



## ASSESSMENT REPORT TITLE PAGE AND SUMMARY

**TITLE OF REPORT: Petrography, Lithochemistry, Assays and Geochemistry on The Kringle-Consolidated Claim Group**

**TOTAL COST:\$45,000.00**

AUTHOR(S): Mikkel Schau; B.Geol.

SIGNATURE(S):

A handwritten signature in black ink that reads "Mikkel Schau".

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): not applicable

STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): SOW-M(5001257) 2011/AUG/31

Submitted late with permission

YEAR OF WORK: 2010-2011

PROPERTY NAME: Kringle-Consolidated

CLAIM NAME(S) (on which work was done): Tenures 509556, 515027, 515028, 515029, 515030, 515032, 515033, 515034, 515386, 515924, 515925, 515926, 515930, 516017, 521073, 529780, 797082, 797102

COMMODITIES SOUGHT: Copper, minor silver and gold

MINERAL INVENTORY MINFILE NUMBER(S),IF KNOWN: 092L163, 092L165, 092L166, 092L166, 092L167, 092L168, 092L169, 092L170, 092L222, 092L249

MINING DIVISION: Nanaimo Mining Division

NTS / BCGS: NTS 092L/08

LATITUDE: \_\_\_\_\_ 50 \_\_\_\_\_ ° \_\_\_\_\_ 19 \_\_\_\_\_ ' \_\_\_\_\_ "

LONGITUDE: \_\_\_\_\_ 126 \_\_\_\_\_ ° \_\_\_\_\_ 06 \_\_\_\_\_ ' \_\_\_\_\_ " (at centre of work)

UTM Zone: \_\_\_\_\_ EASTING: \_\_\_\_\_ NORTHING: \_\_\_\_\_

OWNER(S): Mikkel Schau

MAILING ADDRESS:

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

Mikkel Schau

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REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**)

Upper Triassic Karmutsen Basalts, middle Jurassic Feldspar porphyry, Amygdale rich zones, Veins in Shear zones, intrusive and tectonic breccia:, bornite, chalcopryrite, chalcocite and alteration products, size unknown

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:

1859, 1993, 2379, 3235, 3306, 3403, 3795, 14284, 18255, 22409, 23906, 26930, 27070, 27463, 27736, 27745, 28327, 28328, 28747, 28927, 30121, 31039, 31516, and 31856

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Magnetic Susceptibility			
Other	Density 13	515928, 515929, 515930, 515027, 797102, 521073	100
GEOCHEMICAL (number of samples analysed for ...)			
Soil	9 samples ICP-MS 37 elements	515029	900
Silt	44 samples ICP-MS 37 elements	515928, 515929, 515930, 515027, 797102, 521073	6,000
Rock	119 samples ICP-MS 37 elements	515928, 515929, 515930, 515027, 797102, 521073	10,000
DRILLING (total metres, number of holes, size, storage location)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying	107 Fire Assay for Au, Pt and Pd 18 Whole rock analyses, 11 Copper assay.	515928, 515929, 515930, 515027, 797102, 521073	10,000
Petrographic	99 Thin sections	515928, 515929, 515930, 515027, 797102, 521073	18,000
Mineralographic			
Metallurgic			
PROSPECTING (scale/area)			
PREPARATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km)/trail			
Trench (number/metres)			
Underground development (metres)			
Other			
<b>TOTAL COST</b>			45,000

Assessment Report

including

Petrography, Lithochemistry, Assays and Geochemistry

on

The Kringle-Consolidated Claim Group

(Tenures 509556, 515027, 515028, 515029, 515030, 515032, 515033, 515034, 515386,  
515924, 515925, 515926, 515930, 516017, 521073, 529780, 797082, 797102),

About 250 km north of Nanaimo straddling Highway 19,

Nanaimo Mining District,

Vancouver Island, BC

for

Mikkel Schau, owner

by

Mikkel Schau, P.Geol.

For August 31 2011

Filed December 9, 2011  
with permission

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## **SUMMARY**

This assessment report summarizes work done on four separate field trips and on follow up work.

### ***Location and ownership***

The Kringle-Consolidated claim group, consists of 20 claims totaling 4457 ha. The claims are located at 50 deg 19 min N and 126 deg 6 min W on northern Vancouver Island, adjacent to the Island Highway, about 250 km north of Nanaimo. The claim group is elongate in a northwesterly direction and is about 14.5 km by 3 to 4 km wide. (Figure 1, 2). The claims start west of Keta Lake and stretch north to Rooney Lake, and south to the Tlowils Lake junction along Adam River south main. Various parts of the claims are largely accessible from logging road mains and spurs that result from recent logging operations. This report updates tenures 509556, 515027, 515028, 515029, 515030, 515032, 515033, 515034, 515386, 515924, 515925, 515926, 515930, 516017, 521073, 529780, 797082 and 797102.

The Kringle Consolidated Group is easily reached via Highway 19 and are about 30-40 km west along the highway from the communities of Sayward/Kelsey Bay, a deep water port.

The mineral rights are 100% held by Mikkel Schau (Free miner 142134).

### ***Geology and mineralization***

The geology of the region features early, orogen parallel faults cutting Triassic Vancouver Group rocks along which later (mid)Jurassic granodiorite plutons were emplaced, followed by a subsequent long history of transverse faulting and dyking (Fig 3 and 4).

A mineralized hydrothermal system, associated with a contact between the Triassic Vancouver Group (Karmutsen basalts, Quatsino limestone and Parsons Bay siltstones) and the mid-Jurassic Adam River granodiorite pluton, is manifested in copper mineral occurrences in breccias, shears, veins, amygdales and dispersed disseminations in Karmutsen basalts as well as near contacts of andesite and dacite dykes found within in a several km wide, highly magnetic, bounding, contact zone along the west edge of the pluton. Local veins or disseminations of bornite and chalcopyrite give rise to local high assay values (Fig 5, 6, 7 and 8).

Alteration in the claims is widespread and propylitic attended by a local influx of mineralizing fluids marked by chlorite and salmon colored, hematite stained alkalic feldspars in veins and amygdales. This alteration is locally superposed on contact metamorphism (locally up to amphibolite grade) near the pluton, as well as lower grade (prehnite-pumpellyite) regional metamorphism in the adjacent country rock. The variably and metasomatically altered rocks occur within the parallel positive aeromagnetic anomaly, caused, in part, by breakdown of titaniferous ores in basalt in altered rocks, and, in part, due to introduction of magnetite as veins and stringers.

## ***Exploration concept***

The target is a large bulk copper deposit with local high grade pockets with minor credits in precious metals and possibly molybdenum.

In the Kringle Consolidated claims copper bearing showings are located in the periphery of a plutonic system. Based on a small data-set, there is a possible zoning from a bornite-chalcopyrite rich region (including Linzer Showing) through a chalcopyrite/pyrite region (near Puff showing) to pyrite rich portions further to the north. To the south of Linzer, the Adam West prospect (Minfile 092L-222) is a "manto" like deposit of copper (bornite-chalcopyrite) mineralization formed at the contact of basalt and a within Karmutsen limestone lens. Dykes of several compositions (andesite to rhyodacite) and ages, within the bounding magnetic response are locally associated with mineralization. Local magnetite veining, combined with mineralized (dyke) breccias and local exoskarns showing grandite garnets and epidote, and a paucity of widespread sericitization or argillic alteration suggests that any exploration strategy might consider utilizing one of the following mineral deposit models: *alkalic copper porphyry*, *IOCG* or *copper red bed deposit models* rather than a traditional porphyry copper model.

## ***Status of exploration***

The area has a history of preliminary exploration and prospecting following recent logging activity has added new showings to the inventory of mineralized localities.

Post World War One, government reports indicate copper gold showings were present in region and explored but interest lapsed during the depression and Second World War years.

Prospecting in the sixties and early seventies followed the first wave of logging. Exploration in the area was encouraged by the locating of rich samples at Boyes Creek prospect (Minfile 092L-165) which resulted in trenching and preliminary geophysics surveys performed in the vicinity of a mineralized shear zone/vein. Results include a weighted average of 3.9% of 7 samples over 116 m strike length (average width 1.2 metres). Adam West prospect (Minfile 092L-222) became the most advanced prospect, with drilling and trenching from the 70's detailing the presence of a copper mineralized layer beneath a shallow north dipping limestone lens. 11 trenches yielded up to 2.7% over 3 m and drilling intersections up to 2.96% over 5 m.(AR22409).

A resurgence in logging (clearing areas and building new roads) has encouraged a second round of prospecting. Recent assessment reports (ARIS: 26930, 27070, 27463, 27736, 27745, 28327, 28328, 28747, 28927, 30121, 31039, 31516, and 31856) by this author have recorded hundreds of new assays; many with more than one percent copper, silver values up to 67 ppm and gold values up to 6582 ppb. These assays indicate the abundant presence of locally interesting mineralization (but give no indication of grades or volumes).

Assessment work since 1968 have totaled in excess of \$167,000 in dollars not adjusted for inflation. Of this total about \$125,000 worth of assessment work has been performed by the author since first staking the property in 2001.

## Current results

Sampling has continued along logging roads. 119 lithogeochemical samples have been assayed. Several new metalliferous sample locations have been located in 2010-2011. They include, from north to south, an update on the Oreo Quarry, an update on the Puff Quarry, locating of a new quarry the Eclair Quarry and updates and finding new showings in the Linzer region.

A vein newly located at the Oreo Quarry has yielded elevated gold values

From Oreo Quarry

Gossany Actinolite-pyrite +/- magnetite vein

1577 to 6582 ppb Au

Copper assays from the best 16 assays (out of 119) are listed below. They are from veins and disseminated basalts from the Linzer area, from a new showing, the Eclair Quarry, and from an update at Puff Quarry.

ID	Name	Copper	Showing
6547	Fresh Bornite-chalcocite vein	>25.0%	Linzer area, upper-most vein
6545	Bornite-chalcocite vein	13.92%	
6567	Bornite-chalcocite vein	11.58%	
6645	Pink vein and gangue cutting basalt	7.65%	
6974	Pink veins and basalt	6.09%	Eclair Quarry showing
6972	Amygdular (feldspar) phyric basalt	3.43%	
6540	Amygdular feldspar phyric basalt vein	2.62%	
6975	Quartz vein	2.47%	
6973	Amygdular (feldspar) phyric basalt	2.17%	
16546	Amygdular (feldspar) phyric basalt	2.09%	
16545	Skarn at edge of shear zone	5.07%	Puff Quarry showing
6968	Amygdular feldspar phyric basalt	3.86%	Lower disseminated Linzer area
6970	Amygdular feldspar phyric basalt	3.85%	
6969	Amygdular feldspar phyric basalt	2.832%	
6638	Amygdular feldspar phyric basalt	2.11%	
6537	malachite stained basalt	2.019%	Upper disseminated basalt, Linzer area

## Conclusions

It is concluded that this greenfield project is a high risk venture **with merit and that exploration work should continue.**



## ***Recommendations***

It is recommended that the copper mineralization be better characterized, by providing some dimensions and grade to the local high grade grab sample locations.

The current prospecting has been limited by the difficulty in finding outcrops in second growth forest. Therefore a well financed (company) exploration program would include a **detailed airborne survey** locating magnetic and electromagnetic anomalies to locate further showings and extensions.

Formal company work would include appropriate geological mapping, geochemical and geophysical work on selected grids derived from airborne data and also focus on formal re-sampling of anomalous locations.

Other follow up work might also include prospector based work such as silt sampling of all creeks, systematic till sampling near known showings, chip sampling at localities returning high assay values from grab samples, and use of a beep mat or self potential methods to locate shallow magnetic and conductive subcrop locations along strike of previously located showings.

Systematic samples (with assays of Cu, Ag, Au, and Pd, known to be locally anomalous) would be instrumental in the assessment of area as bulk low grade deposit.

A compilation of all available data on alteration and mineralization would help future selection of drill testable sites

## Introduction and Terms of Reference

Mikkel Schau, the current owner, has prepared this report for submission as an assessment report for tenures 509556, 515027, 515028, 515029, 515030, 515032, 515033, 515034, 515386, 515924, 515925, 515926, 515930, 516017, 521073, 529780, 797082, 797102. A later report will follow on tenures 845813, 845814 and 845815.

The main source of information was four short field programs building on the success of the previous survey. Other sources of information and data contained in this assessment report or used in its preparation are cited and given in the list of references at the back. Some information is derived from private data banks held by Mikkel Schau. Other data used in this report is mainly from government assessment reports including many authored by the owner,

## Property Description and Location

The Kringle Consolidated claim group are centered on 50 deg 19 min N and 126 deg 6 min W on northern Vancouver Island, adjacent to the Island Highway, about 250 km north of Nanaimo. They are located within NTS 092L, and more specifically, mainly within the 092L040 trim sheet (Figure 2) but extend south into 092L030. They straddle the Adam River, as well as the Island Highway (19), and contain the easily identifiable 250 km marker located between Keta Lake to the east of the border and Rooney Lake in the west, and extend south along logging roads to the vicinity of Tlowils Lake. The claim group is elongate in a northwesterly direction and is about 14.5 km by 3 to 4 km wide. (Figures 1 and 2). The claims start just west of Keta Lake and stretch north to Rooney Lake, and south to the Tlowils Lake junction. Various parts of the claims are largely accessible from logging road mains and spurs that reflect recent logging operations.

The property consists of 21 claims totaling 2744.56 ha (or 5862 acres). Some of these claims were staked by location and later converted, other were claimed using MTO. The claims are called the Kringle-Consolidated Claims. They include the claim tenures listed below with their new "good to date" based on this work:

<b>Name</b>	<b>Recorded tenure number</b>	<b>Area in ha.</b>	<b>Good to date</b>
Klejne	509556	165.19	Feb 19, 2013
	515027	247.37	Sept 1, 2013
	515028	226.82	Sept 1, 2013
	515029	82.50	Sept 1, 2013
	515030	123.67	Sept 1, 2013
	515032	20.62	Sept 1, 2013
	515033	61.86	Sept 1, 2013
	515034	103.08	Sept 1, 2013
kringle-last	515386	20.61	Sept 1, 2013
	515924	41.23	Sept 1, 2013
	515925	20.61	Sept 1, 2013

<b>Name</b>	<b>Recorded tenure number</b>	<b>Area in ha.</b>	<b>Good to date</b>
	515926	20.62	Sept 1, 2013
	515930	206.21	Sept 1, 2013
	516017	20.62	Sept 1, 2013
kringle-2	521073	495.08	Sept 1, 2013
kringle-mi.	529780	206.30	Sept 1, 2013
klejne-north	797082	516.05	Sept 1, 2013
	797102	515.85	Sept 1, 2013
keta1	845313*	516.03	Feb 2, 2012
	845314*	516.07	Feb 2, 2012
	845315*	515.37	Feb 2, 2012

\* These tenures are not covered by work in this report.

The mineral rights are 100% held by Mikkel Schau (Free Miner 142134) There are no royalties, back in rights, payments or other agreements and encumbrances to which the property is subject. The mineral rights expire as shown in the above table. An assessment report based on recent work is currently being prepared to extend the “good until” date.

All claims are on crown lands and are focused on copper and precious metal mineralization, but include an ancillary interest in other base and industrial metals.

No environmental liabilities are currently known, but notice is given that the Adam River, which traverses claim area, is a “fish river”, and any development must be cognizant of this fact. It is considered that the Kim Creek drainage area (which is not classified as a fish creek) can be used, to prevent disturbance of the Adam River. Much of the area is in Timber Management zones and has been logged (sometimes several times), but small sections of old forest away from areas of current interest still remain as “OGBA” lots.

No permits are required for the hand based work or aerial surveys suggested in this report. Any machine based excavation would require work permits.

The land situation is typical; I believe I have claimed and hold the mineral rights in a lawful manner.

The area covered by the Kringle-Consolidated claims is mentioned in a number of discussions between the Province and local first nations with regards to land-claims although there is no current treaty involving these lands. Letters have gone to relevant First Nation treaty groups indicating my intent to prospect in region, following guidelines laid down by AME. To the best of my knowledge the land claim treaty process has not directly discussed these lands. It was, however, listed on MapPlace as part of the Kwakiutl\_Laich\_Kuul\_Tach and now the area is indicated to be part of the SOI of Hamatla Treaty process and/or the Tlowitsis First Nation. I have introduced myself to the chief(s) at conference meetings and via the recommended notifications of field work, but no further action has been taken. There has been no impediment to my claiming or working the land to time of writing; In fact, people of nearby communities would like there to be more exploration, and possibly mining, to shore up the local economy.

A map showing the position of current Minfiles on a regional geological map is shown in Figure 3 and newer mineralized locations are shown with respect to claim boundaries and superposed on the aeromagnetic residual map in Figure 4.

## Accessibility, Climate, Local Resources, Infrastructure and Physiography

The claim area lies within the Vancouver Island Mountains and shows a moderately rugged topography with a lower elevation of 180 m, found in the Adam River Valley at the north of the claims, and highest points on unnamed tops at about 1000 m at the south of the claims. The northwest flowing Adam River is joined by north flowing creeks such as Kim Creek and Rooney Creek cutting through earlier glacial fluvial deposits.

The hemlock forests have been logged, sometimes twice, and a wide network of old alder covered roads mark the earlier logging efforts. Old overgrown road metal quarries are located along some of these roads. Much of the area has been replanted.

Highway 19 traverses the area and several logging main roads (including Upper Adam, Lower Adam, Kim Creek Mains) provide general access to the area. Many logging road spurs traverse the area, so that most of the claims are accessible. Off road, the landscape is rugged and the forest litter deep and difficult to traverse.

The nearest population center is Sayward and Kelsey Bay about 30 to 40 km to the east. These resource extraction based communities are served by the Island Highway (19). Kelsey Bay, on Johnston Strait, has a well protected deep water port once widely used by coastal steam ships. To the east, Campbell River is about an hour away by the highway. Port McNeil and Port Hardy lie to the west.

The current main industry in these villages is fish farming and lesser amounts of logging related work. Once this was a major logging center and mining expertise was locally acquired in the nearby, now defunct, magnetite mines. There are large staging areas (once used for logs) available for industrial use in Sayward. Plans for a gravel extraction project in the area are currently in discussion.

## Previous Work and History

Prior ownership of property and ownership changes of the claims are tracked using Assessment Reports as a guide.

Logging opened up the area in the 1960's and regional prospecting campaigns located scattered copper rich showings. A large block was staked in 1965 by W.R. Boyes, and was taken over shortly thereafter by Western Standard Silver Mines. The area has been the locus of subsequent exploration as shown in table below:

Company	Year	Type of work	Assessment Report	Assessment Value	Results
Newconex Canadian Exploration	1969	16 chip samples for copper, 503 soil/silt samples for copper	1859	2601.41	Located copper showings near Rooney Lake, best .23% Cu/20', grid values low. (092L 170)
Bethlehem Copper	1969	Prospecting, geology, minor magnetics, minor soil sampling, minor stream sediment sampling	1993	2400.00	Located minfiles 092L-0165, Boyes Creek now classified as a prospect and minfiles 092L-166-169 inclusive classified as showings
Armeda Copper	1970	Magnetometer work/geochemical-soil sampling	2379	63720	Possible conjoint anomaly NW of Rooney Lake
Conoco Silver Mines	1971	Geochemical study 1300 soil samples	3235	None reported	Three geochemical anomalies located near (092L-222)

Company	Year	Type of work	Assessment Report	Assessment Value	Results
Western Standard Silver Mines	1971	Prospecting, geological, geochemical survey	3306	5574.46	No commercial mineralization
Conoco Silver Mines	1971	IP Survey, gradient SP survey, depth probe	3403	5115.62	Geophysical anomalies found near 092L165, 222
Sayward Explorations Ltd	1972	Prospecting, verified previous results, reported on 6 diamond drill holes (1748') in area south of Rooney Lake	3795	8919.00	Minfiles 092L-0163, 092L-249 now classified as showings.
Craven resources	1985	Geology, drilling 6BQ holes (2747'), 300' of X-ray drilling	14284	4963.81	More work on 092L-222, copper of interest, low precious metals
Germa Minerals	1989	Geology, soil sampling, VLF,	18255	18409.30	Work south east of Rooney Lake, minor geochemical anomalies
West Pride Industries	1991	Geological, geochemical and compilation	22409	10768.00	More work on 092L-222, summarized work and drill core from 7 BQ holes, Reported on another 7 holes from 1973 totaling another 3000' of drilling. Main zone better delineated - 1500' strike length x 1000' down dip x 15' thick. Other also targets located.
Lucky Break Gold	1995	Geophysical studies	23906	Not known	Surveyed one of above favorable targets.
Schau	2002	Geology, Geochemistry, and petrophysics	26930	12194.00	Local high grade skarn at contact and mineralized dykes (Kringle)
Schau	2002	Geology, Geochemistry, and petrophysics	27070	6300.00	Dyke breccia and shear zone in Puff quarry
Schau	2004	Geology, Geochemistry, and petrophysics	27463	4800.18	Three new showings: Pastry, Macaroon, and Oreo
Schau	2005	Prospector's report	27736	3288.00	Krisp copper showing along highway
Schau	2005	Prospectors report/ Klejne	27745	2262.00	Work near Boyes Creek prospect (minfile 165)
Schau	2006	Prospectors report/ Kringle south	28327	13500.00	Verification of minfiles 222 , 166, 167, 168.
Schau	2006	Prospectors report/ Kringle north	28328	3500.00	New showings
Schau	2007	Prospectors report/ Kringle center	28747	2499.00	New high grade showings
Schau	2007	Petrography, magnetic susceptibility and density studies (Kringle south)	28927	17000.00	Petrological studies, and new showings. Details of Veins and alkalic alterations
Schau	2008	Alteration studies (Kringle north)	30121	6550.99	Petrological studies and new showings
Schau	2009	Geology (Dykes) in northern Kringle	31039	1450.00	Petrological studies and new showings

Company	Year	Type of work	Assessment Report	Assessment Value	Results
Schau	2010	Geochemical and biogeochemical studies at Klejne	31516	2650.00	Assessed viability of biogeochemical methods in this environment
Schau	2010	Assays and lithochemistry, Kim Creek, Kringle-consolidated	31856	11000.00	New copper showings; as veins and disseminations in basalt
Schau	2011	This report	This report	45000.00	New copper showing, gold bearing vein

The total value of assessment work in original dollars is \$167,300 + (not all reports were costed) spread over 41 years and 25 assessment reports as well as the value of unreported work. Of the reported amount, \$125,000 has been spent by myself since 2001.

In 1974 the GSC published a map of the area (Muller et al, 1974) that generally follows the geology determined by previous consultants. Quatsino limestone was shown as less widely spread than indicated by Sheppard's mapping (AR3795).

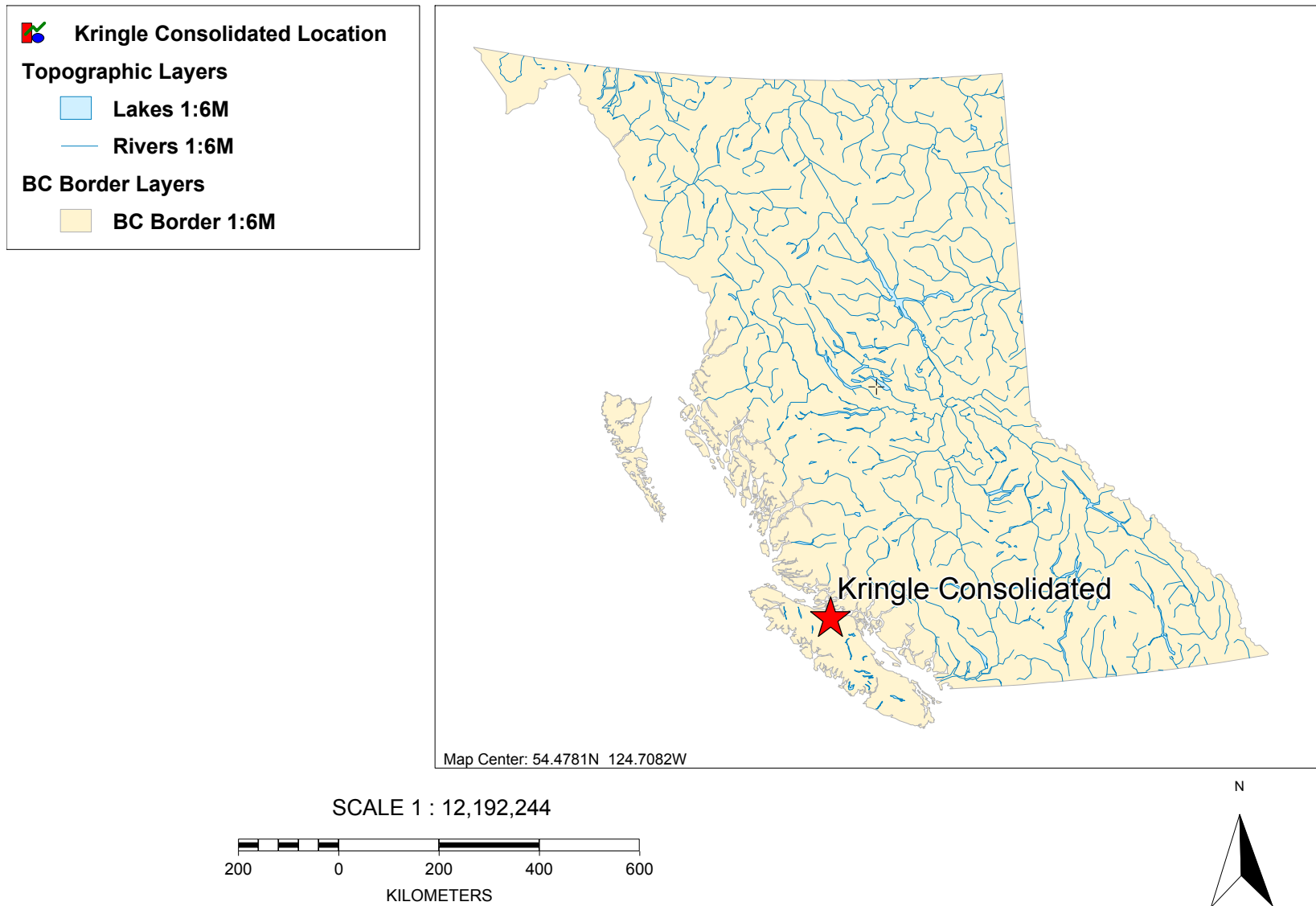
The most comprehensive work has been on Minfile 092L222 (Adam West). In the early seventies and as late as the nineties, work on the Adam west prospect found stratabound copper mineralization below thin limestone beds within the Karmutsen basalts south of the Billy Claims and north of Boyes Creek. The details of exploration on this prospect are discussed in AR 14284, 22409, and 23906. A soil geochemical anomaly was trenched and several drill holes returned favorable results at or near the lower contact of a limestone lens in the Karmutsen: A drill core sample was seen to contain 1.4 gm per tonne gold and 0.57% copper (AR 14284) and drill hole assays that included 0.84% copper over 23.5 m (see Minfile 092L 222 discussion). Cross trenches across this interface were, on average, 5 m long and extended over a 450 m strike length and graded a weighted average of 0.89% Cu. 11 drill holes, probing the lower contact (both 150 m along strike and 200 m down dip) indicated mineralization was concentrated about 13 m below a limestone horizon and all holes crossed copper mineralization with drill hole A6 returning 2.1% Cu over 5 m. (AR22409, and 23906). No historical mineral resources have been recorded, although at Minfile 092L222, a volume of mineralized material of unspecified grade was estimated to be at least 1000' X 1500' X 15' and open in all directions (AR22409). This volume estimate does not meet requirements of a NI 43-101 report and is only reported to give a rough and historical indication of a possible volume of mineralization at one of the many prospects. Some of the unlabeled old drill sites have been located by author under the duff and undergrowth but the locations of the drill positions that yielded a cache of rotten and decrepit core boxes located on site is not known. Thus we are heavily dependent on the summary of the drilling provided by Leriche in the nineties (AR 22409 and 23930).

A geological compilation of area in digital form (Massey, 1994, 2005) contains contacts assembled in part from previous assessment reports. The Quatsino limestone in this compilation occupies a larger area in the vicinity of the claims than on Muller's map (ibid).

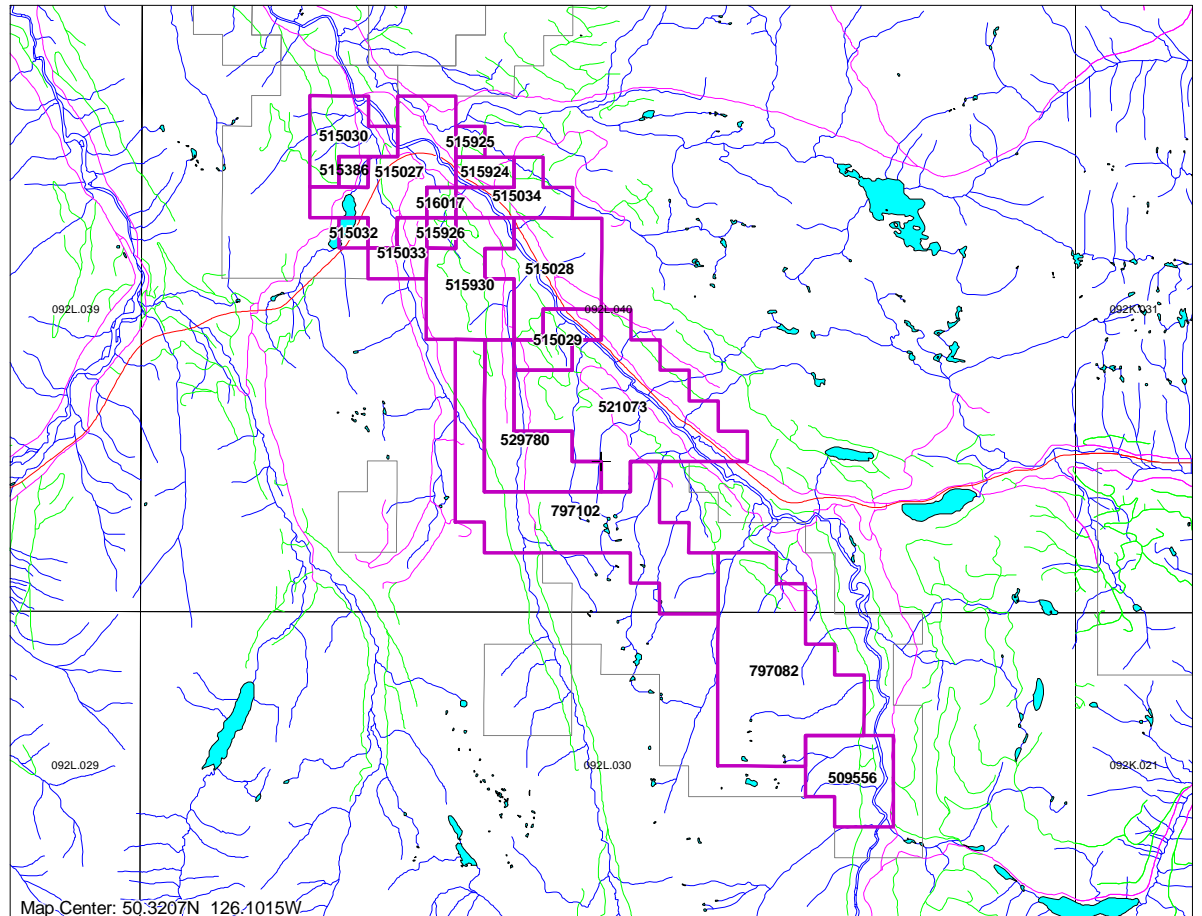
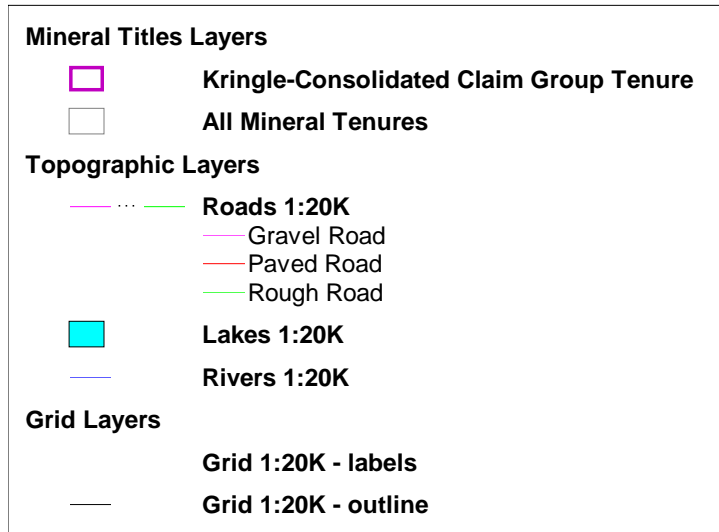
Thus, work to date, has shown sporadic and widespread mineralization of copper and silver with occasional gold values that occurs in veins, amygdaloids and shears in basaltic country rock adjacent to a large granodiorite batholith as well as proximal and distal skarn showings. The country rock is part of the Karmutsen Formation comprising mainly feldspar-phyric basalt, as amygdaloidal or massive flows, or as thin sills (+/- dykes) intercalated with minor beds of limestone and associated clastics, overlain by thicker beds of Quatsino limestone and locally by Parsons Bay formation.

New logging roads have exposed new subcrops and the claims are mainly underlain by the Karmutsen Formation. Prospector grants in 2000 and 2001 helped start my exploration efforts in this area.

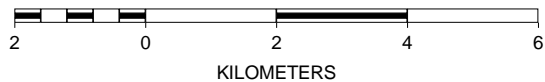
**Figure 1: Location Map**



**Figure 2: Claim Map**



Source: ARIS MapBuilder  
MapPlace.ca





## Summary of work done

*Lithology and geochemical samples:* Samples were taken to document mineral locations. Samples were collected, usually in pairs. One destined to ACME Laboratories, the other retained as a witness sample. Not all witness samples have been kept. Some witness samples were selected for petrologic analysis and thin sections prepared. The sections and cutoffs for these have been retained. Only a few chip samples were collected by author.

No special security precautions were taken. Samples were bagged, selected for analysis, labeled with ACME identification numbers, and packaged in cardboard boxes and sent by Bus to ACME Labs in Vancouver where they entered the laboratory's security stream.

Assay sheet number	Type	Number of samples	Acme Methods used
VAN11004224.1	rock	27 (27)	R200-250, 3B02, 1DX2, 4A4B
VAN11004218	silt	2 soils (2)	SS80, 1DX2
VAN11004217	silt	9( 9)	SS80, 1DX2
VAN11002917.1	soil	13 silt+7 soil (20)	1DX15
VAN11002882.2	rock	46 (55)	R200-250, 3B02, 1DX2, 4A4B
VAN10007169	rock	18 (18)	R200-250, 3B02, 1F02, 4A4B, 7AR
VAN10007168	silt	22 (24)	SS80, 1FO2
VAN10007161	rock	27 (30)	R200-250, 3B02, 1F02, 7AR

SS80 Dry at 60C, sieve 100 gm to -80 mesh

1DX2 1:1:1 Aqua Regia digestion, ICP-MS analyses (15 gms weight)

1DX15 1:1:1 Aqua Regia digestion, ICP-MS analyses (15 gms weight) older terminology

1F02 1:1:1 Aqua Regia digestion, ultra trace ICP-MS analyses (15 gms weight)

R200-250 Crush split, and pulverize 250 gm rock to 200 mesh

3B02 Fire Assay Au, Pt, Pd by ICP-ES (30 gms weight)

4A4B Whole Rock Analysis Majors and trace elements (0.2 Gms)

7 AR 1:1:1 Aqua Regia digestion, ICP-ES analyses (0.4 gms)

Rock descriptions and annotated assay values are shown as Appendix 1a, and the original Assay sheets along with QA/QC data are in Appendix 4. Figures are divided into northern and southern sheets. Figures 5 and 6 show the location of lithochemical samples, and fig 7 and 8 show the joint distribution of Cu and Au in lithochemical samples. Figures 9 show the northern location of Stream sediment samples. Figures 10 show the southern locations of soil and silt samples. Figure 11 show the northern distribution of Cu and Au in stream sediment samples., and fig 12 show the southern distribution of Cu and Au in soil and silt.

ACME protocols have been relied upon, but local samples have been checked by returning to re-sample general areas, and getting similar assay results. Some elements, such as gold have routinely been assayed for in at least two different methods and a 15 gm sample portion is being used routinely for ICP-MS to overcome "nugget effects". Comparisons between gold analyzed by two different methods (aqua regia solution and ICP-MS finish and Fire Assay with ICP-MS finish) yield acceptable results.

Geographical locations are determined largely by GPS but checked against logging road traces as shown on government maps and Google Earth.

The author has largely relied on QA/QC measures provided by ACME Labs, I have returned to my previous sample locations and usually have been able to reproduce assay values.

Eighteen whole rock analyses and trace element analyses have been obtained and are identified in Appendix 2, and their locations shown on Figures 5 and 6.

### *Petrography*

From the witness samples to the above assay samples and several selected localities, thin sections were prepared by Vancouver Petrographics and were studied by a Wild Binocular Stereoscope and by a Nikon Labophot-pol petrographic microscope. A thin section set dating July 2010 are included in this report, as the descriptions were just recently completed. Thin sections include F series, T series, BD series, DX series and FA series. 99 Descriptions are presented in Appendix 3. Locations of the thin sections are shown on figures 13 and 14.

### *Density (Specific Gravity)*

Measurements were made by comparing weight in air with volume of rock. A piece of quartz was used as a standard. Only thirteen sample densities were determined. The results are included with thin section sample descriptions in Appendix 3.

### *Resistivity measurements*

Measurements were made with a voltmeter. Very few specimens showed any resistivity at all. 99 cutoff blocks were tested. Only one positive reading resulted and it is presented in Appendix 3.

## **Detailed Data and Interpretation**

### ***Purpose***

The purpose of the work to demonstrate the possibility of a large hydrothermal system underlying the claims. To this end mineralized locations are sought and their context evaluated with this principle in mind.

### ***General Surficial Geology***

The Kringle-Consolidated Claim group straddles the north-north west flowing Adam River south of its confluence with Eve River. The river largely follows the outcrop trend of the Quatsino Limestone in this area and runs in a typical U shaped valley, between tall hills trending roughly the same north-northwesterly direction. Local areas of till have been noted in lower areas where road construction has laid it bare and as a thin veneer in higher locations where it overlies bedrock. At least three different terraces along the shores of the river indicate that the river has had a complex geomorphic history. The river is currently incising its course through thick, earlier river and till deposits. Bedrock occurs sporadically in the river bottom.

Kim Creek is a large tributary that runs northerly, mainly along a faulted zone, before it turns northeast and joins the Adam. Other adjacent creeks seem to occupy north or northwest trending zones probably also the locus of high strain zones. The creeks are largely incised in their own deposits or into soft

bedrock. Small tributary creeks are locally very steep and incised sharply into the hillsides, and are thought to occupy fault traces and other zones of weakness eroded after the glaciers left. Linzer area, for example, is bounded by such steep and deeply incised creeks. During the last Ice age, the Adam River and the larger creeks were probably occupied by alpine glaciers that flowed northward through most of their history so that most debris tracing would proceed up ice, ie southward..

The hills are variably covered with colluvium which overlies thin till deposits. For example, tills are locally about 1 m thick at elevations of 700 m. Only where logging roads expose subcrops, or in outcrops on cliff faces and/or steep sided valleys is bedrock visible. Road metal quarries used by logging companies are mainly located in strained and fractured rock, providing most of the road building material in region.

Where the old forest cover is still present, deep organic debris shields sub/outcrop from the surface. Bush can be thick. Logged areas contain abundant slash and locally subcrops are exposed through logging activities.

Geochemical surveys of surficial materials are limited by the soil cover being thin and young on hill sides, and transported by rivers, to form terraces where plentiful. An orientation survey reported herein suggests that sampling the variably distributed till may provide more meaningful answers.

The logging roads are built using road metal from mineralized rocks derived from the road metal quarries. Streams are seasonal and locally steep, and much of the area clear-cut, making retrieval of meaningful samples difficult, in fact moss samples are preferred by regional studies. Preliminary survey suggests that stream sediments from small tertiary or smaller may, if obtainable, yield useful results.

## ***Regional Geology***

The Triassic Vancouver Group is the common host rocks to deformation zones, intrusive Jurassic batholiths and consequent faulting. The current tectonic position of the area suggests that much dextral? transverse movement has occurred, as Vancouver Island has adjusted to its position along the leading edge of the continent. In the near region, basalts of the Karmutsen Formation (uTrVK), limestones of the Quatsino Formation (uTrVQ) and slivers of the Parson Bay Formation (uTrVP) are locally deformed, metamorphosed, metasomatized and/or mineralized in the contact region of the Adam River Batholith (See Figure 3). *(MPB or Mississippian or Permian Buttle Lake Limestone and muTrVD or the middle Triassic Daonella beds, in the SW of Fig 3 and the JBHse or lower Jurassic Bonanza Group (Harbledown) sediments in the eastern edge of the map are not part of the geology considered herein.)*

The units of the Vancouver Group are generally as described by Massey (1994, 2005) but many lithological details are taken from Carlisle (1972). Greene has published details of the petrology of the basalts (Greene et al, 2005, 2006, 2008) and Nixon has published maps and descriptions of these units to the west (Nixon et al, 2007). Lincoln (1986), Cho et al (1986), and Kuniyoshi and Liou (1976 a,b) have published on the geology of the Karmutsen to the east of the area. The Vancouver Group (Karmutsen, Quatsino, and Parsons Bay Formations) underlies much of the area covered by the claims.

The *Karmutsen Formation (uTrVK)* (or “subgroup” of Carlisle, 1972) is a low potash tholeiite basalt mass of remarkably consistent structure and thickness that constitutes the lower third of the Vancouver Group in this area. The formation is split into three. A lower sequence 2500 to 3000 m of the formation consists of closely packed pillow lava. At the top of the pillows, magnesian pillow basalts are seen (Keogh Picrites, Greene, 2007, and on Kunnum Creek, see AR30696). The next 600 to 1000 m consist of pillow breccia and aquagene tuff, typically with unsorted beds ½ to 2 m thick in the lower half. The upper 3000 m is composed of meter to decimeter thick, both amygdaloidal and massive, basalt flows.

These thick massive flows have modern analogues. Modern Inflated pahoehoe flows are known to be thick, with a tripartite textural division with a thin lower amygdaloidal section, a thick massive non amygdaloidal central section and an upper very amygdaloidal section (Self 2003). This type of flow may well be represented by local flows that are zoned with amygdular tops and massive cores. Some flows locally show bent vertical vesicles near base of flows. Others show interior zones rich in flattened amygdular layers. Very little interflow material has been located, indicating a lack of deep weathering between the eruption of the flows.

In the upper third of the massive unit, thin, intercalated sporadic and commonly incomplete sequences of 3 to 20 m thick consisting of discontinuous bioclastic, micritic, cherty or tuffaceous limestone which are locally overlain by closely packed pillows, which are in turn overlain by pillow breccia, and then thick massive flows. The presence of shallow marine units and local pillow development indicates that although most of the pahoehoe flows were extruded sub-aerially, shortly after cooling they were submerged below marine wave base. These fluids would aid in the development of very low grade regional metamorphism of the unit.

The structure of the unit is marked by gently folded and locally severely faulted areas. The folding is part of a regional shallowly north plunging antiform. The distribution of units also suggest east trending folds of small amplitudes. Well developed linear valleys trend north and north westerly directions as well as in easterly directions and separate large panels of gently dipping lavas. Slickenlines indicate that the preserved (latest?) directions of slip are largely dextral? and transverse. Scarce early slickenlines indicate vertical movement, but even where present have been almost erased by later movement. The apparent offsets are in part normal (east side down) and in part reverse (north west side up). The region from the south end of the claims to the ocean shore in the north some 27 km. away is underlain by shallow dipping Karmutsen and without structural repetition the shallow dipping sequence of basalt should be at least 9 km thick . The stratigraphic estimate elsewhere is about 6 km. Structural repetition is the most likely cause for this disjoint result.

The Karmutsen basalts have been affected by very low grade regional metamorphism. Albitized feldspars, amygdules and veins of pumpellyite, prehnite, epidote, calcite, and chlorite are widely noted. Local areas of zeolite are found in basalts. This alteration or regional metamorphism would have started as new lava piled on top and gained in import as the pile of lava was buried, and so would be of upper Triassic-lower Jurassic age. Adjacent to contacts with (mid Jurassic) Island intrusives, higher grade green schist and amphibolite bearing assemblages would be imposed on already metamorphosed rocks. Hydrothermal systems would have utilized existing faults and weakness to affect the Karmutsen basalt host rock.

Considerable regional variation of the magnetic field is shown on the aeromagnetic map, including a several km wide strip with positive anomalies adjacent to the pluton. Other local positive anomalies, within the area underlain by the Karmutsen, indicate that magnetite concentrations of the volcanic rocks are not uniform and/or that the area is underlain by highly magnetic bodies. It would appear that the northwest trending aeromagnetic anomaly crosses the regional north north east dip of the basalts and is therefore not a variation of primary magnetism in original flow layers.

The Quatsino Formation (uTrVQ) is a thin ribbon traversing the country in a north-northwest direction, to the northeast of the Karmutsen Formation. Regionally, it is seen to stratigraphically overlie the Karmutsen, and is known to vary in thickness from as much as 500 m to the west, near Alice Lake, to a thinner 150 m or so further east. In the Adam River area it is a distinct, easily recognizable unit, but the thickness is in doubt, because, where best exposed, it is in a ductilely deformed contact with the granodiorite. The Adam River follows part of its outcrop pattern.

The formation consists of grey limestone beds. Where undeformed it is coarsely bioclastic, light grey, indistinctly bedded and non fissile (Carlisle, 1972). Where deformed near plutons it becomes a light

grey, finely recrystallized limestone locally carrying tremolite. In fresher rocks, fossils indicate that the Quatsino Formation is upper Triassic in age (mainly Karnian, perhaps partly lower Norian) (Muller et al, 1974, Nixon, 2007).

The expected negative aeromagnetic signature (a consequence of a diamagnetic response of limestone) is poorly defined on large scale geophysical maps shown on MapPlace. More detailed aeromagnetic surveys are necessary to delineate the outcrop pattern in detail on the Quatsino further to the northwest. It is likely that some of the silty reaction skarns intercalated with black limestone noted on the property, north of the 250 km marker, represent some thin relict lenses of Parsons Bay Formation. Neither Quatsino nor Parsons Bay formations were encountered in this year's work.

### *Jurassic Intrusives (EMJlgd)*

Jurassic granodiorite to diorite underlies the area to the east-northeast of the Adam River. It has been called the Adam River Batholith (Carson, 1973, Muller, et al, 1974). It is about 4 km wide and trends northwesterly in excess of 10 km.

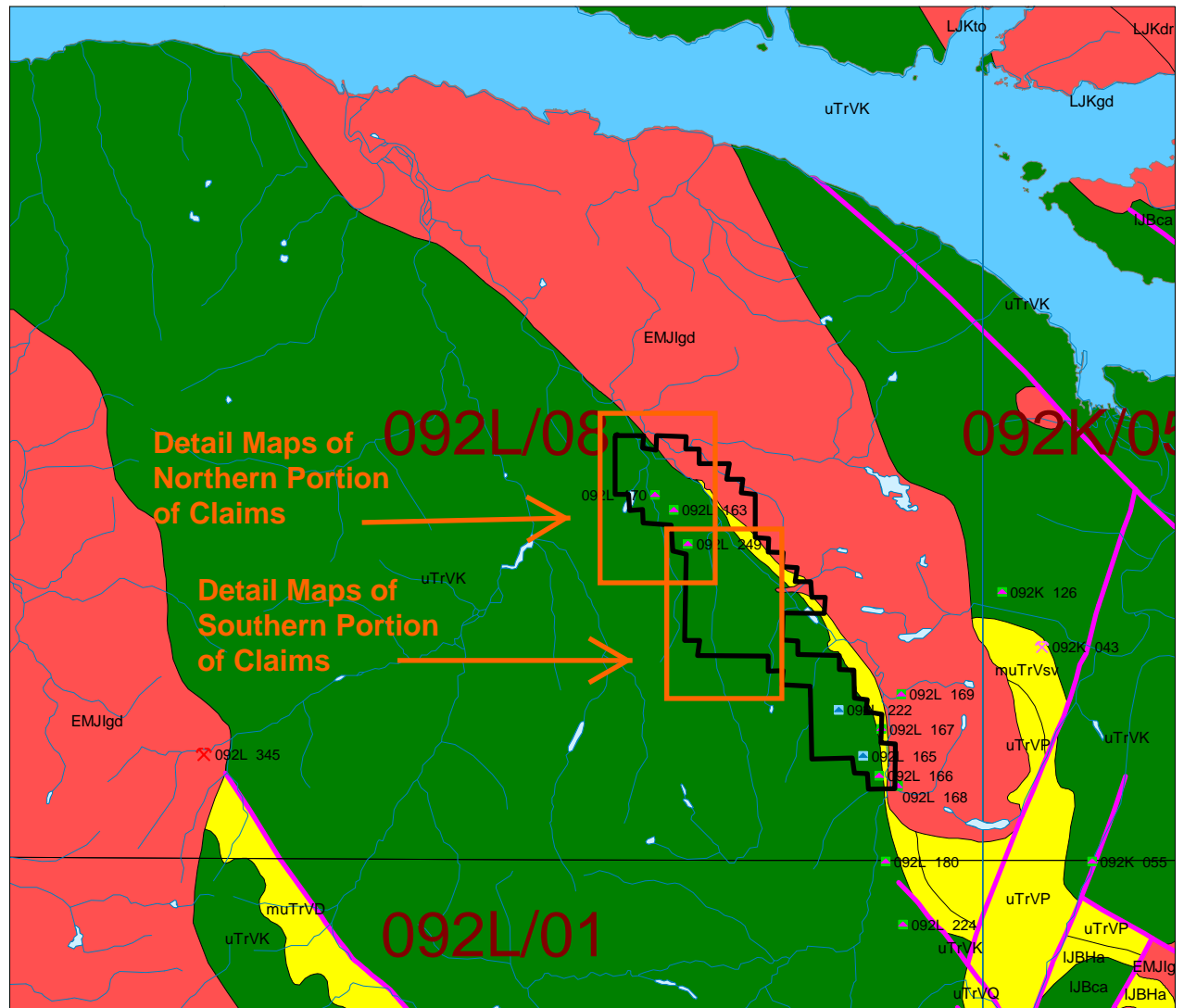
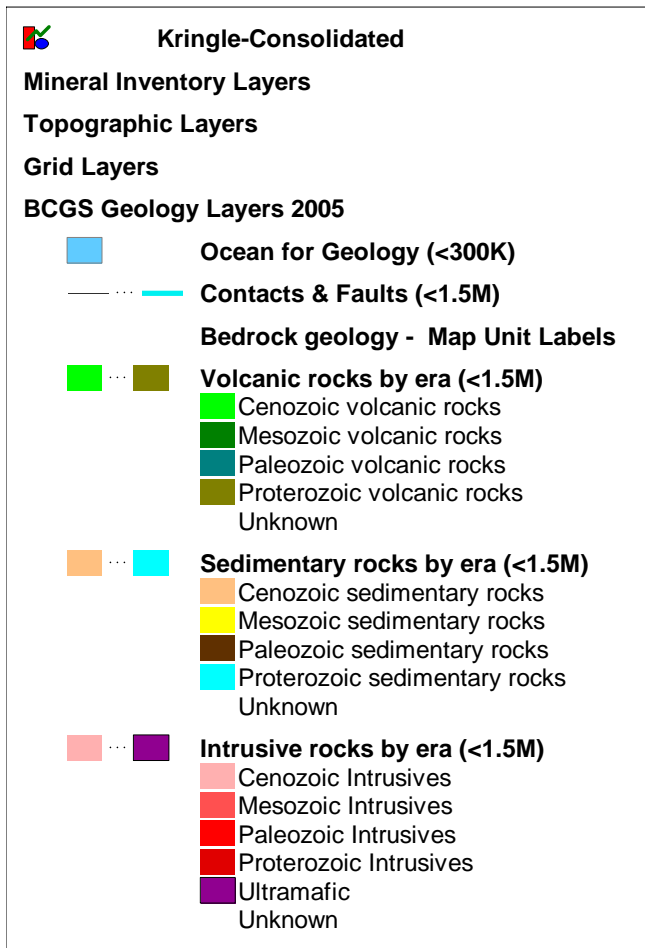
It consists mainly of mesozonal granodiorite. Rocks studied are mainly medium to fine grained biotite hornblende granodiorite and quartz diorite with a locally elevated content of mafic minerals including magnetite. In thin section, pyroxene cores to amphibole grains are noted. Local veining of darker phases by lighter more feldspathic phases are common. At contacts the volcanic rock inclusions are transformed into dioritic inclusions and limestones become skarn and marble rafts.

The intrusive contact is vertical and crosscuts units, cross cutting the highly deformed Parsons Bay Formation in the vicinity of Keta and Tlowils Lakes and intruding the underlying metamorphosed Quatsino further to the northwest. The Karmutsen Formation across the Adam River to the west, has north-north-east dips and is cut obliquely by the granodiorite. An apophyses of granodiorite crosses the Adam River (and the Quatsino limestone), and is emplaced in the Karmutsen near Keta Lake. It is likely that the Batholith was intruded along a **pre-existing** north westerly directed steep fault between the Karmutsen Formation to the west and the younger Quatsino limestone and Parsons Bay to the east.

Contacts are known to be hornfelsed for short distances, with local skarnification near, and in, limestone beds. Locally, as near 250 km marker on Highway 19, ore skarns are well exposed, as they are a km to the north. Orientations are steep and complex at or near the contact. There is much evidence that the Karmutsen flow layers is in fault contact with the overlying Quatsino Limestone rather than in a simple stratigraphic relationship.

K-Ar dates of 160 Ma. on hornblende and 155 Ma. on biotite from a quartz diorite of this batholith (Carson *ibid*) confirm the mid Jurassic age and suggest it to be intruded contemporaneously with the deposition of the andesitic volcanic Bonanza Group (which is well displayed to the west, near Bonanza and Nimpkish Lake) and of about the same age as the plutonism responsible for the Island Copper deposit to the west..

The high concentrations of magnetite in these I-type intrusions are reflected in the regional positive aeromagnetic anomalies over these plutons.



Source: MapperWrapper,  
MapPlace.ca

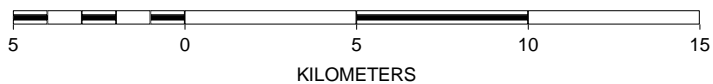
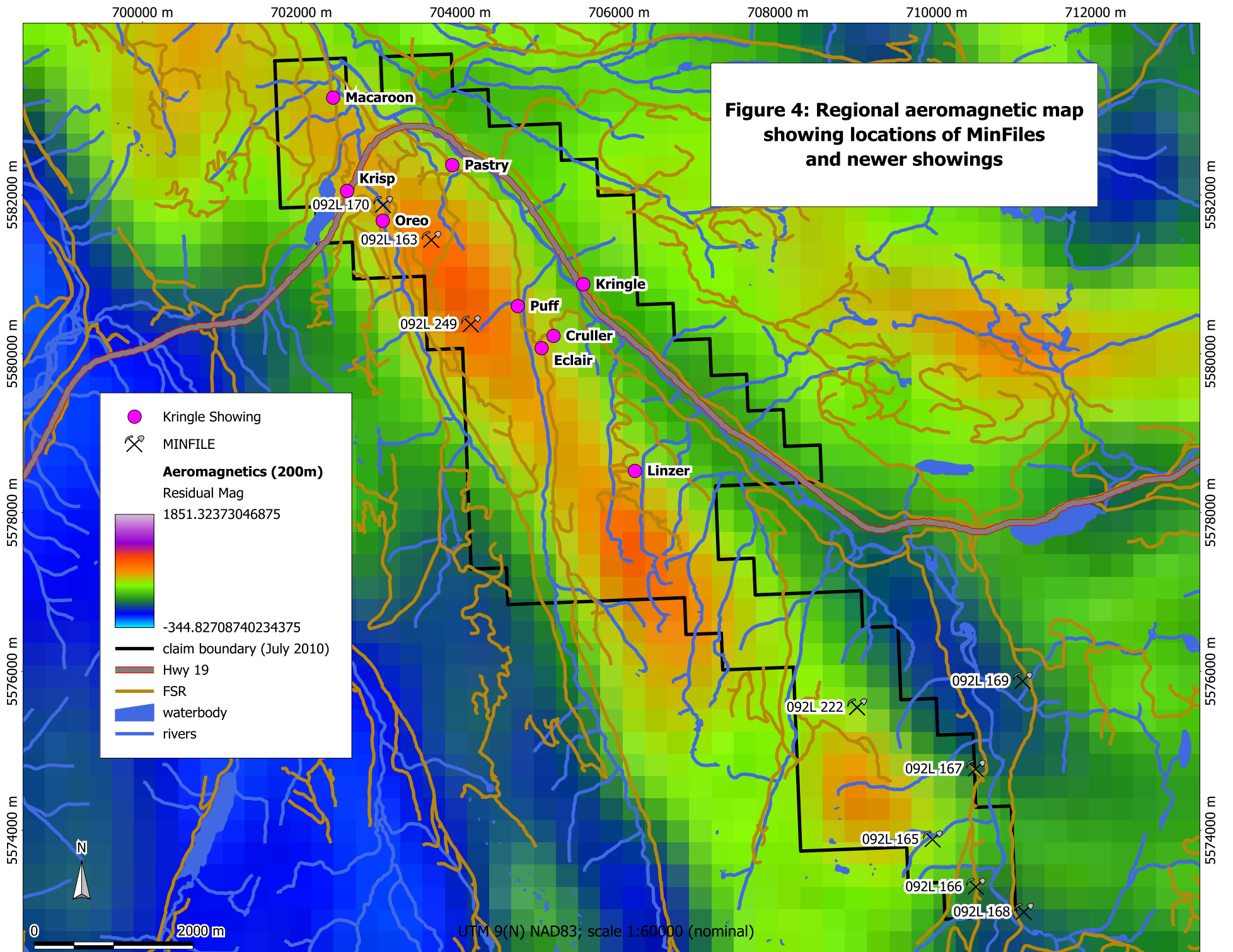


Figure 3: Regional Geology





## *Dykes*

Based on preliminary field evidence, supported in part by prior observations made by Carlisle (1972) in adjacent areas, there appears to be at least three sets of granitoid dykes in the area. The dykes observed so far are in the magnetic aureole in the host rock adjacent to the intrusive contact of the main pluton. From oldest to youngest the dyke units are:

- 1/ Thin Quartz eye + Feldspar Porphyry dykes “folded into tight folds” predate the main intrusive body (example at Kringle Showing).
- 2/ Deformed, and argillically altered and mineralized porphyries (locally brecciated) sub-parallel to intrusive contact of batholith (examples at Cruller and Puff showings).
- 3/ Later “fresh” feldspar and hornblende porphyries with planar or irregular contacts mainly normal to the intrusive body (an example among many, can be seen at 250 km highway marker).

## *Regional structures*

The area of interest lies within the shallow east north east dipping homocline of Triassic rocks and the Adam River Batholith, called by Muller et al. (1974), the White River Block. It is bounded to the west by a major fault, the north northwest trending Eve River Fault. To the north the Johnson Strait Fault terminates the block, the eastern and southern borders are faults outside the claim area in adjacent map sheets. The faults in the claimed area are sub parallel to the border faults, or are second or third order subsidiaries of it. It is thought that these faults contain a large normal component but a dextral transverse component is often mentioned in reports and shown in outcrop as sub horizontal slickenlines. North trending excised valleys probably follow secondary fault structures. One such structure might run along Kim Creek.

Dip directions of the massive basalt flows within each fault panel differ somewhat suggesting some jostling of fault blocks. The majority of dips of flow tops and intercalated bedding recorded by the author are more northerly than easterly and shallow dipping (10 to 30 degree). The area is more structurally complex than implied by a simple homocline, since the regional structure predicts that the youngest rocks should be to the north. Instead, the Parsons Bay Formation (the youngest in this sequence) in this area, is found near Keta Lake and near Tlowils Lake, or far southeast of where it would be expected in a simpler structural milieu. Considerable repetition by faulting is strongly implied and has been locally verified.

A fault with minimal apparent offset along the Adam River postdates the pluton, probably with strike slip motion; but the fault system itself is probably long lived, since it seems that it also predates the pluton as well, with an apparent sense of west side up. West of the pluton, the younging in the Karmutsen is to the east northeast. On the east side of the Adam River pluton the younging is locally to the south, implying an east west trending syncline.

As noted above, the intrusive rocks were probably emplaced along prior northwesterly trending faults in the vicinity of the current course of the Adam River. These are faults parallel to the length of the Cordillera, and hence are called orogen parallel faults. It is highly likely that these faults have stayed active during later transverse faulting episodes. This type of faulting plays a large role in localizing some large mineral deposit in other places in the world, notably Chile.

Northerly striking fault zones strike into the Adam River Fault, these are considered secondary faults: Kim Creek appears to follow such a trace, as does the Rooney Creek drainage to the east. These steeply dipping faults are locally noted in quarries, The best exposed example is in the Oreo Showing. They show tens of metre wide damage zones and rock is variously deformed within these zones.



Cross faulting (steep E-W striking) is locally abundant, with various indications of offsets. Some of these faults are located in quarries and near showings such as in the Oreo, Puff, Eclair, Kringle, and Cruller quarries

## Regional Geophysics

The magnetic character of the Adam River Batholith is expressed on regional aeromagnetic maps. Of some interest is a magnetic domain of similar magnitude, located over Karmutsen Basalts as shown in Figure 4. The contact, between the magnetic batholithic rocks and the thin, non-magnetic limestone, is defined on the low resolution aeromagnetic map. A positive magnetic anomaly with a sharp magnetic boundary located several km to the west overlies basalts. This boundary is not parallel with strikes and dips determined for the basalts, but cross cuts across them instead, to roughly parallel the contact of the Adam River pluton. Cu-Ag vein showings and prospects are located within this anomalously magnetic region.

## **Detailed geology**

### **Locations of outcrops**

Sub-crops are located mainly along logging spur roads. A wide network is being systematically examined. In spite of visits over nearly a decade, not all roads have been visited. Old alder covered roads await discovery and ongoing logging is providing new subcrops for examination.

Locations visited are shown on Figures 5 and 6.. New roads were visited and sampled to test their mineral content. Old road metal quarries used by logging companies to build their roads are favoured sites for investigation. The quarries are located in easily broken rock situations such as shear zones. Many of the showings on the property are located in these quarries as noted below . A mineralized region near spur road KC106D4 was revisited and more mineralized sites were recovered within an area of some 600 m by 400 m.. This is the Linzer set of showings, a complex of many veins and local disseminated bornite in basalt.

### **Mineralized quarries**

This year mineralization was noted in the Eclair Quarry, and the Puff quarry was revisited as was the Oreo quarry for further examination. A number of other quarries have yielded higher than expected copper assays and will be investigated in the next round.

### **Disseminated copper in basalt**

Basalts in the Linzer area near M133, show zones adjacent to an amygdale layers which weather a brown colour more "purplish" than common rust (limonite). These zones and adjacent rocks vary in thickness, a maximum is not known but locally at least a meter thick. These, on detailed examination carry disseminated bornite in amygdales and groundmass. At first it was thought that the locality was an isolated one, but more work indicates that uphill from the main Linzer basalts, there are other sites with disseminated bornite-chalcopyrite. Also in a surprise, host rocks from the Eclair quarry also show presence of disseminated bornite in basalt.

A more systematic investigation into the possibility that other basalts contain disseminated sulphides is urged.

## Faulting and veining

Karmutsen basalt units generally dip north to northeasterly with shallow to moderate dips. The basalts are variously veined and fractured.

The basalt sequence is terminated to the east by a fault zone, across which deformed Quatsino and Parson Bay Formations hosts the Adam pluton. Dykes and apophyses of the Adam Pluton cross the fault to intrude the basalts. This northwest trending fault is thought to be a first order fault, and is thought to have a pre-intrusive history, and to have provided a pathway for the intrusion of the Adam Pluton. It is considered an orogen parallel fault, in the sense that Sillitoe used the term (Sillitoe, 200X) in his review of IOCG deposits in Chile. It is a long fault feature, with a complex history parallel to the tectonic grain in the region.

Associated with this fault are many second order faults, which have northerly trends, Kim Creek, and upper Rooney creek and other northerly directed streams fill valleys carved from the fault damaged basalts. It is these NS faults which have provided the bulk of the road metal to the logging road building effort.

Later easterly trending faults are also considered part of the fault response to the regional earlier fault set. Some host dykes, other mineralized showings and some are found at the intersection of the NS and EW faults.

Veining in this area occurs largely in spaces created by irregularities in shear surfaces, Many lenticular veins and internal lenticular structures of veins combined with abundant sub horizontal slickenlines suggest that vertical persistence is more likely than horizontal persistence.

## Detailed Geochemical sampling

### Litho geochemistry

Rocks, including host basalts, intrusive dykes and veins have been analysed for aqua regia soluble metals. The results are presented in Appendix 1a, and locations of samples are shown on Figures 5 and 6. Results of copper and gold are shown on figures 7 and 8.

Aqua regia dissolves most sulphides and are therefore a reliable means of estimating copper tenor of a rock.

The top sixteen Copper assay values are reported in table below:

ID	Name	Copper	Showing
6547 6545 6567 6645	Fresh Bornite-chalcocite vein	>25.0% 13.92% 11.58% 7.65%	Linzer area, upper-most vein
6974 6972 6540 6975 6973 16546	Amygdular (feldspar) phyrlic basalt and pink veins	6.09% 3.43% 2.62% 2.47% 2.17% 2.09%	Eclair Quarry showing
16545	Skarn at edge of shear zone	5.07%	Puff Quarry showing

ID	Name	Copper	Showing
6968 6970 6969 6638	Amygdular feldspar phyric basalt	3.86% 3.85% 2.832% 2.11%	Lower disseminated Linzer area
6537	malachite stained basalt	2.019%	Upper disseminated basalt, Linzer area

Disseminated basalts with bornite in vesicles and groundmass return copper values of some significance. Of 34 assayed samples that returned assays over 0.35 % copper (Appendix 1a), basalt with amygdaloids directly hosted 14 with assays ranging from 0.364% to 6.091% with a median of 2.091% copper. Veins, mainly hosted in basalt made up the other 20 assays with values ranging up to in excess of 25% copper in chalcocite-bornite rich vein with pink vein gangue.

The variations in values of copper between various parts of a lava flow are quite large:

Type	Number	Cu, low	Cu, mean	Cu, high
Amygdaloidal basalt	9	5 ppm	800 ppm	3.43%
Amygdaloidal feldspar phyric basalt	30	65 ppm	1445 ppm	6.09%
feldspar phyric basalt	9	32 ppm	120 ppm	6425 ppm
Diabase	9	18 ppm	190 ppm	2037 ppm
Basalt, aphanitic	4	92 ppm	App 300 ppm	1.30%

Previously a suite of “unaltered” basalts from this general area has been analyzed and show background values of about 110 ppm copper. Greene is a more regional study which indicates that copper varies from 83 to 217 ppm. The basalt values have copper contents 1/20 th to 300 times the expected values. Amygdaloidal portions of basalt flows seem the most responsive to agents of change.

Local variability.

A rotated block of Karmutsen basalts (located station D048 at zone 9 UTME 704400, and UTMN 5577454, at an elevation of about 660m) has provided an example of local compositional variability.

Several layers are tilted on end (180/70) and cut by faults normal to the strike (255/90) and a small subsidiary fault at 100/70 showing north side down (15 cm). The rotation is unusual and probably indicates nearness to a major fault (such as the one postulated to run down the adjacent valley).

Seven layers over a total of a 4 m interval were sampled as detailed below.

Assay ID	thickness	Rock type	Amygdaloids?	Extent of alteration	notes
16511, top TS 27	1+ m.	Fine grained feldspar phyric basalt	local	Not obvious	Thin section/ ICP-MS analyses of aqua regia extract

Assay ID	thickness	Rock type	Amygdales?	Extent of alteration	notes
16512 TS28	20 cm	Very Fine grained feldspar phyric basalt Possible Base of Flow	nil	Not obvious	Thin section ICP-MS analyses of aqua regia extract
		Possible contact between flows			
16513, T29	30 cm	Aphanitic, light grey, Fine grained epidosite, local malachite stain	nil	Pervasive, silicified? propylitic	Thin section ICP-MS analyses of aqua regia extract
16514 t30	30 cm	Possible top of underlying flow Fine grained feldspar phyric basalt	local	Clay development ?/ propylitic	Thin section ICP-MS analyses of aqua regia extract
16515 t31	10 cm	Several Amygdale layers in basalt	abundant	Variable and pervasive, propylitic	Thin section ICP-MS analyses of aqua regia extract
16516 t32	50 cm	Fine grained feldspar phyric basalt	sparing	propylitic	Thin section ICP-MS analyses of aqua regia extract
16517, bottom t33	1+ m	Fine grained basalt	nil	Not obvious	Thin section ICP-MS analyses of aqua regia extract

These units obviously have responded differently to post depositional hydrothermal fluid flows and indicate that great local variations are to be expected in mineralogy, lithochemistry and geophysical parameters.. The amygdaloidal rich zones seem to have been the locus of the most alteration. This sequence suggests that the base of a flow (16511 and 16512) overlies the vesicle rich top of a multilayered “inflated” pahoehoe flow below.

Assay ID	thickness	Rock type	Cu, ppm	Fe%	Ca%
16511, top TS 27	1+ m.	Fine grained feldspar phyric basalt	N/A	N/A	N/A
16512 TS28	20 cm	Very Fine grained feldspar phyric basalt	220	5.93	3.09
16513, T29	30 cm	Aphanitic, light grey, Fine grained epidosite, local malachite stain	31.7	1.84	2.13
16514 t30	30 cm	Fine grained feldspar phyric basalt	447	5.82	0.95
16515 t31	10 cm	Several Amygdale layers in basalt	583	5.05	7.83
16516 t32	50 cm	Fine grained feldspar phyric basalt Fine grained basalt	854	5.7	7.4
16517, bottom t33	1+ m	Fine grained basalt	N/A	N/A	N/A

About 60 m to the north-north-east, (Zone 9 UTME 704500, UTMN 5577345) several massive flow borders suggest dips of about 20 degrees to the north, a more regional and representative dip. There, the basalt layers are cut by small faults (090/80) with south side apparently down with small offsets (15 cm).

Sample ID	thickness	Rock type	amygdales	alteration	Cu ppm
16522, top	Many m	basalt	common	Pink veins, propylitic	82.1
16521	A few m	basalt	no	propylitic	65.7
16520, bottom	Many m	Basalt, fp common	common	propylitic	164.5

The values reported are less than those expected and may be an indication of local leaching of copper from basalts, and transport by the “pink” vein materials possibly during the propylitic alteration episode.

#### Whole Rock Analyses

Basalts have been analysed and when the “norms” are calculated (using K magma freeware) they do not change much from those expected from tholeiitic basalts, and they largely classify as part of the MORB family. Appendix 2 presents 10 Whole Rock analyses of basalt. Locations are marked on Figures 5 and 6.

Basalts are altered, and variably mineralized. Samples of “fresh” basalts from the Karmutsen (Greene 2006) typically carry about 50% Plagioclase (labradorite), 35% pyroxene, Ore (titanomagnetite) 10% and residuum or mesostasis 5%. In the claims, the changes seen in Karmutsen basalts include alteration of plagioclase, to albite and calcium aluminum silicates, variable alteration of pyroxene, breakdown of ore to leucoxene and magnetite, as well as conversion of mesostasis to chlorite. These alterations do not alter the major chemical components in a major way.

Five dykes have also been analysed and are also presented in Appendix 2. Their locations are shown on Figure 14.

#### Trace element from whole rock analyses

##### Dykes

According to Kelley et al, 2006 Systematic whole rock analysis of volcanic rocks derived from hydrous melts can potentially discriminate fertile hydrous magmatic events on a regional basis from those that are barren:

Dyke ID	SiO <sub>2</sub>	Sr	Y	Sr/Y	Fertile field?	Cu
6595	63.15	354	20.3	17	permitted	71
6971	62.75	377	17	22	permitted	433
6965	62.05	319	18.8	17	permitted	30
6977	58.81	433	22.1	20	permitted	556
6976	55.9	218	23.4	9	no	62

The data in the above table does not preclude presence of fertile intrusive units but is not seen as a reliable guide.

## Secondary Dispersion Media

Two small orientation surveys were carried out in soils overlying the lower mineralized Linzer basalts. Reconnaissance samples were taken from first and second order streams to provide estimates of expected background values.

### *Soil profile at Linzer*

A well developed soil profile was collected from station/waypoint D057 located at Zone 9, UTME 706037, and UTMN 5578591 at an elevation of about 530 m. The locale is in a dip between two outcrops that protrude a few meters above the surface several tens of metres on either side. A small stream runs down the depression some 15 metres to the east. The site is along strike from and possibly slightly below the mineralized beds of the Linzer disseminated showing located some 100 meters to the South.

Samples were selected as shown in table below.

Sample number	Sample position	Sample type	Cu ppm	Au ppb
16532	Within A horizon	Dark brown with orange patches	180.8	3.5
16533	Upper B	Orange grey brown, Probably shows some stream sediment overflow	175.1	3.2
16534	Center B	Dark greyish	143.8	2
16535	Lower B	Dark Brown soil	185.9	4.4
16536	At top of till/C/B transition	Dark orange, rusty	197.8	3.6
16537	Within but near top of Till	Greenish grey with orange spots	245.2	5.6

The profile was collected to check whether soil sampling would be useful in delineating a copper anomaly in area. Hence the expectation is that the commercial metal values would show a high tenor.

Sample number	Sample position	Sample type	Fe %	Mn ppm	Al %
16532	Within A horizon	Dark brown with orange patches	8.81	212	5.31
16533	Upper B	Orange grey brown, Probably shows some stream sediment overflow	10.49	165	4.56
16534	Center B	Dark greyish	11.59	140	3.85
16535	Lower B	Dark Brown soil	5.22	170	7.72
16536	At top of till/C/B transition	Dark orange, rusty	4.67	214	7.02
16537	Within but near top of Till	Greenish grey with orange spots	5.98	280	7.86

Inspection of above tables show that iron oxides have accumulated/become enhanced in the soil while the copper has diminished in that particular soil regime. The Fe/Mn is quite high, especially near the top soil profile as is Fe/Al.

The best material in the profile to test for enhanced copper would seem to be the till.

*Comparison of sediments from Small ditches and creek draining same area as contains the soil profile.*

At this same location a number of stream samples were collected from a small creek and ditches draining the same area as contained the soil profile.

Sample number	Sample position	Sample type	Cu ppm	Au ppb
16538	West ditch	ditch from 240, pebbly, some organic, below, and within a few metres of soil profile	372.8	5.3
16539	Main creek	10 m up from road, just to east of soil profile, good silt, from 150, good silt, some organic	165.9	8
16540	East ditch	At base of small water fall from ditch from about 140, a few metres east of main creek, quite pebbly, no organic	292.2	26.4
16541	Roadside drainage ditch	In ditch about 5 m up from junction of spur with main road, a few more metres to the east quite pebbly, little organic	318.6	13.2
16531	Nearby Subcrop sample	Thin Sulphide bearing vein and variable propylitic alteration in Karmutsen basalt	1301	15

Sample number	Sample position	Sample type	Fe %	Mn ppm	Al %	S %
16538	West ditch	ditch from 240, pebbly, some organic, below, and within a few metres of soil profile	5.91	907	4.59	0.08
16539	Main creek	10 m up from road, good silt, from 150, good silt, some organic	9.89	2770	2.61	0.09
16540	East ditch	At base of small water fall from about 140 a few metres east of main creek, quite pebbly, no organic	8.91	10000	2.95	0.09
16541	Roadside drainage ditch	In ditch about 5 m up from junction of spur with main road, a few more metres to the east, quite pebbly, little organic	6.64	2055	3.95	0.1
16531	Nearby Subcrop sample	Thin Sulphide bearing vein and variable propylitic alteration in Karmutsen basalt	6.9	1675	4.07	0.06

The copper result from sediments in small ditches are higher than from the main creek. This difference is apparently not dependent on pebble content or organic content. It would seem to reflect local variables in source material. Inspection of the Fe/Mn values indicate that they have decreased relative values from in the soil. The Fe/Al has also changed from the soil, increasing. These changes of elemental abundances in the newly deposited stream sediments suggest differential action by the surface waters.

More interestingly, the silts at this location preserve minor amount of S. This suggests that ditches are accessing relatively unweathered materials. For comparison a lithochemical specimen was collected from nearby 16531 which is a mineralized basalt near the soil and stream sediment study. Copper is

obviously preferentially removed, and manganese possibly preferentially precipitated. More work on the pH of soils and stream sediments and stream waters may shed some light on this matter.

### *Establishing benchmarks in bigger streams*

A brief review of the Aqua Regia soluble elements in larger streams show that copper values are broadly similar to those in the smaller streams, although Fe/Al ratio is somewhat greater.

Kim Creek, a substantial second order creek, and tributary to the Adam River, was sampled near its headwaters and near Eclair Quarry.

<b>Sample ID</b>	<b>Cu ppm</b>	<b>Au ppb</b>	<b>Fe (sol) %</b>	<b>Mn (sol) ppm</b>	<b>Al (sol) %</b>	<b>S %</b>
6551 (head of Kim Creek)	118.06	2.2	5.89	1211	4.94	<0.02
6552 (head of Kim Creek)	109.82	1.1	6.06	1948	4.75	0.02
D035-6746 (Bridge at Eclair Q)	108.8	1.6	6.09	1044	3.96	<0.05
D035-6747 (Bridge at Eclair Q)	116.9	23.4	5.68	989	3.99	<0.05

The aqua regia soluble assay values in stream sediments of Kim Creek from its headwaters to the bridge below Eclair quarry show, that although there may be, on a ratio basis, somewhat more iron and less manganese and aluminum in the stream sediment system, the change in copper has been remarkably small. Variation in the gold tenor is small and probably shows that occasional small grains of gold find their way into the stream sediments.

The much larger Adam River, a first order river, shows similar values for sediments at the northern edge of the claims (6593) as well as near the bridge over the Adam River near Keta Lake (6595).

<b>Sample ID</b>	<b>Cu ppm</b>	<b>Au ppb</b>	<b>Fe (sol) %</b>	<b>Mn (sol) ppm</b>	<b>Al (sol) %</b>	<b>S %</b>
6594 at Bridge on UA106D	138.8	15.2	5.56	984	3.5	<0.05
6593 at northern edge of claim	122.4	3.2	5.15	804	3.38	<0.05

### *Conclusion*

Bottom line is, that, if secondary geochemical methods are to be, that till, in particular basal till, would probably be the most diagnostic of a nearby (and somewhat up ice) mineralized domain. Stream sediments, particularly those from tertiary, or greater order streams, may be diagnostic as well, but would depend on the proximity of subcrops; streams draining fluvial deposits and local thick soil horizons would not be useful.

## **Petrology**

### Notes on Method and Mineralogy

The mineralogy is determined by optical means from a thin section. Many new variants of minerals require accurate compositional parameters to classify them, these are not available to me. Hence certain general groupings of related minerals have been used. These groupings, such as chlorite, actinolite,



epidote, will serve to differentiate the minerals and containing thin section until modern techniques can be brought to bear, should that prove advantageous.

Several unusual minerals were noted:

“Actinolite” in veins with pyrite, and locally carriers of up to 6 gms Au /Ton. This mineral is very highly coloured and pleochroic, but extinction angles and relief and birefringence are within actinolite parameters.

“Pale epidote” is a mildly pleochroic mineral showing unusual yellows and very pale greens, yet has many of the optical features of a normal epidote, and sometimes it is seen to grade into the pistachio green type. Epidote has many forms and requires detailed analytical data to name it properly (Grapes and Hoskin, 2004 ). It is thought that this “pale epidote” is similar the “Mg epidote” that Cho et al(2) describes from the Karmutsen a few tens of km to the east. He noted that it is formed as a result of transforming pumpellyite into epidote.

“garnet” has been recorded in a number of localities in previous reports from likely places such as the ore skarn at Kringle showing, and from mineralized shear zone at the Macaroon showing and from units near the porphyry breccia at Puff showing. In this report a new locality at Eclair Quarry showing is added. A hydrogrossular-grandite garnet is seen in contact with bornite blebs. from a “pink vein” (albite-potash feldspar-epidote sulphide) at this locality.

Copper minerals recognized in polished thin section include the more abundant bornite and chalcopyrite as well as chalcocite and secondary “covellite”. Malachite is locally noteworthy, but many well endowed basalts show no malachite alteration on their exposed surfaces. Bornite and chalcopyrite are present in the same grain, but in varying proportions. Near Linzer bornite predominates where as in Eclair and Puff chalcopyrite is possibly more dominant.

## General lithology notes

### Basalts

The area to the west of the Adam River is mainly underlain by the upper part of the Karmutsen Formation (uTrVK) stratigraphy, comprising mainly thick massive flows with local intercalations of amygdaloidal basalt and pods of autoclastic breccias, pillowed and massive flows with thin intercalations of volcanoclastic and limy sandstones, all cut by thin dolerite/gabbro sills. Several textural types of basalt have been noted in area. Most common are feldspar-phyric fine grained basalts. Local variants include those with abundant microlites and altered glass in the ground mass. Others are somewhat coarser of grain. All varieties are locally amygdaloidal, varying from showing small occasional spherical amygdales filled with low temperature minerals to specimens with large irregular and locally joined amygdales. Coarser versions may represent later sills or possibly the centers of thick, slowly cooled basalt flows.

A three part internal structure of basalt flows in “inflated” pahoehoe flows (Self 2003). A flow top and upper crust with vesicles/amygdales, a central massive core and a thin basal amygdular base with local pipe vesicles. The table below shows the division. The importance of the distribution of vesicle rich regions is stressed; In the upper part of one of these flows there may be several horizons of vesicles, crudely defining a plane of flow for the flow, and just at the top of the massive layer there is a “vesicle sheet”. Vesicle sheets are readily distinguished from the horizontal vesicular zones. The latter have a thicknesses of 10's of cm to many meters thick and show a gradation in vesicle size gradation in vesicle sizes increasing downward and then back to finer grained vesicles. Vesicle sheets on the other hand are typically 1 – 5 cm thick, have knife sharp boundaries, and show vesicles the same size.

This description of modern flows compares well with the structures seen in Karmutsen basalts. The Karmutsen basalts are locally seen in stacked, massive, many metre thick units. It is thought that the thick massive flows are the cores of “inflated” pahoehoe flows. Thin basal vesicle bearing units with local pipe

vesicles have been noted, as have upper sections of vesicle rich zones Locally, lava tops have been recognized.

Inflated Pahoehoe Flow Structure after Self et al (2003)

<b>Division</b>	<b>Name</b>	<b>Vesicularity</b>	<b>Crystallinity</b>	<b>Examples from Kringle-Consolidated</b>
Upper Crust about 40% of flow thickness	Upper zone	Many, bubbles increasing with depth	Much intersertal material	Amygdaloidal basalt
	Upper zone less vesicular zone	Fewer vesicles	Abundant intersertal material	Glomeroporphyritic basalt
	Upper zone vesicular zone	More vesicles	Abundant intersertal material	Amygdaloidal glomeroporphyritic basalt
	Upper zone less vesicular zone	Fewer vesicles	Abundant intersertal material	Glomeroporphyritic basalt
	Upper zone vesicular zone		Abundant intersertal material	Amygdaloidal glomeroporphyritic basalt
	Upper zone less vesicular zone	Fewer vesicles	Abundant intersertal material	Amygdaloidal glomeroporphyritic basalt
Core 60% of flow thickness	Top	No vesicles	Intergranular textures	Diabase
	Late stage residuum	Vesicle sheets	Intersertal textures, very vesicular	Amygdaloidal basalt
	crystalline	No vesicles	Intergranular textures	Diabase
	crystalline	Vesicle cylinders	Intergranular textures	Diabase
Lower Crust 20 to 100 cm thick	Bottom very vesicular zone	very vesicular zone	Intersertal textures	Amygdaloidal glomeroporphyritic basalt

In thin section the least altered specimens consist of porphyritic basalt composed of feldspar phenocrysts in a matrix of plagioclase and augite (intergranular) or plagioclase and mesostasis (intersertal) texture. In almost all specimens examined microscopically, the plagioclase is albite, even when the augite is completely unaltered. Most contain a moderate amount of epidote, chlorite and leucoxene/clay and variable amounts of calcite. Chlorite is the most common mineral in the amygdales, but calcite, epidote pumpellyite and quartz were also noted. In detail, the rocks are composed of different amount of altered glomeroporphyritic feldspar set in a matrix of feldspar microlites either with intersertal glass or intergranular pyroxene, Ore (magnetite) forms 5-10% of the rock mass. Some rocks are very amygdaloidal, with shapes ranging from small ovoid to cm long bulbous tubes; in some rocks the amygdales may reach 30 or 40%, in others there are no amygdales.

The table shown above helps classify the petrographic samples collected, many of which are altered examples of the above schema: the samples being amygdaloidal, rather than vesicular. Samples from possible flow tops include autobreccia basalts with few phenocrysts and minor microlites, from vesicle rich regions in upper crust, samples of amygdaloidal porphyritic basalts, from vesicle poor regions in upper crust, samples of porphyritic basalts and from the massive cores, even grained rocks called diabase.

Self also commented on the outer edges of these inflated pahoehoe flows (Self, *ibid*, p.94) He shows that in areas of slow effusion, rough topography or steeper slopes “stacks of small lobes” will form; at intermediate effusion rates, gentler topography or shallower slopes, hummocky flows will form; at high effusion rates, low slopes and gentle topography sheet flows form. In this context local “pillow” basalts (well exposed in some quarries) occur within the massive lava sequence and locally, a pillow sequence of closely packed, sub meter sized “pillows” have been seen to pass laterally into a massive flow offer tantalizing hints as to the flow morphologies.

There is complete agreement with “[The complex] ... processes, and chemical changes in erupted lava during long lived eruption can make their mapping out lobes, flows, and/or flow fields very difficult...”. (*Ibid* p 95).

## Mainly Jurassic Dykes

Several episodes of dyke intrusion have affected the area. From the oldest to the youngest they are discussed below:

1/ Karmutsen related steep and shallow dykes (sills) or diabase, few becoming coarse enough to call diabase or very fine grained gabbro. Often they show abundant feldspar phenocrysts and locally glomeroclastic plagioclase (so called snow flake porphyry). None were collected this year.

2/ Early salic/felsic dykes, complexly deformed and transformed into endoskarn, largely with garnet (grandite) and locally well mineralized. The original Kringle Showing is at one of these. They occur mainly in the deformed Quatsino Limestone near the contact with the granodiorite, and would seem to predate the intrusion. Across the river, there are few examples known, but a flat white dyke associated with local skarn in the wall of the Puff showing, near the mineralized shear, may be an example.

3/ Deformed andesite dykes, also occur mainly in the Quatsino Limestone near the contact, but they are much less deformed, mainly into open folds, and cut by NS and EW faults. Dykes to the west across the Adam River, like the dyke breccia that is mineralized at the Puff showing, may be an example. The Cruller Dyke is an example of a feldspar porphyry dyke trending 150 with mineralized contacts. Other similar dykes have recently been located.

4/ Planar, non deformed, relatively unaltered andesite/dacite dykes (feldspar porphyries) occupy EW faults and would seem to be the latest. An excellent example is the feldspar porphyry located at the original Kringle showing. Mineralization is not commonly associated with this generation.

5/ Thin basaltic dykes cut tectonic breccias near Krisp showing.

Most of the dyke activity is presumably associated with the Adam Pluton, although the gabbro sills in the Karmutsen are probably Triassic in age and the later mafic dyke is of unknown age, although it postdates some metamorphism.

Last year at the Cruller Quarry, decametre wide vertical feldspar porphyry dyke trending 150 and cutting through the magnetically anomalous Karmutsen basalts for at least a half kilometre, was located. It is within the magnetic aureole west of the Adam Pluton and trends roughly parallel with the western edge of the Adam Pluton. Several mineral showings (including the Cruller Quarry showing) are located near it or its southward projection. As a result, this year, subcrops showing dykes were examined with care. Many localities were sampled and had thin sections cut, and several were analyzed for whole rock using the 4A4B protocol. These latter analyses were examined using K magma, a freeware program that calculates igneous modes and classifies the rocks. The asterisk shown below indicates that the rock has been so analyzed and named.

Petrographically, the porphyry dykes are mainly dacites, with a few andesites. Both types are feldspar phyrlic, and both have minor mafic phenocrysts but the main difference between the two rock types, from a handspecimen viewpoint, is that the andesite has more mafic minerals as phenocrysts. In most of the dacites the mafic mineral is a “fresh” pyroxene. Considering the data below, a search for hornblende bearing dykes would seem profitable.

#### Copper and gold in Felsic porphyries

TS number	Assay number	name	notes	Cu ppm	Au ppb
T09	6737	dacite*	with hornblende	420.2	3
T22	16502	dacite		67.9	7
BD01	6595	dacite*		71	<2
T11	6738	Crowded feldspar porphyry		30	<2
T14	6741	andesite	With hornblende	1837.9	2
FA10	6965	dacite*		30	<2
ND	6971	dacite*	With hornblende	433	<2
ND	6976	andesite*		556	<2
ND	6977	andesite*		62	<2
BD17	6995	Foliated and Sheared dacite*	Really a schist	47	11
T29	16513	Foliated and Sheared dacite*	Really a schist	31.7	<2

\* whole rock analyses in Appendix 2 , locations on figures 5 and 6. ND means thin section not determined

Fresh andesites carry on average between 35 and 140 ppm Cu, with an average of 76 ppm, and dacites carry somewhat less (Gunn, 2006). Kelley et al, 2006) has suggested that hornblende bearing felsic porphyries are good candidates to be fertile. Clearly the four from the Claim group note above hornblende bearing and mineralized, and so would belong to group 3 in outline above, the rest probably belong to category 4 (non mineralized).

Four localities with hornblende bearing feldspar porphyries are located within a small 1 x 2 km square area as indicated below, and further mapping their vicinities is encouraged.

Sample ID	utm e	utm n	Copper ppm
6737	705397	5577982	420.5
6741	705178	5578237	1837.9
6971	705471	5580516	433.61
6976	706144	5577916	555.99

NAD83 in Zone 9

The relative ages of these dykes is not yet clear.

As was shown in the lithochemical section, the analytical data of the dykes shows the Sr/Y ratio, a possible indicator of “pregnant” porphyries, to be consistent with the possibility of porphyry mineralization (similar to that at Chinkuashih, Northern Taiwan and Black Mountain in NW Luzon). The presence of

hornblende may be a more reliable and cheaper method of making this prediction. More work is needed in this area of the claims.

## Notes on alteration

An international commission recommends that rocks such as the Karmutsen Basalts be called "spilites". Since these basalts present "...*An altered basic to intermediate, volcanic or subvolcanic rock in which the feldspar is partially or completely composed of albite and is typically chlorite, calcite, epidote, prehnite or other low temperature hydrous crystallization products. Preservation of eruptive (volcanic or subvolcanic) features is an important characteristic of spilites...*" (Arkai et al, 2007, p.7). Naming in this report has focused on eruptive textures and while recognizing that the Karmutsen basalts are part of the rock clan called spilites, nevertheless has chosen to use the protolith texture terms.

The rocks of the claim group are variously altered. The geological history outlined earlier indicated that a long period of regional metamorphism prevailed after deposition in the Carnian until plutonic activity in mid Jurassic time started up in this general area. During this time interval, the area was affected by block faulting and some regional faults cut through the area. The regional metamorphic grade was subgreenschist. Cho and Liou, (1987) estimated that temperatures near 250 degrees centigrade and pressures of 1.4 kb were typical. Upon initiation of mid Jurassic plutonism regions near the pluton underwent a change in conditions; the rocks were heated up, the low grade minerals were dehydrated, and unstable minerals rearranged themselves. The net result was that a magnetic halo formed around the Adam Pluton and within that halo minerals common to the greenschist facies formed. Hydrothermal cooling cells helped disperse the heat from the pluton. This resulted in waters from the pluton mixing with waters liberated from the subgreenschist hydrous minerals by the intrusion heat, and moving through the basaltic pile and redistributing many elements. This double metamorphism has been previously demonstrated in the Karmutsen basalt to the east of Adam Pluton. (Starkey and Frost, 1990).

The practical consequence is that many textures are composite of this mixed history. In particular, basalts with permeability, that, at subgreenschist grade, contained laumontite, prehnite and/or pumpellyite now show typical propylitic assemblages of chlorite-epidote-quartz+/- calcite within the magnetic anomaly zone.

".. Low grade metamorphic metabasite mineral assemblages typically contain the ubiquitous phases albite+quartz+epidote+chlorite+H<sub>2</sub>O along with two or more of pumpellyite, prehnite and actinolite. In addition the fluid phase is considered to be essentially pure H<sub>2</sub>O given the low carbonate content of the rock. When CO<sub>2</sub> is high the non diagnostic assemblage calcite-quartz-chlorite develops" (Cho and Liou (1987)).(Bevins and Robinson, nd, Digel and Ghent, 1994). Hence many published studies give contradictory conclusions about the significance of mineral assemblages. Apparently the Mg/Mg+Fe in the rock and reflected in the same ratio in chlorite also helps determine which phases appear. "...It would seem that rather than trying to specifically assign sub greenschist subfacies that the rocks be grouped together because the disappearance and appearance of critical phases can clearly be seen to be influenced by not only changes in intensive parameters but also by whole rock compositions...(ibid)".

These remarks apply to the bulk of the basaltic rocks that presumably were affected by the cooling convection of percolating waters from initial formation waters and from dehydrating minerals, set up by the cooling pluton.

Evidence for magmatic fluid involvement within this magnetic anomaly zone is provided by the "Pink veins", which consist of hematite stained albite, white potash feldspar, quartz, pale epidote gangue mixtures. These veins have been previously analyzed by whole rock methods and have been shown to be enriched in potash and barium, both probably derived from a magmatic source. The veins may carry copper sulphides, mainly bornite, and the vein selvages are often chloritic and may also be mineralized with sulphides.

## Petrophysics

A voltmeter is used to measure the resistivity of rocks, all cutoff blocks were tested, but only one

showed any sign of a diminished resistivity (ie a conductor). The data is listed on the thin section sheets.

Thirteen specimens had their specific gravity determined. The data is listed on the thin section sheets.

Basalt glass has a lower density than the Karmutsen basalt. This increase in mass reflects the transformation from glass to metamorphic minerals, and, along with the vesicle fillings (ie amygdals), is first hand evidence that material has been added to the rocks.

## **Interpretation**

### ***Deposit Types***

Island copper (Minfile 092L158) produced about 400 Mt of ore 0.41% Cu and 0.017% Mo with credits of Au, Ag and Re, from 1971 to 1996 (Aspinall, 1995). It is considered by most to be an example of a porphyry copper. The initial hydrothermal event there has been shown to be a sulphur poor iron rich quasipervasive magnetite alteration along with many magnetite veinlets featured in a 500 to 700 meter wide magnetite zone (Arancibia and Clark,1996). On northern Vancouver Island several skarn deposits were exploited for their magnetite and base metals in the 60's and 70's. The eastern Adam River pluton and adjacent limestone, for example, hosted the Iron Mike skarn deposit mined in the late '60's (092K 043).

The Kringle-Consolidated claim group is a grass roots project with many local showings. The location and extent of a postulated hydrothermal system adjacent to the Adam River pluton is still being explored. There is a possibility that all new showings and already located Minfile showings and prospects in the claim area constitute various aspects of a single, very large mineralizing system developed near the contact of the Adam River Pluton, and mainly in Karmutsen basalts. In this case, this region may become a very prospective mining area. A number of different mineral deposit models may be appropriate to describe mineralization in the region. It is possible that several types of mineralizing mechanisms have been telescoped. Notably, there is little argillic alteration exposed.

Currently four types of metallogenic deposit models are concurrently being considered. The four working hypotheses are:

Model 1 Quartz saturated Alkalic Porphyry type (Chamberlain, 2011, Richards, 2011)

Model 2 (Chilean/Mesozoic) IOCG type (Sillitoe, 2003)

Model 3 Redbed copper type. Schau (1965), Carson et al (1972), Muller et al (1974,) Lincoln (1986)

Model 4 Not known, or recognized, type

The first three models share the common occurrence of copper minerals in basic rocks altered to what is loosely called propylite. Also common to the three models:they are in a positive magnetic anomaly. Sericite alteration and quartz stock works are rare and the three show less of a sulphur anomaly than a common copper porphyry would manifest (cf Dilles, 2011).

The first named model requires a nearby heat source such as the adjacent mid-Jurassic Adam River batholith, and is currently the most favored.

### ***Mineralization in Area***

The region is noted for copper bearing veins . Muller et al. (1974) and assigns the showings in the vicinity of the claims to his category C: "veins in basalts".

The claim area includes minfile numbers 092L-163, 170, 249, 222, 165, 166, 167, 168 and 169.

Adam west prospect (092L-222) is described as a several metre thick concordant layers as chalcopyrite and bornite bearing basalt beneath a thin limestone layer. Boyes Creek prospect (092L-165) is a anastomosing fault zone with bornite and chalcopyrite in epidote gangue.

Examples from some of the showings located by the author, are noted below. For complete details the original AR should be consulted as there is much more information, assays, and descriptions in these reports. The location of these newer showings are given on Figure 4. From north to south the mineralogy is as indicated:

- 1/ Macaroon, (AR27463) a shear zone with chalcopyrite associated with small grandite and epidote gangue
- 2/ Krisp, (AR27736) a shear zone with chalcopyrite in zeolite and quartz gangue.
- 3/ Oreo, ( AR27463 ,updated this report) cross veins in a complex fault zone with microcrystalline quartz gangue, also a gold bearing actinolite-pyrite +/- magnetite vein
- 4/ Pastry (AR27463), joints and thin calcite quartz veins in basalt
- 5a/ Kringle (AR26930), a skarn carries magnetite, pyrrhotite, chalcopyrite, local molybdenite, and pyrite, in garnet and pyroxene skarn, with local wollastonite.
- 5b/ Kringle (AR26930), an early heavily altered felsic dyke with chalcopyrite.
- 6/ Puff (AR27070 and updated this report), a brecciated albitized dyke cutting a skarn and cut by a shear zone all containing chalcopyrite as main ore mineral .
- 7/ Cruller quarry (AR31856), chalcopyrite in contact related veins and pods adjacent to a dacite porphyry dyke
- 8/ Eclair quarry, (this report) which straddles KC main, is shows basalt with disseminated copper meter wide chalcopyrite +/- bornite and pink alkalic vein material cut by later? quartz veins.
- 9/ Linzer area, (AR31856, updated this report) a lower occurrence of disseminated bornite is in basalts as well as several high grade veins carrying bornite in alkalic feldspar and epidote gangue.

The claim group is primarily a copper play with minor silver credits. Although gold is not a primary focus of this investigation a few locations do show local enrichment of gold. The best sample is located in a vein in Oreo showing where values up to 6582 ppb have been retrieved.

## Interpretation and Conclusions

### Interpretations

The analyzed samples have been collected to show the presence of mineralization and are not to be considered as representing grade because they are mainly point source values and give no information on volumes.

The abundance of showings and various mineralization styles within the bounding magnetic anomaly are thought to indicate various aspects of a large hydrothermal system at work in this region associated with the intrusion of the Adam River pluton during mid Jurassic time.

Source of Mineralization: In the general region, Island Copper was associated with middle Jurassic plutonism. In particular, the Adam Pluton, is an iron rich middle Jurassic granodiorite pluton, known to be mineralized. Trace element ratios of Sr/Y of dykes in claim region are similar to those in Taiwan and Philippine porphyries. Locally Hornblende feldspar porphyries are mineralized.

Pathway of fluids: On the big picture, mineralized fluids followed along faults and breccias in basalts, and in the detail; along vesicle sheets in inflated pahoehoe flows or at limey contacts.

Trapping agent: Several kilometres of ferrous silicates in basalts have provided reductants., and local limey units have provided CO<sub>2</sub>..

Actual Traps occur in porous and permeable venues in basalt, or adjacent to thin limey units, or breccias, of either intrusive origin or tectonically created breccia.

The big question is: what is the volume of mineralized material and is it sufficiently connected to allow for exploitation?

## Conclusions

The geology of the claim group has been verified from previous sources and new field work. It reveals that a sequence of the Vancouver group comprising the Triassic Karmutsen Formation, consisting largely of feldspar-phyric basalt but with intraformational limestone lenses intercalated near the top; the overlying Quatsino limestone; and siliciclastic and limy sediments of the largely upper Triassic Parsons Bay formation that was deformed and faulted along orogen parallel transverse faults, along which, felsic dykes and later mid Jurassic plutons were emplaced. The presence of early deformation, mainly of the brittle type, allowed circulation of fluids supplied and energized by the pluton yielding local alteration and mineralized volumes. The alteration is largely propylitic, but zones of pink alkalic feldspar-epidote-quartz-chlorite are locally dispersed and contain the areas of copper mineralization.

Within the Kringle-Consolidated Claims sulphide accumulations studied over the years, have include local iron sulphide rich veins and replacement masses, more common chalcopyrite veins, molybdenite bearing garnet veins, copper rich skarns, pyritic veins and disseminations in granodiorites and dykes, and pyrrhotite layers in reaction skarns. Pyrite and chalcopyrite are found in mineralized shear zones. Another mode of mineralization is found in sheared, feldspar porphyry bearing, sulphide cemented breccias within the Karmutsen Formation. Recently bornite enrichment of flow parallel zones and in veins in basalt were added to the mineralization roster. Prospects and showings lie along a three km wide magnetic anomaly developed along the edge of Adam River pluton.

Later geologic history is known to be complex and includes post intrusion (transverse?) faulting and low temperature veining but is not yet understood in detail in this area.

Samples are prospecting samples and are collected to show the presence of mineralization at a locality. They are thus specially selected and *do not indicate grade or mineralized volumes*. They do point to mineralized areas where more work can be focused.

**The Kringle-Consolidated claims are considered to be a high-risk, high yield exploration play. Exploration thus far has provided many high assay values from selected grab samples from many different locations over an area of 2744.56 ha (5862 acres). It is concluded that this is an *exploration play with merit*.**

## Recommendations for future work

It is recommended that the copper mineralization be better characterized, by providing some dimensions and grade estimates to the local high grade grab sample locations.

A company financed exploration program should include a detailed airborne survey covering all claims locating magnetic and electromagnetic anomalies to provide geophysical dimensions to known showings and to locate further showings and extensions. An extensive magnetic susceptibility and density database already collected in several assessment reports would help in interpreting the results and provide local control data.

Formal company work would include appropriate geological mapping, geochemical and geophysical ground work on selected grids derived from airborne data and also focus on formal re-sampling of anomalous locations. Drill targets could follow assimilation of new data.

Chip assays of Ag, Au, and Pd, from showings known to be locally anomalous, should be collected.



More showings should be tested for their alteration suites and sulphide contents. Follow up work should also include prospector based work such as silt sampling of all creeks (above or away from roads with suspect road metal), chip sampling at localities returning high assay values from grab samples, and basal till and soil sampling along subsoil “extensions” of mineralized trends.

A ground magnetic survey is clearly indicated to define the extent of magnetic phases of the ore skarn, local breccias and magnetite veins showing positive anomalies as well as to locate shears and veins showing negative anomalies. To locate conductive portions (sulphide concentrations) of mineralized zones one of several types of electromagnetic survey can be contemplated; the size of the exploration commitment would seem to dictate the method. Large EM surveys positioned after the airborne can enlarge the prospective sites, both in size and number. Hand held geophysical methods which penetrate only to shallow depths such as BeepMat, self-potential or magnetometer surveys can be conducted adjacent to known showings to locate magnetic and conductive subcrop locations along strike of previously located showings. Handheld Scintillometers can help show the distribution of potash in “pink” veins, dykes and country rocks. Alteration can be analyzed by SWIR methods and distribution patterns can be outlined.

A suitable exploration project can be crafted to suit the amount invested.

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## Author's qualifications

I, Mikkel Schau

have been a rock hound, prospector and geologist for over 54 years. My mineral exploration experience has been with Shell, Texas Gulf Sulfur, Kennco, Geophoto, Cogema and several small public and private mining juniors. I have worked 10 years in southern BC and spent 23 years with the GSC as a field officer focused on mapping in northeastern Arctic Canada. For the last 16 years I have prospected and mapped in Nunavut, Nunavik, Yukon, Quebec, Ontario and BC.

reside at 3919 Woodhaven Terrace, Victoria, BC, V8N 1S7.

am formally educated as a geologist, I graduated with an honours B.Sc. in 1964 and Ph.D. in Geology in 1969, both, from UBC.

am a P.Geo. (25977) in BC . I am currently a BC Free Miner, # 142134.

have 100% interest in the claims in question.

have worked on various parts of this property since 2000.

am the author of the report entitled *Assessment Report including Petrography, Lithochemistry, Assays and Geochemistry on The Kringle-Consolidated Claim Group (Tenures 509556, 515027, 515028, 515029, 515030, 515032, 515033, 515034, 515386, 515924, 515925, 515926, 515930, 516017, 521073, 529780, 797082, 797102), About 250 km north of Nanaimo straddling Highway 19, Nanaimo Mining District,*

Signed

A handwritten signature in black ink, appearing to read 'Mikkel Schau', enclosed in a rectangular box with a dotted border.

Mikkel Schau, P. Geo.  
(APEGBC-25977)

## Itemized Cost Statement

### Mikkel Schau

October 11-15 inc	5 days /600/day	3000	
april	1/2 day	300	
june 12-16 inclusive	5 days /600/day	3000	
august13-17 inclusive	5 days /600/day	3000	
Subtotal MS (no HST)			9300.00

### Alec Tebbutt (subcontractor)

October invoice		1378.00	
June invoice		2131.15	
August invoice		2286.37	
Subtotal AT (no HST)			5689.52

### Room and Board

October 2011	4 nights/ 2 people /\$80 meals and room	640.00	
June 2011	4 nights/ 2 people /\$80 meals and room	640.00	
August 2011	4 nights/ 2 people /\$80 meals and room	640.00	
Subtotal (Room and Board without HST)			1714.29

### Transportation

Gas costs 2800 km (October, April, June, August)	336.00
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### Field Supplies

Bus Freight; samples to analytical services	285.81
Deakin 03A17292	228.82

Subtotal (Transportation and Field supplies without HST)	759.49
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### Analytical services

#### ACME Labs

#### Invoices

VANI070743	513.86
VANI070951	994.16
VANI070953	1198.28
VAN1087636	441.28
VAN1088190	2671.85
VANI091242	42.72
VANI094983	44.91
VANI095704	202.10
VANI097478	1525.80

Subtotal (without HST)	7634.00
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Van Petrographic		
Invoices		
invoice 110001	545.44	
invoice 110058	1,366.40	
invoice 110836	656.32	
Subtotal (without HST)		2,293.00
Petrographic Analyses \$120/section (without HST)		11880.00
Petrophysics		
Resistivity		
Measurements 99/\$1		99.00
Density		
Measurements 13/\$5		65.00
Report Writing		
Organizing and writing		3000.00
Drafting (Tebbutt invoice) 14 maps x 3 hours X \$40/h (without HST)		1680.00
Generating and maintaining GIS database (Tebbutt invoice) 20 hrs x 40/hr (without HST)		800.00
Office Supplies (without HST)		148.16
	Grand Total (without GST)	<b>45062.46</b>



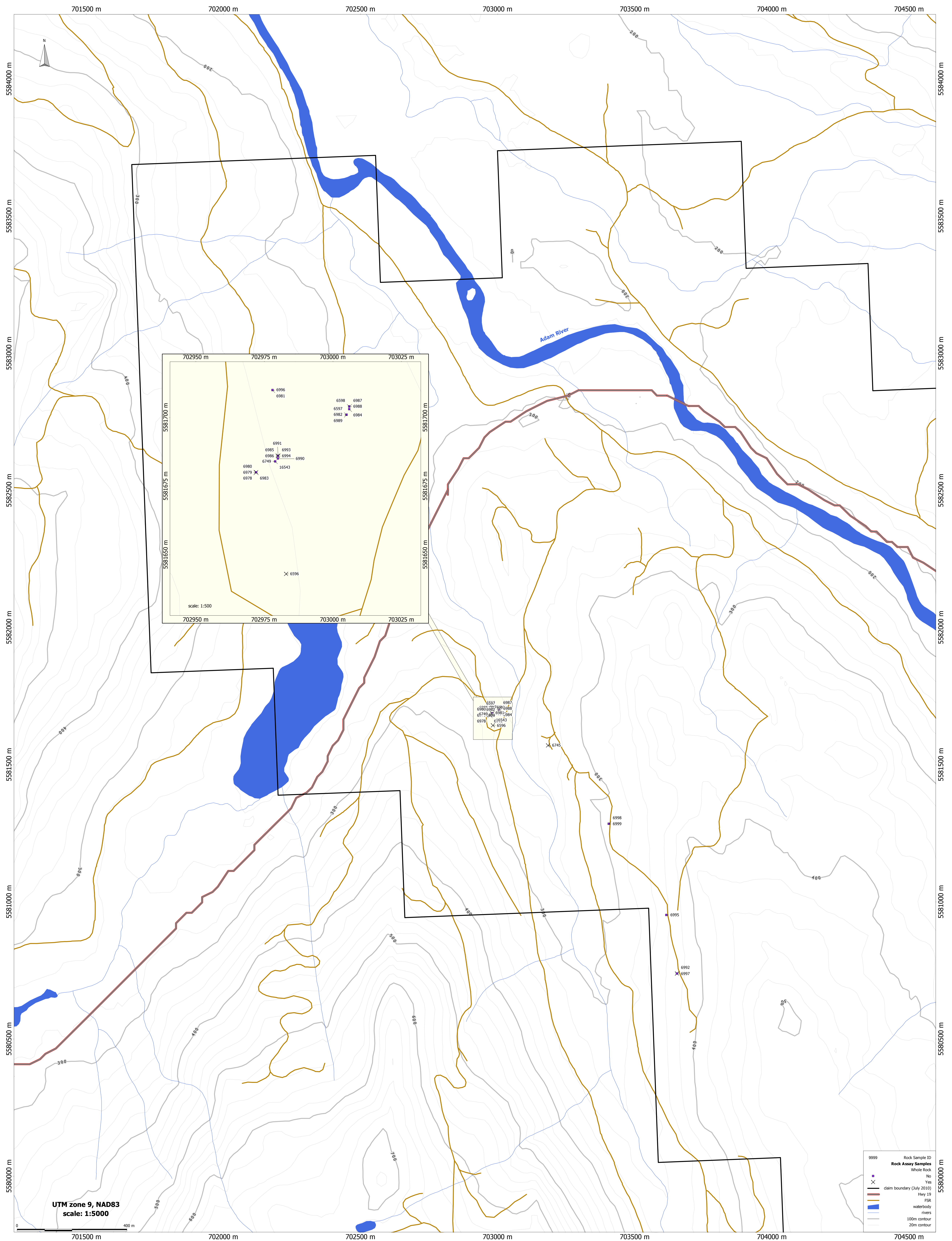
## Appendix 1a: Rock Specimens

Rock Assay #	UTM_E	UTM_N	Elevation (meters)	Rock Description	Cu (ppm or %)	Ag (ppm)	Au (ppb)	S (%)
6537	706113	5578170	658	malachite stained basalt	2.019%	1.933	43	0.33
6538	706498	5577824	671	amygdular basalt with chlorite	0.08%	0.28	2	0.45
6539	706763	5577599	682	Pink vein with chalcopyrite	0.603%	2.731	9	0.45
6540	705034	5580075	334	amygdular feldspar-phyric basalt with vein	2.62%	1.972	118	1.94
6541	705035	5580074	334	amygdular feldspar-phyric basalt with veins	0.008%	0.048	3	0.26
6542	706060	5578373	594	pyrite vein	0.07%	0.179	6	2.23
6543	706060	5578373	594	stained iridescent pyrite vein	0.541%	2.509	41	>10.00
6544	706060	5578373	594	amygdular feldspar-phyric basalt and pyrite vein	0.656%	3.282	72	>10.00
6545	706217	5578087	666	bornite vein	13.915%	26.198	58	2.57
6546	706217	5578087	666	bornite vein, weathered and leached	>25.0%	57.281	34	6.12
6547	706217	5578087	666	bornite vein fresh	>25.0%	44.921	54	4.93
6548	706478	5577934	674	rusty, epidote rich quartz vein	0.121%	0.52	10	0.02
6549	705001	5580061	340	quartz vein	1.538%	14.549	93	4.9
6550	705001	5580064	340	quartz vein cuts previous complex vein	0.762%	5.337	201	6.64
6595	704812	5579412	452	dacite porphyry with feldspar and pyroxene phenocrysts	71	<0.1	<2	<0.05
6596	702983	5581643	244	prehnite veins in fault breccia	283.7	<0.1	8	<0.05
6597	703005	5581701	248	amygdular feldspar-phyric basalt	56.5	<0.1	<2	<0.05
6598	703006	5581704	248	amygdular feldspar-phyric basalt	287.6	0.1	20	0.37
6638	706162	5578534	539	amygdular feldspar-phyric basalt vein and bornite	2.11%	2.65	24	0.44
6639	706003	5578592	536	amygdular feldspar-phyric basalt (autobreccia)	0.364%	0.505	18	0.03
6640	706320	5579236	352	diabase	0.019%	0.103	3	<0.02
6641	706003	5578592	536	amygdular feldspar-phyric basalt with bornite blebs	1.947%	2.376	70	0.46
6642	706221	5578077	665	amygdular basalt with bornite blebs	0.679%	1.256	10	0.16
6643	706275	5578455	553	amygdular feldspar-phyric basalt/basaltic andesite?	0.021%	0.039	<2	<0.02
6644	706144	5579452	344	amygdular feldspar-phyric basalt	0.009%	0.037	<2	<0.02
6645	706221	5578077	665	talus, pink vein cutting basalt	7.647%	19.968	47	1.61
6646	706272	5578926	424	pyrite in shear zone quartz vein	0.059%	0.243	2	0.08
6647	705037	5580065	334	quartz vein in complex vein	0.11%	0.6	10	0.52
6648	706270	5578015	672	amygdular feldspar-phyric basalt with vein	0.007%	0.033	<2	0.03

Rock Assay #	UTM_E	UTM_N	Elevation (meters)	Rock Description	Cu (ppm or %)	Ag (ppm)	Au (ppb)	S (%)
6649	706134	5578552	536	pink vein with bornite cutting dark basalt, 290, 5 cm wide	0.756%	1.175	22	0.27
6650	705006	5580078	334	aphanitic basalt with copper stain	1.301%	0.872	19	0.3
6723	705387	5577121	533	quartz vein	1017.2	1	67	<0.05
6724	705387	5577121	533	quartz vein in north south fault zone with copper alteration	2054.4	3	40	<0.05
6725	705387	5577121	533	diabase	18.7	<0.1	4	<0.05
6726	705387	5577121	533	quartz vein from faulted surface	1.659%	1.8	455	0.14
6731	705679	5576919	580	amygdaloidal basalt with epidote and pink vein and local actinolite	86.9	<0.1	3	<0.05
6732	705679	5576919	580	epidote vein with cutting pink vein	12.8	<0.1	<2	<0.05
6734	705390	5577234	507	feldspar basalt no amyg	110.9	<0.1	3	<0.05
6735	705390	5577234	507	epidosite	9.3	<0.1	2	<0.05
6736	705249	5577583	474	diabase	149.8	<0.1	3	<0.05
6737	705397	5577982	491	sheared foliated hornblende porphyry	420.5	0.2	3	<0.05
6738	705183	5578235	441	crowded feldspar porphyry	30.1	<0.1	<2	<0.05
6739	705178	5578237	428	amygdular feldspar-phyric basalt	72.7	<0.1	5	<0.05
6740	705178	5578237	428	amygdular basalt	5	<0.1	6	<0.05
6741	705178	5578237	428	andesite dyke with hornblende? and copper stained	1837.9	0.7	2	<0.05
6742	705210	5578757	407	feldspar-phyric basalt	32.3	<0.1	4	<0.05
6743	705170	5579112	389	feldspar-phyric basalt	92.4	<0.1	<2	<0.05
6744	705122	5579276	381	amygdular feldspar-phyric basalt	72.2	<0.1	<2	<0.05
6745	703184	5581570	279	diabase with Pink vein	46.1	<0.1	<2	<0.05
6749	702979	5581684	256	pyrite vein fragment	3673.9	7.2	3214	9.36
6960	706172	5578524	538	basalt	0.027%	0.049	<2	<0.02
6961	706013	5578594	536	amygdular basalt with epidote blebs (cpy)	0.162%	0.296	30	0.03
6962	706075	5578591	536	feldspar-phyric basalt	0.018%	0.052	<2	<0.02
6963	706224	5578489	547	amygdular basalt (autobreccia?)	0.085%	0.157	6	<0.02
6964	706162	5578534	539	amygdular feldspar-phyric basalt	0.065%	0.144	48	<0.02
6965	705864	5579348	358	andesite porphyry	0.004%	0.046	<2	<0.02
6966	706244	5578479	544	amygdaloidal porphyritic basalt	0.118%	0.246	10	0.07
6967	706217	5578087	666	bornite rich vein	11.58%	26.991	98	1.74
6968	706107	5578524	549	amygdular feldspar-phyric basalt	3.855%	6.918	67	0.81
6969	706189	5578514	538	amygdular feldspar-phyric basalt	2.832%	5.024	12	0.72
6970	706205	5578511	540	ripup of malachite stained amygdular basalt	3.854%	7.907	19	0.79
6971	705471	5580516	251	sample=feldspar porphyry dyke (cutting black basalt)	0.045%	0.122	<2	<0.02
6972	705012	5580071	334	amygdaloidal basalt	3.43%	4.431	32	2.04
6973	705010	5580070	336	amygdular feldspar-phyric basalt	2.168%	3.222	15	1.6
6974	705008	5580074	335	amygdular feldspar-phyric basalt	6.091%	46.373	119	1.42

Rock Assay #	UTM_E	UTM_N	Elevation (meters)	Rock Description	Cu (ppm or %)	Ag (ppm)	Au (ppb)	S (%)
6975	705036	5580072	334	quartz vein with basalt fragments	2.417%	11.885	93	1.7
6976	706461	5577916	671	sample=feldspar porphyry dyke (cutting black basalt)	0.06%	0.449	<2	<0.02
6977	706144	5579452	344	andesite porphyry	0.007%	0.062	<2	<0.02
6978	702972	5581680	258	feldspar-phyric basalt/diabase contact	2037.2	1.4	9	0.13
6979	702972	5581680	258	diabase	1264	0.4	4	0.09
6980	702972	5581680	258	grey feldspar phyric basalt with white veins throughout (gypsum?)	6425	6	152	1.12
6981	702978	5581710	262	gouge with clay and chlorite bounding a quartz vein	5198	5	230	0.53
6982	703005	5581701	248	broken chip sample of gouge	143.2	0.1	3	<0.05
6983	702972	5581680	258	basalt/diabase contact	47.6	<0.1	<2	<0.05
6984	703006	5581703	248	complex vein in amygdular feldspar-phyric basalt	89.8	<0.1	5	0.14
6985	702980	5581686	258	vein material, actinolite with pyrite and secondary limonite and gypsum	7012.1	18.6	1577	>10.00
6986	702980	5581686	258	pyrite vein with actinolite gangue	2005.7	8	3110	9.52
6987	703006	5581704	248	gossan with secondary limonite and gypsum	215.1	0.2	20	0.55
6988	703006	5581704	248	gossany vein material	292.1	0.3	47	2.96
6989	703005	5581701	248	chip sample from vein	253.2	0.1	7	<0.05
6990	702980	5581685	241	actinolite vein with pyrite and gossan	3204.6	1.9	31	0.43
6991	702980	5581686	258	pyrite vein	846.7	3	3350	4.89
6992	703654	5580738	367	fine grained basalt	92.1	<0.1	5	0.33
6993	702980	5581686	258	clay rich grey aphanite	2362	1.3	8	0.13
6994	702980	5581686	258	feldspar-phyric basalt	1245.9	<0.1	<2	<0.05
6995	703615	5580952	357	fault breccia in rock with dacitic composition	47.4	<0.1	11	7.1
6996	702978	5581710	262	black basalt in shear zone, fragment	412.9	0.6	8	1.3
6997	703654	5580738	367	amygdular feldspar-phyric basalt	94.2	<0.1	<2	0.79
6998	703405	5581284	312	complex vein and gouge with pyrite	121.5	0.2	127	9.77
6999	703405	5581284	312	pyrite vein with bluish sheen	197.3	<0.1	6	1.32
7000	704812	5579412	452	magnetic fine grained basalt	233.6	<0.1	<2	<0.05
16501	704109	5578403	500	feldspar-phyric basalt	132.5	<0.1	6	<0.05
16502	704041	5578159	511	crowded andesite porphyry	67.9	0.1	7	<0.05
16503	704109	5578138	532	amygdular basalt	83.9	<0.1	4	<0.05
16505	704296	5578074	540	float, disseminated bornite in altered basalt	1.556%	1.9	5	<0.05
16509	704438	5577626	657	diabase	71.6	<0.1	5	<0.05
16510	704378	5577560	660	amygdular feldspar-phyric basalt	370.6	<0.1	4	<0.05
16512	704401	5577454	660	diabase	220.8	<0.1	<2	<0.05

Rock Assay #	UTM_E	UTM_N	Elevation (meters)	Rock Description	Cu (ppm or %)	Ag (ppm)	Au (ppb)	S (%)
16513	704401	5577454	660	mylonite? interflow debris?	31.7	<0.1	<2	<0.05
16514	704401	5577454	660	amygdular feldspar-phyric basalt	447.2	0.1	3	<0.05
16515	704401	5577454	660	amygdular feldspar-phyric basalt	583.4	0.3	3	<0.05
16516	704401	5577454	660	amygdular feldspar-phyric basalt	854.7	0.4	6	<0.05
16518	704481	5577396	653	Pink vein	109.3	0.2	22	0.56
16519	704481	5577396	653	chloritic feldspar phyric basalt	84.4	<0.1	<2	<0.05
16520	704506	5577345	645	amygdaloidal layer in basalt	164.9	<0.1	2	<0.05
16521	704506	5577345	645	amygdular feldspar-phyric basalt	65.7	<0.1	2	<0.05
16522	704506	5577345	645	upper amygdaloidal layer in feldspar phyric basalt	82.1	<0.1	4	<0.05
16523	704314	5578295	494	aphanitic basalt	249.3	<0.1	5	<0.05
16525	704616	5578041	496	amygdular feldspar-phyric basalt	1445.2	0.2	5	<0.05
16526	706060	5578375	586	massive pyrite vein	5038.8	2.6	51	>10.00
16527	706060	5578375	586	pyrite vein edge	6671.4	2.7	42	>10.00
16530	706060	5578375	586	amygdular feldspar-phyric basalt as host to vein	1259.3	0.4	12	0.97
16531	706037	5578591	530	epidotized basalt with specks of bornite	1301.5	0.3	15	0.06
16542	706118	5578295	620	pyrite vein	1505.8	0.6	35	4.28
16543	702979	5581684	256	actinolite vein with pyrite and gossan	1236.1	5.9	6582	>10.00
16544	705183	5578235	441	andesite dyke	39.6	<0.1	2	<0.05
16545	704716	5580575	N.A.	skarn from edge of Puff shear zone	5.068%	68.3	105	1.3
16546	705013	5580068	334	amygdular feldspar-phyric basalt	2.091%	12.3	83	0.46



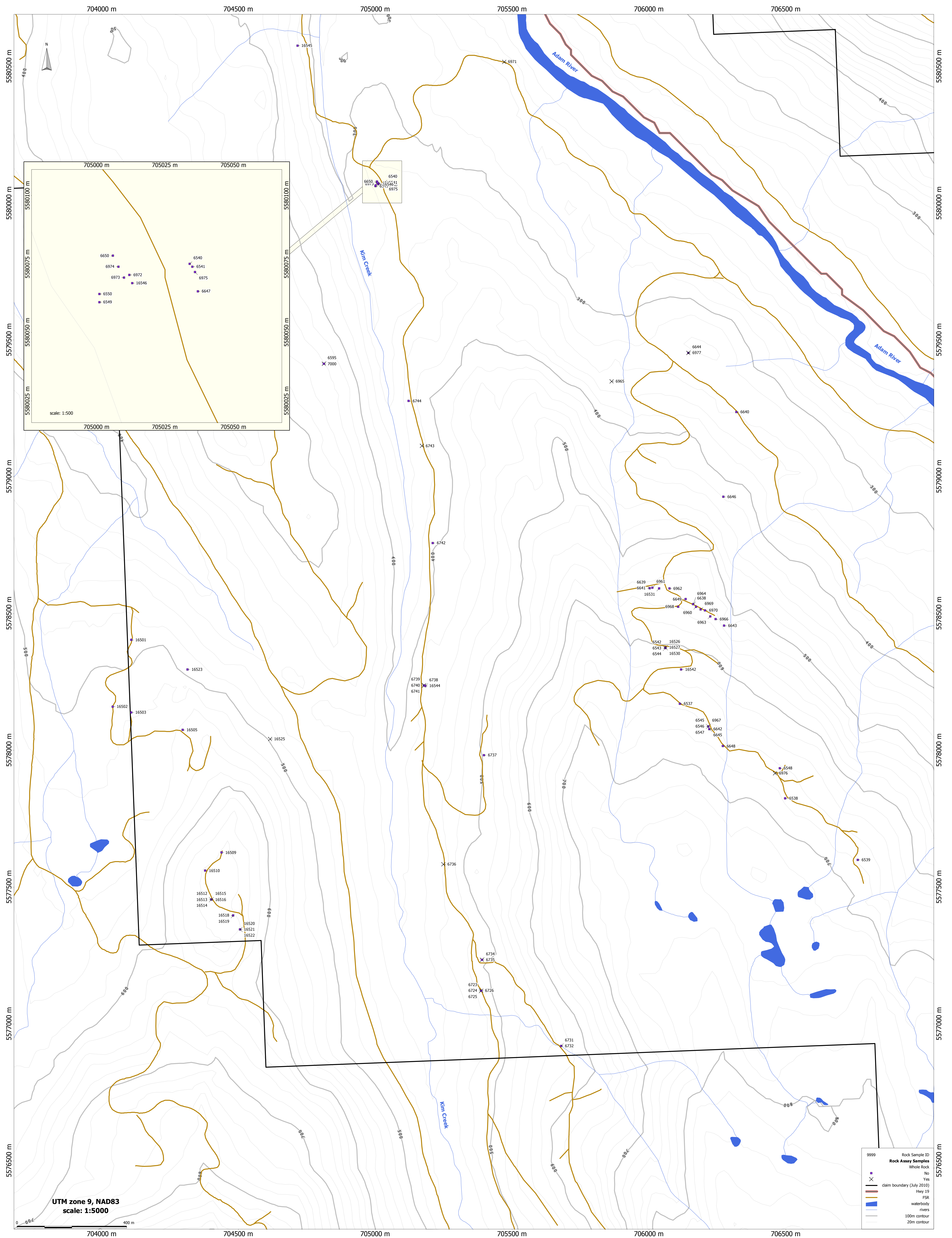
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**Figure 5**  
Location of  
Rock Samples in  
Northern Portion of Claims



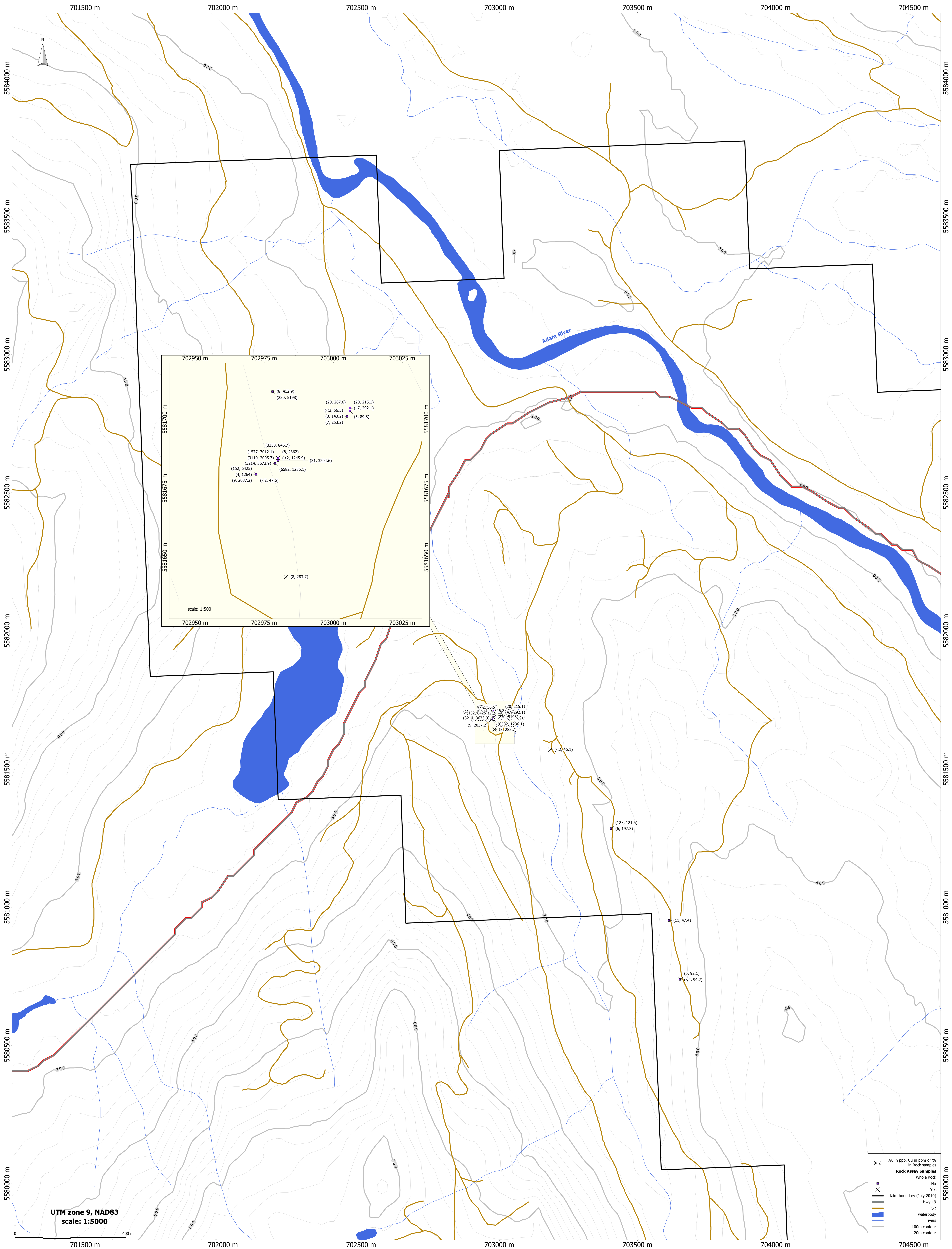
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**Figure 6**  
**Location of**  
**Rock Samples in**  
**Southern Portion of Claims**



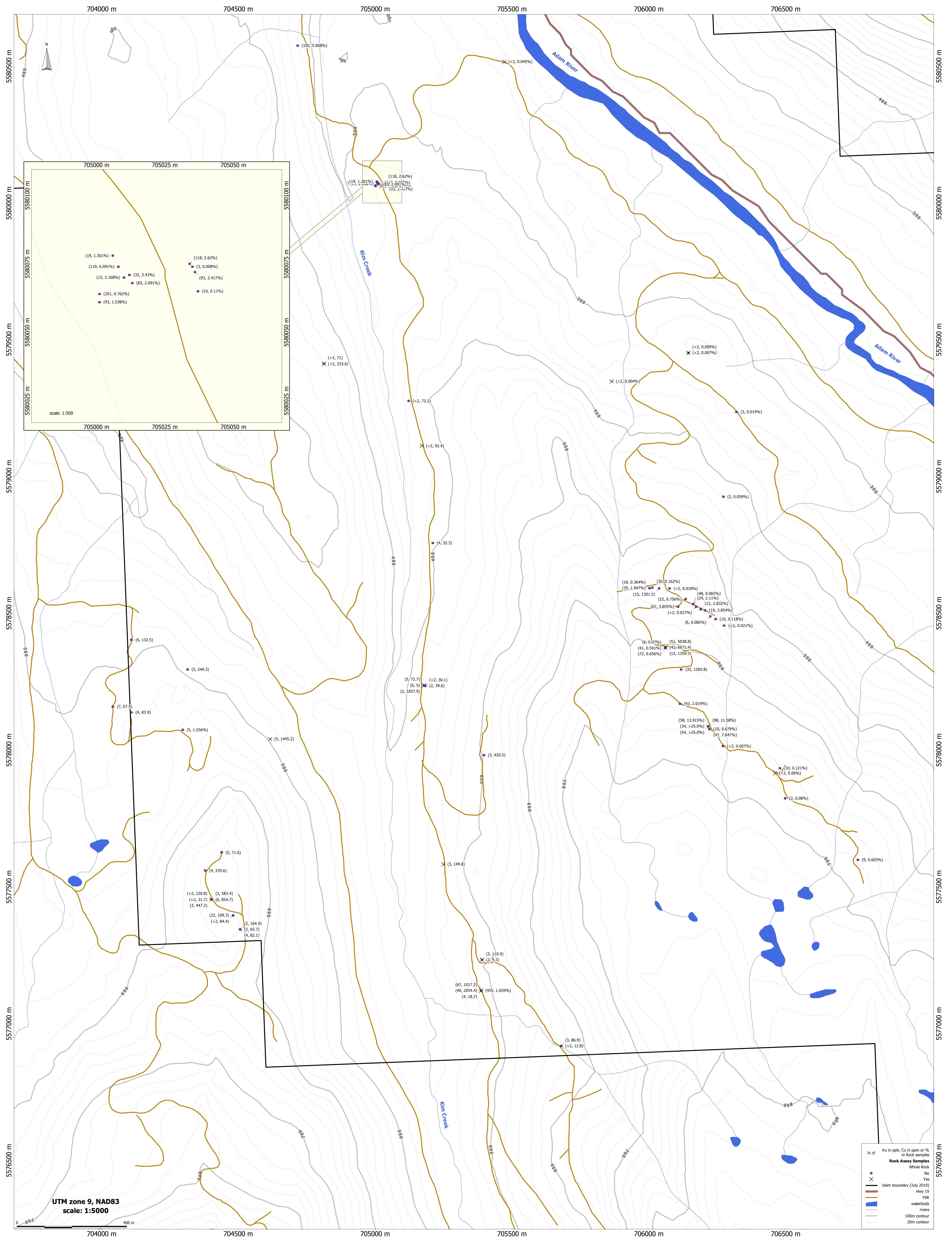
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scale: 1:5000



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**Figure 7  
Gold & Copper Assays:  
Rock Samples in  
Northern Portion of Claims**



Projection/Datum: UTM 9(N) NAD83  
scale: 1:5000



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**Figure 8  
Gold & Copper Assays:  
Rock Samples in  
Southern Portion of Claims**



## Appendix 1b: Soil Specimens

Soil Assay #	UTM East	UTM North	Elevation (meters)	Notes	Cu (ppm)	Ag (ppm)	Au (ppb)	S (%)
D043-16506	704296	5578074	540	Colour: reddish brown; Depth: 5cm; soil sample 2m off KC130 where float w Cu found; B horizon 5 cm depth in side hill; elk trail	88	0.2	<0.5	<0.05
D057-16532	706037	5578591	530	Colour: dark brown with orange; Depth: 10cm; A horizon; 30cm to R of others, better able to get A here; organics deeper here so sample depth is 10cm; dk brown with orange	180.8	0.1	0.7	0.05
D057-16533	706037	5578591	530	Colour: orangey grey brown; Type: clayey; Depth: 10cm; upper B horizon	175.1	0.2	<0.5	<0.05
D057-16534	706037	5578591	530	Colour: greyish; Type: clayey; Depth: 20cm; mid B	143.8	0.1	<0.5	<0.05
D057-16535	706037	5578591	530	Colour: dark brown (not organics); Type: clayey; Depth: 25cm; lower B	185.9	0.2	0.5	<0.05
D057-16536	706037	5578591	530	Colour: dark orange, rusty; Type: clayey; Depth: 50cm; C, just above till	197.8	0.2	1	<0.05
D057-16537	706037	5578591	530	Colour: greenish grey with orange; Type: a bit clayey; Depth: 70cm; till; not cemented till; able to dig out with trowel	245.2	<0.1	1.5	<0.05
6585	704762	5579765	412	Colour: orangy rusty; Depth: 15cm; W side of KC400 in side hill	72.7	<0.1	<0.5	<0.05
6586	704781	5579829	410	Colour: pale buff; Depth: 10cm; from undercut of slope, pale buff, not rusty; probably contains slough from above, couldn't get clean cut	116.2	<0.1	<0.5	<0.05

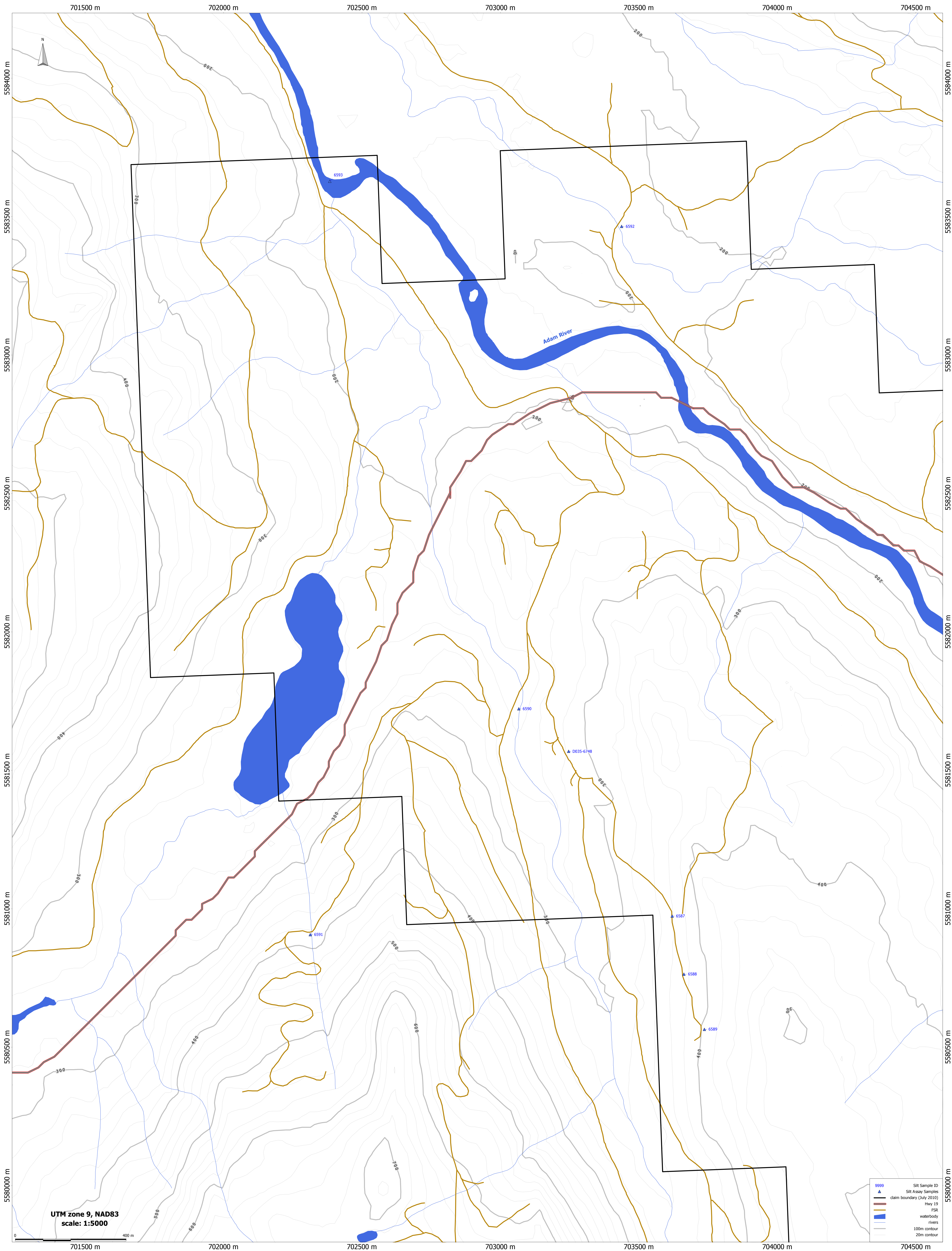
## Appendix 1c: Silt Specimens

Silt Assay #	UTM East	UTM North	Elevation (meters)	Notes	Cu (ppm)	Ag (ppm)	Au (ppb)	Al (%)	S (%)
6551	706779	5571061	598		118.06	48	2.2	4.94	<0.02
6552	706644	5572495	534		109.82	60	1.1	4.75	0.02
6584	704751	5579797	396	ditch W side of KC400, no flow, sample 90%+ organics, med brown; colour: med brown; organics: 90%	112.2	<0.1	10.6	4.24	0.05
6587	703620	5580973	357	small creek from 130°; no flow, small amount of standing water; 1m wide; small sample mostly muck; a few rocks w pink in creek; colour: dk brown; organics: 90%	90.2	0.2	0.8	3.68	0.18
6588	703663	5580763	369	creek from 120°; E of FSR, sample 5m off FSR; colour: dk brown; organics: 15%	134.9	0.2	4.1	5.97	0.08
6589	703737	5580564	388	creek E side of old FSR; from 080°; sample 5m up from FSR; colour: dk brown; organics: 5%	71.1	<0.1	0.7	6.04	<0.05
6590	703066	5581722	240	Rooney crk near Oreo qry; 30m off road; 50m up from bridge; good sample from 5 locations; river R	104.1	<0.1	3.5	3.41	0.08
6591	702313	5580906	373	creek on edge of claims; drains from 180°; sample 15m up from road; colour: med brown	153.8	0.3	8.8	4.53	<0.05
6592	703438	5583464	174	creek on N side of hwy 19, off UA Main; 30m upstream from bridge	42.3	<0.1	<0.5	1.76	<0.05
6593	702384	5583628	168	Adam river at end of old FSR UA101?; campsite on other side of Adam	122.4	<0.1	3.2	3.38	<0.05
6594	709629	5577623	234	Adam River just up from bridge on UA106D	138.8	<0.1	15.2	3.5	<0.05
6701	706252	5579238	340	poor sample; 90%+ organic; creek on EW branch off UA106D4; 40m up from road; organics: 90%	96.88	177	16.1	3.5	0.09
6702	706712	5577529	693	sed sample; small crk in clearcut; poor sample 85%+ organic; drains from 190°; organics: 85%	42.93	152	1.6	2.36	0.09
6703	706608	5577760	674	small crk in clearcut; just off FSR uphill; drains from 240°; ok sample; organics: 40%	79.28	70	3.7	2.97	0.06

Silt Assay #	UTM East	UTM North	Elevation (meters)	Notes	Cu (ppm)	Ag (ppm)	Au (ppb)	Al (%)	S (%)
6704	706529	5577760	697	small crk above FSR; poor sample 90%+ organic; sample taken just at edge of clearcut, well up from road; drains from 160°; organics: 90%	48.06	139	0.9	1.04	0.17
6705	706475	5577831	673	small crk above FSR; poor sample 95%+ organic; sample taken in clearcut 30m up from road; organics: 95%	33.57	141	4.5	1.6	0.12
6706	706284	5577995	665	moss mat sample, found ok silt later - see sample 6707; 20m up from road/culvert; this is crk that becomes steep gulley on N side of road and runs down E side of clearcut	35.83	104	1.4	1.13	0.13
6707	706283	5577993	672	sed 6707; same crk as wpt 293 (sample 6706) but closer to road; ok sample but 90% pebble	165.87	41	12.9	2.9	0.03
6708	706141	5578142	653	crk on UA106D4; sample taken 15m up from road/culvert; poor sample, 90% organic, from below moss; organics: 90%	I.S.	I.S.	I.S.	I.S.	I.S.
6709	705908	5578168	646	crk on W branch off UA106D4; large crk going down W side; sample taken 8m up from road/culvert; pebbles 70%, small pebbles 10%	I.S.	I.S.	I.S.	I.S.	I.S.
6710	706098	5578266	625	sed sample; crk on UA106D4; taken 20m up from road; poor sample 90% organic; organics: 90%	111.81	168	2.6	1.37	0.14
6711	706023	5578374	592	sed sample; dry crk on UA106D4; ok sample 40% organic, 30% pebble; organics: 40%	I.S.	I.S.	I.S.	I.S.	I.S.
6712	705949	5579947	244	sed; major crk on UA106D, taken ~15m up from road; riv L, ok sample, 40% pebble, no organic	156.05	94	3.4	4.05	0.09
6713	705732	5579716	300	sed sample; crk off side road off 106D4; good flow in crk; sample 5% org, 70% pebble; organics: 5%	I.S.	I.S.	I.S.	I.S.	I.S.

Silt Assay #	UTM East	UTM North	Elevation (meters)	Notes	Cu (ppm)	Ag (ppm)	Au (ppb)	Al (%)	S (%)
6714	705900	5579632	313	sed sample; crk off side road off UA106D4; no flow at sample location, small flow upstream & downstream from here; just up from old culvert under old FSR; ok sample 5% org, 30% pebble; organics: 5%	168.89	141	9.8	4.35	0.07
6715	705917	5579357	360	sed sample; crk on old FSR off 106D4; good flow, Riv L, taken under water just upstream from road (3m); 10% org, 20% pebble; organics: 10%	190.45	89	3	4.2	0.05
6716	705820	5579355	368	sed sample; small crk at end of old FSR off US106D4; taken under water in crk; ok sample 20% org, 20% pebble; organics: 20%	82.09	210	10.5	4.8	0.08
6717	706024	5579124	417	sed sample; crk on UA106D4; small crk, good flow; sample 10% org, 30% pebble; organics: 10%	97.27	58	1.3	4.51	0.04
6718	706135	5578524	536	sed sample; bad sample 100% organic; 15m up from road ("bornite lane"), see sample 6719 for better sample; organics: 100%	88.57	218	1.2	1.68	0.16
6719	706143	5578536	533	same crk as sample 6718 but better sample; close to road, 1m up from ditch at road; trickle of flow; small sample	148.35	92	2.9	3.47	0.04
6720	706244	5578317	592	sed sample; end of side road off UA106D4; no crk, just coming off hillside; ok sed sample	94.42	86	9.9	3.14	0.05
316-6722	705414	5577027	500	just at edge of creek; med coarse grained but some finer; colour: light brown; organics: 30%	101.5	<0.1	4.6	3.75	<0.05
323-6733	705733	5576891	588	taken from under water but mostly moss mat; colour: dark brown; organics: 80%	73.8	<0.1	1.8	3.41	0.1
D033-6746	704817	5580291	288	Kim Crk; 25m up from bridge, at edge of creek; colour: brownish grey; organics: 5%	108.8	<0.1	1.6	3.96	<0.05
D033-6747	704817	5580291	288	Kim Crk; 30m up from bridge; at edge of creek; colour: greyish; organics: 5%	116.9	<0.1	23.4	3.99	<0.05

Silt Assay #	UTM East	UTM North	Elevation (meters)	Notes	Cu (ppm)	Ag (ppm)	Au (ppb)	Al (%)	S (%)
D035-6748	703246	5581568	280	small crk on KC110, washed out road; 5m up from road; sample mid creek from under rocks; colour: brownish grey; organics: 20%	112.1	0.1	18.6	3.89	0.05
D044-16507	704112	5578299	503	sample 100% muck from in creek, below vegetation in creek; colour: dark brown; organics: 99%	33.6	0.2	4.6	2.12	0.12
D045-16508	703790	5578526	462	creek/bridge on KC130 just up from start of FSR; about 5m up from bridge; colour: med grey brown	94.6	<0.1	4.4	4.63	<0.05
D052-16524	704542	5578105	492	small creek on FSR off KC130; 5 spots, 5-10m up from road; colour: dark brown; organics: 75%	107	0.1	7.3	4.43	<0.05
D055-16529	706060	5578375	586	10m upstream from waterfall/road; under water muck; colour: dark brown; organics: 95%	233.6	0.3	5.2	1.62	0.12
D058-16538	706052	5578608	529	ditch on spur off UA106D4A; silt, location A, see drawing in notes; from ditch draining from 240°; organics: 30%	372.8	0.1	5.3	4.59	0.08
D058-16539	706052	5578608	529	silt, location B, see drawing in notes; 10m up real creek, 3 locations in creek; good silt; draining from 150°; organics: 20%	165.9	0.2	8	2.61	0.09
D058-16540	706052	5578608	529	ditch on spur off UA106D4A; base of small waterfall in ditch; drains from about 140°; organics: 5%	292.2	0.2	26.4	2.95	0.09
D058-16541	706052	5578608	529	in ditch along UA106D4A; 5m up from junction; drains from about 135°; organics: 5%	318.6	0.1	13.2	3.95	0.1



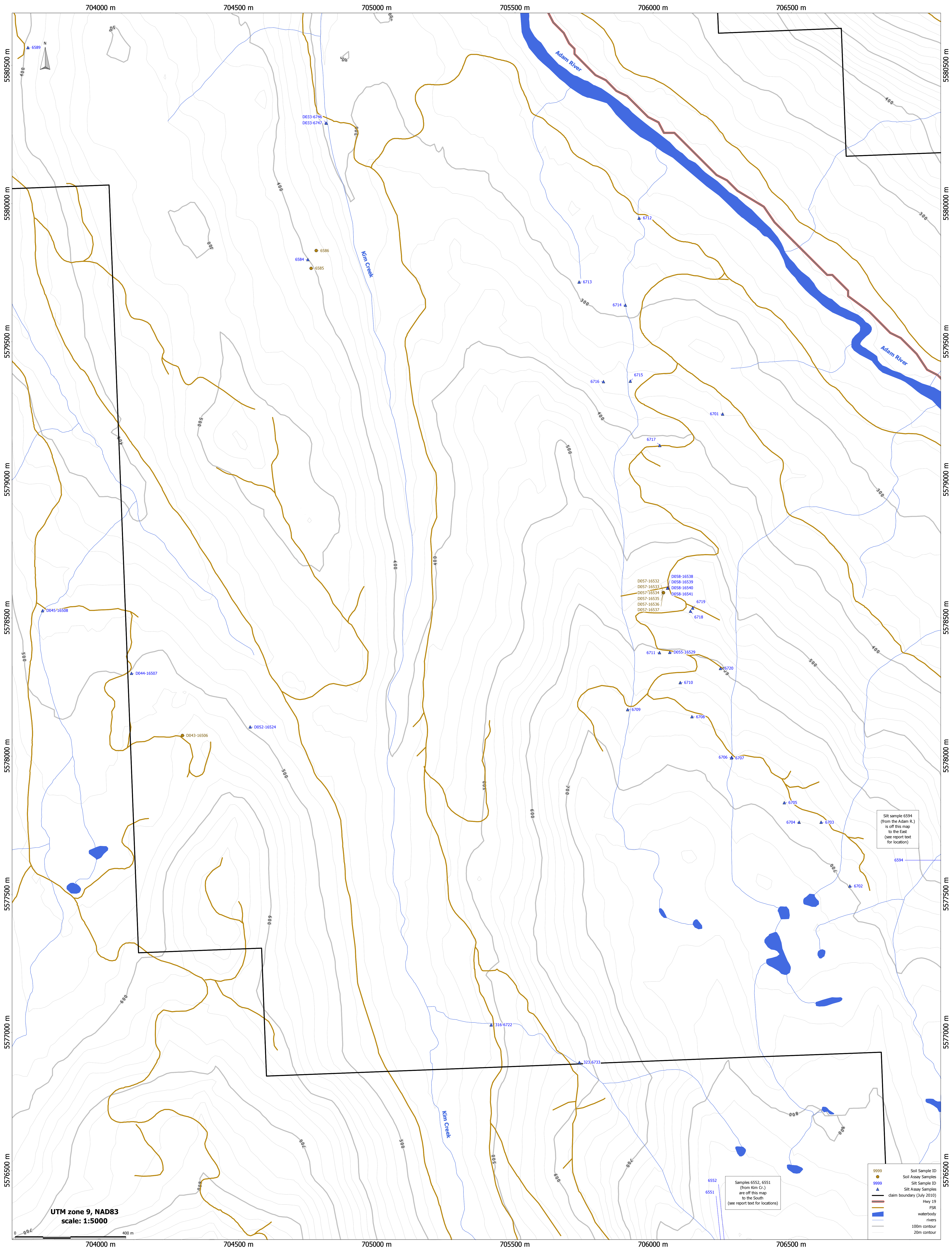
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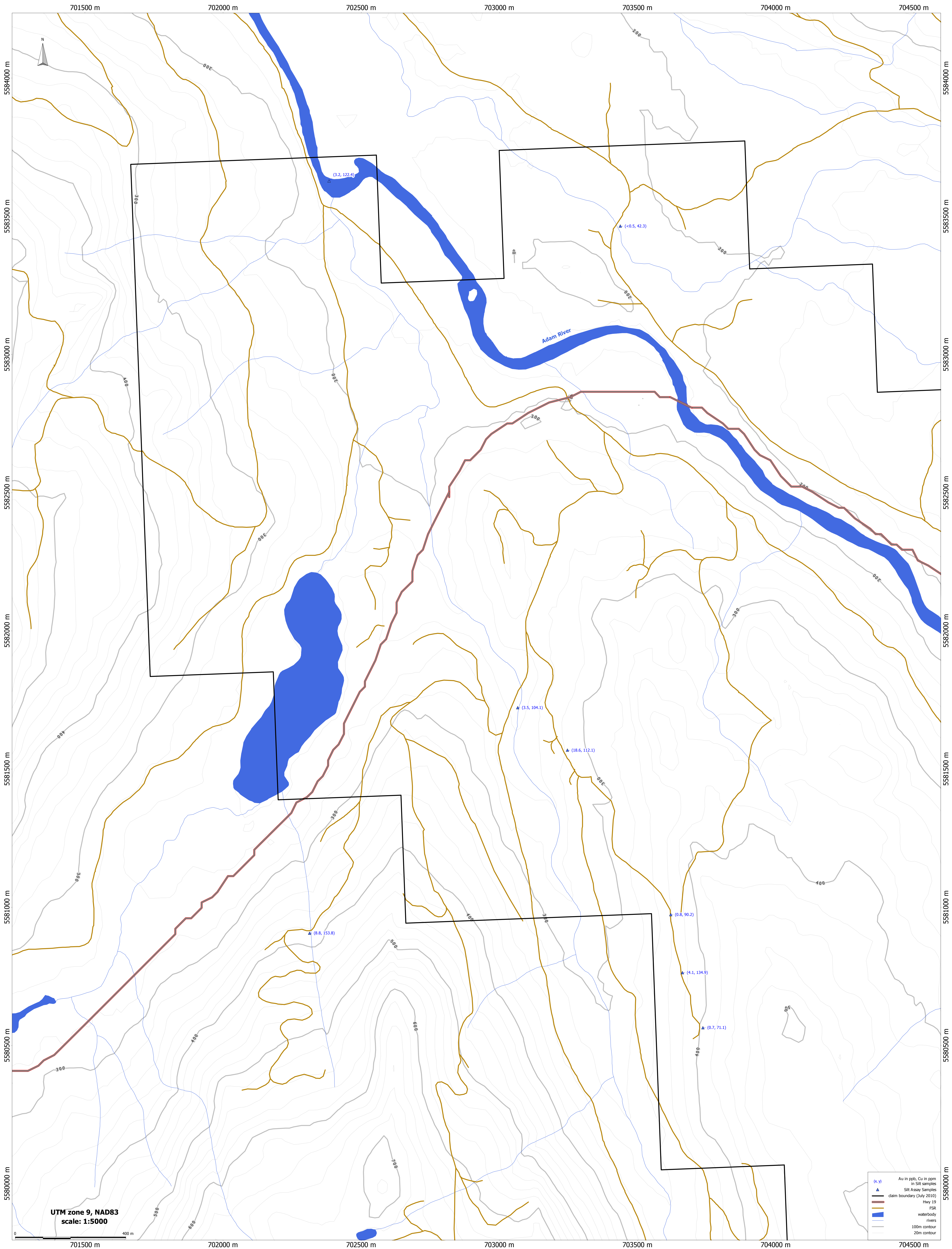
**Figure 9**  
**Location of**  
**Silt Samples in**  
**Northern Portion of Claims**



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**Figure 10**  
**Location of**  
**Soil & Silt Samples in**  
**Southern Portion of Claims**



Projection/Datum: UTM 9(N) NAD83  
scale: 1:5000

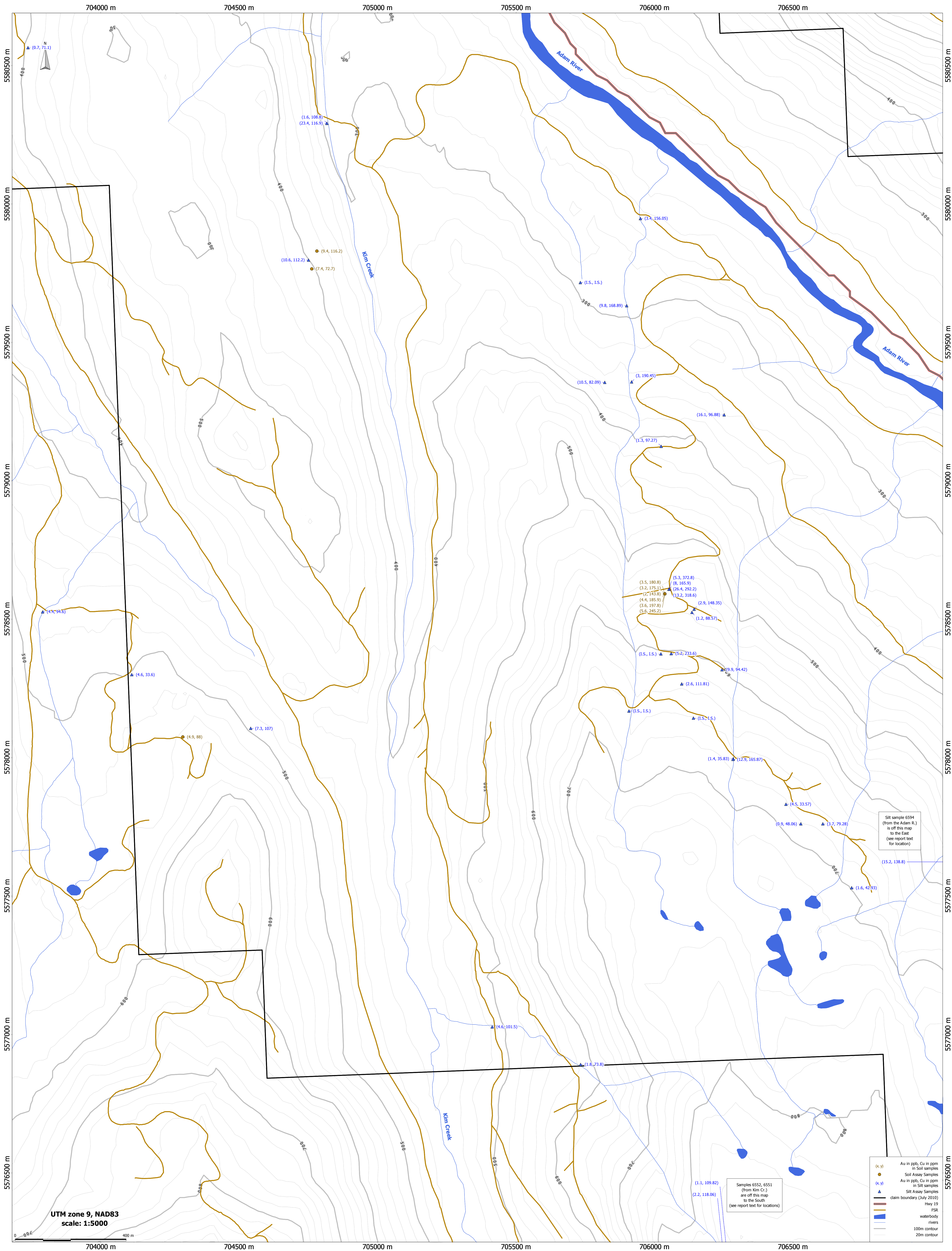


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**Figure 11**  
**Gold & Copper Assays:**  
**Silt Samples in**  
**Northern Portion of Claims**





Projection/Datum: UTM 9(N) NAD83  
scale: 1:5000



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**Figure 12  
Gold & Copper Assays:  
Soil & Silt Samples in  
Southern Portion of Claims**

## Appendix 2: List of Specimens with Whole Rock Assays

Rock Assay #	UTM East	UTM North	Elev. (m.)	Rock Name	SiO <sub>2</sub> %	TiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	MnO %	MgO %	CaO %	Na <sub>2</sub> O %	K <sub>2</sub> O %	P <sub>2</sub> O <sub>5</sub> %	LOI %	Sum %
6595	704812	5579412	452	tectonic breccia	63.15	0.59	15.46	5.82	0.11	2.21	4.75	3.48	2.33	0.13	1.7	99.77
6971	705471	5580516	251	dacite	62.75	0.56	15.91	6.05	0.12	2.33	4.14	3.54	2.05	0.14	2.2	99.75
6965	705864	5579348	358	dacite	62.05	0.57	15.46	5.68	0.11	2.17	4.82	3.51	2.16	0.12	3.2	99.81
6977	706144	5579452	344	andesite	58.81	0.71	16.35	7.33	0.14	2.84	5.45	3.36	1.91	0.17	2.7	99.79
6976	706461	5577916	671	andesite	55.9	0.87	16.18	8.73	0.16	3.34	7.12	3.15	0.93	0.19	3.2	99.74
6745	703184	5581570	279	basalt	49.3	2.26	13.12	15.32	0.21	5.89	7.16	4.14	0.81	0.21	1.3	99.74
6736	705249	5577583	474	basalt	48.94	1.75	14.23	12.7	0.2	7.05	11.85	2.07	0.26	0.17	0.5	99.76
6992	703654	5580738	367	basalt	48.75	2.13	12.55	14.59	0.2	3.67	15.78	0.07	0.02	0.18	1.8	99.8
6739	705178	5578237	428	basalt	48.1	1.3	14.15	12.04	0.15	7.52	12.31	2.24	0.22	0.12	1.6	99.8
6978	702985	5581672	258	basalt	48.1	1.66	14.35	13.24	0.2	6.64	10.5	2.38	0.26	0.17	2	99.49
6743	705170	5579112	389	basalt	47.69	2.39	13.13	15.95	0.21	5.66	8.74	3.07	1.29	0.25	1.3	99.72
6734	705390	5577234	507	basalt	47.48	1.31	14.36	11.21	0.14	6.95	12.03	3.4	0.13	0.12	2.6	99.81
6725	705387	5577121	533	basalt	47.4	1.32	14.3	11.36	0.15	7.59	10.47	3.56	0.14	0.13	3.3	99.8
6596	702983	5581643	244	basalt	47.02	2.86	12.47	17.64	0.25	5.35	8.59	3.15	0.09	0.28	2	99.7
16525	704616	5578041	496	amygdular feldspar - phytic basalt	45.15	2.26	13.06	15.17	0.21	6.74	10.51	2.56	0.02	0.2	3.7	99.6
6740	705178	5578237	428	skarn	42.38	0.99	14.27	11.44	0.21	4.56	22.37	0.14	<0.01	0.06	3.3	99.81
6991	702980	5581689	258	vein material	35.08	1.12	10.25	28.32	0.32	5.8	10.98	0.11	0.02	0.11	7.5	99.63
6985	702980	5581689	258	vein material	29.87	0.25	5.9	38.67	0.23	3.65	6.95	0.41	0.16	0.09	12.9	99.12

## **Appendix 3: Thin Section Descriptions**

Thin sections were prepared in different batches. They listed below in numerical order within the batches.

The batches are in sequence F, T, BD, DX, FA.

Waypoint M137r                      Assay number 6601                      Thin section number F01

Location  
    UTME 706237 ,                      UTMN 5578324,                      elev 592.2

Central south area

Rock type      dark altered amygdaloidal glomeroporphyritic basalt with scattered blebs of pyrite

Fizzes no      Magnetic      yes      Not Conductive                      Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 20% seriate to 3 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain pumpellyite and minor epidote and are locally replaced by albite and dotted with brown dust

Microlites 25% 0.7 mm laths albite replaced in part by dusty brown chlorite and epidote

Chlorite and epidote 15% form clear areas, possibly after previous mafic mineral.

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant near amygdaloes  
Few scattered blebs of chalcopyrite through rock.

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust (leucoxene).

Amygdale 7% up to 6 mm ovoids some filled with chlorite rims and fibrous pumpellyite with small grains of epidote scattered in core, others with chlorite rims and quartz with scattered grains of epidote inside.

##### Textures

Mainly intergranular to intersertal, amygdaloes typically have a 0.5 mm rim of finer and less crystalline material surrounding them

##### Structures

Massive, some amygdaloes are elongate ovoids.

##### Veins and or selvages

Thin vein of mainly quartz, minor chlorite or epidote where these crystals are cut by vein.  
Selvages around amygdaloes, more black dust, and less chlorite.

Waypoint M136R2 Assay number 6603 Thin section number F02  
Location  
UTME 706036 UTMN 5578512, elev 557

Rock type Folded black phyllonite with thin quartz layers/disrupted veins with sulphide (soft) chalcopyrite

Fizzes no Magnetic minor Not Conductive Density not done

#### Thin section analysis

##### Minerals

Chlorite 80% in several different habits, as fabric maker and host for other minerals

Epidote 10% as disrupted 0.5 mm wide vein fragments crossing foliation

Quartz 10% as disrupted fragments of cross cutting veins, also intergrown with chlorite in less green folia.

Black dust Trace, gives variation to various deformed folia

Sulphides Trace as thin layers in quartz veinlets

##### Textures

Foliated,

##### Structures

Folia are tightly folded, veins are disrupted

##### Veins and or selvages

Both quartz and epidote veins are disrupted and have partaken in some differential movement

##### Comment

This phyllonite is host for a high grade vein.

Waypoint M133r Assay number 6607 Thin section number F04

Location  
UTME 706198 UTMN 5578513, elev 540.1

Rock type amygdular porphyritic basalt, mineralized with copper sulphides and malachite stain

Fizzes no Magnetic minor Not Conductive Density 2.67

#### Thin section analysis

##### Minerals

Feldspar 10% 4 mm glomeroporphyritic, phenocrysts show relic twinning epidote chlorite and albite alteration, particularly in sites where glass inclusions may have been trapped early in the crystallization history

Microlites 37% 0.5 mm laths, of albite but locally showing core of dark dusty material

mafic 3% 1 mm patches of clear chlorite

ore widely distributed, in amygdales, and near opaque grains, much of this is seen to be bornite +/- chalcopyrite

ground-mass 15% very fine grained mixture of chlorite, leucoxene clay, albite and limonite

amygdales 35% quartz, both very fine grained and mm sized prisms, decussate chlorite, sheaf like epidote and rare (twin?) albite as well as opaque grains which are variably distributed

##### Textures

Porphyritic

##### Structures

Amygdular, amygdales have different fills, shapes also vary from round to irregular long shapes,

##### Vein

A 0.3 mm quartz calcite chlorite epidote vein cuts through thin section.

##### Comment

This is a rock with disseminated copper minerals, but besides having lots of amygdales, its not that different to many other rocks,

Waypoint m132r Assay number 6610 Thin section number F05

Location  
UTME 706277 UTMN ,5578462, elev 547.7

Rock type Beige coloured pervasively epidotized and silicified amygdaloidal basalt

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Epidote 75% replacing phenocrysts, microlites, most portions of amygdales, grain sizes vary from very fine grained in the matrix and fibrous, sheaf like in the amygdales.  
Quartz 15% fills in part of most amygdales  
Ground-mass 10% is dark almost opaque dust obscuring some of the finer epidote grains

Amygdales occupy about and are ovoid to complex in form.

##### Textures

epidote replacement textures are small grains growing across previous textures,  
Amygdales on the other hand are filled with large complex epidote sheaves and quartz.

##### Structures

Amygdaloidal, massive

##### Comment

This rock lies next to a deep creek which is thought to follow along a fault zone.

Waypoint M131R Assay number 6609 Thin section number F07

Location  
UTME 705332 UTMN 5579457, elev 414.5

Rock type dark Amygdular basalt, with section about ¼ in a single large amygdale and bornite flecks

Fizzes yes Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 5% 4 mm altered to albite, clinozoisite, calcite and minor chlorite

Microlites 55% 0.4 mm long laths, now dusty albite surrounding phenocrysts

Mafic areas 10% 0.6 mm prism shapes now replaced by clear chlorite, may have been

##### Pyroxene

opaques 5% 0.1 mm small specks

ground-mass very fine grained dark brown mass of calcite, chlorite, epidote

Amygdale 10% 5 mm ovoid to irregular shapes filled with chlorite

Main amygdale mass is mainly composed of calcite of several habits, clear mm sized areas to finely crystalline areas, dotted with epidote and small opaque grains

##### Textures

amygdaloidal, porphyritic

##### Structures

massive

##### Comment

The large structure is a part of a much larger layer of Amygdular fill. The larger amygdale has a different fill than the small amygdales in the main rock



Waypoint M128r Assay number 6614 Thin section number F08

Location  
UTME 705397, UTMN 5579210, elev 463

Central Area

Rock type pyrite vein in amygdaloidal porphyritic basalt

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 40% seriate to 5 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain much epidote and are locally replaced by albite and dotted with brown dust

Chlorite and epidote 15% replace grains of 1 mm pyroxene opaque grain clumps

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant near the replacement feature

Ground mass 30% a brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Amygdale trace 1 mm ovoid filled with fibrous epidote and euhedral quartz veins.

Pyrite 5% finely crystalline mass in center of slide, with inclusions of basalt fragments, a relic amygdale filled with quartz, clear albite laths and broken bits of altered feldspar..

##### Textures

Porphyritic, intergranular, sparingly amygdular

##### Structures

Pyrite vein replaces the mafic and opaque minerals in the ground-mass, Massive

##### Vein

The pyrite "vein" is more of a local planar replacement feature than a vein  
Small, thin veins with epidote cut all.

Waypoint K10209      Assay number      6615      Thin section number F09

Location  
    UTME 706075      UTMN ,5578591,      elev 536

Rock type      Crowded feldspar porphyry (dacite) with pink phenocrysts, on one end a small more mafic inclusion is finer grained and shows more mafic minerals

Fizzes no      Magnetic minor      Not Conductive      Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 50% plagioclase laths 4-7 mm, pink, seen to be altered to brownish dusted albite with epidote cores and calcite.

mafic phenocrysts 10% clear areas of chlorite with angular form, local prismatic shapes, near opaque grains

Two flakes of what may have been biotite? Now chlorite

opaques 3% anhedral grains 0.2 mm in size

Ground-mass 32% a mixture of dusty twinned albite, quartz and clear potash feldspar intergrowth, set with small calcite and composite crystals of epidote

##### Textures

Porphyritic

##### Structures

Massive

Waypoint M124r Assay number 6618 Thin section number F10

Location  
UTME 706422, UTMN 5577948, elev 658.1

Southeast sector

Rock type Fresh fine grained black basalt/diabase

Fizzes no Magnetic yes Not Conductive Density 2.91

Thin section analysis

Minerals

Feldspar phenocrysts 20% seriate to 1 cm laths, locally glomeroporphyritic, twinning preserved, crystals are have inclined extinction of albite. They show no zoning.

Microlites 25% 0.5 mm laths albite, locally stellate habit

Pyroxene 25% 1 mm prismatic pyroxene also in clumps with opaque grains

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant pyroxenes

Ground mass 10% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Textures

Mainly intergranular

Structures

Massive,

Waypoint M123r Assay number 6619 Thin section number F11

Location  
UTME 706432, UTMN 5577936, elev 662

south east sector

Rock type altered green grey amygdaloidal glomeroporphyritic basalt

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 20% seriate to 2 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain epidote and are locally replaced by albite and dotted with brown dust

Microlites 25% 0.7 mm laths albite replaced in part by chlorite and epidote

Chlorite and pumpellyite and some epidote 15% replace grains of 1 mm pyroxene?

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant near the replacement features

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, pumpellyite, epidote and fine brown dust

Amygdales 35% up to 1 cm elongate ovoids some filled with quartz and fibrous pumpellyite, others with quartz and epidote fill and chlorite rims and a third quartz free (chlorite-epidote+/- pumpellyite type).

##### Textures

Mainly intergranular to intersertal, amygdales typically have a 0.5 mm rim of finer and less crystalline material surrounding them

##### Structures

Massive, some amygdales are elongate ovoids.

##### Veins and or selvages

Thin quartz veins cut mass. Where quartz vein intersects an amygdale a quartz results

Waypoint M122r Assay number 6620 Thin section number F12

Location  
UTME 706462, UTMN 5577915, elev 665.4

Central south area

Rock type altered grey andesite porphyry

Fizzes yes Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 45% seriate to 2 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain epidote and minor pumpellyite and are locally replaced by albite and dotted with brown dust

Chlorite pumpellyite and epidote 15% replace 1 mm prisms of pyroxene?

Opaque grains 5% 0.5 mm dotted in ground-mass, more abundant near the replacement feature

Ground mass 35% a very dark brown very finely crystalline combination of quartz, albite, potash feldspar?, calcite, chlorite, epidote and fine brown dust

##### Textures

Mainly porphyritic and overgrown by alteration minerals

##### Structures

Massive,

##### Veins and or selvages

Quartz veins about 0.1 mm across.

Waypoint M124r Assay number 6621 Thin section number F13

Location  
UTME 706422 , UTMN 5577948 , elev 658.1

southeast south area

Rock type beige coloured altered glomeroporphyritic andesite

Fizzes yes Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 40% seriate to 2 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain much epidote and are locally replaced by albite and dotted with brown dust

Microlites 25% seriate to 0.7 mm laths albite replaced in part by chlorite and epidote. The microlites are very small but very numerous

Opaque grains 10% 0.5 mm dotted in ground-mass,

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

##### Textures

Mainly porphyritic, some areas of microlites could be termed pilotaxitic

##### Structures

Massive,

##### Comment

Texture more like a feldspar porphyry than a basalt and there is a preponderance of Feldspar in rock. While in the field, the notion that this might be a porphyry dyke was never raised. Must check contacts.

Waypoint M120r Assay number 6622 Thin section number F14

Location  
UTME 706562, UTMN 5577888, elev 677

Central south area

Rock type altered amygdaloidal glomeroporphyritic basalt

Fizzes no Magnetic yes Not Conductive Density 2.79

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 30% seriate to 5 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain much epidote and are locally replaced by albite and dotted with brown dust

Microlites 15% 0.7 mm laths albite replaced in part by chlorite and epidote

Chlorite and epidote 10% variable mm sized patches may be replace grains of pyroxene?

Opaque grains 5% 0.5 mm dotted in ground-mass, more abundant near the replacement feature

Ground mass 20% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

chlorite rims Amygdale 20% up to 3 mm ovoids and irregular shaped; some filled with chlorite rims and blocky epidote, some of which is zoned, other amygdales are filled with and quartz with scattered grains of epidote inside.

##### Textures

Mainly amygdaloidal and intersertal,

##### Structures

Massive, some amygdales are elongate ovoids.

#### Comment

This would be a texture associated with a top part of a pahoehoe flow

Waypoint M118 Assay number 6623 Thin section number F15

Location  
UTME 706774, UTMN 5577553, elev 687.3

Southeastern sector

Rock type Quartz vein with copper mineralization cutting grey basalt, malachite stain

Fizzes no Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 10% seriate to 2 mm laths, local glomeroporphyritic, contain epidote and are locally replaced by albite

Microlites 25% 0.7 mm laths albite replaced in part by chlorite and epidote

Chlorite, pumpellyite and epidote 15% replace grains of pyroxene?

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant near pumpellyite

Ground mass 40% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Amygdale trace, up to 1 mm ovoids some with quartz rims and filled with chlorite

##### Textures

Mainly intergranular to intersertal,

##### Structures

Massive

##### Veins and or selvages

Quartz vein with a core of sulphide (mainly chalcopyrite) is bordered by and includes acicular pumpellyite, chlorite, epidote and quartz  
several subparallel veins with only quartz



Waypoint M117 Assay number 6624 Thin section number F16

Location  
UTME 706081, UTMN 5578285, elev 620.6

Central south area

Rock type contact of an andesite porphyry and an altered broken amygdaloidal glomeroporphyritic basalt, unfortunately the thin section does not include the 'andesite'

Fizzes no Magnetic yes Not Conductive Density 2.68

Thin section analysis

#### Minerals

Feldspar phenocrysts 20% seriate to 3 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain epidote and are locally replaced by albite and dotted with brown dust

Microlites 25% 0.7 mm laths albite replaced in part by chlorite and epidote

Chlorite and epidote 15% replace grains of 1 mm pyroxene? opaque grain clumps

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant near the replacement feature

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Amygdales 10% up to 3 mm ovoids some filled with chlorite rims and fibrous epidote

#### Textures

Mainly intersertal

#### Structures

Massive, some amygdales are elongate ovoids. fragments

#### Comment

The contact with dyke has not had much effect on texture

Waypoint M117r Assay number 6625 Thin section number F17

Location  
UTME 706071 , UTMN 5578293 , elev 622.1

Central south area

Rock type altered dark amygdaloidal glomeroporphyritic basalt with a 5 mm edge of a dyke, showing irregular contact and cm wide contact effect in basalt.

Fizzes yes Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 20% seriate to 2 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain epidote and are locally replaced by albite and dotted with calcite brown dust

Microlites 25% 0.7 mm laths albite replaced in part by dusty calcite, chlorite and epidote

Chlorite, calcite and epidote 15% form clear areas free of brown clay dust

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant near amygdales

Ground mass 30% a very dark brown very finely crystalline combination of calcite, albite, chlorite, epidote and fine brown dust

Amygdale 10% up to 2 mm irregularly shaped ovoids some filled with calcite and having chlorite rims and local fibrous epidote, others have chlorite and epidote with small cores of sulphide

##### Textures

Mainly intergranular to intersertal, amygdales typically have a 0.5 mm rim of finer and less crystalline material surrounding them

##### Structures

Massive, some amygdales are elongate ovoids.

##### Veins and or selvages

Selvages around amygdales, more black dust, and less chlorite.

##### Vein

Contact effect seems to be limited to enhancement of opaques in cm wide rim

Waypoint M115R      Assay number      6628      Thin section number F18

Location  
UTME 705203      UTMN 5578228      elev 435.3

Rock type Dark andesite? (or very feldspathic basalt/basaltic andesite) intrusive unit

Fizzes no      Magnetic minor      Not Conductive      Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 10% 4 mm glomeroporphyritic showing twinning in albite with brownish stain,

Feldspar Microlites 20% seriate to 1 mm, small feldspar laths in a felty mass, mainly clear, but affected by brown clay stain, local saussurite rimmed by albite

Mafic 10% 1 mm subhedral prisms of twinned high relief, second order pyroxene, local patches clear patches of chlorite, probably marks an altered mafic crystal

Opaques 5% small 0.2 mm anhedral grains of magnetite spotted in ground-mass largely surrounded by brown cloudy clay

Sphene Trace 0.1 mm, subhedral in ground mass.

Ground-mass 35% dusty brown to black quartzofeldspathic? material with patches of clear chlorite

Amygdales 20% seriate to 3 mm, irregular shapes, part of thin section seems have a texture similar to a like a sponge,

##### Textures

Texture is intersertal, with Feldspar and small pyroxene crystals set in the dark ground-mass

##### Structures

Seriatly amygdaloidal!, Massive

##### Veins

Chlorite epidote quartz in lenses in shear veins

Waypoint M113r Assay number 6630 Thin section number F20

Location  
UTME 705119 UTMN ,5580484 elev 287.7

Rock type Fine grained diabase

Fizzes Magnetic no Not Conductive Density not done

Thin section analysis

Minerals

Microlites 45% of plagioclase, twinned and lightly zoned, some clusters of mainly plagioclase

Pyroxene 25% 2 mm fresh, slightly pleochroic crystals

Mafic mineral 20% 2 mm laths replaced by chlorite and minor actinolite

Oxides 5% 0.5 mm subhedral grains distributed in joins between crystals, not magnetic, could be ilmenite rich.

Textures

Ophitic to subophitic

Structures

massive

Comment

Very fresh 2 "pyroxene" Diabase!!

Waypoint M110r2 Assay number 6632 Thin section number F21

Location  
UTME 705189, UTMN 5580236, elev 347.8

Central Area

Rock type porphyry with two different types of mafic phenocrysts as well as larger plagioclase (dacite)

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 25% 4 mm laths, only partially altered, twinning and zoning preserved (andesine to albite), dotted with dusty brown clay

Mafic phenocryst A 5% 2 mm laths mainly replaced by chlorite with minor "pyroxene" cores

Mafic phenocryst B 5% 1 mm small prismatic grains of mainly preserved pyroxene and only locally replaced by chlorite

Opaque grains 3% 0.5 mm dotted many near mafic minerals.

Ground mass 62% a brown very finely crystalline combination of low relief, low birefringent quartzofeldspathic intergrowths and fine brown dust obscuring most of their optical properties.

##### Textures

Porphyritic

##### Structures

Massive

##### Veins and or selvages

Thin 0.2 mm veinlet filled with finely granular quartz and thin plates of epidote cuts through minerals with a minimum of offset

Waypoint M110rr Assay number 6633 Thin section number F22

UTME 705189 UTMN 5580236, elev 347.8

central area

Rock type Amygdular fine grained altered basalt with scattered chalcopryrite flecks, one edge against a pink vein

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 5% 0.5 mm altered to dusty albite with local patches altered to pumpellyite, chlorite, or epidote, much preserved twinning,

Feldspar, 40% 0.1 mm microlites, local stellate shape altered to dusty albite

Opaque 25% comprise dusty areas of partially altered pyroxene (amphibole alteration) and leucoxene with opaque areas and granules of magnetite, and more scarce, chalcopryrite.

Interstitial ground-mass 20% is a mix of a higher relief darker chlorite set in lighter green chlorite, epidote, local pumpellyite, albite and quartz spotted with dust.

Amygdales 10% 1cm ovoids filled with chlorite and locally contain epidote sheaves and specks of chalcopryrite.

##### Textures

Intergranular to intersertal, microporphyritic

##### Structures

Massive

##### Veins

small thin 0.03 mm irregular sided veins with epidote and chlorite

#### Comment

Another basalt with chalcopryrite disseminated in matrix and amygdales

Waypoint M107r Assay number 6634 Thin section number F23

Location  
UTME 705241, UTMN 5580017, elev 331.9  
central area

Rock type Amygdular fine grained altered basalt with pumpellyite

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 5% altered to dusty albite with local patches altered to pumpellyite, much preserved twinning,  
Feldspar, 40% microlites, local stellate shape altered to dusty albite  
Opaque 20% comprise dusty opaque areas and granules of magnetite, and leucoxene  
Interstitial ground-mass 20% is a mix of chlorite, epidote, albite and quartz spotted with dust.  
Amygdales 10% 1cm ovoid filled epidote sheaves and rimmed by pumpellyite.

##### Textures

Intergranular to intersertal, microporphyritic

##### Structures

massive

Waypoint M105r Assay number 6635 Thin section number F24

Location  
UTME 705241, UTMN 5580017, elev 331.9  
central area

Rock type Amygdular fine grained altered basalt with pumpellyite

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 5% altered to dusty albite with local patches altered to pumpellyite, much preserved twinning,  
Feldspar, 40% microlites, local stellate shape altered to dusty albite  
Opaque 20% comprise dusty opaque areas and granules of magnetite, and leucoxene  
Interstitial ground-mass 20% is a mix of chlorite, epidote, albite and quartz spotted with dust.  
Amygdales 10% 1cm ovoid filled epidote sheaves and rimmed by pumpellyite.

##### Textures

Intergranular to intersertal, microporphyritic

##### Structures

massive



Waypoint M103r Assay number 6637 Thin section number F25

Location  
UTME 705173, UTMN 5580192, elev 316.7

Central area

Rock type Crowded feldspar porphyry (dacite) with pink phenocrysts, on one end a small more mafic inclusion is finer grained and shows more mafic minerals

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis

Minerals

Feldspar phenocrysts 60% plagioclase laths 4-7 mm, pink, seen to be altered to brownish dusted albite with epidote cores.  
mafic phenocrysts 5% clear areas of chlorite with angular form, local prismatic shapes, near opaque grains  
opaques 3% anhedral grains 0.2 mm in size  
Ground-mass 32% a mixture of dusty twinned albite, quartz and clear potash feldspar intergrowth, set with small composite crystals of epidote

Textures

Porphyritic

Structures

Massive

Waypoint 119r Assay number KR10-119 Thin section number F26

Location  
UTME 706787, UTMN 5577516, elev 687.6  
south east sector

Rock type altered amygdaloidal basalt with thin pink vein

Fizzes no Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 10% seriate to 2 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain epidote and are locally replaced by albite and dotted with brown dust

Microlites 25% 0.7 mm laths albite replaced in part by chlorite and epidote

Chlorite and epidote 15% replace grains of 1 mm pyroxene? opaque grain clumps

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant near the replacement feature

Sphene trace one grain was identified.

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Amygdale 10% up to 3 mm ovoids some filled with quartz rims and chlorite interiors, some with chlorite rims and scattered grains of epidote inside. And several large ones have pumpellyite and quartz with cores of epidote.

##### Textures

Mainly intergranular to intersertal, amygdales typically have a 0.5 mm rim of finer and less crystalline material surrounding them

##### Structures

Massive, some amygdales are ovoids.

##### Veins and or selvages

Vein 5mm thick, of pink vein which consist of a rim of epidote, and thin layer of cryptocrystalline quartz and minor potash feldspar, and a core of crowded flat prisms of dusty albite.

##### Comment

The presence of different minerals in amygdales indicate a very low water/rock ratio at time of alteration.

Waypoint M133r Assay number Thin section number F28

Location  
UTME 706198 UTMN ,5578513 elev 450.1

Rock type dark Amygdular basalt with bornite in amygdales

Fizzes yes Magnetic no Not Conductive Density not done

#### Thin section analysis PTS

##### Minerals

Feldspar phenocrysts 5% 4 mm altered to albite, clinozoisite, calcite and minor chlorite  
Microlites 55% 0.4 mm long laths, now dusty albite surrounding phenocrysts  
opaques 5% 0.1 mm small specks  
ground-mass very fine grained dark brown mass of epidote, brown dust and chlorite,  
Amygdale 10% 5 mm ovoid to irregular shapes filled with chlorite, epidote, and quartz

Complex amygdales contain quartz, pale epidote, chlorite , local calcite and sulphides (both chalcopyrite and bornite)

##### Textures

The abundance of very small amygdales make the thin section look like a chlorite filled sponge. Some of the amygdales have opaque blebs in the core, and some of this material is seen to be bornite and or chalcopyrite.

##### Structures

massive, but differentially altered adjacent to amygdales

##### Comment

1-The rock is mineralized, and the complex shaped and larger amygdales are one site of easily noted opaque grains some of which are seen to be bornite and chalcopyrite. At higher magnifications the sulphide grains continue to be abundant although their size diminishes. The copper minerals are truly disseminated at all scales.

2-the association of epidote, chlorite, calcite, quartz is a well known propylitic alteration, which here is clearly linked to the bornite and/or chalcopyrite mineralization

Waypoint 325 Assay number 6734 Thin section number T08

Location  
UTME 705390 UTMN ,5577234, elev 506.6

Rock type amygdaloidal porphyritic basalt

Fizzes no Magnetic minor Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar 15% 2 mm glomeroporphyritic, often with attached fresh pyroxene, shows relic twinning, altered to albite, dusty brown clay and local chlorite

Microlites 40% of small albite laths in felted texture

Pyroxene 10% broken aggregates of small squat prisms of fresh pyroxene, mildly pleochroic, rarely twinned and as very fine grains between microlites

Ore 5%% very small anhedral grains

chlorite 15% very little ground-mass between grains

Amygdales 15% chlorite filled

##### Textures

intergranular

##### Structures

massive

Waypoint 326-6736 Assay number 6736 Thin section number T09

Location  
UTME 705249 UTMN 5577583 elev 491.4

Rock type Aphanitic feldspar rich basalt/diabase

Fizzes no Magnetic minor Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar 15% 2 mm glomeroporphyritic, often with attached fresh pyroxene, twinned, shows normal zoning range from andesine to albite, largely fresh

Microlites 35% of small albite laths in felted texture

pyroxene 10% small squat prisms of fresh pyroxene, mildly pleochroic, rarely twinned mafic, also as very fine grains between microlites

ore 10% very small anhedral grains

very little ground-mass between grains

##### Textures

pliotaxitic and intergranular

##### Structures

massive

#### Comment

The finely felted texture would seem to indicate a rapidly cooled magma, some sort of contact rock, of a sill or dyke perhaps

This is freshest basalt I have seen to date

Waypoint 328-6738 Assay number 6738 Thin section number T11

Location  
UTME 705183 UTMN ,5578235, elev 440.7

Rock type Pinkish coloured fine grained crowded feldspar porphyry/granodiorite

Fizzes yes Magnetic minor Not Conductive Density not done

#### Thin section analysis

##### Minerals

Plagioclase 30% 3 mm laths mainly agglutinated deep brown clay, clinozoisite and calcite alteration

Other feldspar 20% 2 mm less? brown clay and calcite alteration, difference obvious in hand specimen, not in thin section

Mafic 20% 2 mm single and agglutinated laths, locally altered to mainly chlorite and local green low pleochroism and birefringence amphibole (possibly altered hornblende)

Quartzofeldspathic 15% 1 mm patches very fine grained, carbonated and brown clay altered

Opagues 4% 0.2 mm subhedral-euhedral grains in ground-mass, magnetite

##### Textures

Fine grained granitic/crowded porphyry textures, quartzofeldspathic areas fill space between crowded lath, and is locally carbonated

##### Structures

Massive

##### Comment

This type of alteration is propylitic and shows that propylitic alteration is an event associated with or post dating the dykes and hence likely of mid-Jurassic in age, and thus distinct from the regional low grade metamorphism.

Waypoint D028      Assay number      6739      Thin section number T12

Location  
UTME 7051878      UTMN ,5578237,      elev 428

Rock type Amygdaloidal feldspar phyric basalt

Fizzes vein yes      Magnetic minor      Not Conductive      Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 25% seriate to 2 mm, locally glomerophytic, altered along abundant cleavage dictated veins of albite, relic feldspar higher relief, probably andesine.  
Microlites 47% small feldspar laths in a felty mass, mainly clear, but affected by brown clay stain  
Pyroxene microphenocrysts, 3% 0.3 mm euhedral prisms, mildly pleochroic and second order birefringence, large extinction angle, fresh, rimmed by a very thin lower relief lower extinction angle pyroxene, this outer rim is locally transformed to chlorite  
Opagues 5% small 0.2 mm anhedral grains of magnetite spotted in ground-mass largely surrounded by brown cloudy clay  
Ground-mass 20% dusty brown quartzofeldspathic material  
Amygdales Trace 2 mm ovoids with a chlorite fill, within a chlorite rimmed edge (atoll structure). clear

##### Textures

Microlites show pilotaxitic texture

##### Structures

Massive

##### Veins and or selvages

Calcite vein 3 mm wide, planar sides, selvage shows some carbonation of host rock

Waypoint D028 Assay number 6740 Thin section number T13

Location  
UTME ,705178, UTMN 5578237, elev 428

Quarry

Rock type very beige and altered basalt? with green blocky amygdale fill.

Fizzes no Magnetic NOT Not Conductive Density not done

Thin section analysis

#### Minerals

Feldspar phenocrysts 15%, Plagioclase, typically up to 1.5 mm, crystals show relic glomeroporphyritic textures. Plagioclase probably albite, and clay /saussuritization affects most of crystals. Others seem to be replaced largely by chlorite  
Microlites, 15%, 0.5mm, plagioclase, also mainly saussurite/epidote with minor albite alteration, small prisms. set in a  
Ground-mass, 15%, aphanitic and consisting of almost opaque clay and leucoxene and  
Fine grained opaque "ore" (Magnetite).  
Amygdales, 55% up to 5 cm in globular coalesced ovoid shapes 10%, up to 5 mm in irregular shapes filled with coarse radiating sheaves of pale epidote and scattered albite prisms in the main body of amygdale

#### Textures

Glomeroporphyritic, intersertal texture in ground-mass

#### Structures

Mostly amygdales in pervasively recrystallized and altered rock

#### Veins and or selvages

Gash veins 0.2 mm wide with calcite cut rocks

#### Comment

This rock is very low in Cu compared to most basalts. Could be due to dilution effects.



Waypoint D28 Assay number 6741 Thin section number T14

Location  
UTME 705178, UTMN 5578237, elev 428

Rock type malachite stained pervasively altered (grey beige-silicified?) andesite dyke?

Fizzes no Magnetic NM Not Conductive Density not done

#### Thin section analysis

##### Minerals

Mafic "phenocryst" 4 mm, scarce, 3%, replaced by chlorite with minor epidote and quartz

Ground-mass, 90%, mixture of small idiomorphic epidote crystals (0.2 mm), local opaque spots set in a finely intergrown feldspar-quartz matrix.

##### Textures

Pervasively recrystallized with a chlorite pseudomorph after hornblende?

##### Structures

Very recrystallized massive rock.

Waypoint D029-6742 Assay number 6742 Thin section number T15

Location  
UTME 705210 , UTMN 5578757, elev 406

Central Area

Rock type Black feldspar phyric basalt

Fizzes no Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 30% seriate to 5 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, replaced by patches of chlorite and contain epidote and are locally replaced by albite and dotted with brown dust

Microlites 20% 0.5 mm or less, laths to stellate grains mainly albite but locally replaced by chlorite

Pyroxene 15% 1 mm prismatic grains clumped with feldspars and opaque grains

Opaque grains 5% 0.5 mm dotted in ground-mass, more abundant near the replacement feature

Ground mass 30% a brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

##### Texture

Porphyritic

##### Structures

Massive

Waypoint D031-6743

Assay number 6743

Thin section number T16

Location

UTME 705170, UTMN 5579112, elev 388.9

Central Area

Rock type Black Porphyritic basalt

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis

Minerals

Feldspar phenocrysts 30% seriate to 5 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, replaced by patches of chlorite and contain epidote and are locally replaced by albite and dotted with brown dust

Microlites 20% 0.5 mm or less, laths to intergrown crystals mainly albite but locally replaced by chlorite

Pyroxene 15% 1 mm prismatic grains adjacent to feldspars and opaque grains

Opaque grains 10% 0.5 mm dotted in ground-mass,

Ground mass 25% a brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Texture

Porphyritic

Structures

Massive

Waypoint D032-6744 Assay number 6744 Thin section number T17

Location

UTME 705122, UTMN 5579276, elev 381.4

Five sections come from same major vein 16530 (T41), 16527 (T40), 16526 (T39), 6744 (T17), M234 (DX17) Central south area

Rock type altered amygdaloidal glomeroporphyritic basalt

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis

Minerals

Feldspar phenocrysts 20% seriate to 2 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain epidote and are locally replaced by albite and dotted with brown dust

Microlites 25% 0.7 mm laths albite replaced in part by chlorite and epidote

Chlorite and epidote 15% replace grains of 1 mm pyroxene? opaque grain clumps

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant near the replacement feature

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Amygdales 10% up to 3 mm ovoids some filled with chlorite rims and fibrous epidote, others with chlorite rims and quartz with scattered grains of epidote inside.

Textures

Mainly intergranular to intersertal, amygdales typically have a 0.5 mm rim of finer and less crystalline material surrounding them

Structures

Massive, some amygdales are elongate ovoids.

Veins and or selvages

Selvages around amygdales, more black dust, and less chlorite.

Waypoint D034-6745 Assay number 6745 Thin section number T18

Location  
UTME 703184, UTMN 5581570, elev 279.2

Northwest region

Rock type Edge of a pink vein and interaction with host micro-porphyritic basalt

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis (polished section)

Minerals

Plagioclase 55% mainly as microlites with stellate habit, mainly albite and scarce epidote and some brownish clay.

Mafics 20% small grains, apparently partially degraded pyroxene grains,  
Clear chlorite mm sized patches 20%

Magnetite and dusty leucoxene 15% as grains and as a impenetrable opaque veil  
Apatite trace

Vein Epidote 10% as small grains decreasing in abundance over a cm.  
Albite in vein, trace relic twinning,

Textures

Intergranular, fine grain size, possibly a diabase or a center of a flow

Structures

Massive

Waypoint D038 Assay number 16501 Thin section number T21

Location  
UTME 704109, UTMN 5578403, elev 499.6

Rock type "Fresh" Core of a massive basalt flow/part of a mafic sill, apparently affected by subgreenschist metamorphism

Fizzes no Magnetic not Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar laths 50%, 1 mm laths, altered to albite but with relic twinning, local clay and pumpellyite patches

Pyroxene grains 15% intergranular brownish in colour very lightly pleochroic, 2 nd order birefringence,

Chlorite 15% clear, green, pseudomorphing another mafic mineral

Opaque 10% grains and dust in interstices

Epidote clots in 0.5 mm grains sprinkled through the rock.

##### Textures

Intergranular

##### Structures

Massive

Waypoint D040

Assay number 16502

Thin section number T22

Location

UTME 704041,

UTMN 5578159,

elev 511.2

Rock type Andesite dyke crowded feldspar phenocrysts to 1 cm, also black prisms

Fizzes yes Magnetic not Not Conductive Density not done

Thin section analysis

Minerals

Plagioclase Phenocrysts 40%, seriate to 1 cm, probably albite (low -relief) with largely altered to clay and patches of pumpellyite but still showing twinning.

Mafic phenocrysts 1 mm grains of intensely crackled pyroxene with local development of pumpellyite and chlorite

Ground-mass

Opaque grains with calcite intergrown

Quartzofeldspathic ground-mass stained by brownish hue, very finely crystalline intergrowth with local clear chlorite and calcite patches

Textures

Porphyritic

Structures

Massive

Waypoint D041 Assay number 16503 Thin section number T23

Location  
UTME 704109, UTMN 5578138, elev 531.6

Rock type pervasively propylitized with pink alteration amygdular basalt, rel fresh feldspar

Fizzes no Magnetic not Not Conductive Density not done

#### Thin section analysis

##### Minerals

Plagioclase, 45% typically up to 1.0 mm, prismatic crystals are randomly oriented, relic twinning and evidence of zoned crystals can be seen. Plagioclase probably albite, and dotted with pumpellyite and minor clay /saussurite.  
Chlorite pseudomorph of prismatic pyroxene? Scarce, About 1 mm, dotted with pumpellyite  
Ground-mass, 45%, nearly opaque clay and leucoxene with abundant small crystals of epidote in mesostasis  
Patches of Fine grained opaque "ore" (Magnetite) and almost opaque clay and leucoxene  
Vesicle; One 1.5 cm ovoid vesicle in thin section, composed of epidote and quartz, with a chlorite rim, also small less notable amygdales with mainly chlorite and local pumpellyite fill.

##### Textures

Intersertal texture

##### Structures

Massive

##### Veins

sparse 0.01 mm thin veins cut rock



Waypoint D042 Assay number 16504 Thin section number T24

Location  
UTME 704377, UTMN 5578021, elev 555.3

Rock type pervasively altered propylitic "pink" vein

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis

Vein Minerals

Quartz, usual habit, sometimes strained extinction.  
Albite low relief, low Birefringent, with scarce twinned areas, and dotted with tiny specks of limonite or hematite dust  
Potash feldspar white low relief low birefringent intergrown with albite and epidote  
pale epidote radiating mm sized sprays of pleochroic (pale yellow brown to very pale greenish), birefringent (2<sup>nd</sup> order) positive relief compared to most minerals, with low inclined extinction in vein fill

Textures

Vein fill crystalline in section but not at hand specimen level

Structures

massive vein

Veins and or selvages\

Vein has a narrow selvage shown on thin section block

Waypoint D046 Assay number 16509 Thin section number T25

Location  
UTME 704438, UTMN 5577626, elev 657.2,

Rock type veined, variably propylitized and chloritized basalt/diabase no amygdales no feldspar  
phenocrysts few thin calcite veins

Fizzes no Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Plagioclase, 45% typically up to 1.0 mm, prismatic crystals are randomly oriented, relic twinning can be seen. Plagioclase probably albite, and minor clay /saussuritization affects most of crystals.

Pyroxene 35% grains showing pleochroism (pink-green) are found among the plagioclase as rounded multiple crystal grains,

Ground-mass, 40%, chlorite, with a darker colour rimming the mesostasis area, and a lighter coloured chlorite filling the interstices gives way to local patches of aphanitic and consisting of almost opaque clay and leucoxene and

Patches of Fine grained opaque "ore" (Magnetite) and almost opaque clay and leucoxene

##### Textures

Intergranular texture to subophitic

##### Structures

Massive

#### Comment

This is type of texture expected in a thickened inflated pahoehoe flow. It could also be a fine grained gabbro sill.

Waypoint D047 Assay number 16510 Thin section number T26

Location  
UTME 704378 UTMN 5577560 elev 659.6

Rock type hematite stained fresh amygdular (10%, cc) feldspar phyrlic (5% small) and chlorite amygdales

Fizzes no Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 20%, Plagioclase, typically up to 1.5 mm, crystals glomeroporphyritic relic twinning can be seen. Plagioclase probably albite, and clay /saussuritization affects most of crystals. Some of the feldspars show stellate agglutination.

Microlites, 20%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.05 mm set in a

Ground-mass, 20%, aphanitic and consisting of almost opaque clay and leucoxene and

Fine grained opaque "ore" (Magnetite).

Amygdales, 30%, up to 5 mm in irregular shapes filled with rimming chlorite and albite, other smaller and circular filled with pale epidote, others with radiating sprays of pumpellyite. Amygdales are surrounded by more opaque mesostasis then areas around larger feldspars.

##### Textures

Glomeroporphyritic, intersertal texture in ground-mass

##### Structures

Amygdaloidal and massive

##### Veins and or selvages

Ultra thin veins of chlorite

Waypoint DE048 Assay number 16511 Thin section number T27

Location  
UTME 704401, UTMN 5577454, elev 659.7

Location Is part of a section through a section of several textural varieties of a flow.

Rock type Dark grey amygdaloidal feldspar phyric basalt

Fizzes no Magnetic YES Not Conductive Density not done

Thin section analysis

#### Minerals

Feldspar phenocrysts 10%, Plagioclase, typically up to 1.5 mm, several prisms agglutinated together, relic twinning can be seen. Plagioclase probably albite, and clay/saussuritization affects most of crystals.

Microlites, 20%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.1mm set in a

Ground-mass, 20%, aphanitic and consisting of almost opaque clay and leucoxene and fine opaque "ore" (Magnetite).

Vesicle 20%, about a mm across, amoeboid in shape, composed largely of chlorite

#### Textures

Glomeroporphyritic, intersertal texture in ground-mass

#### Structures

Thin section shows heterogeneous development of mesostasis, could be an autobreccia.

#### Veins and or selvages

>1 mm veins with quartz chlorite

Waypoint D048 Assay number 16512 Thin section number T28

Location  
UTME 704401, UTMN 5577454, elev 659.7

Rock type rel fresh feldspar phyric basalt scarce feldspar, no amygdales

Fizzes no Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 5%, Plagioclase, typically up to 0.7 mm, crystal single relic twinning can be seen. Plagioclase probably albite, and clay /saussuritization affects most of crystals.

Microlites, 55%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.05mm set in a

Ground-mass, 40%, aphanitic and consisting of almost opaque clay and leucoxene and fine opaque "ore" (Magnetite).

##### Textures

Intersertal texture

##### Structures

Thin section shows very fine grained basalt. Could be a base of a flow, being much finer grained than above thin section.

##### Veins and or selvages

irregular sinuous 0.3 mm veins with quartz chlorite and epidote

Waypoint D048                      Assay number 16513                      Thin section number T29

Location  
            UTME 704401,                      UTMN 5577454,                      elev 659.7

Cut

Rock type light green pervasively silicified Fault rock/mylonite

Fizzes no      Magnetic      no      Not Conductive                      Density not done

#### Thin section analysis

##### Minerals

Ground-mass, heterogeneous mixture of fragments and crystal pieces, some alteration, other fragments of opaque rimmed bits of basalt, mainly chlorite and epidote local quartz

##### Textures

Altered partially recrystallized gouge

##### Structures

Thin section shows fragments in recrystallized gouge. Some mm scale fragments. No strong orientation fabric

##### Veins and or selvages

irregular sinuous 0.3 mm mm veins with quartz chlorite and epidote

#### Comment

Could also be between flow weathered material, later tectonically mobilized, and later recrystallized.

Waypoint D048 Assay number 16514 Thin section number T30

Location  
UTME 704401, UTMN 5577454, elev 659.7

Cut

Rock type rusty wash pervasively altered clayey -propylitic Amygdular(scarce) feldspar-phyric basalt

Fizzes no Magnetic yes Not Conductive Density 2.72

Thin section analysis

#### Minerals

Feldspar phenocrysts 20%, Plagioclase, typically up to 01 mm, crystal mainly single although a few agglutinated crystals seen, relic twinning can be seen on smaller grains. Plagioclase probably albite, and clay /saussuritization affects most of crystals.

Microlites, 30%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.05mm set in a

Ground-mass, 20%, aphanitic and consisting of almost opaque clay and leucoxene

Cubic opaque 5% minerals as well as disseminated opaque dust and fine opaque "ore" (Magnetite).

Vesicles 20%, 0.8 mm, circular to amoeboid, showing atoll structure, with one type of chlorite rimming the vesicle and another filling it.,

#### Textures

Porphyritic, intersertal texture in ground-mass

#### Structures

Thin section shows heterogeneous development of mesostasis, could be an autobreccia.

Waypoint D048 Assay number 16515 Thin section number T31

Location  
UTME 704401, UTMN 5577454, elev 659.7,

part of a road side cut study of local variation

Rock type greenish grey pervasively propylitized amygdular feldspar phyric basalt

Fizzes no Magnetic NM Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 10%, Plagioclase, typically up to 0.8 mm, crystal single sparingly agglutinated relic twinning can be seen. Plagioclase probably albite, and clay /saussuritization affects most of crystals.

Microlites, 55%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.05mm set in a

Ground-mass, 40%, aphanitic and consisting of almost opaque clay and leucoxene set in chlorite

Vesicles,20% Amoeboid structures, 3mm or more in length show atoll structure and radiating chlorite and locally pumpellyite, centers are mainly quartz

##### Textures

Glomeroporphyritic, Vesicular, intersertal texture in ground-mass

##### Structures

Vesicles are elongate, and along a similar plane.

##### Veins and or selvages

irregular sinuous 0.1 mm mm veins with chlorite and epidote



Waypoint D048 Assay number 16516 Thin section number T32

Location  
UTME 704401, UTMN 5577454 elev ,659.7

part of road side cut study of local variation

Rock type Amygdaloidal feldspar phyric basalt

Fizzes no Magnetic NOT Not Conductive Density not done

Thin section analysis

#### Minerals

Feldspar phenocrysts 15%, Plagioclase, typically up to 2 mm, crystals are agglutinated relic twinning can be seen. Plagioclase probably albite, and clay /saussuritization affects most of crystals.

Microlites, 10%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.01mm set in a

Ground-mass, 55%, aphanitic and consisting of almost opaque clay and leucoxene

Opaque, Fine grains are found in ground-mass as dust and local blebs (probably sulphides).

Vesicles 20% irregular to circular, 1 mm across filled with chlorite quartz and epidote, local specks of sulphide seen in amygdales.

#### Textures

Glomeroporphyritic, Vesicular, intersertal texture in ground-mass

#### Structures

Thin section is of a massive , vesicular basalt with a lot of opaque material..

#### Veins and or selvages

irregular sinuous 0.1 mm mm veins with sulphide (chalcopyrite?)

Waypoint D048 Assay number 16517 Thin section number T33  
Location  
UTME 704401, UTMN 5577454, elev 659.7,

Part of a road cut, study of local variation

Rock type Vein in amygdaloidal basalt

Fizzes no Magnetic NOT Not Conductive Density not done

#### Thin section analysis

##### Minerals

1/3 Part of rock Basalt:

Microlites, 35%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.05mm set in a

Ground-mass, 40%, aphanitic and consisting of almost opaque clay and leucoxene and fine opaque "ore" (Magnetite) and

Vesicles, 25% 0.2 mm composed of chlorite.

2/3 Vein

Mixture of fragments of basalt, medium grained epidote/clinozoisite, rimming chlorite, core calcite,

##### Textures

Vein with fragments and radiating epidote crystals set in medium grained calcite and finer grained chlorite; basalt locally vesicular and microporphyritic

##### Structures

Thin section shows small fragments of basalt caught up in a major vein.

##### Veins and or selvages

Vein is a major feature of thin section, wider than 2 cm. Composed of epidote/clinozoisite, with local radiating sprays, chlorite, albite, calcite (a typical propylitic assemblage).

Waypoint D049 Assay number 16518 Thin section number T34

Location  
UTME 704481 UTMN ,5577396, elev 652.9

Rock type Pink vein fragment

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Albite 55% 0.2 mm intergrown with quartz and potash feldspar, distinguishable because grains are sparingly twinned.

Potash feldspar 15% 0.2 mm intergrown with albite and is distinguishable by more negative relief and poorly developed microperthite

Sericite Trace 0.003 mm flakes in and near potash feldspar

Quartz 10% 0.1 mm somewhat higher refractive index

Epidote 20% 1 mm porphyroblasts

Hematite/limonite Trace, as stain in some albite and epidote

##### Textures

Intergrown anhedral grains, with minor porphyroblasts

##### Veins and or selvages

This is a fragment from a "Pink vein"

##### Comment

The pink mineral is mainly albite!

Waypoint D050 Assay number 16521 Thin section number T36

Location  
UTME 704506, UTMN 5577345, elev 644.5

Rock type Amygdaloidal feldspar phyric basalt

Fizzes no Magnetic YES Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar Seriate phenocrysts 30%, Plagioclase, typically up to 4 mm mm, crystals glomeroporphyritic relic twinning can be seen. Plagioclase probably albite, and clay /saussuritization affects most of crystals.  
Microlites, 30%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.05mm set in a  
Ground-mass, 40%, fine grained and consisting of grains of pyroxene, surrounded by chlorite, and local patches of almost opaque clay and leucoxene and  
Fine grained opaque "ore" (Magnetite).  
Amygdales, 10%, not obvious in hand specimen, 0.4 mm irregular to round, and filled with chlorite or quartz

##### Textures

Glomeroporphyritic, intergranular texture in ground-mass

##### Structures

Thin section shows heterogeneous development of mesostasis

##### Veins and or selvages

Vein forms one side of the block, shows minor sulphides and rust in a 0.3 mm thick vein (wall paper). irregular sinuous 0.3 mm veins with quartz chlorite and epidote. Thin section analysis

Waypoint D053 Assay number 16525 Thin section number T38

Location  
UTME 704616, UTMN 5578041, elev 495.5

Rock type Pervasively propylitized feldspar phyric basalt

Fizzes no Magnetic YES Not Conductive Density not done 2.75 calc

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 10% Seriate, up to ½ mm, single, relic twinning can be seen.  
Plagioclase probably albite, and clay /saussuritization affects most of crystals.  
Microlites, 25%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.05mm set in a  
Ground-mass, 30%, aphanitic and consisting of small prisms (0.1 mm) of chlorite and almost opaque clay, chlorite and leucoxene  
Fine opaque "ore" (Magnetite) 0.5% probably includes sulphides as well.(cpy?)  
Amygdales 35%, about a mm in size, irregular and amoeboid in shape, filled with quartz/chalcedony

##### Textures

Sparingly glomeroporphyritic, intersertal texture in ground-mass

##### Structures

Thin section shows abundance of amygdules.

Waypoint D055-16526 Assay number 16526 Thin section number T39

Location

UTME 706060, UTMN 5578375, elev 585.8

Five sections come from same major vein 16530 (T41), 16527 (T40), 16526 (T39), 6744 (T17), M234 (DX17) south area

Rock type Massive pyrite vein with few local leached pits with malachite

Fizzes no Magnetic weakly, Conductive (3 Ohm/cm, 5 Ohm/2 cm, 13 ohm/3 cm) Density not done

Thin section analysis (PTS)

Minerals

Pyrite 95% mainly massive crystalline mass and locally granulated. Very porous

Magnetite Trace, 0.2 mm small grey hard spots in pyrite

Chalcopyrite Trace as small 0.1 mm soft spots in pyrite grains, commonly with a very stained patch surrounding them

Malachite occurs as thin mantle around limonite cored 0.1 mm grains in gangue.

Gangue 5% includes quartz, chlorite and rare epidote, as well as limonite grains found where the rock is granulated.

Textures

Mainly granular, individual crystals to 5mm or more, granulated to 0.5 mm

Structures

Massive,

Waypoint D055-16527 Assay number 16527 Thin section number T40

Location

UTME 706060, UTMN 706060, elev 585.8

Five sections come from same major vein 16530 (T41), 16527 (T40), 16526 (T39), 6744 (T17), M234 (DX17) south area

Rock type Complex edge with massive pyrite vein (cm thick edge)

Fizzes yes Magnetic yes Not Conductive Density not done

Thin section analysis (polished thin section)

Minerals in vein

Creamy white pea sized bulbous masses 40%

Quartz 25% with many differing habits, from prismatic vein fill to pea sized cryptocrystalline spheres. bodied

Chlorite patches 25%, largely clear, many showing decussate textures

Pyrite 10% in patches and as narrow veins. In polished section the pyrite is seen to clear of other sulphide inclusions. Bounding limonite surrounds some grains

Structures

Massive, pea sized bulbous clinozoisite-epidote masses set in a matrix of chlorite and sulphide grains, cut by later veinlets of sulphide.

Vein and selvage

Vein has interacted with country rock  
Sulphide veinlets crosscuts bulbous masses  
Chlorite veinlets cut pyrite  
Limonite veinlets cut all.

Waypoint D055-16530 Assay number 16530 Thin section number T41

Location

UTME 706060, UTMN 5578375, elev 585.8

Five sections come from same major vein 16530 (T41), 16527 (T40), 16526 (T39), 6744 (T17), M234 (DX17) south area

Rock type altered amygdaloidal glomeroporphyritic basalt in contact with a complex vein with pyrite

Fizzes yes Magnetic yes Not Conductive Density not done

Thin section analysis

Minerals in basalt

Feldspar 50% up to 2 mm laths, local glomeroporphyritic,, crystals are variably clay altered, some largely calcite and may contain epidote and are locally replaced by albite and chlorite

Chlorite and epidote 7% clear areas, possibly after a mafic mineral

Opaque grains 8% 0.5 mm , some platy in appearance, dotted in ground-mass

Ground mass 20% a very dark brown very finely crystalline combination of albite, chlorite, epidote, calcite and fine brown dust

Amygdale 20% up to 3 mm ovoids some filled with chlorite rims calcite, some with sulphide cores

Textures

Basalt mainly intergranular to intersertal, amygdales typically have a 0.5 mm rim of finer and less crystalline material surrounding them

Structures

Massive, cut by complex vein

Vein and selvage

Vein has interacted with country rock to make an amorphous zone

Minerals in vein

Calcite coarsely crystalline, host for other minerals and elsewhere clear.

Chlorite patches in calcite are clear chlorite, other places the chlorite epidote intergrowth occurs.

Epidote also is seen in local patches pseudomorphing the carbonated country rock fragments

Pyrite is present in small amounts in this section



Waypoint D037-16543 Assay number 16543 Thin section number T43

Location  
UTME 702974, UTMN 5581691, elev 256

Ore main vein

Rock type Vein, mainly of 3-6 mm grains of actinolite in background quartz with one wall on edge of section. Locally vuggy pits show acicular transparent crystals and locally limonite stained (

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis

Minerals

VEIN

Actinolite in quartz 40% large grains intergrown with each other

Epidote 20% actinolite intergrowth, 0.2 mm grain sizes, in lozenge shaped parts of vein.

secondary alteration 20% local patch of dusty birefringent compact mass of small acicular grains of "tremolite?" locally stained by limonite

COUNTRY ROCK

Microlites 6% 1 mm laths of opaque material replacing altered plagioclase (albite)

Epidote grains 10% pseudomorphing small pyroxene round grains between feldspar laths,

Chlorite tr pseudomorphing a prismatic mafic mineral

Opaque ore are spotted in epidote masses

Textures

Host rock intergranular

Structures

Complex vein showing lozenges of differing composition, a fault zone texture

Veins and or selvages

Vein is complex and features medium grained actinolite vein interleaved with finer grained epidote-actinolite vein.

Waypoint 16546 Assay number 16546 Thin section number T46

Location  
UTME 705013, UTMN ,5580068 elev 334

Eclair Quarry

Rock type Unusual rock, could be a scoria? Colour is brownish with green patches. Highly amygdular textured rock with mineralized infill. Minerals that coexist are unusual: hydrogrossular and pumpellyite as well as epidote and quartz and the garnet is also seen against sulphide (bornite) blebs.

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis

Minerals

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning,

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Ground-mass 24% of nearly opaque brown clay and dusty magnetite

Amygdales are large irregularly shaped and pervasive and contain much epidote as well as scarce pumpellyite (blue green sheaves) and hydrogrossular garnet as well as bornite with minor chalcopyrite.

Textures

Scoriaceous amygdale rich basalt

Structures

Very large amygdales

Waypoint 317            Assay number 6725            Thin section number T47

Location  
          UTME ,705387,                    UTMN 5577121                    elev ,532.8,

Quarry with sample C1 representing massive Karmutsen basalt

Rock type Massive Basalt./diabase

Fizzes no    Magnetic    Yes    Not Conductive                    Density not done

Thin section analysis

Minerals

Feldspar phenocrysts 15%, Plagioclase, typically up to 2.0 mm, crystal glomeroporphyritic relic twinning can be seen. Plagioclase probably albite, and clay /saussuritization including pumpellyite affects most of crystals.

Microlites, 35%, plagioclase, also mainly albite with minor clay alteration, small prisms 0.05mm and

Ground-mass, 40%, very fine grained and consisting of

Pyroxene? 20% Prisms and rounded Grains 0.2 mm pleochroic, 2<sup>nd</sup> order Birefringence, high relief mineral (between microlites and 20% almost opaque clay mesostasis along with interstitial "ore" (magnetite)

Textures

Glomeroporphyritic, intergranular texture in ground-mass

Structures

Massive

Notes: Copper has been removed from this basalt; the value is between 1/5 to 1/10 of the usual basalt of this type

Waypoint 317 Assay number 6723 Thin section number T48

Location  
UTME 705387 UTMN ,5577121 elev ,532.8,

: Rock quarry with outcrops of veined Karmutsen Basalt

Rock type Quartz calcite epidote vein with (copper sulphides) and Basalt fragments,

Fizzes no Magnetic: NOT Not Conductive Density not done

#### Thin section analysis

This section is mainly of a vein system with fragments of foliated "pilotaxitic" basalt caught up in a complex vein system which shows many generations and vein minerals, The major vein mineral is 4 cm(+) wide, and consists of intergrown 0.5 mm grains of epidote enveloping basalt fragments 1 mm or so in size; both are cut by a prehnite veins with much finer grain (.2mm) and which is yet again cut by a third even finer aggregate of gouge like quartz and clay grains. The selvage to the vein carries minor sulphides

Waypoint 11MK004A Assay number 6595 Thin section number BD01

Location  
UTME 704812 , UTMN 5579412 , elev 451.9

Central Area

Rock type Porphyry Dyke with feldspar and mafic phenocrysts (dacite)

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 40% seriate to 3 mm laths, twinning locally preserved, crystals are variably altered, some almost completely to black clay+/- pumpellyite and others are only partly altered to clay and albite, old zoning patterns are locally replaced by pumpellyite, and dotted with dusty brown clay

Mafic phenocryst A 4% 0.8 mm laths mainly replaced by chlorite with minor "pyroxene" and oxide cores

Mafic phenocryst B 3% 0.4 mm small prismatic grains of mainly preserved pyroxene, some twinned, and only locally replaced by chlorite

Opaque grains 3% 0.5 mm dotted many near mafic minerals. Local wedges of sphene, Ground mass 50% a brown very finely crystalline combination of low relief, low birefringent quartzofeldspathic intergrowths and fine brown dust obscuring most of their optical properties.

##### Textures

Porphyritic

##### Structures

Massive

Waypoint 11AK0050 Assay number 6597 Thin section number BD03

Location  
UTME 703006, UTMN 5581704 , elev 247

OREO QUARRY, NE VEIN

Rock type variably altered massive basalt w/ amygdales (cc local pink) and feldspar phyrlic (clear 5%), with magnetite vein

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis

Minerals

Feldspar, 30% up to 4 mm glomeroporphyritic altered plagioclase, mainly albite, abundant relic twinning, local agglomerations with mafic minerals  
Microlites 25% 0.4 mm laths of altered plagioclase (albite)  
Pyroxene, 25% as local mm sized crowded pyroxenes as well as in small round grains between feldspar laths, altered locally by chlorite  
Chlorite 10% pseudomorphing a prismatic mafic mineral, in clear areas  
Ground-mass 10% of nearly opaque brown clay and dusty and granular magnetite  
Sphene (titanite) is locally associated with the pyroxene

Textures

Glomeroporphyritic, intersertal

Structures

Massive,

Veins and or selvages

Scarce irregular veins with intergrown chlorite and actinolite

Waypoint 11AK004O Assay number 6997 Thin section number BD04

Location  
UTME 703654, UTMN 5580738, elev 367.1

west side

Rock type variably altered massive basalt w/ 2 amygdales

Fizzes no Magnetic yes Not Conductive Density 2.88

Thin section analysis

Minerals

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local agglomerations with pseudomorphed mafic minerals  
Microlites 20% 0.4 mm laths of altered plagioclase (albite)  
Epidote 50% has overgrown the mafic minerals and ground-mass  
Intergrown chlorite and actinolite constitute the matrix for the epidote  
Magnetite 5% grains are .5 mm and euhedral  
Amygdale 3 mm, ovoid and scarce, are filled with quartz and sheaves of pale epidote

Textures

Pseudomorphed, intergranular glomeroporphyritic

Structures

Massive,

Waypoint 11MK001OCa Assay number 6978 Thin section number BD05

Location  
UTME 702985, UTMN 702985, elev 258

#### OREO Quarry CENTER AREA

Rock type contact between two textural types, one finer grained and fresher than the other, at contact a small pod of quartz with scattered sulphides.

Fizzes no Magnetic yes, coarser grained Not Conductive Density not done

#### Thin section analysis

##### Minerals

Coarser grained part:

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local agglomerations with mafic minerals

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Pyroxene, 30% small round grains between feldspar laths, especially away from vein,

Chlorite 1% pseudomorphing a prismatic mafic mineral

Sphene (Titanite) intergrown with some pyroxene

Ground-mass 24% of nearly opaque brown clay and dusty magnetite

Finer grained part:

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local agglomerations with mafic minerals

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Pyroxene, 30% small round grains between feldspar laths, especially away from vein,

Chlorite 1% pseudomorphing a prismatic mafic mineral

Ground-mass 24% of nearly opaque brown clay and dusty magnetite

Amygdales

##### Textures

Coarser: Glomeroporphyritic, intersertal to intergranular

Finer: Glomeroporphyritic, intersertal to intergranular

##### Structures

Mainly Massive, shows contact between two rock types. Local quartz aggregate with sulphide, and minor intergrown chlorite and actinolite

##### Veins and or selvages

0.1 mm vein with chlorite and sulphides. Joins quartz aggregate mentioned above



Waypoint 11MK001OCb Assay number 6978 Thin section number BD06

Location  
UTME 702985, UTMN 702985, elev 258

OREO Quarry CENTER AREA

Rock type dark fine grained basalt/diabase with pin prick dark spots.

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis

Minerals

Feldspar, 5% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, well developed relic twinning, only small amount of zoning along edges, local agglomerations with mafic minerals  
Microlites 35% 0.4 mm laths of altered plagioclase (albite)  
Pyroxene, 45% local clusters of mafic crystals to 1 mm in size, also small round grains between feldspar laths, slightly pleochroic from pale green to pale greens, altered to chlorite and local actinolite  
Chlorite 5% pseudomorphing a prismatic mafic mineral  
Ground-mass 10% of nearly dusty chlorite and well formed magnetite scattered near pyroxene clusters

Textures

Intergranular to subophitic

Structures

Massive,

Waypoint 11MK0010B Assay number 6983 Thin section number BD07  
Location  
UTME 702985, UTMN 702985, elev 258

#### OREO Quarry CENTER AREA

Rock type contact between two textural types, one finer grained and fresher than the other, at contact a small pod of quartz with scattered sulphides.

Fizzes no Magnetic yes, coarser grained Not Conductive Density not done

#### Thin section analysis

##### Minerals

###### Coarser grained part:

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local agglomerations with mafic minerals

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Pyroxene, 30% small round grains between feldspar laths, especially away from vein,

Chlorite 1% pseudomorphing a prismatic mafic mineral

Sphene (Titanite) intergrown with some pyroxene

Ground-mass 24% of nearly opaque brown clay and dusty magnetite

###### Finer grained part:

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local agglomerations with mafic minerals

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Pyroxene, 30% small round grains between feldspar laths, especially away from vein,

Chlorite 1% pseudomorphing a prismatic mafic mineral

Ground-mass 24% of nearly opaque brown clay and dusty magnetite

Amygdales

##### Textures

Coarser: Glomeroporphyritic, intersertal to intergranular

Finer: Glomeroporphyritic, intersertal to intergranular

##### Structures

Mainly Massive, shows contact between two rock types. Local quartz aggregate with sulphide, and minor intergrown chlorite and actinolite

##### Veins and or selvages

0.1 mm vein with chlorite and sulphides. Joins quartz aggregate mentioned above

Waypoint 11AK004O Assay number 6598 Thin section number BD08

Location  
UTME 703006, UTMN 5581704, elev 247.8

OREO Quarry NE VEIN

Rock type variably altered limonite stained massive basalt w/ amygdales (cc local pink) and feldspar-phyric (clear 5%), with magnetite vein

Fizzes no magnetic no Not Conductive Density not done

Thin section analysis

Minerals

Feldspar, 25% 1.0 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local agglomerations with mafic minerals

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Chlorite 35% pseudomorphing ground-mass, intergrown largely with small actinolite grains, mimicking basaltic texture

Oxide 10% of skeletal limonite stained opaque grains and nearly nearly opaque brown clay.

Textures

Glomeroporphyritic, intersertal to intergranular

Structures

Massive,

Veins and or selvages

>3 mm wide chlorite-actinolite vein cut by 0.01 wide limonite filled "joints".

Waypoint 11AK003O Assay number 6984 Thin section number BD09

Location  
UTME 703006 , UTMN 5581704, elev 247.8

Oreo quarry NE vein

Rock type variably altered massive basalt cut by veins and show a cm sized bleb of granular sulphide, possibly pyrite..

Fizzes no Magnetic yes Not Conductive Density not done

#### Thin section analysis

This section is thick, accentuating pleochroism and birefringence

#### Minerals

Mainly vein material and altered host rock.

Actinolite 30% 3 mm grains, often intergrown with each other, very pleochroic and birefringent

Quartz 30% quartz finely crystalline in the background and as local mm sized euhedral crystal grains,

Opaque (pyrite) in loose masses and spread irregularly through slide

Sparse epidote 0.2mm grains in actinolite

Magnetite grains mainly in replaced basalt part.

#### Altered host rocks

Fine grained epidote mimicking basaltic texture

Local development of albite in background, sparingly showing relic twinning (carlsbad-albite twins indicating albite composition)

Local patches of actinolite

Local dusty chlorite-leucoxene areas and minor opaque grains (magnetite)

#### Textures

Host rock pseudomorphed glomeroporphyritic, intersertal to intergranular

Vein euhedral to anhedral development of vein crystals

#### Structures

Complex vein

#### Veins and or selvages

Most of section is part of a vein complex, fragments set in the main actinolite quartz pyrite vein

Waypoint Vein 2 Assay number 6985 Thin section number BD10

Location  
UTME 702980, UTMN 5581689, elev 257.8

Oreo Quarry, main vein

Rock type Mainly vein material, mostly actinolite with pyrite and pockmarked with vugs showing fibrous amphibole gypsum and rust. Local specks of malachite noted

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis

#### Minerals

amphibole (highly coloured (iron rich) actinolite), varies from 2mm blocky grains to 0.2 mm grains, grown on bundles  
pale epidote ranges from rare 1 mm grains to 0.1 grains. Grows intergrown with actinolite in the finer grained portions  
sulphide (pyrite) is about 0.3 mm grains largely associated with epidote and elsewhere with actinolite, intergrown with the fibers.  
The location of chalcopyrite is not currently known, but probably alongside with pyrite.  
Quartz ranges from 0.4 mm grain to very fine grained in the matrix,

#### Textures

Complex vein, shows gradations from euhedral coarser grains to anhedral finer grain

#### Structures

Massive, grain size zoned

#### Veins and or selvages

The whole section is from the vein. There is a gradation of grain size from one side to the next.

Waypoint 11AK002Oa Assay number 6987 Thin section number BD11

Location  
UTME 703006, UTMN 5581704, elev 247.8

Oreo Quarry Main vein

Rock type Mainly gossan and vugs with soft gypsum crystal locally coated with limonite

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis

Minerals

Limonite very abundant as a fine earthy mass replacing pyrite?  
Gypsum in vugs, low birefringence, inclined extinction, negative relief, cleavages  
small fragments of epidote rich limonite stained altered and angular basalt fragments 1 to  
4mm in size  
Ground-mass of earthy limonite

Textures

protomylonitic, weathered (pyrite) open space vuggy  
basaltic textures in fragments

Structures

tectonic breccia

Veins and or selvages

Thin seams cut rock with limonite

Waypoint 11AK001O Assay number 6990 Thin section number BD12

Location  
UTME 702980, UTMN 5581679, elev 241.1

Oreo Quarry main vein

Rock type Actinolite Vein with sulphides

Fizzes no Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

actinolite 2-4 mm bundles in a vein intergrown with sulphides  
epidote and actinolite  
quartz small euhedral crystals intergrown with actinolite, also as main constituent of a thin  
0.75 mm quartz vein  
clay altered rock or gouge made of above minerals  
sulphide (soft) probably chalcopyrite, in crossing veins

##### Textures

protomylonitic

##### Structures

Strained and Veined

##### Veins and or selvages

Main Vein contains several small strands  
quartz, 1 mm wide, finely crystalline  
gouge rich 2 mm wide strands  
epidote-actinolite rich strands  
chlorite rich strands  
Actinolite rich strands  
crosscut by later, inconspicuous sulphide mm thick veinlets

Waypoint 11MK007B Assay number 6992 Thin section number BD13

Location  
UTME 703654, UTMN 5580738, elev 367.1

Northwest area

Rock type sparsely porphyritic sparse amygdaloidal fine grained basalt

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis

Minerals

Feldspar, 5% 1.0 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local saussurite, and chlorite replacement

Microlites 40% 0.4 mm laths of altered plagioclase (albite) also in stellate shape

Chlorite pseudomorphing pyroxene, 30% small round grains between feldspar laths,

Ground-mass consists of chlorite replacing mesostasis with scattered sphene (titanite) intergrown with nearly opaque brown clay and dusty AND ANHEDRAL magnetite GRAINS

Textures

Sparsely porphyritic, and amygdaloidal, replaced intergranular to intersertal texture

Structures

Massive



Waypoint vein west Assay number 6994 Thin section number BD14

Location

UTME 702980 , UTMN 5581689 , elev 257.8

Oreo Quarry

Rock type altered massive basalt (propylite/greenschist metamorphic grade)

Fizzes no Magnetic no Not Conductive Density 2.64

Thin section analysis

Minerals

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, largely replaced by clinozoisite and local quartz

Microlites 30% 0.2 mm laths of altered plagioclase (albite)

Chlorite 35% pseudomorphing pyroxene, forming 0.5 mm clear areas with local scarce epidote grains along edge

Opaque blebs 5% 0.2 mm subhedral grains, rock not magnetic, some are sulphide

Ground-mass 24% of nearly opaque brown clay and dusty magnetite set quartz, in chlorite and scarce actinolite

Textures

Pseudomorphed glomeroporphyritic, intersertal to intergranular

Structures

Massive, with a zone of local thin gouge zone

Veins and or selvages

Veinlet with crushed country rock, epidote and chlorite recognizable in the very fine grained gouge.

Waypoint M805 Assay number 11MK01K Thin section number BD15

Location  
UTME 702985, UTMN 5581672, elev 258

OREO Quarry CENTER AREA

Rock type bleached, beige heterogeneous carbonated and mineralized faulted basalt

Fizzes yes magnetic no Not Conductive Density not done

Thin section analysis

#### Minerals

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local patches of epidote, also clay alteration

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Ground-mass 24% of nearly opaque brown clay and dusty magnetite patches of actinolite and minor chlorite may be replacements of pyroxene but could also be replacement of intersertal material. Local patches of epidote.

Sulphides 1% soft clumped finely crystalline chalcopyrite along chlorite edges, also along edges of vein

#### Textures

In basalt; glomeroporphyritic, intersertal to intergranular

Protomylonitic degradation of grains,

#### Structures

Lenticular fragments of typical basalt cut by anastomosing veins, about half of which are calcite rich, augen structure locally well developed

#### Veins and or selvages

Calcite and actinolite along edges

Chlorite intergrown with actinolite and opaques (sulphides)

Along extension of a small vein, a small partially leached pit shows gypsum

Waypoint Vein 3 Assay number 6986 Thin section number BD16

Location  
UTME ,702980 UTMN ,5581689 elev 257.8

Oreo Quarry Main vein

Rock type Mainly pyrite (crystalline, lots of cubic crystal faces) and massive limonite with minor amphibole gangue

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis (polished section)

#### Minerals

Sulphides 70% (Pyrite) semimassive, finely crystalline, some grains granulated, parts of grains are encased in limonite, many grains are intergrown with small grains of quartz, epidote and actinolite. A systematic search for other sulphide minerals was undertaken but none were found. It is hypothesized that base metal values are stored in the limonite.

Actinolite, 20% 3 mm fibers are variably surrounded by limonite, or in bunches, near sulphide grains or limonite.

Quartz 5% as small grains and local fine grained matrix

Epidote 5% as small grains near actinolite and sulphide, some times intergrown with sulphide.

Albite, trace, a few grains showed albite twinning.

#### Textures

Intergranular

#### Structures

Semi massive sulphide vein

#### Veins and or selvages

Section wide vein of pyrite, actinolite gangue with minor quartz and epidote.

Waypoint 11MK006a Assay number 6595 Thin section number BD17

Location  
UTME 703615, UTMN 5580952, elev 357

#### NORTHWEST AREA

Rock type Porphyroblastic PYRITE in a gossany tectonic breccia (dacitic composition)

Fizzes no Magnetic no Not Conductive Density 2.65

#### Thin section analysis (polished section)

##### Minerals

Gouge, 45% aphanitic black, seen to be mainly limonite in reflected light  
Cores and neomorphed pyrite 10% in or near limonite  
Quartz 15% euhedral crystals among the breccia debris  
Epidote 15% crystals among the breccia debris  
Tremolite 5% fine hairlike fibers patches act as matrix for epidote.  
Albite, trace, a few grains showed albite twinning.

##### Textures

large size range of crystal, many are euhedral indicating formation after the breccia

##### Structures

Fault zone, apparently recrystallized after faulting, limonite covers a lot of structure.

Waypoint 11MK008B1 Assay number 6998 Thin section number BD18

Location  
UTME 703405 , UTMN 5581284, elev

north Western area

Rock type A rusty complex fault zone showing intersecting pyrite bearing veins, leads some mm thick, also disseminated pyrite in host rock

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis (polished section)

Minerals

Sulphides 30% (Pyrite) many with cubic outlines, authigenic or porphyroblastic  
Pale Epidote 20% as discrete small grains in crush rock  
Gouge 40% mainly very fine grains of epidote set in a pervasive chlorite quartz matrix.  
Albite, trace, a few grains showed albite twinning.  
Opaque 10% grains (limonite) with partially replaced ilmenite lamellae

Textures

Protomylonitic and recrystallized, local porphyroblastic

Structures

Complex vein and fault zone with rotated blocks

Veins and or selvages

Veins of pyrite and  
cut by pyrite in cockscomb quartz

Waypoint      MIK826      Assay number   none   Thin section number   BD19

Location  
    UTME   703411,      UTMN   5581349,      elev   313.3

Oreo Quarry Main vein

Rock type      Pyrite dotted sparsely amygdaloidal basalt.

Fizzes no      Magnetic      yes      Not Conductive      Density not done

Thin section analysis

Minerals

Feldspar, 5% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, well developed relic twinning, only small amount of zoning along edges,

Microlites 55% 0.4 mm laths of altered plagioclase (albite)

Ground-mass 20% of chlorite and dusty chlorite and leucoxene

Magnetite 10% anhedral grains 0.3mm scattered throughout. About half the opaque is pyrite.

Amygdale 10% 5 mm ovoid to irregular filled with zones of chlorite and a core of quartz and a few specks of pyrite, locally very small grains of epidote

Textures

Intersertal

Structures

Massive

Waypoint K10228QV Assay number 6550 Thin section number DX01

Location

UTME 705001 , UTMN 5580064 , elev 340  
Eclair Quarry

Rock type Quartz vein cuts previous vein charged with country rock fragments. Sulphides mainly in old vein and near country rock fragments

Fizzes no Magnetic no Not Conductive Density 2.66

Thin section analysis

Minerals

Quartz 85%, in mm plates and as very fine grained interstitial fill.

Dusty Albite, 10%? with scarce twins, lower relief than quartz as anhedral grains to 1 mm, between quartz blades ,

Sulphides 5% scarce up to 2 mm sized anhedral to euhedral crystals scattered in gangue. Some are surrounded by a thin veneer of fine grained green mineral (chlorite and malachite)

Chlorite 1% adjacent to occasional sulphide grain, and scattered through the main mass of vein.

Calcite in scarce grains in body of vein

Older vein not clearly demarked in thin section, not much change in mineralogy

Fragments in older vein are of glomeroporphyrritic basalt. Grains are heavily altered to very finely crystalline chlorite, albite and clay, and small euhedral grains are evenly spotted through the fragment (these are mostly sulphides).

Textures

Quartz plates and albite grains are surrounded by exceedingly fine grained quartz+/-albite intergrowths, possibly due to granulation of vein minerals.

Structures

Complex vein with three generations

Veins and or selvages

Early vein with fragments cut by quartz vein, and both cut by a late calcite vein.

Waypoint K10229MAGNETIC Assay number 6541 Thin section number DX03

Location  
UTME 705035 , UTMN 5580074, elev 334

Eclair Quarry

Rock type Altered massive feldspar-phyric basalt w/ small amygdales and thin veins,

Fizzes veins and ground-mass Magnetic yes Not Conductive Density not done

Thin section analysis

#### Minerals

Feldspar phenocryst, 15% 2 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, altered to clay and local specks of epidote

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Chlorite pseudomorphs 30% mafic minerals and also occurs with epidote after the same mineral thought to be pyroxene

Ground-mass 24% of nearly opaque brown clay and dusty magnetite in space between feldspar grains and "pyroxene, along with minor calcite

Amygdales 10% 5 mm sized ovoid shaped and filled with a variety of minerals, mainly epidote although several radiating splays of pumpellyite were also seen.

Sulphides 1% soft clumped finely crystalline chalcopyrite in vein with quartz dusty albite and potash feldspar (not cloudy) and chlorite edges, also along edges of vein

#### Textures

Glomeroporphyritic, intersertal to intergranular

#### Structures

Massive, few veins vein

#### Veins and or selvages

a mm wide vein of calcite cuts across section



Waypoint K10229 Assay number 6540 Thin section number DX04

Location  
UTME 705034, UTMN 5580075, elev 334

Eclair Quarry

Rock type variably altered basalt w/ very large amygdales and a rusty vein along one side

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis

Minerals

Feldspar, 10% 1mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local agglomerations with mafic minerals

Microlites 20% 0.2 mm laths of altered plagioclase (albite)

Chlorite 10% and epidote 10% grains are mixed with clay and black dust of magnetite in ground-mass

Amygdale 40% Large irregular shaped filled with acicular pale epidote and quartz

Textures

Glomeroporphyritic, intersertal -amygdaloidal

Structures

Amygdaloidal, several veins, some with sulphide along edges. Perhaps enough amygdale to term the rock a scoria?

Veins and or selvages

1 mm wide vein of chlorite, calcite and sulphide (soft) prob chalcocopyrite

Waypoint K10222 Assay number 6539 Thin section number DX05

Location  
UTME 706763 , UTMN 5577599 , elev 682.2

Southeast sector

Rock type "Pink Vein", with sulphides, a portion of salmon pink vein fill, adjacent pale greenish vein fill, dotted with chalcopyrite and giving way to a patch of limonite rimming chalcopyrite

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis (very thick section)

#### Minerals

Sulphides 20% (Chalcopyrite and limonite)

Pink vein material 35% is composed of mainly (20%) of large grains of dusty brown stained albite, with similar sized grains of less dusty potash feldspar (10%) and less abundant smaller clear quartz 5%. Near edge, epidote needles grow in feldspars.

Epidote 10% in complex clumps with thinly prismatic crystals radiating from a center  
Pale green material 35% is composed of chlorite 20% and quartz 15% with scattered epidote clumps cored by sulphide grains

Magnetite is intergrown with chalcopyrite

#### Textures

largely anhedral, except epidotes which are mainly thin prismatic

#### Structures

Complicated vein structure

#### Comment

This gangue to high grade vein which carries local concentrations of bornite.  
The pink feldspar in these veins is albite

Waypoint K10224 Assay number 6648 Thin section number DX07

Location  
UTME 706270 , UTMN 5578015, elev 672.3

Central south area

Rock type 2 cm wide Vein cuts altered amygdaloidal glomeroporphyritic basalt

Fizzes amygdale edge does Magnetic rock yes vein no Not Conductive Density not done

#### Thin section analysis

Rock fragments and country rock

#### Minerals

Feldspar phenocrysts 20% seriate to 2 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain epidote and are locally replaced by albite

Microlites 25% 0.7 mm laths albite replaced in part by chlorite and epidote

Chlorite and epidote 15% show clear patches

Opaque grains 10% 0.5 mm dotted in ground-mass, several grains of sulphide noted.

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Amygdale 10% up to 3 mm ovoids some filled with chlorite rims and quartz, some with chlorite and others with chlorite and epidote

#### Textures

Mainly intersertal,

#### Structures

Broken fault rock cemented by quartz vein.

#### Veins and or selvages

Selvages around vein, more black dust, and less chlorite.

Early veins are thin chlorite veins and epidote veins, both irregular in shape

#### Main vein 2cm wide

Quartz 80% medium grained to cryptocrystalline,

Epidote 15% mixed sizes

Chlorite 5% patches

Waypoint K10229B Assay number 6647 Thin section number DX08

Location  
UTME 705037 , UTMN 5580065, elev 334

Eclair Quarry

Rock type Quartz vein in mineralized selvage

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis

#### Minerals

##### Main vein

Quartz 95% mm sized bladed quartz grains and microcrystalline matrix

Albite 3% rare twinned grains with low relief, probably some in very fine grained matrix.

Sulphides local 0.1 mm grains along the edges of the vein and as mm grains. Soft, chalcopyrite

Chlorite rare small grains in quartz.

##### Country rock Fragments (about a third of thin section)

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local agglomerations with mafic minerals

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Pyroxene, 30% small round grains between feldspar laths, especially away from vein,

Chlorite 1% pseudomorphing a prismatic mafic mineral

Ground-mass 24% of nearly opaque brown clay and dusty magnetite

Sulphides 1% soft clumped finely crystalline chalcopyrite in vein with quartz, dusty albite and potash feldspar (not cloudy) and chlorite edges, also along edges of vein

#### Textures

Fragment-glomeroporphyritic intersertal

Vein has bladed quartz crystals with later infill of quartz

#### Structures

Massive complex vein

#### Veins and or selvages

2 cm wide quartz cutting through the "pink vein" which contains fragments of country rock.

Sulphides are along the edges of quartz vein

Waypoint K10218A Assay number 6644 Thin section number DX10

Location  
UTME 706144 , UTMN 5579452, elev 344.4

Central south region

Rock type Altered Amygdular basalt (greenschist grade)

Fizzes no Magnetic yes Not Conductive Density 2.73

#### Thin section analysis

##### Minerals

Feldspar 35% up to 2 mm laths, crystals are variably clay altered, contain much epidote and are locally replaced by albite and dotted with brown dust

Chlorite and epidote 15% form local patches

Opaque grains 10% 0.5 mm dotted in ground-mass, more abundant near the replacement feature

Ground mass 40% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Amygdale 25% 10 mm irregular ovoid filled with fibrous chlorite and fibrous tremolite/actinolite

##### Textures

Very amygdaloidal, sparingly porphyritic, intersertal

##### Structures

massive

##### Vein

epidote and euhedral quartz veins.

#### Comment

This is the type of texture associated with the top of an inflated pahoehoe flow.

Waypoint K10205 Assay number 6643 Thin section number DX11  
Location  
UTME 706275 UTMN 5578455, elev 552.9

Rock type Amygdaloidal porphyritic basalt/basaltic andesite

Fizzes No Magnetic minor Not Conductive Density not done

#### Thin section analysis

##### Minerals

Plagioclase 10% 4 mm glomeroporphyritic with relic twinning and  
Microlites 35% seriate from exceedingly small to 0.3 mm as small laths, the larger ones  
show twinning and are presumably albite. Locally cores are altered  
Mafic 10% 2 mm partly broken crystals, locally veined and replaced by green amphibole  
and chlorite  
Opaques 5% as abundant small 0..5 mm grains in ground mass  
Ground-mass 20% dark, composed of intergrown brown dust, albite, chlorite and epidote  
Amygdales 20% many small, a few up to 5 mm in irregular, but long shapes, largely filled  
with epidote, or chlorite atoll structure with quartz, or chlorite with tiny epidote  
crystals

##### Textures

Matrix is very crowded with very small microlites with pilotaxitic texture in a dusty but hard  
ground-mass, looks like a feldspar rich basalt or perhaps a basaltic andesite?

##### Structures

Amygdaloidal layer traverses slide has quartz along with chlorite and epidote

Waypoint AJT31\_295 K10225A

Assay number 6642

Thin section number DX12

Location

UTME 706221

UTMN 5578077

elev 664.8

Central south area

Rock type altered amygdaloidal basalt with scattered sulphides (bornite)

Fizzes no      Magnetic      yes      Not Conductive      Density not done

Thin section analysis

Minerals

Feldspar Microlites 45% 0.5 mm laths with stellate habit are albite replaced in part by chlorite and epidote

Clear Chlorite and small epidote grains 12% replace grains of pyroxene?

Opaque grains 7% 0.5 mm dotted in ground-mass, more abundant near chlorite

Sulphide grains (in part bornite) 1% 0.5 mm are also disseminated through rock

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Amygdale 5% up to 3 mm ovoids some filled with quartz, albite!, calcite and epidote. One has a core of bornite

Textures

Mainly intergranular to intersertal, amygdales typically have a 0.5 mm rim of finer and less crystalline material surrounding them

Structures

Massive, some amygdales are elongate ovoids.

Veins and or selvages

Selvages around amygdales, more black dust, and less chlorite.

Waypoint K10211C Assay number 6641 Thin section number DX13

Location  
UTME 706003 UTMN ,5578592 elev 536,

Rock type Altered amygdaloidal porphyritic basalt with sheared carbonate vein and associated bornite and other sulphides as well as small leach pits

Fizzes yes Magnetic minor Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 5% seriate to 2 cm, locally glomeroporphyritic, the crystals contain much epidote, minor albite, chlorite and clay

Microlites 25% plagioclase, some very small, 0.1 mm size are clear, most larger ones are dusty brown albite, scarce chlorite or leucoxene

Chlorite 33% 0.5 mm patches after mafic mineral and minor grains epidote and leucoxene, plagioclase microlites stick into chlorite very reminiscent of sub ophitic text

Opaques 5% are 0.3 mm and for anhedral grains in chlorite

Ground-mass 15% Small patches of leucoxene and chlorite mixed with epidote and almost black

Amygdales 15% 1 cm and ovoid to elongate irregular, have dark rim around them and are rimmed by chlorite, filled with intergrown 2-5 mm prismatic epidote grains, mainly chlorite, some amygdales have a small core of epidote or fleck of in them.

or are  
sulphide

##### Textures

Intergranular, glomeroporphyritic Amygdular

##### Structures

Altered, Massive, veined

##### Veins and or selvages

Carbonate epidote chlorite quartz vein has small pockets of copper minerals, some have been leached away leaving small leach pits



Waypoint K10215 Assay number 6640 Thin section number DX14

Location  
UTME 706320, UTMN 5579236, elev 352.4

Center area south

Rock type Fresh to very low grade altered diabase or gabbro

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis

Minerals

Feldspar 45% 1 mm laths stellate altered to albite, clay and small rods of pumpellyite  
Pyroxene 35% 4 mm grains quite fresh, in clumps, twinned, pleochroic, and enveloping  
feldspars  
Ore 10% 0.5 mm grains of magnetite,  
Ground-mass of fine grained dust and chlorite patches near pyroxenes

Textures

Ophitic

Structures

Massive

Waypoint K10211B Assay number 6639 Thin section number DX15

Location  
UTME 706003 UTMN ,5578592 elev 536,

Rock type: Altered amygdaloidal porphyritic basalt with several different textural varieties, may be an autolithic breccia,

Fizzes no Magnetic minor Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 5% seriate to 2 cm, locally glomeroporphyritic, the crystals contain much epidote, minor albite, chlorite and clay

Microlites 25% plagioclase, some very small, 0.1 mm size are clear, most larger ones are dusty brown albite, scarce chlorite or leucoxene

Chlorite 33% 0.5 mm patches after mafic mineral and minor grains epidote and leucoxene, Opaques 5% are 0.3 mm and for anhedral grains in chlorite

Ground-mass 15% Small patches of leucoxene and chlorite mixed with epidote and almost black

Sulphides are present in small flecks in amygdales and ground-mass

Amygdales 15% are long cm features and the fill is large a brownish greenish epidote. Locally, they are ovoid to elongate irregular, have dark rim around them and are rimmed by chlorite, filled with fine prismatic epidote grains, some amygdales have a small core of epidote or fleck of sulphide in them.

##### Textures

Some textures are coarser than others, and the amount of ground-mass differs as does the amount of opaque dust

Intergranular, glomeroporphyritic Amygdular

##### Structures

Altered, Massive, autobrecciated and Amygdular, veined

##### Veins and or selvages

Many small veins interior to the amygdales

small mm long disrupted quartz veins cut feldspar and amygdales

thin opaque hairline cracks cut amygdales as well

Waypoint MIK76\_618 K10208C Assay number 006638 Thin section number DX16

Location  
UTME 706162 UTMN 5578534 elev 538.7

Central south area

Rock type altered amygdaloidal basalt with a selvage and a 3cm wide vein fragment (carries bornite)

Fizzes no Magnetic yes Not Conductive Density not done

#### Thin section analysis

##### Minerals

Host rock

Feldspar Microlites 45% 0.5 mm laths with stellate habit are albite replaced in part by chlorite and epidote

Clear Chlorite and small epidote grains 12% replace grains of pyroxene?

Opaque grains 7% 0.5 mm dotted in ground-mass, more abundant near chlorite

Sulphide grains (in part bornite) 1% 0.5 mm are also disseminated through rock

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust

Amygdale 5% up to 3 mm ovoids some filled with chlorite and have epidote rims, a few are all epidote.

##### Texture

Mainly intergranular to intersertal, amygdales typically have a 0.5 mm rim of finer and less crystalline material surrounding them

##### Structures

Massive, some amygdales are elongate ovoids.

##### Veins and or selvages

Selvages 3mm thick around vein

##### VEIN

Quartz 55% is abundant and medium grained

Epidote 35% is in clusters in the vein, locally some pumpellyite

Bornite 10% seriate to 2mm blebs (and lesser amounts of chalcopyrite, chalcocite and "covellite")

##### Textures

anhedral quartz, euhedral epidote, and anhedral bornite

##### Structures

vein has a fabric of flattening parallel to the walls

##### Comment

Bornite specks are visible to the naked eye in the vein, but bornite is finely disseminated through specimen. Local minerals return interesting optical properties because of copper alteration product staining,

Waypoint K10234DITCH

Assay number 6544

Thin section number DX17

Location

UTME 706060, UTMN 5578373, elev 593.8

Five sections come from same major vein 16530 (T41), 16527 (T40), 16526 (T39), 6744 (T17), M234 (DX17) south area

Rock type altered amygdaloidal glomeroporphyritic basalt with pyrite vein (2 cm, only one side), vug with malachite

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis (polished thin section)

Minerals

Feldspar phenocrysts 10% seriate to 2 mm laths, local glomeroporphyritic, twinning and old zoning patterns locally preserved, crystals are variably clay altered, contain chlorite and pumpellyite and are locally replaced by albite and dotted with brown dust

Microlites 25% 0.7 mm laths albite replaced in part by chlorite and epidote

Chlorite and epidote 15% replace grains of 1 mm pyroxene? opaque grain clumps

Opaque grains 5% 0.5 mm dotted in ground-mass, more abundant near the replacement feature. Some are seen to be limonite in polished section.

Ground mass 30% a very dark brown very finely crystalline combination of albite, chlorite, epidote and fine brown dust, Trace amounts of 0.01 mm of bornite are sparingly distributed in basalt.

Amygdale 10% up to 3 mm ovoids some filled with chlorite rims and fibrous epidote, others with chlorite rims and quartz with scattered grains of epidote inside.

Pyrite vein 33% consists of cm sized crystals clumped together. pyrite investigated under reflected light showed no sulphide inclusions. A crackle like fabric has affected most pyrite with no inclusions.

Textures

Mainly intergranular to intersertal, amygdales typically have a 0.5 mm rim of finer and less crystalline material surrounding them

Structures

Massive, some amygdales are elongate ovoids.

Veins and or selvages

Selvages around amygdales, more black dust, and less chlorite.

Waypoint K10218B Assay number 6977 Thin section number FA01

Location  
UTME 706144, UTMN 5579452, elev 344.4

Central Area

Rock type Porphyry Dyke with feldspar and mafic phenocrysts (andesite)

Fizzes no Magnetic no Not Conductive Density not done

Thin section analysis

Minerals

Feldspar phenocrysts 40% seriate to 2 mm laths, twinning locally preserved, crystals are variably altered, to clay and albite, old zoning patterns are locally replaced by and dotted with dusty brown clay

Mafic phenocryst A 5% 0.7 mm laths mainly replaced by chlorite with minor "pyroxene" and oxide cores

Mafic phenocryst B 3% 0.4 mm small prismatic grains of mainly preserved pyroxene, some twinned, and only locally replaced by chlorite

Opaque grains 2% 0.5 mm dotted many near mafic minerals. Local wedges of sphene, Ground mass 50% a brown very finely crystalline combination of low relief, low birefringent quartzofeldspathic intergrowths and fine brown dust obscuring most of their optical properties.

Textures

Porphyritic

Structures

Massive

Waypoint K10227ML Assay number 6974 Thin section number FA03

Location  
UTME 705008 UTMN 5580074 elev 335

Eclair Quarry

Rock type variably altered massive basalt w/ amygdales (cc local pink) and feldspar phyrlic (clear 5%), with magnetite vein

Fizzes no Magnetic yes Not Conductive Density 2.73

Thin section analysis

#### Minerals

Feldspar, 25% 1.5 mm glomeroporphyritic altered plagioclase, mainly albite, still relic twinning, local agglomerations with mafic minerals

Microlites 30% 0.4 mm laths of altered plagioclase (albite)

Pyroxene, 30% small round grains between feldspar laths, especially away from vein,

Chlorite 1% pseudomorphing a prismatic mafic mineral

Ground-mass 24% of nearly opaque brown clay and dusty magnetite

Sulphides 1% soft clumped finely crystalline chalcopyrite in vein with quartz dusty albite and potash feldspar (not cloudy) and chlorite edges, also along edges of vein

#### Textures

Glomeroporphyritic, intersertal to intergranular

#### Structures

Massive, local cracks one vein

#### Veins and or selvages

1 cm wide Vein of pale epidote with very minor quartz, dusty albite and very fine grained sericite? and chlorite edges with chalcopyrite, selvage of rusty minerals for about 2 mm along edge.

Waypoint K10227UL Assay number 6973 Thin section number FA04 (PTS)

Location  
UTME 705010 UTMN 5580070 elev 336

From Eclair Quarry

Rock type Amygdaloidal porphyritic basalt with sulphide veinlets and clots of epidote and local spots of rusty sulphides

Fizzes no Magnetic yes Not Conductive Density not done

Thin section analysis

#### Minerals

Plagioclase phenocrysts 20% 3 mm glomeroporphyritic altered to albite, still show relic twinning,  
Microlites 30% 0.1mm laths of altered plagioclase (albite)  
ground-mass 40% very fine grained nearly opaque mixture of clay and leucoxene with minor epidote  
amygdales 10% Epidote clots to 2 mm, Chlorite in small grains in patches

Sulphides, trace, mainly bornite but local chalcopyrite, disseminated through rock, grains largely 0.1-.3 mm across, although small microveins may be larger, many grains occur near plagioclase, others in amygdale centers and many very small grains in the ground-mass

#### Textures

Basalt is intersertal  
Sulphides disseminated, in veins  
chlorite decussate, epidote clots and sprays

#### Structures

massive, veins

#### Veins and or selvages

microveins of sulphides, mainly bornite and chalcopyrite

Waypoint K10202 Assay number 6969 Thin section number FA07

Location  
UTME 706189 UTMN 5578514, elev 537.7

Rock type dark Amygdular basalt, with a centrally located amygdale

Fizzes yes Magnetic no Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 5% 4 mm altered to albite, clinozoisite, calcite and minor chlorite  
Microlites 55% 0.4 mm long laths, now dusty albite surrounding phenocrysts  
Opaques 5% 0.1 mm small specks  
Ground-mass very fine grained dark brown mass of epidote, brown dust and chlorite,  
Amygdale 10% 5 mm ovoid to irregular shapes filled with chlorite

Central amygdale mass is mainly composed of pale epidote and quartz with chlorite edges and central opaque anhedral grain (a bronze yellow sulphide)

##### Textures

The abundance of very small amygdales make the thin section look like a chlorite filled sponge. Some of the amygdales have opaque blebs in the core, some of this material is seen to be bronze sulphide.

##### Structures

massive

##### Comment

The rock is mineralized, and the amygdales are one site of opaque grains some of which are known to be bronzy sulphide rains. The rock assays 2.8% copper.



Waypoint K10214 Assay number 6698 Thin section number FA08

Location  
UTME 706107 UTMN 5578524, elev 548

Rock type Altered Amygdaloidal porphyritic basalt

Fizzes no Magnetic minor Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 7% seriate to 2 cm, locally glomeroporphyritic, the crystals contain much epidote, minor albite and chlorite

Microlites 25% plagioclase, dusty albite, scarce chlorite or leucoxene

Chlorite 33% 0.5 mm patches after mafic mineral and minor grains epidote and leucoxene,  
Opagues 5% are 0.3 mm and for anhedral grains in chlorite

Ground-mass 15% Small patches of leucoxene and chlorite mixed with calcite

some Amygdales 15% 2 cm and ovoid to elongate irregular, have dark rim around them and are rimmed by chlorite, filled with 2-5 mm calcite grains, or are mainly chlorite, amygdales have a small fleck of sulphide in hem.

##### Textures

Intergranular, glomeroporphyritic Amygdular

##### Structures

Massive

##### Veins and or selvages

Many small cracks with quartz and chlorite

Waypoint K10230 Assay number 6965 Thin section number FA10

Location  
UTME 705864 , UTMN 5579348, elev 358,2

Central Area

Rock type Grey altered porphyry dyke with feldspar and mafic phenocrysts (dacite) with scattered flecks of sulphide

Fizzes no Magnetic weakly Not Conductive Density not done

Thin section analysis

#### Minerals

Feldspar phenocrysts 40% seriate to 3 mm laths, twinning locally preserved, crystals are strongly altered, some almost completely to black clay+/- pumpellyite and others are only partly altered to clay and albite, old zoning patterns are locally replaced by pumpellyite, and dotted with dusty brown clay

Mafic phenocryst A 5% 0.8 mm laths mainly replaced by chlorite with minor pyroxene? and oxide cores

Opaque grains 5% 0.5 mm dotted many near mafic minerals. Local wedges of sphene, Ground mass 50% a brown very finely crystalline combination of low relief, low birefringent quartzofeldspathic intergrowths, finely crystalline higher relief pumpellyite, and fine brown dust obscuring most of their optical properties.

#### Textures

Porphyritic

#### Structures

Massive

Waypoint K10208A Assay number 6964 Thin section number FA11

Location  
UTME 7056162 UTMN 5578534, elev 538.7

Rock type Amygdaloidal feldspar phyric basalt

Fizzes No Magnetic minor Not Conductive Density 2.91

#### Thin section analysis

##### Minerals

Plagioclase 10% 4 mm glomeroporphyritic with relic twinning and  
Microlites 40% seriate from exceedingly small to 0.3 mm as small laths, the larger ones  
show twinning and are presumably albite. Locally cores are altered  
Mafic 10% 2 mm partly broken crystals, locally veined and replaced by epidote and chlorite  
Opauques 5% are found in cores of amygdales, and as small grains surrounded by dark dust  
in ground-mass  
Ground-mass 20% dark, composed of intergrown brown dust, chlorite and epidote  
Amygdales 30% many small, a few up to 5 mm in irregular, but long shapes, largely filled  
with epidote, or chlorite atoll structure with quartz, or chlorite with tiny epidote  
crystals

##### Textures

intergranular to intersertal

##### Structures

Amygdaloidal

##### Comment

The presence of different amygdale fills indicates that the water rock ratio was low in this vicinity. I wonder if there is a regional trend?

Waypoint K10204                      Assay number                      6963                      Thin section number FA12

Location  
                    UTME 706224                      UTMN ,5578489,                      elev 546.6

Rock type Grey very fine grained basalt, a few flecks of malachite at the edge of amygdales

Fizzes No      Magnetic minor                      Not Conductive                      Density not done

#### Thin section analysis

##### Minerals

Plagioclase microphenocrysts 10% consist of clumps of agglutinated microlites, relic twinning noted, locally replaced by epidote

Microlites 40% seriate from exceedingly small to 0.1 mm as small laths, the larger ones show twinning and are presumably albite.

Opaques 5% are found in cores of amygdales, and as small grains surrounded by dark dust in ground-mass

Ground-mass 15% dark ground-mass composed of brown dust, chlorite and epidote

Amygdales 30% many small, a few up to 4 mm in irregular, but long shapes, largely filled with epidote, both pale epidote anhedral grains and a darker form more fibrous, which may be associated with nearby rare pumpellyite; several amygdales have a opaque grain (copper sulphide) in the core.

##### Textures

Unusual texture: small 2 mm clumps of small microlites and ground-mass are set in a very amygdaloidal matrix of very fine grained largely opaque material

##### Structures

Amygdaloidal

##### Comment

Unusual texture suggests that partially crystallized basalt was disrupted by the flow of the amygdale rich magma. This is a feature predicted to be seen in the top of the massive portion of an "inflated pahoehoe flow.

Waypoint K10209 Assay number 6962 Thin section number FA13

Location  
UTME 706075 UTMN 5578591, elev 536.3

Rock type Fresh looking, porphyritic basalt with a joint surface with a thin coating of malachite

Fizzes no Magnetic minor Not Conductive Density 3.13

#### Thin section analysis

##### Minerals

Feldspar phenocrysts 24% seriate to 5 cm, locally glomeroporphyritic, locally zoned, the main crystal is amazingly homogeneous, only a very thin outer rim shows zoning from Andesine to Albite The crystals contain dusty patches, presumably formed from the included basaltic glass

Microlites 25% plagioclase, also very fresh looking

Pyroxene 33% 0.5 mm grains between feldspar laths. Slightly pleochroic, light brownish colour,

Ore 10% between pyroxene and feldspar, preferentially in acute corners

Ground-mass 5% Small patches of what used to be glassy part is dusty chlorite.

Amygdales 3% 0.6 mm and ovoid to irregular, have dark rim around them and are filled with calcite, some have a small fleck of sulphide in hem.

##### Textures

Intergranular, glomeroporphyritic

##### Structures

Massive

##### Veins and or selvages

A 2 mm wide calcite vein runs along the edge of the slide.

Waypoint K10207 Assay number 6960 Thin section number FA14

Location  
UTME 706172 UTMN 5578524 elev 538.3

Rock type Dark "aphanitic" porphyritic basalt

Fizzes yes Magnetic minor Not Conductive Density not done

#### Thin section analysis

##### Minerals

Feldspar 10% 3 mm glomerophenocrysts showing relic twinning, mainly replaced by brown clay, chlorite, and albite  
Microlites 35% 0.3 mm small albite laths rimmed by chlorite and brown dust, some core centres also replaced by chlorite  
Pyroxene 17% 2 mm broken but largely fresh, mildly pleochroic, locally twinned cut by veins of chlorite  
Opagues 3% 0.1mm anhedral grains scattered in ground mass  
Ground-mass 15% cryptocrystalline brown stained, carbonate bearing, chloritic mass.  
Amygdales 10% small irregular shaped, chlorite filled, rarely with small epidote crystals in core.

##### Textures

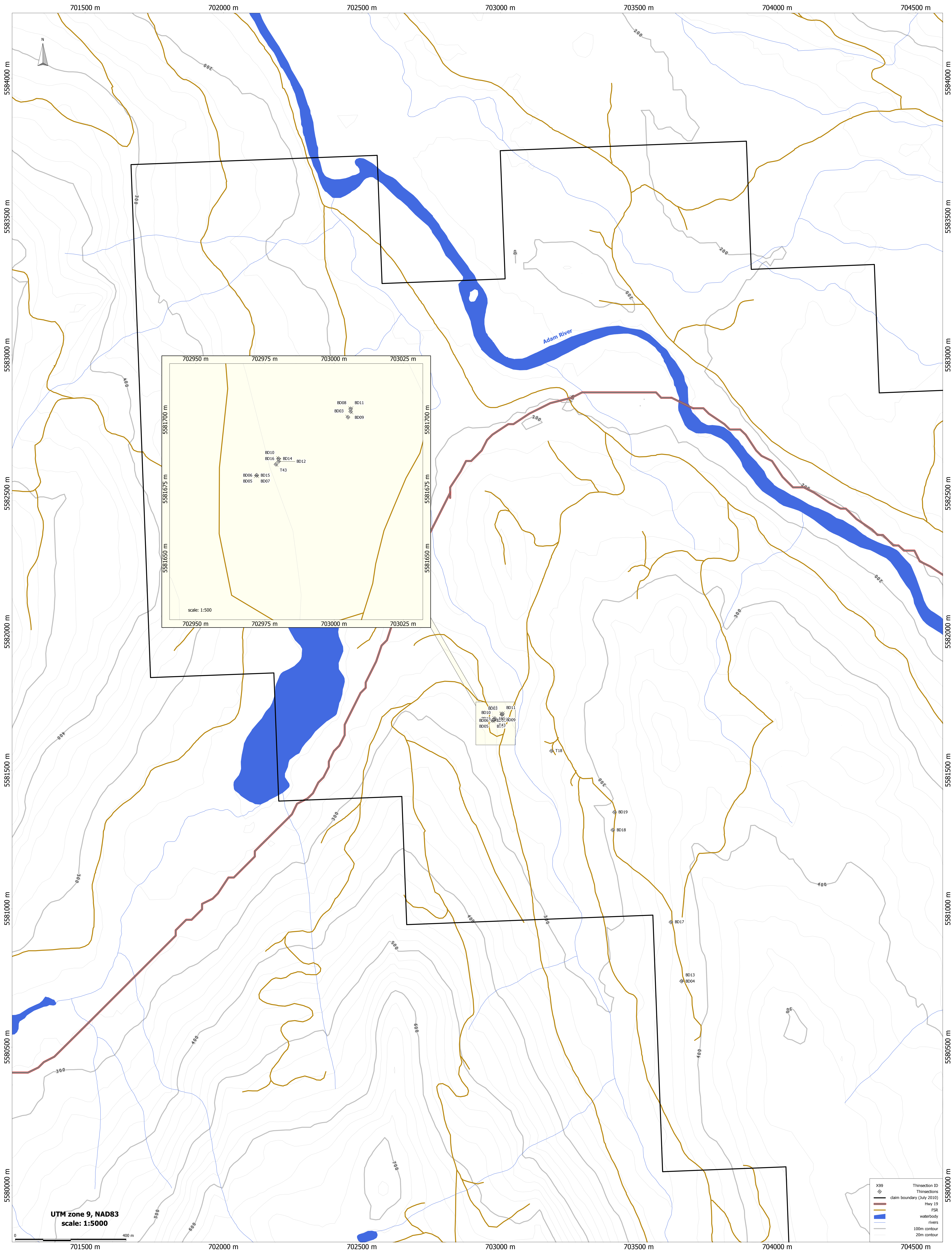
Intersertal but subsequently fractured

##### Structures

Massive

##### Veins and or selvages

Thin Chlorite veins traverse all minerals in chaotic directions with very small fragments of adjacent mineral grains  
Several thin local shear veins seen filled with chlorite and very small fragments of adjacent mineral grains  
Cut by 1/2 mm wide planar vein of quartz, carbonate and chlorite.



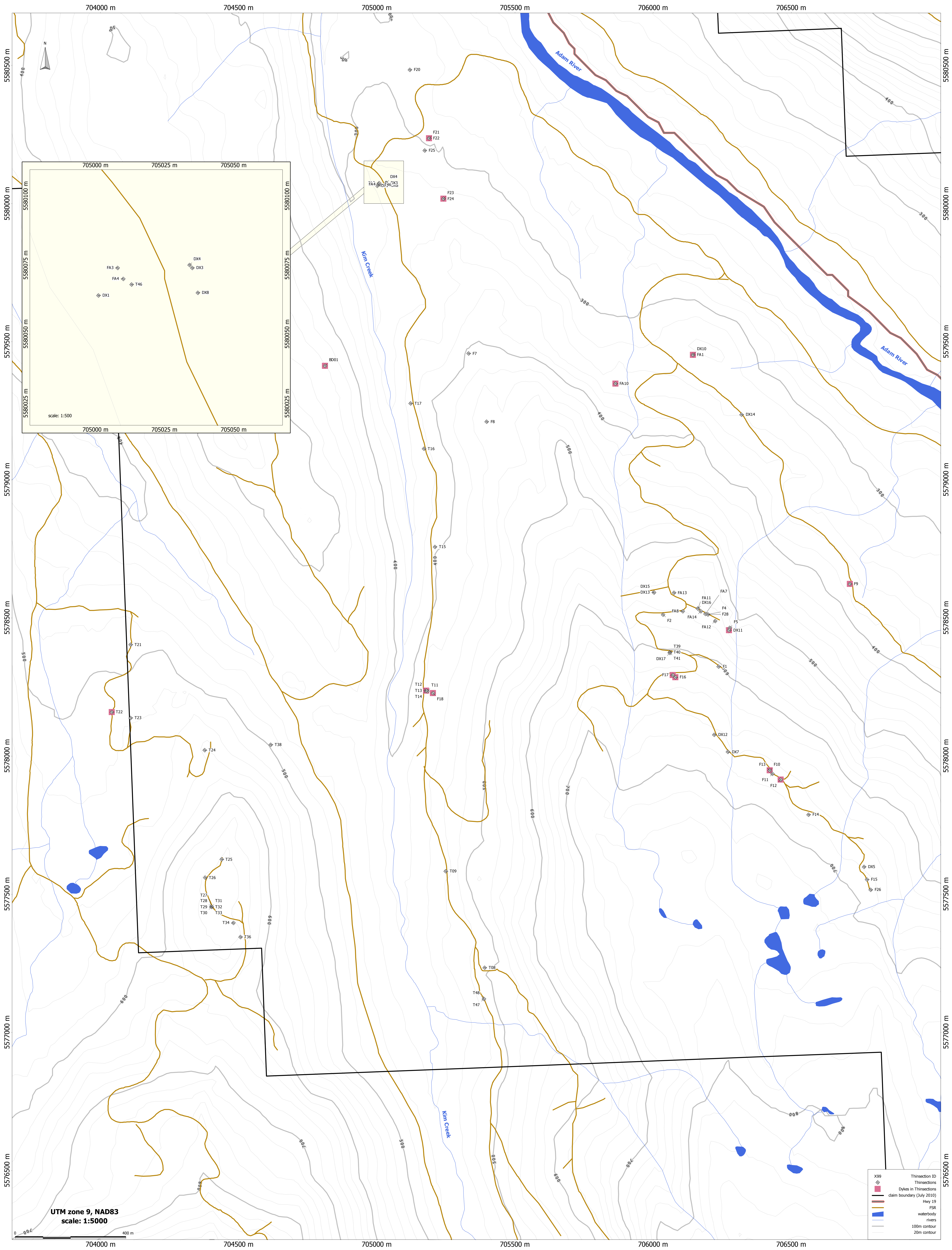
Projection/Datum: UTM 9(N) NAD83  
scale: 1:5000



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November 2011

**Figure 13**  
**Location of**  
**Thinsections in**  
**Northern Portion of Claims**



Projection/Datum: UTM 9(N) NAD83  
scale: 1:5000



**KRINGLE CONSOLIDATED**

November 2011

**Figure 14**  
**Location of**  
**Thinsections in**  
**Southern Portion of Claims**



# Appendix 4: Assay Sheets



1020 Cordova St. East Vancouver BC V6A 4A3 Canada

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**Client:** **Schau, Mikkel**  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7 Canada

Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: December 29, 2010  
Report Date: January 17, 2011  
Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN10007161.1

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 30

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
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: Schau, Mikkel  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7  
Canada

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	27	Crush, split and pulverize 250 g rock to 200 mesh			VAN
1F02	30	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	15	Completed	VAN
7AR	30	1:1:1 Aqua Regia digestion ICP-ES analysis	0.4	Completed	VAN
3B02	30	Fire assay fusion Au Pt Pd by ICP-ES	30	Completed	VAN

### ADDITIONAL COMMENTS



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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 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 1

CERTIFICATE OF ANALYSIS

VAN10007161.1

Method	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
006537	Rock	0.33	0.50	>10000	2.76	31.7	1933	40.8	26.2	324	3.85	0.4	<0.1	35.5	0.2	45.0	0.76	<0.02	0.09	102	1.11
006538	Rock	0.56	2.55	642.4	1.95	57.8	280	54.3	51.2	1563	7.55	3.5	0.4	5.1	0.4	8.8	0.63	<0.02	0.11	215	0.79
006539	Rock	0.28	18.43	5736	1.47	20.3	2731	23.8	16.3	214	4.09	0.6	<0.1	9.5	0.2	47.1	3.94	0.02	0.04	86	1.32
006540	Rock	0.76	14.43	>10000	1.28	138.2	1972	17.0	19.6	188	4.02	1.6	<0.1	44.1	0.1	25.1	7.40	0.12	0.08	67	0.84
006541	Rock	1.10	0.53	59.71	2.52	61.3	48	44.0	24.7	904	7.02	1.5	<0.1	5.1	0.2	54.3	0.10	0.11	0.03	211	3.92
006542	Rock	0.28	229.2	666.6	4.14	137.5	179	46.3	36.7	1410	7.21	56.1	0.1	5.4	0.4	35.4	0.61	0.02	0.03	203	2.61
006543	Rock	0.41	317.4	5173	19.60	45.0	2509	17.4	39.0	345	15.60	105.7	<0.1	31.1	<0.1	41.5	2.45	0.10	0.02	18	2.07
006544	Rock	0.54	564.8	5673	54.33	31.0	3282	25.8	68.8	222	27.56	793.6	<0.1	6.4	<0.1	23.0	1.98	0.08	<0.02	22	0.20
006545	Rock	0.36	23.83	>10000	7.47	22.4	26198	14.7	16.3	165	2.95	3.1	<0.1	46.9	<0.1	59.3	36.60	0.02	0.11	23	0.92
006546	Rock	0.22	74.47	>10000	12.38	19.7	57281	14.1	18.4	154	5.49	1.1	<0.1	20.1	<0.1	39.8	48.77	0.03	0.25	26	0.59
006547	Rock	0.32	54.63	>10000	11.30	12.9	44921	9.1	10.9	119	5.46	1.0	<0.1	28.0	<0.1	47.7	32.20	0.02	0.20	19	0.66
006548	Rock	0.80	0.88	1244	1.91	17.9	520	22.5	14.0	284	4.16	1.3	<0.1	11.0	0.2	53.5	0.50	0.08	0.03	160	4.31
006549	Rock	0.84	5.47	>10000	2.84	108.5	14549	80.8	66.4	438	8.22	47.5	<0.1	43.8	<0.1	3.2	2.43	0.10	0.21	88	0.28
006550	Rock	0.39	0.34	7512	1.93	30.7	5337	24.7	31.6	108	6.89	78.4	<0.1	257.2	<0.1	2.5	2.44	0.07	0.10	29	0.03
006638	Rock	0.41	0.53	>10000	2.13	106.5	2650	34.2	23.1	772	4.71	1.1	0.2	18.7	0.4	18.0	0.31	0.38	0.04	154	0.93
006639	Rock	0.87	0.35	3540	0.57	84.0	505	53.5	38.6	897	5.02	0.7	0.1	23.2	0.3	11.2	0.13	0.02	<0.02	123	0.88
006640	Rock	0.29	0.17	178.9	0.57	23.1	103	44.4	14.3	137	2.44	0.5	<0.1	7.9	0.2	220.7	0.03	<0.02	<0.02	112	3.06
006641	Rock	0.89	0.44	>10000	1.33	80.9	2376	47.5	32.7	759	4.67	0.3	0.2	63.9	0.3	14.6	0.98	0.03	0.02	136	0.96
006642	Rock	0.90	0.54	6510	0.59	31.8	1256	37.1	23.2	308	4.47	0.8	<0.1	9.2	0.2	22.3	2.87	<0.02	0.02	116	1.11
006643	Rock	0.67	0.27	177.3	0.56	128.6	39	56.4	36.1	1003	5.78	0.5	0.1	2.9	0.4	15.1	0.07	<0.02	<0.02	194	1.03
006644	Rock	0.86	0.13	88.31	0.65	21.5	37	52.1	16.1	258	2.12	0.5	<0.1	1.8	0.2	65.2	0.02	0.04	<0.02	48	0.82
006645	Rock	1.08	15.99	>10000	4.10	29.0	19968	21.8	18.9	215	3.55	0.6	<0.1	35.9	0.2	73.1	18.74	<0.02	0.06	73	1.12
006646	Rock	0.32	0.13	599.9	0.58	12.9	243	16.2	7.7	228	1.25	0.5	<0.1	4.6	<0.1	29.1	0.26	<0.02	<0.02	17	2.42
006647	Rock	1.40	0.86	1092	0.98	39.1	600	18.3	16.9	476	3.09	3.1	<0.1	11.5	<0.1	13.6	0.41	0.04	0.02	62	1.15
006648	Rock	0.71	0.17	70.62	0.35	29.2	33	24.3	15.8	603	2.96	0.6	<0.1	5.3	0.1	31.2	0.09	0.02	<0.02	111	2.51
006649	Rock	0.96	1.49	7202	1.41	102.8	1175	32.9	25.2	1865	5.89	0.4	0.3	17.1	0.3	56.5	0.17	<0.02	0.04	189	3.94
006650	Rock	0.89	0.52	>10000	0.92	56.7	872	64.3	39.4	443	6.74	0.8	0.1	15.3	0.2	17.3	0.88	0.03	0.07	181	1.12
STANDARD 3	Rock Pulp	0.22	4.58	8.66	2.01	12.3	21	1.4	0.8	435	0.78	0.5	1.9	0.4	5.1	7.1	0.03	0.03	<0.02	5	0.07
STANDARD 4	Rock Pulp	0.24	14.52	>10000	469.9	1710	69411	9.3	45.9	2262	9.82	4.4	2.3	24.6	4.2	13.0	31.14	0.06	22.63	19	0.10
STANDARD 5	Rock Pulp	0.32	0.41	5203	18.31	616.8	11985	143.1	263.3	803	34.76	<0.1	<0.1	25638	0.1	0.6	8.15	0.05	19.84	112	0.08

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: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 2

# CERTIFICATE OF ANALYSIS

VAN10007161.1

Method	Analyte	Unit	MDL	1F15 P	1F15 La	1F15 Cr	1F15 Mg	1F15 Ba	1F15 Ti	1F15 B	1F15 Al	1F15 Na	1F15 K	1F15 W	1F15 Sc	1F15 TI	1F15 S	1F15 Hg	1F15 Se	1F15 Te	1F15 Ga	7AR Cu	7AR Ag
				%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	gm/t
				0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.001	2
006537	Rock			0.045	1.5	56.7	1.20	4.8	0.377	4	1.58	0.037	0.02	<0.1	3.2	<0.02	0.33	<5	1.6	0.08	7.2	2.019	<2
006538	Rock			0.059	2.6	43.3	2.41	12.6	0.401	2	3.71	0.042	0.02	0.1	10.4	<0.02	0.45	<5	0.6	0.08	14.8	0.080	<2
006539	Rock			0.053	2.7	15.5	0.41	1.2	0.328	2	0.92	0.003	<0.01	<0.1	3.3	<0.02	0.45	<5	3.0	<0.02	3.3	0.603	<2
006540	Rock			0.030	0.8	17.2	0.31	3.2	0.358	<1	0.72	0.028	0.01	<0.1	2.3	<0.02	1.94	<5	0.8	0.02	2.6	2.620	2
006541	Rock			0.055	1.6	67.6	2.07	10.2	0.353	<1	1.97	0.065	0.02	<0.1	9.9	<0.02	0.26	<5	0.3	<0.02	7.9	0.008	<2
006542	Rock			0.063	3.8	27.8	2.47	15.4	0.475	2	2.82	0.042	0.02	0.1	9.5	2.42	2.23	<5	0.5	<0.02	11.8	0.070	<2
006543	Rock			0.001	<0.5	1.3	0.63	17.5	0.008	1	1.32	0.047	0.04	<0.1	0.6	19.01	>10	69	1.6	<0.02	4.6	0.541	<2
006544	Rock			<0.001	<0.5	1.6	0.57	6.1	0.005	<1	0.87	0.007	0.02	<0.1	0.5	34.07	>10	142	2.7	<0.02	3.1	0.656	3
006545	Rock			0.002	<0.5	2.0	0.54	1.5	0.006	3	1.14	0.002	<0.01	<0.1	1.2	<0.02	2.57	52	1.4	0.04	6.0	13.91	29
006546	Rock			0.003	<0.5	2.2	0.54	1.1	0.032	2	0.91	0.002	<0.01	<0.1	1.1	0.23	6.12	40	2.4	0.06	5.2	>25	63
006547	Rock			0.002	<0.5	2.3	0.28	1.3	0.023	2	0.77	0.002	<0.01	<0.1	1.1	0.15	4.93	72	1.8	0.06	4.0	>25	47
006548	Rock			0.037	1.8	35.0	0.75	11.9	0.417	5	4.51	0.007	<0.01	<0.1	5.8	<0.02	0.02	12	0.2	<0.02	19.1	0.121	<2
006549	Rock			0.006	0.7	19.2	0.90	0.8	0.027	<1	1.06	0.003	<0.01	<0.1	4.4	<0.02	4.90	<5	5.0	0.10	5.5	1.538	14
006550	Rock			0.002	0.5	13.2	0.18	0.6	0.022	<1	0.25	0.001	<0.01	<0.1	1.7	0.02	6.64	<5	4.9	0.08	1.9	0.762	6
006638	Rock			0.039	1.7	25.1	2.08	19.5	0.409	2	2.23	0.051	0.05	<0.1	6.2	0.32	0.44	<5	0.5	<0.02	7.1	2.110	5
006639	Rock			0.059	2.0	67.4	2.87	4.1	0.479	1	2.72	0.031	<0.01	<0.1	3.8	<0.02	0.03	<5	0.3	<0.02	9.9	0.364	<2
006640	Rock			0.036	1.7	17.3	0.88	10.0	0.090	<1	5.57	0.574	0.03	<0.1	1.4	<0.02	<0.02	<5	<0.1	<0.02	9.1	0.019	<2
006641	Rock			0.052	1.5	66.1	2.72	4.1	0.556	<1	2.55	0.027	<0.01	<0.1	4.8	<0.02	0.46	<5	0.6	0.02	9.2	1.947	4
006642	Rock			0.058	3.1	23.3	1.12	1.7	0.468	2	1.39	0.036	<0.01	<0.1	1.7	<0.02	0.16	<5	0.3	<0.02	6.2	0.679	<2
006643	Rock			0.064	3.0	52.9	2.53	5.4	0.743	2	2.88	0.043	<0.01	<0.1	4.1	<0.02	<0.02	<5	0.2	<0.02	11.3	0.021	2
006644	Rock			0.034	1.2	36.9	2.07	4.2	0.252	<1	1.69	0.056	<0.01	<0.1	1.6	<0.02	<0.02	<5	0.1	<0.02	4.9	0.009	<2
006645	Rock			0.033	1.7	14.9	0.70	1.1	0.336	3	1.13	0.005	<0.01	<0.1	3.0	0.03	1.61	38	1.3	0.05	4.7	7.647	21
006646	Rock			0.002	<0.5	14.7	0.54	1.8	0.053	2	0.97	0.090	0.02	<0.1	1.3	<0.02	0.08	<5	0.2	<0.02	3.2	0.059	2
006647	Rock			0.011	<0.5	30.2	0.70	2.9	0.069	<1	0.79	0.011	<0.01	<0.1	5.1	<0.02	0.52	<5	0.6	<0.02	3.4	0.110	<2
006648	Rock			0.022	1.4	45.7	1.47	1.0	0.279	<1	1.53	0.016	<0.01	<0.1	6.8	<0.02	0.03	<5	0.5	<0.02	5.4	0.007	<2
006649	Rock			0.051	1.8	57.4	1.93	47.1	0.228	1	3.33	0.096	0.07	<0.1	12.3	0.02	0.27	<5	1.0	0.12	13.5	0.756	<2
006650	Rock			0.056	1.4	64.7	1.88	3.8	0.635	2	1.90	0.044	<0.01	<0.1	4.4	<0.02	0.30	<5	0.7	0.03	10.7	1.301	<2
STANDARD 3	Rock Pulp			0.005	6.8	4.9	0.11	38.1	0.032	<1	0.37	0.043	0.11	0.1	1.3	0.04	0.08	40	0.2	<0.02	2.0	0.001	<2
STANDARD 4	Rock Pulp			0.009	3.9	1.2	0.32	28.8	0.006	<1	3.21	0.003	0.17	<0.1	1.4	0.03	1.18	204	8.0	2.40	15.8	1.427	66
STANDARD 5	Rock Pulp			0.014	0.9	25.3	0.89	1.4	0.041	<1	1.48	0.001	<0.01	0.1	6.3	0.03	>10	90	48.3	7.13	5.4	0.505	22



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Project: None Given
Report Date: January 17, 2011

Page: 2 of 2 Part 3

CERTIFICATE OF ANALYSIS

VAN10007161.1

Table with columns: Method, Analyte, Unit, MDL, 3B Au, 3B Pt, 3B Pd. Rows include sample IDs (006537-006650) and standards (STANDARD 3-5) with corresponding analyte concentrations.



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Project: None Given  
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QUALITY CONTROL REPORT

VAN10007161.1

Method	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
Pulp Duplicates																					
REP G1	QC																				
006546	Rock	0.22	74.47	>10000	12.38	19.7	57281	14.1	18.4	154	5.49	1.1	<0.1	20.1	<0.1	39.8	48.77	0.03	0.25	26	0.59
REP 006546	QC		75.84	>10000	12.39	20.4	58652	14.4	19.1	154	5.62	1.2	<0.1	23.0	<0.1	38.3	50.84	0.03	0.25	26	0.56
006550	Rock	0.39	0.34	7512	1.93	30.7	5337	24.7	31.6	108	6.89	78.4	<0.1	257.2	<0.1	2.5	2.44	0.07	0.10	29	0.03
REP 006550	QC																				
006645	Rock	1.08	15.99	>10000	4.10	29.0	19968	21.8	18.9	215	3.55	0.6	<0.1	35.9	0.2	73.1	18.74	<0.02	0.06	73	1.12
REP 006645	QC		16.60	>10000	4.28	30.1	20584	22.6	18.7	221	3.64	0.5	<0.1	82.2	0.2	75.7	19.16	<0.02	0.06	75	1.16
STANDARD 3	Rock Pulp	0.22	4.58	8.66	2.01	12.3	21	1.4	0.8	435	0.78	0.5	1.9	0.4	5.1	7.1	0.03	0.03	<0.02	5	0.07
REP STANDARD 3	QC																				
Core Reject Duplicates																					
006649	Rock	0.96	1.49	7202	1.41	102.8	1175	32.9	25.2	1865	5.89	0.4	0.3	17.1	0.3	56.5	0.17	<0.02	0.04	189	3.94
DUP 006649	QC	<0.01	1.56	7378	1.22	102.4	1168	33.6	25.3	1918	5.98	0.2	0.3	14.7	0.3	57.1	0.15	<0.02	0.05	194	4.05
Reference Materials																					
STD DS8	Standard		12.80	101.2	122.7	288.1	1597	35.6	7.2	592	2.30	24.9	2.7	87.9	6.7	59.6	2.21	5.04	6.48	40	0.68
STD DS8	Standard		14.38	99.91	130.7	327.3	1786	39.9	8.2	679	2.47	27.9	3.1	106.2	7.6	66.4	2.48	5.81	7.09	43	0.74
STD GC-7	Standard																				
STD GC-7	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD R4A	Standard																				
STD R4A	Standard																				
STD DS8 Expected			13.44	110	123	312	1690	38.1	7.5	615	2.46	26	2.8	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7
STD PD1 Expected																					
STD GC-7 Expected																					
STD R4A Expected																					
BLK	Blank		<0.01	0.90	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01
BLK	Blank																				
BLK	Blank																				

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Project: None Given  
 Report Date: January 17, 2011

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QUALITY CONTROL REPORT

VAN10007161.1

Method		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	7AR	7AR		
Analyte		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cu	Ag	
Unit		%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	gm/t	
MDL		0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.001	2	
Pulp Duplicates																						
REP G1	QC																					
006546	Rock	0.003	<0.5	2.2	0.54	1.1	0.032	2	0.91	0.002	<0.01	<0.1	1.1	0.23	6.12	40	2.4	0.06	5.2	>25	63	
REP 006546	QC	0.004	<0.5	2.3	0.55	1.0	0.032	2	0.91	0.003	<0.01	<0.1	1.2	0.20	6.61	44	2.3	0.09	5.1			
006550	Rock	0.002	0.5	13.2	0.18	0.6	0.022	<1	0.25	0.001	<0.01	<0.1	1.7	0.02	6.64	<5	4.9	0.08	1.9	0.762	6	
REP 006550	QC																			0.766	5	
006645	Rock	0.033	1.7	14.9	0.70	1.1	0.336	3	1.13	0.005	<0.01	<0.1	3.0	0.03	1.61	38	1.3	0.05	4.7	7.647	21	
REP 006645	QC	0.034	1.9	14.8	0.73	1.1	0.347	2	1.18	0.005	<0.01	<0.1	3.1	0.03	1.67	41	1.3	0.06	4.7			
STANDARD 3	Rock Pulp	0.005	6.8	4.9	0.11	38.1	0.032	<1	0.37	0.043	0.11	0.1	1.3	0.04	0.08	40	0.2	<0.02	2.0	0.001	<2	
REP STANDARD 3	QC																					
Core Reject Duplicates																						
006649	Rock	0.051	1.8	57.4	1.93	47.1	0.228	1	3.33	0.096	0.07	<0.1	12.3	0.02	0.27	<5	1.0	0.12	13.5	0.756	<2	
DUP 006649	QC	0.052	1.8	56.7	1.96	47.5	0.235	2	3.44	0.107	0.07	<0.1	12.4	<0.02	0.28	<5	1.1	0.07	13.9	0.752	<2	
Reference Materials																						
STD DS8	Standard	0.076	14.5	111.1	0.58	262.7	0.100	2	0.88	0.087	0.38	2.8	2.2	5.33	0.15	177	4.9	4.64	4.5			
STD DS8	Standard	0.088	16.3	124.9	0.63	295.5	0.113	3	0.95	0.099	0.42	3.1	2.5	5.61	0.16	206	5.5	5.47	5.0			
STD GC-7	Standard																			0.568	>300	
STD GC-7	Standard																			0.557	>300	
STD PD1	Standard																					
STD PD1	Standard																					
STD R4A	Standard																			0.507	85	
STD R4A	Standard																			0.509	91	
STD DS8 Expected		0.08	14.6	115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	2.3	5.4	0.1679	192	5.23	5	4.7			
STD PD1 Expected																						
STD GC-7 Expected																				0.555	619	
STD R4A Expected																				0.502	86	
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1			
BLK	Blank																					
BLK	Blank																					

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**Project:** None Given

**Report Date:** January 17, 2011

**Page:** 1 of 2 **Part** 3

## QUALITY CONTROL REPORT

VAN10007161.1

Method	3B	3B	3B	
Analyte	Au	Pt	Pd	
Unit	ppb	ppb	ppb	
MDL	2	3	2	
Pulp Duplicates				
REP G1	QC	<2	<3	<2
006546	Rock	34	8	3
REP 006546	QC			
006550	Rock	201	<3	<2
REP 006550	QC			
006645	Rock	47	<3	14
REP 006645	QC			
STANDARD 3	Rock Pulp	<2	<3	<2
REP STANDARD 3	QC	<2	<3	<2
Core Reject Duplicates				
006649	Rock	22	<3	29
DUP 006649	QC	23	<3	28
Reference Materials				
STD DS8	Standard			
STD DS8	Standard			
STD GC-7	Standard			
STD GC-7	Standard			
STD PD1	Standard	532	436	550
STD PD1	Standard	501	428	514
STD R4A	Standard			
STD R4A	Standard			
STD DS8 Expected				
STD PD1 Expected		542	456	563
STD GC-7 Expected				
STD R4A Expected				
BLK	Blank			
BLK	Blank	<2	<3	<2
BLK	Blank	<2	<3	<2





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**Report Date:** January 17, 2011

**Page:** 2 of 2 **Part** 1

## QUALITY CONTROL REPORT

VAN10007161.1

		WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
		kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	<0.01	0.13	19.48	3.27	45.5	25	3.4	4.3	563	2.00	0.4	1.9	1.8	5.5	59.7	0.03	<0.02	0.05	37	0.51
G1	Prep Blank	<0.01	0.10	12.54	3.32	43.2	26	3.2	4.0	530	1.88	0.3	1.6	1.0	5.1	55.1	0.02	<0.02	0.05	35	0.48
G1	Prep Blank																				



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## QUALITY CONTROL REPORT

VAN10007161.1

		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	7AR	7AR			
		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cu	Ag		
		%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	gm/t		
BLK	Blank	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.001	2		
BLK	Blank																				<0.001	<2	
BLK	Blank																					<0.001	<2
Prep Wash																							
G1	Prep Blank	0.077	10.2	12.8	0.57	208.2	0.107	<1	1.02	0.092	0.47	<0.1	2.3	0.28	<0.02	<5	<0.1	<0.02	5.0	0.002	<2		
G1	Prep Blank	0.073	9.3	11.7	0.55	190.5	0.099	<1	0.95	0.085	0.44	<0.1	2.0	0.27	<0.02	<5	0.1	<0.02	4.6	0.027	<2		
G1	Prep Blank																						



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# QUALITY CONTROL REPORT

VAN10007161.1

		3B	3B	3B
		Au	Pt	Pd
		ppb	ppb	ppb
		2	3	2
BLK	Blank	<2	<3	<2
BLK	Blank			
BLK	Blank			
Prep Wash				
G1	Prep Blank	<2	<3	4
G1	Prep Blank			
G1	Prep Blank	<2	<3	<2



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**Client:** **Schau, Mikkel**  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7 Canada

Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: December 29, 2010  
Report Date: January 13, 2011  
Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN10007168.1

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 24

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
DISP-RJT-SOIL Immediate Disposal of Soil Reject

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

Invoice To: Schau, Mikkel  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7  
Canada

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SS80	24	Dry at 60C sieve 100g to -80 mesh			VAN
Dry at 60C	24	Dry at 60C			VAN
1F02	20	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	15	Completed	VAN

### ADDITIONAL COMMENTS



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Project: None Given  
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CERTIFICATE OF ANALYSIS

VAN10007168.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.1	0.5	0.01	0.02	0.02	0.02	2	0.01	0.001
006551	Silt	0.23	118.1	2.90	86.6	48	69.2	39.9	1211	5.89	0.7	0.2	2.2	0.4	47.9	0.16	0.02	0.03	218	2.97	0.040
006552	Silt	0.32	109.8	2.58	95.1	60	64.5	41.9	1948	6.06	0.8	0.2	1.1	0.4	43.1	0.19	0.04	0.04	221	2.89	0.047
006701	Silt	1.84	96.88	9.43	77.1	177	25.9	158.7	4305	6.60	1.6	0.2	16.1	0.2	22.1	0.50	0.19	0.07	156	0.93	0.051
006702	Silt	0.48	42.93	15.23	20.2	152	11.8	6.5	162	5.59	1.1	0.1	1.6	0.3	6.9	0.19	0.18	0.12	246	0.40	0.056
006703	Silt	3.02	79.28	10.68	35.1	70	21.4	17.6	341	8.90	1.2	0.2	3.7	0.5	7.5	0.29	0.13	0.12	270	0.64	0.038
006704	Silt	2.34	48.06	9.09	15.5	139	7.1	9.2	234	6.84	1.8	0.1	0.9	<0.1	7.0	0.20	0.11	0.06	97	0.29	0.079
006705	Silt	16.89	33.57	11.92	21.1	141	8.9	6.8	253	9.86	2.0	0.2	4.5	0.2	8.6	0.39	0.13	0.10	251	0.38	0.074
006706	Silt	0.81	35.83	17.74	29.2	104	12.8	11.1	409	3.93	1.5	0.1	1.4	<0.1	9.4	0.14	0.14	0.11	137	0.52	0.067
006707	Silt	3.57	165.9	15.96	58.5	41	42.8	48.0	4743	7.46	4.1	0.2	12.9	0.4	23.7	0.54	0.09	0.04	261	1.65	0.050
006708	Silt	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
006709	Silt	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
006710	Silt	0.96	111.8	18.36	48.3	168	16.1	20.4	1691	5.42	1.8	0.3	2.6	<0.1	11.9	0.35	0.16	0.17	213	0.63	0.133
006711	Silt	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
006712	Silt	1.12	156.0	7.97	120.0	94	43.7	42.3	1921	5.09	3.9	0.4	3.4	0.5	36.0	0.51	0.15	0.06	161	1.41	0.070
006713	Silt	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
006714	Silt	1.52	168.9	9.00	130.1	141	43.3	66.6	4041	6.44	3.7	0.4	9.8	0.3	37.1	0.56	0.16	0.06	180	1.30	0.066
006715	Silt	1.24	190.4	9.07	90.5	89	43.4	66.5	3343	6.16	2.1	0.2	3.0	0.4	47.9	0.38	0.19	0.06	187	1.32	0.059
006716	Silt	1.27	82.09	5.89	90.5	210	35.2	103.2	4214	5.27	1.0	0.2	10.5	0.3	19.0	0.42	0.08	0.06	184	0.75	0.066
006717	Silt	5.37	97.27	10.48	61.2	58	26.6	101.9	3059	12.15	1.6	0.2	1.3	0.5	15.7	0.22	0.21	0.05	286	0.75	0.058
006718	Silt	1.20	88.57	19.16	26.7	218	9.8	11.0	795	3.77	0.9	0.2	1.2	<0.1	8.8	0.19	0.17	0.11	93	0.31	0.106
006719	Silt	4.09	148.4	6.27	44.4	92	16.2	38.0	1854	6.16	0.3	0.3	2.9	0.5	9.0	0.23	0.09	0.13	271	0.48	0.053
006720	Silt	5.01	94.42	8.90	38.6	86	24.2	17.4	439	11.13	1.2	0.3	9.9	0.5	9.2	0.34	0.12	0.09	296	0.78	0.051
STANDARD1	Silt	0.83	2.02	2.29	40.5	10	7.8	4.2	489	1.75	<0.1	2.0	<0.2	3.8	45.7	<0.01	<0.02	0.05	31	0.43	0.086
STANDARD2	Silt	0.46	2572	8.40	4.3	1028	4.3	1.1	118	0.92	<0.1	<0.1	18.3	0.1	139.7	0.40	0.21	0.07	50	3.79	0.031



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Project: None Given  
 Report Date: January 13, 2011

Page: 2 of 2 Part 2

CERTIFICATE OF ANALYSIS

VAN10007168.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
006551	Silt	3.0	69.7	2.16	28.1	0.571	4	4.94	0.032	0.02	<0.1	16.1	<0.02	<0.02	46	0.6	<0.02	13.7
006552	Silt	3.2	68.4	2.00	27.1	0.603	4	4.75	0.025	0.02	<0.1	15.5	<0.02	0.02	88	0.8	<0.02	13.4
006701	Silt	2.4	53.2	0.43	30.3	0.331	4	3.50	0.011	0.03	<0.1	5.5	<0.02	0.09	229	0.9	<0.02	9.3
006702	Silt	1.4	53.9	0.22	10.2	0.472	2	2.36	0.007	0.02	<0.1	5.3	<0.02	0.09	236	0.6	<0.02	12.0
006703	Silt	1.3	72.4	0.68	9.4	0.620	3	2.97	0.005	0.01	<0.1	4.0	<0.02	0.06	121	0.5	<0.02	15.5
006704	Silt	1.6	20.4	0.08	12.9	0.063	4	1.04	0.020	0.06	<0.1	2.9	<0.02	0.17	194	1.2	<0.02	2.6
006705	Silt	1.5	39.3	0.16	20.7	0.301	2	1.60	0.005	0.02	<0.1	3.1	<0.02	0.12	329	1.1	0.03	11.2
006706	Silt	1.4	24.6	0.30	11.4	0.210	2	1.13	0.013	0.09	<0.1	3.1	<0.02	0.13	186	0.6	0.05	7.2
006707	Silt	2.7	48.9	1.05	31.8	0.532	4	2.90	0.011	0.02	<0.1	8.0	<0.02	0.03	65	0.9	<0.02	11.3
006708	Silt	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
006709	Silt	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
006710	Silt	1.8	35.9	0.37	17.6	0.274	4	1.37	0.014	0.06	<0.1	3.8	<0.02	0.14	284	0.8	0.04	13.6
006711	Silt	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
006712	Silt	4.0	54.7	0.91	50.3	0.342	6	4.05	0.020	0.03	<0.1	9.7	<0.02	0.09	117	1.1	<0.02	9.3
006713	Silt	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
006714	Silt	3.4	65.8	0.97	48.8	0.415	3	4.35	0.012	0.02	<0.1	10.1	<0.02	0.07	198	1.1	0.10	10.5
006715	Silt	2.9	68.8	1.04	37.9	0.460	4	4.20	0.022	0.03	<0.1	8.8	<0.02	0.05	136	0.8	0.06	10.9
006716	Silt	3.2	62.0	0.40	39.3	0.423	3	4.80	0.009	0.01	<0.1	7.6	<0.02	0.08	271	1.3	<0.02	10.9
006717	Silt	1.9	89.7	0.62	14.2	0.580	4	4.51	0.014	0.02	<0.1	6.7	<0.02	0.04	152	1.0	<0.02	14.4
006718	Silt	2.2	28.3	0.15	15.3	0.180	3	1.68	0.009	0.04	<0.1	3.8	<0.02	0.16	591	0.9	<0.02	7.2
006719	Silt	2.5	75.9	0.31	12.5	0.850	2	3.47	0.009	0.01	<0.1	5.6	<0.02	0.04	349	0.9	0.02	20.7
006720	Silt	2.0	68.5	0.67	12.2	0.599	3	3.14	0.005	<0.01	<0.1	5.1	<0.02	0.05	218	1.0	<0.02	15.5
STANDARD1	Silt	6.4	81.9	0.53	176.1	0.089	<1	0.94	0.064	0.49	0.1	2.0	0.34	<0.02	8	<0.1	<0.02	4.4
STANDARD2	Silt	1.0	25.0	0.02	1.6	0.244	3	0.76	<0.001	<0.01	2.4	2.5	<0.02	0.14	37	5.9	0.02	3.1



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**Project:** None Given

**Report Date:** January 13, 2011

**Page:** 1 of 1 **Part** 1

QUALITY CONTROL REPORT

VAN10007168.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	
Pulp Duplicates																					
006719	Silt	4.09	148.4	6.27	44.4	92	16.2	38.0	1854	6.16	0.3	0.3	2.9	0.5	9.0	0.23	0.09	0.13	271	0.48	0.053
REP 006719	QC	4.55	168.6	7.43	47.7	100	17.5	44.3	2239	6.90	0.4	0.4	3.6	0.6	10.2	0.25	0.11	0.15	311	0.51	0.061
Reference Materials																					
STD DS8	Standard	12.96	99.30	132.4	297.1	1768	39.8	8.2	630	2.47	22.9	2.5	118.3	6.2	56.1	2.19	5.09	6.24	40	0.68	0.087
STD DS8	Standard	13.48	100.5	128.9	307.1	1701	41.3	8.1	638	2.50	21.1	2.4	104.4	6.0	58.8	2.21	4.95	6.31	42	0.70	0.084
STD DS8 Expected		13.44	110	123	312	1690	38.1	7.5	615	2.46	26	2.8	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7	0.08
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001



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Project: None Given

Report Date: January 13, 2011

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# QUALITY CONTROL REPORT

VAN10007168.1

Method		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15		
Analyte		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	
Pulp Duplicates																			
006719	Silt	2.5	75.9	0.31	12.5	0.850	2	3.47	0.009	0.01	<0.1	5.6	<0.02	0.04	349	0.9	0.02	20.7	
REP 006719	QC	3.0	85.0	0.32	15.7	0.964	4	3.97	0.009	0.01	<0.1	6.2	<0.02	0.05	424	1.0	0.03	23.2	
Reference Materials																			
STD DS8	Standard	12.4	116.3	0.60	248.5	0.091	3	0.90	0.083	0.41	3.0	2.1	5.65	0.16	204	5.8	5.22	4.7	
STD DS8	Standard	12.9	117.3	0.61	242.7	0.092	3	0.91	0.080	0.42	3.1	2.1	5.41	0.16	205	5.3	5.24	4.7	
STD DS8 Expected		14.6	115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	2.3	5.4	0.1679	192	5.23	5	4.7	
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	





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Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: December 29, 2010  
Report Date: January 17, 2011  
Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN10007169.1

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 18

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
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: Schau, Mikkel  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7  
Canada

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	18	Crush, split and pulverize 250 g rock to 200 mesh			VAN
1F02	18	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	15	Completed	VAN
4A4B	4	Whole Rock Analysis Majors and Trace Elements	0.2	Completed	VAN
7AR	18	1:1:1 Aqua Regia digestion ICP-ES analysis	0.4	Completed	VAN
3B02	18	Fire assay fusion Au Pt Pd by ICP-ES	30	Completed	VAN

### ADDITIONAL COMMENTS



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: None Given  
 Report Date: January 17, 2011

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CERTIFICATE OF ANALYSIS

VAN10007169.1

Method	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
006960	Rock	0.59	0.17	291.8	1.22	105.1	49	57.3	42.6	1241	8.31	0.2	<0.1	1.7	0.3	20.9	0.16	0.04	<0.02	187	1.36
006961	Rock	0.93	0.32	1600	0.53	80.4	296	68.4	42.3	966	7.35	0.4	0.1	35.3	0.2	14.7	0.12	0.04	<0.02	170	0.95
006962	Rock	1.64	0.31	153.5	0.33	48.0	52	49.5	22.0	455	4.67	0.3	<0.1	4.3	0.3	111.3	0.08	<0.02	<0.02	133	3.02
006963	Rock	1.18	0.26	828.0	0.60	52.2	157	42.7	29.5	616	5.08	0.2	<0.1	5.9	0.2	19.0	0.07	<0.02	<0.02	120	1.15
006964	Rock	1.89	0.30	638.0	0.19	51.0	144	49.8	32.1	590	5.57	0.1	<0.1	13.5	0.2	14.8	0.06	<0.02	<0.02	135	0.94
006965	Rock	1.39	0.53	29.89	1.91	46.3	46	5.2	13.4	683	3.50	0.4	0.3	0.9	1.1	39.2	0.59	0.04	<0.02	79	1.78
006966	Rock	1.38	1.56	1142	0.38	18.8	246	25.3	16.3	257	2.24	0.4	<0.1	10.7	<0.1	73.2	0.15	0.04	<0.02	71	1.69
006967	Rock	0.17	26.07	>10000	6.18	20.6	26991	15.8	17.8	263	3.87	0.2	<0.1	126.0	0.1	78.1	31.17	0.02	0.10	81	1.45
006968	Rock	0.65	1.26	>10000	2.08	59.3	6918	37.8	29.9	950	6.07	<0.1	0.1	59.5	0.3	37.3	0.60	0.03	0.02	158	2.20
006969	Rock	0.78	0.60	>10000	2.01	48.7	5024	44.1	23.5	488	3.93	0.5	<0.1	13.0	0.2	25.2	1.20	0.02	<0.02	99	1.11
006970	Rock	1.35	0.66	>10000	2.74	101.3	7907	61.5	38.5	1065	6.59	<0.1	0.3	20.4	0.2	47.3	0.28	<0.02	<0.02	114	0.81
006971	Rock	1.25	0.38	433.6	1.22	35.9	122	5.7	13.6	753	3.79	0.5	0.4	<0.2	1.6	55.7	0.10	0.03	<0.02	93	0.97
006972	Rock	1.50	10.03	>10000	1.00	84.6	4431	36.7	25.2	235	4.51	0.3	<0.1	45.9	0.2	31.6	7.24	0.13	0.03	114	1.25
006973	Rock	3.63	2.20	>10000	0.83	63.4	3222	39.2	22.9	252	4.87	0.4	<0.1	21.0	0.2	26.6	3.14	0.12	<0.02	156	1.07
006974	Rock	2.29	78.99	>10000	5.81	58.3	46373	7.6	12.5	630	3.43	2.6	<0.1	102.4	0.1	43.3	35.15	0.29	0.19	108	5.47
006975	Rock	0.60	2.33	>10000	1.45	58.1	11885	69.9	78.4	919	5.56	2.4	<0.1	96.4	<0.1	31.6	8.19	0.07	<0.02	69	4.68
006976	Rock	0.99	0.92	556.0	1.10	57.3	449	2.9	18.7	943	4.32	0.7	0.2	10.7	0.4	29.3	0.48	0.04	0.03	133	1.76
006977	Rock	0.38	0.67	62.03	1.11	50.7	62	2.7	14.1	756	3.90	0.6	0.2	2.4	0.4	68.3	0.08	0.06	0.02	119	1.47



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Project: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 2

CERTIFICATE OF ANALYSIS

VAN10007169.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	4A-4B	4A-4B
Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	SiO2	Al2O3	
Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	%	
MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.01	0.01	
006960	Rock	0.065	3.6	37.2	3.45	51.1	0.324	1	4.09	0.048	0.33	<0.1	8.1	0.12	<0.02	<5	0.4	<0.02	11.2	N.A.	N.A.
006961	Rock	0.068	1.9	103.3	2.95	7.9	0.534	2	3.12	0.050	0.01	<0.1	5.9	<0.02	0.03	<5	0.4	0.03	12.6	N.A.	N.A.
006962	Rock	0.070	4.0	15.4	0.99	12.5	0.371	<1	4.97	0.447	0.04	<0.1	2.5	<0.02	<0.02	<5	0.3	<0.02	10.6	N.A.	N.A.
006963	Rock	0.060	2.0	28.5	1.75	7.8	0.521	2	2.31	0.065	0.02	<0.1	3.8	<0.02	<0.02	<5	0.2	<0.02	10.7	N.A.	N.A.
006964	Rock	0.062	2.3	34.2	2.23	4.2	0.507	<1	2.34	0.061	<0.01	<0.1	2.0	<0.02	<0.02	<5	0.5	<0.02	9.1	N.A.	N.A.
006965	Rock	0.054	4.7	5.4	1.24	27.4	0.122	1	2.15	0.076	0.12	0.1	8.1	<0.02	<0.02	<5	0.2	<0.02	7.3	62.05	15.46
006966	Rock	0.019	0.8	19.0	0.59	2.9	0.285	4	1.59	0.004	<0.01	<0.1	1.6	<0.02	0.07	<5	0.5	<0.02	7.4	N.A.	N.A.
006967	Rock	0.023	1.2	6.5	0.60	2.2	0.349	3	1.39	0.003	<0.01	<0.1	5.7	<0.02	1.74	133	2.3	0.16	6.1	N.A.	N.A.
006968	Rock	0.055	3.0	15.2	2.16	31.6	0.466	1	2.54	0.040	0.11	<0.1	5.8	0.17	0.81	9	1.3	0.09	9.1	N.A.	N.A.
006969	Rock	0.045	1.6	59.9	1.46	4.7	0.502	1	1.85	0.052	<0.01	<0.1	2.9	<0.02	0.72	<5	0.9	0.04	6.9	N.A.	N.A.
006970	Rock	0.027	0.8	27.5	2.97	3.9	0.329	1	3.39	0.006	<0.01	<0.1	6.0	0.04	0.79	<5	1.4	0.11	12.0	N.A.	N.A.
006971	Rock	0.056	4.5	6.6	1.21	44.0	0.112	<1	1.91	0.147	0.09	0.1	7.8	<0.02	<0.02	<5	0.1	0.02	6.8	62.75	15.91
006972	Rock	0.059	1.9	32.2	0.80	11.6	0.500	<1	1.05	0.098	0.02	<0.1	3.5	<0.02	2.04	5	0.9	<0.02	4.0	N.A.	N.A.
006973	Rock	0.060	1.9	50.4	0.90	19.1	0.550	<1	1.04	0.124	0.05	<0.1	4.2	<0.02	1.60	<5	0.5	0.03	5.3	N.A.	N.A.
006974	Rock	0.059	1.3	20.0	0.03	3.8	0.566	1	0.78	0.002	<0.01	0.1	6.6	<0.02	1.42	23	2.0	0.03	2.8	N.A.	N.A.
006975	Rock	0.008	<0.5	11.7	1.05	1.4	0.035	<1	1.13	0.004	<0.01	<0.1	5.7	<0.02	1.70	<5	7.3	0.04	4.9	N.A.	N.A.
006976	Rock	0.071	3.9	5.4	1.73	11.6	0.164	2	2.85	0.043	0.05	<0.1	5.6	<0.02	<0.02	7	<0.1	<0.02	8.4	55.90	16.18
006977	Rock	0.060	5.7	3.5	1.25	31.7	0.162	1	2.48	0.155	0.07	<0.1	3.3	<0.02	<0.02	<5	<0.1	<0.02	7.7	58.81	16.35



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Project: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 3

CERTIFICATE OF ANALYSIS

VAN10007169.1

Method		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
Analyte		Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	Hf	Nb
Unit		%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	0.1	0.1
006960	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006961	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006962	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006963	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006964	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006965	Rock	5.68	2.17	4.82	3.51	2.16	0.57	0.12	0.11	<0.002	<20	15	3.2	99.81	820	<1	14.2	0.4	14.5	3.1	5.7
006966	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006967	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006968	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006969	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006970	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006971	Rock	6.05	2.33	4.14	3.54	2.05	0.56	0.14	0.12	0.002	<20	16	2.2	99.75	817	<1	14.5	0.4	14.7	2.9	5.5
006972	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006973	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006974	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006975	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006976	Rock	8.73	3.34	7.12	3.15	0.93	0.87	0.19	0.16	<0.002	<20	29	3.2	99.74	383	<1	21.9	0.1	16.9	2.4	4.4
006977	Rock	7.33	2.84	5.45	3.36	1.91	0.71	0.17	0.14	0.002	<20	20	2.7	99.79	634	<1	17.7	1.0	15.9	2.9	5.3



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Project: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 4

CERTIFICATE OF ANALYSIS

VAN10007169.1

Method	Analyte	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B
		Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	0.05	0.02
006960	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006961	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006962	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006963	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006964	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006965	Rock	50.9	<1	319.3	0.4	4.7	1.8	140	<0.5	116.2	18.5	14.0	28.7	3.35	13.3	2.93	0.80	2.93	0.49	3.10	0.64
006966	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006967	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006968	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006969	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006970	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006971	Rock	50.3	<1	377.5	0.4	4.3	1.5	139	0.6	108.5	17.0	13.5	27.7	3.19	12.8	2.71	0.80	2.71	0.44	2.84	0.60
006972	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006973	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006974	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006975	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006976	Rock	19.9	<1	314.6	0.2	1.8	0.8	255	<0.5	84.7	23.4	10.4	23.7	3.04	13.6	3.42	1.04	3.77	0.63	3.96	0.84
006977	Rock	39.1	<1	432.4	0.3	2.7	1.2	183	<0.5	105.9	22.1	12.9	28.3	3.46	15.2	3.43	1.00	3.64	0.61	3.78	0.80



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Project: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 5

CERTIFICATE OF ANALYSIS

VAN10007169.1

Method	4A-4B	4A-4B	4A-4B	4A-4B	2A	Leco	2A	Leco	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
Analyte	Er	Tm	Yb	Lu	TOT/C	TOT/S			Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg	Tl	Se
Unit	ppm	ppm	ppm	ppm	%	%			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm
MDL	0.03	0.01	0.05	0.01	0.02	0.02			0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.5	0.01	0.1	0.5
006960	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006961	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006962	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006963	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006964	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006965	Rock	1.89	0.30	2.04	0.32	0.32	<0.02	0.5	38.7	2.5	52	4.7	19.6	0.6	<0.1	<0.1	<0.1	2.6	<0.01	<0.1	<0.5	
006966	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006967	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006968	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006969	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006970	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006971	Rock	1.72	0.28	1.87	0.31	0.10	<0.02	0.3	424.7	1.6	36	5.2	0.6	<0.1	<0.1	<0.1	0.1	<0.5	<0.01	<0.1	<0.5	
006972	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006973	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006974	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006975	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006976	Rock	2.47	0.36	2.38	0.37	0.03	<0.02	1.0	595.2	1.2	63	3.2	0.8	0.4	<0.1	<0.1	0.5	<0.5	<0.01	<0.1	<0.5	
006977	Rock	2.35	0.35	2.36	0.38	0.08	<0.02	0.7	74.2	1.1	53	2.9	0.6	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	<0.1	<0.5	



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Project: None Given  
Report Date: January 17, 2011

Page: 2 of 2 Part 6

# CERTIFICATE OF ANALYSIS

VAN10007169.1

Method	7AR	7AR	3B	3B	3B	
Analyte	Cu	Ag	Au	Pt	Pd	
Unit	%	gm/t	ppb	ppb	ppb	
MDL	0.001	2	2	3	2	
006960	Rock	0.027	<2	<2	6	21
006961	Rock	0.162	<2	30	10	26
006962	Rock	0.018	<2	<2	6	21
006963	Rock	0.085	<2	6	<3	22
006964	Rock	0.065	<2	48	8	21
006965	Rock	0.004	<2	<2	<3	<2
006966	Rock	0.118	<2	10	28	162
006967	Rock	11.58	24	98	5	17
006968	Rock	3.855	5	67	8	63
006969	Rock	2.832	5	12	12	22
006970	Rock	3.854	6	19	8	48
006971	Rock	0.045	<2	<2	6	4
006972	Rock	3.430	4	32	4	13
006973	Rock	2.168	2	15	12	16
006974	Rock	6.091	46	119	11	17
006975	Rock	2.417	10	93	4	17
006976	Rock	0.060	<2	<2	<3	6
006977	Rock	0.007	<2	<2	<3	3



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Project: None Given  
 Report Date: January 17, 2011

Page: 1 of 2 Part 1

QUALITY CONTROL REPORT

VAN10007169.1

Method	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
006976	Rock	0.99	0.92	556.0	1.10	57.3	449	2.9	18.7	943	4.32	0.7	0.2	10.7	0.4	29.3	0.48	0.04	0.03	133	1.76
Pulp Duplicates																					
006965	Rock	1.39	0.53	29.89	1.91	46.3	46	5.2	13.4	683	3.50	0.4	0.3	0.9	1.1	39.2	0.59	0.04	<0.02	79	1.78
REP 006965	QC																				
006968	Rock	0.65	1.26	>10000	2.08	59.3	6918	37.8	29.9	950	6.07	<0.1	0.1	59.5	0.3	37.3	0.60	0.03	0.02	158	2.20
REP 006968	QC		1.42	>10000	2.36	64.0	7392	40.6	31.7	998	6.41	0.1	0.1	66.8	0.3	39.6	0.64	0.02	0.03	167	2.34
006971	Rock	1.25	0.38	433.6	1.22	35.9	122	5.7	13.6	753	3.79	0.5	0.4	<0.2	1.6	55.7	0.10	0.03	<0.02	93	0.97
REP 006971	QC																				
Core Reject Duplicates																					
006960	Rock	0.59	0.17	291.8	1.22	105.1	49	57.3	42.6	1241	8.31	0.2	<0.1	1.7	0.3	20.9	0.16	0.04	<0.02	187	1.36
DUP 006960	QC	<0.01	0.18	218.7	0.38	103.2	41	55.9	42.4	1184	8.09	<0.1	<0.1	1.0	0.2	21.3	0.14	0.04	<0.02	187	1.38
Reference Materials																					
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CSC	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard		12.80	101.2	122.7	288.1	1597	35.6	7.2	592	2.30	24.9	2.7	87.9	6.7	59.6	2.21	5.04	6.48	40	0.68
STD DS8	Standard		14.38	99.91	130.7	327.3	1786	39.9	8.2	679	2.47	27.9	3.1	106.2	7.6	66.4	2.48	5.81	7.09	43	0.74
STD DS8	Standard		15.08	98.84	124.0	322.1	1899	41.5	8.3	699	2.61	24.1	2.5	112.5	6.3	60.5	2.17	5.38	6.21	42	0.73
STD DS8	Standard		13.83	91.73	124.4	304.3	1744	38.0	8.0	654	2.47	22.2	2.3	109.1	5.6	57.3	2.13	4.92	5.83	41	0.70
STD GC-7	Standard																				
STD OREAS45PA	Standard																				
STD OREAS76A	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD R4A	Standard																				
STD SO-18	Standard																				
STD SO-18	Standard																				

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Project: None Given  
 Report Date: January 17, 2011

Page: 1 of 2 Part 2

QUALITY CONTROL REPORT

VAN10007169.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	4A-4B	4A-4B	
Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	SiO2	Al2O3		
Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	%	%	
MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.01	0.01	0.01	
006976	Rock	0.071	3.9	5.4	1.73	11.6	0.164	2	2.85	0.043	0.05	<0.1	5.6	<0.02	<0.02	7	<0.1	<0.02	8.4	55.90	16.18	
Pulp Duplicates																						
006965	Rock	0.054	4.7	5.4	1.24	27.4	0.122	1	2.15	0.076	0.12	0.1	8.1	<0.02	<0.02	<5	0.2	<0.02	7.3	62.05	15.46	
REP 006965	QC																					
006968	Rock	0.055	3.0	15.2	2.16	31.6	0.466	1	2.54	0.040	0.11	<0.1	5.8	0.17	0.81	9	1.3	0.09	9.1	N.A.	N.A.	
REP 006968	QC	0.060	3.3	15.8	2.28	33.7	0.511	2	2.70	0.042	0.12	<0.1	6.3	0.20	0.87	9	1.5	0.04	9.8			
006971	Rock	0.056	4.5	6.6	1.21	44.0	0.112	<1	1.91	0.147	0.09	0.1	7.8	<0.02	<0.02	<5	0.1	0.02	6.8	62.75	15.91	
REP 006971	QC																					
Core Reject Duplicates																						
006960	Rock	0.065	3.6	37.2	3.45	51.1	0.324	1	4.09	0.048	0.33	<0.1	8.1	0.12	<0.02	<5	0.4	<0.02	11.2	N.A.	N.A.	
DUP 006960	QC	0.066	3.7	36.6	3.30	50.8	0.336	1	3.90	0.049	0.32	<0.1	8.3	0.12	<0.02	<5	0.3	<0.02	10.9	N.A.	N.A.	
Reference Materials																						
STD CDN-PGMS-19	Standard																					
STD CDN-PGMS-19	Standard																					
STD CSC	Standard																					
STD DS8	Standard																					
STD DS8	Standard																					
STD DS8	Standard	0.076	14.5	111.1	0.58	262.7	0.100	2	0.88	0.087	0.38	2.8	2.2	5.33	0.15	177	4.9	4.64	4.5			
STD DS8	Standard	0.088	16.3	124.9	0.63	295.5	0.113	3	0.95	0.099	0.42	3.1	2.5	5.61	0.16	206	5.5	5.47	5.0			
STD DS8	Standard	0.090	13.0	126.3	0.63	308.4	0.104	3	0.95	0.097	0.43	3.4	2.5	6.10	0.16	215	5.5	5.84	5.4			
STD DS8	Standard	0.087	13.7	119.1	0.59	295.9	0.099	3	0.91	0.093	0.41	3.0	2.3	5.44	0.16	206	5.3	5.53	5.0			
STD GC-7	Standard																					
STD OREAS45PA	Standard																					
STD OREAS76A	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD R4A	Standard																					
STD SO-18	Standard																				58.29	13.96
STD SO-18	Standard																				58.19	14.00

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Project: None Given  
 Report Date: January 17, 2011

Page: 1 of 2 Part 3

QUALITY CONTROL REPORT

VAN10007169.1

Method		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
Analyte		Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	Hf	Nb
Unit		%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	0.1	0.1
006976	Rock	8.73	3.34	7.12	3.15	0.93	0.87	0.19	0.16	<0.002	<20	29	3.2	99.74	383	<1	21.9	0.1	16.9	2.4	4.4
Pulp Duplicates																					
006965	Rock	5.68	2.17	4.82	3.51	2.16	0.57	0.12	0.11	<0.002	<20	15	3.2	99.81	820	<1	14.2	0.4	14.5	3.1	5.7
REP 006965	QC																				
006968	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 006968	QC																				
006971	Rock	6.05	2.33	4.14	3.54	2.05	0.56	0.14	0.12	0.002	<20	16	2.2	99.75	817	<1	14.5	0.4	14.7	2.9	5.5
REP 006971	QC																				
Core Reject Duplicates																					
006960	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP 006960	QC	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Reference Materials																					
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CSC	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD GC-7	Standard																				
STD OREAS45PA	Standard																				
STD OREAS76A	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD R4A	Standard																				
STD SO-18	Standard	7.57	3.36	6.31	3.70	2.16	0.69	0.84	0.40	0.553	47	25	1.9	99.75	514	<1	27.0	7.2	17.0	9.4	20.4
STD SO-18	Standard	7.57	3.37	6.37	3.70	2.17	0.69	0.83	0.39	0.551	50	25	1.9	99.75	517	<1	27.6	7.3	17.8	9.4	20.6

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Project: None Given

Report Date: January 17, 2011

Page: 1 of 2 Part 4

QUALITY CONTROL REPORT

VAN10007169.1

Method	Analyte	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
		Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	0.05	
006976	Rock	19.9	<1	314.6	0.2	1.8	0.8	255	<0.5	84.7	23.4	10.4	23.7	3.04	13.6	3.42	1.04	3.77	0.63	3.96	0.84
Pulp Duplicates																					
006965	Rock	50.9	<1	319.3	0.4	4.7	1.8	140	<0.5	116.2	18.5	14.0	28.7	3.35	13.3	2.93	0.80	2.93	0.49	3.10	0.64
REP 006965	QC																				
006968	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 006968	QC																				
006971	Rock	50.3	<1	377.5	0.4	4.3	1.5	139	0.6	108.5	17.0	13.5	27.7	3.19	12.8	2.71	0.80	2.71	0.44	2.84	0.60
REP 006971	QC																				
Core Reject Duplicates																					
006960	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP 006960	QC	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Reference Materials																					
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CSC	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD GC-7	Standard																				
STD OREAS45PA	Standard																				
STD OREAS76A	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD R4A	Standard																				
STD SO-18	Standard	28.5	15	390.9	6.8	10.1	16.4	208	14.1	284.8	30.2	11.8	27.1	3.29	13.5	2.82	0.81	2.85	0.48	2.86	0.61
STD SO-18	Standard	29.5	16	401.1	6.8	10.0	16.4	217	14.4	295.3	31.1	11.9	27.3	3.30	13.5	2.82	0.82	2.90	0.48	2.82	0.61

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Project: None Given  
 Report Date: January 17, 2011

Page: 1 of 2 Part 5

QUALITY CONTROL REPORT

VAN10007169.1

Method	4A-4B	4A-4B	4A-4B	4A-4B 2A	Leco 2A	Leco	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
Analyte	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg	Tl	Se	
Unit	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	
MDL	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.5	0.01	0.1	0.5	
006976	Rock	2.47	0.36	2.38	0.37	0.03	<0.02	1.0	595.2	1.2	63	3.2	0.8	0.4	<0.1	<0.1	0.5	<0.5	<0.01	<0.1	<0.5
Pulp Duplicates																					
006965	Rock	1.89	0.30	2.04	0.32	0.32	<0.02	0.5	38.7	2.5	52	4.7	19.6	0.6	<0.1	<0.1	<0.1	2.6	<0.01	<0.1	<0.5
REP 006965	QC					0.32	<0.02														
006968	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 006968	QC																				
006971	Rock	1.72	0.28	1.87	0.31	0.10	<0.02	0.3	424.7	1.6	36	5.2	0.6	<0.1	<0.1	<0.1	0.1	<0.5	<0.01	<0.1	<0.5
REP 006971	QC																				
Core Reject Duplicates																					
006960	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP 006960	QC	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Reference Materials																					
STD CDN-PGMS-19	Standard																				
STD DS8	Standard					3.05	4.09														
STD DS8	Standard							13.4	112.4	127.3	316	39.3	26.7	2.2	4.5	7.0	1.8	97.6	0.17	5.2	4.1
STD DS8	Standard							13.6	111.8	133.6	320	40.0	25.4	2.2	4.9	7.0	1.7	86.7	0.19	5.4	5.2
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD GC-7	Standard																				
STD OREAS45PA	Standard							1.1	608.9	20.1	118	307.8	4.4	0.1	0.2	0.2	0.3	48.2	0.02	<0.1	<0.5
STD OREAS76A	Standard					0.15	16.87														
STD PD1	Standard																				
STD PD1	Standard																				
STD R4A	Standard																				
STD SO-18	Standard	1.75	0.26	1.75	0.27																
STD SO-18	Standard	1.75	0.26	1.76	0.27																

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.

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**Client:** **Schau, Mikkel**  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7 Canada

**Project:** None Given

**Report Date:** January 17, 2011

**Page:** 1 of 2 **Part** 6

## QUALITY CONTROL REPORT

VAN10007169.1

Method	Analyte	7AR	7AR	3B	3B	3B
		Cu	Ag	Au	Pt	Pd
Unit		%	gm/t	ppb	ppb	ppb
MDL		0.001	2	2	3	2
006976	Rock	0.060	<2	<2	<3	6
Pulp Duplicates						
006965	Rock	0.004	<2	<2	<3	<2
REP 006965	QC					
006968	Rock	3.855	5	67	8	63
REP 006968	QC					
006971	Rock	0.045	<2	<2	6	4
REP 006971	QC	0.043	<2			
Core Reject Duplicates						
006960	Rock	0.027	<2	<2	6	21
DUP 006960	QC	0.030	<2	<2	6	22
Reference Materials						
STD CDN-PGMS-19	Standard			200	101	459
STD CDN-PGMS-19	Standard			270	110	495
STD CSC	Standard					
STD DS8	Standard					
STD DS8	Standard					
STD DS8	Standard					
STD DS8	Standard					
STD DS8	Standard					
STD DS8	Standard					
STD GC-7	Standard	0.568	>300			
STD OREAS45PA	Standard					
STD OREAS76A	Standard					
STD PD1	Standard			494	438	503
STD PD1	Standard			532	436	550
STD R4A	Standard	0.507	85			
STD SO-18	Standard					
STD SO-18	Standard					



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 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 1

QUALITY CONTROL REPORT

VAN10007169.1

	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
STD CSC Expected																					
STD OREAS76A Expected																					
STD OREAS45PA Expected																					
STD PD1 Expected																					
STD CDN-PGMS-19																					
STD DS8 Expected		13.44	110	123	312	1690	38.1	7.5	615	2.46	26	2.8	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7	
STD GC-7 Expected																					
STD R4A Expected																					
STD SO-18 Expected																					
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.01	0.90	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	<0.01	0.10	4.76	2.46	43.6	10	3.3	4.5	602	2.09	0.3	1.4	0.5	4.3	53.5	<0.01	<0.02	0.05	38	0.52
G1	Prep Blank	<0.01	0.10	24.04	2.30	39.7	9	3.1	3.9	551	1.89	<0.1	1.3	<0.2	4.0	49.2	0.01	<0.02	<0.02	35	0.50



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Project: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 2

QUALITY CONTROL REPORT

VAN10007169.1

	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	4A-4B	4A-4B	
	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	SiO2	Al2O3	
	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	%	
	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.01	0.01	
STD CSC Expected																					
STD OREAS76A Expected																					
STD OREAS45PA Expected																					
STD PD1 Expected																					
STD CDN-PGMS-19																					
STD DS8 Expected	0.08	14.6	115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	2.3	5.4	0.1679	192	5.23	5	4.7			
STD GC-7 Expected																					
STD R4A Expected																					
STD SO-18 Expected																			58.47	14.23	
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1		
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1		
BLK	Blank																				
BLK	Blank																				
BLK	Blank																			<0.01	<0.01
Prep Wash																					
G1	Prep Blank	0.081	8.4	10.6	0.58	207.0	0.098	1	1.06	0.094	0.50	<0.1	2.4	0.30	<0.02	<5	<0.1	<0.02	5.3	67.66	15.62
G1	Prep Blank	0.079	8.3	10.2	0.52	195.8	0.091	<1	0.98	0.086	0.45	<0.1	2.2	0.26	<0.02	<5	<0.1	<0.02	4.7	67.37	15.93



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 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 3

QUALITY CONTROL REPORT

VAN10007169.1

		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B		
		Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	Hf	Nb	
		%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
		0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	0.1	0.1	
STD CSC Expected																						
STD OREAS76A Expected																						
STD OREAS45PA Expected																						
STD PD1 Expected																						
STD CDN-PGMS-19																						
STD DS8 Expected																						
STD GC-7 Expected																						
STD R4A Expected																						
STD SO-18 Expected		7.67	3.35	6.42	3.71	2.17	0.69	0.83	0.39	0.55	44	25		514		26.2	7.1	17.6	9.8	21.3		
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
Prep Wash																						
G1	Prep Blank	3.43	1.14	3.40	3.56	3.63	0.39	0.20	0.10	0.003	<20	6	0.6	99.76	1043	2	4.8	3.9	18.9	4.1	23.6	
G1	Prep Blank	3.42	1.13	3.44	3.56	3.61	0.38	0.19	0.10	0.003	<20	6	0.6	99.76	1041	3	4.4	4.2	19.0	4.1	23.5	

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 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

Project: None Given

Report Date: January 17, 2011

Page: 2 of 2 Part 4

# QUALITY CONTROL REPORT

VAN10007169.1

		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
		Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
STD CSC Expected		0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	0.05	0.02
STD OREAS76A Expected																					
STD OREAS45PA Expected																					
STD PD1 Expected																					
STD CDN-PGMS-19																					
STD DS8 Expected																					
STD GC-7 Expected																					
STD R4A Expected																					
STD SO-18 Expected		28.7	15	407.4	7.4	9.9	16.4	200	14.8	280	31	12.3	27.1	3.45	14	3	0.89	2.93	0.53	3	0.62
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	4.6	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	<0.01	<0.05	<0.02
Prep Wash																					
G1	Prep Blank	135.4	1	718.9	1.4	8.6	4.8	55	<0.5	137.4	16.6	28.0	57.7	6.37	23.4	4.02	0.99	3.17	0.47	2.73	0.54
G1	Prep Blank	135.7	1	723.5	1.5	10.0	4.0	54	<0.5	147.2	17.2	28.6	58.3	6.43	23.8	4.02	1.02	3.25	0.48	2.74	0.54



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Project: None Given  
 Report Date: January 17, 2011

Page: 2 of 2 Part 5

QUALITY CONTROL REPORT

VAN10007169.1

		4A-4B Er ppm 0.03	4A-4B Tm ppm 0.01	4A-4B Yb ppm 0.05	4A-4B Lu ppm 0.01	2A Leco TOT/C % 0.02	2A Leco TOT/S % 0.02	1DX Mo ppm 0.1	1DX Cu ppm 0.1	1DX Pb ppm 0.1	1DX Zn ppm 1	1DX Ni ppm 0.1	1DX As ppm 0.5	1DX Cd ppm 0.1	1DX Sb ppm 0.1	1DX Bi ppm 0.1	1DX Ag ppm 0.1	1DX Au ppb 0.5	1DX Hg ppm 0.01	1DX Tl ppm 0.1	1DX Se ppm 0.5	
STD CSC Expected						2.94	4.25															
STD OREAS76A Expected						0.16	18															
STD OREAS45PA Expected								0.9	600	19	119	281	4.2	0.09	0.13	0.18	0.3	43	0.03	0.07	0.54	
STD PD1 Expected																						
STD CDN-PGMS-19																						
STD DS8 Expected								13.44	110	123	312	38.1	26	2.38	4.8	6.67	1.69	107	0.192	5.4	5.23	
STD GC-7 Expected																						
STD R4A Expected																						
STD SO-18 Expected		1.84	0.27	1.79	0.27																	
BLK	Blank					<0.02	<0.02															
BLK	Blank																					
BLK	Blank																					
BLK	Blank							<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	<0.1	<0.5	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank	<0.03	<0.01	<0.05	<0.01																	
Prep Wash																						
G1	Prep Blank	1.68	0.26	1.85	0.30	<0.02	<0.02	<0.1	5.6	3.2	49	3.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	0.3	<0.5	
G1	Prep Blank	1.64	0.26	1.85	0.30	<0.02	<0.02	<0.1	31.3	3.1	47	3.7	<0.5	<0.1	<0.1	0.1	<0.1	<0.5	<0.01	0.3	<0.5	



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**Project:** None Given

**Report Date:** January 17, 2011

**Page:** 2 of 2 **Part** 6

# QUALITY CONTROL REPORT

VAN10007169.1

		7AR	7AR	3B	3B	3B
		Cu	Ag	Au	Pt	Pd
		%	gm/t	ppb	ppb	ppb
		0.001	2	2	3	2
STD CSC Expected						
STD OREAS76A Expected						
STD OREAS45PA Expected						
STD PD1 Expected				542	456	563
STD CDN-PGMS-19				230	108	476
STD DS8 Expected						
STD GC-7 Expected		0.555	619			
STD R4A Expected		0.502	86			
STD SO-18 Expected						
BLK	Blank					
BLK	Blank			<2	<3	<2
BLK	Blank			<2	<3	<2
BLK	Blank					
BLK	Blank					
BLK	Blank			<2	<3	<2
BLK	Blank			<2	<3	<2
BLK	Blank					
BLK	Blank	<0.001	<2			
BLK	Blank					
Prep Wash						
G1	Prep Blank	<0.001	<2	<2	<3	<2
G1	Prep Blank	0.003	<2	<2	<3	4



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**Client:** **Schau, Mikkel**  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7 Canada

Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: June 30, 2011  
Report Date: August 11, 2011  
Page: 1 of 3

## CERTIFICATE OF ANALYSIS

VAN11002882.2

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 55

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
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: Schau, Mikkel  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7  
Canada

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	50	Crush, split and pulverize 250 g rock to 200 mesh			VAN
3B02	50	Fire assay fusion Au Pt Pd by ICP-ES	30	Completed	VAN
1DX2	50	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
4A4B	10	Whole Rock Analysis Majors and Trace Elements	0.2	Completed	VAN
7AR	4	1:1:1 Aqua Regia digestion ICP-ES analysis	0.4	Completed	VAN

### ADDITIONAL COMMENTS

Version 2: 7AR1 Cu for Samples 6726, 16505, 16545 & 16546 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. Results apply to samples as submitted. \*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: None Given  
 Report Date: August 11, 2011

Page: 2 of 3 Part 1

# CERTIFICATE OF ANALYSIS

VAN11002882.2

Method	WGHT	3B	3B	3B	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	
Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	2	3	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	
6721	Rock	0.44	5	7	16	0.3	182.9	0.4	61	<0.1	30.0	24.6	614	4.98	<0.5	4.3	0.4	45	<0.1	<0.1	<0.1
6723	Rock	0.60	67	3	21	0.1	1017	0.3	23	1.0	31.8	17.1	302	2.90	1.1	30.6	0.2	14	0.1	<0.1	<0.1
6724	Rock	0.23	40	<3	24	0.2	2054	0.4	12	3.0	14.0	7.6	162	1.72	2.4	34.3	<0.1	22	0.1	<0.1	<0.1
6725	Rock	1.03	4	6	17	0.2	18.7	0.4	58	<0.1	44.3	26.2	546	4.67	0.6	3.3	0.3	15	<0.1	<0.1	<0.1
6726	Rock	0.56	455	<3	23	<0.1	>10000	1.9	23	1.8	22.5	13.3	410	3.21	1.6	415.0	<0.1	44	1.1	0.1	<0.1
6727	Rock	0.86	2	5	17	0.4	111.9	0.3	56	<0.1	37.9	24.7	651	4.83	0.7	<0.5	0.4	12	<0.1	<0.1	<0.1
6728	Rock	0.52	4	4	17	0.2	73.9	0.5	53	<0.1	64.3	27.6	556	4.93	0.6	2.7	0.3	53	<0.1	<0.1	<0.1
6729	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
6730	Rock	0.60	522	4	12	<0.1	1346	0.7	43	0.2	52.0	26.5	1117	4.40	1.3	290.0	0.1	94	0.3	<0.1	<0.1
6731	Rock	0.98	3	5	15	0.3	86.9	0.2	70	<0.1	45.7	31.9	631	4.82	0.5	0.9	0.2	11	<0.1	0.2	<0.1
6732	Rock	0.28	<2	4	5	0.3	12.8	0.2	14	<0.1	30.3	13.3	236	1.55	1.2	<0.5	0.2	46	<0.1	<0.1	<0.1
6734	Rock	0.43	3	7	18	0.3	110.9	0.3	35	<0.1	42.3	23.2	314	3.97	0.8	3.4	0.3	14	<0.1	<0.1	<0.1
6735	Rock	0.70	2	<3	7	0.1	9.3	0.2	10	<0.1	24.2	7.3	146	1.04	1.0	<0.5	<0.1	126	<0.1	<0.1	<0.1
6736	Rock	0.48	3	4	17	0.2	149.8	0.3	29	<0.1	32.6	16.4	171	3.50	<0.5	3.3	0.4	68	<0.1	<0.1	<0.1
6737	Rock	1.20	3	<3	<2	<0.1	420.5	<0.1	50	0.2	4.1	18.7	580	3.07	0.8	3.0	0.3	57	<0.1	<0.1	<0.1
6738	Rock	1.44	<2	<3	<2	0.3	30.1	0.9	63	<0.1	2.9	16.0	782	3.77	0.9	<0.5	1.0	34	0.1	<0.1	<0.1
6739	Rock	0.40	5	4	15	0.2	72.7	0.3	36	<0.1	47.1	24.2	287	3.69	0.8	2.8	0.3	53	<0.1	<0.1	<0.1
6740	Rock	0.60	6	4	10	0.2	5.0	0.5	7	<0.1	20.6	6.3	252	1.41	1.0	<0.5	<0.1	90	<0.1	<0.1	<0.1
6741	Rock	0.70	2	<3	3	0.1	1838	1.1	77	0.7	3.1	16.9	838	3.72	0.7	3.1	0.8	54	0.1	<0.1	<0.1
6742	Rock	0.17	4	3	16	0.2	32.3	1.1	85	<0.1	57.2	32.9	838	6.41	1.4	<0.5	0.3	43	0.4	<0.1	<0.1
6743	Rock	0.87	<2	4	23	0.2	92.4	0.3	68	<0.1	37.8	30.6	290	6.44	0.5	1.5	0.2	16	<0.1	<0.1	<0.1
6744	Rock	0.55	<2	5	20	0.1	72.2	0.5	59	<0.1	43.6	25.5	364	5.55	0.6	<0.5	0.3	14	<0.1	<0.1	<0.1
6745	Rock	1.38	<2	3	24	0.2	46.1	0.7	49	<0.1	30.3	23.3	265	5.06	<0.5	1.8	0.3	21	<0.1	<0.1	<0.1
6749	Rock	0.45	3214	4	18	2.6	3674	8.7	152	7.2	71.0	174.0	284	16.52	195.7	3287	<0.1	11	1.5	0.3	<0.1
6750	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16501	Rock	0.90	6	4	17	0.4	132.5	0.4	52	<0.1	36.9	26.4	616	5.47	1.1	5.4	0.4	9	<0.1	<0.1	<0.1
16502	Rock	0.35	7	<3	<2	0.2	67.9	1.2	38	0.1	4.3	11.3	548	2.51	1.7	4.5	1.5	29	<0.1	<0.1	<0.1
16503	Rock	0.28	4	5	18	0.3	83.9	0.3	76	<0.1	39.1	24.9	743	5.05	0.6	4.0	0.4	29	<0.1	<0.1	<0.1
16504	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16505	Rock	0.56	5	4	17	0.8	>10000	0.9	39	1.9	53.9	35.8	963	7.10	62.2	4.0	0.6	19	0.1	<0.1	<0.1

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: None Given  
 Report Date: August 11, 2011

Page: 2 of 3 Part 2

**CERTIFICATE OF ANALYSIS**

**VAN11002882.2**

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
		V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL		2	0.01	0.001	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
6721	Rock	139	2.07	0.057	5	4	1.08	5	0.256	6	3.13	0.367	0.02	<0.1	<0.01	1.7	<0.1	<0.05	11	<0.5	<0.2
6723	Rock	92	6.05	0.022	2	45	1.07	1	0.187	2	2.63	0.015	<0.01	<0.1	0.02	6.8	<0.1	<0.05	8	0.5	<0.2
6724	Rock	52	8.39	0.004	<1	6	0.39	1	0.029	2	3.40	0.005	<0.01	<0.1	0.07	1.6	<0.1	<0.05	11	1.2	<0.2
6725	Rock	132	2.17	0.042	4	12	1.70	3	0.142	8	2.90	0.067	<0.01	<0.1	<0.01	4.2	<0.1	<0.05	10	<0.5	<0.2
6726	Rock	58	1.62	0.011	<1	31	0.79	5	0.119	<1	1.86	<0.001	0.18	<0.1	0.02	2.5	<0.1	0.14	4	1.1	<0.2
6727	Rock	129	2.80	0.043	4	6	1.34	3	0.194	13	2.99	0.045	<0.01	<0.1	<0.01	3.9	<0.1	<0.05	10	<0.5	<0.2
6728	Rock	179	2.00	0.052	4	71	2.12	8	0.204	1	3.16	0.254	0.02	<0.1	<0.01	7.1	<0.1	<0.05	9	<0.5	<0.2
6729	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
6730	Rock	140	9.18	0.026	3	122	2.36	3	0.189	<1	2.72	0.034	0.03	<0.1	<0.01	12.0	<0.1	0.06	8	2.0	<0.2
6731	Rock	84	0.75	0.044	3	8	2.37	2	0.307	<1	2.45	0.064	<0.01	<0.1	<0.01	2.5	<0.1	<0.05	7	<0.5	<0.2
6732	Rock	68	1.71	0.027	2	13	0.52	<1	0.319	1	1.32	0.002	<0.01	<0.1	<0.01	3.6	<0.1	<0.05	4	<0.5	<0.2
6734	Rock	107	2.38	0.041	3	10	1.24	2	0.144	11	2.71	0.057	0.01	<0.1	<0.01	1.8	<0.1	<0.05	10	<0.5	<0.2
6735	Rock	45	1.23	0.026	1	16	0.37	<1	0.222	4	0.97	<0.001	<0.01	<0.1	<0.01	1.4	<0.1	<0.05	2	<0.5	<0.2
6736	Rock	157	1.85	0.054	5	20	0.64	9	0.212	1	2.84	0.423	0.04	<0.1	<0.01	1.4	<0.1	<0.05	7	<0.5	<0.2
6737	Rock	48	0.90	0.096	3	1	2.04	4	0.141	<1	2.12	0.061	0.03	<0.1	<0.01	1.8	<0.1	<0.05	4	<0.5	<0.2
6738	Rock	88	1.19	0.064	4	4	1.47	19	0.169	2	2.03	0.114	0.07	<0.1	<0.01	4.5	<0.1	<0.05	7	<0.5	<0.2
6739	Rock	104	1.99	0.040	3	22	1.33	10	0.204	<1	3.16	0.373	0.03	<0.1	<0.01	1.5	<0.1	<0.05	8	<0.5	<0.2
6740	Rock	65	2.95	0.012	<1	24	0.34	<1	0.304	2	1.01	0.003	<0.01	<0.1	<0.01	1.3	<0.1	<0.05	3	<0.5	<0.2
6741	Rock	74	0.82	0.104	5	1	1.36	21	0.201	2	2.12	0.089	0.05	<0.1	<0.01	3.0	<0.1	<0.05	7	<0.5	<0.2
6742	Rock	212	6.99	0.049	3	84	2.17	7	0.359	<1	2.31	0.081	0.08	<0.1	<0.01	11.8	<0.1	<0.05	12	<0.5	<0.2
6743	Rock	161	0.62	0.089	6	23	1.48	26	0.173	<1	1.57	0.100	0.31	<0.1	<0.01	1.6	<0.1	<0.05	8	<0.5	<0.2
6744	Rock	156	0.72	0.070	4	40	1.39	8	0.281	2	1.52	0.146	0.04	<0.1	<0.01	2.6	<0.1	<0.05	7	<0.5	<0.2
6745	Rock	193	0.67	0.078	6	19	1.17	68	0.208	<1	1.36	0.123	0.28	<0.1	<0.01	2.4	<0.1	<0.05	8	<0.5	<0.2
6749	Rock	43	0.34	0.006	<1	5	0.43	<1	0.023	<1	0.89	0.004	<0.01	<0.1	0.11	1.7	<0.1	9.36	6	14.1	0.3
6750	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16501	Rock	145	1.88	0.060	6	9	1.40	5	0.265	5	2.78	0.068	0.02	<0.1	<0.01	3.5	<0.1	<0.05	12	<0.5	<0.2
16502	Rock	42	1.19	0.045	4	4	1.03	29	0.075	2	1.57	0.109	0.12	0.1	<0.01	4.3	<0.1	<0.05	5	<0.5	<0.2
16503	Rock	143	1.97	0.063	6	13	1.28	4	0.286	4	2.91	0.200	0.02	<0.1	<0.01	2.5	<0.1	<0.05	12	<0.5	<0.2
16504	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16505	Rock	243	7.99	0.061	6	68	2.15	2	0.421	4	4.69	<0.001	<0.01	<0.1	0.03	17.4	<0.1	<0.05	19	0.9	<0.2

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: August 11, 2011

Page: 2 of 3 Part 3

CERTIFICATE OF ANALYSIS

VAN11002882.2

Method	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
Analyte	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	
Unit	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	
6721	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6723	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6724	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6725	Rock	47.40	14.30	11.36	7.59	10.47	3.56	0.14	1.32	0.13	0.15	0.032	87	39	3.3	99.80	55	<1	43.9	<0.1	15.2
6726	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6727	Rock	47.21	14.21	11.72	6.82	11.60	3.38	0.05	1.46	0.12	0.19	0.031	78	39	3.0	99.80	11	<1	43.8	<0.1	17.5
6728	Rock	49.78	13.30	12.32	7.34	9.19	2.37	0.20	1.70	0.15	0.17	0.038	102	38	3.2	99.76	48	<1	40.9	0.1	16.6
6729	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
6730	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6731	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6732	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6734	Rock	47.48	14.36	11.21	6.95	12.03	3.40	0.13	1.31	0.12	0.14	0.033	89	39	2.6	99.81	17	<1	43.7	<0.1	17.6
6735	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6736	Rock	48.94	14.23	12.70	7.05	11.85	2.07	0.26	1.75	0.17	0.20	0.028	95	39	0.5	99.76	56	<1	46.3	0.1	19.1
6737	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6738	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6739	Rock	48.10	14.15	12.04	7.52	12.31	2.24	0.22	1.30	0.12	0.15	0.028	95	40	1.6	99.80	55	<1	48.3	0.1	16.5
6740	Rock	42.38	14.27	11.44	4.56	22.37	0.14	<0.01	0.99	0.06	0.21	0.021	67	30	3.3	99.81	3	<1	26.2	<0.1	23.7
6741	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6742	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6743	Rock	47.69	13.13	15.95	5.66	8.74	3.07	1.29	2.39	0.25	0.21	0.011	58	41	1.3	99.72	293	<1	50.5	0.3	20.7
6744	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6745	Rock	49.30	13.12	15.32	5.89	7.16	4.14	0.81	2.26	0.21	0.21	0.011	60	40	1.3	99.74	233	<1	49.4	0.2	19.9
6749	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
6750	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
16501	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16502	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16503	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16504	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
16505	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	

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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 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: August 11, 2011

Page: 2 of 3 Part 4

CERTIFICATE OF ANALYSIS

VAN11002882.2

Method Analyte Unit MDL		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B		
		Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01
6721	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6723	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6724	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6725	Rock	1.9	6.3	1.6	<1	254.6	0.1	0.5	0.2	313	2.9	68.5	19.0	5.3	13.6	2.01	9.7	2.76	1.03	3.30		
6726	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6727	Rock	2.3	7.0	0.7	<1	85.9	0.1	0.7	0.2	339	2.6	78.4	21.8	6.1	15.3	2.27	11.2	3.15	1.17	3.72		
6728	Rock	3.0	8.1	2.9	<1	251.1	0.3	0.7	0.2	359	1.3	95.1	22.7	6.6	17.0	2.62	13.1	3.63	1.34	4.15		
6729	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.		
6730	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6731	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6732	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6734	Rock	2.0	6.6	2.1	<1	186.2	0.4	0.5	0.2	320	<0.5	70.5	19.0	5.3	13.0	1.95	9.9	2.70	0.98	3.23		
6735	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6736	Rock	2.9	8.2	3.4	<1	218.0	0.5	0.6	0.2	405	<0.5	98.8	24.4	7.0	17.4	2.66	13.3	3.67	1.36	4.34		
6737	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6738	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6739	Rock	1.9	7.0	3.2	7	204.4	2.8	0.5	0.1	344	<0.5	70.0	20.1	4.8	11.9	1.85	9.2	2.74	1.03	3.27		
6740	Rock	1.6	4.5	<0.1	1	672.9	0.5	0.3	<0.1	366	<0.5	53.3	11.7	2.8	5.6	0.85	4.3	1.41	0.61	1.79		
6741	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6742	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6743	Rock	4.2	13.5	21.9	2	429.3	1.1	1.2	0.4	470	<0.5	161.4	36.3	11.2	27.9	4.23	20.9	5.59	1.86	6.40		
6744	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6745	Rock	3.5	10.7	13.7	1	443.6	0.8	0.9	0.2	462	<0.5	124.2	29.8	8.7	22.4	3.35	16.7	4.63	1.57	5.20		
6749	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
6750	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.		
16501	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
16502	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
16503	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
16504	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.		
16505	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		

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Project: None Given  
Report Date: August 11, 2011

Page: 2 of 3 Part 5

CERTIFICATE OF ANALYSIS

VAN11002882.2

Method	Analyte	Unit	MDL	4A-4B Dy	4A-4B Ho	4A-4B Er	4A-4B Tm	4A-4B Yb	4A-4B Lu	2A LeCo	2A LeCo	1DX Mo	1DX Cu	1DX Pb	1DX Zn	1DX Ni	1DX As	1DX Cd	1DX Sb	1DX Bi	1DX Ag	1DX Au	1DX Hg
				ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm
				0.05	0.02	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1
6721	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6723	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6724	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6725	Rock			3.68	0.76	2.07	0.30	1.78	0.27	0.03	<0.02	0.3	25.8	0.4	65	46.1	<0.5	<0.1	<0.1	<0.1	<0.1	3.2	<0.01
6726	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6727	Rock			4.11	0.85	2.34	0.35	2.03	0.32	0.02	0.02	0.5	127.3	0.4	65	42.0	0.7	<0.1	<0.1	<0.1	<0.1	1.4	<0.01
6728	Rock			4.65	0.90	2.54	0.36	2.20	0.32	0.27	<0.02	0.3	78.5	0.6	58	69.9	<0.5	<0.1	<0.1	<0.1	<0.1	4.0	<0.01
6729	Rock			L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
6730	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6731	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6732	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6734	Rock			3.53	0.71	2.06	0.30	1.74	0.28	<0.02	<0.02	0.3	130.6	0.3	42	45.6	0.6	<0.1	<0.1	<0.1	<0.1	3.4	<0.01
6735	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6736	Rock			4.28	0.89	2.59	0.38	2.20	0.32	<0.02	<0.02	0.2	155.0	0.3	31	35.4	<0.5	<0.1	<0.1	<0.1	<0.1	3.1	<0.01
6737	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6738	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6739	Rock			3.51	0.72	2.10	0.32	1.87	0.28	0.10	<0.02	0.2	71.8	0.3	37	44.4	1.9	<0.1	<0.1	<0.1	<0.1	2.3	<0.01
6740	Rock			2.17	0.45	1.29	0.20	1.23	0.18	0.47	<0.02	0.1	5.6	0.4	9	21.7	0.6	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01
6741	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6742	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6743	Rock			6.34	1.31	3.79	0.54	3.21	0.48	<0.02	<0.02	0.2	108.5	0.2	81	44.3	<0.5	<0.1	<0.1	<0.1	<0.1	1.8	<0.01
6744	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6745	Rock			5.56	1.08	3.10	0.47	2.69	0.40	<0.02	<0.02	0.2	52.8	0.2	56	36.2	<0.5	<0.1	<0.1	<0.1	<0.1	2.3	<0.01
6749	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6750	Rock			L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16501	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
16502	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
16503	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
16504	Rock			L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16505	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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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 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: August 11, 2011

Page: 2 of 3 Part 6

CERTIFICATE OF ANALYSIS

VAN11002882.2

Method	1DX	1DX	7AR	
Analyte	Ti	Se	Cu	
Unit	ppm	ppm	%	
MDL	0.1	0.5	0.001	
6721	Rock	N.A.	N.A.	N.A.
6723	Rock	N.A.	N.A.	N.A.
6724	Rock	N.A.	N.A.	N.A.
6725	Rock	<0.1	<0.5	N.A.
6726	Rock	N.A.	N.A.	1.659
6727	Rock	<0.1	<0.5	N.A.
6728	Rock	<0.1	<0.5	N.A.
6729	Rock	L.N.R.	L.N.R.	L.N.R.
6730	Rock	N.A.	N.A.	N.A.
6731	Rock	N.A.	N.A.	N.A.
6732	Rock	N.A.	N.A.	N.A.
6734	Rock	<0.1	<0.5	N.A.
6735	Rock	N.A.	N.A.	N.A.
6736	Rock	<0.1	<0.5	N.A.
6737	Rock	N.A.	N.A.	N.A.
6738	Rock	N.A.	N.A.	N.A.
6739	Rock	<0.1	<0.5	N.A.
6740	Rock	<0.1	<0.5	N.A.
6741	Rock	N.A.	N.A.	N.A.
6742	Rock	N.A.	N.A.	N.A.
6743	Rock	<0.1	<0.5	N.A.
6744	Rock	N.A.	N.A.	N.A.
6745	Rock	<0.1	<0.5	N.A.
6749	Rock	N.A.	N.A.	N.A.
6750	Rock	L.N.R.	L.N.R.	L.N.R.
16501	Rock	N.A.	N.A.	N.A.
16502	Rock	N.A.	N.A.	N.A.
16503	Rock	N.A.	N.A.	N.A.
16504	Rock	L.N.R.	L.N.R.	L.N.R.
16505	Rock	N.A.	N.A.	1.556



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Project: None Given  
 Report Date: August 11, 2011

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CERTIFICATE OF ANALYSIS

VAN11002882.2

Method	WGHT	3B	3B	3B	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	
Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	2	3	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	
16509	Rock	0.47	5	5	20	0.2	71.6	0.5	54	<0.1	35.6	26.2	919	5.39	1.0	5.6	0.5	66	<0.1	<0.1	<0.1
16510	Rock	1.25	4	5	20	0.5	370.6	0.7	81	<0.1	44.6	30.9	801	6.32	1.5	4.3	0.6	12	<0.1	<0.1	<0.1
16511	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16512	Rock	0.53	<2	<3	<2	0.4	220.8	0.5	74	<0.1	4.9	20.2	1244	5.93	1.6	<0.5	1.0	21	<0.1	<0.1	<0.1
16513	Rock	0.29	<2	<3	<2	0.2	31.7	0.2	24	<0.1	2.5	9.5	372	1.84	0.9	0.6	0.5	121	<0.1	<0.1	<0.1
16514	Rock	0.56	3	7	17	0.2	447.2	0.4	80	0.1	63.5	32.1	1021	5.82	0.7	1.1	0.4	19	<0.1	<0.1	<0.1
16515	Rock	0.65	3	<3	21	0.7	583.4	0.3	43	0.3	64.4	27.0	600	5.05	1.7	4.7	0.5	8	<0.1	<0.1	<0.1
16516	Rock	0.63	6	4	15	0.7	854.7	0.4	39	0.4	59.5	27.3	582	5.70	1.8	7.3	0.5	9	<0.1	<0.1	<0.1
16517	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16518	Rock	0.11	22	8	19	0.7	109.3	2.5	47	0.2	41.2	34.2	767	5.20	3.0	19.6	0.4	62	<0.1	<0.1	<0.1
16519	Rock	0.53	<2	5	15	0.4	84.4	0.6	75	<0.1	38.0	27.2	993	5.73	1.0	1.4	0.5	13	<0.1	<0.1	<0.1
16520	Rock	0.34	2	6	7	0.9	164.9	0.5	39	<0.1	49.1	26.9	551	5.14	1.5	1.9	0.5	7	<0.1	<0.1	<0.1
16521	Rock	0.75	2	7	13	0.3	65.7	0.3	72	<0.1	39.5	26.6	891	5.13	1.0	1.6	0.5	24	<0.1	<0.1	<0.1
16522	Rock	0.60	4	6	14	0.3	82.1	0.6	77	<0.1	35.5	25.2	914	5.13	1.1	2.7	0.4	46	<0.1	0.1	<0.1
16523	Rock	0.58	5	6	18	0.3	249.3	1.3	55	<0.1	35.2	22.2	724	5.01	0.9	3.0	0.4	27	<0.1	<0.1	<0.1
16525	Rock	0.66	5	6	26	1.0	1445	0.5	69	0.2	45.6	35.0	880	6.95	1.4	4.3	0.7	9	<0.1	<0.1	<0.1
16526	Rock	0.59	51	<3	15	667.8	5039	44.0	43	2.6	34.9	73.8	273	29.56	510.6	14.2	<0.1	2	2.1	0.3	<0.1
16527	Rock	1.53	42	<3	4	554.3	6671	45.3	44	2.7	25.7	61.5	313	28.09	794.3	33.1	<0.1	24	3.0	0.1	<0.1
16530	Rock	0.98	12	<3	22	36.6	1259	2.2	187	0.4	41.6	31.7	1555	6.19	15.2	8.9	0.3	40	1.1	<0.1	<0.1
16531	Rock	0.16	15	<3	22	2.7	1301	0.6	123	0.3	45.6	34.2	1675	6.90	1.5	12.5	0.5	13	<0.1	<0.1	<0.1
16542	Rock	0.40	35	<3	18	354.8	1506	10.7	129	0.6	43.6	68.3	828	9.08	48.0	35.2	0.3	18	2.6	0.1	0.1
16543	Rock	0.37	6582	18	25	3.6	1236	8.4	62	5.9	70.8	338.7	180	20.90	301.9	6104	<0.1	7	0.7	0.1	0.1
16544	Rock	0.57	2	<3	<2	2.4	39.6	1.5	64	<0.1	3.3	15.0	746	3.65	1.8	13.7	1.0	41	0.1	<0.1	<0.1
16545	Rock	0.78	105	13	132	7.3	>10000	7.8	64	68.3	144.4	100.2	183	25.61	19.5	105.7	<0.1	32	1.7	0.4	0.3
16546	Rock	1.24	83	<3	22	5.7	>10000	2.9	50	12.3	18.2	12.1	377	2.21	2.7	77.7	0.3	60	13.2	0.2	0.1



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CERTIFICATE OF ANALYSIS

VAN11002882.2

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
		V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	%	ppm	ppm	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL		2	0.01	0.001	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
16509	Rock	119	1.36	0.068	6	7	1.41	18	0.231	2	2.67	0.126	0.04	<0.1	<0.01	2.6	<0.1	<0.05	12	<0.5	<0.2
16510	Rock	189	4.26	0.067	6	29	1.60	2	0.395	3	3.08	0.062	<0.01	<0.1	<0.01	5.2	<0.1	<0.05	16	<0.5	<0.2
16511	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16512	Rock	146	3.09	0.165	9	1	1.66	17	0.112	10	3.56	0.088	0.05	<0.1	<0.01	3.8	<0.1	<0.05	12	<0.5	<0.2
16513	Rock	49	2.13	0.146	5	2	0.46	<1	0.141	4	1.80	0.006	<0.01	<0.1	<0.01	2.2	<0.1	<0.05	5	<0.5	<0.2
16514	Rock	137	0.95	0.062	5	30	2.44	2	0.479	1	2.55	0.109	<0.01	<0.1	<0.01	5.2	<0.1	<0.05	7	<0.5	<0.2
16515	Rock	213	7.83	0.063	4	86	1.41	2	0.360	7	4.85	<0.001	<0.01	<0.1	<0.01	16.7	<0.1	<0.05	19	<0.5	<0.2
16516	Rock	196	7.40	0.059	4	61	1.25	2	0.381	8	4.60	<0.001	<0.01	<0.1	0.01	13.9	<0.1	<0.05	20	<0.5	<0.2
16517	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
16518	Rock	184	4.83	0.049	4	47	1.10	4	0.492	7	5.52	0.023	0.05	<0.1	0.03	14.5	<0.1	0.56	14	0.8	<0.2
16519	Rock	158	2.43	0.055	6	8	1.72	2	0.486	9	3.24	0.077	<0.01	<0.1	<0.01	6.9	<0.1	<0.05	13	<0.5	<0.2
16520	Rock	216	7.64	0.054	4	74	1.35	1	0.330	6	5.34	<0.001	<0.01	<0.1	0.02	18.5	<0.1	<0.05	18	<0.5	<0.2
16521	Rock	125	1.66	0.048	4	6	1.89	6	0.416	5	2.85	0.142	0.04	<0.1	0.01	3.0	<0.1	<0.05	10	<0.5	<0.2
16522	Rock	147	2.64	0.050	5	6	1.38	8	0.388	5	3.97	0.442	0.03	<0.1	<0.01	2.8	<0.1	<0.05	12	<0.5	<0.2
16523	Rock	164	1.69	0.062	6	8	1.32	9	0.410	6	2.68	0.133	0.06	<0.1	0.02	2.1	<0.1	<0.05	12	<0.5	<0.2
16525	Rock	179	3.19	0.081	6	19	2.04	2	0.475	5	3.66	0.030	<0.01	<0.1	0.01	5.2	<0.1	<0.05	18	<0.5	<0.2
16526	Rock	56	0.12	0.006	<1	5	0.61	15	0.032	<1	1.00	0.002	0.04	<0.1	0.09	2.0	47.8	>10	4	1.8	<0.2
16527	Rock	21	0.58	0.002	<1	3	0.60	15	0.021	2	1.20	0.051	0.03	<0.1	0.10	1.4	41.3	>10	5	2.1	<0.2
16530	Rock	211	6.94	0.056	4	57	1.62	5	0.389	<1	2.13	0.042	0.02	<0.1	0.02	9.9	1.0	0.97	12	0.6	<0.2
16531	Rock	190	0.86	0.074	5	18	3.99	49	0.456	2	4.07	0.039	0.10	<0.1	<0.01	4.7	0.2	0.06	17	<0.5	<0.2
16542	Rock	129	4.39	0.054	4	18	1.61	6	0.416	2	1.87	0.046	0.01	0.1	<0.01	2.4	5.3	4.28	9	1.0	<0.2
16543	Rock	28	0.25	0.003	<1	2	0.20	1	0.010	<1	0.32	0.006	<0.01	<0.1	0.09	1.4	0.2	>10	3	21.5	0.8
16544	Rock	85	1.20	0.067	4	4	1.41	20	0.172	1	2.05	0.090	0.07	0.1	<0.01	4.2	<0.1	<0.05	8	<0.5	<0.2
16545	Rock	228	0.36	0.015	<1	91	0.18	1	0.082	<1	0.72	<0.001	<0.01	<0.1	0.46	4.8	<0.1	1.30	8	37.8	<0.2
16546	Rock	99	4.97	0.069	3	8	0.60	9	0.591	1	0.98	0.021	0.01	<0.1	0.05	3.3	<0.1	0.46	4	0.7	<0.2



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Page: 3 of 3 Part 3

CERTIFICATE OF ANALYSIS

VAN11002882.2

Method	Analyte	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
		SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga
Unit		%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	
MDL		0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	
16509	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16510	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16511	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
16512	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16513	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16514	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16515	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16516	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16517	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
16518	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16519	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16520	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16521	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16522	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16523	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16525	Rock	45.15	13.06	15.17	6.74	10.51	2.56	0.02	2.26	0.20	0.21	0.016	78	39	3.7	99.60	4	<1	52.6	<0.1	23.3
16526	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16527	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16530	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16531	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16542	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16543	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16544	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16545	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16546	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	



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Project: None Given  
 Report Date: August 11, 2011

Page: 3 of 3 Part 4

CERTIFICATE OF ANALYSIS

VAN11002882.2

Method	Analyte	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B		
		Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL
16509	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16510	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16511	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
16512	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16513	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16514	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16515	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16516	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16517	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
16518	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16519	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16520	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16521	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16522	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16523	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16525	Rock	4.0	12.8	0.2	3	30.1	0.9	0.9	0.3	428	<0.5	138.5	31.9	9.2	24.9	3.75	18.5	5.09	1.73	6.07	1.06	
16526	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16527	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16530	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16531	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16542	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16543	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16544	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16545	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16546	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	



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Project: None Given  
Report Date: August 11, 2011

Page: 3 of 3 Part 5

CERTIFICATE OF ANALYSIS

VAN11002882.2

Method	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B 2A	Leco 2A	Leco	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
Analyte	Dy	Ho	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	
MDL	0.05	0.02	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.5	0.01	
16509	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16510	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16511	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
16512	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16513	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16514	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16515	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16516	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16517	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
16518	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16519	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16520	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16521	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16522	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16523	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16525	Rock	5.95	1.19	3.50	0.49	2.95	0.42	<0.02	<0.02	0.6	1403	0.4	66	41.5	1.1	<0.1	<0.1	<0.1	0.2	4.9	<0.01
16526	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16527	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16530	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16531	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16542	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16543	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16544	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16545	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
16546	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	



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Project: None Given  
Report Date: August 11, 2011

Page: 3 of 3 Part 6

# CERTIFICATE OF ANALYSIS

# VAN11002882.2

Method	1DX	1DX	7AR	
Analyte	Ti	Se	Cu	
Unit	ppm	ppm	%	
MDL	0.1	0.5	0.001	
16509	Rock	N.A.	N.A.	N.A.
16510	Rock	N.A.	N.A.	N.A.
16511	Rock	L.N.R.	L.N.R.	L.N.R.
16512	Rock	N.A.	N.A.	N.A.
16513	Rock	N.A.	N.A.	N.A.
16514	Rock	N.A.	N.A.	N.A.
16515	Rock	N.A.	N.A.	N.A.
16516	Rock	N.A.	N.A.	N.A.
16517	Rock	L.N.R.	L.N.R.	L.N.R.
16518	Rock	N.A.	N.A.	N.A.
16519	Rock	N.A.	N.A.	N.A.
16520	Rock	N.A.	N.A.	N.A.
16521	Rock	N.A.	N.A.	N.A.
16522	Rock	N.A.	N.A.	N.A.
16523	Rock	N.A.	N.A.	N.A.
16525	Rock	<0.1	0.7	N.A.
16526	Rock	N.A.	N.A.	N.A.
16527	Rock	N.A.	N.A.	N.A.
16530	Rock	N.A.	N.A.	N.A.
16531	Rock	N.A.	N.A.	N.A.
16542	Rock	N.A.	N.A.	N.A.
16543	Rock	N.A.	N.A.	N.A.
16544	Rock	N.A.	N.A.	N.A.
16545	Rock	N.A.	N.A.	5.068
16546	Rock	N.A.	N.A.	2.091





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Project: None Given  
 Report Date: August 11, 2011

Page: 1 of 3 Part 1

QUALITY CONTROL REPORT

VAN11002882.2

Method	WGHT	3B	3B	3B	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	
Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	2	3	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	
Pulp Duplicates																					
6726	Rock	0.56	455	<3	23	<0.1	>10000	1.9	23	1.8	22.5	13.3	410	3.21	1.6	415.0	<0.1	44	1.1	0.1	<0.1
REP 6726	QC					<0.1	>10000	1.8	24	1.7	21.9	13.2	405	3.20	1.8	440.3	<0.1	44	1.0	0.1	<0.1
6745	Rock	1.38	<2	3	24	0.2	46.1	0.7	49	<0.1	30.3	23.3	265	5.06	<0.5	1.8	0.3	21	<0.1	<0.1	<0.1
REP 6745	QC																				
16502	Rock	0.35	7	<3	<2	0.2	67.9	1.2	38	0.1	4.3	11.3	548	2.51	1.7	4.5	1.5	29	<0.1	<0.1	<0.1
REP 16502	QC		6	<3	<2																
16515	Rock	0.65	3	<3	21	0.7	583.4	0.3	43	0.3	64.4	27.0	600	5.05	1.7	4.7	0.5	8	<0.1	<0.1	<0.1
REP 16515	QC		5	<3	20																
16545	Rock	0.78	105	13	132	7.3	>10000	7.8	64	68.3	144.4	100.2	183	25.61	19.5	105.7	<0.1	32	1.7	0.4	0.3
REP 16545	QC					7.8	>10000	8.6	59	69.2	145.7	99.1	191	26.33	19.1	107.0	<0.1	35	1.9	0.4	0.3
16546	Rock	1.24	83	<3	22	5.7	>10000	2.9	50	12.3	18.2	12.1	377	2.21	2.7	77.7	0.3	60	13.2	0.2	0.1
REP 16546	QC		86	4	20																
Core Reject Duplicates																					
6727	Rock	0.86	2	5	17	0.4	111.9	0.3	56	<0.1	37.9	24.7	651	4.83	0.7	<0.5	0.4	12	<0.1	<0.1	<0.1
DUP 6727	QC		3	6	18	0.4	143.0	0.3	59	<0.1	37.9	25.8	666	4.84	0.8	2.0	0.4	13	<0.1	<0.1	<0.1
16519	Rock	0.53	<2	5	15	0.4	84.4	0.6	75	<0.1	38.0	27.2	993	5.73	1.0	1.4	0.5	13	<0.1	<0.1	<0.1
DUP 16519	QC		<2	6	16	0.3	78.5	0.3	73	<0.1	35.8	28.0	1029	5.84	1.1	0.6	0.5	14	<0.1	<0.1	<0.1
Reference Materials																					
STD CDN-PGMS-19	Standard		224	116	513																
STD CDN-PGMS-19	Standard		211	110	500																
STD CSC	Standard																				
STD CSC	Standard																				
STD DS8	Standard					12.6	104.2	121.5	298	1.7	35.5	6.6	574	2.36	28.4	103.0	6.7	63	2.0	5.7	6.6
STD DS8	Standard					12.5	103.6	127.8	317	1.8	36.1	7.1	613	2.45	26.2	115.8	7.2	69	2.4	6.2	7.3
STD DS8	Standard					12.7	110.2	126.8	311	1.8	39.2	7.6	611	2.41	26.2	111.7	6.3	60	2.4	5.6	6.5
STD DS8	Standard					13.6	114.2	130.0	314	1.8	40.5	7.6	625	2.49	26.5	107.4	6.5	60	2.2	5.6	6.6
STD DS8	Standard					11.7	104.4	124.2	299	1.7	37.0	7.5	577	2.32	24.9	108.3	6.5	62	2.2	4.8	6.5
STD DS8	Standard					12.4	104.9	118.9	305	1.8	38.5	7.1	620	2.39	25.9	97.1	6.6	64	2.1	5.1	6.6

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 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: August 11, 2011

Page: 1 of 3 Part 2

QUALITY CONTROL REPORT

VAN11002882.2

Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
Analyte	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	
Unit	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL	2	0.01	0.001	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	
Pulp Duplicates																					
6726 Rock	58	1.62	0.011	<1	31	0.79	5	0.119	<1	1.86	<0.001	0.18	<0.1	0.02	2.5	<0.1	0.14	4	1.1	<0.2	
REP 6726 QC	58	1.60	0.011	<1	31	0.78	5	0.120	<1	1.91	<0.001	0.18	<0.1	0.02	2.4	<0.1	0.14	4	1.0	<0.2	
6745 Rock	193	0.67	0.078	6	19	1.17	68	0.208	<1	1.36	0.123	0.28	<0.1	<0.01	2.4	<0.1	<0.05	8	<0.5	<0.2	
REP 6745 QC																					
16502 Rock	42	1.19	0.045	4	4	1.03	29	0.075	2	1.57	0.109	0.12	0.1	<0.01	4.3	<0.1	<0.05	5	<0.5	<0.2	
REP 16502 QC																					
16515 Rock	213	7.83	0.063	4	86	1.41	2	0.360	7	4.85	<0.001	<0.01	<0.1	<0.01	16.7	<0.1	<0.05	19	<0.5	<0.2	
REP 16515 QC																					
16545 Rock	228	0.36	0.015	<1	91	0.18	1	0.082	<1	0.72	<0.001	<0.01	<0.1	0.46	4.8	<0.1	1.30	8	37.8	<0.2	
REP 16545 QC	232	0.38	0.015	<1	94	0.18	2	0.085	<1	0.73	<0.001	<0.01	<0.1	0.49	5.1	<0.1	1.30	8	37.6	<0.2	
16546 Rock	99	4.97	0.069	3	8	0.60	9	0.591	1	0.98	0.021	0.01	<0.1	0.05	3.3	<0.1	0.46	4	0.7	<0.2	
REP 16546 QC																					
Core Reject Duplicates																					
6727 Rock	129	2.80	0.043	4	6	1.34	3	0.194	13	2.99	0.045	<0.01	<0.1	<0.01	3.9	<0.1	<0.05	10	<0.5	<0.2	
DUP 6727 QC	135	2.97	0.044	4	7	1.39	3	0.221	12	3.11	0.054	<0.01	<0.1	<0.01	3.9	<0.1	<0.05	11	<0.5	<0.2	
16519 Rock	158	2.43	0.055	6	8	1.72	2	0.486	9	3.24	0.077	<0.01	<0.1	<0.01	6.9	<0.1	<0.05	13	<0.5	<0.2	
DUP 16519 QC	159	2.45	0.056	6	9	1.74	3	0.483	9	3.29	0.082	<0.01	<0.1	0.01	7.0	<0.1	<0.05	13	<0.5	<0.2	
Reference Materials																					
STD CDN-PGMS-19 Standard																					
STD CDN-PGMS-19 Standard																					
STD CSC Standard																					
STD CSC Standard																					
STD DS8 Standard	38	0.65	0.076	13	107	0.57	261	0.098	2	0.84	0.078	0.38	3.3	0.23	1.8	5.5	0.15	5	5.2	5.1	
STD DS8 Standard	40	0.69	0.077	14	114	0.60	282	0.107	2	0.90	0.086	0.40	3.1	0.22	1.9	5.4	0.15	5	7.1	5.1	
STD DS8 Standard	40	0.65	0.074	12	121	0.61	268	0.107	1	0.91	0.090	0.40	3.0	0.20	1.8	5.4	0.16	4	5.0	4.8	
STD DS8 Standard	41	0.69	0.079	13	124	0.62	274	0.111	2	0.93	0.092	0.41	3.2	0.21	1.9	5.6	0.17	5	5.0	5.6	
STD DS8 Standard	40	0.67	0.077	13	115	0.58	261	0.106	1	0.87	0.082	0.39	2.7	0.22	1.8	5.1	0.16	4	3.1	3.9	
STD DS8 Standard	41	0.66	0.075	14	117	0.59	268	0.111	3	0.91	0.088	0.41	2.8	0.20	1.7	4.8	0.16	5	4.3	4.5	

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Project: None Given  
 Report Date: August 11, 2011

Page: 1 of 3 Part 3

QUALITY CONTROL REPORT

VAN11002882.2

Method		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B
Analyte		SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga
Unit		%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5
Pulp Duplicates																					
6726	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 6726	QC																				
6745	Rock	49.30	13.12	15.32	5.89	7.16	4.14	0.81	2.26	0.21	0.21	0.011	60	40	1.3	99.74	233	<1	49.4	0.2	19.9
REP 6745	QC	49.20	13.19	15.24	5.92	7.20	4.16	0.82	2.29	0.21	0.21	0.012	60	40	1.3	99.74	226	<1	49.8	0.2	19.3
16502	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 16502	QC																				
16515	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 16515	QC																				
16545	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 16545	QC																				
16546	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 16546	QC																				
Core Reject Duplicates																					
6727	Rock	47.21	14.21	11.72	6.82	11.60	3.38	0.05	1.46	0.12	0.19	0.031	78	39	3.0	99.80	11	<1	43.8	<0.1	17.5
DUP 6727	QC	47.28	14.22	11.81	6.74	11.51	3.41	0.05	1.43	0.13	0.19	0.032	74	39	3.0	99.80	10	<1	42.7	<0.1	17.4
16519	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP 16519	QC	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Reference Materials																					
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CSC	Standard																				
STD CSC	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
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Project: None Given  
 Report Date: August 11, 2011

Page: 1 of 3 Part 4

QUALITY CONTROL REPORT

VAN11002882.2

Method	Analyte	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B
		Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05
Pulp Duplicates																				
6726	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 6726	QC																			
6745	Rock	3.5	10.7	13.7	1	443.6	0.8	0.9	0.2	462	<0.5	124.2	29.8	8.7	22.4	3.35	16.7	4.63	1.57	5.20
REP 6745	QC	3.5	10.5	13.3	1	441.2	0.6	0.8	0.2	465	<0.5	122.2	29.3	8.8	22.0	3.31	17.3	4.51	1.57	5.24
16502	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 16502	QC																			
16515	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 16515	QC																			
16545	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 16545	QC																			
16546	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 16546	QC																			
Core Reject Duplicates																				
6727	Rock	2.3	7.0	0.7	<1	85.9	0.1	0.7	0.2	339	2.6	78.4	21.8	6.1	15.3	2.27	11.2	3.15	1.17	3.72
DUP 6727	QC	2.4	7.1	0.9	<1	86.0	0.2	0.7	0.2	338	1.4	78.1	21.3	6.1	15.2	2.22	11.1	3.12	1.12	3.64
16519	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP 16519	QC	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Reference Materials																				
STD CDN-PGMS-19	Standard																			
STD CDN-PGMS-19	Standard																			
STD CSC	Standard																			
STD CSC	Standard																			
STD DS8	Standard																			
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Project: None Given  
 Report Date: August 11, 2011

Page: 1 of 3 Part 5

QUALITY CONTROL REPORT

VAN11002882.2

Method	Analyte	Unit	MDL	4A-4B Dy	4A-4B Ho	4A-4B Er	4A-4B Tm	4A-4B Yb	4A-4B Lu	2A Leco TOT/C	2A Leco TOT/S	1DX Mo	1DX Cu	1DX Pb	1DX Zn	1DX Ni	1DX As	1DX Cd	1DX Sb	1DX Bi	1DX Ag	1DX Au	1DX Hg
				ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	
Pulp Duplicates																							
6726	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
REP 6726	QC																						
6745	Rock			5.56	1.08	3.10	0.47	2.69	0.40	<0.02	<0.02	0.2	52.8	0.2	56	36.2	<0.5	<0.1	<0.1	<0.1	<0.1	2.3	<0.01
REP 6745	QC			5.53	1.11	2.96	0.46	2.70	0.39														
16502	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
REP 16502	QC																						
16515	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
REP 16515	QC																						
16545	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
REP 16545	QC																						
16546	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
REP 16546	QC																						
Core Reject Duplicates																							
6727	Rock			4.11	0.85	2.34	0.35	2.03	0.32	0.02	0.02	0.5	127.3	0.4	65	42.0	0.7	<0.1	<0.1	<0.1	<0.1	1.4	<0.01
DUP 6727	QC			4.11	0.81	2.27	0.34	2.02	0.30	0.03	0.02	0.5	173.4	0.5	71	44.7	0.8	<0.1	<0.1	<0.1	<0.1	3.7	<0.01
16519	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
DUP 16519	QC			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Reference Materials																							
STD CDN-PGMS-19	Standard																						
STD CDN-PGMS-19	Standard																						
STD CSC	Standard									3.14	4.11												
STD CSC	Standard									3.07	4.33												
STD DS8	Standard																						
STD DS8	Standard																						
STD DS8	Standard																						
STD DS8	Standard																						
STD DS8	Standard																						
STD DS8	Standard																						



Acme Analytical Laboratories (Vancouver) Ltd.

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**Client:** **Schau, Mikkel**  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7 Canada

**Project:** None Given

**Report Date:** August 11, 2011

**Page:** 1 of 3 **Part** 6

## QUALITY CONTROL REPORT

VAN11002882.2

Method	1DX	1DX	7AR	
Analyte	Ti	Se	Cu	
Unit	ppm	ppm	%	
MDL	0.1	0.5	0.001	
Pulp Duplicates				
6726	Rock	N.A.	N.A.	1.659
REP 6726	QC			
6745	Rock	<0.1	<0.5	N.A.
REP 6745	QC			
16502	Rock	N.A.	N.A.	N.A.
REP 16502	QC			
16515	Rock	N.A.	N.A.	N.A.
REP 16515	QC			
16545	Rock	N.A.	N.A.	5.068
REP 16545	QC			
16546	Rock	N.A.	N.A.	2.091
REP 16546	QC			
Core Reject Duplicates				
6727	Rock	<0.1	<0.5	N.A.
DUP 6727	QC	<0.1	<0.5	N.A.
16519	Rock	N.A.	N.A.	N.A.
DUP 16519	QC	N.A.	N.A.	N.A.
Reference Materials				
STD CDN-PGMS-19	Standard			
STD CDN-PGMS-19	Standard			
STD CSC	Standard			
STD CSC	Standard			
STD DS8	Standard			
STD DS8	Standard			
STD DS8	Standard			
STD DS8	Standard			
STD DS8	Standard			
STD DS8	Standard			



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 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

Project: None Given

Report Date: August 11, 2011

Page: 2 of 3 Part 1

QUALITY CONTROL REPORT

VAN11002882.2

		WGHT	3B	3B	3B	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15		
		Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	
		kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
		0.01	2	3	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	
STD DS8	Standard																					
STD DS8	Standard																					
STD GC-7	Standard																					
STD OREAS45CA	Standard																					
STD OREAS45CA	Standard																					
STD OREAS76A	Standard																					
STD OREAS76A	Standard																					
STD PD1	Standard		508	439	547																	
STD PD1	Standard		559	469	587																	
STD PD1	Standard		517	425	543																	
STD PD1	Standard		541	493	577																	
STD R4A	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD CDN-PGMS-19			230	108	476																	
STD PD1 Expected			542	456	563																	
STD CSC Expected																						
STD OREAS76A Expected																						
STD DS8 Expected						13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	5.7	6.67	
STD OREAS45CA Expected																						
STD SO-18 Expected																						
STD GC-7 Expected																						
STD R4A Expected																						
BLK	Blank																					

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 Victoria BC V8N 1S7 Canada

Project: None Given

Report Date: August 11, 2011

Page: 2 of 3 Part 2

QUALITY CONTROL REPORT

VAN11002882.2

		1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15		
		V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	
		ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
		2	0.01	0.001	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	
STD DS8	Standard																					
STD DS8	Standard																					
STD GC-7	Standard																					
STD OREAS45CA	Standard																					
STD OREAS45CA	Standard																					
STD OREAS76A	Standard																					
STD OREAS76A	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD R4A	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD SO-18	Standard																					
STD CDN-PGMS-19																						
STD PD1 Expected																						
STD CSC Expected																						
STD OREAS76A Expected																						
STD DS8 Expected		41.1	0.7	0.08	14.6	115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	2.3	5.4	0.1679	4.7	5.23	5	
STD OREAS45CA Expected																						
STD SO-18 Expected																						
STD GC-7 Expected																						
STD R4A Expected																						
BLK	Blank																					

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Project: None Given  
 Report Date: August 11, 2011

Page: 2 of 3 Part 3

QUALITY CONTROL REPORT

VAN11002882.2

		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
		SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	
		%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	
		0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	
STD DS8	Standard																					
STD DS8	Standard																					
STD GC-7	Standard																					
STD OREAS45CA	Standard																					
STD OREAS45CA	Standard																					
STD OREAS76A	Standard																					
STD OREAS76A	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD R4A	Standard																					
STD SO-18	Standard	57.96	14.29	7.56	3.33	6.32	3.73	2.18	0.69	0.83	0.40	0.565	41	24	1.9	99.76	500	<1	26.5	6.6	17.7	
STD SO-18	Standard	58.07	14.20	7.57	3.35	6.37	3.69	2.17	0.69	0.80	0.40	0.555	39	24	1.9	99.77	506	<1	26.5	6.9	17.2	
STD SO-18	Standard	58.03	14.15	7.66	3.36	6.34	3.67	2.15	0.69	0.85	0.40	0.545	44	24	1.9	99.75	497	<1	27.3	6.8	17.5	
STD SO-18	Standard	58.24	14.13	7.56	3.34	6.34	3.67	2.13	0.69	0.83	0.39	0.541	42	23	1.9	99.77	509	<1	27.6	6.8	17.5	
STD SO-18	Standard	57.98	14.13	7.67	3.37	6.38	3.65	2.15	0.69	0.84	0.40	0.550	45	24	1.9	99.72	534	1	29.5	7.2	18.1	
STD SO-18	Standard	58.22	14.01	7.58	3.35	6.38	3.67	2.14	0.68	0.84	0.39	0.541	46	24	1.9	98.20	526	2	27.4	7.3	17.9	
STD SO-18	Standard	57.98	14.13	7.67	3.37	6.38	3.65	2.15	0.69	0.84	0.40	0.550	45	24	1.9	98.20	541	1	27.7	7.5	18.6	
STD CDN-PGMS-19																						
STD PD1 Expected																						
STD CSC Expected																						
STD OREAS76A Expected																						
STD DS8 Expected																						
STD OREAS45CA Expected																						
STD SO-18 Expected		58.47	14.23	7.67	3.35	6.42	3.71	2.17	0.69	0.83	0.39	0.55	44	25			514		26.2	7.1	17.6	
STD GC-7 Expected																						
STD R4A Expected																						
BLK	Blank																					

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 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: August 11, 2011

Page: 2 of 3 Part 4

QUALITY CONTROL REPORT

VAN11002882.2

		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B		
		Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
		0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	
STD DS8	Standard																					
STD DS8	Standard																					
STD GC-7	Standard																					
STD OREAS45CA	Standard																					
STD OREAS45CA	Standard																					
STD OREAS76A	Standard																					
STD OREAS76A	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD R4A	Standard																					
STD SO-18	Standard	9.2	20.7	28.2	14	407.3	7.3	10.5	15.7	201	13.6	279.5	30.4	11.6	25.3	3.22	13.5	2.85	0.85	2.91	0.50	
STD SO-18	Standard	9.5	19.7	27.5	14	402.8	7.0	10.1	15.6	196	15.1	280.2	30.1	11.6	25.4	3.23	13.3	2.85	0.84	2.84	0.49	
STD SO-18	Standard	8.7	19.8	28.4	15	412.5	6.9	9.5	14.9	211	13.6	281.0	29.5	11.2	24.8	3.12	12.8	2.74	0.81	2.71	0.48	
STD SO-18	Standard	8.8	19.4	27.8	15	414.4	6.7	9.5	14.8	209	13.5	280.3	29.2	10.3	24.4	2.93	12.6	2.71	0.81	2.70	0.46	
STD SO-18	Standard	9.1	20.5	29.5	16	458.5	7.1	9.9	15.4	221	11.5	299.3	30.2	11.4	25.2	3.17	13.1	2.82	0.82	2.77	0.41	
STD SO-18	Standard	9.6	21.1	29.2	14	412.2	7.3	10.2	16.7	208	15.2	296.1	32.2	12.2	26.9	3.41	14.0	3.07	0.91	3.08	0.51	
STD SO-18	Standard	9.6	21.7	29.6	14	416.2	7.6	10.4	17.0	214	15.3	296.9	32.3	12.5	27.4	3.46	14.1	3.16	0.91	3.05	0.52	
STD CDN-PGMS-19																						
STD PD1 Expected																						
STD CSC Expected																						
STD OREAS76A Expected																						
STD DS8 Expected																						
STD OREAS45CA Expected																						
STD SO-18 Expected		9.8	21.3	28.7	15	407.4	7.4	9.9	16.4	200	14.8	280	31	12.3	27.1	3.45	14	3	0.89	2.93	0.53	
STD GC-7 Expected																						
STD R4A Expected																						
BLK	Blank																					

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Project: None Given  
 Report Date: August 11, 2011

Page: 2 of 3 Part 5

QUALITY CONTROL REPORT

VAN11002882.2

		4A-4B Dy ppm 0.05	4A-4B Ho ppm 0.02	4A-4B Er ppm 0.03	4A-4B Tm ppm 0.01	4A-4B Yb ppm 0.05	4A-4B Lu ppm 0.01	2A Leco TOT/C % 0.02	2A Leco TOT/S % 0.02	1DX Mo ppm 0.1	1DX Cu ppm 0.1	1DX Pb ppm 0.1	1DX Zn ppm 1	1DX Ni ppm 0.1	1DX As ppm 0.5	1DX Cd ppm 0.1	1DX Sb ppm 0.1	1DX Bi ppm 0.1	1DX Ag ppm 0.1	1DX Au ppb 0.5	1DX Hg ppm 0.01	
STD DS8	Standard									14.1	118.8	134.6	333	42.6	27.3	2.4	4.2	6.7	1.8	101.2	0.21	
STD DS8	Standard									12.7	107.2	105.0	313	37.2	26.5	2.3	3.9	6.3	1.7	96.1	0.17	
STD GC-7	Standard																					
STD OREAS45CA	Standard									0.9	519.5	17.1	64	252.2	2.5	<0.1	<0.1	0.2	0.3	35.4	0.02	
STD OREAS45CA	Standard									1.1	540.0	20.6	75	270.0	3.8	0.1	<0.1	0.2	0.3	41.8	0.03	
STD OREAS76A	Standard							0.17	17.85													
STD OREAS76A	Standard							0.15	18.57													
STD PD1	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD R4A	Standard																					
STD SO-18	Standard	3.01	0.61	1.82	0.28	1.82	0.28															
STD SO-18	Standard	2.90	0.61	1.76	0.27	1.76	0.26															
STD SO-18	Standard	2.76	0.56	1.65	0.26	1.60	0.24															
STD SO-18	Standard	2.73	0.56	1.60	0.26	1.64	0.25															
STD SO-18	Standard	2.77	0.57	1.71	0.23	1.63	0.25															
STD SO-18	Standard	3.04	0.63	1.81	0.28	1.84	0.28															
STD SO-18	Standard	3.18	0.67	1.85	0.28	1.87	0.28															
STD CDN-PGMS-19																						
STD PD1 Expected																						
STD CSC Expected								2.94	4.25													
STD OREAS76A Expected								0.16	18													
STD DS8 Expected										13.44	110	123	312	38.1	26	2.38	4.8	6.67	1.69	107	0.192	
STD OREAS45CA Expected										1	494	20	60	240	3.8	0.1	0.13	0.19	0.275	43	0.03	
STD SO-18 Expected		3	0.62	1.84	0.27	1.79	0.27															
STD GC-7 Expected																						
STD R4A Expected																						
BLK	Blank							<0.02	<0.02													

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**Project:** None Given

**Report Date:** August 11, 2011

**Page:** 2 of 3 **Part** 6

## QUALITY CONTROL REPORT

VAN11002882.2

		1DX TI ppm 0.1	1DX Se ppm 0.5	7AR Cu % 0.001
STD DS8	Standard	5.8	4.4	
STD DS8	Standard	5.1	4.8	
STD GC-7	Standard			0.537
STD OREAS45CA	Standard	<0.1	<0.5	
STD OREAS45CA	Standard	<0.1	<0.5	
STD OREAS76A	Standard			
STD OREAS76A	Standard			
STD PD1	Standard			
STD PD1	Standard			
STD PD1	Standard			
STD PD1	Standard			
STD R4A	Standard			0.489
STD SO-18	Standard			
STD SO-18	Standard			
STD SO-18	Standard			
STD SO-18	Standard			
STD SO-18	Standard			
STD SO-18	Standard			
STD SO-18	Standard			
STD CDN-PGMS-19				
STD PD1 Expected				
STD CSC Expected				
STD OREAS76A Expected				
STD DS8 Expected		5.4	5.23	
STD OREAS45CA Expected		0.07	0.5	
STD SO-18 Expected				
STD GC-7 Expected				0.555
STD R4A Expected				0.502
BLK	Blank			



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 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: August 11, 2011

Page: 3 of 3 Part 1

QUALITY CONTROL REPORT

VAN11002882.2

		WGHT	3B	3B	3B	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
		Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi
		kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm
		0.01	2	3	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1
BLK	Blank		<2	<3	<2																
BLK	Blank		<2	<3	<2																
BLK	Blank		<2	<3	<2																
BLK	Blank		<2	<3	<2																
BLK	Blank					<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1
BLK	Blank					<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1
BLK	Blank		<2	<3	<2																
BLK	Blank		<2	<3	<2																
BLK	Blank					<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	<0.01	<2	<3	<2	<0.1	1.6	2.8	44	<0.1	3.5	4.0	540	1.80	1.2	2.5	4.3	56	<0.1	<0.1	<0.1
G1	Prep Blank	<0.01	<2	<3	<2	<0.1	1.8	2.7	45	<0.1	3.6	4.1	538	1.84	<0.5	<0.5	4.7	54	<0.1	<0.1	<0.1

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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Client: **Schau, Mikkel**  
 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

Project: None Given

Report Date: August 11, 2011

Page: 3 of 3 Part 2

QUALITY CONTROL REPORT

VAN11002882.2

		1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
		V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
		ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
BLK	Blank	2	0.01	0.001	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<2	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<2	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<2	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	33	0.44	0.074	7	7	0.54	211	0.107	<1	1.06	0.134	0.48	<0.1	<0.01	2.0	0.3	<0.05	5	<0.5	<0.2
G1	Prep Blank	34	0.43	0.075	7	7	0.55	201	0.115	<1	1.03	0.117	0.47	<0.1	<0.01	1.9	0.3	<0.05	5	<0.5	<0.2



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 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: August 11, 2011

Page: 3 of 3 Part 3

QUALITY CONTROL REPORT

VAN11002882.2

		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
		SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	
		%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	
		0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank	0.20	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	0.20	<1	<1	<0.2	<0.1	<0.5	
BLK	Blank	0.22	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	0.22	<1	<1	<0.2	<0.1	<0.5	
BLK	Blank																					
BLK	Blank																					
BLK	Blank	<0.01	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	<0.01	<1	<1	<0.2	<0.1	<0.5	
BLK	Blank	<0.01	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	<0.01	<1	<1	<0.2	<0.1	<0.5	
BLK	Blank																					
Prep Wash																						
G1	Prep Blank	67.62	15.63	3.34	1.18	3.41	3.49	3.82	0.39	0.18	0.10	<0.002	<20	5	0.6	99.77	1077	2	4.3	4.0	18.3	
G1	Prep Blank	67.71	15.57	3.32	1.15	3.37	3.50	3.81	0.39	0.20	0.10	<0.002	<20	5	0.6	99.73	1099	2	4.3	4.1	17.7	



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Project: None Given  
 Report Date: August 11, 2011

Page: 3 of 3 Part 4

QUALITY CONTROL REPORT

VAN11002882.2

		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B		
		Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
		0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	<0.1	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	<0.01	
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	1.0	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	<0.01	
BLK	Blank																					
BLK	Blank																					
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	<0.1	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	<0.01	
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	<0.1	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	<0.01	
BLK	Blank																					
Prep Wash																						
G1	Prep Blank	4.1	22.3	127.0	<1	736.7	1.0	8.6	3.4	48	5.6	133.1	15.6	25.8	51.5	6.00	22.0	3.95	1.06	3.17	0.49	
G1	Prep Blank	4.2	23.5	127.0	<1	763.6	1.3	9.3	3.5	49	5.5	130.0	17.0	30.8	60.1	6.85	24.8	4.28	1.08	3.53	0.51	





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Project: None Given  
 Report Date: August 11, 2011

Page: 3 of 3 Part 5

QUALITY CONTROL REPORT

VAN11002882.2

		4A-4B Dy ppm 0.05	4A-4B Ho ppm 0.02	4A-4B Er ppm 0.03	4A-4B Tm ppm 0.01	4A-4B Yb ppm 0.05	4A-4B Lu ppm 0.01	2A Leco TOT/C % 0.02	2A Leco TOT/S % 0.02	1DX Mo ppm 0.1	1DX Cu ppm 0.1	1DX Pb ppm 0.1	1DX Zn ppm 1	1DX Ni ppm 0.1	1DX As ppm 0.5	1DX Cd ppm 0.1	1DX Sb ppm 0.1	1DX Bi ppm 0.1	1DX Ag ppm 0.1	1DX Au ppb 0.5	1DX Hg ppm 0.01	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank							<0.02	<0.02													
BLK	Blank	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01															
BLK	Blank	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01															
BLK	Blank									<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	
BLK	Blank									<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	
BLK	Blank	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01															
BLK	Blank	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01															
BLK	Blank																					
Prep Wash																						
G1	Prep Blank	2.69	0.52	1.67	0.26	1.76	0.30	<0.02	<0.02	<0.1	2.3	3.0	52	3.9	0.6	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	
G1	Prep Blank	2.76	0.56	1.72	0.28	1.89	0.30	<0.02	<0.02	0.1	2.5	2.9	50	4.0	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	



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Victoria BC V8N 1S7 Canada

**Project:** None Given

**Report Date:** August 11, 2011

**Page:** 3 of 3 **Part** 6

# QUALITY CONTROL REPORT

VAN11002882.2

		1DX TI ppm 0.1	1DX Se ppm 0.5	7AR Cu % 0.001
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank	<0.1	<0.5	
BLK	Blank	<0.1	<0.5	
BLK	Blank			
BLK	Blank			
BLK	Blank			<0.001
Prep Wash				
G1	Prep Blank	0.3	<0.5	N.A.
G1	Prep Blank	0.3	<0.5	N.A.



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**Client:** **Schau, Mikkel**  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7 Canada

Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: June 30, 2011  
Report Date: July 15, 2011  
Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN11002917.1

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 20

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
DISP-RJT-SOIL Immediate Disposal of Soil Reject

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

Invoice To: Schau, Mikkel  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7  
Canada

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	20	Dry at 60C			VAN
SS80	20	Dry at 60C sieve 100g to -80 mesh			VAN
1DX2	20	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN

### ADDITIONAL COMMENTS



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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 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: July 15, 2011

Page: 2 of 2 Part 1

CERTIFICATE OF ANALYSIS

VAN11002917.1

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
MDL		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	2	0.01	0.001	1	
316-6722	Soil	0.5	101.5	6.7	71	<0.1	36.2	60.4	2877	6.89	1.4	4.6	0.4	30	0.2	0.1	0.1	247	2.16	0.047	3
323-6733	Soil	0.5	73.8	11.1	54	<0.1	27.2	90.0	4601	9.61	1.8	1.8	0.4	35	0.2	<0.1	<0.1	276	0.80	0.064	2
D033-6746	Soil	0.3	108.8	1.4	91	<0.1	51.9	30.2	1044	6.09	0.9	1.6	0.4	37	0.2	<0.1	<0.1	220	2.87	0.043	4
D033-6747	Soil	0.2	116.9	2.1	86	<0.1	49.7	29.3	989	5.68	0.9	23.4	0.5	37	0.2	<0.1	<0.1	201	2.81	0.047	4
D035-6748	Soil	1.9	112.1	5.3	135	0.1	46.8	74.6	4928	5.86	1.1	18.6	0.4	28	0.6	<0.1	<0.1	183	1.57	0.053	4
D043-16506	Soil	0.5	88.0	2.5	35	0.2	21.2	11.6	261	12.19	<0.5	4.9	0.9	11	0.1	<0.1	<0.1	410	1.22	0.045	3
D044-16507	Soil	0.7	33.6	5.1	22	0.2	9.6	11.4	572	2.35	<0.5	4.6	<0.1	12	<0.1	<0.1	<0.1	97	0.99	0.076	3
D045-16508	Soil	0.6	94.6	2.4	140	<0.1	51.3	65.5	6773	8.11	0.6	4.4	0.5	26	0.2	<0.1	<0.1	268	2.28	0.039	4
D052-16524	Soil	0.4	107.0	3.4	78	0.1	42.4	41.6	2461	5.38	1.4	7.3	0.5	22	0.3	<0.1	<0.1	231	2.82	0.042	5
D055-16529	Soil	1.4	233.6	26.0	50	0.3	14.4	21.1	3519	7.01	1.5	5.2	0.1	17	0.9	0.2	0.1	258	0.68	0.104	2
D057-16532	Soil	0.9	180.8	2.1	35	0.1	17.2	9.7	212	8.81	0.7	3.5	0.8	10	0.2	<0.1	<0.1	275	0.53	0.046	3
D057-16533	Soil	0.7	175.1	2.4	28	0.2	13.7	7.2	165	10.49	<0.5	3.2	0.7	8	0.3	<0.1	<0.1	388	0.39	0.045	3
D057-16534	Soil	0.9	143.8	3.8	28	0.1	13.0	6.3	140	11.59	<0.5	2.0	0.6	8	0.2	<0.1	<0.1	522	0.33	0.036	2
D057-16535	Soil	1.0	185.9	2.7	30	0.2	16.5	8.3	170	5.22	0.5	4.4	0.8	9	0.2	<0.1	<0.1	177	0.51	0.047	4
D057-16536	Soil	0.8	197.8	2.0	36	0.2	19.7	10.1	214	4.67	1.0	3.6	0.8	11	0.3	<0.1	<0.1	171	0.63	0.050	4
D057-16537	Soil	1.0	245.2	1.0	35	<0.1	24.5	12.5	280	5.98	1.5	5.6	1.1	11	0.2	<0.1	<0.1	189	0.73	0.054	5
D058-16538	Soil	2.0	372.8	5.7	65	0.1	29.2	23.2	907	5.91	2.1	5.3	0.7	17	0.3	<0.1	<0.1	211	0.99	0.083	3
D058-16539	Soil	3.1	165.9	11.2	62	0.2	22.7	65.0	2770	9.89	1.7	8.0	0.4	17	0.4	0.2	0.1	317	0.87	0.048	2
D058-16540	Soil	4.5	292.2	12.3	281	0.2	65.2	718.6	>10000	8.91	2.0	26.4	0.4	18	3.3	0.1	<0.1	249	0.81	0.055	3
D058-16541	Soil	2.1	318.6	4.7	86	0.1	39.4	35.6	2055	6.64	1.7	13.2	0.5	22	0.5	<0.1	<0.1	221	0.94	0.053	3



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Project: None Given  
 Report Date: July 15, 2011

Page: 2 of 2 Part 2

CERTIFICATE OF ANALYSIS

VAN11002917.1

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
316-6722	Soil	45	1.10	18	0.533	8	3.75	0.016	0.02	<0.1	0.10	7.8	<0.1	<0.05	13	<0.5	<0.2
323-6733	Soil	63	0.61	26	0.372	6	3.41	0.016	0.03	<0.1	0.18	6.0	<0.1	0.10	14	1.3	<0.2
D033-6746	Soil	43	1.67	25	0.540	6	3.96	0.031	0.01	<0.1	0.03	9.7	<0.1	<0.05	12	0.7	<0.2
D033-6747	Soil	41	1.68	25	0.501	4	3.99	0.033	0.01	<0.1	0.02	9.2	<0.1	<0.05	12	0.9	<0.2
D035-6748	Soil	35	0.79	52	0.431	6	3.89	0.016	0.01	<0.1	0.13	8.1	<0.1	0.05	10	1.0	<0.2
D043-16506	Soil	142	0.48	10	0.808	5	5.79	0.009	<0.01	<0.1	0.39	12.2	<0.1	<0.05	23	1.0	<0.2
D044-16507	Soil	38	0.24	11	0.208	5	2.12	0.015	0.07	<0.1	0.42	4.1	<0.1	0.12	10	0.8	<0.2
D045-16508	Soil	59	1.24	37	0.535	7	4.63	0.011	0.01	<0.1	0.09	10.2	<0.1	<0.05	14	1.4	<0.2
D052-16524	Soil	49	0.97	27	0.579	9	4.43	0.011	0.01	<0.1	0.15	12.4	<0.1	<0.05	12	1.1	<0.2
D055-16529	Soil	35	0.40	19	0.257	4	1.62	0.008	0.04	<0.1	0.34	4.6	<0.1	0.12	14	0.5	<0.2
D057-16532	Soil	86	0.49	12	0.709	2	5.31	0.008	<0.01	<0.1	0.38	8.1	<0.1	0.05	19	1.4	<0.2
D057-16533	Soil	92	0.29	9	0.854	4	4.56	0.006	<0.01	<0.1	0.37	7.3	<0.1	<0.05	23	0.9	<0.2
D057-16534	Soil	96	0.24	9	1.030	4	3.85	0.006	<0.01	<0.1	0.33	5.7	<0.1	<0.05	31	1.1	<0.2
D057-16535	Soil	76	0.45	10	0.538	3	7.72	0.008	<0.01	<0.1	0.44	12.4	<0.1	<0.05	12	1.8	<0.2
D057-16536	Soil	70	0.59	12	0.556	3	7.05	0.009	<0.01	<0.1	0.39	12.3	<0.1	<0.05	12	1.7	<0.2
D057-16537	Soil	60	0.70	11	0.553	5	7.86	0.009	<0.01	<0.1	0.20	15.9	<0.1	<0.05	11	1.3	<0.2
D058-16538	Soil	54	0.93	18	0.478	3	4.59	0.011	0.02	<0.1	0.20	8.8	<0.1	0.08	11	0.9	<0.2
D058-16539	Soil	60	0.65	18	0.513	3	2.61	0.008	0.02	<0.1	0.17	4.2	<0.1	0.09	15	0.6	<0.2
D058-16540	Soil	50	0.75	114	0.377	3	2.95	0.011	0.03	<0.1	0.17	5.4	0.2	0.09	12	0.8	<0.2
D058-16541	Soil	54	1.13	22	0.462	3	3.95	0.013	0.03	<0.1	0.13	7.4	<0.1	0.10	12	0.7	<0.2



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3919 Woodhaven Terrace  
Victoria BC V8N 1S7 Canada

Project: None Given

Report Date: July 15, 2011

Page: 1 of 1 Part 1

# QUALITY CONTROL REPORT

VAN11002917.1

Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1	
Pulp Duplicates																					
D055-16529	Soil	1.4	233.6	26.0	50	0.3	14.4	21.1	3519	7.01	1.5	5.2	0.1	17	0.9	0.2	0.1	258	0.68	0.104	2
REP D055-16529	QC	1.5	235.3	26.8	51	0.4	13.6	21.0	3371	6.94	1.3	3.8	0.1	17	1.0	0.2	0.1	267	0.68	0.115	2
Reference Materials																					
STD DS8	Standard	13.9	107.6	124.3	326	1.9	37.8	7.4	629	2.51	25.4	113.4	6.4	66	2.4	5.6	6.6	43	0.68	0.079	14
STD DS8	Standard	14.3	109.7	132.3	326	1.8	38.5	7.5	615	2.50	24.6	117.9	6.7	66	2.5	5.5	6.6	44	0.72	0.082	15
STD DS8	Standard	14.1	116.9	125.7	347	1.9	39.0	7.9	655	2.63	29.8	111.6	6.9	75	2.4	5.9	6.7	42	0.76	0.088	16
STD DS8	Standard	13.8	113.2	130.6	342	2.0	37.7	7.6	660	2.47	29.7	131.1	7.1	73	2.5	5.6	6.7	42	0.76	0.089	16
STD DS8 Expected		13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7	0.08	14.6
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1



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Client: **Schau, Mikkel**  
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Project: None Given

Report Date: July 15, 2011

Page: 1 of 1 Part 2

QUALITY CONTROL REPORT

VAN11002917.1

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																	
D055-16529	Soil	35	0.40	19	0.257	4	1.62	0.008	0.04	<0.1	0.34	4.6	<0.1	0.12	14	0.5	<0.2
REP D055-16529	QC	37	0.39	20	0.264	4	1.53	0.008	0.04	<0.1	0.34	4.9	<0.1	0.15	14	0.6	<0.2
Reference Materials																	
STD DS8	Standard	118	0.63	273	0.111	3	0.94	0.095	0.42	3.1	0.20	1.9	5.7	0.22	5	5.3	5.0
STD DS8	Standard	125	0.65	282	0.117	3	0.95	0.095	0.41	3.1	0.21	2.0	5.6	0.24	5	5.1	5.4
STD DS8	Standard	116	0.66	301	0.117	5	0.99	0.095	0.47	2.9	0.22	2.2	5.6	0.15	5	5.2	5.4
STD DS8	Standard	114	0.65	300	0.115	5	1.00	0.098	0.45	3.2	0.22	2.2	5.7	0.14	5	5.1	4.9
STD DS8 Expected		115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	2.3	5.4	0.1679	4.7	5.23	5
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2



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**Client:** **Schau, Mikkel**  
3919 Woodhaven Terrace  
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Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: August 25, 2011  
Report Date: September 15, 2011  
Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN11004217.1

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 9

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
DISP-RJT-SOIL Immediate Disposal of Soil Reject

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

Invoice To: Schau, Mikkel  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7  
Canada

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	9	Dry at 60C			VAN
SS80	9	Dry at 60C sieve 100g to -80 mesh			VAN
1DX2	9	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN

### ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. \*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.





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 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: September 15, 2011

Page: 2 of 2 Part 1

CERTIFICATE OF ANALYSIS

VAN11004217.1

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	
006584	Silt	0.5	112.2	2.9	47	<0.1	31.9	29.7	615	6.41	<0.5	10.6	0.7	15	0.1	<0.1	<0.1	275	1.42	0.037	5
006587	Silt	1.0	90.2	14.0	69	0.2	32.6	190.0	3682	3.07	1.3	0.8	0.1	24	0.5	0.1	0.1	72	0.74	0.074	7
006588	Silt	0.9	134.9	4.1	157	0.2	62.7	302.5	>10000	5.12	1.0	4.1	0.5	19	0.4	<0.1	<0.1	140	1.02	0.058	7
006589	Silt	0.8	71.1	4.0	90	<0.1	35.8	187.9	9515	5.95	1.0	0.7	0.6	10	0.3	<0.1	<0.1	158	0.59	0.046	3
006590	Silt	0.8	104.1	4.6	92	<0.1	39.9	52.1	2667	5.31	1.1	3.5	0.5	26	0.2	0.1	<0.1	215	2.12	0.047	4
006591	Silt	0.6	153.8	6.6	142	0.3	52.8	45.2	3458	5.56	0.6	8.8	0.3	26	0.2	0.2	<0.1	205	1.19	0.057	4
006592	Silt	3.2	42.3	6.7	38	<0.1	7.1	14.4	631	3.40	1.9	<0.5	4.2	42	<0.1	<0.1	<0.1	138	0.80	0.065	9
006593	Silt	0.9	122.4	2.7	78	<0.1	49.6	28.6	804	5.15	2.1	3.2	0.6	42	0.2	<0.1	<0.1	187	1.86	0.047	4
006594	Silt	1.0	138.8	3.8	82	<0.1	52.1	31.9	984	5.36	2.6	15.2	0.6	55	0.2	<0.1	<0.1	198	2.01	0.050	5



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 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: September 15, 2011

Page: 2 of 2 Part 2

CERTIFICATE OF ANALYSIS

VAN11004217.1

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
006584	Silt	58	0.65	20	0.659	2	4.24	0.009	<0.01	<0.1	0.11	10.9	<0.1	0.05	12	0.7	<0.2
006587	Silt	27	0.22	51	0.147	5	3.68	0.014	0.03	<0.1	0.34	7.2	<0.1	0.18	4	1.7	<0.2
006588	Silt	48	0.48	80	0.320	3	5.97	0.011	<0.01	<0.1	0.17	13.9	<0.1	0.08	8	1.1	<0.2
006589	Silt	57	0.34	36	0.355	2	6.04	0.008	<0.01	<0.1	0.22	9.4	<0.1	<0.05	9	1.1	<0.2
006590	Silt	46	0.94	30	0.543	4	3.41	0.014	0.02	<0.1	0.09	8.3	<0.1	0.08	11	1.1	<0.2
006591	Silt	72	0.82	33	0.399	2	4.53	0.008	0.02	<0.1	0.20	9.7	<0.1	<0.05	10	1.3	<0.2
006592	Silt	14	0.58	40	0.160	<1	1.76	0.020	0.05	0.3	0.03	2.4	<0.1	<0.05	6	0.7	<0.2
006593	Silt	45	1.62	28	0.453	2	3.38	0.033	0.02	<0.1	0.02	7.4	<0.1	<0.05	10	0.6	<0.2
006594	Silt	47	1.67	35	0.544	2	3.50	0.037	0.03	0.2	0.02	8.2	<0.1	<0.05	11	1.4	<0.2



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Project: None Given

Report Date: September 15, 2011

Page: 1 of 1 Part 1

# QUALITY CONTROL REPORT

VAN11004217.1

Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1	
Pulp Duplicates																					
006587 Silt	1.0	90.2	14.0	69	0.2	32.6	190.0	3682	3.07	1.3	0.8	0.1	24	0.5	0.1	0.1	72	0.74	0.074	7	
REP 006587 QC	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	
Reference Materials																					
STD DS8 Standard	13.3	116.6	129.4	311	1.9	41.3	8.0	593	2.48	24.6	110.2	7.4	67	2.3	6.0	7.0	43	0.70	0.077	15	
STD DS8 Expected	13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7	0.08	14.6	
BLK Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1	



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**Project:** None Given

**Report Date:** September 15, 2011

**Page:** 1 of 1 Part 2

QUALITY CONTROL REPORT

VAN11004217.1

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
Pulp Duplicates																	
006587	Silt	27	0.22	51	0.147	5	3.68	0.014	0.03	<0.1	0.34	7.2	<0.1	0.18	4	1.7	<0.2
REP 006587	QC	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
Reference Materials																	
STD DS8	Standard	123	0.64	269	0.122	3	0.89	0.076	0.40	2.9	0.19	2.0	5.3	0.19	4	6.0	4.7
STD DS8	Expected	115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	2.3	5.4	0.1679	4.7	5.23	5
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2



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**Client:** **Schau, Mikkel**  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7 Canada

Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: August 25, 2011  
Report Date: September 03, 2011  
Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN11004218.1

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 2

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
DISP-RJT-SOIL Immediate Disposal of Soil Reject

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

Invoice To: Schau, Mikkel  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7  
Canada

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	2	Dry at 60C			VAN
SS80	2	Dry at 60C sieve 100g to -80 mesh			VAN
1DX2	2	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN

### ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. \*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Client: **Schau, Mikkel**  
 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: September 03, 2011

Page: 2 of 2 Part 1

CERTIFICATE OF ANALYSIS

VAN11004218.1

Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1	
006585	Soil	0.6	72.7	3.6	37	<0.1	16.4	11.2	197	10.43	<0.5	7.4	1.0	11	0.2	0.1	0.1	388	0.70	0.028	5
006586	Soil	0.5	116.2	1.6	60	<0.1	30.0	45.3	535	4.97	<0.5	9.4	0.7	19	0.2	<0.1	<0.1	207	1.32	0.034	5



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 3919 Woodhaven Terrace  
 Victoria BC V8N 1S7 Canada

**Project:** None Given  
**Report Date:** September 03, 2011

**Page:** 2 of 2 **Part** 2

## CERTIFICATE OF ANALYSIS

VAN11004218.1

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
006585	Soil	91	0.26	11	0.902	3	4.94	0.007	<0.01	<0.1	0.34	13.6	<0.1	<0.05	19	0.9	<0.2
006586	Soil	57	0.70	21	0.633	4	4.05	0.009	<0.01	<0.1	0.10	9.8	<0.1	<0.05	12	0.8	<0.2



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**Project:** None Given

**Report Date:** September 03, 2011

**Page:** 1 of 1 **Part** 1

QUALITY CONTROL REPORT

VAN11004218.1

Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	
MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1	
Reference Materials																					
STD DS8	Standard	13.5	114.1	123.6	314	1.7	39.1	8.0	630	2.53	25.9	108.7	7.3	70	2.2	6.1	6.9	46	0.70	0.078	16
STD DS8 Expected		13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	5.7	6.67	41.1	0.7	0.08	14.6
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1





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**Project:** None Given

**Report Date:** September 03, 2011

**Page:** 1 of 1 Part 2

QUALITY CONTROL REPORT

VAN11004218.1

Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	
Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	
Reference Materials																	
STD DS8	Standard	122	0.64	276	0.123	1	0.94	0.087	0.42	3.0	0.18	2.3	5.6	0.19	5	5.3	4.6
STD DS8 Expected		115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	2.3	5.4	0.1679	4.7	5.23	5
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2



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Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: August 26, 2011  
Report Date: September 28, 2011  
Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN11004224.1

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID:  
P.O. Number  
Number of Samples: 27

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
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: Schau, Mikkel  
3919 Woodhaven Terrace  
Victoria BC V8N 1S7  
Canada

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	27	Crush, split and pulverize 250 g rock to 200 mesh			VAN
3B02	27	Fire assay fusion Au Pt Pd by ICP-ES	30	Completed	VAN
1DX2	27	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
4A4B	6	Whole Rock Analysis Majors and Trace Elements	0.2	Completed	VAN

### ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. \*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: None Given  
 Report Date: September 28, 2011

Page: 2 of 2 Part 1

CERTIFICATE OF ANALYSIS

VAN11004224.1

Method	WGHT	3B	3B	3B	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	
Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	2	3	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	
006595	Rock	1.01	<2	<3	<2	0.4	71.0	1.6	36	<0.1	4.1	10.5	485	2.95	1.2	<0.5	1.9	58	0.1	<0.1	<0.1
006596	Rock	0.47	8	3	19	0.2	283.7	0.4	90	<0.1	26.9	33.3	466	7.22	0.6	10.0	0.3	29	<0.1	<0.1	<0.1
006597	Rock	0.48	<2	6	17	0.2	56.5	2.6	45	<0.1	38.6	21.3	308	4.14	1.3	4.0	0.2	44	<0.1	<0.1	<0.1
006598	Rock	0.38	20	9	30	0.6	287.6	7.9	34	0.1	20.1	14.3	264	11.29	57.1	22.3	0.1	52	<0.1	0.3	0.1
006978	Rock	1.21	9	6	14	0.3	2037	1.1	63	1.4	31.9	20.3	400	3.94	0.7	9.5	0.3	77	0.3	<0.1	<0.1
006979	Rock	0.39	4	9	18	0.2	1264	0.9	46	0.4	22.5	16.9	380	3.82	<0.5	2.7	0.3	63	0.2	<0.1	<0.1
006980	Rock	0.22	152	5	18	0.3	6425	2.2	163	6.0	51.5	55.9	389	3.75	8.9	167.0	<0.1	53	2.7	0.1	<0.1
006981	Rock	0.44	230	5	8	0.8	5198	4.7	124	5.0	36.9	28.0	391	3.79	1.1	217.6	0.3	49	1.1	<0.1	<0.1
006982	Rock	0.37	3	6	25	0.2	143.2	4.5	41	0.1	39.0	30.0	433	3.21	7.0	4.9	0.1	117	<0.1	0.1	<0.1
006983	Rock	0.37	<2	<3	3	0.7	47.6	0.7	18	<0.1	11.6	7.0	236	1.43	0.6	1.0	0.3	66	<0.1	<0.1	<0.1
006984	Rock	0.40	5	9	15	0.1	89.8	4.6	30	<0.1	29.3	25.4	699	2.75	11.8	5.9	0.1	71	<0.1	0.2	<0.1
006985	Rock	0.33	1577	<3	17	1.2	7012	7.4	152	18.6	87.4	254.3	274	22.30	160.0	1632	<0.1	28	1.9	0.3	<0.1
006986	Rock	0.46	3110	5	19	2.9	2006	9.9	163	8.0	65.1	205.6	371	21.78	246.7	3188	<0.1	28	1.3	0.2	<0.1
006987	Rock	0.38	20	4	13	0.2	215.1	4.0	23	0.2	20.0	15.6	199	7.20	36.2	25.2	<0.1	51	<0.1	0.2	<0.1
006988	Rock	0.31	47	4	12	<0.1	292.1	5.8	15	0.3	26.7	46.2	139	10.27	142.2	49.3	<0.1	39	<0.1	0.4	<0.1
006989	Rock	0.66	7	8	26	0.6	253.2	5.2	53	0.1	51.1	43.7	513	5.01	14.3	5.6	0.1	112	<0.1	0.2	<0.1
006990	Rock	1.13	31	4	6	0.9	3205	3.2	100	1.9	40.3	36.8	508	3.89	7.2	32.5	0.3	52	1.5	<0.1	<0.1
006991	Rock	0.44	3350	4	15	0.8	846.7	5.7	132	3.0	37.4	118.8	630	12.61	91.4	3545	<0.1	47	1.1	0.1	<0.1
006992	Rock	0.65	5	5	20	1.6	92.1	1.1	24	<0.1	15.1	19.6	231	3.73	0.9	3.4	0.2	40	<0.1	0.1	<0.1
006993	Rock	0.48	8	<3	5	0.6	2362	1.9	111	1.3	37.8	27.5	741	4.91	2.3	4.8	0.2	28	1.3	<0.1	<0.1
006994	Rock	0.54	<2	5	6	0.3	1246	0.9	99	<0.1	24.2	21.3	574	3.94	3.1	1.5	<0.1	38	0.6	<0.1	<0.1
006995	Rock	0.47	11	6	12	0.7	47.4	10.3	37	<0.1	22.5	65.5	262	10.96	50.0	10.7	<0.1	18	<0.1	0.2	0.5
006996	Rock	0.38	8	5	20	0.2	412.9	4.2	69	0.6	64.0	58.8	507	6.39	5.8	7.3	0.1	11	0.1	<0.1	<0.1
006997	Rock	0.60	<2	6	19	0.4	94.2	0.8	20	<0.1	19.1	25.2	234	3.97	1.1	1.0	0.2	66	0.1	<0.1	<0.1
006998	Rock	0.44	127	<3	21	0.2	121.5	11.4	43	0.2	59.9	89.3	311	12.97	112.3	152.0	<0.1	33	<0.1	0.1	0.4
006999	Rock	0.63	6	5	26	0.5	197.3	3.7	38	<0.1	35.9	29.2	389	4.64	21.4	10.7	0.1	18	<0.1	<0.1	<0.1
007000	Rock	0.07	<2	8	33	1.3	233.6	1.3	157	<0.1	55.6	44.9	1544	11.88	1.1	0.9	0.5	16	0.6	<0.1	<0.1



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 Victoria BC V8N 1S7 Canada

Project: None Given  
 Report Date: September 28, 2011

Page: 2 of 2 Part 2

CERTIFICATE OF ANALYSIS

VAN11004224.1

Method	Analyte	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
		V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL		2	0.01	0.001	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
006595	Rock	79	1.07	0.047	6	6	0.89	34	0.104	3	1.56	0.130	0.07	0.1	<0.01	2.2	<0.1	<0.05	6	<0.5	<0.2
006596	Rock	265	0.88	0.111	8	7	1.53	8	0.236	2	1.88	0.065	0.01	<0.1	<0.01	5.3	<0.1	<0.05	9	<0.5	<0.2
006597	Rock	151	1.12	0.059	4	23	1.17	6	0.224	3	1.49	0.099	0.03	<0.1	<0.01	4.4	<0.1	<0.05	6	<0.5	<0.2
006598	Rock	114	0.77	0.042	2	32	0.60	10	0.421	2	1.79	0.025	0.02	<0.1	0.08	7.1	<0.1	0.37	7	3.9	<0.2
006978	Rock	121	1.57	0.068	5	22	1.30	20	0.289	2	2.81	0.259	0.08	<0.1	<0.01	2.6	<0.1	0.13	9	0.8	<0.2
006979	Rock	87	1.42	0.121	8	15	1.11	11	0.292	2	1.96	0.161	0.04	<0.1	<0.01	2.5	<0.1	0.09	7	<0.5	<0.2
006980	Rock	110	2.28	0.042	2	32	1.12	4	0.352	3	2.15	0.051	0.04	<0.1	0.09	5.7	<0.1	1.12	7	0.7	<0.2
006981	Rock	101	1.23	0.080	1	78	2.16	20	0.201	1	2.78	0.046	0.12	<0.1	0.13	5.1	<0.1	0.53	9	0.9	<0.2
006982	Rock	108	2.46	0.053	2	33	0.81	2	0.365	2	2.91	0.022	0.04	<0.1	0.03	6.8	<0.1	<0.05	9	<0.5	<0.2
006983	Rock	48	1.32	0.080	2	30	0.55	15	0.156	1	1.60	0.264	0.05	<0.1	<0.01	3.4	<0.1	<0.05	4	<0.5	<0.2
006984	Rock	80	1.33	0.043	3	23	0.72	5	0.389	1	1.37	0.035	0.02	<0.1	<0.01	5.6	<0.1	0.14	5	<0.5	<0.2
006985	Rock	51	0.55	0.027	1	17	0.53	1	0.059	<1	0.95	0.020	0.01	0.2	0.20	2.4	<0.1	>10	9	15.6	<0.2
006986	Rock	65	0.40	0.019	<1	22	0.81	<1	0.085	<1	1.24	0.005	<0.01	<0.1	0.13	3.5	<0.1	9.52	10	16.3	0.4
006987	Rock	96	0.77	0.032	<1	28	0.66	3	0.357	1	1.37	0.022	0.02	<0.1	0.05	5.9	<0.1	0.55	7	1.7	0.2
006988	Rock	79	0.46	0.026	<1	22	0.45	1	0.284	<1	0.89	0.009	0.01	<0.1	0.10	3.6	<0.1	2.96	7	2.9	<0.2
006989	Rock	144	1.84	0.057	3	40	1.15	3	0.434	1	2.41	0.041	0.02	<0.1	0.03	7.2	<0.1	<0.05	8	<0.5	<0.2
006990	Rock	110	1.46	0.088	1	69	1.63	4	0.183	2	2.24	0.044	0.04	<0.1	0.03	5.1	<0.1	0.43	8	<0.5	<0.2
006991	Rock	96	0.66	0.036	1	48	1.38	<1	0.202	<1	1.98	0.004	<0.01	<0.1	0.03	5.5	<0.1	4.89	11	6.6	<0.2
006992	Rock	95	1.22	0.069	3	12	0.44	1	0.464	2	0.80	0.003	<0.01	<0.1	<0.01	2.7	<0.1	0.33	3	<0.5	<0.2
006993	Rock	125	1.02	0.116	1	93	2.63	3	0.126	1	3.09	0.085	0.02	<0.1	0.04	4.9	<0.1	0.13	10	<0.5	<0.2
006994	Rock	82	0.89	0.058	2	39	1.50	2	0.143	<1	1.81	0.035	0.01	<0.1	0.01	4.4	<0.1	<0.05	8	<0.5	<0.2
006995	Rock	87	0.54	0.035	<1	17	0.62	4	0.298	1	0.79	0.013	0.02	<0.1	0.01	2.9	<0.1	7.10	5	2.1	<0.2
006996	Rock	172	0.97	0.068	3	44	2.71	4	0.380	<1	2.45	0.065	0.03	<0.1	0.03	8.8	<0.1	1.30	10	1.0	<0.2
006997	Rock	93	1.45	0.070	3	15	0.41	1	0.522	2	0.83	0.004	<0.01	<0.1	<0.01	2.6	<0.1	0.79	4	0.7	<0.2
006998	Rock	107	0.73	0.057	2	23	0.96	12	0.341	<1	1.26	0.056	0.03	<0.1	<0.01	4.2	<0.1	9.77	4	2.5	0.3
006999	Rock	91	0.94	0.065	2	14	0.73	5	0.418	<1	1.26	0.032	0.02	<0.1	<0.01	5.2	<0.1	1.32	6	<0.5	<0.2
007000	Rock	316	1.07	0.115	7	44	3.07	7	0.705	3	2.93	0.074	<0.01	0.1	<0.01	8.4	<0.1	<0.05	15	<0.5	<0.2



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Project: None Given  
 Report Date: September 28, 2011

Page: 2 of 2 Part 3

CERTIFICATE OF ANALYSIS

VAN11004224.1

Method	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
Analyte	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	
Unit	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	
006595	Rock	63.15	15.46	5.82	2.21	4.75	3.48	2.33	0.59	0.13	0.11	<0.002	<20	16	1.7	99.77	890	2	13.6	0.3	14.8
006596	Rock	47.02	12.47	17.64	5.35	8.59	3.15	0.09	2.86	0.28	0.25	0.003	37	42	2.0	99.70	32	3	51.3	<0.1	18.1
006597	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006598	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006978	Rock	48.10	14.35	13.24	6.64	10.50	2.38	0.26	1.66	0.17	0.20	0.019	69	39	2.0	99.49	81	<1	43.6	0.2	19.1
006979	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006980	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006981	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006982	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006983	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006984	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006985	Rock	29.87	5.90	38.67	3.65	6.95	0.41	0.16	0.25	0.09	0.23	0.006	92	14	12.9	99.12	18	1	272.0	<0.1	15.2
006986	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006987	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006988	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006989	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006990	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006991	Rock	35.08	10.25	28.32	5.80	10.98	0.11	0.02	1.12	0.11	0.32	0.011	32	28	7.5	99.63	11	1	130.1	<0.1	21.5
006992	Rock	48.75	12.55	14.59	3.67	15.78	0.07	0.02	2.13	0.18	0.20	0.009	38	38	1.8	99.80	14	<1	32.9	<0.1	21.5
006993	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006994	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006995	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006996	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006997	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006998	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006999	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
007000	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.



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Project: None Given  
 Report Date: September 28, 2011

Page: 2 of 2 Part 4

CERTIFICATE OF ANALYSIS

VAN11004224.1

Method	Analyte	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B		
		Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL
006595	Rock	3.3	6.4	50.0	<1	354.3	0.6	4.4	1.7	149	0.6	117.9	20.3	16.0	30.5	3.77	15.5	3.42	0.94	3.38	0.55	
006596	Rock	4.6	14.7	1.5	2	270.5	1.0	1.3	0.4	517	<0.5	164.2	39.1	12.3	31.8	4.69	25.1	6.72	2.24	7.29	1.31	
006597	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006598	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006978	Rock	2.5	7.5	3.4	1	305.5	0.6	0.8	0.4	362	<0.5	91.1	25.2	8.5	20.4	3.08	15.8	3.97	1.53	4.75	0.81	
006979	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006980	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006981	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006982	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006983	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006984	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006985	Rock	0.6	1.1	1.6	<1	223.8	<0.1	0.3	0.3	134	0.5	15.7	14.5	8.9	18.3	2.71	12.1	3.55	1.77	3.41	0.53	
006986	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006987	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006988	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006989	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006990	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006991	Rock	1.5	5.0	<0.1	<1	519.8	0.3	0.4	0.2	247	<0.5	56.6	26.8	8.9	21.1	3.10	15.1	4.12	4.02	5.11	0.87	
006992	Rock	3.5	10.0	0.1	1	346.3	0.7	0.7	0.3	436	<0.5	112.9	26.5	8.6	21.8	3.30	15.4	4.43	1.63	5.20	0.87	
006993	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006994	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006995	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006996	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006997	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006998	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006999	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
007000	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	



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Project: None Given  
 Report Date: September 28, 2011

Page: 2 of 2 Part 5

CERTIFICATE OF ANALYSIS

VAN11004224.1

Method	Analyte	4A-4B Dy	4A-4B Ho	4A-4B Er	4A-4B Tm	4A-4B Yb	4A-4B Lu	2A Leco	2A Leco	1DX Mo	1DX Cu	1DX Pb	1DX Zn	1DX Ni	1DX As	1DX Cd	1DX Sb	1DX Bi	1DX Ag	1DX Au	1DX Hg
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm
006595	Rock	3.47	0.72	2.15	0.33	2.36	0.35	0.11	<0.02	0.4	77.0	1.6	37	4.8	1.5	<0.1	<0.1	<0.1	<0.1	0.9	<0.01
006596	Rock	7.93	1.52	4.33	0.63	3.68	0.57	<0.02	<0.02	0.3	288.0	0.3	84	27.3	0.6	<0.1	<0.1	<0.1	<0.1	5.3	<0.01
006597	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006598	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006978	Rock	4.81	0.99	2.79	0.39	2.36	0.36	<0.02	0.12	0.3	2133	1.1	58	33.2	<0.5	0.2	<0.1	<0.1	1.3	9.1	<0.01
006979	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006980	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006981	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006982	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006983	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006984	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006985	Rock	3.24	0.53	1.31	0.18	1.13	0.16	0.04	14.75	1.1	7028	7.6	145	91.3	157.7	2.0	0.4	<0.1	19.6	1563	0.17
006986	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006987	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006988	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006989	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006990	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006991	Rock	5.16	0.94	2.57	0.34	1.93	0.32	0.02	5.48	1.0	852.6	6.0	125	38.2	94.7	1.1	0.1	0.2	2.4	1326	0.03
006992	Rock	5.67	1.05	2.88	0.42	2.78	0.38	<0.02	0.33	1.2	100.6	0.9	20	14.7	1.3	<0.1	0.1	<0.1	<0.1	<0.5	<0.01
006993	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006994	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006995	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006996	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006997	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006998	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006999	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
007000	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.



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Project: None Given
Report Date: September 28, 2011

Page: 2 of 2 Part 6

CERTIFICATE OF ANALYSIS

VAN11004224.1

Table with 4 columns: Method, Analyte, Unit, MDL, 1DX TI ppm, 1DX Se ppm. Rows include sample IDs 006595 through 007000 and their corresponding analytical results.





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Report Date: September 28, 2011

Page: 1 of 2 Part 1

QUALITY CONTROL REPORT

VAN11004224.1

Method	WGHT	3B	3B	3B	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15
Analyte	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	
Unit	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	2	3	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	
Pulp Duplicates																					
REP G1	QC																				
006978	Rock	1.21	9	6	14	0.3	2037	1.1	63	1.4	31.9	20.3	400	3.94	0.7	9.5	0.3	77	0.3	<0.1	<0.1
REP 006978	QC					0.3	2060	1.1	62	1.3	31.8	20.5	402	4.02	0.6	7.7	0.3	79	0.3	<0.1	<0.1
006981	Rock	0.44	230	5	8	0.8	5198	4.7	124	5.0	36.9	28.0	391	3.79	1.1	217.6	0.3	49	1.1	<0.1	<0.1
REP 006981	QC		225	3	8																
006992	Rock	0.65	5	5	20	1.6	92.1	1.1	24	<0.1	15.1	19.6	231	3.73	0.9	3.4	0.2	40	<0.1	0.1	<0.1
REP 006992	QC					1.3	95.1	0.9	23	<0.1	15.8	20.8	231	3.75	1.4	3.2	0.2	46	<0.1	0.2	<0.1
Core Reject Duplicates																					
006998	Rock	0.44	127	<3	21	0.2	121.5	11.4	43	0.2	59.9	89.3	311	12.97	112.3	152.0	<0.1	33	<0.1	0.1	0.4
DUP 006998	QC		86	<3	21	0.4	102.7	14.4	53	0.2	53.7	72.3	355	12.95	138.8	111.2	<0.1	38	<0.1	0.1	0.4
Reference Materials																					
STD CDN-PGMS-19	Standard		271	104	472																
STD CDN-PGMS-19	Standard		230	110	508																
STD CDN-PGMS-19	Standard		196	102	459																
STD CSC	Standard																				
STD DS8	Standard																				
STD DS8	Standard					13.7	112.9	128.8	320	1.8	38.0	7.4	619	2.58	25.6	119.6	6.9	67	1.9	5.6	6.7
STD OREAS45CA	Standard																				
STD OREAS76A	Standard																				
STD PD1	Standard		539	465	565																
STD PD1	Standard		535	462	567																
STD PD1	Standard		524	461	545																
STD SO-18	Standard																				
STD SO-18	Standard																				
STD CSC Expected																					
STD OREAS76A Expected																					
STD OREAS45CA Expected																					
STD PD1 Expected			542	456	563																

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Project: None Given

Report Date: September 28, 2011

Page: 1 of 2 Part 2

QUALITY CONTROL REPORT

VAN11004224.1

Method	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
Analyte	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	
Unit	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL	2	0.01	0.001	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	
Pulp Duplicates																					
REP G1	QC																				
006978	Rock	121	1.57	0.068	5	22	1.30	20	0.289	2	2.81	0.259	0.08	<0.1	<0.01	2.6	<0.1	0.13	9	0.8	<0.2
REP 006978	QC	124	1.56	0.071	5	22	1.31	20	0.288	1	2.84	0.254	0.08	<0.1	<0.01	2.4	<0.1	0.13	9	0.6	<0.2
006981	Rock	101	1.23	0.080	1	78	2.16	20	0.201	1	2.78	0.046	0.12	<0.1	0.13	5.1	<0.1	0.53	9	0.9	<0.2
REP 006981	QC																				
006992	Rock	95	1.22	0.069	3	12	0.44	1	0.464	2	0.80	0.003	<0.01	<0.1	<0.01	2.7	<0.1	0.33	3	<0.5	<0.2
REP 006992	QC	103	1.33	0.069	3	12	0.44	1	0.518	1	0.85	0.003	<0.01	<0.1	<0.01	2.8	<0.1	0.34	4	0.7	<0.2
Core Reject Duplicates																					
006998	Rock	107	0.73	0.057	2	23	0.96	12	0.341	<1	1.26	0.056	0.03	<0.1	<0.01	4.2	<0.1	9.77	4	2.5	0.3
DUP 006998	QC	120	0.78	0.062	2	26	1.08	12	0.366	1	1.41	0.059	0.04	<0.1	<0.01	4.5	<0.1	9.57	5	2.5	0.3
Reference Materials																					
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CSC	Standard																				
STD DS8	Standard																				
STD DS8	Standard	42	0.73	0.082	15	117	0.63	276	0.121	3	0.93	0.085	0.42	3.2	0.20	2.1	5.6	0.17	5	5.6	4.7
STD OREAS45CA	Standard																				
STD OREAS76A	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD SO-18	Standard																				
STD SO-18	Standard																				
STD CSC Expected																					
STD OREAS76A Expected																					
STD OREAS45CA Expected																					
STD PD1 Expected																					

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Project: None Given

Report Date: September 28, 2011

Page: 1 of 2 Part 3

QUALITY CONTROL REPORT

VAN11004224.1

Method		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B
Analyte		SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga
Unit		%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm
MDL		0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5
Pulp Duplicates																					
REP G1	QC																				
006978	Rock	48.10	14.35	13.24	6.64	10.50	2.38	0.26	1.66	0.17	0.20	0.019	69	39	2.0	99.49	81	<1	43.6	0.2	19.1
REP 006978	QC																				
006981	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 006981	QC																				
006992	Rock	48.75	12.55	14.59	3.67	15.78	0.07	0.02	2.13	0.18	0.20	0.009	38	38	1.8	99.80	14	<1	32.9	<0.1	21.5
REP 006992	QC																				
Core Reject Duplicates																					
006998	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP 006998	QC	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Reference Materials																					
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CSC	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD OREAS45CA	Standard																				
STD OREAS76A	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD SO-18	Standard	58.24	14.22	7.26	3.37	6.41	3.67	2.14	0.69	0.87	0.40	0.552	47	24	1.9	98.20	526	1	25.9	6.7	17.7
STD SO-18	Standard	58.27	14.11	7.46	3.35	6.37	3.64	2.12	0.69	0.87	0.40	0.544	38	24	1.9	98.20	538	1	26.9	7.2	18.5
STD CSC Expected																					
STD OREAS76A Expected																					
STD OREAS45CA Expected																					
STD PD1 Expected																					

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Project: None Given

Report Date: September 28, 2011

Page: 1 of 2 Part 4

# QUALITY CONTROL REPORT

VAN11004224.1

Method	Analyte	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B
		Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01
Pulp Duplicates																					
REP G1	QC																				
006978	Rock	2.5	7.5	3.4	1	305.5	0.6	0.8	0.4	362	<0.5	91.1	25.2	8.5	20.4	3.08	15.8	3.97	1.53	4.75	0.81
REP 006978	QC																				
006981	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 006981	QC																				
006992	Rock	3.5	10.0	0.1	1	346.3	0.7	0.7	0.3	436	<0.5	112.9	26.5	8.6	21.8	3.30	15.4	4.43	1.63	5.20	0.87
REP 006992	QC																				
Core Reject Duplicates																					
006998	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP 006998	QC	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Reference Materials																					
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CDN-PGMS-19	Standard																				
STD CSC	Standard																				
STD DS8	Standard																				
STD DS8	Standard																				
STD OREAS45CA	Standard																				
STD OREAS76A	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD SO-18	Standard	9.3	21.0	27.8	15	408.1	7.4	10.4	16.0	208	13.8	286.0	31.3	12.4	27.0	3.34	14.6	2.89	0.88	2.97	0.50
STD SO-18	Standard	9.6	21.5	28.9	16	415.0	7.3	10.3	15.9	204	14.3	293.5	31.4	12.7	27.3	3.42	14.5	2.98	0.91	3.01	0.51
STD CSC Expected																					
STD OREAS76A Expected																					
STD OREAS45CA Expected																					
STD PD1 Expected																					



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Project: None Given

Report Date: September 28, 2011

Page: 1 of 2 Part 5

QUALITY CONTROL REPORT

VAN11004224.1

Method	Analyte	Unit	MDL	4A-4B Dy	4A-4B Ho	4A-4B Er	4A-4B Tm	4A-4B Yb	4A-4B Lu	2A Leco TOT/C	2A Leco TOT/S	1DX Mo	1DX Cu	1DX Pb	1DX Zn	1DX Ni	1DX As	1DX Cd	1DX Sb	1DX Bi	1DX Ag	1DX Au	1DX Hg
				ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	
Pulp Duplicates																							
REP G1	QC											0.1	2.2	3.2	43	2.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01
006978	Rock			4.81	0.99	2.79	0.39	2.36	0.36	<0.02	0.12	0.3	2133	1.1	58	33.2	<0.5	0.2	<0.1	<0.1	1.3	9.1	<0.01
REP 006978	QC																						
006981	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
REP 006981	QC																						
006992	Rock			5.67	1.05	2.88	0.42	2.78	0.38	<0.02	0.33	1.2	100.6	0.9	20	14.7	1.3	<0.1	0.1	<0.1	<0.1	<0.5	<0.01
REP 006992	QC																						
Core Reject Duplicates																							
006998	Rock			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP 006998	QC			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Reference Materials																							
STD CDN-PGMS-19	Standard																						
STD CDN-PGMS-19	Standard																						
STD CDN-PGMS-19	Standard																						
STD CSC	Standard									3.07	4.18												
STD DS8	Standard											12.5	118.2	113.4	285	35.4	24.5	2.3	4.8	6.4	1.6	135.3	0.17
STD DS8	Standard																						
STD OREAS45CA	Standard											0.9	504.3	21.6	58	246.5	4.8	<0.1	0.1	0.2	0.2	32.1	0.03
STD OREAS76A	Standard									0.15	17.50												
STD PD1	Standard																						
STD PD1	Standard																						
STD PD1	Standard																						
STD SO-18	Standard			2.91	0.62	1.79	0.29	1.85	0.26														
STD SO-18	Standard			3.05	0.63	1.87	0.28	1.85	0.28														
STD CSC Expected										2.94	4.25												
STD OREAS76A Expected										0.16	18												
STD OREAS45CA Expected												1	494	20	60	240	3.8	0.1	0.13	0.19	0.275	43	0.03
STD PD1 Expected																							

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**Project:** None Given

**Report Date:** September 28, 2011

**Page:** 1 of 2 **Part** 6

# QUALITY CONTROL REPORT

VAN11004224.1

Method	1DX	1DX
Analyte	TI	Se
Unit	ppm	ppm
MDL	0.1	0.5
Pulp Duplicates		
REP G1	QC	0.3 <0.5
006978	Rock	<0.1 1.2
REP 006978	QC	
006981	Rock	N.A. N.A.
REP 006981	QC	
006992	Rock	<0.1 0.8
REP 006992	QC	
Core Reject Duplicates		
006998	Rock	N.A. N.A.
DUP 006998	QC	N.A. N.A.
Reference Materials		
STD CDN-PGMS-19	Standard	
STD CDN-PGMS-19	Standard	
STD CDN-PGMS-19	Standard	
STD CSC	Standard	
STD DS8	Standard	4.7 4.5
STD DS8	Standard	
STD OREAS45CA	Standard	0.1 0.7
STD OREAS76A	Standard	
STD PD1	Standard	
STD PD1	Standard	
STD PD1	Standard	
STD SO-18	Standard	
STD SO-18	Standard	
STD CSC Expected		
STD OREAS76A Expected		
STD OREAS45CA Expected		0.07 0.5
STD PD1 Expected		



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Project: None Given

Report Date: September 28, 2011

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QUALITY CONTROL REPORT

VAN11004224.1

	WGHT	3B	3B	3B	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
	Wgt	Au	Pt	Pd	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	
	kg	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	
	0.01	2	3	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	
STD CDN-PGMS-19		230	108	476																	
STD DS8 Expected					13.44	110	123	312	1.69	38.1	7.5	615	2.46	26	107	6.89	67.7	2.38	5.7	6.67	
STD SO-18 Expected																					
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	<3	<2																	
BLK	Blank	<2	<3	<2																	
BLK	Blank				<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	<0.01	<2	<3	<2	0.1	2.2	3.0	44	<0.1	2.1	3.6	506	1.92	0.5	<0.5	4.8	57	<0.1	<0.1	0.1
G1	Prep Blank	<0.01	<2	<3	<2	0.1	4.8	3.4	48	<0.1	1.7	3.9	583	2.13	2.7	<0.5	5.5	76	<0.1	0.1	<0.1
G1	Prep Blank																				



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QUALITY CONTROL REPORT

VAN11004224.1

		1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	1DX15	
		V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
		ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
STD CDN-PGMS-19		2	0.01	0.001	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
STD DS8 Expected		41.1	0.7	0.08	14.6	115	0.6045	279	0.113	2.6	0.93	0.0883	0.41	3	0.192	2.3	5.4	0.1679	4.7	5.23	5
STD SO-18 Expected																					
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	34	0.44	0.071	11	5	0.47	136	0.106	1	0.86	0.073	0.43	<0.1	<0.01	1.6	0.2	<0.05	4	<0.5	<0.2
G1	Prep Blank	39	0.53	0.079	15	6	0.48	119	0.118	1	0.89	0.085	0.45	<0.1	<0.01	1.8	0.3	<0.05	5	<0.5	<0.2
G1	Prep Blank																				





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**Project:** None Given

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## QUALITY CONTROL REPORT

VAN11004224.1

		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B		
		SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	
		%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	
		0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	
STD CDN-PGMS-19																						
STD DS8 Expected																						
STD SO-18 Expected		58.47	14.23	7.67	3.35	6.42	3.71	2.17	0.69	0.83	0.39	0.55	44	25			514		26.2	7.1	17.6	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
Prep Wash																						
G1	Prep Blank	66.73	15.90	3.50	1.04	3.44	3.54	3.99	0.40	0.19	0.10	<0.002	<20	6	0.9	99.68	1420	4	4.6	3.9	18.2	
G1	Prep Blank	66.62	16.12	3.46	0.96	3.50	3.68	3.82	0.41	0.20	0.10	<0.002	<20	5	0.8	99.69	1243	5	4.3	3.7	19.2	
G1	Prep Blank																					



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# QUALITY CONTROL REPORT

VAN11004224.1

		4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
		Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
STD CDN-PGMS-19		0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01
STD DS8 Expected																					
STD SO-18 Expected		9.8	21.3	28.7	15	407.4	7.4	9.9	16.4	200	14.8	280	31	12.3	27.1	3.45	14	3	0.89	2.93	0.53
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	<0.1	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	<0.01
Prep Wash																					
G1	Prep Blank	3.9	24.4	135.4	2	850.0	1.4	9.2	3.3	61	<0.5	146.3	15.6	31.1	62.1	7.30	29.7	4.69	1.18	3.48	0.51
G1	Prep Blank	4.3	24.1	132.5	2	902.4	1.6	9.8	3.2	66	<0.5	157.0	17.1	36.1	70.2	8.04	33.0	5.16	1.31	3.95	0.54
G1	Prep Blank																				



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QUALITY CONTROL REPORT

VAN11004224.1

		4A-4B Dy ppm 0.05	4A-4B Ho ppm 0.02	4A-4B Er ppm 0.03	4A-4B Tm ppm 0.01	4A-4B Yb ppm 0.05	4A-4B Lu ppm 0.01	2A Leco TOT/C % 0.02	2A Leco TOT/S % 0.02	1DX Mo ppm 0.1	1DX Cu ppm 0.1	1DX Pb ppm 0.1	1DX Zn ppm 1	1DX Ni ppm 0.1	1DX As ppm 0.5	1DX Cd ppm 0.1	1DX Sb ppm 0.1	1DX Bi ppm 0.1	1DX Ag ppm 0.1	1DX Au ppb 0.5	1DX Hg ppm 0.01	
STD CDN-PGMS-19																						
STD DS8 Expected										13.44	110	123	312	38.1	26	2.38	4.8	6.67	1.69	107	0.192	
STD SO-18 Expected		3	0.62	1.84	0.27	1.79	0.27															
BLK	Blank							<0.02	<0.02													
BLK	Blank									<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
Prep Wash																						
G1	Prep Blank	3.18	0.56	1.64	0.26	1.73	0.28	<0.02	<0.02													
G1	Prep Blank	3.17	0.62	1.77	0.26	1.64	0.31	0.02	0.03	<0.1	2.3	3.4	44	1.8	2.2	<0.1	<0.1	<0.1	<0.1	0.9	0.01	
G1	Prep Blank									0.2	2.0	3.2	43	2.5	<0.5	<0.1	<0.1	<0.1	<0.1	0.9	<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.



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**Project:** None Given

**Report Date:** September 28, 2011

**Page:** 2 of 2 **Part** 6

## QUALITY CONTROL REPORT

VAN11004224.1

		1DX TI ppm 0.1	1DX Se ppm 0.5
STD CDN-PGMS-19			
STD DS8 Expected		5.4	5.23
STD SO-18 Expected			
BLK	Blank		
BLK	Blank	<0.1	<0.5
BLK	Blank		
BLK	Blank		
BLK	Blank		
BLK	Blank		
BLK	Blank		
BLK	Blank		
BLK	Blank		
BLK	Blank		
BLK	Blank		
Prep Wash			
G1	Prep Blank		
G1	Prep Blank	0.3	<0.5
G1	Prep Blank	0.3	<0.5