	<0.001	<0.001	<0.01	1.85	0.045	0.001	0.83	1.19
007322	Drill Core	3.59	0.134	0.152	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.007	<0.001	<0.001	<0.01	1.52	0.044	0.001	0.75	1.14
007323	Drill Core	3.90	0.012	0.026	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.08	<0.01	0.004	<0.001	<0.001	<0.01	1.17	0.045	0.002	0.75	1.08
007324	Drill Core	3.76	0.005	1.159	<0.01	<0.01	5	<0.001	<0.001	0.02	2.12	<0.01	0.006	<0.001	<0.001	<0.01	1.19	0.047	0.001	0.76	1.18
007325	Drill Core	3.49	0.217	0.267	<0.01	<0.01	<2	0.001	0.001	0.03	2.50	<0.01	0.005	<0.001	<0.001	<0.01	1.04	0.048	0.001	1.06	1.32
007326	Drill Core	3.48	0.059	0.120	<0.01	<0.01	<2	<0.001	0.001	0.03	2.37	<0.01	0.006	<0.001	<0.001	<0.01	1.05	0.046	0.001	1.11	1.37
007327	Drill Core	3.25	0.003	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.11	<0.01	0.003	<0.001	<0.001	<0.01	0.88	0.051	0.001	0.63	0.98
007328	Drill Core	3.66	<0.001	0.023	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.07	<0.01	0.004	<0.001	<0.001	<0.01	1.01	0.047	0.001	0.57	1.02
007329	Drill Core	3.80	<0.001	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.95	<0.01	0.004	<0.001	<0.001	<0.01	0.97	0.046	0.001	0.56	0.99
007330	Drill Core	3.85	0.010	0.021	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.23	<0.01	0.007	<0.001	<0.001	<0.01	1.61	0.047	0.001	0.80	1.44
007331	Drill Core	6.90	<0.001	0.026	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.14	<0.01	0.003	<0.001	<0.001	<0.01	0.83	0.050	0.001	0.57	0.87
007332	Drill Core	3.77	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.00	<0.01	0.003	<0.001	<0.001	<0.01	0.69	0.047	0.001	0.57	0.80
007333	Drill Core	4.15	0.025	0.029	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.13	<0.01	0.003	<0.001	<0.001	<0.01	0.81	0.050	0.001	0.67	0.91
007334	Drill Core	4.15	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.21	<0.01	0.003	<0.001	<0.001	<0.01	0.63	0.052	0.001	0.63	0.81
007335	Drill Core	5.16	<0.001	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.07	<0.01	0.003	<0.001	<0.001	<0.01	0.60	0.052	0.001	0.59	0.77
007336	Drill Core	4.62	0.014	0.057	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.46	<0.01	0.007	<0.001	<0.001	<0.01	1.28	0.059	<0.001	0.76	1.24
007337	Rock	0.53	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.51	<0.01	0.004	<0.001	<0.001	<0.01	21.34	0.012	<0.001	11.67	0.02
007338	Drill Core	7.46	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.11	<0.01	0.004	<0.001	<0.001	<0.01	0.86	0.055	<0.001	0.54	0.92
007339	Drill Core	4.33	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.12	<0.01	0.004	<0.001	<0.001	<0.01	0.78	0.055	<0.001	0.51	0.78
007340	Drill Core	5.18	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.11	<0.01	0.003	<0.001	<0.001	<0.01	0.65	0.055	0.001	0.50	0.74
007341	Rock Pulp	0.06	0.048	0.315	<0.01	<0.01	2	0.002	0.002	0.06	4.92	<0.01	0.014	<0.001	<0.001	<0.01	4.17	0.108	0.002	1.25	1.42
007342	Drill Core	4.65	<0.001	0.004	<0.01	<0.01	<2	<0.001	0.001	0.03	2.43	<0.01	0.013	<0.001	<0.001	<0.01	1.98	0.058	<0.001	1.00	1.69
007343	Drill Core	7.24	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.01	<0.01	0.003	<0.001	<0.001	<0.01	0.72	0.053	0.001	0.46	0.74
007344	Drill Core	7.15	<0.001	0.027	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.13	<0.01	0.004	<0.001	<0.001	<0.01	0.75	0.053	0.001	0.46	0.83
007345	Drill Core	3.47	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.13	<0.01	0.009	<0.001	<0.001	<0.01	1.57	0.050	<0.001	0.68	1.54
007346	Drill Core	3.53	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.14	<0.01	0.009	<0.001	<0.001	<0.01	1.52	0.050	<0.001	0.67	1.57
007347	Drill Core	6.95	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.006	<0.001	<0.001	<0.01	1.22	0.049	<0.001	0.65	1.13
007348	Drill Core	6.56	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.07	<0.01	0.005	<0.001	<0.001	<0.01	0.99	0.050	0.001	0.57	0.91
007349	Drill Core	7.56	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.05	<0.01	0.004	<0.001	<0.001	<0.01	0.76	0.049	<0.001	0.54	0.87

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Project: RATERIA
 Report Date: November 23, 2009

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CERTIFICATE OF ANALYSIS

VAN09005200.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
007320	Drill Core	0.04	0.19	<0.001	<0.001	0.05	0.02
007321	Drill Core	0.04	0.26	<0.001	<0.001	0.11	0.05
007322	Drill Core	0.03	0.16	<0.001	<0.001	0.14	0.04
007323	Drill Core	0.06	0.15	<0.001	<0.001	<0.05	0.01
007324	Drill Core	0.06	0.14	<0.001	<0.001	0.37	0.26
007325	Drill Core	0.07	0.17	<0.001	<0.001	0.24	0.07
007326	Drill Core	0.05	0.11	<0.001	<0.001	0.08	0.03
007327	Drill Core	0.09	0.26	<0.001	<0.001	<0.05	N.A.
007328	Drill Core	0.08	0.21	<0.001	<0.001	<0.05	N.A.
007329	Drill Core	0.07	0.20	<0.001	<0.001	<0.05	N.A.
007330	Drill Core	0.06	0.15	<0.001	<0.001	<0.05	N.A.
007331	Drill Core	0.07	0.25	<0.001	<0.001	<0.05	N.A.
007332	Drill Core	0.10	0.31	<0.001	<0.001	<0.05	N.A.
007333	Drill Core	0.07	0.28	<0.001	<0.001	<0.05	N.A.
007334	Drill Core	0.09	0.36	<0.001	<0.001	<0.05	N.A.
007335	Drill Core	0.08	0.36	<0.001	<0.001	<0.05	N.A.
007336	Drill Core	0.06	0.20	<0.001	<0.001	<0.05	N.A.
007337	Rock	<0.01	0.02	<0.001	<0.001	<0.05	N.A.
007338	Drill Core	0.09	0.21	<0.001	<0.001	<0.05	N.A.
007339	Drill Core	0.08	0.16	<0.001	<0.001	<0.05	N.A.
007340	Drill Core	0.08	0.26	<0.001	<0.001	<0.05	N.A.
007341	Rock Pulp	0.08	0.30	<0.001	<0.001	1.86	N.A.
007342	Drill Core	0.06	0.15	<0.001	<0.001	<0.05	N.A.
007343	Drill Core	0.08	0.22	<0.001	<0.001	<0.05	N.A.
007344	Drill Core	0.09	0.24	<0.001	<0.001	<0.05	N.A.
007345	Drill Core	0.09	0.14	<0.001	<0.001	<0.05	N.A.
007346	Drill Core	0.10	0.17	<0.001	<0.001	<0.05	N.A.
007347	Drill Core	0.07	0.13	<0.001	<0.001	<0.05	N.A.
007348	Drill Core	0.07	0.18	<0.001	<0.001	<0.05	N.A.
007349	Drill Core	0.08	0.21	<0.001	<0.001	<0.05	N.A.

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Project: RATERIA
 Report Date: November 23, 2009

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CERTIFICATE OF ANALYSIS

VAN09005200.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
007350	Drill Core	6.84	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.15	<0.01	0.006	<0.001	<0.001	<0.01	1.06	0.050	0.001	0.60	1.01
007351	Drill Core	3.96	<0.001	0.102	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.89	<0.01	0.011	<0.001	<0.001	<0.01	2.68	0.050	<0.001	0.41	0.58
007352	Drill Core	6.73	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.19	<0.01	0.008	<0.001	<0.001	<0.01	1.54	0.048	0.001	0.66	1.03
007353	Drill Core	6.31	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.28	<0.01	0.008	<0.001	<0.001	<0.01	1.19	0.053	0.001	0.61	0.87
007354	Drill Core	5.17	<0.001	0.005	<0.01	<0.01	<2	0.001	<0.001	0.03	2.27	<0.01	0.008	<0.001	<0.001	<0.01	1.48	0.050	0.001	0.95	1.38
007355	Drill Core	6.10	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.02	<0.01	0.005	<0.001	<0.001	<0.01	0.90	0.045	<0.001	0.62	0.89
007356	Drill Core	6.41	<0.001	0.047	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.78	<0.01	0.013	<0.001	<0.001	<0.01	4.01	0.047	<0.001	0.40	0.76
007357	Drill Core	2.92	<0.001	0.150	<0.01	<0.01	<2	0.001	<0.001	0.03	2.60	<0.01	0.004	<0.001	<0.001	<0.01	1.08	0.054	0.001	0.86	0.99
007358	Drill Core	6.26	<0.001	0.131	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.29	<0.01	0.009	<0.001	<0.001	<0.01	1.94	0.052	<0.001	0.87	1.26
007359	Drill Core	6.16	<0.001	0.025	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.03	<0.01	0.012	<0.001	<0.001	<0.01	2.08	0.051	<0.001	0.93	1.31
007360	Rock	0.62	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.48	<0.01	0.004	<0.001	<0.001	<0.01	21.49	0.015	<0.001	11.54	0.02
007361	Drill Core	6.67	<0.001	0.040	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.21	<0.01	0.009	<0.001	<0.001	<0.01	1.53	0.051	<0.001	0.64	0.97
007362	Drill Core	6.68	<0.001	0.057	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.32	<0.01	0.006	<0.001	<0.001	<0.01	0.91	0.052	0.001	0.65	1.06
007363	Drill Core	5.73	<0.001	0.045	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.22	<0.01	0.006	<0.001	<0.001	<0.01	0.97	0.052	<0.001	0.66	1.08
007364	Drill Core	5.83	<0.001	0.023	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.39	<0.01	0.007	<0.001	<0.001	<0.01	1.70	0.054	<0.001	0.71	0.98
007365	Drill Core	6.60	<0.001	0.026	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.31	<0.01	0.008	<0.001	<0.001	<0.01	1.67	0.052	<0.001	0.68	1.03



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Project: RATERIA
Report Date: November 23, 2009

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CERTIFICATE OF ANALYSIS

VAN09005200.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
007350	Drill Core	0.08	0.22	<0.001	<0.001	<0.05	N.A.
007351	Drill Core	0.06	0.13	<0.001	<0.001	0.05	N.A.
007352	Drill Core	0.07	0.17	<0.001	<0.001	<0.05	N.A.
007353	Drill Core	0.06	0.15	<0.001	<0.001	<0.05	N.A.
007354	Drill Core	0.07	0.11	<0.001	<0.001	<0.05	N.A.
007355	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	N.A.
007356	Drill Core	0.05	0.08	<0.001	<0.001	<0.05	N.A.
007357	Drill Core	0.06	0.15	<0.001	<0.001	<0.05	N.A.
007358	Drill Core	0.05	0.12	<0.001	<0.001	<0.05	N.A.
007359	Drill Core	0.05	0.08	<0.001	<0.001	<0.05	N.A.
007360	Rock	<0.01	0.01	<0.001	<0.001	<0.05	N.A.
007361	Drill Core	0.05	0.19	<0.001	<0.001	<0.05	N.A.
007362	Drill Core	0.10	0.25	<0.001	<0.001	<0.05	N.A.
007363	Drill Core	0.10	0.23	<0.001	<0.001	<0.05	N.A.
007364	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	N.A.
007365	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	N.A.



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QUALITY CONTROL REPORT

VAN09005200.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
Pulp Duplicates																					
007298	Drill Core	6.74	<0.001	0.062	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.39	<0.01	0.009	<0.001	<0.001	<0.01	1.55	0.052	0.001	0.68	0.98
REP 007298	QC		<0.001	0.063	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.46	<0.01	0.009	<0.001	<0.001	<0.01	1.58	0.055	0.001	0.69	1.00
007301	Drill Core	4.07	<0.001	0.369	<0.01	<0.01	<2	<0.001	<0.001	0.04	3.37	<0.01	0.006	<0.001	<0.001	<0.01	1.32	0.075	<0.001	0.99	1.29
REP 007301	QC		<0.001	0.356	<0.01	<0.01	<2	0.001	<0.001	0.04	3.40	<0.01	0.006	<0.001	<0.001	<0.01	1.31	0.076	<0.001	0.98	1.28
007313	Drill Core	6.77	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.14	<0.01	0.008	<0.001	<0.001	<0.01	2.53	0.050	<0.001	0.80	0.78
REP 007313	QC																				
007322	Drill Core	3.59	0.134	0.152	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.007	<0.001	<0.001	<0.01	1.52	0.044	0.001	0.75	1.14
REP 007322	QC		0.130	0.145	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.97	<0.01	0.006	<0.001	<0.001	<0.01	1.47	0.041	0.001	0.73	1.11
007343	Drill Core	7.24	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.01	<0.01	0.003	<0.001	<0.001	<0.01	0.72	0.053	0.001	0.46	0.74
REP 007343	QC		<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.99	<0.01	0.003	<0.001	<0.001	<0.01	0.72	0.053	<0.001	0.46	0.75
Core Reject Duplicates																					
007268	Drill Core	5.07	<0.001	0.039	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.07	<0.01	0.006	<0.001	<0.001	<0.01	1.09	0.050	<0.001	0.59	0.96
DUP 007268	QC		<0.001	0.039	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.22	<0.01	0.006	<0.001	<0.001	<0.01	1.16	0.051	<0.001	0.60	0.99
007303	Drill Core	7.32	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.15	<0.01	0.010	<0.001	<0.001	<0.01	1.79	0.049	<0.001	0.74	1.16
DUP 007303	QC		<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.17	<0.01	0.010	<0.001	<0.001	<0.01	1.72	0.048	<0.001	0.72	1.16
007338	Drill Core	7.46	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.11	<0.01	0.004	<0.001	<0.001	<0.01	0.86	0.055	<0.001	0.54	0.92
DUP 007338	QC		<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.12	<0.01	0.004	<0.001	<0.001	<0.01	0.89	0.054	0.001	0.56	0.88
Reference Materials																					
STD OXH55	Standard																				
STD OXH55	Standard																				
STD OXH55	Standard																				
STD OXK69	Standard																				
STD OXK69	Standard																				
STD OXK69	Standard																				
STD R4A	Standard		0.063	0.503	1.52	3.27	87	0.358	0.040	0.06	23.31	0.02	0.003	0.018	0.014	<0.01	0.96	0.043	0.013	0.86	1.28
STD R4A	Standard		0.063	0.510	1.54	3.30	89	0.360	0.041	0.06	23.53	0.02	0.004	0.018	0.014	<0.01	0.97	0.043	0.013	0.86	1.30
STD R4A	Standard		0.064	0.510	1.53	3.29	86	0.349	0.040	0.06	23.17	0.02	0.003	0.017	0.017	<0.01	0.97	0.042	0.013	0.85	1.28
STD R4A	Standard		0.063	0.507	1.54	3.29	86	0.354	0.040	0.06	23.49	0.03	0.004	0.017	0.018	<0.01	0.96	0.042	0.013	0.86	1.28

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.



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Project: RATERIA
Report Date: November 23, 2009

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QUALITY CONTROL REPORT

VAN09005200.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
Pulp Duplicates							
007298	Drill Core	0.06	0.18	<0.001	<0.001	<0.05	0.01
REP 007298	QC	0.06	0.19	<0.001	<0.001	<0.05	
007301	Drill Core	0.07	0.15	<0.001	<0.001	0.11	0.09
REP 007301	QC	0.07	0.15	<0.001	<0.001	0.11	
007313	Drill Core	0.04	0.15	<0.001	<0.001	<0.05	<0.01
REP 007313	QC						<0.01
007322	Drill Core	0.03	0.16	<0.001	<0.001	0.14	0.04
REP 007322	QC	0.03	0.16	<0.001	<0.001	0.14	
007343	Drill Core	0.08	0.22	<0.001	<0.001	<0.05	N.A.
REP 007343	QC	0.08	0.22	<0.001	<0.001	<0.05	
Core Reject Duplicates							
007268	Drill Core	0.06	0.16	<0.001	<0.001	<0.05	<0.01
DUP 007268	QC	0.06	0.16	<0.001	<0.001	<0.05	N.A.
007303	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	<0.01
DUP 007303	QC	0.07	0.14	<0.001	<0.001	<0.05	N.A.
007338	Drill Core	0.09	0.21	<0.001	<0.001	<0.05	N.A.
DUP 007338	QC	0.08	0.20	<0.001	<0.001	<0.05	N.A.
Reference Materials							
STD OXH55	Standard						1.29
STD OXH55	Standard						1.32
STD OXH55	Standard						1.32
STD OXK69	Standard						3.63
STD OXK69	Standard						3.64
STD OXK69	Standard						3.72
STD R4A	Standard	0.06	0.51	<0.001	0.001	16.10	
STD R4A	Standard	0.07	0.51	<0.001	<0.001	15.89	
STD R4A	Standard	0.06	0.51	<0.001	<0.001	16.07	
STD R4A	Standard	0.06	0.50	<0.001	<0.001	16.23	



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Project: RATERIA
Report Date: November 23, 2009

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QUALITY CONTROL REPORT

VAN09005200.2

		WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR		
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
		kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
		0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
STD R4A	Standard		0.063	0.510	1.53	3.30	85	0.342	0.041	0.06	23.95	0.02	0.003	0.018	0.014	<0.01	0.97	0.042	0.013	0.86	1.27	
STD R4A	Standard		0.062	0.509	1.50	3.28	87	0.341	0.040	0.06	24.01	0.02	0.003	0.018	0.014	<0.01	0.98	0.043	0.012	0.86	1.27	
STD R4A	Standard		0.062	0.501	1.53	3.30	87	0.354	0.040	0.06	23.67	0.02	0.004	0.018	0.013	<0.01	0.97	0.043	0.013	0.86	1.27	
STD R4A	Standard		0.063	0.504	1.54	3.30	87	0.356	0.040	0.06	23.79	0.02	0.004	0.018	0.013	<0.01	0.97	0.043	0.013	0.86	1.27	
STD R4A	Standard		0.064	0.516	1.59	3.35	87	0.370	0.041	0.07	23.78	0.03	0.004	0.018	0.017	<0.01	1.00	0.043	0.013	0.87	1.30	
STD R4A	Standard		0.064	0.511	1.58	3.33	87	0.362	0.041	0.07	23.73	0.03	0.004	0.018	0.017	<0.01	0.99	0.043	0.013	0.87	1.29	
STD R4A Expected			0.062	0.502	1.5	3.31	86	0.334	0.04	0.06	23.38	0.023	0.004	0.017	0.0135	0.0024	0.94	0.042	0.012	0.83	1.25	
STD OXH55 Expected																						
STD OXK69 Expected																						
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
Prep Wash																						
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.09	<0.01	0.007	<0.001	<0.001	<0.01	0.60	0.079	0.001	0.61	1.09
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.11	<0.01	0.007	<0.001	<0.001	<0.01	0.58	0.078	0.001	0.61	1.10



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Project: RATERIA

Report Date: November 23, 2009

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QUALITY CONTROL REPORT

VAN09005200.2

		7AR Na %	7AR K %	7AR W %	7AR Hg %	7AR S %	G6 Au gm/mt
		0.01	0.01	0.001	0.001	0.05	0.01
STD R4A	Standard	0.07	0.50	<0.001	<0.001	16.06	
STD R4A	Standard	0.07	0.50	<0.001	0.001	16.20	
STD R4A	Standard	0.05	0.51	<0.001	0.001	16.12	
STD R4A	Standard	0.05	0.51	<0.001	0.001	16.18	
STD R4A	Standard	0.06	0.52	<0.001	<0.001	16.45	
STD R4A	Standard	0.06	0.52	<0.001	<0.001	16.33	
STD R4A Expected		0.07	0.51	0.0011	0.001	16.7	
STD OXH55 Expected							1.282
STD OXK69 Expected							3.583
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank						<0.01
BLK	Blank						<0.01
BLK	Blank						<0.01
BLK	Blank						<0.01
BLK	Blank						<0.01
BLK	Blank						<0.01
Prep Wash							
G1	Prep Blank	0.10	0.57	<0.001	<0.001	<0.05	N.A.
G1	Prep Blank	0.10	0.58	<0.001	<0.001	<0.05	N.A.



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Submitted By: David Blann
 Receiving Lab: Canada-Vancouver
 Received: October 28, 2009
 Report Date: November 22, 2009
 Page: 1 of 5

CERTIFICATE OF ANALYSIS

VAN09005276.2

CLIENT JOB INFORMATION

Project: RATERIA
 Shipment ID:
 P.O. Number
 Number of Samples: 91

SAMPLE DISPOSAL

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

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: Happy Creek Minerals Ltd.
 Suite 2300 - 1066 W. Hastings St.
 Vancouver BC V6E 3X2
 Canada

CC: Paul Reynold

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	89	Crush split and pulverize 250g drill core to 200 mesh			VAN
7AR2	91	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN
G601	57	Fire Assay fusion Au by ICP-ES	30	Completed	VAN

ADDITIONAL COMMENTS

Version 2: Group 6 Au included



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



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Project: RATERIA
 Report Date: November 22, 2009

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CERTIFICATE OF ANALYSIS

VAN09005276.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
007366	Drill Core	6.46	<0.001	0.010	<0.01	<0.01	<2	0.001	<0.001	0.03	2.37	<0.01	0.004	<0.001	<0.001	<0.01	0.83	0.057	0.001	0.61	0.87
007367	Drill Core	3.46	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.16	<0.01	0.004	<0.001	<0.001	<0.01	0.84	0.051	<0.001	0.61	0.92
007368	Drill Core	3.59	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.10	<0.01	0.004	<0.001	<0.001	<0.01	0.88	0.050	<0.001	0.63	0.95
007369	Drill Core	7.45	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.29	<0.01	0.006	<0.001	<0.001	<0.01	1.30	0.052	<0.001	0.75	1.20
007370	Drill Core	6.65	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.83	<0.01	0.004	<0.001	<0.001	<0.01	1.00	0.044	<0.001	0.52	0.88
007371	Drill Core	6.49	<0.001	0.028	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.10	<0.01	0.006	<0.001	<0.001	<0.01	0.96	0.048	<0.001	0.66	1.03
007372	Drill Core	4.21	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.99	<0.01	0.006	<0.001	<0.001	<0.01	0.77	0.050	<0.001	0.49	0.81
007373	Drill Core	6.03	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.12	<0.01	0.007	<0.001	<0.001	<0.01	1.34	0.049	<0.001	0.67	1.03
007374	Drill Core	5.57	<0.001	0.026	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.33	<0.01	0.005	<0.001	<0.001	<0.01	1.00	0.053	0.001	0.71	1.00
007375	Drill Core	4.78	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.20	<0.01	0.012	<0.001	<0.001	<0.01	1.76	0.052	<0.001	0.77	1.21
007376	Drill Core	3.14	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.40	<0.01	0.009	<0.001	<0.001	<0.01	1.86	0.055	<0.001	0.83	1.24
007377	Drill Core	4.79	0.001	0.102	<0.01	<0.01	<2	<0.001	<0.001	0.05	2.10	<0.01	0.010	<0.001	<0.001	<0.01	3.06	0.049	<0.001	0.46	0.95
007378	Rock	0.68	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.44	<0.01	0.003	<0.001	<0.001	<0.01	20.45	0.014	<0.001	11.74	0.02
007379	Drill Core	6.05	<0.001	0.019	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.27	<0.01	0.009	<0.001	<0.001	<0.01	1.51	0.052	<0.001	0.57	1.10
007380	Drill Core	5.61	<0.001	0.049	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.44	<0.01	0.011	<0.001	<0.001	<0.01	2.56	0.052	<0.001	0.54	1.32
007381	Drill Core	6.07	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.23	<0.01	0.012	<0.001	<0.001	<0.01	1.99	0.054	<0.001	0.81	1.51
007382	Drill Core	2.49	<0.001	0.029	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.09	<0.01	0.013	<0.001	<0.001	<0.01	2.75	0.054	<0.001	0.63	1.19
007383	Drill Core	2.37	<0.001	0.023	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.24	<0.01	0.012	<0.001	<0.001	<0.01	2.51	0.054	<0.001	0.72	1.31
007384	Drill Core	4.79	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.20	<0.01	0.010	<0.001	<0.001	<0.01	1.93	0.050	<0.001	0.67	1.21
007385	Drill Core	5.05	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.26	<0.01	0.010	<0.001	<0.001	<0.01	1.09	0.055	<0.001	0.65	1.13
007386	Drill Core	4.93	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.12	<0.01	0.012	<0.001	<0.001	<0.01	1.27	0.055	<0.001	0.59	1.22
007387	Rock Pulp	0.01	0.021	0.456	<0.01	<0.01	41	<0.001	<0.001	0.02	1.29	<0.01	0.016	<0.001	0.009	<0.01	0.98	0.026	0.002	0.07	0.33
007388	Drill Core	6.18	<0.001	0.023	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.48	<0.01	0.009	<0.001	<0.001	<0.01	1.45	0.058	<0.001	0.63	1.13
007389	Drill Core	3.70	0.004	0.019	<0.01	<0.01	<2	0.001	<0.001	0.05	2.88	<0.01	0.011	<0.001	<0.001	<0.01	3.27	0.044	<0.001	1.29	0.97
007390	Drill Core	6.35	<0.001	0.008	<0.01	<0.01	<2	0.001	0.001	0.05	2.69	<0.01	0.014	<0.001	<0.001	<0.01	2.29	0.048	0.001	0.91	1.26
007391	Drill Core	4.78	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.31	<0.01	0.011	<0.001	<0.001	<0.01	1.92	0.052	<0.001	0.87	0.91
007392	Drill Core	3.31	0.005	0.038	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.23	<0.01	0.014	<0.001	<0.001	<0.01	2.83	0.056	<0.001	0.49	1.10
007393	Drill Core	4.73	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.21	<0.01	0.006	<0.001	<0.001	<0.01	1.17	0.055	0.001	0.61	1.01
007394	Drill Core	2.89	<0.001	0.091	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.41	<0.01	0.007	<0.001	<0.001	<0.01	1.19	0.052	0.001	0.81	1.20
007395	Rock	0.72	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.43	<0.01	0.004	<0.001	<0.001	<0.01	20.31	0.015	<0.001	11.58	0.02

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 Vancouver BC V6E 3X2 Canada

Project: RATERIA
Report Date: November 22, 2009

Page: 2 of 5 Part 2

CERTIFICATE OF ANALYSIS

VAN09005276.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
007366	Drill Core	0.08	0.22	<0.001	<0.001	<0.05	N.A.
007367	Drill Core	0.08	0.21	<0.001	<0.001	<0.05	N.A.
007368	Drill Core	0.07	0.19	<0.001	<0.001	<0.05	N.A.
007369	Drill Core	0.07	0.17	<0.001	<0.001	<0.05	N.A.
007370	Drill Core	0.07	0.17	<0.001	<0.001	<0.05	N.A.
007371	Drill Core	0.07	0.20	<0.001	<0.001	<0.05	N.A.
007372	Drill Core	0.06	0.19	<0.001	<0.001	<0.05	N.A.
007373	Drill Core	0.07	0.22	<0.001	<0.001	<0.05	N.A.
007374	Drill Core	0.07	0.21	<0.001	<0.001	<0.05	N.A.
007375	Drill Core	0.04	0.17	<0.001	<0.001	<0.05	N.A.
007376	Drill Core	0.06	0.17	<0.001	<0.001	<0.05	N.A.
007377	Drill Core	0.04	0.20	<0.001	<0.001	<0.05	N.A.
007378	Rock	<0.01	0.01	<0.001	<0.001	<0.05	N.A.
007379	Drill Core	0.07	0.17	<0.001	<0.001	<0.05	N.A.
007380	Drill Core	0.04	0.15	<0.001	<0.001	<0.05	0.01
007381	Drill Core	0.06	0.14	<0.001	<0.001	<0.05	<0.01
007382	Drill Core	0.04	0.12	<0.001	<0.001	<0.05	<0.01
007383	Drill Core	0.05	0.13	<0.001	<0.001	<0.05	<0.01
007384	Drill Core	0.06	0.21	<0.001	<0.001	<0.05	<0.01
007385	Drill Core	0.07	0.22	<0.001	<0.001	<0.05	<0.01
007386	Drill Core	0.08	0.19	<0.001	<0.001	<0.05	<0.01
007387	Rock Pulp	0.03	0.21	<0.001	<0.001	0.68	N.A.
007388	Drill Core	0.09	0.22	<0.001	<0.001	<0.05	<0.01
007389	Drill Core	0.04	0.09	<0.001	<0.001	<0.05	<0.01
007390	Drill Core	0.07	0.16	<0.001	<0.001	<0.05	<0.01
007391	Drill Core	0.05	0.22	<0.001	<0.001	<0.05	<0.01
007392	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	<0.01
007393	Drill Core	0.07	0.17	<0.001	<0.001	<0.05	<0.01
007394	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	<0.01
007395	Rock	<0.01	0.01	<0.001	<0.001	<0.05	N.A.

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Project: RATERIA
 Report Date: November 22, 2009

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CERTIFICATE OF ANALYSIS

VAN09005276.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.001	0.001	0.001	0.01	0.01	
007396	Drill Core	4.62	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.14	<0.01	0.009	<0.001	<0.001	<0.01	1.90	0.048	<0.001	0.82	1.15
007397	Drill Core	6.26	<0.001	0.020	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.21	<0.01	0.009	<0.001	<0.001	<0.01	1.34	0.053	0.001	0.69	1.12
007398	Drill Core	6.70	<0.001	0.025	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.09	<0.01	0.009	<0.001	<0.001	<0.01	1.70	0.048	0.001	0.71	1.32
007399	Drill Core	4.60	<0.001	0.050	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.18	<0.01	0.010	<0.001	<0.001	<0.01	1.38	0.051	0.001	0.74	1.46
007400	Drill Core	3.02	0.002	0.830	<0.01	<0.01	4	0.001	<0.001	0.03	2.33	<0.01	0.008	<0.001	<0.001	<0.01	2.47	0.051	<0.001	0.66	0.99
007401	Drill Core	2.54	<0.001	0.044	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.28	<0.01	0.010	<0.001	<0.001	<0.01	1.82	0.051	<0.001	0.81	1.26
007402	Drill Core	2.11	<0.001	0.098	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.30	<0.01	0.008	<0.001	<0.001	<0.01	1.68	0.052	<0.001	0.89	1.23
007403	Drill Core	3.02	<0.001	0.240	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.29	<0.01	0.007	<0.001	<0.001	<0.01	1.32	0.053	0.001	0.69	1.00
007404	Drill Core	2.50	<0.001	0.168	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.38	<0.01	0.008	<0.001	<0.001	<0.01	1.93	0.050	<0.001	0.83	1.21
007405	Drill Core	2.99	<0.001	0.141	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.22	<0.01	0.025	<0.001	<0.001	<0.01	3.65	0.045	<0.001	1.09	2.42
007406	Drill Core	2.55	<0.001	0.033	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.28	<0.01	0.013	<0.001	<0.001	<0.01	1.94	0.052	<0.001	0.93	1.49
007407	Drill Core	2.62	<0.001	0.410	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.57	<0.01	0.010	<0.001	<0.001	<0.01	1.64	0.052	<0.001	0.94	1.40
007408	Drill Core	3.05	<0.001	0.782	<0.01	<0.01	4	0.001	0.001	0.04	2.57	<0.01	0.019	<0.001	<0.001	<0.01	2.35	0.049	0.001	1.18	1.80
007409	Drill Core	3.57	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.51	<0.01	0.008	<0.001	<0.001	<0.01	1.70	0.061	<0.001	0.75	1.35
007410	Drill Core	3.39	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.53	<0.01	0.008	<0.001	<0.001	<0.01	1.57	0.062	<0.001	0.73	1.34
007411	Drill Core	6.41	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.28	<0.01	0.007	<0.001	<0.001	<0.01	1.53	0.051	0.001	0.77	1.17
007412	Drill Core	6.81	<0.001	0.043	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.58	<0.01	0.006	<0.001	<0.001	<0.01	1.42	0.058	0.001	0.77	1.15
007413	Drill Core	2.87	<0.001	0.412	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.70	<0.01	0.009	<0.001	<0.001	<0.01	2.34	0.057	<0.001	0.73	1.18
007414	Drill Core	2.75	<0.001	0.353	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.50	<0.01	0.006	<0.001	<0.001	<0.01	1.93	0.053	<0.001	0.71	1.06
007415	Rock	0.59	<0.001	0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.53	<0.01	0.004	<0.001	<0.001	<0.01	21.47	0.017	<0.001	11.89	0.03
007416	Drill Core	3.43	<0.001	0.061	<0.01	<0.01	<2	0.001	<0.001	0.03	2.57	<0.01	0.005	<0.001	<0.001	<0.01	1.04	0.054	0.001	0.81	1.07
007417	Drill Core	3.30	<0.001	0.318	<0.01	<0.01	2	<0.001	<0.001	0.03	2.45	<0.01	0.007	<0.001	<0.001	<0.01	1.19	0.056	0.001	0.69	1.15
007418	Drill Core	3.68	0.002	0.178	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.55	<0.01	0.006	<0.001	<0.001	<0.01	1.36	0.056	<0.001	0.82	1.20
007419	Drill Core	3.26	<0.001	0.255	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.72	<0.01	0.007	<0.001	<0.001	<0.01	1.62	0.059	0.001	0.82	1.21
007420	Drill Core	3.52	0.008	0.771	<0.01	<0.01	4	<0.001	0.001	0.04	3.00	<0.01	0.006	<0.001	<0.001	<0.01	1.46	0.054	<0.001	1.05	1.40
007421	Rock Pulp	0.04	0.049	0.317	<0.01	<0.01	<2	0.002	0.002	0.06	5.09	<0.01	0.014	<0.001	<0.001	<0.01	4.37	0.108	0.002	1.26	1.48
007422	Drill Core	3.66	0.011	1.711	<0.01	<0.01	8	<0.001	<0.001	0.03	2.51	<0.01	0.012	<0.001	<0.001	<0.01	2.53	0.049	<0.001	0.84	1.40
007423	Drill Core	2.64	0.002	0.352	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.90	<0.01	0.011	<0.001	<0.001	<0.01	2.84	0.056	<0.001	0.56	1.14
007424	Drill Core	3.10	0.013	0.299	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.92	<0.01	0.008	<0.001	<0.001	<0.01	2.87	0.057	<0.001	0.55	1.02
007425	Drill Core	3.00	0.002	0.549	<0.01	<0.01	3	<0.001	<0.001	0.03	2.58	<0.01	0.007	<0.001	<0.001	<0.01	1.92	0.058	<0.001	0.81	1.19

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Project: RATERIA
 Report Date: November 22, 2009

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CERTIFICATE OF ANALYSIS

VAN09005276.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
007396	Drill Core	0.07	0.18	<0.001	<0.001	<0.05	<0.01
007397	Drill Core	0.08	0.18	<0.001	<0.001	<0.05	<0.01
007398	Drill Core	0.09	0.20	<0.001	<0.001	<0.05	<0.01
007399	Drill Core	0.10	0.19	<0.001	<0.001	<0.05	<0.01
007400	Drill Core	0.04	0.14	<0.001	<0.001	0.30	0.07
007401	Drill Core	0.07	0.12	<0.001	<0.001	<0.05	0.01
007402	Drill Core	0.05	0.12	<0.001	<0.001	<0.05	0.03
007403	Drill Core	0.06	0.14	<0.001	<0.001	0.08	0.03
007404	Drill Core	0.05	0.13	<0.001	<0.001	0.06	0.05
007405	Drill Core	0.05	0.11	<0.001	<0.001	<0.05	0.07
007406	Drill Core	0.06	0.14	<0.001	<0.001	<0.05	0.02
007407	Drill Core	0.05	0.13	<0.001	<0.001	0.13	0.17
007408	Drill Core	0.05	0.13	<0.001	<0.001	0.26	0.42
007409	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	<0.01
007410	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	<0.01
007411	Drill Core	0.06	0.19	<0.001	<0.001	<0.05	<0.01
007412	Drill Core	0.07	0.17	<0.001	<0.001	<0.05	<0.01
007413	Drill Core	0.05	0.13	<0.001	<0.001	0.13	0.68
007414	Drill Core	0.05	0.14	<0.001	<0.001	0.12	0.06
007415	Rock	<0.01	0.01	<0.001	<0.001	<0.05	N.A.
007416	Drill Core	0.08	0.22	<0.001	<0.001	<0.05	0.01
007417	Drill Core	0.09	0.20	<0.001	<0.001	0.13	0.08
007418	Drill Core	0.07	0.16	<0.001	<0.001	0.06	0.02
007419	Drill Core	0.06	0.17	<0.001	<0.001	0.09	0.02
007420	Drill Core	0.04	0.19	<0.001	<0.001	0.27	0.04
007421	Rock Pulp	0.08	0.33	<0.001	<0.001	1.91	N.A.
007422	Drill Core	0.04	0.21	<0.001	<0.001	0.62	0.09
007423	Drill Core	0.04	0.27	<0.001	<0.001	0.12	0.01
007424	Drill Core	0.04	0.26	<0.001	<0.001	0.11	0.01
007425	Drill Core	0.06	0.15	<0.001	<0.001	0.20	0.01

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CERTIFICATE OF ANALYSIS

VAN09005276.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
007426	Drill Core	3.68	0.006	0.201	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.64	<0.01	0.006	<0.001	<0.001	<0.01	1.81	0.056	0.001	0.85	1.13
007427	Drill Core	4.72	0.001	0.124	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.39	<0.01	0.006	<0.001	<0.001	<0.01	1.39	0.055	<0.001	0.75	1.26
007428	Drill Core	4.45	0.009	0.213	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.48	<0.01	0.007	<0.001	<0.001	<0.01	1.53	0.052	<0.001	0.87	1.33
007429	Drill Core	2.00	0.001	0.105	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.38	<0.01	0.006	<0.001	<0.001	<0.01	1.41	0.056	0.001	0.76	1.16
007430	Drill Core	2.19	<0.001	0.141	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.54	<0.01	0.006	<0.001	<0.001	<0.01	1.37	0.058	0.001	0.75	1.15
007431	Drill Core	7.31	<0.001	0.064	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.31	<0.01	0.006	<0.001	<0.001	<0.01	1.46	0.053	<0.001	0.77	1.15
007432	Drill Core	7.72	<0.001	0.066	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.51	<0.01	0.006	<0.001	<0.001	<0.01	1.37	0.060	<0.001	0.72	1.11
007433	Drill Core	6.81	<0.001	0.031	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.37	<0.01	0.006	<0.001	<0.001	<0.01	1.17	0.055	<0.001	0.78	1.11
007434	Drill Core	5.12	<0.001	0.019	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.14	<0.01	0.010	<0.001	<0.001	<0.01	1.56	0.053	<0.001	0.76	1.27
007435	Drill Core	3.92	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.04	3.06	<0.01	0.009	<0.001	<0.001	<0.01	1.98	0.081	<0.001	0.89	1.31
007436	Rock	0.51	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.47	<0.01	0.004	<0.001	<0.001	<0.01	21.73	0.013	<0.001	11.88	0.02
007437	Drill Core	3.49	<0.001	0.040	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.37	<0.01	0.013	<0.001	<0.001	<0.01	2.53	0.071	<0.001	0.56	0.98
007438	Drill Core	2.30	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.19	<0.01	0.011	<0.001	<0.001	<0.01	1.80	0.054	<0.001	0.56	1.05
007439	Drill Core	2.79	<0.001	0.021	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.010	<0.001	<0.001	<0.01	1.43	0.053	<0.001	0.49	1.04
007440	Drill Core	6.07	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.07	<0.01	0.005	<0.001	<0.001	<0.01	1.00	0.055	<0.001	0.60	0.89
007441	Drill Core	6.74	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.36	<0.01	0.006	<0.001	<0.001	<0.01	1.14	0.064	0.001	0.67	1.04
007442	Drill Core	3.98	<0.001	0.239	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.12	<0.01	0.006	<0.001	<0.001	<0.01	0.97	0.056	<0.001	0.54	0.84
007443	Drill Core	2.78	<0.001	0.040	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.64	<0.01	0.004	<0.001	<0.001	<0.01	0.89	0.081	<0.001	0.66	0.93
007444	Drill Core	2.91	<0.001	0.034	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.43	<0.01	0.008	<0.001	<0.001	<0.01	1.56	0.062	<0.001	0.65	0.96
007445	Drill Core	2.79	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.39	<0.01	0.008	<0.001	<0.001	<0.01	1.37	0.058	<0.001	0.77	1.23
007446	Drill Core	6.56	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.15	<0.01	0.007	<0.001	<0.001	<0.01	1.20	0.055	<0.001	0.56	1.08
007447	Drill Core	3.45	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.13	<0.01	0.007	<0.001	<0.001	<0.01	1.03	0.053	<0.001	0.50	0.81
007448	Drill Core	3.74	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.07	<0.01	0.006	<0.001	<0.001	<0.01	0.90	0.053	<0.001	0.49	0.75
007449	Drill Core	7.20	<0.001	0.004	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.11	<0.01	0.008	<0.001	<0.001	<0.01	1.30	0.055	<0.001	0.48	0.82
007450	Drill Core	4.44	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.14	<0.01	0.008	<0.001	<0.001	<0.01	1.14	0.053	<0.001	0.55	0.94
007451	Drill Core	4.66	0.015	0.278	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.98	<0.01	0.010	<0.001	<0.001	<0.01	2.13	0.053	<0.001	0.40	0.92
007452	Drill Core	6.10	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.06	<0.01	0.007	<0.001	<0.001	<0.01	1.34	0.052	<0.001	0.57	0.96
007453	Drill Core	4.25	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.14	<0.01	0.013	<0.001	<0.001	<0.01	2.08	0.051	<0.001	0.62	1.18
007454	Rock	0.54	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.03	0.50	<0.01	0.004	<0.001	<0.001	<0.01	21.61	0.015	<0.001	12.00	0.02
007455	Drill Core	4.42	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.20	<0.01	0.006	<0.001	<0.001	<0.01	0.89	0.054	0.001	0.63	0.94

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Project: RATERIA
Report Date: November 22, 2009

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CERTIFICATE OF ANALYSIS

VAN09005276.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
007426	Drill Core	0.05	0.16	<0.001	<0.001	0.07	<0.01
007427	Drill Core	0.09	0.17	<0.001	<0.001	<0.05	<0.01
007428	Drill Core	0.06	0.12	<0.001	<0.001	0.07	0.02
007429	Drill Core	0.08	0.12	<0.001	<0.001	<0.05	<0.01
007430	Drill Core	0.07	0.12	<0.001	<0.001	<0.05	<0.01
007431	Drill Core	0.07	0.16	<0.001	<0.001	<0.05	0.01
007432	Drill Core	0.07	0.14	<0.001	<0.001	<0.05	<0.01
007433	Drill Core	0.07	0.16	<0.001	<0.001	<0.05	N.A.
007434	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	N.A.
007435	Drill Core	0.06	0.14	<0.001	<0.001	<0.05	N.A.
007436	Rock	<0.01	<0.01	<0.001	<0.001	<0.05	N.A.
007437	Drill Core	0.05	0.11	<0.001	<0.001	<0.05	<0.01
007438	Drill Core	0.06	0.10	<0.001	<0.001	<0.05	<0.01
007439	Drill Core	0.08	0.16	<0.001	<0.001	<0.05	<0.01
007440	Drill Core	0.07	0.18	<0.001	<0.001	<0.05	<0.01
007441	Drill Core	0.07	0.17	<0.001	<0.001	<0.05	<0.01
007442	Drill Core	0.05	0.22	<0.001	<0.001	0.07	0.01
007443	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	0.02
007444	Drill Core	0.05	0.11	<0.001	<0.001	<0.05	0.01
007445	Drill Core	0.06	0.11	<0.001	<0.001	<0.05	N.A.
007446	Drill Core	0.08	0.18	<0.001	<0.001	<0.05	N.A.
007447	Drill Core	0.07	0.24	<0.001	<0.001	<0.05	N.A.
007448	Drill Core	0.07	0.24	<0.001	<0.001	<0.05	N.A.
007449	Drill Core	0.07	0.20	<0.001	<0.001	<0.05	N.A.
007450	Drill Core	0.06	0.20	<0.001	<0.001	<0.05	N.A.
007451	Drill Core	0.05	0.13	<0.001	<0.001	0.09	N.A.
007452	Drill Core	0.06	0.12	<0.001	<0.001	<0.05	N.A.
007453	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	N.A.
007454	Rock	<0.01	<0.01	<0.001	<0.001	<0.05	N.A.
007455	Drill Core	0.07	0.19	<0.001	<0.001	<0.05	N.A.



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Project: RATERIA

Report Date: November 22, 2009

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CERTIFICATE OF ANALYSIS

VAN09005276.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
007456	Drill Core	4.64	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.20	<0.01	0.004	<0.001	<0.001	<0.01	0.80	0.054	0.001	0.64	0.90



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CERTIFICATE OF ANALYSIS

VAN09005276.2

Method	7AR	7AR	7AR	7AR	7AR	G6
Analyte	Na	K	W	Hg	S	Au
Unit	%	%	%	%	%	gm/mt
MDL	0.01	0.01	0.001	0.001	0.05	0.01
007456 Drill Core	0.08	0.24	<0.001	<0.001	<0.05	N.A.



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 Report Date: November 22, 2009

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QUALITY CONTROL REPORT

VAN09005276.2

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
Pulp Duplicates																					
007372	Drill Core	4.21	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.99	<0.01	0.006	<0.001	<0.001	<0.01	0.77	0.050	<0.001	0.49	0.81
REP 007372	QC		<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.99	<0.01	0.006	<0.001	<0.001	<0.01	0.79	0.049	<0.001	0.50	0.85
007396	Drill Core	4.62	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.14	<0.01	0.009	<0.001	<0.001	<0.01	1.90	0.048	<0.001	0.82	1.15
REP 007396	QC																				
007406	Drill Core	2.55	<0.001	0.033	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.28	<0.01	0.013	<0.001	<0.001	<0.01	1.94	0.052	<0.001	0.93	1.49
REP 007406	QC		<0.001	0.032	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.25	<0.01	0.013	<0.001	<0.001	<0.01	1.96	0.052	<0.001	0.92	1.50
007427	Drill Core	4.72	0.001	0.124	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.39	<0.01	0.006	<0.001	<0.001	<0.01	1.39	0.055	<0.001	0.75	1.26
REP 007427	QC																				
007443	Drill Core	2.78	<0.001	0.040	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.64	<0.01	0.004	<0.001	<0.001	<0.01	0.89	0.081	<0.001	0.66	0.93
REP 007443	QC		<0.001	0.040	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.68	<0.01	0.004	<0.001	<0.001	<0.01	0.90	0.081	<0.001	0.66	0.93
Core Reject Duplicates																					
007390	Drill Core	6.35	<0.001	0.008	<0.01	<0.01	<2	0.001	0.001	0.05	2.69	<0.01	0.014	<0.001	<0.001	<0.01	2.29	0.048	0.001	0.91	1.26
DUP 007390	QC		<0.001	0.008	<0.01	<0.01	<2	0.001	<0.001	0.05	2.72	<0.01	0.014	<0.001	<0.001	<0.01	2.27	0.048	0.001	0.90	1.27
007425	Drill Core	3.00	0.002	0.549	<0.01	<0.01	3	<0.001	<0.001	0.03	2.58	<0.01	0.007	<0.001	<0.001	<0.01	1.92	0.058	<0.001	0.81	1.19
DUP 007425	QC		0.003	0.536	<0.01	<0.01	3	<0.001	<0.001	0.03	2.52	<0.01	0.007	<0.001	<0.001	<0.01	1.96	0.057	<0.001	0.80	1.21
Reference Materials																					
STD OXH55	Standard																				
STD OXH55	Standard																				
STD OXH55	Standard																				
STD OXK69	Standard																				
STD OXK69	Standard																				
STD R4A	Standard		0.064	0.517	1.57	3.34	87	0.363	0.041	0.06	24.43	0.03	0.004	0.018	0.015	<0.01	0.99	0.043	0.013	0.89	1.30
STD R4A	Standard		0.064	0.513	1.57	3.32	88	0.357	0.041	0.06	24.28	0.02	0.004	0.017	0.015	<0.01	0.98	0.043	0.013	0.87	1.29
STD R4A	Standard		0.063	0.511	1.60	3.31	88	0.360	0.040	0.06	23.30	0.03	0.004	0.018	0.014	<0.01	1.05	0.043	0.013	0.87	1.29
STD R4A	Standard		0.062	0.509	1.62	3.34	88	0.366	0.040	0.06	23.46	0.03	0.004	0.018	0.014	<0.01	1.06	0.043	0.013	0.87	1.31
STD R4A	Standard		0.063	0.513	1.65	3.34	89	0.369	0.040	0.06	23.56	0.03	0.004	0.018	0.014	<0.01	1.00	0.043	0.013	0.88	1.30
STD R4A	Standard		0.063	0.514	1.64	3.34	89	0.365	0.040	0.06	23.54	0.03	0.004	0.018	0.014	<0.01	0.99	0.043	0.013	0.87	1.30
STD R4A Expected			0.062	0.502	1.5	3.31	86	0.334	0.04	0.06	23.38	0.023	0.004	0.017	0.0135	0.0024	0.94	0.042	0.012	0.83	1.25

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Project: RATERIA
Report Date: November 22, 2009

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QUALITY CONTROL REPORT

VAN09005276.2

Method	7AR	7AR	7AR	7AR	7AR	G6	
Analyte	Na	K	W	Hg	S	Au	
Unit	%	%	%	%	%	gm/mt	
MDL	0.01	0.01	0.001	0.001	0.05	0.01	
Pulp Duplicates							
007372	Drill Core	0.06	0.19	<0.001	<0.001	<0.05	N.A.
REP 007372	QC	0.07	0.20	<0.001	<0.001	<0.05	
007396	Drill Core	0.07	0.18	<0.001	<0.001	<0.05	<0.01
REP 007396	QC						<0.01
007406	Drill Core	0.06	0.14	<0.001	<0.001	<0.05	0.02
REP 007406	QC	0.06	0.14	<0.001	<0.001	<0.05	
007427	Drill Core	0.09	0.17	<0.001	<0.001	<0.05	<0.01
REP 007427	QC						<0.01
007443	Drill Core	0.06	0.13	<0.001	<0.001	<0.05	0.02
REP 007443	QC	0.06	0.13	<0.001	<0.001	<0.05	
Core Reject Duplicates							
007390	Drill Core	0.07	0.16	<0.001	<0.001	<0.05	<0.01
DUP 007390	QC	0.07	0.16	<0.001	<0.001	<0.05	N.A.
007425	Drill Core	0.06	0.15	<0.001	<0.001	0.20	0.01
DUP 007425	QC	0.06	0.15	<0.001	<0.001	0.19	N.A.
Reference Materials							
STD OXH55	Standard						1.35
STD OXH55	Standard						1.26
STD OXH55	Standard						1.29
STD OXK69	Standard						3.65
STD OXK69	Standard						3.63
STD R4A	Standard	0.07	0.51	<0.001	<0.001	16.35	
STD R4A	Standard	0.07	0.51	<0.001	<0.001	16.29	
STD R4A	Standard	0.07	0.51	<0.001	<0.001	16.24	
STD R4A	Standard	0.07	0.52	<0.001	<0.001	16.30	
STD R4A	Standard	0.07	0.51	<0.001	<0.001	16.45	
STD R4A	Standard	0.07	0.51	<0.001	0.001	16.38	
STD R4A Expected		0.07	0.51	0.0011	0.001	16.7	



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QUALITY CONTROL REPORT

VAN09005276.2

		WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR		
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
		kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
		0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
STD OXH55 Expected																						
STD OXK69 Expected																						
BLK	Blank	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	<0.01	
BLK	Blank	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	<0.01	
BLK	Blank	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	<0.01	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
Prep Wash																						
G1	Prep Blank	<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.00	<0.01	0.006	<0.001	<0.001	<0.01	0.54	0.074	<0.001	0.52	0.98	
G1	Prep Blank	<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.01	<0.01	0.006	<0.001	<0.001	<0.01	0.55	0.073	<0.001	0.51	0.98	

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Suite 2300 - 1066 W. Hastings St.

Vancouver BC V6E 3X2 Canada

Project: RATERIA

Report Date: November 22, 2009

Page: 2 of 2 Part 2

QUALITY CONTROL REPORT

VAN09005276.2

		7AR	7AR	7AR	7AR	7AR	G6
		Na	K	W	Hg	S	Au
		%	%	%	%	%	gm/mt
		0.01	0.01	0.001	0.001	0.05	0.01
STD OXH55 Expected							1.282
STD OXK69 Expected							3.583
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05	
BLK	Blank						<0.01
BLK	Blank						<0.01
BLK	Blank						<0.01
BLK	Blank						<0.01
BLK	Blank						<0.01
BLK	Blank						<0.01
Prep Wash							
G1	Prep Blank	0.10	0.51	<0.001	<0.001	<0.05	N.A.
G1	Prep Blank	0.10	0.51	<0.001	<0.001	<0.05	N.A.



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Suite 2300 - 1066 W. Hastings St.
Vancouver BC V6E 3X2 Canada

Submitted By: David Blann

Receiving Lab: Canada-Vancouver

Received: November 02, 2009

Report Date: November 13, 2009

Page: 1 of 4

CERTIFICATE OF ANALYSIS

VAN09005344.1

CLIENT JOB INFORMATION

Project: RATERIA
Shipment ID:
P.O. Number
Number of Samples: 77

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	75	Crush split and pulverize 250g drill core to 200 mesh			VAN
7AR2	77	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN

SAMPLE DISPOSAL

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

ADDITIONAL COMMENTS

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: Happy Creek Minerals Ltd.
Suite 2300 - 1066 W. Hastings St.
Vancouver BC V6E 3X2
Canada

CC: Paul Reynold



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



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Project: RATERIA
 Report Date: November 13, 2009

Page: 2 of 4 Part 1

CERTIFICATE OF ANALYSIS

VAN09005344.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
007457	Drill Core	3.99	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.99	<0.01	0.005	<0.001	<0.001	<0.01	1.71	0.050	<0.001	0.73	1.67
007458	Drill Core	5.36	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.01	<0.01	0.010	<0.001	<0.001	<0.01	1.21	0.048	<0.001	0.49	1.39
007459	Drill Core	5.19	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.005	<0.001	<0.001	<0.01	1.13	0.049	<0.001	0.55	1.38
007460	Drill Core	5.41	<0.001	0.087	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.12	<0.01	0.006	<0.001	<0.001	<0.01	3.15	0.050	<0.001	0.74	1.73
007461	Drill Core	4.45	<0.001	0.136	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.24	<0.01	0.004	<0.001	<0.001	<0.01	1.21	0.050	0.001	0.83	1.50
007462	Drill Core	3.28	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.06	<0.01	0.005	<0.001	<0.001	<0.01	1.38	0.048	<0.001	0.70	1.13
007463	Drill Core	4.67	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.005	<0.001	<0.001	<0.01	1.01	0.049	<0.001	0.63	1.15
007464	Rock Pulp	0.01	0.021	0.464	<0.01	<0.01	40	<0.001	<0.001	0.02	1.22	<0.01	0.016	<0.001	0.009	<0.01	0.99	0.027	0.002	0.06	0.30
007465	Drill Core	6.42	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.94	<0.01	0.006	<0.001	<0.001	<0.01	1.29	0.045	<0.001	0.56	1.31
007466	Drill Core	6.50	<0.001	0.007	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.96	<0.01	0.008	<0.001	<0.001	<0.01	1.29	0.047	<0.001	0.56	1.29
007467	Drill Core	3.29	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.11	<0.01	0.010	<0.001	<0.001	<0.01	1.21	0.055	<0.001	0.53	1.27
007468	Drill Core	3.02	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.09	<0.01	0.009	<0.001	<0.001	<0.01	1.27	0.053	0.001	0.53	1.30
007469	Drill Core	6.46	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.00	<0.01	0.008	<0.001	<0.001	<0.01	1.47	0.051	<0.001	0.58	1.43
007470	Drill Core	6.42	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.009	<0.001	<0.001	<0.01	1.36	0.048	<0.001	0.61	1.38
007471	Drill Core	6.84	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.67	<0.01	0.007	<0.001	<0.001	<0.01	1.05	0.037	<0.001	0.48	1.08
007472	Drill Core	6.57	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.97	<0.01	0.010	<0.001	<0.001	<0.01	1.27	0.047	<0.001	0.54	1.38
007473	Drill Core	6.47	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.98	<0.01	0.009	<0.001	<0.001	<0.01	1.60	0.049	<0.001	0.52	1.50
007474	Rock	0.63	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.45	<0.01	0.004	<0.001	<0.001	<0.01	22.00	0.014	<0.001	11.55	0.04
007475	Drill Core	6.56	<0.001	0.003	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.99	<0.01	0.013	<0.001	<0.001	<0.01	1.23	0.051	<0.001	0.49	1.41
007476	Drill Core	6.26	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.09	<0.01	0.010	<0.001	<0.001	<0.01	1.53	0.052	<0.001	0.58	1.54
007477	Drill Core	6.18	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.98	<0.01	0.011	<0.001	<0.001	<0.01	1.01	0.047	<0.001	0.57	1.31
007478	Drill Core	6.03	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.95	<0.01	0.010	<0.001	<0.001	<0.01	1.39	0.046	<0.001	0.60	1.48
007479	Drill Core	6.38	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.93	<0.01	0.009	<0.001	<0.001	<0.01	1.53	0.046	<0.001	0.54	1.58
007480	Drill Core	6.41	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.90	<0.01	0.011	<0.001	<0.001	<0.01	1.32	0.044	<0.001	0.50	1.60
007481	Drill Core	6.66	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.05	<0.01	0.007	<0.001	<0.001	<0.01	1.32	0.047	0.001	0.61	1.35
007482	Drill Core	6.70	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.33	<0.01	0.009	<0.001	<0.001	<0.01	1.38	0.050	0.001	0.66	1.40
007483	Drill Core	6.75	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	1.97	<0.01	0.007	<0.001	<0.001	<0.01	1.56	0.046	<0.001	0.55	1.29
007484	Drill Core	3.21	<0.001	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.15	<0.01	0.010	<0.001	<0.001	<0.01	1.44	0.051	<0.001	0.57	1.35
007485	Drill Core	3.19	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.18	<0.01	0.010	<0.001	<0.001	<0.01	1.46	0.055	<0.001	0.57	1.36
007486	Drill Core	7.37	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.16	<0.01	0.009	<0.001	<0.001	<0.01	1.24	0.054	<0.001	0.55	1.21

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 Vancouver BC V6E 3X2 Canada

Project: RATERIA
Report Date: November 13, 2009

Page: 2 of 4 Part 2

CERTIFICATE OF ANALYSIS

VAN09005344.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
007457	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
007458	Drill Core	0.11	0.21	<0.001	<0.001	<0.05
007459	Drill Core	0.09	0.18	<0.001	<0.001	<0.05
007460	Drill Core	0.05	0.20	<0.001	<0.001	<0.05
007461	Drill Core	0.08	0.15	<0.001	<0.001	<0.05
007462	Drill Core	0.06	0.15	<0.001	<0.001	<0.05
007463	Drill Core	0.08	0.22	<0.001	<0.001	<0.05
007464	Rock Pulp	0.03	0.19	<0.001	<0.001	0.66
007465	Drill Core	0.08	0.18	<0.001	<0.001	<0.05
007466	Drill Core	0.08	0.14	<0.001	<0.001	<0.05
007467	Drill Core	0.08	0.17	<0.001	<0.001	<0.05
007468	Drill Core	0.09	0.17	<0.001	<0.001	<0.05
007469	Drill Core	0.07	0.14	<0.001	<0.001	<0.05
007470	Drill Core	0.07	0.17	<0.001	<0.001	<0.05
007471	Drill Core	0.07	0.19	<0.001	<0.001	<0.05
007472	Drill Core	0.09	0.15	<0.001	<0.001	<0.05
007473	Drill Core	0.09	0.15	<0.001	<0.001	<0.05
007474	Rock	<0.01	0.02	<0.001	<0.001	<0.05
007475	Drill Core	0.09	0.17	<0.001	<0.001	<0.05
007476	Drill Core	0.10	0.15	<0.001	<0.001	<0.05
007477	Drill Core	0.08	0.21	<0.001	<0.001	<0.05
007478	Drill Core	0.09	0.18	<0.001	<0.001	<0.05
007479	Drill Core	0.11	0.17	<0.001	<0.001	<0.05
007480	Drill Core	0.12	0.16	<0.001	<0.001	<0.05
007481	Drill Core	0.08	0.20	<0.001	<0.001	<0.05
007482	Drill Core	0.10	0.18	<0.001	<0.001	<0.05
007483	Drill Core	0.08	0.16	<0.001	<0.001	<0.05
007484	Drill Core	0.09	0.22	<0.001	<0.001	<0.05
007485	Drill Core	0.08	0.20	<0.001	<0.001	<0.05
007486	Drill Core	0.09	0.21	<0.001	<0.001	<0.05

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Project: RATERIA
 Report Date: November 13, 2009

Page: 3 of 4 Part 1

CERTIFICATE OF ANALYSIS

VAN09005344.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.01	0.01	
007487	Drill Core	6.48	<0.001	0.009	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.30	<0.01	0.008	<0.001	<0.001	<0.01	1.29	0.061	<0.001	0.66	1.32
007488	Drill Core	7.58	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.49	<0.01	0.013	<0.001	<0.001	<0.01	1.92	0.068	<0.001	0.78	1.74
007489	Drill Core	6.47	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.55	<0.01	0.015	<0.001	<0.001	<0.01	2.63	0.071	<0.001	0.75	2.58
007490	Drill Core	6.82	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.64	<0.01	0.014	<0.001	<0.001	<0.01	2.24	0.078	<0.001	0.67	1.99
007491	Drill Core	6.85	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.51	<0.01	0.013	<0.001	<0.001	<0.01	1.54	0.080	<0.001	0.58	1.63
007492	Drill Core	6.60	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.58	<0.01	0.013	<0.001	<0.001	<0.01	1.96	0.078	<0.001	0.66	2.11
007493	Drill Core	6.54	<0.001	0.013	<0.01	<0.01	<2	0.001	<0.001	0.04	2.53	<0.01	0.011	<0.001	<0.001	<0.01	1.65	0.070	0.001	0.76	1.64
007494	Drill Core	2.56	<0.001	0.021	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.007	<0.001	<0.001	<0.01	1.67	0.049	<0.001	0.60	1.39
007495	Rock	0.65	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.33	<0.01	0.003	<0.001	<0.001	<0.01	16.02	0.012	<0.001	9.04	0.02
007496	Drill Core	6.04	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.02	<0.01	0.011	<0.001	<0.001	<0.01	1.40	0.053	<0.001	0.50	1.37
007497	Drill Core	6.19	<0.001	0.002	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.60	<0.01	0.014	<0.001	<0.001	<0.01	1.19	0.034	<0.001	0.43	1.23
007498	Drill Core	6.08	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.02	1.79	<0.01	0.010	<0.001	<0.001	<0.01	1.17	0.048	<0.001	0.44	1.22
007499	Drill Core	6.79	<0.001	0.006	<0.01	<0.01	3	<0.001	<0.001	0.03	2.20	<0.01	0.013	<0.001	<0.001	<0.01	1.36	0.061	<0.001	0.57	1.48
007500	Drill Core	6.40	<0.001	0.007	<0.01	<0.01	2	<0.001	<0.001	0.03	2.36	<0.01	0.009	<0.001	<0.001	<0.01	1.45	0.062	<0.001	0.63	1.59
007501	Drill Core	6.24	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.18	<0.01	0.013	<0.001	<0.001	<0.01	1.32	0.055	<0.001	0.56	1.61
007502	Drill Core	2.97	<0.001	0.134	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.11	<0.01	0.014	<0.001	<0.001	<0.01	1.99	0.055	<0.001	0.53	1.99
007503	Drill Core	6.57	<0.001	0.006	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.11	<0.01	0.009	<0.001	<0.001	<0.01	1.71	0.057	<0.001	0.64	1.55
007504	Rock Pulp	0.04	0.051	0.317	<0.01	<0.01	<2	0.002	0.002	0.07	4.89	<0.01	0.014	<0.001	0.001	<0.01	4.29	0.108	0.002	1.28	1.42
007505	Drill Core	4.91	<0.001	0.005	<0.01	<0.01	<2	<0.001	<0.001	0.04	1.99	<0.01	0.013	<0.001	<0.001	<0.01	2.31	0.051	<0.001	0.70	1.66
007506	Drill Core	7.15	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.26	<0.01	0.005	<0.001	<0.001	<0.01	1.51	0.059	<0.001	0.62	1.10
007507	Drill Core	3.14	<0.001	0.015	<0.01	<0.01	<2	0.001	<0.001	0.04	2.60	<0.01	0.015	<0.001	<0.001	<0.01	2.01	0.068	<0.001	0.77	1.42
007508	Drill Core	3.25	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.21	<0.01	0.007	<0.001	<0.001	<0.01	1.35	0.054	0.001	0.63	1.43
007509	Drill Core	3.09	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.31	<0.01	0.007	<0.001	<0.001	<0.01	1.49	0.057	0.001	0.62	1.49
007510	Drill Core	7.00	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.31	<0.01	0.007	<0.001	<0.001	<0.01	1.35	0.056	<0.001	0.62	1.35
007511	Drill Core	6.89	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.31	<0.01	0.007	<0.001	<0.001	<0.01	1.37	0.055	<0.001	0.65	1.38
007512	Drill Core	7.32	<0.001	0.012	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.26	<0.01	0.019	<0.001	<0.001	<0.01	1.16	0.055	<0.001	0.58	1.30
007513	Drill Core	3.40	<0.001	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.25	<0.01	0.013	<0.001	<0.001	<0.01	1.18	0.055	<0.001	0.59	1.29
007514	Rock	0.71	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.42	<0.01	0.004	<0.001	<0.001	<0.01	20.25	0.014	<0.001	11.65	0.02
007515	Drill Core	7.17	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.05	<0.01	0.008	<0.001	<0.001	<0.01	1.07	0.050	<0.001	0.50	0.96
007516	Drill Core	3.39	<0.001	0.008	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.06	<0.01	0.005	<0.001	<0.001	<0.01	2.20	0.047	<0.001	0.64	1.24

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.



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Project: RATERIA
 Report Date: November 13, 2009

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CERTIFICATE OF ANALYSIS

VAN09005344.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
007487	Drill Core	0.09	0.20	0.001	<0.001	<0.05
007488	Drill Core	0.11	0.20	<0.001	<0.001	<0.05
007489	Drill Core	0.14	0.18	<0.001	<0.001	<0.05
007490	Drill Core	0.12	0.18	<0.001	<0.001	<0.05
007491	Drill Core	0.12	0.17	<0.001	<0.001	<0.05
007492	Drill Core	0.16	0.17	<0.001	<0.001	<0.05
007493	Drill Core	0.10	0.14	<0.001	<0.001	<0.05
007494	Drill Core	0.08	0.22	<0.001	<0.001	<0.05
007495	Rock	<0.01	<0.01	<0.001	<0.001	<0.05
007496	Drill Core	0.09	0.15	<0.001	<0.001	<0.05
007497	Drill Core	0.09	0.13	<0.001	<0.001	<0.05
007498	Drill Core	0.08	0.14	<0.001	<0.001	<0.05
007499	Drill Core	0.11	0.18	<0.001	<0.001	<0.05
007500	Drill Core	0.11	0.16	<0.001	<0.001	<0.05
007501	Drill Core	0.11	0.19	<0.001	<0.001	<0.05
007502	Drill Core	0.14	0.14	<0.001	<0.001	<0.05
007503	Drill Core	0.09	0.14	<0.001	<0.001	<0.05
007504	Rock Pulp	0.08	0.29	<0.001	<0.001	1.83
007505	Drill Core	0.08	0.18	<0.001	<0.001	<0.05
007506	Drill Core	0.06	0.19	<0.001	<0.001	<0.05
007507	Drill Core	0.07	0.20	<0.001	<0.001	<0.05
007508	Drill Core	0.09	0.21	<0.001	<0.001	<0.05
007509	Drill Core	0.09	0.20	<0.001	<0.001	<0.05
007510	Drill Core	0.08	0.19	<0.001	<0.001	<0.05
007511	Drill Core	0.09	0.24	<0.001	<0.001	<0.05
007512	Drill Core	0.10	0.27	<0.001	<0.001	<0.05
007513	Drill Core	0.09	0.19	<0.001	<0.001	<0.05
007514	Rock	<0.01	0.01	<0.001	<0.001	<0.05
007515	Drill Core	0.07	0.23	<0.001	<0.001	<0.05
007516	Drill Core	0.05	0.25	<0.001	<0.001	<0.05

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 Report Date: November 13, 2009

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CERTIFICATE OF ANALYSIS

VAN09005344.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
007517	Drill Core	6.88	<0.001	0.013	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.42	<0.01	0.011	<0.001	<0.001	<0.01	1.23	0.055	0.001	0.62	1.15
007518	Drill Core	6.93	<0.001	0.021	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.30	<0.01	0.010	<0.001	<0.001	<0.01	1.06	0.051	<0.001	0.58	1.43
007519	Drill Core	6.26	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.27	<0.01	0.005	<0.001	<0.001	<0.01	1.18	0.053	0.001	0.58	1.58
007520	Drill Core	2.85	<0.001	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.16	<0.01	0.021	<0.001	0.001	<0.01	2.00	0.055	<0.001	0.63	1.69
007521	Drill Core	2.87	<0.001	0.017	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.12	<0.01	0.016	<0.001	<0.001	<0.01	2.29	0.053	<0.001	0.64	1.70
007522	Drill Core	6.80	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.20	<0.01	0.015	<0.001	<0.001	<0.01	1.38	0.048	<0.001	0.54	1.62
007523	Drill Core	7.00	<0.001	0.018	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.23	<0.01	0.017	<0.001	<0.001	<0.01	1.37	0.051	<0.001	0.53	1.52
007524	Drill Core	6.99	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.24	<0.01	0.012	<0.001	<0.001	<0.01	1.07	0.052	<0.001	0.55	1.36
007525	Drill Core	4.78	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.02	2.07	<0.01	0.007	<0.001	<0.001	<0.01	0.95	0.048	<0.001	0.52	1.26
007526	Drill Core	4.54	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.04	<0.01	0.007	<0.001	<0.001	<0.01	0.84	0.045	0.001	0.53	1.30
007527	Drill Core	4.16	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.26	<0.01	0.012	<0.001	0.001	<0.01	1.45	0.054	0.001	0.62	1.81
007528	Drill Core	6.92	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.22	<0.01	0.009	<0.001	<0.001	<0.01	1.36	0.053	<0.001	0.62	1.64
007529	Drill Core	4.05	<0.001	0.011	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.42	<0.01	0.047	<0.001	<0.001	<0.01	2.82	0.063	<0.001	0.72	3.09
007530	Drill Core	4.05	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.45	<0.01	0.020	<0.001	<0.001	<0.01	2.09	0.065	<0.001	0.65	2.46
007531	Drill Core	6.76	<0.001	0.010	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.37	<0.01	0.019	<0.001	<0.001	<0.01	2.37	0.064	<0.001	0.65	2.11
007532	Drill Core	6.12	<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.47	<0.01	0.011	<0.001	<0.001	<0.01	1.64	0.071	<0.001	0.62	2.04
007533	Drill Core	3.08	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.53	<0.01	0.007	<0.001	<0.001	<0.01	1.46	0.074	0.001	0.63	1.62



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Project: RATERIA

Report Date: November 13, 2009

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CERTIFICATE OF ANALYSIS

VAN09005344.1

Method	7AR	7AR	7AR	7AR	7AR	
Analyte	Na	K	W	Hg	S	
Unit	%	%	%	%	%	
MDL	0.01	0.01	0.001	0.001	0.05	
007517	Drill Core	0.10	0.23	<0.001	<0.001	<0.05
007518	Drill Core	0.14	0.28	<0.001	<0.001	<0.05
007519	Drill Core	0.15	0.22	<0.001	<0.001	<0.05
007520	Drill Core	0.11	0.32	<0.001	<0.001	<0.05
007521	Drill Core	0.10	0.33	<0.001	<0.001	<0.05
007522	Drill Core	0.15	0.21	<0.001	<0.001	<0.05
007523	Drill Core	0.15	0.22	<0.001	<0.001	<0.05
007524	Drill Core	0.13	0.22	<0.001	<0.001	<0.05
007525	Drill Core	0.13	0.24	<0.001	<0.001	<0.05
007526	Drill Core	0.13	0.27	<0.001	<0.001	<0.05
007527	Drill Core	0.15	0.26	<0.001	<0.001	<0.05
007528	Drill Core	0.14	0.28	<0.001	<0.001	<0.05
007529	Drill Core	0.20	0.16	<0.001	<0.001	<0.05
007530	Drill Core	0.22	0.19	<0.001	<0.001	<0.05
007531	Drill Core	0.22	0.22	<0.001	<0.001	<0.05
007532	Drill Core	0.18	0.15	<0.001	<0.001	<0.05
007533	Drill Core	0.14	0.14	<0.001	<0.001	<0.05



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QUALITY CONTROL REPORT

VAN09005344.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR		
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al		
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%		
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01		
Pulp Duplicates																						
007514	Rock	0.71	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.42	<0.01	0.004	<0.001	<0.001	<0.01	20.25	0.014	<0.001	11.65	0.02	
REP 007514	QC		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.42	<0.01	0.004	<0.001	<0.001	<0.01	20.32	0.014	<0.001	11.56	0.02	
007522	Drill Core	6.80	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.20	<0.01	0.015	<0.001	<0.001	<0.01	1.38	0.048	<0.001	0.54	1.62	
REP 007522	QC		<0.001	0.014	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.14	<0.01	0.015	<0.001	<0.001	<0.01	1.37	0.046	<0.001	0.54	1.66	
Core Reject Duplicates																						
007460	Drill Core	5.41	<0.001	0.087	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.12	<0.01	0.006	<0.001	<0.001	<0.01	3.15	0.050	<0.001	0.74	1.73	
DUP 007460	QC		<0.001	0.083	<0.01	<0.01	<2	<0.001	<0.001	0.04	2.12	<0.01	0.005	<0.001	<0.001	<0.01	2.98	0.050	<0.001	0.74	1.63	
007495	Rock	0.65	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.33	<0.01	0.003	<0.001	<0.001	<0.01	16.02	0.012	<0.001	9.04	0.02	
DUP 007495	QC		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.02	0.38	<0.01	0.003	<0.001	<0.001	<0.01	18.19	0.014	<0.001	10.27	0.02	
007530	Drill Core	4.05	<0.001	0.016	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.45	<0.01	0.020	<0.001	<0.001	<0.01	2.09	0.065	<0.001	0.65	2.46	
DUP 007530	QC		<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	0.03	2.43	<0.01	0.021	<0.001	<0.001	<0.01	2.09	0.066	<0.001	0.63	2.43	
Reference Materials																						
STD R4A	Standard		0.063	0.509	1.55	3.27	87	0.350	0.041	0.06	23.98	0.02	0.004	0.018	0.014	<0.01	0.96	0.043	0.012	0.86	1.28	
STD R4A	Standard		0.064	0.518	1.62	3.34	89	0.367	0.041	0.06	24.46	0.03	0.004	0.018	0.016	<0.01	0.99	0.043	0.013	0.91	1.31	
STD R4A	Standard		0.062	0.507	1.60	3.29	87	0.355	0.040	0.06	23.53	0.02	0.003	0.018	0.014	<0.01	0.96	0.043	0.012	0.85	1.26	
STD R4A	Standard		0.062	0.507	1.59	3.28	87	0.352	0.040	0.06	23.47	0.02	0.003	0.018	0.015	<0.01	0.96	0.042	0.012	0.85	1.26	
STD R4A	Standard		0.063	0.512	1.56	3.29	86	0.358	0.041	0.06	24.02	0.03	0.003	0.017	0.016	<0.01	0.96	0.044	0.012	0.86	1.26	
STD R4A	Standard		0.062	0.508	1.54	3.28	86	0.353	0.040	0.06	23.80	0.03	0.003	0.017	0.016	<0.01	0.96	0.042	0.012	0.85	1.25	
STD R4A Expected			0.062	0.502	1.5	3.31	86	0.334	0.04	0.06	23.38	0.023	0.004	0.017	0.0135	0.0024	0.94	0.042	0.012	0.83	1.25	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	
Prep Wash																						
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.95	<0.01	0.006	<0.001	<0.001	<0.01	0.51	0.076	<0.001	0.55	1.02
G1	Prep Blank		<0.01	<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	1.97	<0.01	0.006	<0.001	<0.001	<0.01	0.53	0.075	<0.001	0.53	1.04



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Project: RATERIA
Report Date: November 13, 2009

Page: 1 of 1 Part 2

QUALITY CONTROL REPORT

VAN09005344.1

Method		7AR	7AR	7AR	7AR	7AR
Analyte		Na	K	W	Hg	S
Unit		%	%	%	%	%
MDL		0.01	0.01	0.001	0.001	0.05
Pulp Duplicates						
007514	Rock	<0.01	0.01	<0.001	<0.001	<0.05
REP 007514	QC	<0.01	0.02	<0.001	<0.001	<0.05
007522	Drill Core	0.15	0.21	<0.001	<0.001	<0.05
REP 007522	QC	0.17	0.23	<0.001	<0.001	<0.05
Core Reject Duplicates						
007460	Drill Core	0.05	0.20	<0.001	<0.001	<0.05
DUP 007460	QC	0.05	0.18	<0.001	<0.001	<0.05
007495	Rock	<0.01	<0.01	<0.001	<0.001	<0.05
DUP 007495	QC	<0.01	0.01	<0.001	<0.001	<0.05
007530	Drill Core	0.22	0.19	<0.001	<0.001	<0.05
DUP 007530	QC	0.21	0.18	<0.001	<0.001	<0.05
Reference Materials						
STD R4A	Standard	0.07	0.51	<0.001	<0.001	16.07
STD R4A	Standard	0.07	0.52	<0.001	0.001	16.43
STD R4A	Standard	0.07	0.50	<0.001	<0.001	16.21
STD R4A	Standard	0.07	0.50	<0.001	0.001	16.25
STD R4A	Standard	0.06	0.49	<0.001	<0.001	16.04
STD R4A	Standard	0.05	0.49	<0.001	0.001	16.02
STD R4A Expected		0.07	0.51	0.0011	0.001	16.7
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
Prep Wash						
G1	Prep Blank	0.10	0.55	<0.001	<0.001	<0.05
G1	Prep Blank	0.12	0.55	<0.001	<0.001	<0.05

Appendix D

Drill logs



MINING DIVISION: Kamloops
 OVERBURDEN: 11.23m
 TOTAL DEPTH: 209.4m
 CORE SIZE: NQ

STARTED: Sept 19 2009
 FINISHED: Sept 22 2009
 UTM-E: 647,460
 UTM-N: 5,583,830
 NAD83 Zn 10

DOWNHOLE SURVEY			
Instrument	DEPTH (m)	AZIMUTH	DIP
Compass	0	270	-60
Acid	130.15		-59.5
Acid	191.11		56

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	ALTERATION (1-5):										MINERALIZATION (%):					
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeO	Cpy	Bor	Cc	other	
0.00	11.23	casing	No recovery																	
11.23	57.00	QMD	f. - med grained Qz monzodrt; locally rock is flooded by kspar much of the biot is alt'd to chlor: locally rock is broken/crushed; locally chlor observed on fracture surfaces; 5-10% Qtz as small anhedral grains; 30% biot as 1-3 rarely 5mm sub-euhedral locally altered to chlor; 60% plag f.g. grndmass; locally kspar [secondary] makes up 10-50% of rock; mostly hard competent rock; mod magnetic.	0	1	1	3	1	1	1	1	2	0	5	0	0	0	0		
11.23	23.50	kspar	numerous kspar salvages 1-3cm wide along fractures, most are 0-10° TCA																	
13.20	13.60	flt	fault gouge																	
18.80	19.40	flt	fault; 15° TCA healed by a soft, white-clear waxy clay [dickite?] + calcite; 1-3mm																	
19.90	20.00	flt	fault; 15° TCA healed by a soft, white-clear waxy clay [dickite?] + calcite; 1-3mm																	
21.20		flt	Shear; 30° TCA healed by chlor, 1-2mm																	
23.60			xenolith; 5cm across, darker material.																	
27.50			xenolith, 4cm across darker material																	
28.00		flt	15cm crushed core																	
30.10	30.20	flt	fault gouge ~40° TCA																	
30.90		flt	fault gouge ~35° TCA																	
33.20		flt	fault with well developed a slicks, 40° TCA; chlor in slicks																	
33.90	34.65	flt	several faults in this interval coated with chlor some have well-developed slicks; 35-45° TCA, some have calcite																	
38.71	42.87	flt	broken core; 50-60° TCA; chlor plus hem? On fracture surfaces; locally plag altered to sericite.																	
46.50		flt	fault healed by greenish calcite; 25° TCA																	
51.50		flt	chlor filled fracture; 20° TCA																	
54.60	58.50	flt	broken core; several sections of fault gouge; locally abundant kspar in selvage; ~ 30-40° TCA locally chlor and calcite filled fractures; 10-20° TCA																	
14.50		cpy	2 specs of cpy																	
57.00	99.90	QMD	much as above; f-med grained; locally biot up to 5mm in size mostly 2-4mm; makes up 25-35% of rock; 5-10%? qtz as small (1mm) grains, anhedral; plag makes up groundmass 60-65%, locally kspar flooded 10-20% of rock; much of biot is chloritized; locally see abundant v.f. grained secondary biot [looks a bit like bornite] but not the right color streak; Rock is mod magnetic	0	1	1	3	2	1	2	2	3	0	5	0	0	0	0		
50.50		cvn	chlor/carbonate veins; 25° TCA 3mm wide																	
59.00	61.00	cvn	numerous fractures filled with carbonate and chlor; subtle kspar selvage mostly 5-10° TCA; 1-3mm wide																	
61.00	64.00	chlvn	several chlor carbonate fractures mostly one-2mm wide; 10-50° TCA																	
64.00	64.15	flt	fault gouge																	
64.15	65.80	chlvn	several 2-3mm fractures filled by chlor and carbonate at 10-15° TCA																	
65.80		flt	fault gouge; ~ 45° TCA?																	
65.80	69.19	cvn	several fractures filled with carbonate and chlor 2-3mm thick; 10-25° TCA; abundant secondary biot																	
59.15		qvn	qtz/epidote vein 50° TCA, 3cm wide "qtz/epidote/Qtz/crush" ; no sulfide observed																	
69.19	70.80	QMDfg	competent core; no fractures; short interval of finer grained rock, same composition; diffuse boundaries																	
70.80	71.50	flt	broken core; calcite and chlor fracture fill; 5° TCA with kspar salvages																	
71.50	72.90	QMDfg	several sections of fine-grained rock same composition as course mostly diffuse boundaries, one spot 72.8 m looks like a sharp contact 50° TCA; dyke or?																	
72.90	81.40	altd	variably altered, locally mod kspar; numerous chlor and carbonate fracture fails, mostly 2-4mm wide; 20% 10-20° TCA; from 72.9-74.53 m rock is quite fine-grained, rock is broken@contact fine-grained//medium grained																	
74.28	77.28	QMD	sample 15975	0	1	1	3	1	1	3	1	2	0	5	0	0	0.1	0.1		

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS	ALTERATION (1-5):								MINERALIZATION (%):							
FROM	TO			>3mm (#/m)	Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeO	Cpy	Bor	Cc	other	
81.40	82.50	QMDfg	weakly magnetic, slightly fine-grained at bottom of interval																	
82.50	83.00	flt	rubbly core; highly altered; soft green clays; sericite and chlor? Small 1mm specs dark gray-black mineral hem? [Soft H = 3] overall 0.1% of this interval-likely hem (scratched red)																	
83.00	83.70	QMD	medium-coarse-grained Qtz monzodiorite; mod magnetic, relatively fresh [minor kspar]																	
83.70	84.40	aplite	most of this interval is an aplite Dyke; upper contact ~ 60° TCA slightly irregular contact or contact is in broken core; 84.30 m several blotches of molybdenum just below contact associated with epidote 20° TCA																	
84.40	90.70		medium-coarse-grained Qtz monzodiorite; several chlor +/- carbonate veins 10-15° TCA [upper 1/2] lower 1/2 several carbonate plus possessing feldspar veins 15-25° TCA																	
90.10		carbvn	carbonate vein ~ 40° TCA ~1cm wide, rock is fine-grained for 5-10cm either side?!																	
92.70	99.90		fine-grained Qtz monzodiorite, variably magnetic; heavily chlor altered; locally epidote; locally chlor zones soft/mushy; rock soft/broken; locally rock has a very muddy look; micro fractures filled with hem? and chlor and ?; Locally slicks observed; spec of cc? Observed @ 99.70 m also here vein of hem plus cc? 1cm wide 40° TCA																	
66.14	70.00	QMDfg	fine-grained Qtz monzodiorite, variably magnetic; heavily chlor altered; locally epidote; locally chlor zones soft/mushy; rock soft/broken; locally rock has a very muddy look; micro frac																	
99.90	105.10	QMD	altered fine-grained QMD; Muddy green color; plag altered to sericite; mafics altered to chlor; core is quite soft locally faulted; 103.40-104.85 m mafic dyke ~30-40° TCA contact is irregular; from 101-102.3 m rock is sheared ~10° TCA soft/crumbly; locally observed kspar along salvages especially at base of this unit; 5-7mm thick chlor filled fracture with strong kspar alteration ~30° TCA; mod magnetic except where kspar alteration then low magnetic; @104.80 m calcite vein 3-5mm 35° TCA; 104.0 m calcite vein 1mm 20° TCA	0	4	1	4	1	1	1	1	2	0	1	0	0	0	0		
105.10	118.78	QMD	salt-and-pepper-slightly pinkish; mod magnetic; pinkish color comes from kspar alterations scattered throughout; medium grain with biot 2-3mm in size; 20-5% plag; 60-65%; magnetite equals 5%; kspar 10% mostly secondary; much of biot is altered to chlor	0	3	1	3	1	1	2	1	2	0	5	0.1	0.1	0	0		
105.10	111.78	QMD	105.35 m cpy on chlor filled fracture 3mm; 35° TCA; kspar or selvage; 107.5 m calcite filled fracture, 50° TCA, kspar selvage; 108.81 m carbonate fracture 20° TCA, kspar selvage from 108.81-118.70 rock is greenish as plag is altered to pale green clay, 110.50 m fracture with clots of hem and cc? + specs of cpy 35° TCA.																	
111.78	113.28	QMD?	Very altered rock! Difficult to estimate bornite/cc as there are several discrete clots (easy to estimate) but also several dark gray-black smears of ~gouge may be significant cc. At 112.0 m specs cpy; 112.10-112.30 m fault gouge 7-10mm interval of dark gray material below which is a Qtz all the way to 113.70 m is vein jumbled/fractured and impregnated with cc and molybdenum usually in fractures; @113.75 m 3-4mm wide vein of hem ± cc? 40° TCA; interval is mostly nonmagnetic.	10	4	1	4	1	1	3	4	3	0	1	5	0.01	0.1	0.3	.1 mo	
113.28	114.78	QMD	much as above: very altered; rock is muddy green; 3-4mm wide cc vein 40° TCA @ 114.5 m; rock is generally weakly to nonmagnetic; rock is quite soft (plag alt'd to white-greenish clays) Qtz locally as discrete veins (113.6 m 40° TCA) other places in vein is diffuse-irregular more of a silicic flooding	5	3	1	3	1	1	2	3	2	0	1	2	0.01	0.01	0.4	.01 mo	
114.78	116.28	QMD	becoming less altered; hem plus cc occur in vein with rusty hem (limonite) 35° TCA (114.78-150 m) mostly fault gouge.	1	2	1	2	1	1	2	2	1	0	0	3	2	0	0	0.1	0
116.28	132.60	QMD	medium-fine-grained; mostly fresh intrusive; locally faulted; much of the unit altered to chlor; mostly rock is hard; salt and pepper (greenish); 116.8 m fault gouge ~45° TCA 10cm; 125.30-125.60 m fault gouge 118-129.50 m much of core is broken; 120.50 m chlor 1mm coated fracture 20° TCA; 129.50-132.60 m competent core slightly coarser grained, 3-4mm biot altered to chlor; rock is hard; plag fresh; 132.0 m 20° TCA fractures, chlor filled 2mm.	0.5	2	1	2	1	1	2	2	1	0	0	3	2	0	0	0.1	
132.60	133.80	gouge	medium-pistachio green gouge-paste 25° TCA (upper contact) 30° TCA (lower contact)	0	3	1	3	3	1	2	1	1	0	0	0	0	0	0		
133.80	138.00	qmd	medium grained (top)-fine-grained (bottom) Qtz monzodiorite; much as 116.28-132.6 m; medium grained from 133.8-135.8 m grade finer over 30cm then becomes intensely chloritized over last 30cm of interval (137.7-130.0 m) rock is mostly fresh plag hard, biot altered to chlor; 135.7m kspar selvage 10° TCA; 137.40 m chlor vein 2mm 20° TCA; upper contact 30° TCA; lower contact is rubble																	
138.00	141.50	gouge	soft Chloritic gouge	0	2	1	3	1	1	2	1	1	0	0	0	0	0	0		
141.50	150.15	QMD	mod altered rock; plag (40% fine-grained ground mass) altered to soft white-pale green clay; locally kspar flooded; 40% biot altered to chlor (5-7mm); 5-10% Qtz 1mm anhedral grains; 5% magnetite; rock is soft and locally quite broken; fractures healed with chlor/carbonate/epidote																	
141.50	150.15	QMD		0	3	1	3	2	1	3	1	2	0	0	5	1	0	0	0	
150.15	152.65	gouge	upper contact perpendicular to core axis; lower contact ~80° TCA; upper half of this unit is mush; deforms under pressure from fingers; lower 1/2 is broken core recognizable as Qtz monzodiorite; hem plus chlor observed on fracture surfaces; calcite in crushed rock; locally rock has rounded fragments (milled in fault?)																	

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS	ALTERATION (1-5):								MINERALIZATION (%):						
FROM	TO			>3mm (#/m)	Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeO	Cpy	Bor	Cc	other
				0	3	1	3	1	1	3	1	1		0	0	2	0	0	0
146.90		flt	fracture 80° TCA; healed by hem + 4-5mm vein of dark gray-green soft (each equals 3-4) material not red streak; not magnetic but I don't think is cc??																
152.65	171.80	QMD	much as 141.5-150.15 m; but here plag is a little fresher; biot altered to chlor mostly 5-7mm (160-160.25 m fine grained 1-2mm interval); 153.9 m secondary magnetite mineralization initially thought to be cc; 152.65-154.0 m fracture 3-5° TCA; 153.9 m fracture 70° TCA chlor filled slicks observed; 155 m 40° TCA fracture chlor and slicks; @ 156 m trace cc and hem in chlor filled fracture 50-60° TCA carbonate vein here too; 156.70-156.80 m gouge 80° TCA soft pasty; 155.8-158.0 m increase kspar alteration; locally weakly magnetic; 150.3 m 1cm calcite vein 25° TCA; 161.28-164.60 m fault; gouge plus broken core; 75-85° TCA; abundant chlor and hem in crushed rock; 164.0 m epidote veinlets occur 5-15° TCA multiple (2-4mm wide)	1	2	1	2	2	1	2	2	2	5	1	0	0	0.01	0	
171.80	175.00	gouge	large fault/gouge/broken core; fracturing 70-80° TCA; abundant hem poor/epidote all biot altered to chlor; abundant calcite	0.5	3	1	3	3	1	3	1	2	0	2	1	0	0	0	
175.00	181.30	QMD	much as 152.65-171.8 m; ~176.6 m numerous clots 1cm in size of soft H=3 red-black mineral not red streak; not magnetic; zeolite? Rock varies from weakly-mod magnetic (weak near fault) moderate where fresh; 180 m fracture with hem plus chlor 10-15° TCA; 177.70-178.0m Dyke? Pinkish color aplite?; Upper contact 60° TCA; lower contact 80° TCA; weak-nonmagnetic 45-50% plag 45-50% pale pink (kspar) 5% hem as tiny grains <1-1mm; 176.30-176.50 m sheared healed with hem 70° TCA; 180.0-181.3 m increasing kspar alteration from weak to moderate, numerous chlor filled slips, 30-50° TCA some contain epidote.	0	2	1	3	3	1	2	1	2	0	3	1	0	0	0	0
175.00	181.30	QMD	much as 152.65-171.8 m; ~176.6 m numerous clots 1cm in size of soft H=3 red-black mineral not red streak; not magnetic; zeolite? Rock varies from weakly-mod magnetic (weak near fault) moderate where fresh; 180m fracture with hem + chlor 10-15° TCA; 177.70-178.0m Dyke? Pinkish color aplite?; Upper contact 60° TCA; lower contact 80° TCA; weak-nonmagnetic 45-50% plag 45-50% pale pink (kspar) 5% hem as tiny grains <1-1mm; 176.30-176.50 m sheared healed with hem 70° TCA; 180.0-181.3m increasing kspar alteration from weak to moderate, numerous chlor filled slips, 30-50° TCA some contain epidote.	0	2	1	3	3	1	2	1	2	0	3	1	0	0	0	0
181.30	181.76	QMD	odd pale green to pale pink rock upper contact ~40° TCA Lower contact 20° TCA; rock is likely qtz monzodiorite some texture as above; here the rock has numerous hem veins (1-3mm) 10-30° TCA; upper lower contacts shears; rock is very altered; nonmagnetic; soft H. =4	0	3	1	1	1	1	2	1	2	0	0	2	0	0	0	0
181.76	197.21	QMD	S & P color with pepper being dark green; med grained; 3-5mm biot (altered to dark green chlor) 35-40% + white-locally pinkish plag locally rock is sheared;	0	2	1	3	1	1	2	1	2	0	4	1	0	0	0	
182.30	182.60	flt	sheared rock; 45° TCA; locally kspar altered; chlor on fracture surfaces																
183.40	183.60	QMD	very similar to 181.3 m-181.76 m 50° lower contact (hem on fracture) 70° upper contact epidote + hem on fracture; nonmagnetic																
185.28		flt	fracture; 20° TCA; juxtaposes slightly lighter/darker qtz monzodiorite																
185.80	186.40	flt	shear; 20° TCA, chlor in shear																
187.40		flt	fracture, 10° TCA chlor and slicks observed																
188.20		hemvn	specular hem on fracture, 4 veins <1mm, 2mm, <1mm and 3-5mm thick some cc could hide in here, 70-80° TCA																
189.00		flt	10cm of crush 70° TCA																
190.30	190.60	flt	crush/gouge; 40° TCA = lower contact; 60° TCA = upper contact (chloritic)																
193.30	193.50	dyke	thin Dyke? Finer grained with ~2mm biot similar lithology just a different look and quite magnetic, upper contact 40° TCA chlor coated fracture; lower contact fault gouge 50° TCA																
193.50	195.00	flt	chlor coated slicks 10-15° TCA broken core-nearly gouge																
195.05		flt	7mm thick fracture coating silvery gray to very dark green soft (H= 3) mineral = chlor? Possibly some cc? 70° TCA																
195.85	196.05	dyke	Dyke? Upper contact gradational 55-60° TCA both upper and lower contact; possibly a kspar selvage on both contacts; dyke is fine-grained 1mm and nonmagnetic; two calcite veins parallel to contact each 5-7mm wide																
197.21	198.50	QMD	unsure of protolith?; Rock is heavily altered, abundant chlor + epidote + hem as veinlets and flooding; upper contact 40° TCA; lower contact 65° TCA both likely faulted; rock has a pale green to maroon color; nonmagnetic; veins of hem cut core axis at 55-65° TCA; plag altered to sericite	0	3	1	2	3	1	2	1	2	0	0	5	0	0	0	0
198.50	209.40	QMD	pale green to salt-and-green pepper; locally pinkish; mod-nonmagnetic; mostly shared rock; locally gouge; most shears 20-30° TCA; some are parallel to core axis.	0	3	1	4	1	1	3	1	2	0	3	2	0	0	0	0
202.00	202.30	flt	rock crenulated; possibly a shear ~parallel to core axis and crenulated perpendicular to shear																
201.30	201.50	flt	shear; 20-30° TCA slicks on chlor																
204.00	205.30	flt	broken core-gouge 45° TCA = 1 shear; 0° TCA is another.																
206.80	209.10	flt	shear ~parallel to core axis; chlor filled																

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	ALTERATION (1-5):								MINERALIZATION (%):					
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeO	Cpy	Bor	Cc
209.40			EOH															



MINING DIVISION: Kamloops
 OVERBURDEN: 6.40m
 TOTAL DEPTH: 200.86m
 CORE SIZE: NQ

STARTED: Sept 23, 2009
 FINISHED: Sept 27, 2009
 UTM-E: 647,200
 UTM-N: 5,583,555
 NAD83 Zn 10

DOWNHOLE SURVEY			
Instrument	DEPTH (m)	AZIMUTH	DIP
Compass	0		-90
Acid	105.77		-82.5
Acid			

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	ALTERATION (1-5):										MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeO	Cpy	Bor	Cc	other		
0	6.4	casing	no recovery																		
6.4	102.72	QMD	S & P (green pepper); mostly fine grained; biotite 2-3mm, locally 6-7mm, 30-35%; 5%? Magnetite as fine specs; 55-60% plag as ground mass; 10% quartz as <1-1mm grains; 2-5% kspar on selvages of fractures locally observed large 4-5mm clots of magnetite; rock is very weak magnetic over 10cm, mostly altered rock being low-non-magnetic; fresher rock mod magnetic; a few specs of cc and cpy are observed as diss grains scattered widely (<0.05%-trace) <1-1mm in size.	0	2	1	3	2	1	2	1	2	0	5	0	0.01	0.01	0			
9.8			2cm gouge ~perpendicular TCA																		
11			2mm kspar selvage 20° TCA																		
12.4			3mm vein carbonate; 25° TCA																		
14.8			6-8cm gouge 70° TCA																		
16			2mm calcite vein 10° TCA																		
17		veins	2X2mm calcite veins with kspar selvage 30° TCA																		
19.5		veins	carbonate and kspar vein 5mm 25° TCA																		
20			Xenolith																		
20.42	22		increase in kspar flooding																		
20.9	21.1		Gouge, lower 45° upper 40° TCA																		
24.5	24.75		gouge 50° TCA; chlorite with slickensides, rock is altered to Clay quite soft.																		
25.2	26		broken core/gouge 75-80° TCA																		
32.61	38.71		similar to QMD but here are ground mass is muddy green gray color (kspar plus sericite plus chlorite?)																		
38.1			pink carbonate vein 20° TCA																		
39.1			pink carbonate veins @35° TCA																		
41.1	41.25		gouge upper and lower contact 70° TCA																		
43.9			white - slightly pinkish carbonate 40° TCA vein																		
45.8			pink carbonate 35° TCA; several large clots of magnetite in this region																		
47.6			contacts; two anthologies possibly xenolith only 10cm of rock number two																		
48.6	49		broken rock-get 25° TCA																		
50.2			contact° TCA later rock above slightly darker rock below																		
44	56		numerous subtle variations and lithology/appearance to rock, say from 44.0 m-56.0 m some difficulty to put your finger on contact																		
51.05	53.1		slightly higher amount of epidote in rock; upper contact 30° TCA lower contact 45° TCA general pale epidote green look to ground mass																		
54			green look to ground mass																		
54			several pink carbonate veins 20-30° TCA																		
55			gouge 45° TCA upper contact;? Lower contact																		
54.1			Quartz vein 20° TCA not parallel to carbonate veins																		
56	56.5		broken core probable fault																		
57	57.2		several clots of bornite up to 3mm x 1.5cm in size																		
59.1			fractures 75-85° TCA healed by epidote																		
60	61		several sub parallel fracture filled with pink carbonate and/or carbonate plus kspar																		
61.8	63.1		broken core at top; intensely altered in middle, sericite + chlor + kspar; gouge at bottom (60° TCA)																		
63.1	63.6		rock is quite dark green biotite altered to chlorite but also plagioclase in groundmass has a greenish color too																		
65.2			epidote in selvage of 60° TCA fracture																		
63.6	60		rock becomes progressively less altered down the downhole becomes fresh @ 68.0 m (biotite still altered to chloritic)																		

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	ALTERATION (1-5):										MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeO	Cpy	Bor	Cc	other		
69	72.5		numerous pink carbonate fracture fills mostly one-3mm thick @ 25-35° TCA.																		
72.5	72.8		broken core; epidote + hematite +?; Crumbly looking rock can break with hands																		
76.4			calcite veins 3-4mm; 30° TCA; many biotite grains are parallel to calcite																		
76.6			as 76.4 here 4-5mm, less biotite alignment																		
77.28	77.7	Aplite	Aplite dyke; upper and lower contact ~60° TCA; pale pink color ~equigranular 35% Quartz 4-6mm ameboid; 55 % locally sub to euhedral plagioclase variably altered to kspar and sericite; 10% biotite altered to chlorite; 2-3% magnetite																		
77	79.5	QMD	kspar altered; biotite altered chlorite (3-4mm) numerous epidote +/- carbonate veins 3-8mm thick cutting core @ 25-35° TCA																		
79.5	80		drk green & pink rock; 65% blotches of biotite alt'd to chlor; 5-10mm in size in pale pink ground mass; upper contact 70° TCA (fault?) Lower contact 20° TCA, calcite rich crush																		
80	82	QMD	fine grained 1-3mm biotite altered to chlorite; much of plag altered kspar; several 35-50° TCA pink calcite veins; locally abundant epidote.																		
82	84.5		broken core opponent chlorite plus epidote rock faulted at 10-20° TCA; rock is heavily fractured ranges from pink (kspar) to dark green (chlorite)																		
84.5	87.48		competent fairly fresh coarse monzodiorite fine-medium grained 2-5mm biotite altered chlorite																		
87.48	93.2		mostly broken core locally nearly gouge; mostly weakly to not magnetic; chloritic and kspar flooding locally several angles of fractures																		
81.38	1.6		few specks of bornite; trace over entire sample interval																		
93.2	90.2		as 84.5-87.48 m here mostly weakly magnetic a few carbonate veins @ 75-80° TCA and 25-30° TCA some weak kspar alteration																		
90.2	102.72	QMD	variably altered' locally fresh (biotite altar to chlorite) locally kspar on selvage; locally plag altered to sericite; several fracture zones, 70-80° TCA; some healed by carbonate																		
102.72	200.86	QMD	QMD; numerous different phases some finer some coarser some more mafic some more felsic; extremely variable and alteration from quite weak to obliterated; numerous faults (a fault in most every box) weakly mineralized only a few zones with anything (i.e. no more than a few specks of cc or cpy) color varies from salt and green pepper to greenish with white specks																		
				0.5	2	1	3	2	1	2	1	2	0	5	1	0.01	0.01	0	0		
102.72	112.6	QMD	med. grained, 3-4mm mostly fresh (biotite altered chlorite) locally kspar occurring along selvages (104-106 m) epidote occurs along some fractures.																		
112.6	114	QMD	coarse-grained (5mm) magnetic version of 102.72-112.6 m; biotite altered chlorite; local kspar.																		
114	118.7	fault	gouge/broken core, chlorite + kspar + carbonate all abundant																		
118.7	123.3	QMD	3-4mm QMD; mostly weak-moderately kspar flooded; biotite altered to chlorite; plagioclase soft altered to sericite; several fractures 2-4mm @ 20-30° TCA, carbonate filled; gouge 1cm wide w/ carbonate 80° TCA.																		
123.3	128.3		gray-salt-and-pepper; plag is mostly medium gray color but quite hard; biotite altered to chlorite; 2-3mm grain size; magnetic except in fracture zone; little kspar observed; fractures filled with calcite; fractures at 123.4 m @ 65° TCA; 124.0 m = 60° TCA; 125.4 m = 30° TCA chloritic; 124.5 m = 30° TCA; 126.0 m = 65-70° TCA gouge, chloritic; 126.30 m = 40° TCA; 126.8 m gouge = 30° TCA.																		
120.3	132.5	QMD	strongly altered; here rock is green with white specks of plagioclase altered sericite; rock is soft; specs of hematite <1-3mm in size are observed.																		
132.5	136.45	QMD	moderately fresh; ~3mm biotite altered to chlorite; magnetic; salt-and-pepper colored; a few small kspar selvages.																		
136.45	145.39	fault	broken core; very chloritic fractures at many angles TCA; some fractures filled by chlorite others with carbonate; mostly nonmagnetic.																		
145.39	150	QMD	broken core but not gouge; 1-3mm grain size; variably magnetic; variably altered sericite at top (palest pink color); chloritic and sericite in the middle; kspar and chlorite at bottom; 146.7 m clot of chalcocite? 1mm x 3mm.																		
150	194.16	QMD	QMD w/ SIGNIFICANT faults ~50% of this large interval is gouge/paste (rock deforms under finger pressure) there appears to be several phases of QMD but due to alteration and faulting difficult to determine; fracture surfaces; 150m = 60°; 151m = 60°; 152m = 60°; 153m = 60°; 153.4m = 70°; 155.5m = 60°; 157.5m = 30°; 159.0m = 60°; 160.3m = 15°; 162.4m = 60°; 164.5m = 50°; 166m = 80°; 167m = 40°; 171m = 80°; 173m = 60°; 174m = 80°; 179m = 80°; 182m = 80°; 183.4m = 80°; 186.0m = 50°; 189.0m = 45°; 193.1m = 80°; 194.7m = 75°; 190m = 20°.																		
194.16	200.86	QMD	salt-and-pepper QMD; locally rock is slightly pinkish-Orange, kspar flooding; locally rock is greenish (chlorite flooding); biotite altered to chlorite; locally plagioclase altered sericite; lowermost (95cm) is green gouge; 196.0-196.20 m greenish gouge carbonate rich 80° TCA; 194.5m carbonate veins 20° and 60° TCA, 1mm thick; 195.2 m 2mm carbonate veins 20° TCA; 197 m pink carbonate and kspar vein 2mm thick 20° TCA.																		
200.86		EOH		0	3	1	2	1	1	2	1	2	0	2	0	0	0	0			



MINING DIVISION: Kamloops
 OVERBURDEN: 3.66m
 TOTAL DEPTH: 163.68m
 CORE SIZE: NQ

STARTED: Sept 28, 2009
 FINISHED: Sept 30, 2009
 UTM-E: 646,625
 UTM-N: 5,583,100
 NAD83 Zn 10

DOWNHOLE SURVEY			
Instrument	DEPTH (m)	AZIMUTH	DIP
Compass	0	270	-60
Acid	105.77		-56
Acid			

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	RATION (1-5):													MINERALIZATION (%):																				
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld		Py	Mag	FeOx	Cpy	Bor	Cc	other																		
0.00	3.66	casing	mineralization noted in recovered rock																																			
3.66	18.66	GD	S&P color; ~30% Quartz 2-3mm, sub-anhedral; 30% biotite 3-10mm, some fresh (not chloritized) sub- euهدral; plagioclase ~30% 2-4mm sub -euهدral, rare euهدral grain; 5% kspar some is likely primary; 1-2mm an-subهدral; 5% magnetite <1-2mm grains, sub-anhedral; locally rock is altered pale-medium green epidote plus chlorite?; Other places i.e. @15 m rock is altered by kspar over 20cm; only a few pinkish calcite veins are observed 25-30° TCA.	0	1	1	2	2	1	2	1	2	1	2		0	5	0	0	0	0	0	0															
18.66	21.66	GD	as above; but from 19.8-20.3 m fault gouge 45° TCA (carbonate rich with specks of hematite) and from 21.25-21.35 fractures 55° TCA with minor malachite and one large 3X5mm clot of chalcocite; a few small specks of chalcocite also observe near fractures; is there any chalcocite in fault gouge?	0	2	1	2	1	1	3	1	1			0	4	1						0.1	0.1	ma													
21.66	51.56	GD	as 3.66-18.66 m here biotite altered to chlorite; locally biotite are up to 10mm in size and tend to be blocky most are 3-4mm most plagioclase are hard (not seritized); locally rock is cut by veins of calcite or quartz or epidote + chlorite?	0.5	1	1	2	2	1	2	1	1			0	5	0	0	0	0	0																	
23.00	23.50		several pink calcite veins 20-35° TCA, 3-5mm wide																																			
26.20			odd greenish color to rock (epidote plus chloritic?) over 10cm.																																			
27.70	28.10		quartz vein ~55° TCA with odd green color selvages (chlorite plus epidote?)																																			
31.50			kspar + chlorite + epidote? vein 25° TCA with 10-15cm selvage, tiny fractures ~ perpendicular to vein, very weakly magnetic.																																			
34.60			30° TCA; 2mm soft white fault gouge/paste																																			
37.00	38.00		several fractures? 60-70° TCA with 0.5-1cm selvage where plagioclase is altered sericite																																			
41.30			45° TCA selvage with odd green minerals (epidote + chlorite?) 5cm wide																																			
41.70			2cm wide kspar vein 40° TCA																																			
45.55			brownish gray quartz vein 60° TCA; 2cm wide																																			
46.80			65-70° TCA brownish gray quartz veins; 1.5cm wide																																			
49.50	50.50		zone of moderate-weak (chlorite + epidote?) alteration seems to cut core at 25° TCA; rock is locally soft H = 5.5																																			
51.56	69.66	GD	as 3.66-18.66 m but here perhaps 10% Quartz; 40% biotite altered to chlorite; 40% plagioclase; 4% magnetite; 3% kspar; 5% chlorite as flooding; rock is quite hard plagioclase locally altered to sericite but not intense; color very from salt-and-pepper to greenish salt-and-pepper to locally pinkish (intervals of kspar selvage); biotite grains vary from 3-8mm in size secondary biotite is common.	0.5	2	1	2	1	1	2	2	2			0	4	0	0	0	0																		
59.80	60.20		several quartz veins up to 4cm wide with kspar halos; angles include 50°, 10° and 45° TCA, at least 2 appear to be perpendicular to each other																																			
62.60			2 pink carbonate veins 3-4mm wide 40° TCA kspar selvage.																																			
63.00			Quartz vein 55° TCA 5-7mm wide with 1mm carbonate veins at edges.																																			
64.00			3cm carbonate veins 40° TCA																																			
64.00	67.00		small 3-5mm carbonate veins cutting core at many angles 20-55° TCA.																																			
67.00	67.10		broken core																																			
64.10			brownish quartz vein 55° TCA, 1cm wide.																																			
69.66	83.00	GD	much as 51.56-69.66 m but here core is very altered/broken; locally rock looks shattered, abundant chlorite and hematite throughout; chlorite + epidote in lower 1/2 of interval giving rock and unusual green color, in upper 1/2 hematite occurs as <1-1mm disseminated specs, fracture coatings and fills 2-3mm veins often in areas with carbonate veins, interval ends in a zone of broken core.	0.5	3	1	3	2	1	2	1	1			0	2	3	0	0	0																		
71.50	71.80		broken core																																			
71.80	72.63		rock looks very sheared, abundant hematite and calcite veins 40° TCA veins are diffuse somewhat "horse tail" like in appearance.																																			
72.63	74.30		intense chlorite alteration but little hematite.																																			
74.30	75.66		abundant hematite on fracture surfaces core is very broken fractured tends to cut core at low angles 0-30° TCA @ 72.4 m rock is ~auto breccia with hematite healing fractures.																																			

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	RATION (1-5):										MINERALIZATION (%):							
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld		Py	Mag	FeOx	Cpy	Bor	Cc	other		
75.66	79.30		little hematite but chlorite + epidote common; plagioclase locally altered to sericite; rock is very tectonized but rather competent; the color is rather odd green locally trace malachite may be present (but only trace).																			
79.30	80.50		relatively fresh GD; salt and pepper color; 2 weak kspars selvages @ 79.5 m and 2 chlorite filled fractures @ 80.25 m (40-45° TCA).																			
80.50	83.00		weak-modern chlorite + weak epidote alteration; weak plagioclase alteration to sericite.																			
83.00	94.30	GD	salt-and-pepper; fairly fresh; some plagioclase altered to sericite; all biotite altered to chlorite; 20-3% Quartz <1-2mm anhedral (difficult to estimate) 30-40% plagioclase <1-3mm anhedral; 30-40% biotite <1-7mm in size sub-euhedral; 5% kspars; mostly hard competent core only a few fractures mostly 40-50° TCA.	0.5	2	1	2	1	1	2	1	1		0	2	0	0	0				
94.30	95.10	GD	sheared /altered pale green color, lower contact = 1cm gouge @ 65° TCA; 1/2 interval broken core/gouge; 94.62cm gouge 55° TCA																			
				0	3	1	3	1	1	2	1	0	0	1	0	0	0	0				
95.10	104.00	GD	much as 83-94.3 m here biotite up to 1cm and plagioclase and quartz both slightly more euhedral plagioclase/biotite/quartz 30/40/30% respectively; mostly fresh with a few slightly chloritic zones and sericite alteration zones; tiny 1mm carbonate veins cut core @ mostly 30-50° TCA; one vein ~90° TCA; either tiny aplite dyke or kspars plus quartz vein carries trace <<1mm specs of pyrite; in vein/dyke 8mm wide.	0.5	2	1	2	1	1	2	1	1		0	5	0	0	0				
104.00	111.50	GD	much as 95.1-104.0m; here rock is mostly pale-medium green and pepper; locally rock is quite broken sheared; significant amount of plag alt'd to sericite; Epidote observed in selvage @ 111.0 m; upper contact fault 50° TCA, lower contact gradational into fault altered rock; biotite up to 1cm; several <1-3mm carbonate veins 30-50° TCA.	0	2	1	3	2	1	2	1	1		0	5	1	0	0				
111.50	113.95	fault	hematite fault mostly gouge; fracture orientation quite variable 112 m equals 20° TCA; 112.5 m equal 0° TCA; 113.5 m = 85° TCA rock is mostly maroon to locally greenish; abundant carbonate throughout; protolith may have been GD but not sure; lower contact fault. Locally rock is 60% plagioclase alt'd to sericite (completely) with 30-40% hematite groundmass.	0	3	1	3	1	1	3	1	1	0	0	5	0	0	0				
113.95	115.65	GD	much as 104-111.5 m but here coarser granit biotite equals 1cm sub-euhedral plagioclase 6mm (locally completely alter to sericite) 2-3mm quartz; medium green color to thin 5mm-1cm aplite dyke's? Or kspars veins @ 115.15 m 20° TCA.	0	2	1	3	2	1	2	1	1		0	5	0	0	0				
115.65	118.70	GD?	unsure of lithology but most of the interval looks like GD; but locally rock is completely replaced by a deep red brown hematite; in much of interval plagioclase crystals 1-3mm subhedral can be seen altered to sericite; ground mass hematite 117.5 m an odd brick orange carbonate veins 20° TCA; portions of the interval are fresh GD, also @ 117.5 m 5cm of fault gouge 75° TCA; upper contact diffuse over 10cm, lower contact ~75° TCA diffuse over 1cm	0	4	1	3	1	1	3	1	1	0	0	1	30	0	0				
118.70	155.80	QMD	Quartz is only 5-10% of rock as <1-2mm anhedral grain; plagioclase 60% mostly as fine-grained ground mass and <1-5mm anhedral blebs rarely as 2-3mm subhedral xtals; 30-35% biotite altered to chlorite <1-10mm clots to euhedral books; rock has a pale green ground mass and dark green blotches; plagioclase varies from pale green (mostly fresh) to intensely sericite altered (especially close to large faults) rock is mostly nonmagnetic	0.5	3	1	3	1	1	2	2	1		0	1	0.5	0	0				
119.60			quartz vein 6mm wide 40° TCA.																			
121.10			fracture 30° TCA chlorite halo 3-4cm each side.																			
121.50	125.50		moderately broken core; moderate chlorite altered; in general the more broken the core the more chlorite in rock.																			
122.00			1cm crush (fault gouge)																			
123.60			3 hematite veins (blood red) 1mm wide @ 25° TCA.																			
123.80			Quartz vein 1cm wide 55° TCA.																			
124.10			20cm of ~fault gouge with a thin 1mm hematite vein at base 25° TCA.																			
127.80	128.40		fault 30° TCA, very broken core.																			
130.70			kspars/quartz vein 1cm wide 20° TCA.																			
129.10			fault with slickensides ~ parallel to core axis.																			
131.50			off white vein not quartz (hardness = four) not carbonate (no acid reaction) 25° TCA.																			
132.66			several calcite veins undulatory but generally cutting core 0-20° TCA; (<1-5mm wide) with <1mm chlorite rinds.																			
133.30	134.50		odd silica/kspars flooding but rock is H=6; textures are obliterated; muddy greenish-pink color.																			
134.20			fracture 20° TCA.																			
135.00			fracture 45° TCA.																			
136.35			2 calcite + hematite veins 20-30° TCA 1-2cm each.																			
137.70			gouge 2cm; 80° TCA calcite in gouge.																			

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	RATION (1-5):										MINERALIZATION (%):									
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld		Py	Mag	FeOx	Cpy	Bor	Cc	other				
130.66	141.66		auto brx; healed by calcite; dark-light green (chlorite) matrix; locally well developed; other portions more of a gouge like rock; faulting 60-80° TCA.																					
139.60	140.30		moderate to intense hematite alteration calcite stringers/blebs abundant.																					
140.70	140.85		gouge; abundant calcite; 70-80° TCA.																					
144.50	144.60		gouge 30° TCA hematite on the fracture surfaces.																					
144.20	144.30		intense sericite alteration.																					
145.50	155.80		plag mostly altered to sericite; rock is quite broken; very few 10cm pieces																					
148.00	148.20		hematite altered interval; rock has a muddy red color; quite fractured.																					
149.00	151.80		numerous <1-6mm calcite veins; cut core at all angles.																					
151.80	155.80		intense sericite alteration; numerous intervals of gouge or near gouge material; fractures seem to be from 45-65° TCA; calcite is abundant; lower contract is sharp ~80° TCA.																					
145.50			trace epidote near fracture.																					
155.80	156.55		gouge-intense hematite gool; lower contract 50-60° TCA.																					
132.20			calcite vein with open spaces ~0° TCA; up to 1cm wide, open spaces up to ~5-7mm across.																					
127.10			very thin <<1mm cpy on fracture surfaces 40° TCA.																					
156.55	163.68		med green; f.g. dyke; microdiorite? Groundmass has carbonate; circular vesicle like structures are filled with carbonate; <1-5mm calcite veins cut core at many angles.																					
				0	1	1	1	1	1	1	2	1		0	5	0	0	0	0					
163.68			End of Hole																					



MINING DIVISION: Kamloops
 OVERBURDEN: 14.33m
 TOTAL DEPTH: 205.13m
 CORE SIZE: NQ

STARTED: Oct 1, 2009
 FINISHED: Oct 5, 2009
 UTM-E: 646,300
 UTM-N: 5,582,275
 NAD83 Zn 10

DOWNHOLE SURVEY			
Instrument	DEPTH (m)	AZIMUTH	DIP
Compass	0		-90
Acid	38.71		-89.5
Acid			

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	ALTERATION (1-5):								MINERALIZATION (%):					
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc
0	14.33	casing	18cm recovery boulders.															
14.33	111.54	QMD	intensely altered/intensely sheared QMD; intervals where texture can be observed protolith appears to have been QMD; 30-40% biotite up to 8mm in size (either altered to chlorite or completely obliterated) 50-60% plag an-subhedral up to 6mm in size (either altered to sericite or completely obliterated); 5% magnetite (altered to hematite or obliterated) 5% Quartz <1-2mm anhedral grains; color ranges from rusty yellow at top of hole to various shades of green/maroon to white; nearly every box has significant fault gouge; specs of hem (<1-2mm) are scattered throughout much of this interval; no cc or bn observed but trace amounts could be within hematite; core is broken most of this large interval.	0	5	3	5	1	1	3	1	3	0	5	0	0	0	0
14.33	19.5	flt	fractures coated with rusty yellow stain (limonite +?); 18.0 m fault parallel to core axis; 19.4 m fault gouge perpendicular to core axis															
19.5	21.2	alt	moderate-intense chlorite alteration; ground mass is greenish; specks of hematite <1-2mm; 1-3% of rock; lower contact 70° TCA (hematite coated shear); few plag grains discernible altered to sericite.															
21.2	22.7	alt	intense sericite + hematite alteration; plag altered to sericite; everything else altered to hematite; plag 2-3mm subhedral 50-60%; lower contact gradational; many fractures 60-70° TCA.															
22.7	28.2	alt	intense sericite + chlorite alteration; specs of hematite <1-2mm, 1-3%															
28.2	30	alt	intense ser + chlor and moderate-intense hem alt'n; variably altered locally up to 15-20% hem other portions only ser + chlor with specks of hem 1-2%															
30	31.94	alt	intense sericite + chlorite alteration rock is broken parallel to core axis, last 30cm is gouge.															
31.94	34.2	alt	intense hem + ser alt'n; faults @ 10° TCA.; rock is very soft (deforms under fingertip) locally 80%? hem - dark reddish brown color locally as little as 15% hem (85% ser).															
34.2	35.33	GD	intense ser + mod chlor alt'n abundant calcite; 3-5% hem as specs 1-2mm; rock is a pale green color; very soft; H = 3-4; perhaps 10-15% Quartz possibly some epidote here, color is slightly pistachio colored.															
35.33	37	alt	intense chlorite + sericite alteration rock is medium green color; 2-3% hematite as tiny specks scattered throughout.															
37	38	flt	gouge medium-pale green mush.															
38	50.9	alt	intense sericite + chlorite alteration rock is pale-medium green in color occasionally see QMD like structure 5% Quartz, 2-3% hematite specs.															
46.5		flt	fracture 45° TCA with slickensides perpendicular to core axis.															
50.9	51.8	alt	intense sericite + chlorite + hematite alteration; Rock is rusty pale green; soft; hematite stains all fracture surfaces and is 3-5% tiny specks scattered throughout core.															
51.8	52.7	flt	very broken core, intense chlorite alteration; Rock is dark green; lower contact = fault 45° TCA.															
52.7	53.5	flt	gouge, green paste.															
41		flt	80° TCA fracture.															
51		flt	45° TCA fracture.															
45		flt	30° TCA fracture.															
53.5	54.6	QMD	coarse-grained biotite altered to chlorite 50% of rock; 5-9mm across plag alt'd to sericite; very blotchy appearance, 5% kspar as 2-3mm anhedral grains.															
54.6	57.17	alt	rock becomes intensely altered little-no texture remains palest green color fracture surfaces @ 50-60° TCA.															
57.17	50	alt	pale green clay-locally intensely hematite altered; gouge; rock easily broken with hands; locally deforms under finger.															
58	59.5	alt	plag altered to sericite completely (40-50% rock = soft white clay) 2-4mm sub-euhedral; 40-50% fine-grained hematite; 5-10% calcite in matrix?.															
59.5	66	alt	as 58-59.5m; here < hem in grndmass (5-10% hem) locally chlor 10-15% of rock; much of intr'l is p. green - off white gouge; 0° & 45° TCA are common angles of faults/fractures.															
57.5		flt	fault 45° TCA slickensides perpendicular to core axis.															
55		flt	fault 45° TCA slickensides parallel to core axis.															
62.33	63.6	flt	pale green to locally rusty red paste, 35° TCA seems like orientation fault.															
63.6	64.15	QMD	intensely altered sericite + chlorite 1-2% hematite as tiny 1mm specs.															
64.15	64.57	gouge	at 62.33-63.60 m lower contact fault @ 50° TCA.															
64.57	64.8	QMD	intensely altered GD nearly brick red; plaid altered to white clay, groundmass altered to deep red hematite + kspar?.															
64.8	65.3	gouge	as 62.33-63.60 m fault seems to be 30° TCA.															

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	ALTERATION (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other
65.3	68.7	QMD	intensely alt'd GD; 5-10% Quartz anhedral 2-3mm clear; plag 30-40% altered to white (3mm subhedral) clay; groundmass altered to kspar (30-40%) tiny specks of hematite <1-1% ,<<1mm; from 65.30-65.80 m fault cuts core at 10 ° TCA; rock is pale brick red; plag altered to white blotches; rock is lowermost meter becomes slightly chlorite altered.																
68.7	85.6	QMD	interval is intensely alt'd here by chlor and lesser by kspar (patchy) rock is primarily medium green in color; with patches of pale orange usually only a few cm to perhaps 15cm at most; medium grained (~3mm); 5% Quartz as 2mm grains (anhedral) everything else altered to chlorite 1-2% hematite as tiny <1mm specks scattered throughout core; core is very broken; locally plag altered ser; 69.30 m fault 20° TCA; 71 m fault 10° TCA; 72.50m fault 0-10° TCA; 79m fault 0-10° TCA; 85m 10cm gouge.																
85.6	111.54	QMD	pale to mostly medium-dark green QMD; moderately to intensely chlorite altered; 40-45% biot alt'd to chlor; 40-45% plag pale green; 5-10% kspar scattered throughout core, 1-3% hem as <1-2mm specs scattered grains; perhaps 1% magnetite overall; ~ 1/2 of this interval is fault gouge; including: 88.6-90.6 m, 96.3-96.8 m, 97.5-97.7 m; 101-103.05 m; 103.7-103.9 m; 105.05-105.25; 108.2-109 m; 111.0-111.2 m; 111.4-111.5 m; rock is mostly non-weakly magnetic; grain size mostly 2-4mm; ; 88.5m quartz veins 5-7mm wide 80° TCA; 89.90 fault, 10-20° TCA, fault (hem stained) 80° TCA; 96.4 m fault 65-70° TCA; 97 m fault 0° TCA; 97.5 m fault 75° TCA; 99 m fault 80° TCA; 104.8 m hematite vein 30° TCA; 108.5 m fault 60° TCA; 109.0 m fault 45° TCA; 111 m fault 70° TCA; 111.5 m fault 65° TCA.																
111.54	126.5	GD	medium-dark green to locally pinkish; medium grained 3-6mm (rarely up to 7mm); mostly weak-moderately magnetic locally strongly magnetic; 15% quartz 3-4mm anhedral grain; 35-40% plag subhedral 3-6mm (moderately to weakly altered to sericite); 30% biotite sub-euhedral altered to chlorite up to 8mm; 5% magnetite as tiny specks; 5-10% kspar replacing plag and found in groundmass; locally rock is intensely chlorite altered, unsure if this denotes a different intrusion or just an increase in alteration.	0.5	2	1	3	1	1	1	1	3	0	5	0	0	0	0	
112.9		qvn	reddish maroon quartz vein 5cm wide ~80° TCA																
112.9	113.7	alt	moderate sericite alt'n (plag altered to sericite)																
114.5	114.91	alt	intense chlorite alteration (possibly another intrusive?)																
120	120.1	flt	as 112.90m broken core unable to determine orientation.																
120.1	120.35	alt	as 114.5-114.91m.																
122.33		flt	fault (5cm) ~80° TCA.																
126.5	144.9	QMD	kspar altered QMD; pale pink to strong pinkish orders; medium-fine-grained 2-3mm; nonmagnetic; moderate-intensely kspar altered; much of interval is broken core; with several zones of gouge; three Quartz veins 128.33m (10-20° TCA) 1cm; 133.5m 80° TCA 1cm; 140-140.33m; several small veins from 136.25-139.29m; numerous splotches of dark gray material only one or two specs of cc can be positively identified but several of these blotches up to 1 x 3cm may be in part cc; specs of hem are observed scattered throughout core; 138.5-138.8 gouge 60° TCA; 141-142.4 very broken core + gouge ~70° TCA; 10-15% Quartz (2-3mm anhedral); 50-55% plag altered to kspar (fine-grained); 30 to 35% biot altered to chlor 2-3mm; 144-144.9m broken core + gouge 70° TCA.																
173.3	174	flt	series of slips chlorite on fracture.70° TCA.																
175	178.5	flt	fault gouge soft white paste likely 60-70° TCA..																
178	178.92		lost core in this interval.																
178.92	179.1	alt	dark green muddy looking granite chlorite altered.																
179.1	180	flt	gouge 25° TCA.																
182	183.5	flt	faults 30° TCA @ 182.2 m and 40-50° TCA @183 m; sericite altered in and around these fractures / faults.																
184.5	185.3	flt	fault 10-20° TCA																
187	189	flt	broken core no sericite alteration.																
190	190.5	flt	fault 20° TCA sericite alteration.																
190.6		flt	fault 75° TCA; chlorite alteration in selvage.																
193.68		cvn	calcite vein of 30° TCA; 8mm chlorite alteration halo																
197		cvn	calcite vein 20° TCA; little to no alteration.																
195	201.3	aplite	syenogranite dike; 30-40% kspar; several epidote veins cut core at many angles each 1-7mm wide; upper and lower contact seems to be 75-80° TCA; weak-nonmagnetic.																
201.7	204.3	flt	broken core; 20° TCA.																
204.3	204.4	aplite	aplite dyke; 35° TCA.																
204.4	205.13	alt	moderates sericite alteration (plag altered sericite).																
144.9	163.68	Qmonz	QMonz; 15% Qtz 2-3mm anhedral; 25-30% kspar f.g. groundmass; 25-30% plag, 2-4mm, white-pale yellow fairly fresh and hard; 5% magnetite mostly as 1-3mm blotchy masses; 20-25% biot some alt'd to chlor some fresh and black up to 8mm; locally plag alt'd to ser; 151-151.25 broken core; 156.3 fracture 80° TCA; 161m broken core 30cm.	0	2	1	2	1	1	2	1	2	0	5	0	0	0	0	

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	ALTERATION (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other
163.68	169.45	Gran	20-25% Quartz 3-4mm anhedral; 30-35% plag slightly altered to sericite milky but still quite hard (except all on fracture where server-side alteration is intense) 30% biotite altered to chlorite up to 8mm an-euhedral; 5% kspar in ground mass; 5% magnetite; first 50cm is intense sericite altered gouge; fault 40-50° TCA; 165 m 7cm wide non-magnetic finer grained (3mm) take slightly less mythic 45° TCA; from 164.5-10cm of gouge unsure of orientation 165.5-168 m rock is fractured parallel to core axis calcite 5-10mm wide intense sericite alteration salvage 10mm either side; 168.8 m fault 3-5 m wide healed by calcite; 169.102 fractures 45° TCA with 5mm sericite alteration salvage.																
169.45	172.82	GD	20-25% Quartz 3-6mm, anhedral; 20-25% plag 3-4mm subhedral locally altered sericite or chlorite + sericite; 10-15% kspar open (replacing plag) 15-20% biot alt'd to chlorite (2-7mm anhedral) 5% open spaces odd pitted look to rock unsure what minerals removed (mafics and plag are observed proximal to spaces) upper contact fault 50° TCA; lower contact gradational into non-resorbed similar rock; 170.8 m fault at 75° TCA; 171 m fault@75° TCA; 172.4 m carbonate veins 10mm wide 20° TCA; rock is pinkish to pinkish greenish.	0	2	1	3	1	1	3	1	3	0	2	0	0	0	0	
172.82	205.13	Granite	large interval of granitic composition 20-30% Quartz 2-4mm anhedral; 20 to 30% kspar in groundmass (some is secondary?) 20-30% plag locally altered to sericite (i.e. near faults) most plag off-white and hard 2-5mm; 20-30% biotite altered to chlorite (1-8mm) an-euhedral; magnetite 0-5%; mostly moderately magnetic; grain size 3-8mm; trace very fine grained cpy was observed in groundmass in this interval.	0	2	1	2	1	1	2	1	2	1	3	0	0.01	0	0	0
205.13			EOH																



MINING DIVISION: Kamloops
 OVERBURDEN: 14.63m
 TOTAL DEPTH: 337.41m
 CORE SIZE: NQ

STARTED: Oct 6, 2009
 FINISHED: Oct 13, 2009
 UTM-E: 5,581,200
 UTM-N: 646,365
 NAD83 Zn 10

DOWNHOLE SURVEY			
Instrument	DEPTH (m)	AZIMUTH	DIP
Compass	0		-90
Acid			
Acid			

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):										MINERALIZATION (%):					
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other	
0.00	14.63	casing	casing no recovery.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
14.63	29.47	GD	50% of the interval is gouge; very poor recovery (more gouge lost?) Rock is intensely altered from complete obliteration of (i.e. gouge) to intensely chlor altered where rock is soft pale green color (plag altered to ser plus chlor and biotite altered to chlor); upper one half of the interval has 3-5% specs of hem 1-3mm in size; a couple of purplish quartz veins are observed (hem plus Quartz?) Especially 20.42-21.0 m; unsure of protolith 25-30% Quartz suggests that protolith was granitic possibly been a GD; lower one half of interval has abundant hem on fracture surfaces; 26.25 m Quartz + kspar vein ~45° TCA.	0.5	3	1	3	1	1	2	2	2	0	0	3	0	0	0		
29.47	68.56	GD	GD-QMD; coarse salt and pepper color locally pale green or pale pink; 40% biotite (2-10mm), sub-euhedral, locally altered to chlor but much is fresh; 40% plag an-subhedral, fine-grained (~3-5mm); 5% magnetite; 2-3% kspar in salvages and has diffuse spotty ground mass; numerous dykes in this interval; 10-15% Quartz 1-3mm anhedral; @47.30 m is a 10cm quartz vein with a few 2mm clots of cc at the edge of vein; interval is moderately magnetic and is mostly medium-coarse (4-8mm in size).	0.5	3	1	2	2	1	2	2	2	0	4	0.5	0	0	0		
31.00		Cvn	calcite vein 45° TCA, 1cm wide.																	
32.00	32.20	dyke	Dyke; more mafic than surrounding rock.																	
33.50		flt	gouge 45° TCA.																	
34.20	35.66	flt	faulted Dyke; upper contact 10° TCA; abundant hem on fracture surfaces; dyke is fine-grained and weakly magnetic, lower contract in broken core.																	
35.66	36.20	dyke	another Dyke; fine-grained green ground mass (chlor) with large (10mm) clots of hem (from biotite??) Lower contract 60° TCA.																	
38.60	40.30	aplite	several aplite dikes 39 m 45° TCA 4cm; 40.1 m 1-2cm 45° TCA; 40.2-40.3 m 10cm 45° TCA.																	
40.80	41.00	qvn	qtz vein 30° TCA carries epidote halo of epidote + kspar 10cm either side.																	
41.00	41.20		chlor + epidote in groundmass.																	
41.20		qvn	quartz vein 50° TCA in turn fractured and filled by epidote both parallel and perpendicular to vein.																	
41.20	42.00	dyke	fine grain dyke; upper contact 50° TCA; lower contact 20° TCA.																	
42.30		cvn	1-2cm pink calcite vein at 25° TCA times two.																	
42.30	46.00	flt	broken core fractures parallel TCA filled with a 1mm calcite; lowest 1/4 has 3-5% hem as wispy veinlets and blebs																	
46.00	46.30	flt	zone of chlor + hem in fractures; locally (bottom) is autobrecciated; healed by chlor + hem fractures are wispy/anastomosing.																	
47.30		qvn	Quartz vein																	
47.30	47.75	dyke	dyke; fine grained and kspar rich next to Quartz vein; gradually becomes coarser grain and more like country rock until an indistinguishable.																	
50.90	51.00	dyke	mafic dyke; chloritized and hematitic																	
52.50	53.00	dyke	kspar Rich Dyke 10-15° TCA; 40-45° kspar 50-55% plag 5-10% biotite.																	
56.63	57.30	dyke	aplite dyke upper contact = 40° TCA; lower contact = 50° TCA.																	
64.90	68.00	flt	numerous fractures 10-20° TCA filled with pink calcite.																	
68.56	117.96	GD	much as 29.47-68.56m 35% biotite some fresh some altered to chlor 2-10mm; plag 3% creamy white and hard locally older to ser and/or chlor; 5% kspar mostly as ground mass; 5% magnetite as <1-5mm grains sub-anhedral; 1% epidote as altered areas what 10-15% Quartz; rock is S&P to green S&P in color; numerous dikes (many aplite in composition) cut core, <5% Quartz as <1-1mm grains.	0.5	2	1	3	2	1	1	1	1	0	5	0	0	0	0		
69.60		altn	epidote + chlor alt'n zone 10cm wide.																	
70.60		kvn	kspar vein 80° TCA; 1cm wide.																	
71.00		chlvn	30° TCA; chlor + epidote vein; 1cm wide with chlor + epidote in selvage 3cm either side.																	
73.70		chlvn	as 71 m but at 40° TCA.																	
74.00		flt	kspar in fracture 5-10° TCA 1cm halo.																	
76.10		flt	kspar halo 3cm wide 70° TCA.																	
76.85		qvn	2cm quartz vein 45° TCA with kspar and chlor alt'n halo; possibly one spec of cc 1mm wide.																	
77.00	77.20	flt	numerous <1mm fracture fills of epidote 70° TCA.																	

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):										MINERALIZATION (%):					
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other	
78.10	78.20	flt	chlor + epidote in fracture/halos 45° TCA.																	
78.50	79.91	alt'n	chlor + epidote alt'n; odd green color.																	
80.80		qvn	Quartz vein 5mm wide 40° TCA; epidote in salvage.																	
83.63		qvn	Quartz carbonate veins likely 10-20° TCA (broken Core) epi + chlor in Salvage.																	
84.50	85.00	epvn	epidote + chlor alt'n seems to be associated with 45° TCA fractures.																	
86.63		qvn	75° TCA Quartz vein 3-4mm wide; kspar + chlor + epidote alt'n 5-10cm either side.																	
89.63	90.00	dyke	fine grained (<1mm-1mm) a slightly plag phyrlic Dyke; palest peach color (85° TCA) 25cm true width.																	
90.43		dyke	3cm dyke; pale orange; 90° TCA; digestive boundaries; fine-grained (aplite?)																	
90.70	90.85	dyke	very unusual looking Dyke; 9cm wide; 50° TCA; pale grey; chilled margins with strange assortment of plag +? Phenocrysts + xenoliths? plag are pink-white.																	
91.80		dyke	75° TCA dyke much as 90.7-90.85.																	
92.50		qvn	Quartz vein; 8mm wide; 75° TCA + calcite vein 15-20° TCA, 2mm thick.																	
93.60		dyke	pale pinkish dyke 40° TCA; 4cm wide (aplite)																	
95.63	95.80	alt'n	epi + chlor alt'n																	
96.50		dyke	two pulses at edges is 91.8 m type dyke then in the middle is a finer grained ~alite like Dyke (1cm-3cm-1cm) approximately 50° TCA.																	
97.00		dyke	91.8 m type dyke 3.5cm wide 55° TCA																	
98.60		dyke	91.8 m type Dyke; 3.5cm 45° TCA																	
99.20	99.45	dyke	pinkish orange Dyke; 60° TCA; digestive contacts can see fabric of country rock in dyke; Syenite in composition.																	
100.00		dyke	91.8 m style dyke; 2cm wide; 45° TCA.																	
102.00	102.72	flt	fault gouge																	
102.72	103.30	alt'n	weak kspar alt'n																	
103.80	104.25	epvn	epidote plus chlor alt'n 30-45° TCA; calcite veins (associated)																	
105.30	105.70	epvn	epidote + chlor flood on fractures																	
105.77	108.20	alt'n	weak-mod kspar alt'n																	
108.20	108.81	flt	fault gouge 45° TCA + 5cm calcite vein @ 65-70° TCA with milled rock at edges (autobrx) + intense hem alt'n.																	
108.81	110.00	epvn	intense epi + chlor + ? alt'n; very muddy color likely hem in ground mass; calcite on fractures surfaces.																	
110.00	111.20	GD	fine grained version of country rock.																	
111.20	114.00	alt'n	variably altered; mod chlor + epi alt'n to mod kspar alt'n to fault gouge to intense epidote alt'n to fault zone @ 10° TCA with rusty hem to muddy hem + chlor + epi?.																	
114.00	117.96	flt	broken core moderate ser + chlor+ kspar alt'n																	
117.96	160.50	GD	much is above 68.56-117.96 m numerous slightly different phases of ~GD like composition is locally finer /coarser grained locally altered by kspar and/or ser and/or chlor and/or hem and/or epidote; rock is locally strongly faulted; a few aplite dykes are observed; 10-15% qtz, 1-3mm anhedral grains; 50% plag as creamy white 1-4mm crystals; 35% biotite (altered to chlor) 2-10mm; 5-10% kspar in groundmass (primary? /secondary?) Mostly moderately magnetic with 3-10mm grain size.	0.5	2	1	3	2	1	2	2	2	2	0	5	1	0	0	0	
118.50	121.40	flt	broken core, locally gouge; strong chlor alt'n; chlor + epi observed in last 15cm (moderate-strong)																	
122.60		dyke	kspar vein 5cm wide 55° TCA (aplite Dyke?)																	
122.75		flt	5cm wide gouge, greenish; 80° TCA																	
124.05	124.55	flt	green and pink gouge possibly 45° TCA; 1-3mm specs hem throughout; 2 veins or Dykes, one pink (45°) aplite? Kspar? and another medium-dark green @ 55° TCA; the two are nearly perpendicular to each other																	
124.55	128.30	aplite	kspar veins 2-6mm wide cutting core @ very low angle (0-10° TCA) locally core is weakly flooded by kspar																	
128.30	128.57	flt	moderate-Strong epidote + chlor alt'n; hem observed on fractures surfaces; very weak kspar flooding.																	
128.57	140.10	flt	biot altered to chlor; kspar on some fractures and weak kspar flooding: a couple small aplite dykes. Several Quartz veins 1-5cm wide; small intervals of gouge.																	
129.80		qvn	2cm Quartz veins with small blebs of epidote; 55° TCA																	
130.80		qvn	2cm Quartz vein possibly 70° TCA																	
131.50		aplite	two small (1 + 3cm) aplite Dykes ~60° TCA																	
131.80		qvn	1cm Quartz vein 50° TCA																	
131.80	132.00	aplite	two aplite Dykes 5-10cm wide plag phyrlic, kspar groundmass																	
132.10		flt	3cm gouge; 75° TCA																	
132.55		qvn	3-4cm irregular Quartz veins; 70° TCA																	
133.20	136.50	flt	weak-moderate epi flooding and epidote in some fractures; weak-mod kspar flooding; biotite altered to chlor																	
133.20		chlvn	Chlor + epi vein, 2-3mm wide 45° TCA																	

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):					
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc
134.65		epvn	epi + chlor on fracture 35° TCA															
136.00		carvn	carbonate + epi vein 1cm 40° TCA															
136.20		qvn	Quartz + epi vein; 1cm 50° TCA															
136.50	137.25	flt	gouge ~90° TCA															
137.25	139.60	altn	interval of weak-moderate kspar alt'n; biot altered to chlor; weak epi flooding; lower most 20cm is moderate kspar on fractures ~50° TCA															
137.80		carvn	7mm wide Calcite + pink calcite vein															
138.50		qvn	1cm chlor + Quartz vein 45° TCA															
138.60		kvn	kspar (1cm) vein 45° TCA															
139.60	141.30	flt	broken core/gouge; calcite + chlor fractures seems to range from 30-50° TCA															
141.30	141.80	dyke	dyke perhaps 30% kspar in groundmass 25% qtz 3-4mm; 30% plag as milky subhedral grains; 15-20% biot alt'd to chlor; 5-10% magnetite (moderate-strong)															
141.80	143.00	dyke	another dyke? 40% biot as 1cm clots; 3-5% kspar in groundmass; 15-20% qtz 3-4mm anhedral grains; 30% plag as white milky 1-4mm subhedral grains; 5+ % magnetite															
143.00	144.70	altn	variably alt'd GD; locally epi + chlor flooded; locally weak kspar flooding; Qtz + epi vein 3-4mm wide @144.7m; 5cm granite dyke 33% plag, 33% Qtz, 33% kspar @143.8m															
145.20		kvn	kspar vein 5-7mm 15° TCA															
145.50	146.50	dyke	mafic dyke ~parallel TCA; 50-60% biot some look somewhat fresh; GD and dikes seem to be separated by kspar vein 0-10° TCA															
147.00		flt	5cm gouge; 55-60° TCA															
147.00	147.50	altn	bleached GD; palest green color.															
150.50	160.20	altn	several indistinct but different lithologies, subtle color differences, subtle composition changes; difficult to put finger on exact transition points; alt'n muddies contacts further.															
152.10		chlvn	chlor + Calcite vein 3-5mm wide 50°TCA															
152.50	153.10	epvn	epidote + chlor flooded interval															
153.20	153.50	dyke	dyke 50° more kspar in groundmass; plag more euhedral and larger mafic denote the Dyke.															
155.55	156.00	dyke	dyke much like 153.2-153.5 m 60° TCA ends in fault ~30° TCA															
158.00	160.33	dyke	several small dykes 91.8m Dyke; 45 and 20° TCA (158-158.5m) fault @ 159.1m 45° TCA chloritic															
160.37	160.50	qvn	intense hem + Quartz veins and Quartz is autobrx'd and healed by hem.															
160.50	208.40	GD	rock is quite variable in grain size and alt'n but seems to be same (or at least similar) protolith; locally rock is so altered the protolith is unknown; however in general rock is S&P to greenish S&P locally pinkish; several faults cut this interval; all biot alt'd to chlor; locally plag altered chlor; locally hem specs make up 2-3% a rock; mostly rock as weakly - nonmagnetic; ranges from ~1mm - >10mm grain size. in general 15-20% Quartz < 1-3mm anhedral; 30-35% biot alt'd to chlor (<1-10mm); plag 25-35% + <1 - >4mm in size sub-euhedral; kspar 10% (locally as high as 20%) mostly as groundmass; 2-5% magnetite; 2-3% hem mostly as tiny specks scattered; but as mentioned intense alt'n has changed compositions to 70% chlor (?); Most of the interval the plag altered to ser but then altered chlor or hem or ???.	0.5	3	1	4	1	1	2	2	0	0	2	2	0	0	0
160.50	161.30	altn	intense chlor alt'n rock is mottled green color.															
161.30	162.80	altn	moderate kspar alt'n 10-15% Rock is kspar; biotite altered to chlor; fine-medium grained; 3-4mm biotite; moderately magnetic.															
162.80	171.20	altn	mod-intense chlor alt'n; fault @ 163.25m 20-30° TCA; weak kspar alt'n in selvage (2cm) calcite (bright white) vein 30° TCA @ 164.2 m; weak kspar alt'n @ 165.3m (20cm); broken core from 165.6-166.0 m; intense ser alt'n; 166.1-166.2m intense hem alt'n perhaps 30% of rock is bright red hem; 166.4 chlor vein 30° TCA; 168-177 m core is mostly broken possibly several orientations of fractures 60° & 70° & 0° & 25° several fracture surfaces are coated with hem.															
171.20	174.30	altn	Mod-strong alt'n unusual much of rock is replaced (only Quartz remains) but color is pale peach-brown not right color for a strong kspar perhaps kspar +???; Much of this interval is broken core; hem observed on some fractures.															
174.30	176.36	altn	weak-moderate kspar alt'n much like 161.3-162.8 m.															
176.36	176.80	dyke	felsic dyke 35-40% Quartz rest is fine grained greenish groundmass, upper contact 70° TCA; lower contact 50° TCA															
176.80	184.00	altn	weak epi + mod kspar to mod chlor alt'n; several different phases of the intrusive; difficult to tell which are due to alt'n vs. Original composition changes.															
178.00		GD	rock is very little chlor 5% (2-3mm)															
179.10		aplite	aplite dyke @ 30° TCA 4-5cm wide															
180.00		altn	35-40% of rock is chlor (alt'n? Or protolith?)															
180.70		flt	rock is brx'd and numerous hairline fractures filled by chlor															
181.60		epvn	epi veins many angles to core axis.															
184.00	184.60	GD	rock is very coarse many biotite altered to chlor >1cm in size															
184.60	190.60	GD	weak-mod chlor altered GD?; Locally very difficult to see original textures; locally kspar observed in groundmass; from 188.5-188.8m very intense hem + kspar, 30-40% rock deep red purple; 189.4m Quartz carbonate veins @ 45° TCA															

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other
190.00	214.50	altn	chlor altered GD; 2-4mm in size; medium-dark green color; weak-moderately magnetic except where rock is intensely altered by ser around 213 m; ~10% kspar in groundmass; chlor replaces biotite and is in fractures and seems to flood rock giving groundmass a greenish color.																
190.30	190.40	flt	Green fault gouge 60° TCA; hem specs observed in several parts of this interval.																
190.60	200.00	altn	interval mostly med-fine-grained intensely chlor alt'd; dark green in color; locally I'm confident this is a dyke other places some GD textures are observed!; From 194-195m rock is weakly-moderately chlor alt'd and weakly kspar alt'd excellent GD textures observed; from 192.3-194m rock is dark green nearly black, med grained, some quartz is observed; 195-198m as 192.3-194m; 198-199.8m rock is fine -med grained, textures are obliterated, several dark gray-red 2-4mm wide Quartz veins cut this interval at many angles; 199.8-200m as 192.3-194m.																
200.00	204.20	flt	fault; a very large fault from 200.5-201.2 m intense gouge 45° TCA mush; pale green to maroon from 203.63-204.2 broken core-gouge, pale green color; carbonate seems to be healing gouge in both zones rest of this interval is deformed locally autobreccia; 202.5-202.6 m healed by calcite the maroon color in upper fault is likely hem.																
204.20	208.40	altn	odd blotchy appearance; kspar as 3-7mm blotches especially in upper 1/2 of interval, locally 15% of rock; also a weak fabric is observed many of the biotite is altered to chlor seems to be preferentially aligned; mod -intense chlor alt'n (biotite to chlor) and chlor on fractures /vein like structures.																
208.40	256.00	GD	most of this interval is GD; 10-15% qtz <1-3mm anhedral; 35% plag <1-4mm subhedral; 1-2% magnetite; 5-10% kspar in groundmass; 5% hem as tiny specks and as fracture coatings and locally flooding rock; 30-40% biotite altered to chlor mostly <1-4mm subhedral grains locally up to 10mm; 5-10% chlor as fracture coatings and flooding rock; difficult to say rock protolith changes or just alt'n style; most of rock moderately-intensely chlor altered; greenish S&P color much of interval is non-weekly magnetic.	0.5	3	1	3.5	2	1	2	2	2	0	2	3	0	0		
214.50	215.45	dyke	similar composition perhaps 50-55% biot alt'd to chlor; but is quite coarse grained (up to 1cm in size), dyke or?; aplite Dyke @ 215.10 m in broken core perhaps 5-10cm wide, 45° TCA = lower contact.																
215.45	216.10	aplite	aplite dyke; 60-65% kspar; 10-15% qtz (3-4mm, anhedral); 10-15% plag (2-3mm sub-anhedral) some altered to chlor; up'r contact ~65-70° TCA but seems variable; low'r contact = broken core																
216.00	246.00	altn	fairly uniform moderate-strongly chlor altered GD; 3-6mm mostly weakly - nonmagnetic; 2-4mm grain size; moderate-weak kspar alt'n from 222.2-223.1 m numerous hem + carbonate veins cutting core at many angles, large vein @ 222.8 m ~70° TCA 10cm wide with 5cm gouge at bottom.																
223.00	224.00	flt	broken core ~parallel to core axis																
224.00		qvn	Quartz epi vein, 1-2cm wide, 70-80° TCA.																
224.50	228.00	chlvn	chlor + epi + hem on fractures surfaces and in groundmass																
226.80		flt	intense breccia zone with hem and carbonate healing fractures.																
229.30		qvn	coarse Quartz + kspar vein 3-4cm wide 50° TCA																
230.90		qvn	coarse Quartz + kspar + milky yellow plag? vein 2cm wide 40° TCA.																
234.50	234.80	altn	hem rich interval; hem dust in groundmass.																
236.63		qvn	1cm Quartz vein 40° TCA with kspar very fine grained.																
237.20	239.66	altn	intense ser alt'n; Rock is soft (easily scratched) several Carb veins cut core at 5-20° core axis																
238.20	238.70	altn	intense ser + hem alt'n; Quartz vein @ 238.5 m 0.9cm wide 35° TCA; carb vein 1.5cm wide 40° TCA (two veins perpendicular to each other) zone has abundant hem in selages and in groundmass.																
242.66	245.00	hemvn	numerous veins of hem + carbonate most and are 5-10mm wide.																
242.66		kvvn	kspar plus Quartz vein 25° TCA 1cm wide.																
242.90		altn	10cm wide zone of maroon rock discolored by intense hem (halo around a fracture ~45° TCA)																
245.66	246.00	flt	broken core parallel TCA.																
246.00	256.00	altn	medium to pale green GD; moderate to intense ser alt'n; rock is soft to scratch; often almost aqua green; chlor gouge less prevalent above; hopefully rock is nearly white color; approximately 5-10% kspar in ground mass; Quartz 20% locally 25% likely it is just easier to see in the softer matrix; 2-3mm grain size; 25-30% plag altered to ser; 25-30% biotite altered chlor locally not discernible (altered to fine grained ser?).																
246.40	247.40	carvn	numerous carbonate + hem veins 60-80° TCA.																
248.66		dyke	3-5cm wide kspar + coarse biotite altered to chlor Dyke 25-30° TCA + Quartz																
249.00	251.66	altn	several intervals of nearly white rock; very soft; same composition as above/below; but bleached nearly white.																
251.66	256.00	flt	broken core; locally bleached as 249-251.66; chlor + hem are on fracture surfaces; rock is mostly medium-pale green.																
253.90	254.00	carvn	several carbonate + hem vein; 75° TCA; 1 - 3cm wide.																

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other
256.00	291.62	GD	interval characterized by numerous phases of ~GD intrusive; moderate-intensely altered often boundaries between phases (various compositions) difficult to locate; rock is broken/faulted; locally intensely ser altered, all biotite altered to chlor; rock is mostly greenish in color, some phases are darker green (~black) others are nearly white (ser) others maroon due to hem flooding; only a few meters of relatively fresh intrusive are observed; locally rock is quite felsic with 20% Quartz; overall 10-15% Quartz (<1-3mm) anhedral; 30-35% biotite altered to chlor, <1-8mm subhedral; 30-35% plag <1-4mm an-subhedral; 3-5% magnetite; 5% hem as specs (1mm-2mm) and fracture coatings; kspar 5% groundmass 1% epidote as fracture fill; 2-3% carbonate veins; <1% Quartz veins.	0.5	3.5	1	3.5	1	3	2	2	2	0	2	3	0	0	0	
256.00	257.30	flt	broken core; pale green.																
257.30	257.60	altn	intense hem flooding perhaps 15-20% rock has blotchy hem.																
257.60	259.90	altn	medium-dark green; wk epi alt'n, weak hem alt'n; moderate-strong chlor alt'n																
258.50		flt	fault likely 20-30° TCA																
259.50		carvn	carbonate + hem vein 70° TCA, likely a fault.																
259.90	260.46	flt	fault; very broken core, apple green to maroon; intense hem + ser alt'n, carbonate veins @ 80° TCA: fault @ 50° TCA																
260.46	269.14	flt	medium green to pale pink; very broken core; mod-intense chlor + ser alt'n; weak kspar alt'n; upper contact = fault 70° TCA; lower contact = Dyke (contact underlying Dyke has subtle chill margin) in the upper 1/2 of this interval several fractures 70-85° TCA filled by calcite + hem																
263.40		flt	fault gouge 5cm 70° TCA around each of these faults is a weak kspar halo 30-50cm other side;																
263.70		flt	fault gouge 1cm ~30° TCA.																
265.30		flt	fault gouge unsure of orientation but likely 20-30° TCA.																
266.30		aplite	2cm aplite Dyke, 80° TCA.																
266.50	267.00	flt	fault; intensely broken core.																
269.14	269.90	dyke	mafic coarse-grained Dyke; 75% is biotite altered to chlor, clots up to 15mm across; very weakly magnetic; lower contact a fault 15-20° TCA.																
269.90	274.50	flt	GD? Broken core mostly; interval characterized by intense ser alt'n, all plag altered to ser; locally abundant hem as specs 1-3mm (i. e. Upper most meter) or found in fractures or in the halos surrounding fractures; calcite vein @ 270m ~20° TCA.																
271.20	272.00	flt	fault mostly gouge in fractures @ 70°, 30°, 20°, abundant hem + calcite in this fault.																
272.20		flt	fracture 60° TCA hem in halo 2cm either side.																
272.80		flt	fracture 45° TCA hem in 2cm halo.																
273.20	269.90	flt	broken core; interval ranges from pale green to locally white locally medium green.																
274.50	275.70	flt	mod chlor altered GD; lower contact in broken core.																
275.70	277.10	dyke	mafic dyke 40-50% of rock is biot alt'd to chlor; rock is cut by calcite veins ~parallel TCA; intense ser + mod epi alt'n observed proximal to vein; lower contact is gradational with underlying GD; portions of the Dyke are strongly magnetic; lower contact = 20° TCA.																
277.10	279.50	GD	relatively fresh interval w/ 3-5mm biot alt'd to chlor but much of plag still fresh / hard; locally weak kspar observed; lower contact with more intensely altered GD is gradational; calcite + epi in veins 10-30° TCA.																
279.50	281.30	altn	interval is mod-intensely alt'd; 2 Quartz veins ~20° TCA each 2-3cm wide very trace amounts of Moly (<1-1mm specs) hem is abundant (5%) mainly as fracture fill and irregular clots near Quartz veins; biotite alt'd to chlor; mod ser alt'n (plag altered to ser) between qtz veins (280.2 & 280.45 m) is a zone of auto brecciation and mod epi flooding; lower contact is fault gouge 10° TCA; 1-2% of rock are <1-2mm pale yellow soft specks with irregular shapes (sulfide alt'd to Clay?) many have a rusty halo.																
281.30	285.60	altn	variably altered GD; changes from mod chlor-mod hem-mod chlor-fresh-weak chlor over a few meters the tiny yellow specks continue in this interval except in the fresh section; lower contact is gradational with ser altered rocks below.																
283.00	284.50	flt	fracture parallel to core axis with heavy chlor																
283.05		flt	fault @ 45° TCA																
285.60	291.62	altn	variably offered GD with numerous carbonate + hem veins cutting core at many angles; rock seems slightly more felsic than many above; 35-40% quartz up to 6mm in size; 25-30% biot alt'd to chlor (or locally altered to ser); 40% plag weak-strong ser alterat'd; nonmagnetic; perhaps 5% kspar in ground mass; tiny yellow specks trace-1%; most of the interval moderate-strongly ser altered; where not strong ser biot alt'd to chlor.																
285.80		carvn	carbonate veins; <1-2cm wide with 1mm selvage of hem 85° TCA.																
286.30		carvn	carbonate veins; <1-2cm wide; 1mm selvage of hem; 40° TCA.																
287.00		carvn	carbonate veins 2cm wide																
287.80	288.40	flt	broken core.																
289.70		qvn	pale green Quartz vein; broken core.																
289.80	290.00	carvn	numerous hairline veinlets of carbonate + hem 80° TCA.																
290.40	290.70	altn	odd-irregular shaped patches of hem flooding.																

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other
291.30	291.60	altn	moderate kspar flooding.																
291.62	299.98	GD	variably alt'd over short intervals from weak kspar to bleached with hem + kspar to nearly fresh to intensely hem altered back-and-forth over this interval; in general rock is medium 4-5mm GD; locally coarse (up to 9mm) locally fine (2mm) rock is somewhat variable in composition but difficult to say it due to alt'n or due to protolith; in unaltered rock quartz = 25-30% (2-3mm anhedral) rock is pink-greenish; plag? = 65%; in fresher rock biotite = 35% <1-9mm; plag 35-40% and Quartz 20-25% (2-3mm anhedral)	1	4	1	3	1	1	2	3	3	0	1	5	0	0		
291.62	292.40	kvn	fine-grained ~2mm fairly fresh S&P with a diffuse vein like structure carrying kspar ~parallel to the core axis.																
292.40	293.70	altn	interval of heavy alt'n including strong ser (plag - ser) moderate-strong kspar (in groundmass and as veins) Strong hem in selvages of carbonate veins; abrupt changes from above and below (i.e. upper contact sharp @ 80° (no indication of fault) lower contact in broken core (possibly fault);																
292.50		carvn	carbonate + hem veins; 85 & 90° TCA, 1cm wide																
292.90		carvn	carbonate + hem veins; 70° TCA ~0.5-1cm wide;																
293.10		kvn	kspar vein (aplite dyke?); 3-5cm ~80° TCA.																
293.33		kvn	kspar vein (aplite dyke?); 3-5cm ~80° TCA.																
293.70	294.75	GD	fresh GD.																
294.75	299.98	GD	rock grades from fresh at top of interval to mod chlor altered @ 295m with fault there @ 35° TCA; then into strong hem + kspar altered by 296 m, veins that look maroon (i.e. like hem) when stained to show high % of kspar (i.e. @ 295.7m) 25° TCA 1cm wide and; 5% rock is epidote as 1-2mm grains; locally brx could be defined as autobrx, from 296.63-298.66 m rock grades from moderate ser + wk kspar to moderate chlor to nearly fresh @ 298 m then back to moderate chlor by 290.6 m; . From 298.6-299.98 m rock varies from intense hem (+ kspar?) to moderate chlor + ser; all biot alt'd to chlor (some chlor now looks slightly epidotized.)																
295.00		flt	fault; 35° TCA																
295.80	296.63	flt	intense brx healed by hem (+ kspar?) most veins/brecciation zones occur ~50° TCA																
297.69		flt	fault; 5-10° TCA																
298.70		carvn	carbonate vein @ 30° TCA; 1cm wide brx'd; hem halo 3cm wide.																
299.98	337.41	GD	intensely altered GD?; Rock is pale pink in color; staining shows 40-50% rock is kspar (fine grained groundmass) 20-30% Quartz; 5-10% hem as specs <1-4mm in size scattered throughout rock; 10% is plag altered to ser; 3-5% dark pink mineral assumed to be kspar before stained) hem +??; hem also observed in some fractures.	0.5	4	1	2	1	1	1	1	4	0	0	5	0	0		
299.98	307.80	qvn	several large Qtz veins + intense hem zones, int'vl is quite broken; many carb veins seem to cut core at high angles (70 - 80° TCA) but qtz veins seem to be mod-low angles.																
300.00		hemvn	hem + carbonate vein 75° TCA.																
300.40		hemvn	hem + carbonate vein 65° TCA.																
301.30		hemvn	hem + carbonate vein 80° TCA.																
302.00	302.15	flt	hem + qtz brx in broken core.																
303.10		vein	5mm vein of dark gray-black soft mineral graphite? 10-20° TCA, broken core.																
304.00		qvn	Quartz + hem 45° TCA.																
305.70	305.90	hemvn	hem qtz vein, irregular.																
308.20	309.60		odd greenish mineral quite soft (H=3.5-4) heals auto brx'd GD; irregular shape; mineral is translucent almost like a green fluorite.																
314.90	315.30	flt	broken core																
318.10		chlvn	chlor + hem vein 1cm 25° TCA.																
321.00	331.20	qvn	2 Quartz veins 5-8mm; 30 + 45° TCA.																
322.80		flt	broken core.																
323.10		flt	broken core																
324.00	326.63	flt	broken core faults ~parallel to core axis.																
328.00		vein	similar looking (odd greenish) mineral in a vein like structure 5-10° TCA; 3-5cm wide.																
330.80	331.00	flt	broken core.																
332.00	333.10	flt	broken core.																
335.63	336.50	flt	hem on fractures some parallel to core axis.																
337.41			EOH																



MINING DIVISION: Kamloops
 OVERBURDEN: 15.50m
 TOTAL DEPTH: 252.07m
 CORE SIZE: NQ

STARTED: Oct 14, 2009
 FINISHED: Oct 18, 2009
 UTM-E: 5,584,301
 UTM-N: 647,370
 NAD83 Zn 10

DOWNHOLE SURVEY			
Instrument	DEPTH (m)	AZIMUTH	DIP
Compass	0	270	-65
Acid	90.53		-67
Acid	212.45		-68

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):										MINERALIZATION (%):					
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeO	Cpy	Bor	Cc	other	
0.00	15.85	casing	no recovery																	
15.85	73.50	GD	Fresh GD; medium-coarse grained, average 3-5 mm; color is salt-and-pepper with pink - orange ground mass; 25% Quartz 2-3 mm, anhedral; 30-to 35% plag <1-3 mm, sub-euhedral; 25-30% biotite <1-7 mm 10-15% potassium feldspar <1 mm anhedral; some biotite altar to chlorite; numerous diorite (fine-grained) Dykes cut core. GD is moderately magnetic; i.e. magnetite ~5%; rock is heavily altered from 45.15-48.20 m; lower contact is gradational into more altered rock.	0	1	1	2	1	1	1	1	1	1	0	5	0	0	0	0	
24.60	28.70		broken core including gouge @ 25 m.																	
30.20	31.50		fine grained diorite Dyke 2 m week magnetic upper contact 70° TCA digestive; lower contact 60° two core axis.																	
35.66	36.00		broken core, some gouge.																	
40.40	40.90		broken core, chloritic gouge.																	
43.50	45.10		GD has a darker ground mass, chloritic.																	
45.10	48.20		strongly altered 5-10% hem in groundmass 3-5% -epid as scattered blotches much of this interval is heavily faulted possibly @ 45-70° TCA many fractures have carb																	
45.80			Muscovite alteration observed in fracture.																	
48.20	56.00		diorite Dyke as 30.2-31.5 m, here kspar halos proximal to fractures many angles to core axis perhaps a 5% kspar in ground mass.																	
56.00	65.30		GD as 15.85-67.85 m locally up to 6-7 mm biotite.																	
59.50			pink carbonate vein 20° TCA																	
61.30			chlorite + kspar in fault and halo 25° TCA																	
64.00			aplite dyke 40° TCA, 4-5 cm.																	
65.30	65.60		diorite Dyke; upper contact equals 30° TCA, lower contact equals 25° TCA																	
65.60	66.55		GD as above.																	
66.55	67.50		fine grained diorite 2 mm biotite; upper contact = 75° TCA; lower contact = gradational with coarser unit.																	
67.50	73.50		medium-fine grained diorite-GD locally very little kspar 3-5% other places 10-15% usually finer grained has less kspar coarser grained more kspar.																	
70.80			carbonate + epidote vein 20° two core axis; 2-4 mm wide.																	
71.50			Aplite dyke 3-4 cm; 80° TCA																	
73.50	76.80	GD	GD, much as 15.85-73.5m; but here rock is mod - strongly alt'd; and mod mineralized; rock is locally mod chlor +epid alt'd (73.9-74.6m) to fairly fresh (74.6-75.3m) to intensely kspar+chlor+hem+cc alt'd (75.3-76.5m) to mod chlor alt'd (76.5-76.8m); difficult to estimate cc it is observed in dark purple grey fractures up to 1cm thick (unsure how much cc vs calcite); also observed replacing chlor (unsure what % of chlor grains are cc) 75.6-76.5m gouge and broken rock; faults 30-40° TCA	0.5	2	1	4	2	1	2	1	3	0	2	3	0.1	0.1	1		
76.80	84.50	QDrt	GD mostly as 15.85-73.5 m; 3-5 mm grain size; weakly-moderately magnetic; perhaps only 5% kspar in ground mass; 15% Quartz, 1-2 mm anhedral; 45% plag <1-2 mm Subhedral; 40% biotite 3-5 mm locally altered to chlorite; rock is mostly fresh to chlorite altered; plag looks white and hard; 79.1 m 3 cm aplite dyke; 45° TCA; 82.75-83.5 m compositional banding alternating bands of mafic rich / poor bands 50-60 ° TCA chill margins? on multiple Dykes.	0	1	1	2	1	1	1	1	1	0	4	0	0	0	0		
84.50	86.00	QDrt	much as 76.8-84.5m but here rock varies from quite fresh @ 84.5m to very sheared and chlor and hem and CC? @ 85.3m then back to fresh @ 86.0m; 85.1m creamy white calcite vein ~1cm @ 35° TCA on either side is drk grey ~blk material; non magnet; H~6, cc+?; 85.2-85.35m v drk green chlorite ~45° TCA; abundant calcite shredded throughout; 86.9m contact between sheared rock and mod chlor rock ~75° TCA; 85.9m = 2 qtz + f.g. grey mineral 35° TCA; 2mm and 5mm across; 85.1m vein is cc - upto 1% Cu if not then only trace cc present;	1	3	1	4	1	1	3	2	2	0	1	0	0	0.01	0.1		
86.00	91.80	GD	chlor alt'd; GC as 15.85-73.5m; biot -> chlor; wk - mod magnetic; 4-5mm grain size; 89.0-89.3m aplite dyke 45° TCA, 4cm across; wk kspar in a few fractures 1mm wide	0	1	1	2	1	1	1	1	2	0	3	0	0	0	0		

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):							MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeO	Cpy	Bor	Cc
91.80	93.00	GD	as 86.0-91.8m but here intense kspar+chlor+ser +mnr cc; several veins of chlor + carb + cccit core @ 10-20° TCA; difficult to est cc; likely tr-0.1%; drk grey green material (chlor+cc?+hem?) observed in fractures and replacing biot -> chlor -> dark grey	0	3	1	4	1	1	3	1	3	0	1	2	0	0	0
93.00	111.50	GD	15% qtz, <1-2mm anhedral; 25-30% biot <1-6mm; 35% plag mostly <1-2mm mostly hard and white; 10-15% kspar mostly as groundmass; 3-5% mt; S&P with pinkish ground mass color; several f.g. Diorite dykes; and aplite dykes cut this interval; core is quite competent; fresh; 93.5-94.6m f.g. kspar poor dyke; small shear @ 94.10m slicks II to CA; trace cpy and cc found in shear 15-20° TCA; several pink carb veins ~II to shear <1-3mm thick.	0.5	1	1	2	1	1	1	1	2	0	4	0	0.01	0	0
99.20	101.20	dyke	UC = 70° TCA; LC - lost core; f.g. Dyke; ~2mm; kspar poor; within this dyke os a coarse grained dyke ~70° TCA of mafic poor dyke 15-20% qtz, 55% plag 25% kspar 5% biot (99.7-100m); 100.85m fracture w/ epid <<1mm and kspar halo 1cm each side; biot -> chlor -> chlor + cc? within this 2cm halo 35° TCA;															
101.20	111.50	GD	mostly fresh (biot -> chlor) GD numerous aplite dykes cut core mostly 3-5cm across															
101.80			epidote in fract 45° TCA															
102.30	102.60		odd dyke; aplite on either end with odd coarse grained (1cm) abund biot ->chlor; UC = 40° TCA															
104.45		dyke	aplite dyke 2cm 55° TCA															
105.65		xeno	large 6cm xeno of drk green - blk f.g. (volcanic?) rock															
106.35		dyke	aplite dyke 40° TCA; 2-3cm wide															
106.65		dyke	aplite dyke 40° TCA; 1-2cm wide															
108.40		dyke	aplite dyke 35° TCA; 4cm wide															
109.50		dyke	aplite dyke 40° TCA; 1cm wide															
110.00		gouge	5cm fault gouge 80° TCA; chlor + carb.															
111.50	114.00	GD	GD; 5-10% qtz <1-2mm anhedral; 5-10% kspar groundmass; 5% mt <1-2mm; 35% biot -> chlor upto 5mm; 40% plag <1-3mm sub -anhedral; tr-1% epid mosly in fract; plag = hard and white;	0	2	1	2	2	1	1	1	2	0	3	0	0	0	0
111.50	112.20	gouge	broken core / gouge chlor + epidote; 75-80° TCA															
112.20	112.50	fractures	epidote in fract possibly tr cc in fract at bottom of interval															
114.00	117.50	GD	as 111.5-114m but here is mod - intensely alt'd and mod well mineralized; several shears healed by carb and or epid and/or cc	0	3	1	3	2	1	3	1	2	0	2	1	0.01	0.01	0.4
114.15			3cm carb vein w. 1mm cc 20° TCA															
115.80			epi + cc vein 2-4mm wide 20° TCA w/ kspar halo															
116.70	117.20		mafic dyke 50+% biot; UC = LC = 65° TCA;															
117.50	123.75	GD	much as 111.5-114 but here slightly more kspar perhaps 10-15% with more being in the lower part than the upper part; mostly weak - mod mag; mostly 4-6mm biot (-> chlor)	0.5	3	1	3	2	1	2	1	3	0	3	2	0	0	0
117.40			numerous clots of cc (replacing biot?) and magnetite															
118.60		shear	shear w/ trace cc 45° TCA															
119.10		shear	chloritic shear; 20° TCA; 3-4cm wide															
120.30		shear	chloritic shear; 5-10° TCA;															
121.50	122.00	shear	broken core; chlor on shears; 40° TCA															
122.50	122.80	shear	numerous shears 45-60° TCA; chlor + tr cc															
122.80	123.40		mod intense kspar w/ epid in thin veins 30-45° TCA;															
123.40	123.65	shear	intense shear / gouge kspar - chlor 65-75° TCA															
123.75	146.00	GD	numerous phases of GD (or close variant) range from non- strongly mag; and from 2-8mm in grainsize (biot); mostly fairly fresh; locally wk ser alt'd; wkly - mod chlor.	0.5	2	1	3	2	1	2	1	2	0	5	2	0	0	0
127.80		shear	shear chlor + kspar															
128.26	131.50	dyke	numerous small dykes (kspar poor so likely QMD); mostly 45-60° TCA; some fine grained some coarse															
132.80	133.80		mod kspar flood epid in fractures 40° TCA															
133.63		vein	hem + chlor + carb + cc?; 50° TCA															
135.00	135.50	kspar	kspar flood and numerous fract coated w/ chlorite; 20-40° TCA															

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other
136.00	136.90	fault	broken core																
136.25		gouge	10cm gouge in broken core;																
138.00		vein	chlor + carb vein 10° TCA; tr hem																
138.40	143.00		wk-mod ser alt'n above here very little to nil ser alt'n																
139.50		fractures	fractures 45° TCA; chlor + tr cc?																
141.20	143.00	fault	mod broken / sheared rock; many fract surfaces coated w/ chlor some have tr hem and many MAY have tr cc in them (difficult to estimate)																
144.80	146.00		rock qts progressively more alt'd / deformed down hole; wk-mod kspar; wk-mod chlor; ep in some fractures; locally wk-mod ser alt'n																
146.00	149.20	GD	GD? Intensely alt'd rock is pale green to nearly white; locally intensely fractured ~ stockwork, healed by hem / carb;	0	5	1	3	1	1	3	1	2		0	0	5	0	0	0.1
148.00	148.60	vein	numerous clots / vein like structures of dark grey waxy mineral + cc??																
149.20	151.20	GD	intensely alt'd GD; upper 50cm intensely kspar alt'd pinkish; rest is intensely chlor + epid alt'd tiny hairline fract filled w/ hem	0	3	1	4	5	1	2	1	3		0	0	2	0	0	0
151.12	154.90	GD	S&P to pinkish; wk-mod alt'd; wk-mod mag; 3-5mm biot -> chlor 35%; 15-20% kspar some of which is 2ndary; 15-20% qtz <1-3mm; 35% plag grndmass-2mm	0	2	1	2	1	1	2	1	2		0	2	0	0	0	0
154.00		vein	vein 20° TCA; carries chlor + tr cc?																
154.90	166.73	GD	mod-intensely alt'd GD; pinkish - orange S&P; much of this interval is shredded by small faults many perp to each other ~ stockwork; cc and bn heal stockwork; numerous slips are coated w/ dark green - blk - purplish mineral diff to est % of cc / bn	1	2	1	2	3	1	2	2	4		0	4	1	0	0.2	0.5
155.25		vein	calcite (brite white) and drk grey blk mineral (cc? + ?); 10-15° TCA; 1.5cm wide																
156.10		vein	chlor + calcirte; 5-10mm wide tr cc?																
156.50		fractures	fracture 45° TCA; rusty- protolith unrecognizable																
157.25		vein	carb vein yellowish 5mm wide 35° TCA, carries cc																
159.60	161.70	fault	broken core; numerous dark purplish = bleck - green coatings diff to est how much is cc / bn; most fract 40-60° TCA;																
163.20	164.70	stockwork	stockwork of bn / cc in strongly kspar alt'd rock; <1-5mm locally large clots of cc especially at intersections																
164.70	166.73	GD	mod kspar alt'd GD; numerous veins of chlor / epi; +/- bn/cc most @ 20-25° TCA; diff to est bn / cc %; but can see definate purplish hue to several zones- ~0.3% Cu?																
166.73	184.80	GD	relatively fresh; wk kspar throughout (mod for the uppermost 1m); several fractures are coated w/ dark grey / blk mineral some contain cc, not sure if all does; med grain 3-8mm	0.5	2	1	2	2	1	2	1	2		0	3	0	0	0.01	0
167.00	167.80		mod kspar and epi in veins;																
167.30		vein	qtz vein like structures; 3cm wide - diffuse																
167.50		vein	several 1mm wide dark grey 35-40° TCA; cc observed																
173.20		vein	1cm wide vein 30° TCA; dark grey material cc? + chlor																
174.90	176.00	fractures	fractures ll to CA; w/ chlor and tr cc?;																
177.50		vein	vein 30° TCA; 1mm thick; carb + chlor + cc																
178.30		vein	1cm vein of drk grey - blk minerla; chlor + cc50° TCA																
180.00		fractures	30° TCA; fractures w/ chlor+ cc?																
183.00		fractures	20° TCA; fract coated w/ chlor + cc?																
184.20		vein	vein like structure; 30° TCA; 1cm wide contains cc and has 1cm wide kspar halo																
184.80	192.90	QDrt	f.g. QD; wk-mod mag; mostly 1-3mm biot -> chlor 35-40%; 10-15% qtz <1-2mm; 40-45% plag as f.g. Groundmass - 1mm subhedral grains; 2-3% mt; 2-3% kspar mostly 2ndary and as halos	0	1	1	2	1	1	1	1	2		0	3	0	0	0.01	0
185.02		fractures	chlor + cc fract fill in kspar alt'd rock; 45° TCA;																
187.50	188.00	dyke	2 aplite dykes 1 and 10 cm wide; irreg orientation																
191.11		fractures	1mm fract coating; ~45° TCA; of cc+cpy+chlor;																
191.50		fractures	cc and cpy in v thin fract coating 30° TCA																
192.90	194.70	QDrt	as 184.8-192.9m; but here is mod- intensely alt'd / mineralized; gradual increase in alt'n over 50cm; epi occurs in blebs and fract; cc occurs mostly as tiny specs (trace)	0.5	2	1	3	2	1	2	2	4		0	2	2	0	0.01	0
193.60		kspar	chlor + kspar floods rock (most intense at 193.6m)																

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other
194.70	207.15	QDrt	f.g. mostly 2mm biot (-> chlor) 10-15% qtz <1-2mm anhedral; 35-40% plag <1-2mm sub - anhedral (groundmass; 35-40% biot (-> chlor) sub - euhehdral <1-2mm; color is S& P locally pinkish due to pink carb (some kspar?) flooding (esp 201.3-205.5m) ; numerous pink carb veins cut core mostly at 0-20° TCA; most are a few mm wide; lower contact is sharp and irreg possibly digestive.	0.5	2	1	2	1	1	2	2	2	0	0	2	0	0	0	
195.40		vein	intense chlor at 25- 30° TCA																
202.20		vein	qtz vein 7mm wide @ 30° TCA w/ pinkish halo (kspar?)																
202.80		vein	qtz vein 5mm wide 25° TCA; green halo; epi + chlor?																
205.20		vein	epi + chlor 4cm wide 30° TCA;																
207.15	215.60	GD	S and P color, slightly pinkish; med grained 4-6mm; w-m magnet; mostly fairly fresh; biot -> chlor; some fractures have kspar haloes; fractures coated by carb + chlor +/- epid; 10-15% qtz <1-2mm anhedral; 10-15% kspar grndmass; 35-40% plag grndmass- 3mm sub - euhehdral; biot -> chlor 40% <1-6mm sub-eauhehdral	0.5	2	1	2	2	1	2	1	2	0	5	0	0	0	0	
215.60	216.70	GD	as 207.15-215.6m but here rock is alt'd almost beyond recognition; rock is med green grey; numerous creamy white to dark grey card veins cut core at 15-30° TCA; lower contact is 20° TCA~shear w/ dark grey filling; 3-5% of rock is tiny yellow specks of clay perhaps a zeolite (H-2)	0	3	1	4	2	1	2	1	3	0	1	2	0	0	0.1	
215.70		vein	7mm vein w/ drk grey selvage; chlorite + ?? 30° TCA;																
216.00		vein	3mm vein 15° TCA; drk grey selvageis there some cc in selvage??																
216.70	228.40	GD	much as 207.15-215.6m here core is more broken w/ several short intervals of gouge; locally rock is mod alt'd; tr amounts of cc and cpy are observed at 221.3m	0	2	1	3	2	1	2	1	3	0	0	2	1	0.01	0.01	0
217.70		vein	carb vein @ 40° TCA, 1cm wide 1 clot of soft black minerla v.f. Grianed, possible cc on edge of vein.																
219.50		gouge	15cm of kspar alted gouge 45° TCA;																
220.20		gouge	20cm of fresh looking gouge, ~ 70° TCA																
221.20	221.50	gouge	gouge (chlor + cc+cpy) on fract 65° TCA																
222.20		gouge	20cm of gouge 30° TCA, slicks ll to CA																
223.00	224.00	fault	broken core mod kspar flooded, chlor on fractures																
224.50		vein	epi vein like structure 10-20° TCA;																
225.00		xeno	xenolith of mt rich rock																
226.50	227.00	GD	muddy looking kspar alt'd GD																
228.40	231.50	GD	strongly alt'd GD; intense chlor + ser alt'n leaves this rock v. Drk green to locally pale green; rock is locally quite sheared; locally rock is 80?% chlor; locally rock is indurated with carb; locally rock has tiny shears healed w/ chlor + hem + cc?; no cc observed but many shears / selvages contain dark grey f.g. minerals possibly cc; most shears seem to cut core at low angles 20-40° TCA; lower contact gradational over 10cm	0.5	4	1	4	1	1	4	1	1	0	1	2	0	0	0	
228.90		vein	3cm "vein" of hem - more like a healed shear																
229.40		brx	breccia w/ green grey gouge																
229.90		vein	carb vein 30° TCA; carried grey selvage																
231.50	252.07	GD	variably alt'd; locally fairly fresh (only bio ->chlor) locally mod kspar flooded; locally strongly chlor alt'd over short intervals, only a few specks of cpy/cc observed	0.5	3	1	3	1	1	2	1	2	0	4	1	0.01	0.01	0	
231.50	233.70		wk chlor alt'n																
232.00	233.00		a few blebs / specks of cc observed																
233.00		fractures	3 tiny shears ~45° TCA carry cc																
233.70	239.00		wk - mod kspar alt'n many fractures @ 45° TCA carry hem + chlor																
236.00	237.50	GD	finer grained 2-3mm																
237.00	239.00	fault	broken core																
239.00	239.88	shears	sheared at 20° TCA w/ 5cm of carb gouge, dark green intesnce chlor alt'n																
239.88	250.00	GD	weak - nil kspar; wk chlor alt'd med grained GD																
243.00			speck of cpy																
246.30			speck of cpy																

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):									MINERALIZATION (%):					
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOx	Cpy	Bor	Cc	other
247.50			speck of cpy																
247.50	247.80		intense chlor + ser alt'n; sheared at 20-30° TCA;																
249.40	249.90		dark finer grained muddy looking intrusive, mod chlor alt'n																
250.70	251.00		3-5% of rock is pale yellow soft clay mineral (zeolite?)																
250.90			carb + hem vein 20° TCA																
252.07			EOH																



MINING DIVISION: Kamloops
 OVERBURDEN: 18.90m
 TOTAL DEPTH: 200.25m
 CORE SIZE: NQ

STARTED: Oct 19, 2009
 FINISHED: Oct 23, 2009
 UTM-E: 5,584,100
 UTM-N: 647,425
 NAD83 Zn 10

DOWNHOLE SURVEY			
Instrument	DEPTH (m)	AZIMUTH	DIP
Compass	0	270	-60
Acid	41.76		-62
Acid	160.63		-61

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):										MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other		
0.00	18.90	casing	no recovery																		
18.90	48.40	GD	f. - med grained (2-6mm); fairly fresh GD; 10-15% qtz <1-3mm anhedral; 35% biot (-> chlor) <1-6mm, sub - euhedral; 25% kspar groundmass; 2-3% mt; 30-35% plag as grndmass-2mm subhedral grains; slightly pinkish S & P in color; locally wk kspar alt'n over short intervals (i.e. 28.5-29.5m); chlor observed on some fractures	0.5	2	1	2	2	1	2	1	2		0	2	0.01	0	0	0		
28.70			gouge 45 dtca ?																		
32.00	48.40		broken core																		
32.61			gouge 90 dtca ?																		
35.00	48.40		plag alt'd to ser wk-mod																		
40.40	50.00		45° TCA; gouge, chloritic																		
42.50			mod-strong ser alt'n																		
48.40	64.00	GD	Granodiorite: mostly mod-intense chlor alt'n; very fractured / sheared; mostly too alt'd to identify composition - but where fresh (i.e. 59.2-61.0m) rock looks much like 18.9-41 m; poster rock is medium-dark green to nearly black; dark red-purple from 56.6-57.0 m (intense hematite alteration). possibly cc in chlor gouge - impossible to see	0.5	3	1	4	1	1	2	1	2		0	1	2	0	0	0		
54.60	55.50		20° tca (chlorite).																		
51.70			2-3 cm of carbonate veins ~45° tca; looks like brx over this interval.																		
56.60	57.00		45° hematite.																		
59.60			30° tca chlorite; 10cm wide																		
60.60			45° tca chlorite 10 cm.																		
61.50	61.70		20° two core axis.																		
62.30	64.00		pale green paste (chlorite);? Orientation.																		
64.00	66.80	GD	much as 18.9-48.4m but here Mod-Strong sercite alteration, somewhat sheared at bottom of interval; light colored S&P; biot alt'd to chlorite plag alt'd to Sericite; rock is quite soft; lower contact sheared with finer grained intrusive; upper contracts 70-80° tca equals fault gouge above	0	3	1	3	1	1	1	1	2		0	1	0	0	0	0		
66.82	85.00		S&P color; fine grained 2-3 mm; 10-15% Quartz <1-1 mm anhedral; 35-40 % Biotite alt'd to chlorite <1-3 mm; 35-40 % plag locally fresh/hard locally alt'd to Sericite; 5% kspar grndmass; 2-3% magnetite; locally rock is faulted to gouge; possibly trace cc in chlorite gouge/fracture coatings.	0	3	1	3	2	1	2	1	1		0	2	1	0	0	0		
69.40			fault; 10° TCA; above here fresh, below plag alt'd to sercite.																		
73.10	75.20		much of this interval is slightly coarser QMD, locally up to 4-5 mm.																		
75.40	77.00		broken core / fault; interval of intense hem and/ or chlor; 40° TCA, likely fault angles; numerous carb/hem veins @76.8-76.9 m ~50° TCA, locally looks like healing auto breccia.																		
77.30	77.70		crush																		
77.70	79.10		intense sericite + chlorite alt'd rocks, very soft; locally weak kspar alteration; small amount of epi in tiny veins@79.0 m																		
79.10	83.00		intense chlorite alteration much of this interval is broken rock; hem on fracture surfaces ranging from 0-70° TCA.																		
83.00	85.00		crush/gouge; some veins in this interval may carry cc; difficult to estimate - but slightly wrong color for 100% chlorite; intensely sericite plus chlorite alt'd.																		
85.00	99.00		GD; S & P to slightly pinkish S & P; med grained mostly 4-6 mm 10-15% qtz <1-2 mm, 10-15% kspar grndmass; 2-3% magnetite; 30-35% biot -> chlorite; 30-35% plag grndmass-2 mm locally alt'd to sericite; locally rock is fine grained (2-3 mm) and has less primary ksapr ; rock is fairly competent but there are several faults within this interval.	0	3	1	3	1	1	2	1	2		0	2	0.01	0.01	0.01	0		
85.10	90.10		fairly fresh biot alt'd to chlorite; chlorite on fractures; very weak sericite alteration																		
87.10	91.00		broken core																		
87.10	87.70		trace amounts of cpy / bn / cc observed mostly on fractures surfaces ~parallel to core axis.																		
90.10			odd green goo; chlorite gouge 20° TCA; nearby epidote observed in fractures parallel to core axis.																		

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other
91.00	93.60		fine grained intrusive; perhaps QMD but still has 5-10% kspar; interval is intensely ser alt'd.																
93.60	99.00		medium grained GD; wk-moderate sericite alteration; weak-mod kspar alteration; wk-moderate chlorite alteration; mostly fairly competent rock.																
94.10	94.20		shear, possibly 20-30° TCA.																
95.50			broken core with carbonate vein @ 25° TCA.																
96.60	90.00		numerous pink carbonate veins 10-20° TCA.																
98.00			broken core 25° TCA.																
99.00			lower contact is in broken core; fairly suddenly kspar increases and mineralization begins.																
99.00	113.80	GD	alt'd and mineralized GD; moderate-intense kspar alteration; moderate-intense chlorite alt'n; most of this interval is broken core/ gouge; many of the fractures/veins are low angles to core axis (0-20°; a few 30-40°). Mineralization is observed as blebs stringers within or partly replacing chlorite shears /veins; in bright sunlight many veins can be confirmed to contain bn/cc but in poor light very difficult to be certain; much of this interval will run 0.1-0.5% copper a few grains of biot alt'd to chlorite alt'd to bn are observed near fractures; too many specs / veinlets to account but the following are some some highlights.	0	3	1	3	2	1	3	1	4	0	1	1	0.01	0.1	0.1	
99.10			specs of cc/bn in chlorite grain.																
99.60			cc / bn in vein 30° TCA.																
99.75			cc in vein 30° TCA.																
100.00			six carbonate veins 70° TCA.																
102.00			cc? on fracture 0° TCA.																
103.50			cc/bn vein 3-4 mm wide 35° TCA.																
104.10			bn veinlet 1-2 mm discontinuous 40° TCA.																
106.10			cc/bn replacing clots of chlorite.																
106.50	106.65		Muddy Clay gouge or mudd?																
107.75			fault with green gouge 25° TCA; likely contains cc/bn																
109.80			numerous tiny fractures filled with cpy/bn ~30° TCA																
109.80	111.00		gouge																
111.15	112.20		gouge																
111.50			bn/cc in fractures 2-4 mm wide 10° TCA.																
112.40			bn in fractured rock; 30° TCA.																
112.65			cpy vein 45° TCA and healing autobx hairline epid																
112.80			large fracture ~1 cm wide carries abundant cc/bn; 45° TCA.																
113.80			gouge/paste unsure of orientation.																
113.80	122.50	GD	GD: several different phases of the intrusive finer/coarser, more/less mafic; contacts are either sheared 0 DTCA -irregular (digestive); weak-moderate kspar alteration observed as indistinct bands or zones and as halos proximal to shears; xenos are observed @ 120.2 m (is it possible that some of the phases are large xenos ??) Specs of cc are observed in with chlorite grains, numerous fractures mostly @ 10-30° TCA carry dark green (<1 mm thick) possibly cc + chlorite.	0	2	1	2	2	1	2	1	2	0	5	0.1	0	0.01	0	
122.50	125.50	GD	GD; heavily mineralized; locally strong ksapr, locally strong chlorite, locally strong chlorite, locally strong plag alt'd to white clay; anastomosing vein like structures of cc/bn (this interval may run multiple percent copper) veins are blebby - irregular up to 1 cm across and tend to run at low angles to core axis; where rock is strongly chlorite alt'd -chlorite often has a purpleish hue (bn + fine grained chlorite??) Interval is mostly broken core. too many things to mention virtually every 5 cm.	0	3	1	4	2	1	2	1	3	0	2	1	0	1	1	
122.70			1cm wide fault gouge; 25° TCA																
125.50	131.50	GD	GD; medium grained 4-6 mm; weakly kspar alt'd; weakly chlor alt'd (biot alt'd to chlorite) kspar halos proximal to fractures/faults; moderate-strongly mineralized; mostly as veins of cc/bn cutting core mod-low angles TCA; up to 1cm wide. cc also observed in chlor grains-very difficult to see (need bright sunlight) easy to underestimate.	0	2	1	2	1	1	2	1	2	0	2	0.01	0.01	0.1	0.2	
126.60			bn/cc vein 45° TCA, 5 mm wide																
127.30			cc in vein ~10° TCA, 2-3 mm wide; cc also observed in chlorite here																
127.90			bn/cc/cpy in irregular vein 5-8 mm wide; ~20-30° TCA																
129.10			several dark green grey veins cc/chlorite/hem observed 1-3 mm wide ~40-60° TCA.																
130.70			cc/bn vein 30° TCA, 5-6 mm wide.																

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):										MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other		
131.50	134.50	GD	GD; strong kspar, very strong mineralization; much of this interval is broken core; rock is intensely fractured at many angles (locally weak-moderate stockwork is observed) locally 10-15% of rock is blebs (-align along fractures?) of dark gray-purpleish cc/bn/chlorite, hard to estimate how much of cc; interval ends in large shear ~50 cm off core ~15-35° TCA, calcareous with abundant chlorite + gray streaks (cc??); Epidote along one side about this fault.	0	2	1	3	3	1	3	1	5	0	1	0.01	0.01	1	1			
134.50	145.00	GD	GD; locally moderate kspar alteration, locally moderate chlor alteration; locally well-developed stock work cc/bn/chlor veins; intense mineralization is spatially associated with kspar alteration; spots/specs cc observed with grains of chlorite (difficult to see/estimate %); GD vary from 2-6 mm in grain size	0.5	2	1	2	2	1	2	2	2	0	3	0.01	0.01	0.1	0.4			
134.50	137.70		rock is gouge/crush/broken core (locally can see cc/bn in crush)																		
137.00			large shear ~5-10° TCA contains cc/bn/chlorite;																		
138.00	139.00		numerous veins 2-4 mm wide, 20-40° TCA, a few veins perpendicular to main set give weak stock work.																		
139.00			numerous clots of chlorite carry cc																		
139.00	140.00		numerous veins 2-4 mm wide of cc 0 - 40 dtca some anastomosing																		
141.70			fracture coatings dark gray-nearly blacked mineral chlor + graphite + cc? 40° TCA, 7 mm thick																		
142.30	143.00		well-developed stock work 2 mm cc veins 20°// 50° TCA.																		
142.90			qtz plus kspar vein 30° to core access, 1 cm wide.																		
144.30			Quartz + kspar vein 1 cm in broken core.																		
144.70	145.00		strong kspar alteration, numerous 2-5 mm veins of cc ~40° TCA.																		
145.00	159.00	GD	mostly fresh GD (biot alt'd chlorite) med (5-6 mm) to locally fg (2-3 mm); Dykes weakly kspar alt'd and med grained occur 145-151.4m & 153.2-159 m. Dyke have a banded appearance with more/less mafic zones/bands 60-70° TCA; locally see bn/cc in with chlor grains (very difficult to see/est. need bright sun) rock is mostly hard/competent (plag mostly fresh-locally plag alt'd sericite) core is broken from 157-159 m.	0	2	1	2	1	1	2	1	2	0	2	0.01	0	0.05	0.2			
146.50			cc/bn vein <1-1 mm wide 5° to or axis.																		
148.50			dark gray-black fracture coatings <1 mm wide, 55-60° TCA.																		
149.50			chlorite coating fracture (cc? too) ~0-5° TCA.																		
152.70			3 chlorite + cc? fracture coatings 30-45° TCA 1-2 mm thick.																		
154.00			specs of cc in chlorite.																		
155.30			several fracture coated by chlorite + cc? 35° TCA.																		
158.50			5 cm of gouge 35° TCA.																		
159.00	162.70	GD	GD; med- fine grained (2-6 mm) non-mod magnetic; rock is broken/crushed; locally intensely chlor alt'd; locally mod kspar alt'd; difficult to est copper, abundant cc could be hiding in gouge/chlorite/shears.	0.5	2	1	3	1	1	2	2	3	0	2	1	0	0.1	0.2			
159.00	161.00		sheared with grey clay on surfaces 45-90° TCA, chlor in many tiny fractures locally ~stockwrk; biot alt'd to chlor (possibly chlor + cc?) Weak -mod chlor; mostly weak kspar.																		
161.00	161.90		very strong chlorite alteration 80% of rock is chlorite; some very dark grey nearly black (cc?) much is gouge.																		
161.90	162.70		moderate-strong kspar alteration numerous fractures 10-30° to core taxes; fracture contains chlorite + hem + cc? Mostly <1 mm in size																		
162.70	173.10	GD	S&P; mostly fresh to weakly alt'd; med-crse-grained (3-8 mm); mostly wk-mod mag; locally sheared; a few kspar veins @ low-mod angle TCA: 173.10m shear ~85° TCA.	0.5	1	1	2	1	1	1	1	2	0	2	0.01	0	0.01	0			
162.70	165.50		coarse fresh GD; shear @ 163.68 m (gouge 10 cm) @ 50 -60° TCA.																		
165.50	165.90		shear gouge @ 45° TCA.																		
165.90	173.00		medium grained mostly fresh S&P GD; several kspar veins mostly at low-moderate angles mostly ~1 cm.																		
169.20			chlorite filling fractures 10-15° TCA, ksapr halo.																		
171.40	171.60		mafic Dyke 60-65° TCA.																		
172.70			chlorite filled fracture 10° TCA.																		
173.10	176.75	GD	fine-grained; mostly broken core; locally gouge; interval is strongly-mod chlor; mod-well mineralized; @ 173.57 m ~3 mm vein of solid cc in broken core; from 173.5-174m low angle fracture filled with cc and chlor 1-2mm also mod kspar alt'd here; 174-176.75m strong chlor, weak kspar; numerous <1-1mm veinlets of cc ~20-30° TCA; cc also observed replacing chlor (hard to estimate % Cu is likely 0.5% of rock is cc) cc also observed as 1 cm X 4 mm clots ~parallel to core axis; locally a weak stock work fabric is observed; epidote on a few fracture surfaces.	0.5	2	1	4	1	1	2	1	3	0	1	0.01	0	0.1	0.3			
176.75	189.70	GD	med grained (mostly 4-5mm); mostly fresh; 15% qtz <1-3mm anhedral; 40% plag, <1-3mm an-subhedral; 40% biot (alt'd to chlor) <1-6mm sub-euhedral; 10% kspar grndmass																		

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):										MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld			Py	Mag	FeOX	Cpy	Bor	Cc	other
176.75	179.00		broken core some of the chlorite may contain cc	0.5	1	1	2	1	1	2	1	2									
181.80	182.00	GD	finer grained GD somewhat sheared 85° TCA.																		
182.50			several carbonate veins 85° TCA, 1-5 mm wide, odd <1-2 mm pale yellow crystals in halo around veins ... zeolite? Or?																		
183.60			trace cpy observed in fracture.																		
184.50	185.30		numerous fractures in 80-85° TCA; rock is fine grained; nonmagnetic; chloritized with many carbonate veins and unusual pale yellow crystals.																		
189.70	191.80	GD	sheared & strongly chlor; wkly kspar alt'd; fine-med grained GD; med-dark green; well mineralized, cc in veins / fractures throughout @ 191 m rock seems indurated with cc + chlor (diff to est %)	0	1	1	3.5	1	1	2	1	2		0	1	5	0	0.1	0.2		
190.00			carbonate + hem + cc vein 30° TCA																		
190.20	191.00		numerous shears coated with cc; 45-70° TCA.																		
191.10	191.80		numerous shears coated by hematite + cc most <1-1 mm, 30-40° TCA, weak stock work fabric.																		
191.80	200.25	GD	medium grained GD (4-6 mm) fairly fresh locally-weak kspar; locally sheared; biot alt'd to chlorite;																		
191.80	193.50		medium-coarse-grained (5-7 mm) locally weak kspar (patchy) chlorite + hem + cc? on very thin fracture coatings.																		
193.50	196.00		medium grained (4 mm); patchy kspar; 194.8-195 m severral carbonate veins 80° TCA, hard yellow crystals (chlorite alt'd)																		
195.80	196.33		broken core ending in 25 cm of fault gouge; bn observed in shears 70-80 dtca, gouge has chlor + hematite + cc in it																		
196.33	200.25		medium coarse grained (4-6 mm) patchy kspar alteration along rare fracture.																		
200.25			EOH																		



MINING DIVISION: Kamloops
 OVERBURDEN: 15.85m
 TOTAL DEPTH: 203.3m
 CORE SIZE: NQ

STARTED: Oct 24, 2009
 FINISHED: Oct 26, 2009
 UTM-E: 5,583,766
 UTM-N: 649,428
 NAD83 Zn 10

DOWNHOLE SURVEY			
Instrument	DEPTH (m)	AZIMUTH	DIP
Compass	0	90	-65
Acid	148.44		-62

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):										MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other		
0	15.85	casing	no recovery																		
15.85	16.13	overburden	various lithology and gravel/till																		
16.13	108.81	GD	med-f grained (3-5mm) non-weakly magnetic; mostly strongly argillic (clay)-sericite alt'd most of this interval is soft (broken with hands) locally fractured/gouge; 5-10% qtz <1-2mm anhedral; 10-15% kspar in groundmass; 35-40% plag (mostly altered to sericite) <1-3mm; 35-40% biot altered to chlorite; <1-5mm sub-euhedral; locally pinkish (kspar altered); mineralization and observed @ 30.8m (malachite, bn) in an unusual linear feature ~parallel TCA; a few specks of malachite are observed around 64-65m	0	3	1	3	1	1	2	1	1		0	2	0	0	0.01	0	.01 Mal	
16.13	18.8	flt	gouge																		
18.8	26	gd	fairly fresh GD, numerous fractures @ 80° TCA with 5 mm-1 cm kspar halo.																		
26	26.9	flt	broken core/gouge																		
26.9	27.8	altn	moderate kspar altered rock flooded pale pink																		
27.8	28.9	flt	gouge, faint greenish color suggests trace malachite.																		
28.9	32.5	altn	weak kspar (locally) and moderate-strong sericite, clay altered numerous faint green blotches (malachite?) and one strong clot @30.8 m.																		
35.5	41	altn	weak kspar alteration locally.																		
36		cvn	several carbonate veinlets 20-30° TCA; now locally dissolved-leaving open spaces.																		
38		flt	two small fault zones <1 cm each ~80° TCA, contain trace epidote.																		
43	43.5		large xenolith perhaps a small dyke (quite mafic)																		
43.5		flt	gouge 80 ° TCA																		
45.5		flt	gouge 75 ° TCA																		
47	53	flt	~gouge, rock very soft.																		
53		flt	dark gray ~black; chlorite plus epidote coating fractures possibly specs of malachite; fractures @ 80 & 30 ° TCA.																		
57.5		flt	epidote coating fractures 80 ° TCA, 4 mm wide.																		
62.5	63	gd	slightly fresher GD, more competent																		
64.3		flt	gouge with few specs of malachite 75° TCA																		
65		flt	gouge with few specs of malachite 40 ° TCA																		
69.1	70.5	flt	calcareous gouge ~80° TCA																		
72.2	73	flt	shear 5° TCA; horse tail like structures chlor + ? altered to dark gray chlorite, 3-4 mm wide.																		
75.5	77	flt	gouge, calcareous 45 and 90 ° TCA																		
77.7		flt	hematite on fractures surfaces																		
78.3	81.6		numerous large (>10 cm) xenoliths of dark material (mafic dyke?)																		
83.5	84	flt	shear/gouge; 45 and 90 ° TCA carbonate vein																		
85.8	86.2	altn	epidite plus chlorite in gouge, dark green chlorite; plag altered to white powdery clay.																		
86.2	89.5	cvn	numerous calcite veins mostly 60-70° TCA; some have pink halos (kspar?)																		
89.5	97.5	gd	rock is a little fresher some plag are hard and white.																		
96		flt	several shears chloritic; 80 ° TCA, 3-5 cm wide.																		
96.22	108.81	gd	mostly finer grained (3 mm)																		
101		cvn	carbonate vein 2 cm wide 70° TCA																		
103.6		flt	3 chlorite shears each 1 cm, 40-45 ° TCA																		
103.9		flt	2.0 Carbonite + chlorite veins /shears 6 cm total 75-80° TCA																		
106		cvn	carbonate vein 1/2 centimeter 20 ° TCA																		
107.4		cvn	carbonate vein 1/2 cm 20° TCA																		

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):							
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other	
108.7		cvn	carbonate vein/chlorite 20-30 ° TCA																	
108.81	116.25	GD	GD, med grained (4-5mm) S&P color; v weak-weak magnetic; fresher than above; patches of plag are hard and white, but much plag alt'd to soft white clay; Biot alt'd to chlor; last 20cm is discolored and odd green color (chlor flooded?); F.g GD from 112.5-113.9m (rubbly core) numerous <<1 mm specs of native Cu are observed along with a few specs of bn; Native Cu is mostly observed @ margins of mafics or within the mafics (i.e. not in veins); thin sections are advised to assist in understanding the mechanism of this mineralization; 5-10% qtz, <1-1 mm, anhedral; 5-10% kspar groundmass; 40-45% plag <1-2mm sub-euhedral; 40-45% Biot <1-6mm sub-euhedral; fractures in the f.g. unit ~60° TCA coated with chlor + biot	0	3	1	3	1	1	3	1	2		0	1	2	0	0.01	0	0.01
116.25	124	GD-QMD	S&P f.g. GD (QMD?) 5-10% Qtz? vfg (<2 mm); 40-45% plag-alt'd to ser <1-1mm sub-euhedral; 40-45% biot alt'd to chlor; rock is mod hard; 116.25-116.4 m broken core; 116.8 -117.0 broken core, sheared 80° TCA; 121 m broken core 0° TCA; 123.9 gouge, 1 cm 80° TCA, no kspar observed.	0	3	1	2	1	1	1	1	1		0	1	0	0	0	0	0
124	152.6		Medium grained 3-5 mm; salt-and-pepper color; 35-40% biotite altered to chlorite <1-5 mm sub-euhedral; ~5% kspar (ground mass); 5-10% ? Quartz <1-1 mm, anhedral; 40-45% plagioclase altered to sericite <1-2 mm sub-euhedral.	0	3	1	2	1	1	2	1	2		0	1	0	0	0	0	0.01
125			sheared rock 10-15 ° TCA chlorite																	
128.5	129.5		sheared locally gouge 80 ° TCA.																	
131	132.2		several intervals of kspar alter'd rock possibly separated by non-kspar altered rocks by small shearers 90 ° TCA																	
132.5			oval shaped body 5 cm x 5 cm of strongly mineralized bn + cc + native copper + malachite in fairly fresh looking GD.																	
132.9	133.3		fault call a grayish gouge, but solid not mushy 40-45 ° TCA																	
135.1	135.5		kspar alteration.																	
136.3	103 6.7		shear grey gouge 80-85 ° TCA.																	
137.1	137.4		gouge 75-85 ° TCA																	
138.7	139.6		gouge, green-pinkish 85 ° TCA																	
142.1			3-4 tiny specks of native copper @ edge of biotite grain.																	
142.6	143.3		gouge; dark green chlorite with shredded calcite veie; several native copper grains up to 1 mm in size located in nondescript alteration mineral (chlorite plus +?)																	
144.4	144.8		several shears ~90 ° TCA, one of carbonate vein 1 cm wide.																	
146.8	147.22		moderate kspar + mod chlorite in a sheared looking rock; carb vein @ 30 ° TCA.																	
150			6 cm of fault gouge 80-85 ° TCA.																	
150.5	151		sheared and kspar altered 80-85° TCA.																	
152.6	203.3		much as above; this interval is characterized by alternating units of medium and fine grained QMD/GD both units seem to have similar composition some contracts are fault bounded others are intrusive contracts; mostly the rock is hard and relatively fresh compared to the rocks uphole.	0	3	1	2	1	1	2	1	2		0	2	0.01	0	0	0	.01
152.6	160.3		fine-grained lower contact = fault 80-85 ° TCA.																	
156.4		cu	very tiny <<1 mm native copper specs at margin of biotite grain next to fault ~90 ° TCA 5 cm gouge.																	
160.3	163.3	gd	medium grained GD with numerous faults/shears 80-90 ° TCA; weakly kspar altered (locally) strongly chlorite altered in and around faults.																	
161.3		cu	native copper near biot grain; 2 cm from fault 85 ° TCA.																	
163.3	171.5	gd	medium grained.																	
167.65		brx	many grains near shears ~auto breccia 50 ° TCA.																	
167.65		brx	auto breccia 50 ° TCA 10 cm wide, muddy chlorite?																	
168.6		brx	shear with weak auto breccia 15 ° TCA; chlorite, 5 cm wide.																	
169.1		flt	30-40° TCA; 10-15 cm of discontinuous shear chlorite filled.																	
170.1		flt	shear 15 ° TCA chlorite; 1cm wide.																	
170.9		flt	shear 60 ° TCA; 10 cm discontinuous.																	
171.5	172.85	flt	chlorite gouge for most of a interval; 75-85° TCA																	
172.85		flt	near fault 80 ° TCA.																	

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other
172.85	175.87	GD	mostly fine grained GD numerous shears mostly@ mod-high angle to core axis, many have weak kspar halos and many carry trace specs of native copper, locally shears are healed by calcite which is locally disolved leaving 1+ cm cavities in core.																
173.4		flt	fract surface 75 ° TCA.																
173.9		cu	native copper weak shear 65 ° TCA.																
174.3		flt	shear; native copper 35 ° TCA weak kspar alteration.																
174.65		cvn	carbonate vein 50° TCA; weak kspar; native copper.																
175.87	203.3	GD	mostly medium grained GD. numerous shears mostly@ mod-high angle to core axis, many have weak kspar halos and many carry trace specs of native copper, locally shears are healed by calcite which is locally disolved leaving 1+ cm cavities in core.																
181.6		flt	75 ° TCA chlorite shear with weak kspar halo and native copper.																
182.5		flt	as 181.6 m but 80 ° TCA. Native copper																
184.4		cu	native copper; short 10cm autobreccia; weak kspar halo; copper observed several cms away from kspar.																
185.5	185.65	aplite	aplite dyke; upper contact broken but appears to be ~80 ° TCA.																
185.65	185.75	dyke	f.g, med gray S&P dyke; UC=60° TCA, 3-4mm calcite vein ; LC=6-7mm vein, possibly Qtz + kspar, quite hard 80° TCA, this vein crosscut by later, softer vein not calcite (chlor?)																
187.4		brx	auto breccia, chlorite + weak kspar + native copper.																
187.6		cu	native copper; auto breccia weak kspar a few cms away.																
187.9		cu	native copper; chlorite + kspar (moderate) + carbonate vein.																
194.25		cu	native copper; brx with strong chlorite + pink carb? (or kspar + carbonate? more likely); sheared ~70° TCA.																
195.7		cu	native copper chlorite + kspar shear 85 ° TCA.																
203.3			EOH																



MINING DIVISION: Kamloops
 OVERBURDEN: 28.04m
 TOTAL DEPTH: 254.2m
 CORE SIZE: NQ

STARTED: Oct 29, 2009
 FINISHED: Nov 2, 2009
 UTM-E: 5,584,014
 UTM-N: 647,548
 NAD83 Zn 10

DOWNHOLE SURVEY			
Instrument	DEPTH (m)	AZIMUTH	DIP
Compass	0	90	-90
Acid			

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):										MINERALIZATION (%):					
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other	
0	28.04	casing	no recovery																	
28.04	104.52	GD	med- f.g.; quite variable grain size and alteration styles over nearly each box of core; locally non-wkly-mod kspar alt'd; wk-mod-strong chlor alt'n; numerous shear zones /fault gouge at least one per box; color is variable from S&P to drk green to pinkish orange; no mineralization observed; much of this interval is broken. on average rock is 5-10% kspar, groundmass; 10%? qtz, very small grain; 40-45% plag <1-3 mm white hard alt'd to soft and pale green; 40-45% biotite <1-5 mm sub-euhedral alt'd to chlor; rock varies from 2--5mm in size; mostly weak to v. weakly magnetic and nonmagnetic in shears/heavy chlor alt'n																	
40.9			fault 50° TCA	0.5	2	1	3	1	1	2	1	3		0	2	0.01	0	0	0	
43.1	43.8	shear	10-30° TCA; hem stained.																	
44	44.8		interval chlor alteration.																	
44.8	57.8		moderate kspar alteration.																	
47			broken core																	
49.4			chlor gouge 45° TCA																	
55.9			chlor gouge 40° TCA																	
58.1			chlor gouge 70° TCA																	
64.1	64.5		chlor gouge 50° TCA.																	
64.14			chlor gouge 40° TCA																	
67.1	68		chlor gouge 70° TCA																	
70			chlor gouge 70° TCA																	
75.29			chlor gouge 65° TCA																	
78.6			chlor gouge 60° TCA																	
83			chlor gouge; ?° TCA																	
83.6			chlor gouge 20.0° TCA																	
84			chlor gouge 60° TCA																	
104.52	106		fractures @ 20° TCA + other angles (20° is dominant); pale pink-green-v drk green (chlor + cc?) gouge; kspar-chlor alt'd rock; hem + epi on some fractures; slicks 90° TCA.																	
106	106.8		moderate chlor alter'd GD; one smear/vein like structure of cc +bn 4 mm x 5 cm in size (70° TCA).																	
106.8	107.3		pale green gouge in kspar alt'd GD; fault ~10° TCA 2-5 cm wide																	
107.3	108.2		moderate kspar + moderate chlor alt'd GD; a few clots <1 cm across observed @ 107.6 m.																	
108.2	110		as 106.8-107.3 m here fault parallel to core axis; locally dark clots of chlor (+ cc?)																	
110	111.86		as 107.3-108.2 m bn/cc clots & vein like structures @ 111.3 m (70° TCA)																	
111.86	113		pale green chlor gouge in kspar alt'd GD; fault -parallel to core axis.																	
113	113.7		moderate kspar + chlor alt'd GD																	
113.7	114.1		intense dark green nearly black chlor (unsure but may be cc rich) 10-15° TCA.																	
114.1	114.7		as 113-113.7 m.																	
114.7	114.8		as 113.7-114.1 m; here 30° core axis and a few specs of spec hem.																	
114.8	115.8		as 113-113.7 m.																	
115.8	116.3		as 111.86-113.0 m.																	
116.3	119	GD	mod fresh; wk ser & biot alt'd to chlor + v weak kspar near fractures (2 coated by carb vns 30-40° TCA). 1 x 2cm wide vein of drk green chlor + cc + epi @ 118.8 m 55° TCA.																	
119	120.44		moderate shear; mod kspar alt'd; hem gouge 1 cm @ 119.15 m @ 60° TCA; very dark chlor + cc? + epi vein @ 120.3 m @ 30° TCA 4-5 cm wide.																	
85.5			gouge 35-40° TCA, 20 cm pale color (white-green).																	
87			broken core.																	
87.25	88.2		gouge 65° TCA; dark green with streaks of hem on fract surfaces; a few clots of dark grey-green mineral that might be cc + chlor?																	

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other
89.3	92.6		dark green (chlor) broken core/gouge some fracture surfaces @ low angles to core axis (10-20°)																
88.4			bleb of dark green, ~black chlor (trace cc?).																
88.65			spec of cpy in fracture.																
94	95		a few clots of dark green ~black chlor (in one I am 99% sure is some cc.)																
95.5	96.4		several fracture surfaces with Rusty hem + chlor + trace epi; ~40° TCA.																
100	101		chlor shearers ~parallel to core axis; rock is very soft or quite gouge but moderate-strongly chlor alt'd and sheared.																
103.5	104		broken core; chlor coats fracture surfaces parallel to core axis.																
104.52	154.53	GD	much as above; here rock is mostly weakly ± sericite ± kspar alt'd rd	0	2	1	3	2	1	2	1	2	0	2	0.01	0	0.01	0	
120.44	125.3		mod sericite alt'n, weak kspar + weak chlor (biot alt'd chlor) alt'n; light colored S&P; core quite soft; becoming harder in the last m; m. grained; weakly magnetic.																
125.3	125.65		pale green and dark pink gouge 35° TCA.																
125.65	130.3		as 120.44-125.3m; here weak sericite alteration; core is hard & fairly fresh.																
130.3	131.2	GD	fract'd; mod-strong chlor alt'n; weak-mod kspar; some of the chlor looks very dark and slightly purple (cc/bny?); gouge @ top 25 cm ~20-25° TCA; gouge @ last 20 cm 55° TCA																
131.2	132.4		weakly kspar alt'd GD; Lower contact 45° TCA (fault).																
132.4	139.3		mod kspar + mod chlor; broken core; a few qtz veins + epi + hairline fractures filled with black mineral (cc?) in and around the Qtz vns; vns are 40- 50° TCA (135.2 m, 3 cm) +136.5 m 25 cm (~autobrx with black mineral healing Qtz veins) 134.7 m several small Qtz veins 2-4mm + carb 35° TCA.																
136.15			nearly black mineral healing sheared rock 10 cm.																
137.4	138.3		Shear/gouge zone 75-80° TCA plag alt'd to soft white clay locally rock is crenulated; hem on shears.																
137.9			smear of blacked chlor 30° TCA, cc?																
138.7	139.3		strongly sheared 1/2 strong chlor, 1/2 strong hem																
139.3	154.53		mod-strongly chlor alt'd; much of this int'vl is sheared/gouge (chlor) tiny specks of cc observed @ 144.8m (rock sheared parallel to core axis) 153.1m trace cc is observed hidden in chlor gouge; many shears are 60-70° TCA; Very difficult to estimate cc in chlor zones, I expect only trace; 147m = 20cm of strongly kspar alt'd broken core are.																
147	147.2		abundant purpleish mineral @ 65-75° TCA; trace cc perhaps abundant??.																
154.53	194.16	GD	much as above; med-f.g. (mostly 2-4mm); biot alt'd to chlor; weakly to nonmagnetic; S&P to greenish S&P; much of this interval is sheared/gouge; wkly - mod - locally strongly chlor alt'd; no mineralization observed but cc may be in chlor especially in shear zones - difficult to see.	0.5	2	1	4	1	1	1	1	1	0	0	2	0.01	0	0.01	0
155.6	156.5		chlor gouge 80° TCA																
157			rock looks crenulated; slicks observed on chlor coated fracture surfaces.																
157.1			7 cm of 70-80° TCA.																
157.7	158.3		fault 10° TCA; rock is very soft ~gouge; hem on fracture surfaces.																
159.2	160.5		mostly gouge; very soft chlor 65-80° TCA.																
162.3	163.8		mostly gouge chlor; 65-80° TCA																
164.35	164.7		gouge, chlor; 45-70° TCA.																
165.6	166.2		chlor gouge; ~10 cm is kspar alt'd with tiny <<<1 mm veinlet of dark gray mineral (chlor plus cc?) Fractures @ 10° TCA.																
166.53	167.5		chlor gouge; fractures @ 0 & 90° TCA.																
168	169		sheared rock not quite gouge but close.																
169	169.5		paste, dark green; fractures ~10-20° TCA & @ 80° TCA.																
170.1	170.15		gouge, chlor 70° TCA.																
171.3	172.4		gouge; chlor locally salt-and-pepper with countless tiny <<<1 mm Black fracture coatings 20 & 70° TCA.																
173.1	173.65		chlor gouge 20° TCA																
163	163.2		strong epi with trace cc???																
173.65	175.5		mostly fairly fresh GD; fine-grained; biot alt'd to chlor.																
175.5	176.4		intense chlor gouge; shears @ 0-5° TCA & 70-80° TCA.																
176.4	177.5		as 173.65-175.5 m shear with chlor @ 5-10° TCA.																
177.5	178.1		chlor gouge with weak kspar alteration 45-50° TCA																
178.1	178.5		broken core-moderate chlor alteration																
178.5	178.8		brx - gouge; hem in vein like structures and coats fracture surfaces ~60-70° TCA abundant carbonate in this interval.																
179.2	179.6		broken core.																
179.6	183		fairly fresh GD; 2-3 mm in size; biot alt'd to chlor; hard competent core; locally weak kspar alteration (10 cm of gouge @ 182.25 m @ 65° TCA).																

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other
183	184.85		chlor gouge locally abundant hem; 60° TCA = shear																
184.85	185.65		moderate cocompetent, strongly chlor alt'd GD; tiny pale yellow crystals?? zeolite? Several small 1-2 mm qtz veins; veins cut core at many angles.																
185.65	185.9		chlor gouge 50° TCA = shear.																
185.9	187		as 173.65-175.5; chlor on some fracture surfaces.																
187	191.11		chlor gouge; locally light green in color mostly med - dark green; shear ~parallel to core axis.																
191.11	194.16		mostly fresh-wkly chlor alt'd GD; locally broken; small gouge section @ 193.10m in broken core on either side; chlor on fracture surf's; core is quite hard (ser alt'n is weak to 0)																
194.16	195.4		mod-intense chlor alt'd; qtz vn ~2cm wide in broken core 60-80° TCA with a halo of cc in tiny vein parallel to Qtz vn; ~3-4cm of rock contains some cc (based on color) LC = 85-90° TCA ft.																
195.4	197.8	GD	medium grained (3-4 mm); wk-mod magnetic; wkly kspar alt'd; mod'ly sericite alt'd; pinkish orange salt and pepper; lower contact is gradational into less kspar alt'd GD below.	0	2	1	2	1	1	2	1	2	0	4	0	0	0	0	
197.8	202.6	GD	S&P with wk kspar only proximal to fractures; wk-very weakly magnetic; 2-4 mm biot crystals; fractures mostly @ 50-70° TCA; 1 cm Quartz vein @ 198.10 m a couple specs up of bn are observed proximal vein 85° TCA; 10cm fault gouge @ 210.1 m 75-85° TCA.	1	2	1	2	1	1	1	2	2	0	2	0	0	0.01	0	
202.6	206.05	GD	much as above but here quite fractured and mod-intense chlor alteration, especially near fracture/gouge zones; hem and chlor are observed in fractures; rock is locally brx'd; shears ~parallel to core axis & 75-80° TCA. 1X2 mm vein of cc/bn observed @ 203.35 m ~80° TCA; lower contracts fault ~80° TCA.	0	2	1	3.5	1	1	1	1	1	0	0	0.01	0	0.01	0	
206.05	254.2	GD	mostly f.g. (2-3 mm) weak-mod chlor alt'n, intense in gouge/fault zones; nearly 1/2 of intvl is gouge; mostly wk-non magnetic; rock is S& green P to green; a few short intervals are weakly kspar alt'd chlor and occasionally hem on fract surfaces; a few specs/smears of cc/bn are observed near shears; it is possible cc / bn in chlor gouge cannot be sure.	0	2	1	3.5	1	1	1	1	2	0	2	1	0	0.01	0	
207.7			odd rusty fracture filling shear @ 30° TCA; 4-5 cm wide.																
208.4	208.7		gouge 70° TCA																
209.1			Quartz vein 75-80° TCA; 1 cm; no mineralization observed.																
210.1			2 qtz-carb vns + 1 dark vn (may carry tr cc? with chlor) all @ 65-75° TCA; Rock is mod kspar alt'd and heavily chlor alt'd; a few specs of what is most likely cc are obs'vd																
212	212.5		very soft gouge like rock; 70° TCA; weak chlor																
213.4	213.7		very soft gouge like rock; 70° TCA; weak chlor																
214.6	216.3		mostly gouge/broken core 80° TCA; weak chlor around 215.8-216.3 m rock is fractured @ 20° TCA																
216.3	216.5		medium-coarse grained unit upper contract in 70-80° TCA = fault: lower contact 30° TCA - coarse unit has chill margin.																
217.5	218.1		very sheared ~20° TCA; chlor alteration; coarse 6 mm; upper contact is fault; lower contact 20-30° TCA weak chill margin.																
218.2	218.7		chlor shear 50° TCA																
219.7	220.3		chlor shear high/moderate and low angles to core axis.																
221	222.5		chlor gouge 60-80° and 10° TCA																
222.9	223.5		chlor shear/gouge 20-40° TCA & 80° TCA.																
223.6	224		chlor shear/gouge; 45° and 60° TCA																
224.8	227		chlor shear/gouge unsure orientation (paste).																
227.5			a few possible specs of cc along carbonate vein 2mm wide variable orientation mostly ~40° TCA.																
227.6	228.8		chlor shear/gouge 70-90° TCA.																
229.2	230.6		chlor gouge; 45-70° TCA																
230.6	232.1		strong chlor alteration, broken core; hem on fracture surfaces.																
232.1	233.5		chlor gouge 55° TCA; a couple small 1cm calcite veins parallel shears.																
233.5	236.3	GD	soft, sheared, salt-and-pepper GD; numerous carbonate veins 10-20° TCA; wk kspar near fractures.																
236.3	239.5		first 50 cm mod kspar alteration; moderate chlor alteration; Sheared GD; trace epi in shears, parallel to core axis.																
236.65			clots of chlor + cc? 50° TCA almost vein like.																
236.65	239.5		chlor shear locally hem on a fracture surfaces; shears @ 10° and 50° TCA.																
237.5			a few specks of chlor that may contain cc.																
239.5	240.3		sheared salt-and-pepper GD (3 mm grain size) rock is soft (easily scratched) sericite alteration + fractures.																
240.3	241.5		gouge, chloritic; sheared @ 10-20° & 70-80° core axis. Trace hem on fracture surfaces; many smears of chlor some may contain cc?.																
241.5	242.5		as 239.5-240.3, here are slightly more kspar; 10 cm gouge @ 242.4 m 70-80° TCA.																
242.5	243		chlor gouge abundant hem on fractures surfaces.																

INTERVAL (m):		ROCK TYPE	DESCRIPTION	QTZ VEINS >3mm (#/m)	alt'n (1-5):								MINERALIZATION (%):						
FROM	TO				Ser	Musc	Chl	Ep	Kaol	Carb	Silica	Kfeld	Py	Mag	FeOX	Cpy	Bor	Cc	other
243	247.5		as 239.5-240.3; soft numerous chlor coated shears; a few specks of cc and cpy associated with a shear @ 243.50 m @ 55° TCA.																
247.5	254.2	GD	med-f.g. (3-4 mm); S&P; relatively fresh (especially 48.0-EOH) first 50 cm rock is sericite alt'd and weakly kspar alt'd	0	1	1	2	1	1	2	1	2		0	2	0.01	0.01	0.01	0
251.1	252.7		broken core; 5-20° TCA; kspar in halo; pale green clay on fractures surfaces.																
248	251.1		fresh with widely spaced fractures 10-20° TCA with kspar coatings.																
244			chlor vein may have cc in it??																
252.7	253.5		as 248.0-251.0 m																
253.5	254.2		broken core; hem and chlor on fractures. Possibly some cc in chlor but here it seems unlikely.																
254.2			EOH																

Appendix E

Samples with assays

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
15951	R09-01	11.28	14.28	3	0.0005	0.036	0.005	0.005	1	
15952	R09-01	14.28	17.28	3	0.0005	0.013	0.005	0.005	1	
15953	R09-01	17.28	20.28	3	0.0005	0.011	0.005	0.005	1	
15954	R09-01	20.28	23.28	3	0.0005	0.016	0.005	0.005	1	
15955	R09-01	23.28	26.28	3	0.0005	0.033	0.005	0.005	1	
15956	R09-01	26.28	29.28	3	0.0005	0.019	0.005	0.005	1	
15958	R09-01	29.28	32.28	3	0.0005	0.034	0.005	0.005	1	
15959	R09-01	32.28	35.28	3	0.0005	0.019	0.005	0.005	1	
15961	R09-01	35.28	38.28	3	0.0005	0.012	0.005	0.005	1	
15962	R09-01	38.28	41.28	3	0.0005	0.133	0.005	0.005	1	
15963	R09-01	41.28	44.28	3	0.0005	0.018	0.005	0.005	1	
15964	R09-01	44.28	47.28	3	0.0005	0.013	0.005	0.005	1	
15966	R09-01	47.28	50.28	3	0.0005	0.02	0.005	0.005	1	
15967	R09-01	50.28	53.28	3	0.0005	0.02	0.005	0.005	1	
15968	R09-01	53.28	56.28	3	0.0005	0.013	0.005	0.005	1	
15969	R09-01	56.28	59.28	3	0.0005	0.004	0.005	0.005	1	
15970	R09-01	59.28	62.28	3	0.0005	0.018	0.005	0.005	1	
15971	R09-01	62.28	65.28	3	0.0005	0.059	0.005	0.005	1	
15972	R09-01	65.28	68.28	3	0.0005	0.011	0.005	0.005	1	
15973	R09-01	68.28	71.28	3	0.0005	0.016	0.005	0.005	1	
15974	R09-01	71.28	74.28	3	0.0005	0.006	0.005	0.005	1	
15975	R09-01	74.28	77.28	3	0.001	0.086	0.005	0.005	1	
15976	R09-01	77.28	80.28	3	0.0005	0.012	0.005	0.005	1	
15977	R09-01	80.28	83.28	3	0.0005	0.01	0.005	0.005	1	
15978	R09-01	83.28	86.28	3	0.002	0.011	0.005	0.005	1	
15979	R09-01	86.28	89.28	3	0.0005	0.015	0.005	0.005	1	
15981	R09-01	89.28	92.28	3	0.0005	0.018	0.005	0.005	1	
15982	R09-01	92.28	95.28	3	0.0005	0.038	0.005	0.005	1	
15984	R09-01	95.28	98.28	3	0.0005	0.036	0.005	0.005	1	
15985	R09-01	98.28	101.28	3	0.0005	0.01	0.005	0.005	1	
15986	R09-01	101.28	104.28	3	0.0005	0.023	0.005	0.005	1	
15987	R09-01	104.28	107.28	3	0.0005	0.01	0.005	0.005	1	
15988	R09-01	107.28	110.28	3	0.0005	0.016	0.005	0.005	1	
15989	R09-01	110.28	111.78	1.5	0.0005	0.03	0.005	0.005	1	
15990	R09-01	111.78	113.28	1.5	0.024	1.313	0.005	0.005	9	
15991	R09-01	113.28	114.78	1.5	0.002	1.269	0.005	0.005	7	
15993	R09-01	114.78	116.28	1.5	0.0005	0.035	0.005	0.005	1	
15994	R09-01	116.28	119.28	3	0.0005	0.129	0.005	0.005	1	
15995	R09-01	119.28	122.28	3	0.0005	0.031	0.005	0.005	1	
15996	R09-01	122.28	125.28	3	0.0005	0.01	0.005	0.005	1	
15997	R09-01	125.28	128.28	3	0.0005	0.005	0.005	0.005	1	
15998	R09-01	128.28	131.28	3	0.0005	0.007	0.005	0.005	1	
15999	R09-01	131.28	134.28	3	0.0005	0.005	0.005	0.005	1	
16000	R09-01	134.28	137.28	3	0.0005	0.006	0.005	0.005	1	
16701	R09-01	137.28	140.28	3	0.0005	0.009	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
16703	R09-01	140.28	143.28	3	0.0005	0.117	0.005	0.005	1	
16704	R09-01	143.28	146.28	3	0.0005	0.023	0.005	0.005	1	
16705	R09-01	146.28	149.28	3	0.006	0.171	0.005	0.005	1	
16706	R09-01	149.28	152.28	3	0.0005	0.071	0.005	0.005	1	
16708	R09-01	152.28	155.28	3	0.0005	0.03	0.005	0.005	1	
16709	R09-01	155.28	158.28	3	0.0005	0.09	0.005	0.005	1	
16710	R09-01	158.28	161.28	3	0.0005	0.012	0.005	0.005	1	
16711	R09-01	161.28	164.28	3	0.001	0.053	0.005	0.005	1	
16712	R09-01	164.28	167.28	3	0.0005	0.013	0.005	0.005	1	
16713	R09-01	167.28	170.28	3	0.0005	0.061	0.005	0.005	1	
16714	R09-01	170.28	173.28	3	0.0005	0.05	0.005	0.005	1	
16715	R09-01	173.28	176.28	3	0.0005	0.034	0.005	0.005	1	
16716	R09-01	176.28	179.28	3	0.0005	0.058	0.005	0.005	1	
16717	R09-01	179.28	182.28	3	0.0005	0.007	0.005	0.005	1	
16718	R09-01	182.28	185.28	3	0.0005	0.043	0.005	0.005	1	
16719	R09-01	185.28	188.28	3	0.0005	0.011	0.005	0.005	1	
16721	R09-01	188.28	191.28	3	0.0005	0.005	0.005	0.005	1	
16722	R09-01	191.28	194.28	3	0.0005	0.024	0.005	0.005	1	
16723	R09-01	194.28	197.28	3	0.004	0.01	0.005	0.005	1	
16725	R09-01	197.28	200.28	3	0.0005	0.01	0.005	0.005	1	
16726	R09-01	200.28	203.28	3	0.0005	0.035	0.005	0.005	1	
16727	R09-01	203.28	206.28	3	0.0005	0.007	0.005	0.005	1	
16728	R09-01	206.28	209.4	3.12	0.0005	0.007	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
16729	R09-02	6.4	9.4	3	0.0005	0.005	0.005	0.005	1	
16730	R09-02	9.4	12.4	3	0.0005	0.013	0.005	0.005	1	
16731	R09-02	12.4	15.4	3	0.0005	0.018	0.005	0.005	1	
16732	R09-02	15.4	18.4	3	0.0005	0.005	0.005	0.005	1	
16733	R09-02	18.4	21.4	3	0.0005	0.015	0.005	0.005	1	
16734	R09-02	21.4	24.4	3	0.0005	0.009	0.005	0.005	1	
16735	R09-02	24.4	27.4	3	0.0005	0.006	0.005	0.005	1	
16736	R09-02	27.4	30.4	3	0.0005	0.009	0.005	0.005	1	
16737	R09-02	30.4	33.4	3	0.0005	0.010	0.005	0.005	1	
16738	R09-02	33.4	36.4	3	0.0005	0.010	0.005	0.005	1	
16739	R09-02	36.4	39.4	3	0.002	0.010	0.005	0.005	1	
16740	R09-02	39.4	42.4	3	0.0005	0.013	0.005	0.005	1	
16741	R09-02	42.4	45.4	3	0.0005	0.007	0.005	0.005	1	
16742	R09-02	45.4	48.4	3	0.0005	0.009	0.005	0.005	1	
16744	R09-02	48.4	51.4	3	0.0005	0.005	0.005	0.005	1	
16745	R09-02	51.4	54.4	3	0.001	0.004	0.005	0.005	1	
16747	R09-02	54.4	57.4	3	0.0005	0.013	0.005	0.005	1	
16748	R09-02	57.4	60.4	3	0.0005	0.007	0.005	0.005	1	
16750	R09-02	60.4	63.4	3	0.0005	0.007	0.005	0.005	1	
16751	R09-02	63.4	66.4	3	0.0005	0.003	0.005	0.005	1	
16752	R09-02	66.4	69.4	3	0.0005	0.004	0.005	0.005	1	
16753	R09-02	69.4	72.4	3	0.0005	0.007	0.005	0.005	1	
16754	R09-02	72.4	75.4	3	0.0005	0.003	0.005	0.005	1	
16755	R09-02	75.4	78.4	3	0.0005	0.018	0.005	0.005	1	
16756	R09-02	78.4	81.4	3	0.0005	0.020	0.005	0.005	1	
16758	R09-02	81.4	84.4	3	0.0005	0.006	0.005	0.005	1	
16759	R09-02	84.4	87.4	3	0.0005	0.009	0.005	0.005	1	
16760	R09-02	87.4	90.4	3	0.0005	0.004	0.005	0.005	1	
16761	R09-02	90.4	93.4	3	0.0005	0.008	0.005	0.005	1	
16762	R09-02	93.4	96.4	3	0.0005	0.007	0.005	0.005	1	
16763	R09-02	96.4	99.4	3	0.0005	0.002	0.005	0.005	1	
16764	R09-02	99.4	102.4	3	0.0005	0.004	0.005	0.005	1	
16765	R09-02	102.4	105.4	3	0.0005	0.005	0.005	0.005	1	
16766	R09-02	105.4	108.4	3	0.0005	0.008	0.005	0.005	1	
16767	R09-02	108.4	111.4	3	0.0005	0.011	0.005	0.005	1	
16768	R09-02	111.4	114.4	3	0.0005	0.011	0.005	0.005	1	
16769	R09-02	114.4	117.4	3	0.0005	0.004	0.005	0.005	1	
16771	R09-02	117.4	120.4	3	0.0005	0.010	0.005	0.005	1	
16772	R09-02	120.4	123.4	3	0.0005	0.008	0.005	0.005	1	
16773	R09-02	123.4	126.4	3	0.0005	0.005	0.005	0.005	1	
16774	R09-02	126.4	129.4	3	0.0005	0.009	0.005	0.005	1	
16776	R09-02	129.4	132.4	3	0.0005	0.010	0.005	0.005	1	
16777	R09-02	132.4	135.4	3	0.0005	0.019	0.005	0.005	1	
16778	R09-02	135.4	138.4	3	0.0005	0.009	0.005	0.005	1	
16779	R09-02	138.4	141.4	3	0.0005	0.022	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
16780	R09-02	141.4	144.4	3	0.0005	0.018	0.005	0.005	1	
16782	R09-02	144.4	147.4	3	0.0005	0.020	0.005	0.005	1	
16783	R09-02	147.4	150.4	3	0.0005	0.015	0.005	0.005	1	
16785	R09-02	150.4	153.4	3	0.0005	0.018	0.005	0.005	1	
16786	R09-02	153.4	156.4	3	0.0005	0.025	0.005	0.005	1	
16787	R09-02	156.4	159.4	3	0.0005	0.035	0.005	0.005	1	
16788	R09-02	159.4	162.4	3	0.0005	0.041	0.005	0.005	1	
16789	R09-02	162.4	165.4	3	0.0005	0.040	0.005	0.005	1	
16790	R09-02	165.4	168.4	3	0.0005	0.040	0.005	0.005	1	
16791	R09-02	168.4	171.4	3	0.0005	0.041	0.005	0.005	1	
16792	R09-02	171.4	174.4	3	0.0005	0.051	0.005	0.005	1	
16793	R09-02	174.4	177.4	3	0.0005	0.033	0.005	0.005	1	
16794	R09-02	177.4	180.4	3	0.0005	0.018	0.005	0.005	1	
16795	R09-02	180.4	183.4	3	0.0005	0.009	0.005	0.005	1	
16796	R09-02	183.4	186.4	3	0.0005	0.038	0.005	0.005	1	
16797	R09-02	186.4	189.4	3	0.0005	0.012	0.005	0.005	1	
16799	R09-02	189.4	192.4	3	0.0005	0.016	0.005	0.005	1	
16800	R09-02	192.4	195.4	3	0.0005	0.014	0.005	0.005	1	
16801	R09-02	195.4	198.4	3	0.0005	0.019	0.005	0.005	1	
16802	R09-02	198.4	200.86	2.46	0.0005	0.027	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
16803	R09-03	3.66	6.66	3	0.0005	0.003	0.005	0.005	1	
16804	R09-03	6.66	9.66	3	0.0005	0.004	0.005	0.005	1	
16806	R09-03	9.66	12.66	3	0.0005	0.001	0.005	0.005	1	
16807	R09-03	12.66	15.66	3	0.0005	0.0005	0.005	0.005	1	
16808	R09-03	15.66	18.66	3	0.0005	0.0005	0.005	0.005	1	
16809	R09-03	18.66	21.66	3	0.0005	0.157	0.005	0.005	1	
16810	R09-03	21.66	24.66	3	0.0005	0.002	0.005	0.005	1	
16811	R09-03	24.66	27.66	3	0.0005	0.002	0.005	0.005	1	
16812	R09-03	27.66	30.66	3	0.0005	0.0005	0.005	0.005	1	
16813	R09-03	30.66	33.66	3	0.0005	0.0005	0.005	0.005	1	
16814	R09-03	33.66	36.66	3	0.0005	0.0005	0.005	0.005	1	
16815	R09-03	36.66	39.66	3	0.0005	0.001	0.005	0.005	1	
16817	R09-03	39.66	42.66	3	0.0005	0.001	0.005	0.005	1	
16818	R09-03	42.66	45.66	3	0.0005	0.001	0.005	0.005	1	
16819	R09-03	45.66	48.66	3	0.0005	0.004	0.005	0.005	1	
16820	R09-03	48.66	51.66	3	0.0005	0.007	0.005	0.005	1	
16821	R09-03	51.66	54.66	3	0.0005	0.014	0.005	0.005	1	
16822	R09-03	54.66	57.66	3	0.0005	0.003	0.005	0.005	1	
16823	R09-03	57.66	60.66	3	0.0005	0.027	0.005	0.005	1	
16825	R09-03	60.66	63.66	3	0.0005	0.026	0.005	0.005	1	
16826	R09-03	63.66	66.66	3	0.0005	0.014	0.005	0.005	1	
16827	R09-03	66.66	69.66	3	0.0005	0.003	0.005	0.005	1	
16828	R09-03	69.66	72.66	3	0.0005	0.003	0.005	0.005	1	
16829	R09-03	72.66	75.66	3	0.0005	0.002	0.005	0.005	1	
16831	R09-03	75.66	78.66	3	0.0005	0.0005	0.005	0.005	1	
16832	R09-03	78.66	81.66	3	0.0005	0.0005	0.005	0.005	1	
16833	R09-03	81.66	84.66	3	0.0005	0.002	0.005	0.005	1	
16834	R09-03	84.66	87.66	3	0.0005	0.002	0.005	0.005	1	
16836	R09-03	87.66	90.66	3	0.0005	0.003	0.005	0.005	1	
16837	R09-03	90.66	93.66	3	0.0005	0.002	0.005	0.005	1	
16838	R09-03	93.66	96.66	3	0.0005	0.001	0.005	0.005	1	
16839	R09-03	96.66	99.66	3	0.0005	0.003	0.005	0.005	1	
16840	R09-03	99.66	102.66	3	0.0005	0.004	0.005	0.005	1	
16841	R09-03	102.66	105.66	3	0.0005	0.02	0.005	0.005	1	
16842	R09-03	105.66	108.66	3	0.0005	0.005	0.005	0.005	1	
16843	R09-03	108.66	111.66	3	0.0005	0.002	0.005	0.005	1	
16844	R09-03	111.66	114.66	3	0.0005	0.007	0.005	0.005	1	
16846	R09-03	114.66	117.66	3	0.0005	0.018	0.005	0.005	1	
16847	R09-03	117.66	120.66	3	0.0005	0.0005	0.005	0.005	1	
16848	R09-03	120.66	123.66	3	0.0005	0.0005	0.005	0.005	1	
16849	R09-03	123.66	126.66	3	0.0005	0.001	0.005	0.005	1	
16850	R09-03	126.66	129.66	3	0.0005	0.005	0.005	0.005	1	
16851	R09-03	129.66	132.66	3	0.0005	0.001	0.005	0.005	1	
16852	R09-03	132.66	135.66	3	0.0005	0.001	0.005	0.005	1	
16853	R09-03	135.66	138.66	3	0.0005	0.003	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
16854	R09-03	138.66	141.66	3	0.0005	0.001	0.005	0.005	1	
16855	R09-03	141.66	144.66	3	0.0005	0.0005	0.005	0.005	1	
16856	R09-03	144.66	147.66	3	0.0005	0.001	0.005	0.005	1	
16857	R09-03	147.66	150.66	3	0.0005	0.0005	0.005	0.005	1	
16858	R09-03	150.66	153.66	3	0.0005	0.0005	0.005	0.005	1	
16860	R09-03	153.66	156.66	3	0.0005	0.002	0.005	0.005	1	
16861	R09-03	156.66	159.66	3	0.0005	0.0005	0.005	0.01	1	
16863	R09-03	159.66	163.68	4.02	0.0005	0.0005	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
16864	R09-04	14.33	17.33	3	0.0005	0.001	0.005	0.005	1	
16865	R09-04	17.33	20.33	3	0.0005	0.001	0.005	0.01	1	
16866	R09-04	20.33	23.33	3	0.0005	0.002	0.005	0.005	1	
16868	R09-04	23.33	26.33	3	0.0005	0.0005	0.005	0.005	1	
16869	R09-04	26.33	29.33	3	0.0005	0.0005	0.005	0.005	1	
16870	R09-04	29.33	32.33	3	0.0005	0.001	0.005	0.005	1	
16871	R09-04	32.33	35.33	3	0.0005	0.0005	0.005	0.005	1	
16872	R09-04	35.33	38.33	3	0.0005	0.0005	0.005	0.005	1	
16873	R09-04	38.33	41.33	3	0.0005	0.0005	0.005	0.005	1	
16874	R09-04	41.33	44.33	3	0.0005	0.0005	0.005	0.005	1	
16875	R09-04	44.33	47.33	3	0.0005	0.001	0.005	0.005	1	
16876	R09-04	47.33	50.33	3	0.0005	0.0005	0.005	0.005	1	
16877	R09-04	50.33	53.33	3	0.0005	0.006	0.005	0.005	1	
16878	R09-04	53.33	56.33	3	0.0005	0.0005	0.005	0.005	1	
16880	R09-04	56.33	59.33	3	0.0005	0.0005	0.005	0.005	1	
16881	R09-04	59.33	62.33	3	0.0005	0.0005	0.005	0.005	1	
16882	R09-04	62.33	65.33	3	0.0005	0.006	0.005	0.005	1	
16883	R09-04	65.33	68.33	3	0.0005	0.0005	0.005	0.005	1	
16884	R09-04	68.33	71.33	3	0.0005	0.002	0.005	0.005	1	
16885	R09-04	71.33	74.33	3	0.0005	0.013	0.005	0.005	1	
16887	R09-04	74.33	77.33	3	0.0005	0.002	0.005	0.005	1	
16888	R09-04	77.33	80.33	3	0.0005	0.002	0.005	0.005	1	
16889	R09-04	80.33	83.33	3	0.0005	0.001	0.005	0.005	3	
16890	R09-04	83.33	86.33	3	0.0005	0.007	0.005	0.005	1	
16891	R09-04	86.33	89.33	3	0.0005	0.006	0.005	0.005	1	
16892	R09-04	89.33	92.33	3	0.0005	0.005	0.005	0.005	1	
16893	R09-04	92.33	95.33	3	0.0005	0.003	0.005	0.005	1	
16894	R09-04	95.33	98.33	3	0.0005	0.011	0.005	0.005	1	
16896	R09-04	98.33	101.33	3	0.0005	0.01	0.005	0.005	1	
16897	R09-04	101.33	104.33	3	0.0005	0.023	0.005	0.005	1	
16898	R09-04	104.33	107.33	3	0.0005	0.022	0.005	0.005	1	
16899	R09-04	107.33	110.33	3	0.0005	0.003	0.005	0.005	1	
16900	R09-04	110.33	113.33	3	0.0005	0.004	0.005	0.005	1	
16901	R09-04	113.33	116.33	3	0.0005	0.002	0.005	0.005	1	
16903	R09-04	116.33	119.33	3	0.0005	0.008	0.005	0.005	1	
16904	R09-04	119.33	122.33	3	0.0005	0.023	0.005	0.005	1	
16905	R09-04	122.33	125.33	3	0.0005	0.006	0.005	0.005	1	
16906	R09-04	125.33	128.33	3	0.0005	0.002	0.005	0.005	1	
16907	R09-04	128.33	131.33	3	0.0005	0.011	0.005	0.005	1	
16909	R09-04	131.33	134.33	3	0.0005	0.009	0.005	0.005	1	
16910	R09-04	134.33	137.33	3	0.0005	0.023	0.005	0.005	1	
16911	R09-04	137.33	140.33	3	0.0005	0.039	0.005	0.005	1	
16912	R09-04	140.33	143.33	3	0.0005	0.01	0.005	0.005	1	
16913	R09-04	143.33	146.33	3	0.0005	0.003	0.005	0.005	1	
16914	R09-04	146.33	149.33	3	0.0005	0.003	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
16916	R09-04	149.33	152.33	3	0.0005	0.003	0.005	0.005	1	
16917	R09-04	152.33	155.33	3	0.0005	0.005	0.005	0.005	1	
16918	R09-04	155.33	158.33	3	0.0005	0.005	0.005	0.005	1	
16919	R09-04	158.33	161.33	3	0.0005	0.005	0.005	0.005	1	
16920	R09-04	161.33	164.33	3	0.0005	0.003	0.005	0.005	1	
16921	R09-04	164.33	167.33	3	0.0005	0.003	0.005	0.005	1	
16922	R09-04	167.33	170.33	3	0.0005	0.002	0.005	0.005	1	
16923	R09-04	170.33	173.33	3	0.0005	0.001	0.005	0.005	1	
16925	R09-04	173.33	176.33	3	0.0005	0.002	0.005	0.005	1	
16926	R09-04	176.33	179.33	3	0.0005	0.008	0.005	0.005	1	
16927	R09-04	179.33	182.33	3	0.0005	0.017	0.005	0.005	1	
16928	R09-04	182.33	185.33	3	0.0005	0.005	0.005	0.005	1	
16929	R09-04	185.33	188.33	3	0.0005	0.003	0.005	0.005	1	
16930	R09-04	188.33	191.33	3	0.0005	0.005	0.005	0.005	1	
16931	R09-04	191.33	194.33	3	0.0005	0.006	0.005	0.005	1	
16932	R09-04	194.33	197.33	3	0.0005	0.007	0.005	0.005	1	
16933	R09-04	197.33	200.33	3	0.0005	0.008	0.005	0.005	1	
16935	R09-04	200.33	203.33	3	0.0005	0.005	0.005	0.005	1	
16936	R09-04	203.33	205.13	1.8	0.0005	0.014	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
16937	R09-05	14.63	17.63	3	0.0005	0.003	0.005	0.005	1	
16938	R09-05	17.63	20.63	3	0.0005	0.019	0.005	0.005	1	
16940	R09-05	20.63	23.63	3	0.0005	0.0005	0.005	0.005	1	
16941	R09-05	23.63	26.63	3	0.0005	0.006	0.005	0.005	1	
16942	R09-05	26.63	29.63	3	0.0005	0.043	0.005	0.005	1	
16943	R09-05	29.63	32.63	3	0.0005	0.001	0.005	0.005	1	
16944	R09-05	32.63	35.63	3	0.0005	0.002	0.005	0.005	1	
16945	R09-05	35.63	38.63	3	0.0005	0.072	0.005	0.005	1	
16946	R09-05	38.63	41.63	3	0.0005	0.0005	0.005	0.005	1	
16948	R09-05	41.63	44.63	3	0.0005	0.0005	0.005	0.005	1	
16949	R09-05	44.63	47.63	3	0.0005	0.017	0.005	0.005	1	
16950	R09-05	47.63	50.63	3	0.0005	0.005	0.005	0.005	1	
16951	R09-05	50.63	53.63	3	0.0005	0.005	0.005	0.005	1	
16952	R09-05	53.63	56.63	3	0.0005	0.003	0.005	0.005	1	
16953	R09-05	56.63	59.63	3	0.0005	0.004	0.005	0.005	1	
16954	R09-05	59.63	62.63	3	0.0005	0.0005	0.005	0.005	1	
16955	R09-05	62.63	65.63	3	0.0005	0.002	0.005	0.005	1	
16956	R09-05	65.63	68.63	3	0.0005	0.001	0.005	0.005	1	
16958	R09-05	68.63	71.63	3	0.0005	0.002	0.005	0.005	1	
16959	R09-05	71.63	74.63	3	0.0005	0.0005	0.005	0.005	1	
16960	R09-05	74.63	77.63	3	0.0005	0.001	0.005	0.005	1	
16961	R09-05	77.63	80.63	3	0.0005	0.002	0.005	0.005	1	
16962	R09-05	80.63	83.63	3	0.0005	0.002	0.005	0.005	1	
16963	R09-05	83.63	86.63	3	0.0005	0.002	0.005	0.005	1	
16964	R09-05	86.63	89.63	3	0.0005	0.002	0.005	0.005	1	
16965	R09-05	89.63	92.63	3	0.0005	0.003	0.005	0.005	1	
16966	R09-05	92.63	95.63	3	0.0005	0.003	0.005	0.005	1	
16967	R09-05	95.63	98.63	3	0.0005	0.003	0.005	0.005	1	
16969	R09-05	98.63	101.63	3	0.0005	0.001	0.005	0.005	1	
16970	R09-05	101.63	104.63	3	0.0005	0.003	0.005	0.005	1	
16971	R09-05	104.63	107.63	3	0.0005	0.004	0.005	0.005	1	
16972	R09-05	107.63	110.63	3	0.0005	0.003	0.005	0.005	1	
16973	R09-05	110.63	113.63	3	0.0005	0.002	0.005	0.005	1	
16974	R09-05	113.63	116.63	3	0.0005	0.002	0.005	0.005	1	
16975	R09-05	116.63	119.63	3	0.0005	0.001	0.005	0.005	1	
16977	R09-05	119.63	122.63	3	0.0005	0.002	0.005	0.005	1	
16978	R09-05	122.63	125.63	3	0.0005	0.002	0.005	0.005	1	
16979	R09-05	125.63	128.63	3	0.0005	0.001	0.005	0.005	1	
16980	R09-05	128.63	131.63	3	0.0005	0.0005	0.005	0.005	1	
16981	R09-05	131.63	134.63	3	0.0005	0.0005	0.005	0.005	1	
16983	R09-05	134.63	137.63	3	0.0005	0.003	0.005	0.005	1	
16984	R09-05	137.63	140.63	3	0.0005	0.002	0.005	0.005	1	
16985	R09-05	140.63	143.63	3	0.0005	0.0005	0.005	0.005	1	
16986	R09-05	143.63	146.63	3	0.0005	0.001	0.005	0.005	1	
16987	R09-05	146.63	149.63	3	0.0005	0.002	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
16988	R09-05	149.63	152.63	3	0.0005	0.002	0.005	0.005	1	
16990	R09-05	152.63	155.63	3	0.0005	0.002	0.005	0.005	1	
16991	R09-05	155.63	158.63	3	0.0005	0.001	0.005	0.005	1	
16992	R09-05	158.63	161.63	3	0.0005	0.004	0.005	0.005	1	
16993	R09-05	161.63	164.63	3	0.0005	0.004	0.005	0.005	1	
16994	R09-05	164.63	167.63	3	0.0005	0.003	0.005	0.005	1	
16995	R09-05	167.63	170.63	3	0.0005	0.03	0.005	0.005	1	
16996	R09-05	170.63	173.63	3	0.0005	0.0005	0.005	0.005	1	
16997	R09-05	173.63	176.63	3	0.0005	0.002	0.005	0.005	1	
16998	R09-05	176.63	179.63	3	0.0005	0.003	0.005	0.005	1	
16999	R09-05	179.63	182.63	3	0.0005	0.0005	0.005	0.005	1	
17000	R09-05	182.63	185.63	3	0.0005	0.0005	0.005	0.005	2	
7201	R09-05	185.63	188.63	3	0.0005	0.003	0.005	0.005	1	
7203	R09-05	188.63	191.63	3	0.0005	0.004	0.005	0.005	1	
7204	R09-05	191.63	194.63	3	0.0005	0.0005	0.005	0.005	1	
7205	R09-05	194.63	197.63	3	0.0005	0.001	0.005	0.005	1	
7206	R09-05	197.63	200.63	3	0.0005	0.002	0.005	0.005	1	
7207	R09-05	200.63	203.63	3	0.0005	0.0005	0.005	0.005	1	
7209	R09-05	203.63	206.63	3	0.0005	0.002	0.005	0.005	1	
7210	R09-05	206.63	209.63	3	0.0005	0.003	0.005	0.005	1	
7211	R09-05	209.63	212.63	3	0.0005	0.003	0.005	0.005	1	
7212	R09-05	212.63	215.63	3	0.0005	0.002	0.005	0.005	1	
7213	R09-05	215.63	218.63	3	0.0005	0.002	0.005	0.005	1	
7214	R09-05	218.63	221.63	3	0.0005	0.002	0.005	0.005	1	
7215	R09-05	221.63	224.63	3	0.0005	0.001	0.005	0.005	1	
7216	R09-05	224.63	227.63	3	0.0005	0.0005	0.005	0.005	1	
7217	R09-05	224.63	227.63	3	0.0005	0.001	0.005	0.005	1	
7218	R09-05	227.63	230.63	3	0.0005	0.0005	0.005	0.005	1	
7219	R09-05	230.63	233.63	3	0.0005	0.003	0.005	0.005	1	
7220	R09-05	233.63	236.63	3	0.0005	0.001	0.005	0.005	1	
7221	R09-05	236.63	239.63	3	0.0005	0.002	0.005	0.005	1	
7222	R09-05	239.63	242.63	3	0.0005	0.001	0.005	0.005	1	
7223	R09-05	242.63	245.63	3	0.0005	0.0005	0.005	0.005	1	
7225	R09-05	245.63	248.63	3	0.0005	0.008	0.005	0.005	1	
7226	R09-05	248.63	251.63	3	0.0005	0.0005	0.005	0.005	1	
7227	R09-05	251.63	254.63	3	0.0005	0.0005	0.005	0.005	1	
7229	R09-05	254.63	257.63	3	0.0005	0.0005	0.005	0.005	1	
7230	R09-05	257.63	260.63	3	0.0005	0.0005	0.005	0.005	1	
7231	R09-05	260.63	263.63	3	0.0005	0.004	0.005	0.005	1	
7232	R09-05	263.63	266.63	3	0.0005	0.0005	0.005	0.005	1	
7233	R09-05	266.63	269.63	3	0.0005	0.0005	0.005	0.005	1	
7234	R09-05	269.63	272.63	3	0.0005	0.0005	0.005	0.005	1	
7235	R09-05	272.63	275.63	3	0.0005	0.0005	0.005	0.005	1	
7236	R09-05	275.63	278.63	3	0.0005	0.0005	0.005	0.005	1	
7238	R09-05	278.63	281.63	3	0.0005	0.084	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7239	R09-05	281.63	284.63	3	0.0005	0.007	0.005	0.005	1	
7240	R09-05	284.63	287.63	3	0.0005	0.002	0.005	0.005	1	
7241	R09-05	287.63	290.63	3	0.0005	0.001	0.005	0.005	1	
7242	R09-05	290.63	293.63	3	0.0005	0.0005	0.005	0.005	1	
7243	R09-05	293.63	296.63	3	0.0005	0.007	0.005	0.005	1	
7244	R09-05	296.63	299.63	3	0.0005	0.003	0.005	0.005	1	
7245	R09-05	299.63	302.63	3	0.0005	0.002	0.005	0.005	1	
7246	R09-05	302.63	305.63	3	0.014	0.017	0.005	0.005	1	
7248	R09-05	305.63	308.63	3	0.0005	0.011	0.005	0.005	1	
7249	R09-05	308.63	311.63	3	0.0005	0.009	0.005	0.005	1	
7250	R09-05	311.63	314.63	3	0.0005	0.0005	0.005	0.005	1	
7251	R09-05	314.63	317.63	3	0.0005	0.0005	0.005	0.005	1	
7252	R09-05	317.63	320.63	3	0.0005	0.003	0.005	0.005	1	
7253	R09-05	320.63	323.63	3	0.0005	0.003	0.005	0.005	1	
7254	R09-05	323.63	326.63	3	0.0005	0.007	0.005	0.005	1	
7255	R09-05	326.63	329.63	3	0.0005	0.009	0.005	0.005	1	
7256	R09-05	329.63	332.63	3	0.0005	0.008	0.005	0.005	1	
7257	R09-05	332.63	335.63	3	0.0005	0.002	0.005	0.005	1	
7258	R09-05	332.63	337.41	4.78	0.0005	0.0005	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7259	R09-06	15.85	18.85	3	0.0005	0.005	0.005	0.005	1	
7260	R09-06	18.85	21.85	3	0.0005	0.011	0.005	0.005	1	
7262	R09-06	21.85	24.85	3	0.0005	0.007	0.005	0.005	1	
7263	R09-06	24.85	27.85	3	0.0005	0.006	0.005	0.005	1	
7264	R09-06	27.85	30.85	3	0.0005	0.022	0.005	0.005	1	
7265	R09-06	30.85	33.85	3	0.0005	0.008	0.005	0.005	1	
7267	R09-06	33.85	36.85	3	0.0005	0.039	0.005	0.005	1	
7268	R09-06	36.85	39.85	3	0.0005	0.027	0.005	0.005	1	
7269	R09-06	39.85	42.85	3	0.0005	0.012	0.005	0.005	1	
7270	R09-06	42.85	45.85	3	0.002	0.096	0.005	0.005	1	
7271	R09-06	45.85	48.85	3	0.005	0.155	0.005	0.005	1	
7272	R09-06	48.85	51.85	3	0.0005	0.011	0.005	0.005	1	
7273	R09-06	51.85	54.85	3	0.0005	0.006	0.005	0.005	1	
7274	R09-06	54.85	57.85	3	0.0005	0.005	0.005	0.005	1	
7276	R09-06	57.85	60.85	3	0.0005	0.004	0.005	0.005	1	
7277	R09-06	60.85	63.85	3	0.0005	0.006	0.005	0.005	1	
7278	R09-06	63.85	66.85	3	0.0005	0.011	0.005	0.005	1	
7279	R09-06	66.85	69.85	3	0.0005	0.002	0.005	0.005	1	
7280	R09-06	69.85	72.85	3	0.0005	0.007	0.005	0.005	1	
7281	R09-06	72.85	75.3	2.45	0.0005	0.054	0.005	0.005	1	
7282	R09-06	75.3	76.8	1.5	0.014	1.929	0.005	0.005	9	
7283	R09-06	76.8	78.3	1.5	0.0005	0.114	0.005	0.005	1	
7284	R09-06	78.3	81.3	3	0.0005	0.005	0.005	0.005	1	
7285	R09-06	81.3	84.5	3.2	0.0005	0.003	0.005	0.005	1	
7286	R09-06	84.5	86	1.5	0.0005	0.168	0.005	0.005	1	
7287	R09-06	86	89	3	0.0005	0.012	0.005	0.005	1	
7288	R09-06	89	91.8	2.8	0.0005	0.032	0.005	0.005	1	
7289	R09-06	91.8	93.3	1.5	0.002	0.325	0.005	0.005	1	
7290	R09-06	93.3	94.8	1.5	0.0005	0.05	0.005	0.005	1	
7292	R09-06	94.8	97.8	3	0.0005	0.016	0.005	0.005	1	
7293	R09-06	97.8	100.8	3	0.0005	0.074	0.005	0.005	1	
7294	R09-06	100.8	103.8	3	0.0005	0.012	0.005	0.005	1	
7295	R09-06	103.8	106.8	3	0.0005	0.014	0.005	0.005	1	
7296	R09-06	106.8	109.8	3	0.0005	0.005	0.005	0.005	1	
7297	R09-06	109.8	112.8	3	0.0005	0.062	0.005	0.005	1	
7298	R09-06	112.8	114.3	1.5	0.0005	0.128	0.005	0.005	1	
7299	R09-06	114.3	115.8	1.5	0.0005	0.611	0.005	0.005	3	
7301	R09-06	115.8	117.5	1.7	0.0005	0.369	0.005	0.005	1	
7302	R09-06	117.5	120.5	3	0.0005	0.021	0.005	0.005	1	
7303	R09-06	120.5	123.5	3	0.0005	0.01	0.005	0.005	1	
7304	R09-06	123.5	126.5	3	0.0005	0.008	0.005	0.005	1	
7306	R09-06	126.5	129.5	3	0.0005	0.005	0.005	0.005	1	
7307	R09-06	129.5	132.5	3	0.0005	0.011	0.005	0.005	1	
7308	R09-06	132.5	135.5	3	0.002	0.058	0.005	0.005	1	
7309	R09-06	135.5	138.5	3	0.0005	0.046	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7311	R09-06	138.5	141.5	3	0.0005	0.085	0.005	0.005	1	
7312	R09-06	141.5	144.5	3	0.0005	0.044	0.005	0.005	1	
7313	R09-06	144.5	147.5	3	0.0005	0.003	0.005	0.005	1	
7314	R09-06	147.5	149.2	1.7	0.021	0.029	0.005	0.005	1	
7315	R09-06	149.2	151.2	2	0.092	0.002	0.005	0.005	1	
7317	R09-06	151.2	154.2	3	0.0005	0.01	0.005	0.005	1	
7318	R09-06	154.2	155.7	1.5	0.013	0.093	0.005	0.005	1	
7319	R09-06	155.7	157.2	1.5	0.008	0.166	0.005	0.005	1	
7320	R09-06	157.2	158.7	1.5	0.008	0.123	0.005	0.005	1	
7321	R09-06	158.7	160.2	1.5	0.01	0.278	0.005	0.005	1	
7322	R09-06	160.2	161.7	1.5	0.134	0.152	0.005	0.005	1	
7323	R09-06	161.7	163.2	1.5	0.012	0.026	0.005	0.005	1	
7324	R09-06	163.2	164.7	1.5	0.005	1.159	0.005	0.005	5	
7325	R09-06	164.7	166.2	1.5	0.217	0.267	0.005	0.005	1	
7326	R09-06	166.2	167.7	1.5	0.059	0.12	0.005	0.005	1	
7327	R09-06	167.7	169.2	1.5	0.003	0.018	0.005	0.005	1	
7328	R09-06	169.2	172.2	3	0.0005	0.023	0.005	0.005	1	
7330	R09-06	172.2	173.7	1.5	0.01	0.021	0.005	0.005	1	
7331	R09-06	173.7	176.7	3	0.0005	0.026	0.005	0.005	1	
7332	R09-06	176.7	178.2	1.5	0.0005	0.011	0.005	0.005	1	
7333	R09-06	178.2	179.7	1.5	0.025	0.029	0.005	0.005	1	
7334	R09-06	179.7	181.7	2	0.0005	0.013	0.005	0.005	1	
7335	R09-06	181.7	184	2.3	0.0005	0.017	0.005	0.005	1	
7336	R09-06	184	185.7	1.7	0.014	0.057	0.005	0.005	1	
7338	R09-06	185.7	188.7	3	0.0005	0.012	0.005	0.005	1	
7339	R09-06	188.7	190.7	2	0.0005	0.007	0.005	0.005	1	
7340	R09-06	190.7	192.9	2.2	0.0005	0.018	0.005	0.005	1	
7342	R09-06	192.9	194.7	1.8	0.0005	0.004	0.005	0.005	1	
7343	R09-06	194.7	197.7	3	0.0005	0.006	0.005	0.005	1	
7344	R09-06	197.7	200.7	3	0.0005	0.027	0.005	0.005	1	
7345	R09-06	200.7	203.7	3	0.0005	0.007	0.005	0.005	1	
7347	R09-06	203.7	206.7	3	0.0005	0.009	0.005	0.005	1	
7348	R09-06	206.7	209.7	3	0.0005	0.011	0.005	0.005	1	
7349	R09-06	209.7	212.7	3	0.0005	0.008	0.005	0.005	1	
7350	R09-06	212.7	215.5	2.8	0.0005	0.015	0.005	0.005	1	
7351	R09-06	215.5	217	1.5	0.0005	0.102	0.005	0.005	1	
7352	R09-06	217	220	3	0.0005	0.009	0.005	0.005	1	
7353	R09-06	220	223	3	0.0005	0.01	0.005	0.005	1	
7354	R09-06	223	225.5	2.5	0.0005	0.005	0.005	0.005	1	
7355	R09-06	225.5	228.5	3	0.0005	0.016	0.005	0.005	1	
7356	R09-06	228.5	231.5	3	0.0005	0.047	0.005	0.005	1	
7357	R09-06	231.5	233	1.5	0.0005	0.15	0.005	0.005	1	
7358	R09-06	233	236	3	0.0005	0.131	0.005	0.005	1	
7359	R09-06	236	239	3	0.0005	0.025	0.005	0.005	1	
7361	R09-06	239	242	3	0.0005	0.04	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7362	R09-06	242	245	3	0.0005	0.057	0.005	0.005	1	
7363	R09-06	245	247	2	0.0005	0.045	0.005	0.005	1	
7364	R09-06	247	249.5	2.5	0.0005	0.023	0.005	0.005	1	
7365	R09-06	249.5	252.07	2.57	0.0005	0.026	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7366	R09-07	18.9	21.9	3	0.0005	0.01	0.005	0.005	1	
7367	R09-07	21.9	24.9	3	0.0005	0.008	0.005	0.005	1	
7369	R09-07	24.9	27.9	3	0.0005	0.012	0.005	0.005	1	
7370	R09-07	27.9	30.9	3	0.0005	0.011	0.005	0.005	1	
7371	R09-07	30.9	33.9	3	0.0005	0.028	0.005	0.005	1	
7372	R09-07	33.9	36.9	3	0.0005	0.008	0.005	0.005	1	
7373	R09-07	36.9	39.9	3	0.0005	0.006	0.005	0.005	1	
7374	R09-07	39.9	42.9	3	0.0005	0.026	0.005	0.005	1	
7375	R09-07	42.9	45.9	3	0.0005	0.008	0.005	0.005	1	
7376	R09-07	45.9	48.4	2.5	0.0005	0.015	0.005	0.005	1	
7377	R09-07	48.4	51.4	3	0.001	0.102	0.005	0.005	1	
7379	R09-07	51.4	54.4	3	0.0005	0.019	0.005	0.005	1	
7380	R09-07	54.4	57.4	3	0.0005	0.049	0.005	0.005	1	0.01
7381	R09-07	57.4	60.4	3	0.0005	0.013	0.005	0.005	1	0.005
7382	R09-07	60.4	63.4	3	0.0005	0.029	0.005	0.005	1	0.005
7383	R09-07	60.4	63.4	3	0.0005	0.023	0.005	0.005	1	0.005
7384	R09-07	63.4	66.4	3	0.0005	0.018	0.005	0.005	1	0.005
7385	R09-07	66.4	69.4	3	0.0005	0.013	0.005	0.005	1	0.005
7386	R09-07	69.4	72.4	3	0.0005	0.006	0.005	0.005	1	0.005
7388	R09-07	72.4	75.4	3	0.0005	0.023	0.005	0.005	1	0.005
7389	R09-07	75.4	77	1.6	0.004	0.019	0.005	0.005	1	0.005
7390	R09-07	77	80	3	0.0005	0.008	0.005	0.005	1	0.005
7391	R09-07	80	83	3	0.0005	0.006	0.005	0.005	1	0.005
7392	R09-07	83	85	2	0.005	0.038	0.005	0.005	1	0.005
7393	R09-07	85	87	2	0.0005	0.013	0.005	0.005	1	0.005
7394	R09-07	87	88.5	1.5	0.0005	0.091	0.005	0.005	1	0.005
7396	R09-07	88.5	91	2.5	0.0005	0.016	0.005	0.005	1	0.005
7397	R09-07	91	94	3	0.0005	0.02	0.005	0.005	1	0.005
7398	R09-07	94	97	3	0.0005	0.025	0.005	0.005	1	0.005
7399	R09-07	97	99	2	0.0005	0.05	0.005	0.005	1	0.005
7400	R09-07	99	100.5	1.5	0.002	0.83	0.005	0.005	4	0.07
7401	R09-07	100.5	102	1.5	0.0005	0.044	0.005	0.005	1	0.01
7402	R09-07	102	103.5	1.5	0.0005	0.098	0.005	0.005	1	0.03
7403	R09-07	103.5	105	1.5	0.0005	0.24	0.005	0.005	1	0.03
7404	R09-07	105	106.5	1.5	0.0005	0.168	0.005	0.005	1	0.05
7405	R09-07	106.5	108	1.5	0.0005	0.141	0.005	0.005	1	0.07
7406	R09-07	108	109.5	1.5	0.0005	0.033	0.005	0.005	1	0.02
7407	R09-07	109.5	111.5	2	0.0005	0.41	0.005	0.005	1	0.17
7408	R09-07	111.5	113.6	2.1	0.0005	0.782	0.005	0.005	4	0.42
7409	R09-07	113.6	116.6	3	0.0005	0.014	0.005	0.005	1	0.005
7411	R09-07	116.6	119.6	3	0.0005	0.012	0.005	0.005	1	0.005
7412	R09-07	119.6	122.5	2.9	0.0005	0.043	0.005	0.005	1	0.005
7413	R09-07	122.5	124	1.5	0.0005	0.412	0.005	0.005	1	0.68
7414	R09-07	124	125.5	1.5	0.0005	0.353	0.005	0.005	1	0.06
7416	R09-07	125.5	127	1.5	0.0005	0.061	0.005	0.005	1	0.01

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7417	R09-07	127	128.5	1.5	0.0005	0.318	0.005	0.005	2	0.08
7418	R09-07	128.5	130	1.5	0.002	0.178	0.005	0.005	1	0.02
7419	R09-07	130	131.5	1.5	0.0005	0.255	0.005	0.005	1	0.02
7420	R09-07	131.5	133	1.5	0.008	0.771	0.005	0.005	4	0.04
7422	R09-07	133	134.5	1.5	0.011	1.711	0.005	0.005	8	0.09
7423	R09-07	134.5	136	1.5	0.002	0.352	0.005	0.005	1	0.01
7424	R09-07	136	137.5	1.5	0.013	0.299	0.005	0.005	1	0.01
7425	R09-07	137.5	139	1.5	0.002	0.549	0.005	0.005	3	0.01
7426	R09-07	139	140.5	1.5	0.006	0.201	0.005	0.005	1	0.005
7427	R09-07	140.5	142.5	2	0.001	0.124	0.005	0.005	1	0.005
7428	R09-07	142.5	145	2.5	0.009	0.213	0.005	0.005	1	0.02
7429	R09-07	145	147	2	0.001	0.105	0.005	0.005	1	0.005
7431	R09-07	147	150	3	0.0005	0.064	0.005	0.005	1	0.01
7432	R09-07	150	153	3	0.0005	0.066	0.005	0.005	1	0.005
7433	R09-07	153	156	3	0.0005	0.031	0.005	0.005	1	
7434	R09-07	156	159	3	0.0005	0.019	0.005	0.005	1	
7435	R09-07	159	161	2	0.0005	0.011	0.005	0.005	1	
7437	R09-07	161	163	2	0.0005	0.04	0.005	0.005	1	0.005
7438	R09-07	163	164.5	1.5	0.0005	0.007	0.005	0.005	1	0.005
7439	R09-07	164.5	166	1.5	0.0005	0.021	0.005	0.005	1	0.005
7440	R09-07	166	169	3	0.0005	0.013	0.005	0.005	1	0.005
7441	R09-07	169	172	3	0.0005	0.005	0.005	0.005	1	0.005
7442	R09-07	172	174	2	0.0005	0.239	0.005	0.005	1	0.01
7443	R09-07	174	175.5	1.5	0.0005	0.04	0.005	0.005	1	0.02
7444	R09-07	175.5	177	1.5	0.0005	0.034	0.005	0.005	1	0.01
7445	R09-07	177	178.5	1.5	0.0005	0.005	0.005	0.005	1	
7446	R09-07	178.5	181.5	3	0.0005	0.008	0.005	0.005	1	
7447	R09-07	181.5	184.5	3	0.0005	0.008	0.005	0.005	1	
7449	R09-07	184.5	187.5	3	0.0005	0.004	0.005	0.005	1	
7450	R09-07	187.5	189.5	2	0.0005	0.005	0.005	0.005	1	
7451	R09-07	189.5	191.75	2.25	0.015	0.278	0.005	0.005	1	
7452	R09-07	191.75	194.65	2.9	0.0005	0.007	0.005	0.005	1	
7453	R09-07	194.65	196.4	1.75	0.0005	0.009	0.005	0.005	1	
7455	R09-07	196.4	198.4	2	0.0005	0.011	0.005	0.005	1	
7456	R09-07	198.4	200.25	1.85	0.0005	0.012	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7457	R09-08	16.13	20	3.87	0.0005	0.012	0.005	0.005	1	
7458	R09-08	20	23	3	0.0005	0.011	0.005	0.005	1	
7459	R09-08	23	26	3	0.0005	0.01	0.005	0.005	1	
7460	R09-08	26	29	3	0.0005	0.087	0.005	0.005	1	
7461	R09-08	29	31	2	0.0005	0.136	0.005	0.005	1	
7462	R09-08	31	32.5	1.5	0.0005	0.013	0.005	0.005	1	
7463	R09-08	32.5	34.5	2	0.0005	0.009	0.005	0.005	1	
7465	R09-08	34.5	37.5	3	0.0005	0.011	0.005	0.005	1	
7466	R09-08	37.5	40.5	3	0.0005	0.007	0.005	0.005	1	
7467	R09-08	40.5	43.5	3	0.0005	0.011	0.005	0.005	1	
7468	R09-08	40.5	43.5	3	0.0005	0.013	0.005	0.005	1	
7469	R09-08	43.5	46.5	3	0.0005	0.009	0.005	0.005	1	
7470	R09-08	46.5	49.5	3	0.0005	0.014	0.005	0.005	1	
7471	R09-08	49.5	52.5	3	0.0005	0.009	0.005	0.005	1	
7472	R09-08	52.5	55.5	3	0.0005	0.009	0.005	0.005	1	
7473	R09-08	55.5	58.5	3	0.0005	0.005	0.005	0.005	1	
7474	R09-08	58.5	61.5	3	0.0005	0.0005	0.005	0.005	1	
7476	R09-08	61.5	64.5	3	0.0005	0.01	0.005	0.005	1	
7477	R09-08	64.5	67.5	3	0.0005	0.01	0.005	0.005	1	
7478	R09-08	67.5	70.5	3	0.0005	0.011	0.005	0.005	1	
7479	R09-08	70.5	73.5	3	0.0005	0.011	0.005	0.005	1	
7480	R09-08	73.5	76.5	3	0.0005	0.006	0.005	0.005	1	
7481	R09-08	76.5	79.5	3	0.0005	0.011	0.005	0.005	1	
7482	R09-08	79.5	82.5	3	0.0005	0.015	0.005	0.005	1	
7483	R09-08	82.5	85.5	3	0.0005	0.01	0.005	0.005	1	
7484	R09-08	85.5	88.5	3	0.0005	0.017	0.005	0.005	1	
7486	R09-08	88.5	91.5	3	0.0005	0.01	0.005	0.005	1	
7487	R09-08	91.5	94.5	3	0.0005	0.009	0.005	0.005	1	
7488	R09-08	94.5	97.5	3	0.0005	0.015	0.005	0.005	1	
7489	R09-08	97.5	100.5	3	0.0005	0.015	0.005	0.005	1	
7490	R09-08	100.5	103.5	3	0.0005	0.013	0.005	0.005	1	
7491	R09-08	103.5	106.5	3	0.0005	0.016	0.005	0.005	1	
7492	R09-08	106.5	109.5	3	0.0005	0.015	0.005	0.005	1	
7493	R09-08	109.5	112.5	3	0.0005	0.013	0.005	0.005	1	
7494	R09-08	112.5	114	1.5	0.0005	0.021	0.005	0.005	1	
7496	R09-08	114	117	3	0.0005	0.005	0.005	0.005	1	
7497	R09-08	117	120	3	0.0005	0.002	0.005	0.005	1	
7498	R09-08	120	123	3	0.0005	0.005	0.005	0.005	1	
7499	R09-08	123	126	3	0.0005	0.006	0.005	0.005	3	
7500	R09-08	126	129	3	0.0005	0.007	0.005	0.005	2	
7501	R09-08	129	132	3	0.0005	0.006	0.005	0.005	1	
7502	R09-08	132	133.5	1.5	0.0005	0.134	0.005	0.005	1	
7503	R09-08	133.5	136.5	3	0.0005	0.006	0.005	0.005	1	
7505	R09-08	136.5	139.5	3	0.0005	0.005	0.005	0.005	1	
7506	R09-08	139.5	142.5	3	0.0005	0.016	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7507	R09-08	142.5	144	1.5	0.0005	0.015	0.005	0.005	1	
7508	R09-08	144	147	3	0.0005	0.012	0.005	0.005	1	
7510	R09-08	147	150	3	0.0005	0.016	0.005	0.005	1	
7511	R09-08	150	153	3	0.0005	0.014	0.005	0.005	1	
7512	R09-08	153	156	3	0.0005	0.012	0.005	0.005	1	
7513	R09-08	156	157.5	1.5	0.0005	0.017	0.005	0.005	1	
7515	R09-08	157.5	160.5	3	0.0005	0.014	0.005	0.005	1	
7516	R09-08	160.5	162	1.5	0.0005	0.008	0.005	0.005	1	
7517	R09-08	162	165	3	0.0005	0.013	0.005	0.005	1	
7518	R09-08	165	168	3	0.0005	0.021	0.005	0.005	1	
7519	R09-08	168	171	3	0.0005	0.014	0.005	0.005	1	
7520	R09-08	171	174	3	0.0005	0.017	0.005	0.005	1	
7522	R09-08	174	177	3	0.0005	0.015	0.005	0.005	1	
7523	R09-08	177	180	3	0.0005	0.018	0.005	0.005	1	
7524	R09-08	180	183	3	0.0005	0.016	0.005	0.005	1	
7525	R09-08	183	185	2	0.0005	0.016	0.005	0.005	1	
7526	R09-08	185	187	2	0.0005	0.01	0.005	0.005	1	
7527	R09-08	187	189	2	0.0005	0.014	0.005	0.005	1	
7528	R09-08	189	192	3	0.0005	0.011	0.005	0.005	1	
7529	R09-08	192	194	2	0.0005	0.011	0.005	0.005	1	
7530	R09-08	194	196	2	0.0005	0.016	0.005	0.005	1	
7531	R09-08	196	199	3	0.0005	0.01	0.005	0.005	1	
7532	R09-08	199	202	3	0.0005	0.014	0.005	0.005	1	
7533	R09-08	202	203.3	1.3	0.0005	0.016	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7534	R09-09	28.04	31	2.96	0.0005	0.01	0.005	0.005	1	
7535	R09-09	31	34	3	0.0005	0.007	0.005	0.005	1	
7537	R09-09	34	37	3	0.0005	0.011	0.005	0.005	1	
7538	R09-09	37	40	3	0.0005	0.015	0.005	0.005	1	
7539	R09-09	40	43	3	0.0005	0.013	0.005	0.005	1	
7540	R09-09	43	46	3	0.0005	0.003	0.005	0.005	1	
7541	R09-09	46	49	3	0.0005	0.003	0.005	0.005	1	
7542	R09-09	49	52	3	0.0005	0.016	0.005	0.005	1	
7544	R09-09	52	55	3	0.0005	0.014	0.005	0.005	1	
7545	R09-09	55	58	3	0.0005	0.008	0.005	0.005	1	
7546	R09-09	58	61	3	0.0005	0.016	0.005	0.005	1	
7547	R09-09	61	64	3	0.0005	0.01	0.005	0.005	1	
7549	R09-09	64	67	3	0.0005	0.013	0.005	0.005	1	
7550	R09-09	67	70	3	0.0005	0.009	0.005	0.005	1	
7551	R09-09	70	73	3	0.0005	0.009	0.005	0.005	1	
7552	R09-09	73	76	3	0.0005	0.008	0.005	0.005	1	
7553	R09-09	76	79	3	0.0005	0.011	0.005	0.005	1	
7554	R09-09	79	82	3	0.0005	0.007	0.005	0.005	1	
7555	R09-09	82	85	3	0.0005	0.019	0.005	0.005	1	
7556	R09-09	85	88	3	0.0005	0.013	0.005	0.005	1	
7558	R09-09	88	89.5	1.5	0.0005	0.014	0.005	0.005	1	
7559	R09-09	89.5	92.5	3	0.0005	0.075	0.005	0.005	1	
7560	R09-09	92.5	95.5	3	0.0005	0.044	0.005	0.005	1	
7561	R09-09	95.5	98.5	3	0.0005	0.01	0.005	0.005	1	
7562	R09-09	98.5	101.5	3	0.0005	0.018	0.005	0.005	1	
7563	R09-09	101.5	104.5	3	0.0005	0.018	0.005	0.005	1	
7564	R09-09	104.5	106.4	1.9	0.0005	0.018	0.005	0.005	1	
7565	R09-09	106.4	108	1.6	0.0005	0.019	0.005	0.005	1	
7566	R09-09	108	110	2	0.0005	0.047	0.005	0.005	1	
7567	R09-09	110	112	2	0.0005	0.042	0.005	0.005	1	
7568	R09-09	112	113.5	1.5	0.0005	0.031	0.005	0.005	1	
7569	R09-09	113.5	115	1.5	0.0005	0.021	0.005	0.005	1	
7570	R09-09	115	116.6	1.6	0.0005	0.021	0.005	0.005	1	
7571	R09-09	116.6	119	2.4	0.0005	0.01	0.005	0.005	1	
7572	R09-09	119	120.5	1.5	0.0005	0.01	0.005	0.005	1	
7573	R09-09	120.5	123.5	3	0.0005	0.017	0.005	0.005	1	
7574	R09-09	123.5	126.5	3	0.0005	0.011	0.005	0.005	1	
7575	R09-09	126.5	129.5	3	0.0005	0.015	0.005	0.005	1	
7577	R09-09	129.5	131.2	1.7	0.0005	0.01	0.005	0.005	1	
7578	R09-09	131.2	134.2	3	0.0005	0.01	0.005	0.005	1	
7579	R09-09	134.2	136	1.8	0.0005	0.019	0.005	0.005	1	
7580	R09-09	136	137.5	1.5	0.0005	0.015	0.005	0.005	1	
7581	R09-09	137.5	140	2.5	0.0005	0.057	0.005	0.005	1	
7582	R09-09	140	143	3	0.0005	0.017	0.005	0.005	1	
7584	R09-09	143	144.5	1.5	0.0005	0.014	0.005	0.005	1	

Sample	Hole	From (m)	To (m)	Length (m)	Mo (%)	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppm)
7585	R09-09	144.5	146	1.5	0.0005	0.018	0.005	0.005	1	
7586	R09-09	146	148	2	0.0005	0.366	0.005	0.005	2	
7587	R09-09	148	151	3	0.0005	0.014	0.005	0.005	1	
7588	R09-09	151	152.5	1.5	0.0005	0.01	0.005	0.005	1	
7590	R09-09	152.5	154	1.5	0.0005	0.081	0.005	0.005	1	
7591	R09-09	154	157	3	0.0005	0.012	0.005	0.005	1	
7592	R09-09	157	160	3	0.0005	0.011	0.005	0.005	1	
7593	R09-09	160	163	3	0.0005	0.013	0.005	0.005	1	
7594	R09-09	163	166	3	0.0005	0.03	0.005	0.005	1	
7595	R09-09	166	169	3	0.0005	0.014	0.005	0.005	1	
7597	R09-09	169	172	3	0.0005	0.016	0.005	0.005	1	
7598	R09-09	172	175	3	0.0005	0.007	0.005	0.005	1	
7599	R09-09	175	178	3	0.0005	0.009	0.005	0.005	1	
7600	R09-09	178	181	3	0.0005	0.014	0.005	0.005	1	
7601	R09-09	181	184	3	0.0005	0.026	0.005	0.005	1	
7602	R09-09	184	187	3	0.0005	0.008	0.005	0.005	1	
7603	R09-09	187	190	3	0.0005	0.008	0.005	0.005	1	
7605	R09-09	190	193	3	0.0005	0.014	0.005	0.005	1	
7606	R09-09	193	194.5	1.5	0.0005	0.007	0.005	0.005	1	
7607	R09-09	194.5	196	1.5	0.0005	0.057	0.005	0.005	1	
7608	R09-09	196	199	3	0.0005	0.026	0.005	0.005	1	
7609	R09-09	199	202	3	0.0005	0.037	0.005	0.005	1	
7610	R09-09	202	203.5	1.5	0.0005	0.275	0.005	0.005	1	
7611	R09-09	203.5	205	1.5	0.007	0.269	0.005	0.005	1	
7612	R09-09	205	208	3	0.0005	0.013	0.005	0.005	1	
7613	R09-09	208	210	2	0.0005	0.015	0.005	0.005	1	
7614	R09-09	210	211.5	1.5	0.0005	0.042	0.005	0.005	1	
7616	R09-09	211.5	214.5	3	0.0005	0.013	0.005	0.005	1	
7617	R09-09	214.5	217.5	3	0.0005	0.015	0.005	0.005	1	
7618	R09-09	217.5	220.5	3	0.0005	0.01	0.005	0.005	1	
7619	R09-09	220.5	223.5	3	0.0005	0.006	0.005	0.005	1	
7620	R09-09	223.5	226.5	3	0.0005	0.012	0.005	0.005	1	
7621	R09-09	226.5	228	1.5	0.0005	0.017	0.005	0.005	1	
7623	R09-09	228	231	3	0.0005	0.01	0.005	0.005	1	
7624	R09-09	231	234	3	0.0005	0.007	0.005	0.005	1	
7625	R09-09	234	236	2	0.0005	0.008	0.005	0.005	1	
7626	R09-09	236	238	2	0.0005	0.011	0.005	0.005	1	
7627	R09-09	238	241	3	0.0005	0.018	0.005	0.005	1	
7629	R09-09	241	242.5	1.5	0.0005	0.023	0.005	0.005	1	
7630	R09-09	242.5	244	1.5	0.0005	0.009	0.005	0.005	1	
7631	R09-09	244	247	3	0.0005	0.016	0.005	0.005	1	
7632	R09-09	247	250	3	0.0005	0.015	0.005	0.005	1	
7633	R09-09	250	253	3	0.0005	0.012	0.005	0.005	1	
7634	R09-09	253	254.2	1.2	0.0005	0.029	0.005	0.005	1	

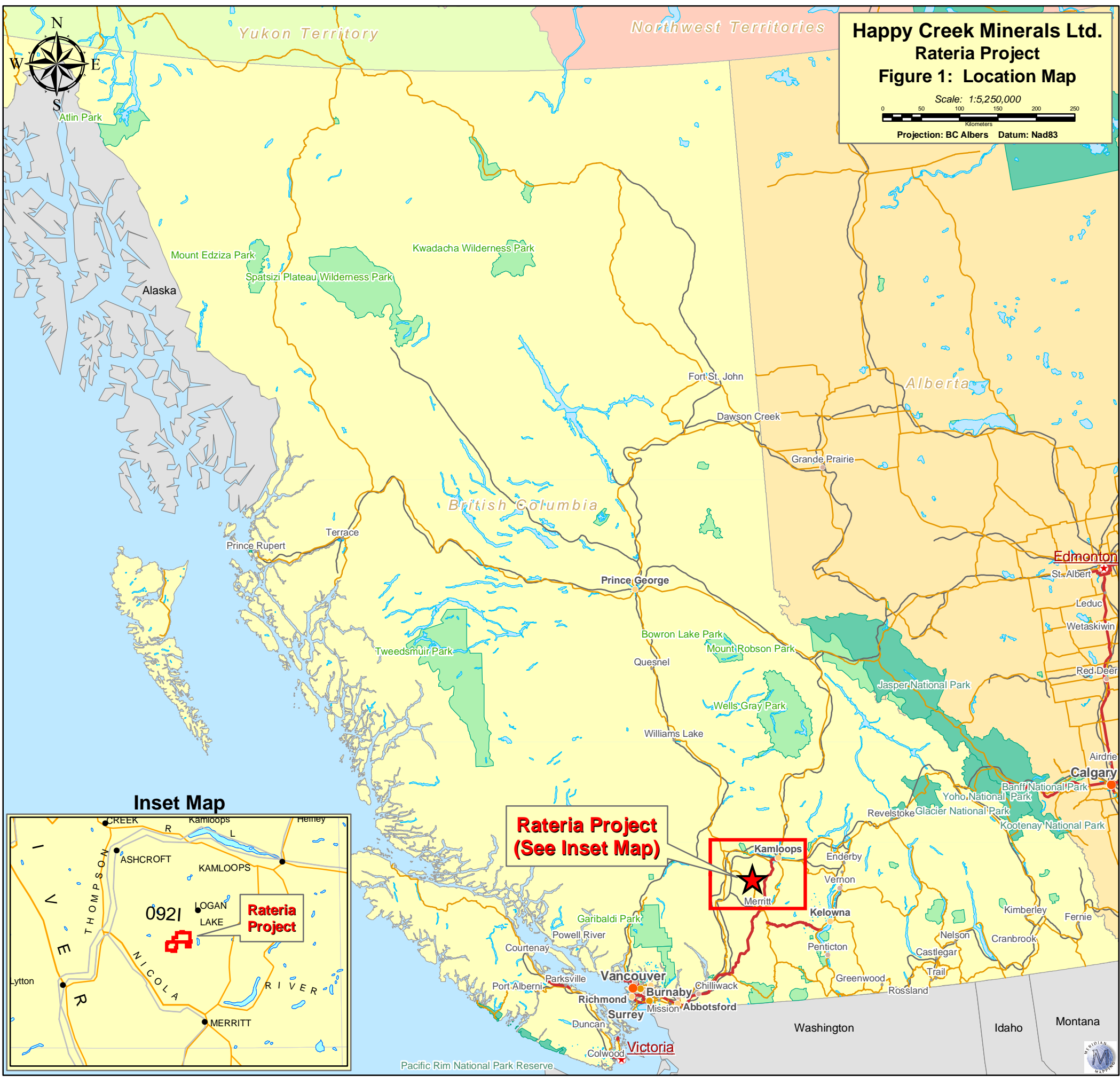
Appendix F

Figures

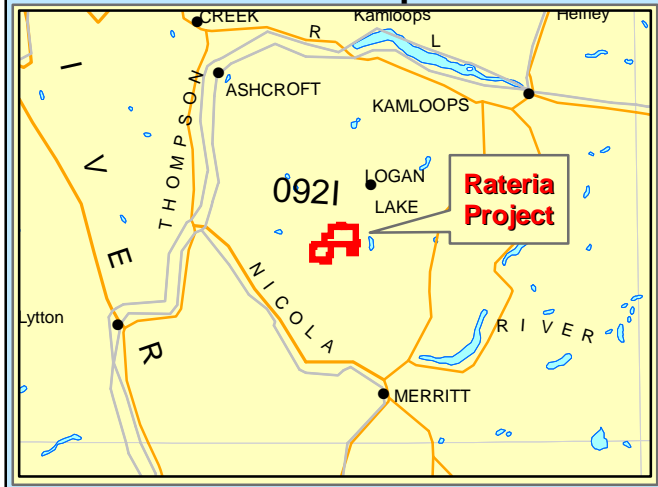
Happy Creek Minerals Ltd.
Rateria Project
Figure 1: Location Map

Scale: 1:5,250,000

Projection: BC Albers Datum: Nad83

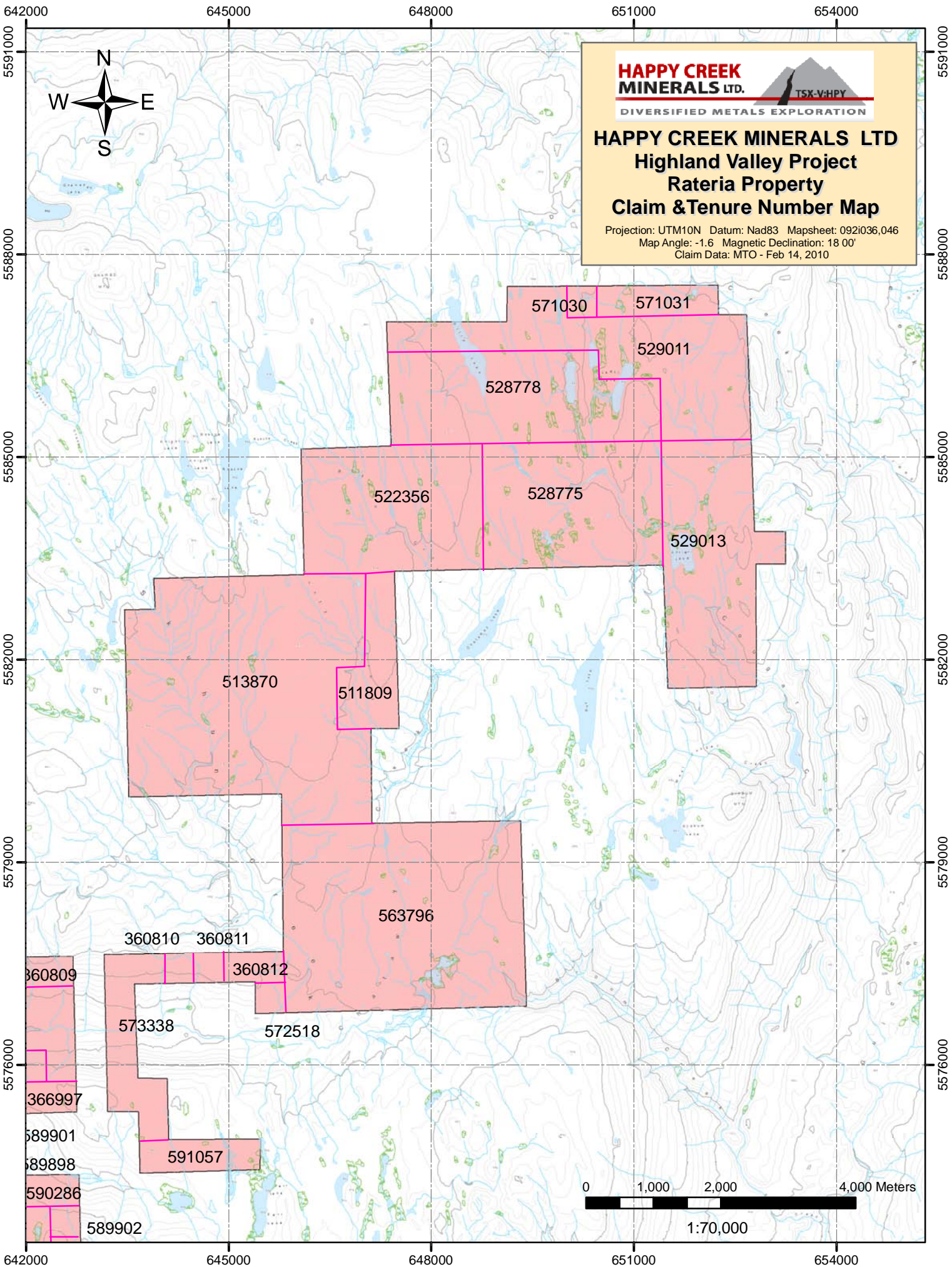


Inset Map



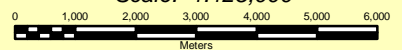
Rateria Project
(See Inset Map)



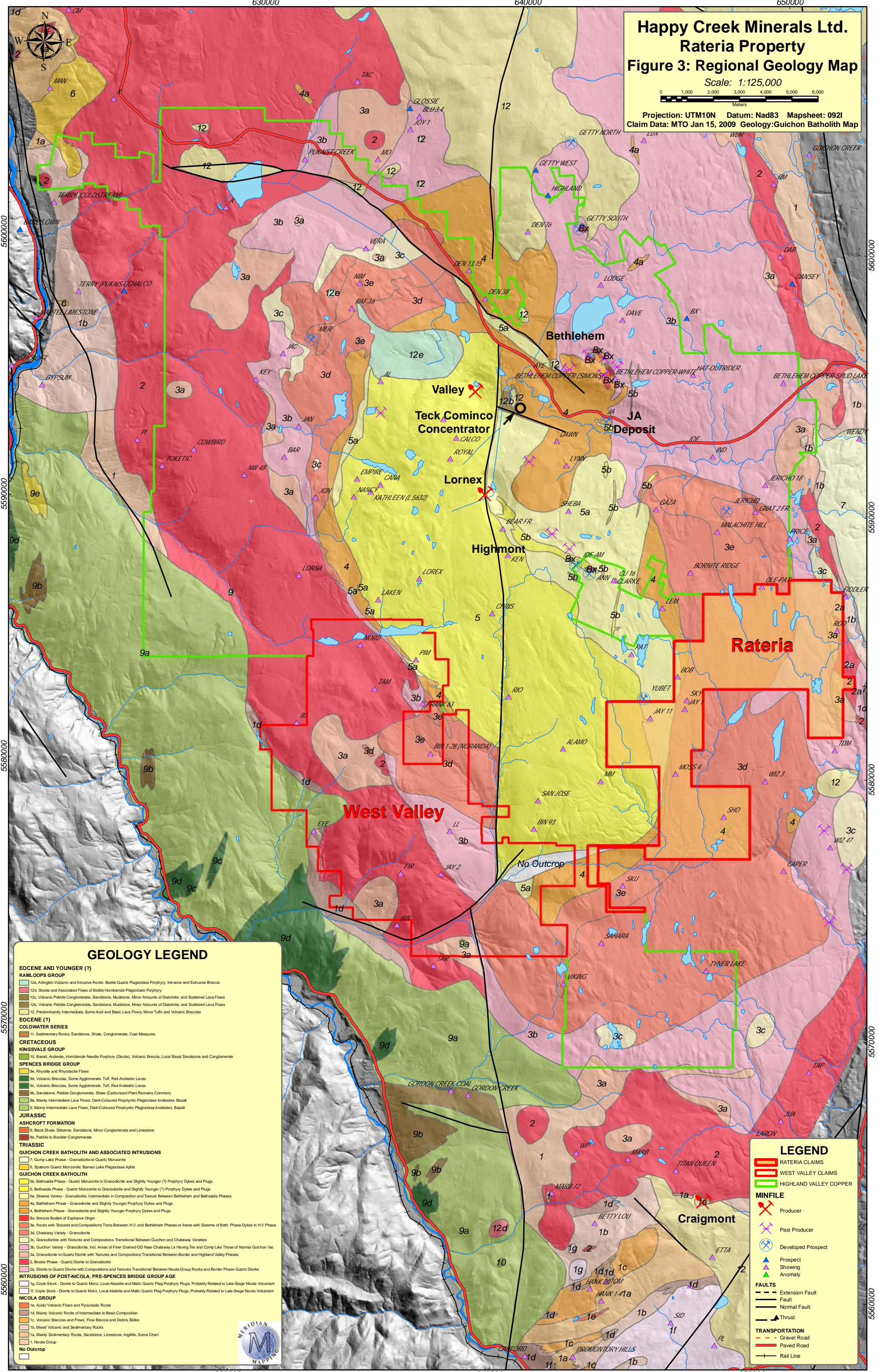


**Happy Creek Minerals Ltd.
Rateria Property
Figure 3: Regional Geology Map**

Scale: 1:125,000



Projection: UTM10N Datum: Nad83 Mapsheet: 0921
Claim Data: MTO Jan 15, 2009 Geology: Guichon Batholith Map



GEOLOGY LEGEND

- EOCENE AND YOUNGER (?)**
- KAMLOOPS GROUP**
 - 12e, Aftonian Volcanic and Intrusive Rocks: Biotite Quartz Plagioclase Porphyry; Intrusive and Extrusive Breccia
 - 12d, Stocks and Associated Flows of Biotite Hornblende Plagioclase Porphyry
 - 12c, Volcanic Pebble Conglomerate, Sandstone, Mudstone, Minor Amounts of Diatomite, and Scattered Lava Flows
 - 12b, Volcanic Pebble Conglomerate, Sandstone, Mudstone, Minor Amounts of Diatomite, and Scattered Lava Flows
 - 12, Predominantly Intermediate, Some Acid and Basic Lava Flows; Minor Tuffs and Volcanic Breccias
- EOCENE (?)**
- COLDWATER SERIES**
 - 11, Sedimentary Rocks: Sandstone, Shale, Conglomerate, Coal Measures
- CRETACEOUS**
- KINGSVALE GROUP**
 - 10, Basalt, Andesite, Hornblende Needle Porphyry (Dacite), Volcanic Breccia, Local Basal Sandstone and Conglomerate
- SPENCES BRIDGE GROUP**
 - 9e, Rhyolite and Rhyodacite Flows
 - 9d, Volcanic Breccias, Some Agglomerate, Tuff, Red Andesitic Lavas
 - 9c, Volcanic Breccias, Some Agglomerate, Tuff, Red Andesitic Lavas
 - 9b, Sandstone, Pebble Conglomerate, Shale (Carbonized Plant Remains Common)
 - 9a, Mainly Intermediate Lava Flows, Dark-Coloured Porphyritic Plagioclase Andesites, Basalt
 - 9, Mainly Intermediate Lava Flows, Dark-Coloured Porphyritic Plagioclase Andesites, Basalt
- JURASSIC**
- ASHCROFT FORMATION**
 - 8, Black Shale, Siltstone, Sandstone, Minor Conglomerate and Limestone
 - 8a, Pebble to Boulder Conglomerate
- TRIASSIC**
- GUICHON CREEK BATHOLITH AND ASSOCIATED INTRUSIONS**
 - 7, Gump Lake Phase - Granodiorite to Quartz Monzonite
 - 6, Spatum Quartz Monzonite; Barnes Lake Plagioclase Aplites
- GUICHON CREEK BATHOLITH**
 - 5b, Bethesda Phase - Quartz Monzonite to Granodiorite and Slightly Younger (?) Porphyry Dykes and Plugs
 - 5a, Bethesda Phase - Quartz Monzonite to Granodiorite and Slightly Younger (?) Porphyry Dykes and Plugs
 - 5, Skeena Variety - Granodiorite, Intermediate in Composition and Texture Between Bethesda and Bethesda Phases
 - 4a, Bethlehem Phase - Granodiorite and Slightly Younger Porphyry Dykes and Plugs
 - 4, Bethlehem Phase - Granodiorite and Slightly Younger Porphyry Dykes and Plugs
 - 3e, Breccia Bodies of Explosive Origin
 - 3d, Rocks with Textures and Compositions Transitional Between H.V. and Bethlehem Phases or Areas with Swarms of Beth. Phase Dykes in HV Phase
 - 3c, Chataway Variety - Granodiorite
 - 3b, Granodiorites with Textures and Compositions Transitional Between Guichon and Chataway Varieties
 - 3a, Guichon Variety - Granodiorite, Incl. Areas of Finer Grained GD Near Chataway Lk Having Text and Comp Like Those of Normal Guichon Var.
 - 2, Granodiorite to Quartz Diorite with Textures and Compositions Transitional Between Border and Highland Valley Phases
 - 2, Border Phase - Quartz Diorite to Granodiorite
 - 2a, Diorite to Quartz Diorite with Compositions and Textures Transitional Between Nicola Group Rocks and Border Phase Quartz Diorite
- INTRUSIONS OF POST-NICOLA, PRE-SPENCES BRIDGE GROUP AGE**
 - 1g, Coyte Stock - Diorite to Quartz Monz., Local Alaskite and Mafic Quartz Plag Porphyry Plugs, Probably Related to Late-Stage Nicola Volcanism
 - 1f, Coyte Stock - Diorite to Quartz Monz., Local Alaskite and Mafic Quartz Plag Porphyry Plugs, Probably Related to Late-Stage Nicola Volcanism
 - 1d, Coyte Stock - Diorite to Quartz Monz., Local Alaskite and Mafic Quartz Plag Porphyry Plugs, Probably Related to Late-Stage Nicola Volcanism
- NICOLA GROUP**
 - 1e, Acidic Volcanic Flows and Pyroclastic Rocks
 - 1d, Mainly Volcanic Rocks of Intermediate to Basic Composition
 - 1c, Volcanic Breccias and Flows, Flow Breccias and Plugs
 - 1b, Mixed Volcanic and Sedimentary Rocks
 - 1a, Mainly Sedimentary Rocks, Sandstone, Limestone, Argillite, Some Chert
 - 1, Nicola Group
- No Outcrop

LEGEND

- RATERIA CLAIMS** (Red outline)
- WEST VALLEY CLAIMS** (Red outline)
- HIGHLAND VALLEY COPPER** (Green outline)
- MINFILE**
 - Producer (Red X)
 - Past Producer (Purple X)
 - Developed Prospect (Blue circle with X)
 - Prospect Showing (Blue triangle)
 - Anomaly (Green triangle)
- FAULTS**
 - Extension Fault (Dashed line)
 - Fault (Solid line)
 - Normal Fault (Line with triangles)
 - Thrust (Line with triangles)
- TRANSPORTATION**
 - Gravel Road (Dashed line)
 - Paved Road (Solid line)
 - Rail Line (Line with cross-ticks)

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Highland Valley Project Rateria Property Diamond Drilling 2009 & Drill Plan

UTM 10, NAD 83

Zone 2

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R09-06

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R09-03

R09-04

R09-05

R09-08

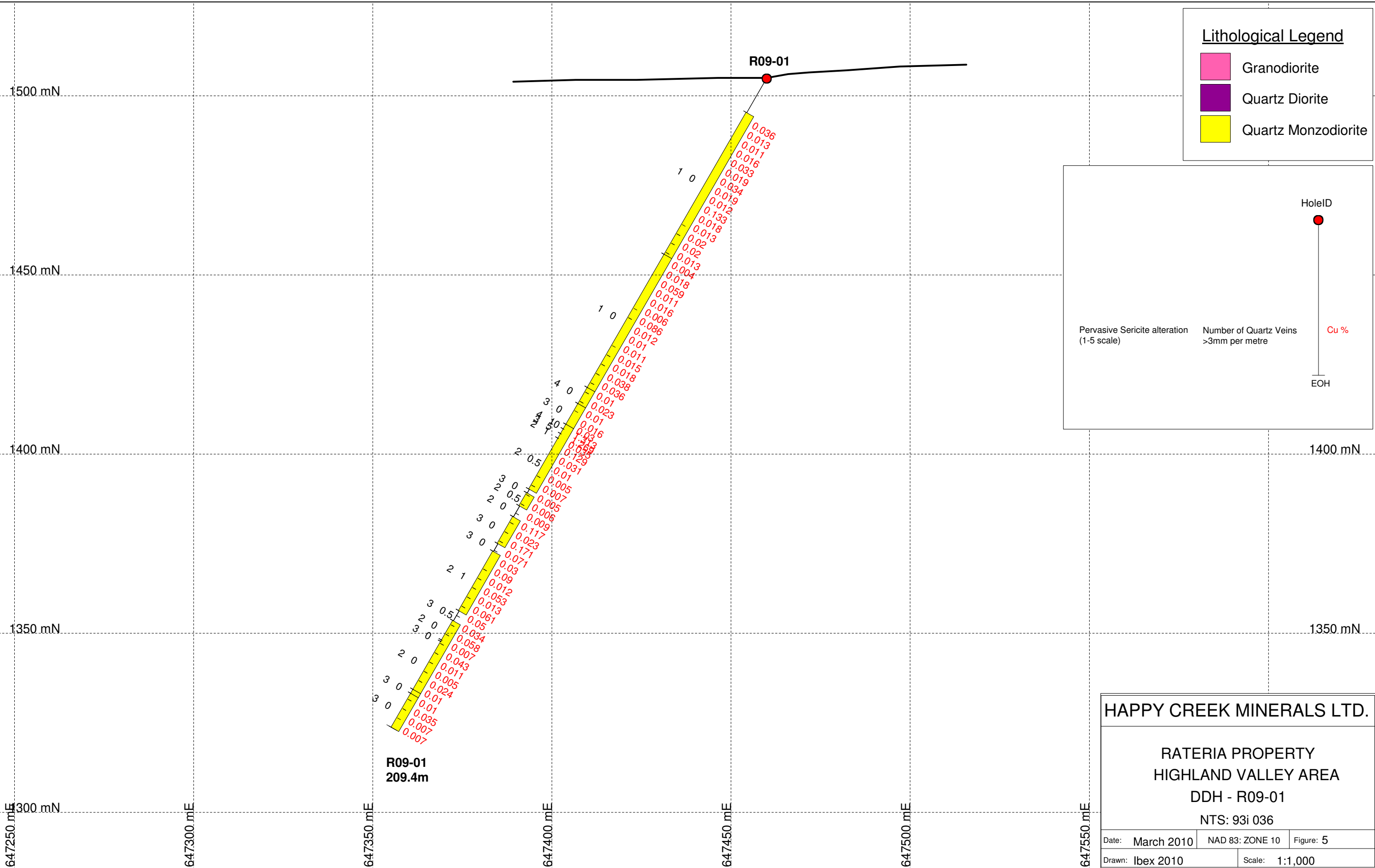
LEGEND 2009 Diamond Drill Program

- 2009 DDH
- >1% Cu
- 0.3 to 1% Cu
- 0.1 to 0.3% Cu
- 0.04 to 0.1% Cu
- Drill Trace
- HCM Claim
- Developed prospect mineralization zone

0 245 490 980 Meters

1:18,000

647000 648000 649000



Lithological Legend

- Granodiorite
- Quartz Diorite
- Quartz Monzodiorite

Legend

- HoleID
- Pervasive Sericite alteration (1-5 scale)
- Number of Quartz Veins >3mm per metre
- Cu %
- EOH

HAPPY CREEK MINERALS LTD.

RATERIA PROPERTY
HIGHLAND VALLEY AREA
DDH - R09-01
NTS: 93i 036

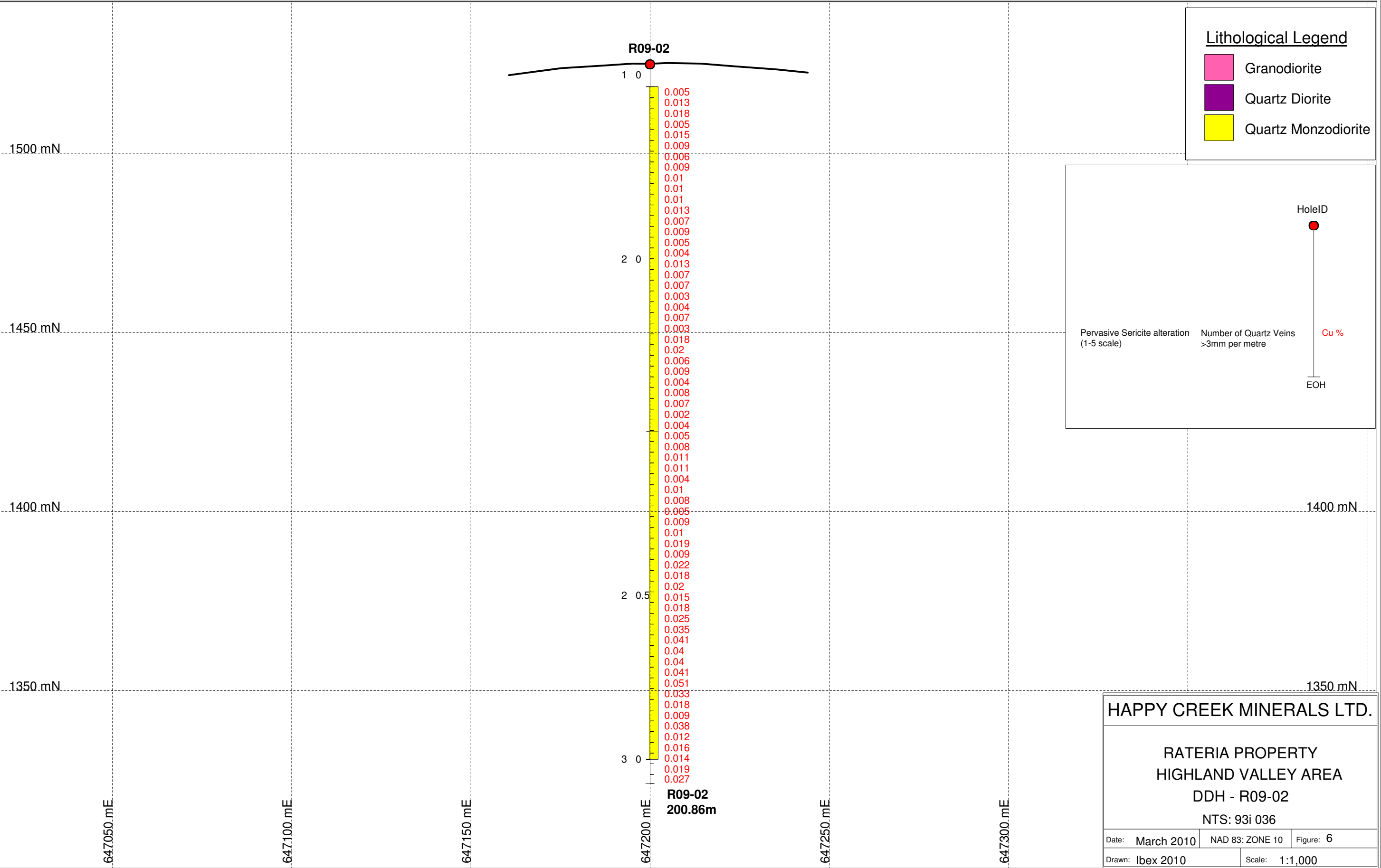
Date: March 2010	NAD 83: ZONE 10	Figure: 5
Drawn: Ibex 2010	Scale: 1:1,000	

R09-01
209.4m

● R09-02

Lithological Legend

- Granodiorite
- Quartz Diorite
- Quartz Monzodiorite



R09-02

1 0

2 0

2 0.5

3 0

R09-02

200.86m

HoleID

●

EOH

Pervasive Sericite alteration
(1-5 scale)

Number of Quartz Veins
>3mm per metre

Cu %

HAPPY CREEK MINERALS LTD.

**RATERIA PROPERTY
HIGHLAND VALLEY AREA
DDH - R09-02**

NTS: 93i 036

Date: March 2010 | NAD 83: ZONE 10 | Figure: 6

Drawn: Ibex 2010 | Scale: 1:1,000

1500 mN

1450 mN

1400 mN

1350 mN

1400 mN

1350 mN

647050 mE

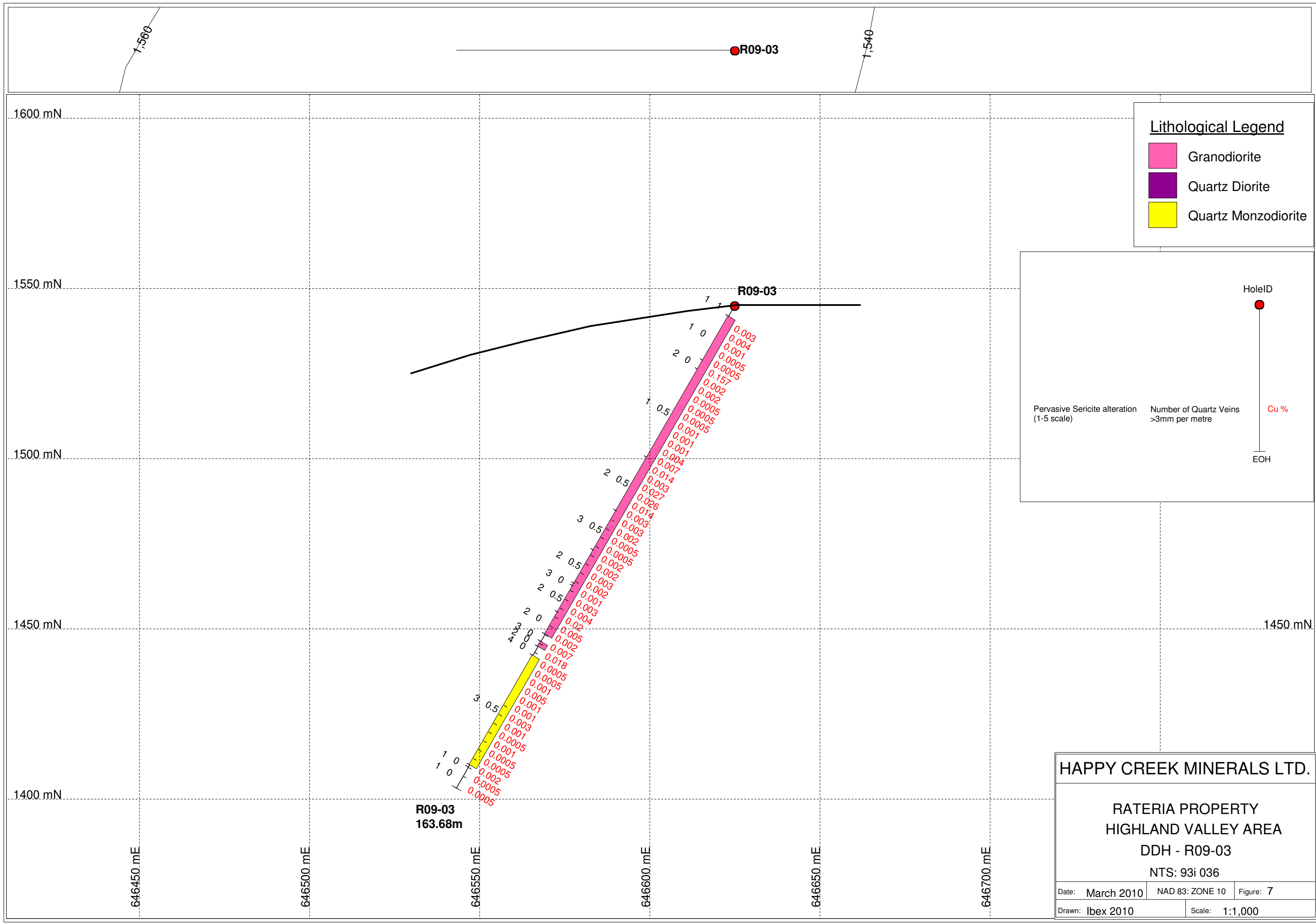
647100 mE

647150 mE

647200 mE

647250 mE

647300 mE

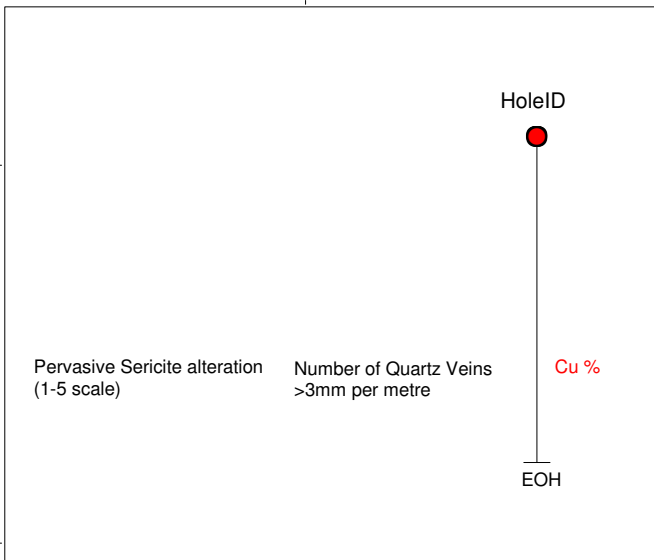
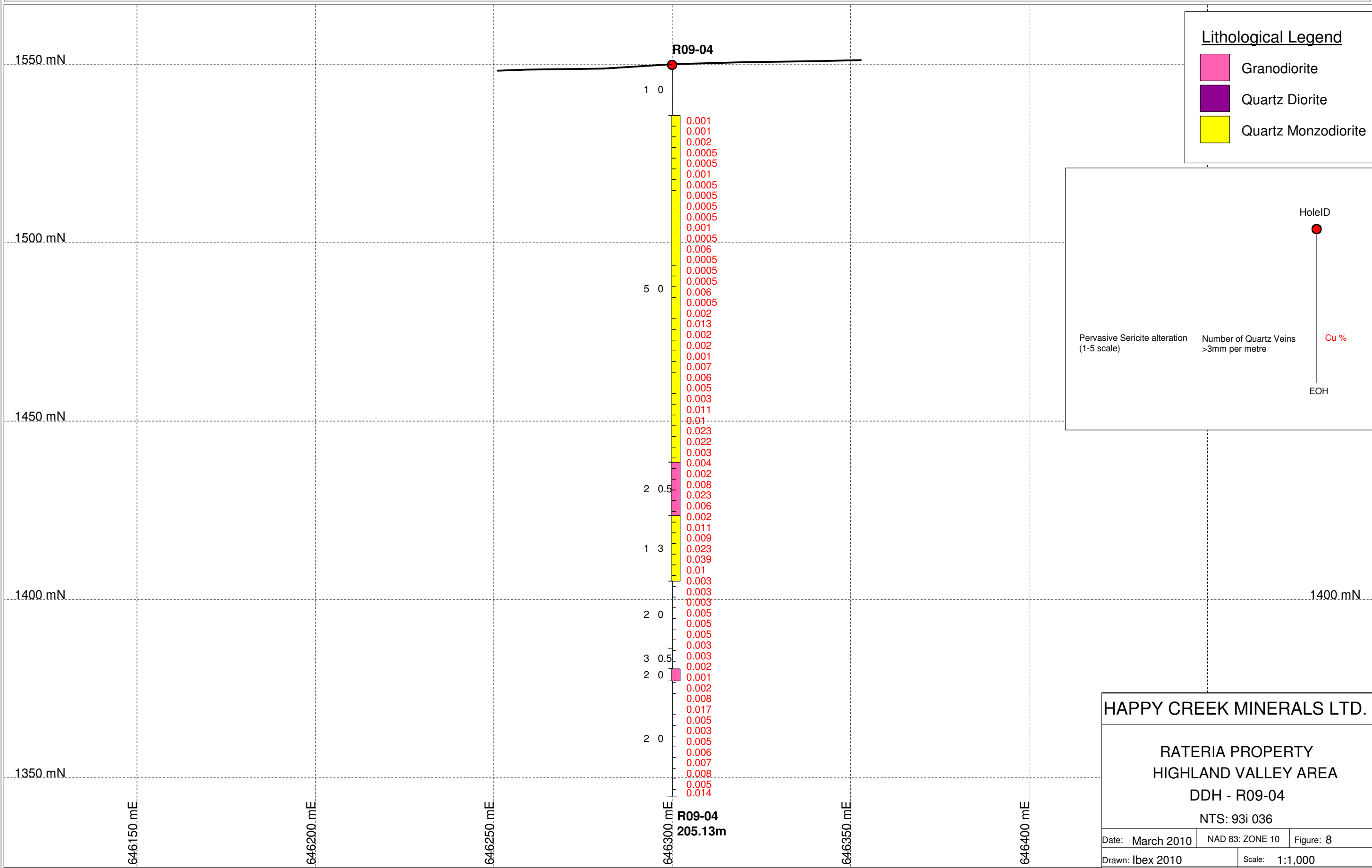


R09-04

R09-04

Lithological Legend

- Granodiorite
- Quartz Diorite
- Quartz Monzodiorite



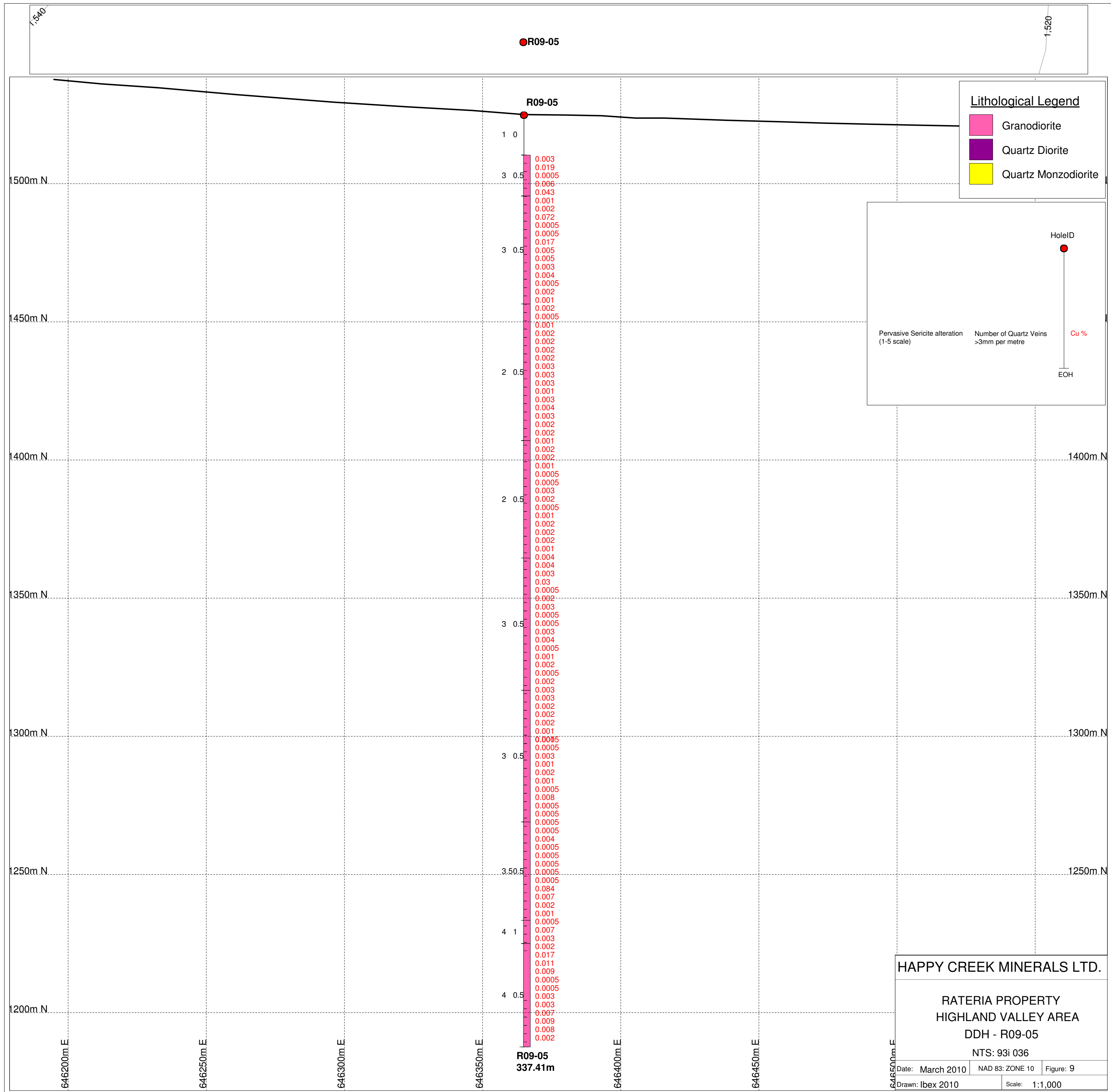
HAPPY CREEK MINERALS LTD.

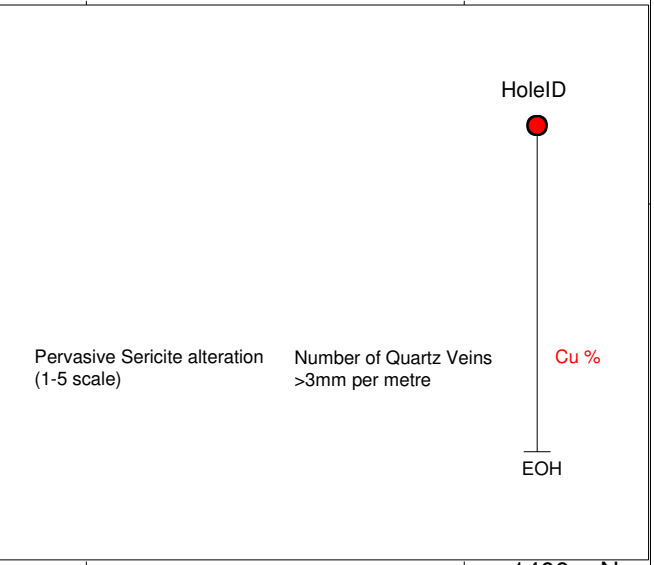
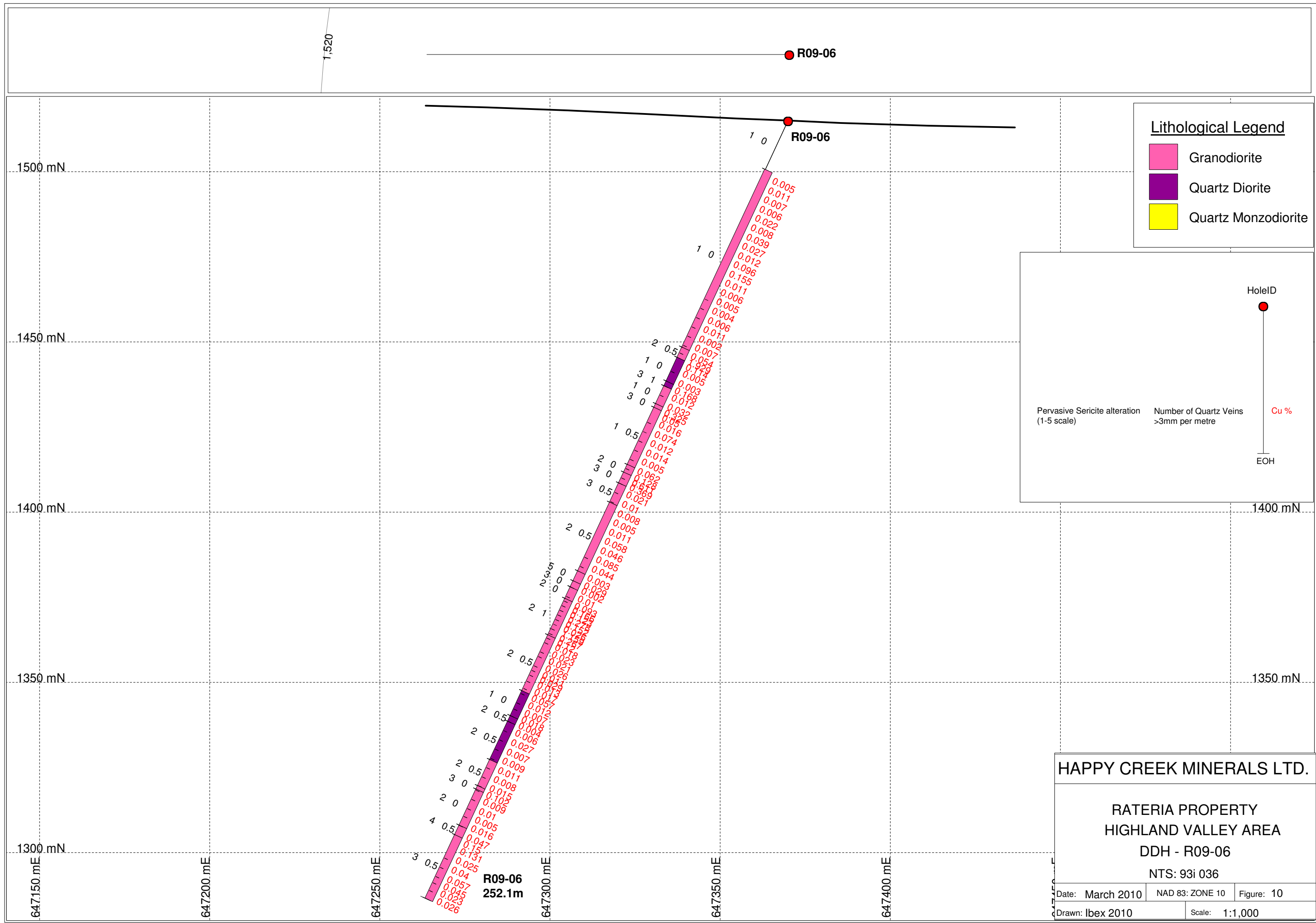
RATERIA PROPERTY
HIGHLAND VALLEY AREA
DDH - R09-04

NTS: 93i 036

Date: March 2010	NAD 83: ZONE 10	Figure: 8
Drawn: lbex 2010	Scale: 1:1,000	

R09-04
205.13m





HAPPY CREEK MINERALS LTD.

RATERIA PROPERTY
 HIGHLAND VALLEY AREA
 DDH - R09-06
 NTS: 93i 036

Date: March 2010 NAD 83: ZONE 10 Figure: 10
 Drawn: lbex 2010 Scale: 1:1,000

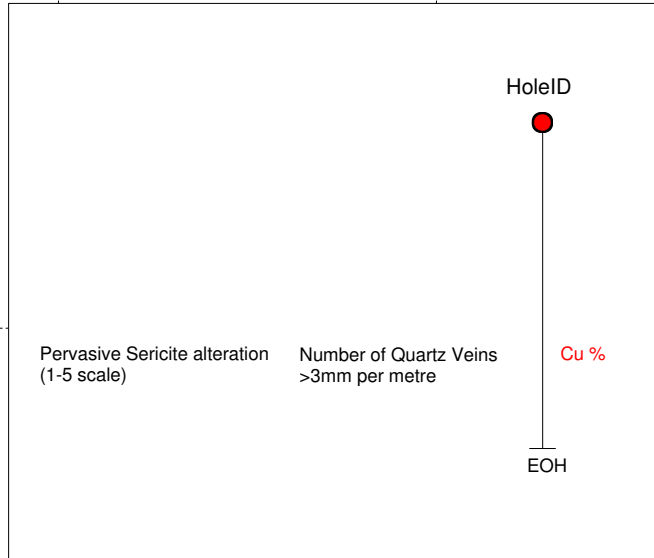
R09-07

R09-07

R09-07
200.25m

Lithological Legend

- Granodiorite
- Quartz Diorite
- Quartz Monzodiorite



HAPPY CREEK MINERALS LTD.

RATERIA PROPERTY
HIGHLAND VALLEY AREA
DDH - R09-07

NTS: 93i 036

Date: March 2010	NAD 83: ZONE 10	Figure: 11
Drawn: lbex 2010	Scale: 1:1,000	

1500 mN

1450 mN

1400 mN

1350 mN

647200 mE

647250 mE

647300 mE

647350 mE

647400 mE

647450 mE

647500 mE

1400 mN

1350 mN

R09-08



1450 mN

1400 mN

1350 mN

1300 mN

1250 mN

649300.mE

649350.mE

649400.mE

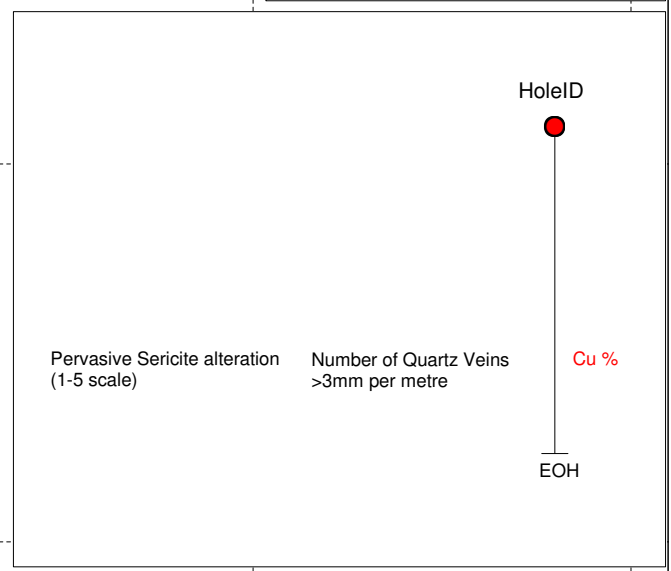
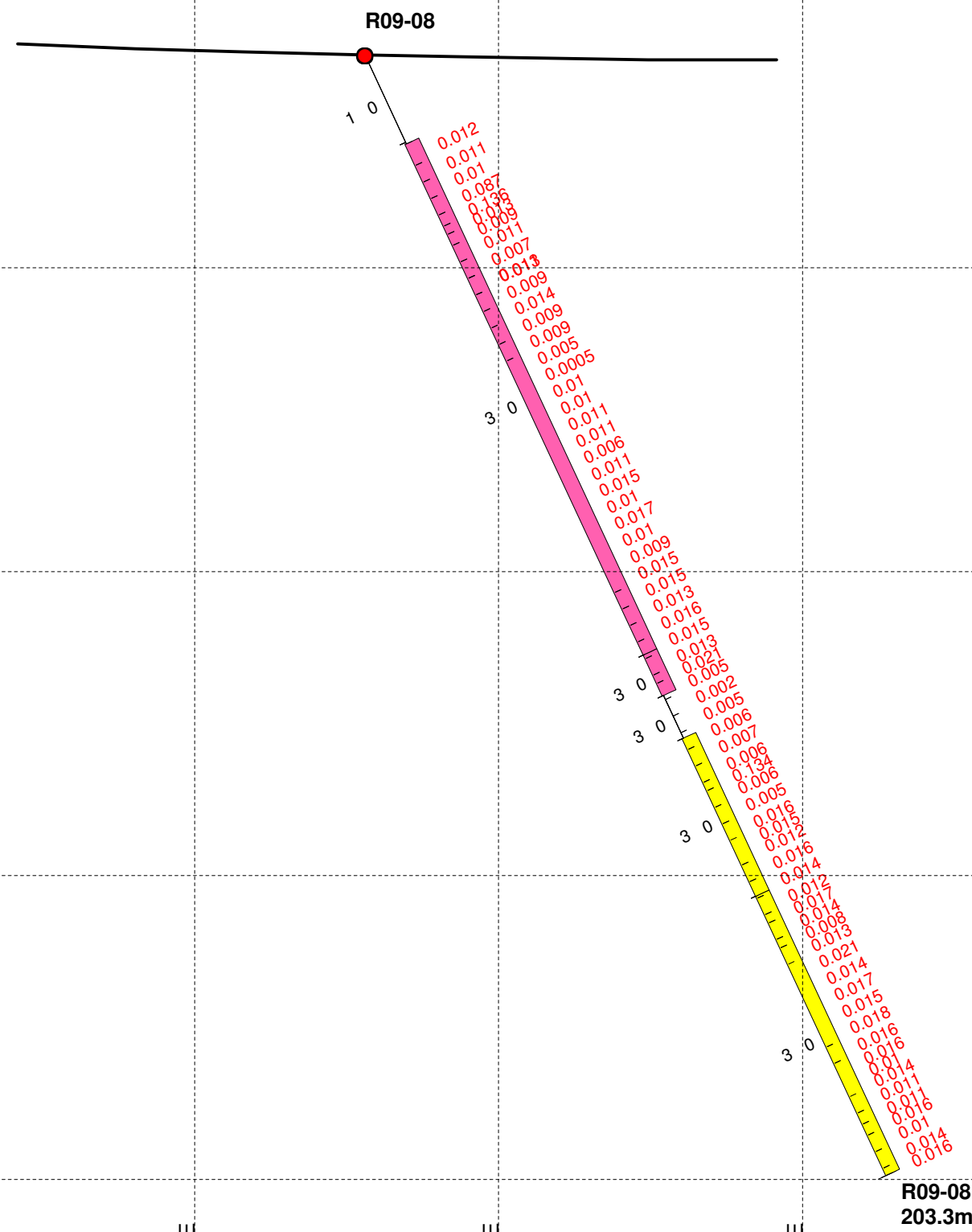
649450.mE

649500.mE

649550.mE

Lithological Legend

- Granodiorite
- Quartz Diorite
- Quartz Monzodiorite



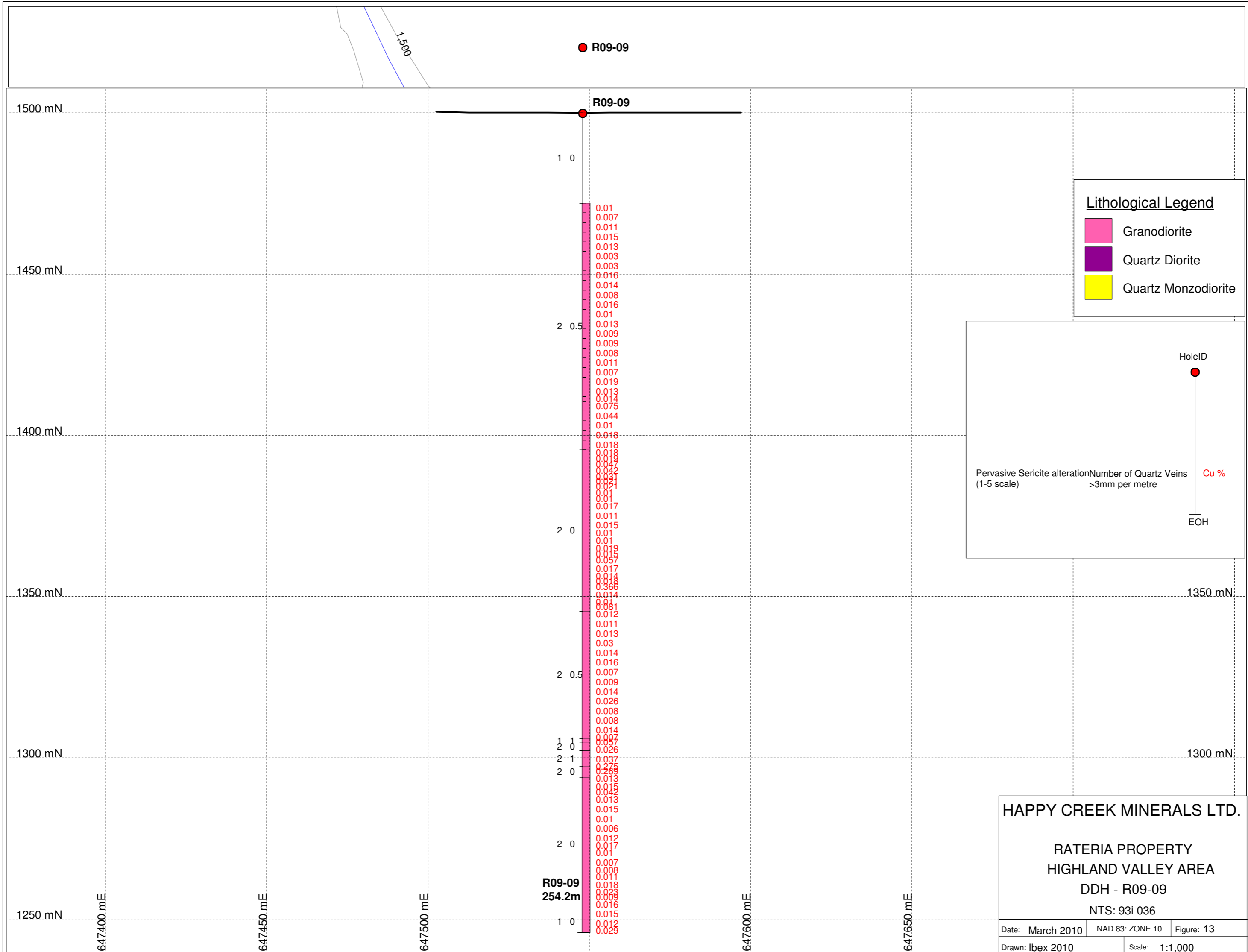
R09-08
203.3m

HAPPY CREEK MINERALS LTD.

RATERIA PROPERTY
HIGHLAND VALLEY AREA
DDH - R09-08

NTS: 93i 036

Date: March 2010	NAD 83: ZONE 10	Figure: 12
Drawn: Ibex 2010	Scale: 1:1,000	

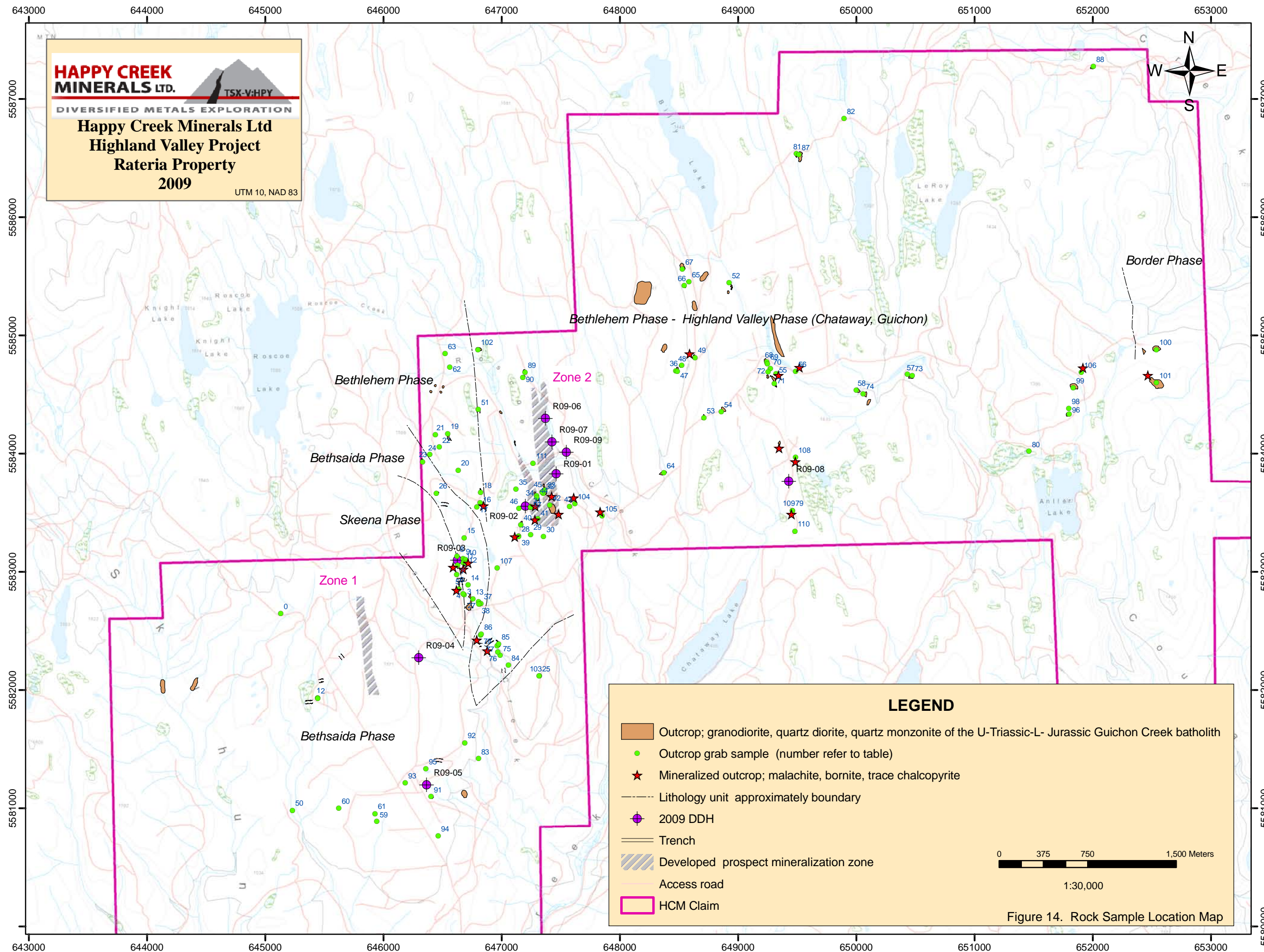


HAPPY CREEK MINERALS LTD.

RATERIA PROPERTY
HIGHLAND VALLEY AREA
DDH - R09-09

NTS: 93i 036

Date: March 2010 NAD 83: ZONE 10 Figure: 13
Drawn: Ibex 2010 Scale: 1:1,000



HAPPY CREEK MINERALS LTD.
 TSX-V:HPY
 DIVERSIFIED METALS EXPLORATION
Happy Creek Minerals Ltd
Highland Valley Project
Rateria Property
2009
 UTM 10, NAD 83

LEGEND

- Outcrop; granodiorite, quartz diorite, quartz monzonite of the U-Triassic-L- Jurassic Guichon Creek batholith
- Outcrop grab sample (number refer to table)
- Mineralized outcrop; malachite, bornite, trace chalcopyrite
- Lithology unit approximately boundary
- 2009 DDH
- Trench
- Developed prospect mineralization zone
- Access road
- HCM Claim

0 375 750 1,500 Meters
1:30,000

Figure 14. Rock Sample Location Map

Appendix G

Geological Mapping of the Rateria Property



Geological Mapping of the Rateria Property (2009)

INTRODUCTION

From August 10th to August 26th, and 10 days throughout October, 2009, two geologists carried out property-wide geological mapping on Happy Creek Minerals' Rateria property. Widespread glacial till obscures much of the bedrock in the Rateria area. Extensive and ongoing logging operations have been conducted on the property; this is largely due to the pine beetle epidemic. The recent logging activities have created several new bedrock exposures.

The objectives of the mapping program were to investigate areas with recent logging clear cuts, to look for new areas of favorable alteration/mineralization and to add detail to existing mapped areas by gaining a better understanding of the various lithologies which are present on the properties. A full suite of type specimens was collected in order to better understand the various phases of the Guichon Batholith which underlie the property.

Mapping objectives on the Rateria included:

- Delineating the various phases of the Guichon Batholith which underlie the property.
- Collection of a significant number of representative type samples from the various phases of the intrusion.
- Traverses within recent clear cuts in order to check for new outcrop exposures.
- To propose further exploration activity such as locating diamond drill holes in areas of favorable alteration/mineralization.
- Prospecting for new mineral occurrences (particularly in freshly logged areas in the central portion of the property).
- To gain a better understanding of the petrology and mineral distribution of the various Guichon phases throughout the property, particularly the Zone 2 area.
- Study contact relationships, structures and rock types and their relationships to mineralization.

SAMPLING AND DESCRIPTION OF ROCKS

One hundred thirteen outcrops throughout the property were mapped and a total of 200 grab samples were collected. More than 50% of the outcrops are smaller than 100 m². Some of the samples were 'stained' to test for primary K-feldspar as well as secondary K-feldspar alteration. Lithology, alteration and mineralization were documented for each mapping location. A complete list of rock samples and field description is included in Appendix F. Rock sample locations and outcrops are plotted on Figure 4.

In general, this mapping concurs with the regional geological map. Our observations modify some lithology boundaries of previously published maps. Border phase rocks are mapped in the extreme eastern portion of the claims. Highland Valley phase (Chataway and Guichon varieties) rocks are seen the central part of claim in the northern portion. Bethlehem phase rocks are mapped in the extreme north east portions of the claim block. The approximate contact between Bethlehem and Highland valley is shown on the map, however, some

Bethlehem phase outcrops are found in the central portion of the claim. Further to the east and south the rocks are a coarser grained, mafic poor Skeena and Bethsaida phases. The contacts between the rock units were not observed due to the extensive glacial till.

Rocks collected from the "Zone 2 showing" are of the Bethlehem and Chataway phases. Malachite, chalcopyrite and bornite are observed in some of the outcrops throughout this area. The mineralization is hosted by sheared and intensely chlorite-sericite altered rocks. The area west of the Zone 2 (west portion of the claim block) is underlain by variety of Bethsaida phase rocks. The rocks mapped in the Lindsay Creek area show the presence of Skeena and Bethsaida phases. The lithologies observed in the Three Creeks showing, Northwest showing, Billy Lakes showing and north-east portion of the claim block are a combination of Chataway and Bethlehem phases. This observation differs somewhat from the previous mapping lithology in that all of the lithologies in this area were previously mapped as Chataway. In the eastern portion of the property trace copper mineralization was observed in Guichon variety rocks. Aplite and numerous other small dikes were not plotted on the map as they would obscure the more pertinent large scale features.

Rateria rock samples with assay ...

South of Rateria West Showing

Sample 1002 (lab # 12303) Au (<2ppb), Cu (<0.002%), E: 646640, N:5582931

-South of the West Rateria Showing

-Sample from trench (trench is 52m long, 1m deep, Az 275,

-No outcrop inside the trench, bn and malachite on several 20-35cm angular boulders in the trench.

Rateria West Showing

Sample 1003 (lab # 12304) Au (83 ppb), Cu (0.487%), E: 646635, N:5583067

-Sample from outcrop (40x20m), granodiorite (phenos: qtz,bio,hb),

-Ore mineralization in fractures/veins, up to 5mm, trace bn, cc also present in veins and associated with mafic minerals.

-Quartz veins are common up to 5 cm

-Chloritization is common mainly in fractures

-Some broken rocks show evidence of strike – slip movement.

Bornite and malachite mineralization are observed in various amount in outcrops for 200m along the N-S road in Rateria West Showing zone. Some samples are strongly mineralized. R09-03 DDH is located in this area.

Rateria, between Zones 1 and 2 mineralization area.

Sample 12306 (lab # 12306), Au (6ppb), Cu (0.03%), E: 646802, N: 5582492

-Sample from 5m shear zone, strike 95, dip 76,

-highly altered, chl, lim, jarosite. Iron oxide common.

-Quartz veins are common, partly mineralized.

-Malachite, bn, strongly sheared associated with fractures, joints and shearing.

Rateria old explored area (3 Creek Showing)

Sample R16-04 (lab # 12309), Au (3ppb), Cu (0.034%), E: 646824, N: 5582465

-Granodiorite outcrops associated with intensive alteration (chloritization, seritization, silicification) and good showing surface mineralization. Potassic alteration also observed.

-Mineralization is controlled by rock structures and tectonic features. Malachite and bn + iron oxides are mainly observed in fractures and veinlets.

-Copper mineralization extends at least 100X100m in this area.

Rateria east of Zone 2 mineralization area

Sample 12305 (lab # 12305) Au (12ppb), Cu(0.018%), E: 649283, N: 5584729

-Sample from granodiorite outcrop

-Veins of K-spar, qtz, and iron oxide are common

-malachite observed in fractures and in veinlets.

No	Date	Sample	Easting	Northing	Rock Group	Ore	Alteration	Outcrop (m)	Description
0	Aug 11-09	R11-01	645131	5582647	Bethsaida		Ksp,Ser	3x2	Outcrop located in the east side of core shack, granodiorite, coarse-grained, leucocratic, weakly altered, equigranular to slightly porphyritic (phenos: qtz,bio, amph), orthoclase (Kspar) 15-20%, qtz (10-20%), mafic minerals about 10% (bi >>hb), bi book, 5% (5-7mm), plag (30-40%) slightly altered to ser+clay+/-chl, potassic alteration in groundmass and in small fractures. mag 2%, Locally fractures filled with red-orange iron-oxid + carbonate, no mineralization. Old trenches near km 24.5 Pumanus Rd (E 6454453, N5582078), 85N, 50x5 m, no mineralization.
1	Aug 11-09	R11-02	645443	5581934	Bethsaida		Ksp,Ser		General characters same as R11-01. Rock cut by 10cm wide, pinkish fine-grained aplite dike (098/90). Contacts are sharp with alteration halo or chill margin.
2	Aug 11-09	R11-03	645446	5581932	Aplit Dike		Ksp,Ser		Aplite dike observed with R11-02 outcrop
3	Aug 12-09	R12-01	646683	5582807	Bethsaida		Ser,Chl	3x10	Outcrop on east flank of very small (30cm wide) N-S creek. Granodiorite, leucocratic, equigranular, coarse grained. Plag (45%), partly altered to ser, Kspar (5%) primary, qtz (35%) gray, subhedral, 3mm in size, Mafic minerals 20-30% (bi>hb), bi book up to 4mm and slightly chloritized, same as hb. Chl and ep in fractures .
4	Aug 12-09	R12-02	646674	5582814	Bethsaida		Ser,Ksp		General characters same as R12-01.
5	Aug 12-09	R12-03	646638	5582856	Skeena	mal,cc,b n	Ser, Chl,Car,Qtz	2x2	Outcrop (West Showing) granodiorite, light green color, Plagioclase and qtz are dominant minerals, pinkish Kspar is common, bi >hb are major mafic minerals. Rocks seritized and slightly chloritized. Intense chloritization in fractures. Significant amounts of bornite, malachite and cc as patchy and fracture fillings mineralization associated with slightly elevated Kspar alteration. Rock weakly stained with hematite. In the south part of the outcrop, the rock cut (270N) by 4cm fine grained pinkish aplite dike. Sharp contact with 1cm alteration or chill margin. Toward to the north, copper mineralization plus chl alteration in fractures are increase. Qtz veins are widespread through the outcrops.
6	Aug 12-09	R12-04	646621	5582979	Bethlehem		Ksp,Ser	10x5	West Showing, medium grained granodiorite, amoeboid quartz, orthoclase (Kspar) 15-20%, qtz (10-20%), mafic minerals about 10% (bi >>hb), bi book, 5% (5-7mm), plag (30-40%) slightly altered to ser+clay+/-chl, potassic alteration in groundmass and in small fractures. mag 2%, Locally fractures filled with red-orange iron-oxid + carbonate, weak alteration

7	Aug 12-09	R12-05	646628	5583058	Skeena	mal,bn, cc	Ksp,Qtz,Chl,Cla y	40x20	West Showing, General mineralogy charactes same as R12-03, some broken rocks features of strike-slip movement. Trace amount of azoite.
8	Aug 12-09	R12-06	646622	5583130	Bethlehem	mal,bn,	Ksp,Chl,Ep,Clay		West Showing, Medium garined granodiorite. General charactes same as R12-04,
9	Aug 12-09	R12-07	646673	5583113	Bethsaida		Clay		Light green irregular outcrop, General characters same as R11-01, manganese common on fractures. Local pervasive chloritization of mafics.
10	Aug 12-09	R12-08	646694	5583105	Bethsaida		_		Same as R12-07
11	Aug 12-09	R12-09	646676	5583076	Bethlehem	mal	Chl,Ep		Similar mineralogy as same unit before, Trace malachite in fractures.
12	Aug 12-09	R12-10	646699	5583077	Chataway		_	10x20	Presence of mafic minerals are higher than before (20-30%), bi=hb, plag (50%), qtz (10-15%) 1-2mm, Kspar 2-3%, mag 1%. No significant alteration.
13	Aug 12-09	R12-11	646757	5582771	Chataway		_	50x20	Same as R12-10
14	Aug 12-09	R12-12	646716	5582890	Mafic Dike		Chl		Coarse gained, hb rich mafic dike
15	Aug 12-09	R12-13	646684	5583289	Bethsaida		_		same as general characters of the rock unit in the area
16	Aug 12-09	R12-14	646817	5583583	Bethlehem		_		same as general characters of the rock unit in the area
17	Aug 12-09	R12-15	646791	5583548	Bethsaida	mal	Ser, Ksp	2x2	same as general characters of the rock unit in the area, trace malachite
18	Aug 12-09	R12-16	646824	5583671	Chataway		_		same as general characters of the rock unit in the area
19	Aug 12-09	R12-17	646544	5584170	Skeena		Ser, Ksp	50x30	Outcrop granodiorite, light green color, Plagioclase and qtz are dominant minerals, pinkish Kspar is common, bi >hb are major mafic minerals. Rocks seritized and slightly chloritized. Intense chloritization in fractures. Rock weakly stained with hematite. In the south part of the outcrop, Qtz veins are widespread through the outcrops.
20	Aug 12-09	R12-18	646633	5583861	Bethlehem		_		same as general characters of the rock unit in the area
21	Aug 12-09	R12-19	646441	5584159	Bethlehem		_		same as general characters of the rock unit in the area
22	Aug 12-09	R12-20	646473	5584055	Bethsaida		_	1x1	same as general characters of the rock unit in the area
23	Aug 12-09	R12-21	646331	5583932	Bethsaida		_		same as general characters of the rock unit in the area
24	Aug 12-09	R12-22	646393	5583991	Bethlehem		Ser	10x5	same as general characters of the rock unit in the area
25	Aug 12-09	R12-23	647318	5582120	Bethsaida		_	3x4	same as general characters of the rock unit in the area
26	Aug 12-09	R12-24	646447	5583666	Bethsaida		_	3x4	same as general characters of the rock unit in the area
27	Aug 13-09	R13-01	646805	5582747	Bethsaida		Ser,Qtz,Clay		Similar to rock unit type, Kspar vains (+qtz) up to 1 cm in wide, patchy of K-spar. Ser, clay alteration are common.
28	Aug 13-09	R13-02	647144	5583303	Chataway		Ksp,Chl		Medium grained granodiorite, mafic minerals 15%, (bi>>hb);qtz, 30% subhedral; General character similar to the rock unit type,Kspar 5% (interstial); chl in fractures and veins (1mm). Irregular veins filled with second Kspar. Hem staining and in fractures.
29	Aug 13-09	R13-03	647246	5583316	Chataway		Clay		Same as R13-02, veins of chl, qtz (1mm wide). With ser, kspar patchy texture.

30	Aug 13-09	R13-04	647355	5583299	Chataway		Chl,Car,Ksp		Same as R13-02, veins of chl, qtz (5 mm wide). With ser, kspar patchy texture.
31	Aug 13-09	R13-05	647242	5583543	Chataway	mal	Chl,Car,Ksp		Same as R13-02, qtz-ep veins 2.5 cm, hm staining, se+clay alteration common, trace mal mineralization.
32	Aug 13-09	R13-06	647352	5583665	Chataway	mal	Chl,Ep,Ksp,Qtz		Same as R13-02, qtz-ep veins, hm staining, se+clay alteration common, trace mal mineralization.
33	Aug 13-09	R13-07	647365	5583693	Bethlehem		-		Medium grained granodiorite, mafic minerals (20%) (1-3mm), qtz (15%), Kspar (10%), plag (50%) partly ser and clay altered, mag (1%), Trace aptite and muscovite. Chl in fractures, Kspar as irregular patchy and in fractures. Ep in fractures. Few mm to 0.5 cm thick veins of pinkish qtz+ser and hem. Chlorite and carbonate in 0.5 cm vein.
34	Aug 13-09	R13-08	647297	5583645	Bethlehem		Chl,Car,Ksp,Qtz		General characters same as R13-07. with 10 cm wide qtz vein. The vein adjacent to 2.5 cm pink aplite dike.
35	Aug 13-09	R13-09	647121	5583699	Chataway		Chl		Same as R13-02
36	Aug 13-09	R13-10	648473	5584701	Chataway		Ksp		Same as R13-02
37	Aug 13-09	R13-500	646825	5582730	Chataway	mal	Qtz,Chl		Outcrop, leucocratic, coarse grained granodiorite, almost equigranular texture, coarser grains are book bi (10-15%) up to 0.5 cm in size. Qtz subhedral (30%), plag semi-fresh (50%), bi+hb (15%), bi>hb. Primary K spar, fine grained (3-5%), mag 1%.
38	Aug 13-09	R13-501	646807	5582727	Chataway		-		Same as R13-500, medium to coarse grained. Hematite staining locally
39	Aug 13-09	R13-502	647145	5583301	Bethlehem	mal,bn	Chl,Ep,Ksp,Qtz, Musc		Medium grained granodiorite, mafic minerals (20%) are finer than R13-500 (1-3mm), qtz (15%), Kspar (10%), plag (50%) partly ser and clay altered, mag (1%), Trace aptite and muscovite. Trace bn and mal in veins and as disseminate. Chl in fractures, Kspar as irregular patchy and in fractures. Ep in fractures. Few mm to 0.5 cm thick veins of pinkish qtz+ser and hem. Evidence of strike-slip movement with trace malachite mineralization plus hem. Chlorite and carbonate in 0.5 cm vein.
40	Aug 13-09	R13-503	647163	5583398	Bethlehem		Ser		Mineralogy and texture same as R13-502. Ser alteration is dominant
41	Aug 13-09	R13-504	647306	5583449	Chataway		Chl,Car,Qtz	2x2	Mineralogy and texture same as R13-502 but mafic minerals are higher. Qtz and carbonate veins are irregular to subparallel.
42	Aug 13-09	R13-505	647408	5583564	Chataway	mal	Ser,Chl,Car,Qtz	50x20	Mineralogy and texture are similar to rock unit, weak chl, trace ep, locally Kspar in fractures and as replacement of felds (patches). Clay alteration in fractures, Some fractures show Ser alteration halo. Fractures are mainly oriented in 25N.

43	Aug 13-09	R13-506	647574	5583552	Bethlehem		_		Mineralogy and texture same as R13-502.
44	Aug 13-09	R13-507	647299	5583626	Bethlehem		Qtz,Chl		Mineralogy and texture same as R13-502. Qtz veins up to half a meter thick are common. Chl with calcite in veins, Hem staining.
45	Aug 13-09	R13-508	647342	5583679	Bethlehem	mal	Qtz,Chl,Ksp		Mineralogy and texture same as R13-502. except Qtz 20-25% and Plag 40%, Mal in fractures
46	Aug 13-09	R13-509	647147	5583536	Chataway		_		Same as R13-504, R13-505
47	Aug 13-09	R13-510	648485	5584696	Bethlehem		_	2x5	Same as R13-502, very fine-grained
48	Aug 13-09	R13-511	648524	5584745	Chataway		ser	30x20	Same as R13-504, R13-505,
49	Aug 13-09	R13-512	648635	5584813	Bethlehem	mal	Ser,Clay	20x5	Same as R13-502, malachite in fractures. Very dark chl, weak Kspar, Ep in vein with halo of Kspar, cc and clay in fractures.
50	Aug 15-09	R15-01	645231	5580983	Felsic Dike		Chl		Medium grained, 15-20% amoeboid Qtz to 3mm; 15% interstitial and secondary Ksp; plag weakly altered to ser; 3 to 5% mafics bi>>hb; locally weak chl alteration of mafics
51	Aug 15-09	R15-02	646803	5584373	Chataway		Clay		Med to coarse grained, 10% Qtz anhedral to interstitial; 4% Ksp interstitial; 10-12% mafics; med-coarse grained hb, slightly less than bi; plag 60%.
52	Aug 15-09	R15-03	648925	5585446	Chataway		Ksp,Clay		Med to coarse grained, south of Billy Lake, locally 1-2 cm Ksp envelopes along fault; plagioclase weakly clay/sericite altered; 10-15% Qtz anhedral to interstitial, 0.5-1 mm; 2-3% Ksp interstitial; 25-30% mafics; med-fine grained hb, bi>>hb; plag 60%. Fine grained mafics (70%), 10 cm xenolith.
53	Aug 15-09	R15-04	648712	5584303	Chataway		Chl,Ksp		Medium-coarse grained, mafics 25-30%, chlorite altered; bi>>hb, bi subhedral, Qtz 5-10%; plag 40%. Locally 2-5mm chl/Ksp veinlets.
54	Aug 15-09	R15-05	648859	5584356	Bethlehem		Ksp		local Ksp along fractures. Contact with R15-04, 20 cm fine grained mafic dike, sharp contact, no chill margins. Dike enriched in Ksp
55	Aug 15-09	R15-06	649322	5584674	Chataway	mal, bn	Ksp,Qtz		similar to R15-03, 10-12% Ksp (primary) also in fractures; mafic 15%; bi 10%, hb 3-5%; Qtz 7%; plag 50%. mal-bn on fractures; Ksp/Qtz veins up to 2cm, x-cutting, locally stockworks,
56	Aug 15-09	R15-07	649485	5584696	Bethlehem		ser		Same as typical rock type, plag to ser
57	Aug 15-09	R15-08	650433	5584669	Bethlehem		_		Same as typical rock type, chl+Qtz veinlets noted
58	Aug 15-09	R15-09	650001	5584535	Bethlehem		Ksp		Same as typical rock type, minor ksp along fractures

59	Aug 15-09	R15-513	645944	5580891	Bethsaida		Qtz	5x5	Coarse grained gneiss, Qtz subhedral to anhedral 20% (4mm). Mafic minerals 10% (hb=bi), bi euhedral to subhedral; plag 60%. No significant alteration, small veins of Qtz are common.
60	Aug 15-09	R15-514	645622	5581002	Bethsaida		Qtz	3x4	Similar to R15-513
61	Aug 15-09	R15-515	645930	5580955	Bethsaida		Qtz		Similar to R15-513
62	Aug 15-09	R15-516	646562	5584730	Chataway		Qtz,Chl		Similar to R15-02
63	Aug 15-09	R15-517	646521	5584845	Bethlehem		Qtz	50x50 few	Similar to R15-02
64	Aug 15-09	R15-518	648371	5583837	Bethlehem		Ksp		Similar to R15-02
65	Aug 15-09	R15-519	648584	5585453	Bethlehem		–	100x30	Mineralogy and texture are similar to the rock unit type. The outcrop is located in top of a hill at east side of Billy Lake, approx in N-S direction.
66	Aug 15-09	R15-520	648544	5585421	Bethlehem		–	100x30	similar to R15-519, probably north extension of that, 100 m apart.
67	Aug 15-09	R15-521	648529	5585561	Bethlehem		–	100x40	similar to R15-519, probably north extension of that, 100 m apart.
68	Aug 15-09	R15-522	649244	5584775	Chataway		Chl,Ser,Ep	20X50	Granodiorite located in corner of small creek, leucocratic , coarse grained, Mineralogy and texture are similar to the rock unit type. Trace chl, hm on fractures
69	Aug 15-09	R15-523	649248	5584758	Chataway		–	20x10	Granodiorite located in corner of small creek, leucocratic , coarse grained, Mineralogy and texture are similar to the rock unit type. trace chl, hm on fractures
70	Aug 15-09	R15-524	649273	5584718	Bethlehem		Ksp,Qtz	10x30	Granodiorite, leucocratic , coarse grained. Mafic minerals 10% (hb=bi); Ksp 15% primary; plag 40% fresh; Qtz 15% subhedral 0.5-1mm in size. Veins of Qtz and orthoclase are common.
71	Aug 15-09	R15-525	649307	5584591	Bethlehem	mal	Ksp,Qtz		Same as R15-524. Iron oxide and orthoclase filling fractures and veins, Malachite in fractures.
72	Aug 15-09	R15-526	649253	5584694	Bethlehem		–		Same as R15-524.
73	Aug 15-09	R15-527	650472	5584660	Bethlehem		Qtz,Ksp,Car,Ser		Same as R15-524.

74	Aug 15-09	R15-528	650059	5584506	Bethlehem		Qtz		Same as R15-524.
75	Aug 16-09	R16-01	646987	5582292	Chataway		Ksp		General character similar to the rock unit type, med-coarse grained.
76	Aug 16-09	R16-02	646968	5582324	Chataway		Ksp		General character similar to the rock unit type, med-coarse grained.
77	Aug 16-09	R16-03	646963	5582375	Chataway		Ksp		General character similar to the rock unit type, med-coarse grained.
78	Aug 16-09	R16-04	646824	5582465	Chataway	mal,bn, cc	Qtz,Ksp,Car,Ser	Old showing	same as R16-531 sample from the old showing
79	Aug 16-09	R16-05	649460	5583519	Boulder	cp	Ksp		Till float; lithology not of local origin, mineralization only noted in one sub-rounded boulder 25-35cm boulder. This rock type not seen previously on the property. Comp: coarse grained Ksp primary interstitial 25%, 5mm average salmon pink color. Mafic 5% almost equal population of bi-hb. Weak ch alteration, qtz 20-25% subhedral, coarse grained. Plag 40% . Diss cp, blebs up to 3-4mm.
80	Aug 16-09	R16-06	651460	5584019	Bethlehem		Ksp		Med to coarse grained, locally 1-2 cm Ksp envelops along fault; plagioclase weakly clay/sericite altered; 10-15% qtz anhedral to interstitial, 0.5-1 mm; 2-3% Ksp interstitial; 25-30% mafics; med-fine grained hb, bi>> hb; plag 60%. Fine grained mafics (70%).
81	Aug 16-09	R16-07	649493	5586536	Bethlehem		Ksp, Chl, Ep		Same as R16-06, with much propylitic alt.
82	Aug 16-09	R16-08	649896	5586837	Bethlehem		Chl, Qtz, Ksp		Same as the typical rock type with intense alteration
83	Aug 16-09	R16-09	646804	5581419	Bethsaida		Chl, Ser, Ksp,EP		Same as the typical rock type with intense alteration
84	Aug 16-09	R16-529	647058	5582210	Bathlehem		_	3x5m	Same as R16-06, located in the east side of local creek
85	Aug 16-09	R16-530	646975	5582389	Chataway		Ksp, Qtz	3x10 few	Same as rock unit type, located in the east side of local creek

86	Aug 16-09	R16-531	646828	5582472	Chataway	mal,bn, cc	Qtz,Ksp,Car,Ser	Old showing	Historical trenching, and drilling area. Surface stripping. Medium sized granodiorite are variably altered. Sericite replaced feldspar in groundmass and hosted in fractures with qtz, chl and Kspar. Mafic minerals altered with chl and ep. The secondary minerals also observed in fractures and veins. Silicification is a major alteration in this area and strongly modified the goundmass. Quartz also presents in veins and fractures. Kspar presents as filling fractures, patchy and replacing minerals. Ore mineralization in this area are controlled by structures. Malachite and bn + iron oxides are mainly observed in fractures, veins and faults. Mineralization in west part of the trench presents in rock banding-fractures, strike: 25d; dip: sub-vertical slightly to west. Two cm wide qtz+chl+mal+clay vein: 294/50. One cm wide qtz+chl+Kspar+mal+clay vein: 270/30. Three cm wide shear zone hosted for lim,hem, mal, 125/70. Three cm wide shear zone hosted for lim, 180/20.
87	Aug 16-09	R16-532	649513	5586528	Chataway		Ksp,Qtz, Ep	70x30	Same as typical rock type, along small creek (N-S), in the both sides of a creek, Veins of Kspar and qtz are present, up to few cm wide. Veins of Ep up to 4mm
88	Aug 16-09	R16-533	652005	5587275	Chataway		Qtz	50x20	Medim garined grodiorite, qtz subhedral to undedral 15% (4mm). Mafic minerals 30% (hb>>bi), bi euhedral to subhedral, flack and black (up to 1cm); plag 60%. K spar 15% primary. Some fractures filled with qtz-iron oxides and Kspar. Felsic dike (15 cm wide) cut the rock .
89	Oct 22-09	R22-01	647197	5584688	chataway			5x10	General character similar to rock unit type, med-coarse grained.
90	Oct 22-09	R22-02	647179	5584645	chataway			5x10	General character similar to rock unit type, med-coarse grained.
91	Oct 22-09	R22-03	646403	5581097	Bethsaida			5x10	Coarse garined grodiorite, qtz subhedral to undedral 20% (4mm). Mafic minerals 10% (hb=bi), bi euhedral to subhedral; plag 60%. Mild ser+chl alterations,
92	Oct 22-09	R22-04	646688	5581554	Bethsaida			5x10	Same as R22-03
93	Oct 22-09	R22-05	646184	5581216	Bethsaida			5x10	Same as R22-03
94	Oct 22-09	R22-06	646464	5580767	Bethsaida			5x10	Same as R22-03
95	Oct 22-09	R22-07	646360	5581334	Bethsaida			5x10	Same as R22-03
96	Oct 24-09	R24-01	651801	5584333	Highland Valley			10X20	Sample probably is Highland Valley Phase, mild alteration
97	Oct 24-09	R24-02	647245	5583549	chataway		bio	few 30X20	General character similar to rock unit type, med-coarse grained.
98	Oct 24-09	R24-03	651797	5584381	Guichon				Fine to medium grained granodiorite, 15% mafics, bi=hb, weak chl alt.
99	Oct 24-09	R24-04	651835	5584558	Guichon			20X50	Same as 24-03

100	Oct 24-09	R24-05	652538	5584881	Border phase	mal		20x50	Texture and mineralization similar to Border phase, Probably is boulder. Mal in fractures with intense hem-chl helo.
101	Oct 24-09	R24-06	652538	5584600	Guichon			150X50	Same as 24-03
102	Oct 24-09	R24-07	646800	5584881	Highland Valley			20X50	Sample probably is Highland Valley Phase, mild alteration
103	Oct 25-09	R25-01	647317	5582119	Bethlehem			2X2	Same as typical rock type, weak altered
104	Oct 25-09	R25-02	647621	5583576	Chataway	mal	chl	2X2	Medium-grained granodiorite, bi (10-15%) up to 0.5 cm in size. Qtz subhedral (30%), plag semi-fresh (50%), bi+hb (15%), bi>hb. Primary Kspar, fine grained (3-5%), mag 1%. Mal in fractures
105	Oct 25-09	R25-03	647851	5583474	Chataway	mal	ser-clay, chl		Medium- coarse grained granodiorite, almost equigranular texture, coarser grains are book bi (10-15%) up to 0.5 cm in size. Qtz subhedral (30%), plag semi-fresh (50%), bi+hb (15%), bi>hb. Primary K spar, fine grained (3-5%), mag 1%. Aplite dike: 300/50, mal in fractures with alteration helo, Rock highly altered.
106	Oct 25-09	R25-04	651903	5584687	Guichon	cp,bn	chl		Same as 24-03
107	Oct 25-09	R25-05	646963	5583031	Chataway		chl		Medium- coarse grained granodiorite, equigranular texture, book bi (10-15%). Qtz subhedral (30%), plag semi-fresh (50%), bi+hb (15%), bi>hb. Primary Kspar, fine grained (3-5%), mag 1%. Mild alteration
108	Oct 25-09	R25-06	649485	5583970	Chataway	cp	chl		same as R25-05, cp in fractures
109	Oct 25-09	R25-07	649460	5583519	Chataway	mal-cp	chl		same as R25-05, cp in fractures
110	Oct 25-09	R25-08	649481	5583344	Chataway		chl		same as R25-05
111	Oct 25-09	R25-09	647267	5583919	Chataway		chl		same as R25-05