

BC Geological Survey
Assessment Report
30121

Assessment Report

Part 2:

On Alteration

in southern part of KRINGLE-Consolidated Claim Group

Keta Lake Area

Nanaimo Mining District

for

Mikkel Schau, owner

by

Mikkel Schau, P.Geol.

For April 26, 2008

(submitted July 26, 2008)

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

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SUMMARY

Kringle-consolidated Claims, covering some 4914.89 ha., lie mainly west of the Island Highway, southeast of Rooney Lake, near the 255 km marker and reach southward past Keta Lake at 245 Km to Tlowils Lake along Adams Main south logging road. The group is staked on a hydrothermal system associated with a contact between the Triassic Vancouver Group and the Jurassic Adam River granodiorite pluton. The main copper mineral occurrences are in shears, veins, amygdales and dispersed disseminations found in a highly magnetic bounding fringe along the edge of the pluton, and are locally exposed in logging road cuts.

Previous work in the general area has located copper mineralization. In the sixties a few mineral samples with 25% copper and 0.78 opt gold from Boyes Creek excited the prospecting community. Exploration work was carried out in the area over the next 4 decades. The Kringle-consolidated Claims currently covers about 4914.89 ha, a large area of local mineralized showings including Minfiles 092L-163, 170 and 249 in the north and 092L-165, 166, 167, 168, and 222 in the south. They also include several newly located showings as noted in several recent ARIS Reports. Early trenching at minfile 092L165 (Boyes Creek) showed by chip sampling 13 trenches over a length of 300 m an average 3.25% over 1.3 m width.(AR3795) At 092L222 11 trenches over 450 m showed about 0.89% over approximately 5 m width. A chip sample from a new locality (Puff) yielded 0.98% copper over 2.2 m. (AR27070)

Previous drilling on the property is documented in several minfiles. The best results were obtained at minfile 092L-222 (Adam West) where 6 Xray drill holes and 11 BQ drill holes were drilled. A several metres thick mineralized zone was outlined some 10's of meters below a thin limestone member for about 300 m along strike and about 200 metres down dip. The best intersection was A6 which yielded 2.11% copper over 5 m. (AR22409). At minfile 092L-163, 5 holes were drilled, only a small part of the core was analyzed, and the best result was including 0.53% over 1.5 m, at hole 1. At minfile 092L-249 a partially analysed hole yielded 0.48% over 3.6 m..(AR 1993)

New showings found by author have been noted in recent assessment reports (ARIS: 26930, 27070, 27463, 27736, 27745, 28747 and 28927) with at least fourteen locations with large (1 kg or larger) grab samples containing well over a percent copper, silver values up to 67 ppm and gold values up to 1169 ppb. These values indicate the presence of locally interesting mineralization but give no indication of grades or volumes.

These prospects and showings lie along a sixteen km length of a three km wide magnetic anomaly developed along the edge of Adam River pluton. The localities and anomaly are shown on figure 2.

The geology 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 was deformed and faulted along orogen parallel transverse faults, along which later mid Jurassic plutons were emplaced. Later geologic history, known to be complex and including (transverse?) faulting, is not yet fully understood in this area. 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.

Previous studies of the alteration in the claims (AR28927) notes that propylitic alteration attended by an influx of mineralizing fluids with iron and sodium. A halo of affected rocks occur up to a few km away from the contact and is marked by a positive aeromagnetic anomaly. The alteration is superposed on very low grade regional metamorphism best displayed in pumpellyite and prehnite bearing basalts. The magnetic effect is in part due to low grade metamorphic breakdown of titaniferous ores in basalt and in part due to introduction of magnetite as veins and stringers.

The work reported here has been focused on determining whether a magnetic low within the aeromagnetic high was due to a core of alteration such as is often encountered in moly-copper-gold porphyry deposits. Previously it was suggested (AR28927) that there was a possibility that the magnetic low is marked an area of more complete alteration. The sampling attempted to locate such an alteration halo but did not succeed. This study concludes instead that the aeromagnetic low is due to local alteration associated with post pluton faulting superposed on areas underlain by Quatsino limestone, Parsons Bay metasediments and cataclased intrusive.

It is recommended that the copper anomaly be better characterized, by providing some dimensions to the local high grade grab sample locations. A work program could include:

Silt sampling of all creeks (above or away from roads with suspect road metal) .

Chip sampling at localities with high assay values from grab samples.

Better characterize high assay localities including soil sampling along subsoil "extensions" of mineralized trends

It is further recommended that several of the southern claims of the Kringle-consolidated claim group be dropped. Further work, at this time, is not recommended on tenures 402270, 504026, 504357, 505622, 506339 and 529363 and these claims are to be allowed to lapse.

A detailed airborne survey locating magnetic and electromagnetic anomalies would be very useful in helping locate further showings and extensions.

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Introduction

Kringle-consolidated Claims, covering some 4914.89 ha., lie mainly west of the Island Highway, southeast of Rooney Lake, near the 255 km marker and reach southward past Keta Lake at 245 Km to Tlowils Lake along Adams Main south logging road. The group is staked on a hydrothermal system associated with a contact between the Triassic Vancouver Group and the Jurassic Adam River granodiorite pluton. The main copper mineral occurrences are in shears, veins, amygdales and dispersed disseminations found in a highly magnetic bounding fringe along the edge of the pluton, and are locally exposed in logging road cuts.

The work program outlined here was conducted to test the hypothesis that a magnetic low was due to an area of increased and localized alteration such as is often found near porphyry deposits.

The program has been conducted by Mikkel Schau, P.Geol and helpers. He is the holder of 100% of the mineral rights on the property which is located on crown lands.

Property location, access and title

The Kringle-consolidated Claims are located on northern Vancouver Island, BC (Figures 1). They straddle the Adam River, as well as the Island Highway (19), and contain the easily identifiable 250 km marker located within NTS 092L, and more specifically, within the 092L040 trim sheet (Figure 1). Many logging roads traverse the area, so that most of the claims are accessible. Off road, the landscape is rugged and difficult to travel in.

Some claims were staked by location, other using MTO. The claims cover some 4914.89 ha. and are called the Kringle-consolidated Claims. They include the claims numbers listed on the next page.

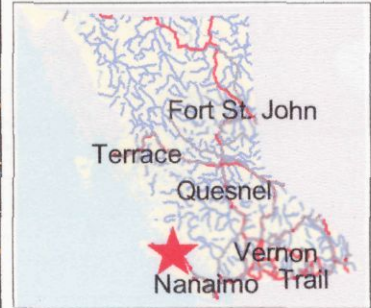
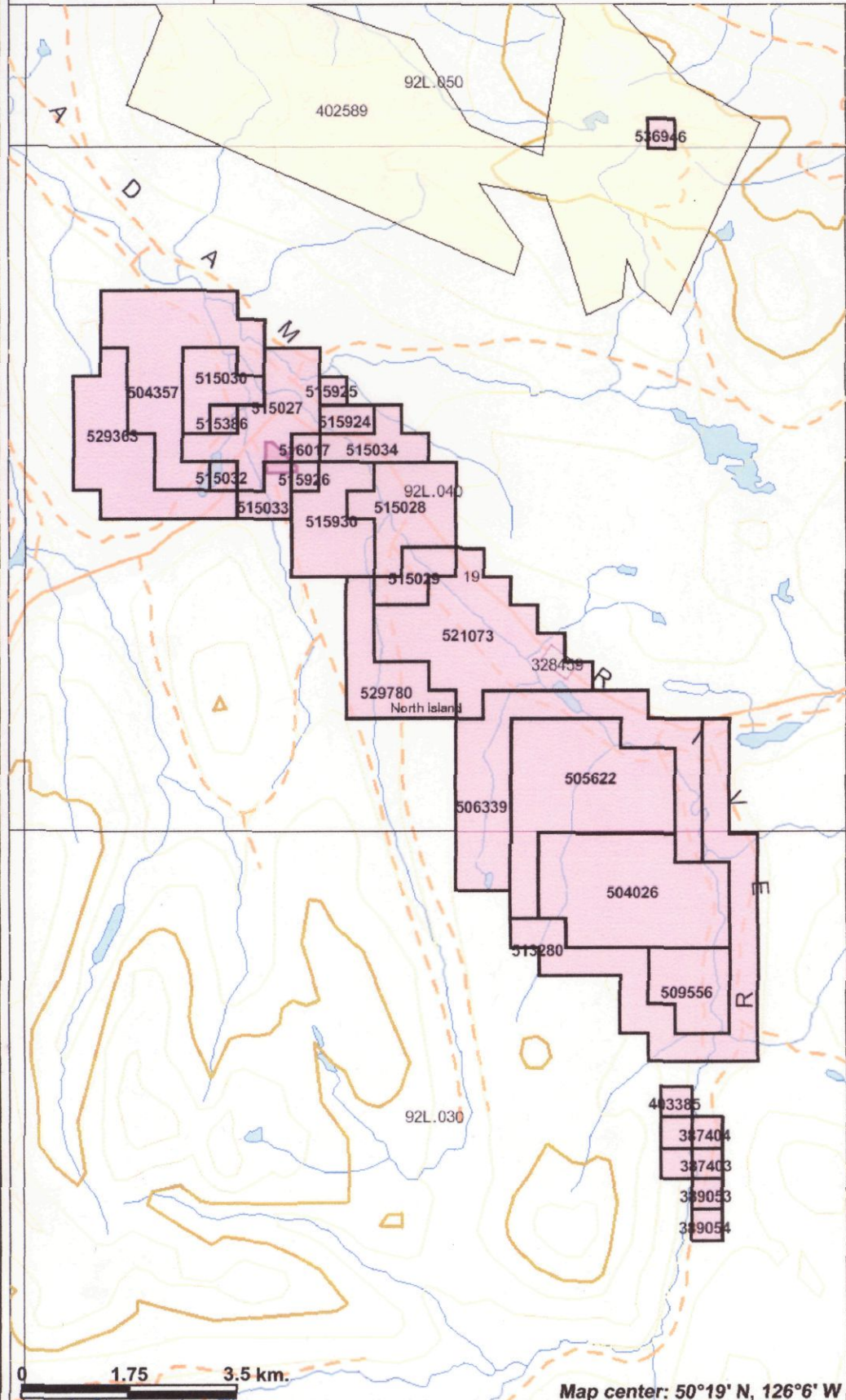
Name	Record	Ha	Good to Date
pastry5	402270	25.0	**May 27, 2008
kranse	504026	516.076	**May 27, 2008 ✓
kage	504357	432.832	**May 20, 2008
loaf	505622	515.917	**May 02, 2008 ✓
bun	506339	515.905	**May 08, 2008 ✓
	509556	165.19	Feb. 19, 2010 ✓
Klejne-wrap	513280	516.14	May 25, 2009 ✓
	515027	247.37	May 27, 2009
	515028	226.82	May 27, 2009
	515029	82.50	May 27, 2009
	515030	123.67	May 27, 2009
	515032	20.62	May 27, 2009
	515033	61.86	May 27, 2009
	515034	103.08	May 27, 2009
kringle-last	515386	20.61	May 27, 2009
	515924	41.23	May 27, 2009
	515925	20.61	May 27, 2009
	515926	20.62	May 27, 2009
	515930	206.21	May 27, 2009
	516017	20.62	May 27, 2009
kringle-2	521073	495.08	May 27, 2009
kringle-nw	529363	329.87	**May 03, 2008
kringle-mi.	529780	206.30	May 27, 2009

The anniversary date of the claims listed is adjusted to take into account the work listed herein. ** designates claims to be allowed to lapse.

All claims are focused on copper and silver mineralization, but include an ancillary interest in gold and palladium as well as other base and industrial metals. The mineral rights are wholly owned by Mikkel Schau.

The land situation is typical; I believe I have claimed and hold the mineral rights in a lawful manner. The region, including the claimed area, is in a Timber License previously logged and reforested; and to the best of my knowledge the land claim treaty process has not directly discussed these lands. It is, however, listed on MapPlace as part of the Kwakiutl_Laich_Kuul_Tach SOI. There has been no impediment to my claiming or working the land to time of writing. And I have no expectation of any. In fact, people of nearby communities would like there to be more exploration, and possibly mining, to shore up the local economy.

Kringle-consolidated



Legend

- Indian Reserves
- National Parks
- Parks
- Mineral Tenures (Mineral - LRDW)
- Mineral Claim
- Mineral Lease
- Reserves (Mineral - LRDW Sites)
- Placer Claim Designation
- Placer Lease Designation
- No Staking Reserve
- Conditional Reserve
- Release Required Reserve
- Surface Restriction
- Recreation Area
- Others
- BCGS Grid
- Contours (1:250K)
- Contour - Index
- Contour - Intermediate
- Area of Exclusion
- Area of Indefinite Contours
- Annotation (1:250K)
- Transportation - Points (1:250K)
- Airfield
- Anchorage - Seaplane
- Ferry Route
- Heliport
- Seaplane Base
- Air Field
- Airport
- Air Feature - Condition Unknown
- Airport.Abandoned
- Transportation - Lines (1:250K)
- Ferry Route
- Aerial Cableway
- Road (Gravel Undivided) - 1 Lane
- Road (Gravel Undivided) - 3 Lanes
- Road - Paved.lanes.2or More.Divided
- Road (Paved Undivided) - Not Elevated - 1 Lane
- Road (Paved Undivided) - Not Elevated - 2 Lanes
- Road - Paved.lanes.3or More.Undivided
- Road (Unimproved)
- Road - Loose.access Dry Weather
- Road (Winter Road)
- Road - Paved.lanes.2.Undivided
- Road - Paved.lanes.2.Undivided.U/C
- Road - Paved.Divided.access.Non Standard
- Track - Cart/Tractor

0 1.75 3.5 km.

Map center: 50°19' N, 126°6' W



Scale: 1:100,000

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Previous work

Prospecting work has been carried out in the general Adam River region for about a century. Minfiles 092L 163, 165-167 inclusive, 222 and 249 are located within the Kringle-consolidated Claims. Newer showings from the claims have been reported in recent ARIS: 26930, 27070, 27463, 27736, 27745, 28747 and 28927.

The ground was prospected for silver and gold in the first quarter of the century and showings of copper and gold veins were reported. Some distance south of the claims, but in the same geological context, a showing (Lucky Jim) of a contact deposit with copper (5.92%), silver (1.8 opt) and gold (.9 opt) has been described as early as 1918 (page K270, 1918 BC Minister of Mines Report).

Logging opened up the area in the 60'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.

AR 1859, was the first formal report of copper showings near Rooney Lake in 1969.

AR 1993, commissioned by Bethlehem Copper Corporation, and carried out by W.M. Sharp, P.Eng., in 1969 sketched in the regional geology of a large area, some of which includes the area currently claimed. He noted the presence of a large NW trending granodiorite pluton emplaced in a sequence of Karmutsen "basalt-andesites" and the Quatsino Limestone. He noted that much mineralisation of the area is mainly in veins. The report focused on the Boyes Creek occurrence (minfile 092L-165) and adjacent showings (092L-166,7,8). The first mention of the Billy Claims occurs in this report as a parcel covering widely dispersed copper mineralization. The geological framework presented by Mr. Sharp has not changed substantially, although he mentioned the occurrence of Bonanza volcanics in the general region; this latter conclusion has not been confirmed by later workers. (Unless Parsons Bay Formation is considered to be part of the Bonanza).

AR 3795, commissioned by Sayward Explorations Ltd, and carried out by Sheppard and Associates in 1972, reported on the geology of the Billy Claims Group and documents showings now known as Minfile 092L163 (in Billy 19) and 092L249 in (Billy 11). These showings are west of the Adam River. They reported that amygdaloidal portions of basalts and adjacent faults are mineralized.

At 092L-222 stratabound copper mineralization was found below thin limestone beds within the Karmutsen basalts in early seventies, south of the Billy Claims and north of Boyes Creek. The details of this prospect are discussed in AR 14284, 22409, and 23906.

In 1974 the GSC published a map of the area (Mueller 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 (see above).

A later AR (18255) focused on land near Rooney Lake. The exploration results were neither accurate nor useful.

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).

The author has been active in the area since 2000 and several Prospector's Grant reports and Assessment reports have been filed. They document location of several newly located mineralized showings, possibly all part of a single large hydrothermal system (see AR 26930, 27070, 27463, 27736, 27745, 28327, 28328, 28747 and 28927

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. The country rock is part of the Karmutsen Formation comprising mainly feldspar-phyric basalt, as amygdaloidal or massive flows, or as thin sills with intercalated with minor beds of limestone and associated clastics, overlain by thicker beds of Quatsino limestone and locally by Parsons Bay formation. New roads have exposed new subcrops and the area under discussion is mainly underlain by Karmutsen Formation.

Summary of work done

The region in the area marked area of interest on fig 2, and the base for all subsequent maps (Fig 3-6). This area was prospected and the geology checked and magnetic susceptibility measurements obtained and samples collected for assay and petrography.

Acme : 5 geochemical assays method 1F (ICP-MS for 37 elements)

Petrographic analysis: 25 TS

Density determinations: 11

Conductivity: . 23

Magnetic susceptibility: 103 determinations at 23 localities

Detailed data and interpretation

Purpose

This work is aimed at understanding the nature of the mineralizing events along and in the vicinity of a bent tectonized contact between basalt, limestone and granodiorite batholith with the aim of locating a region with significant mineralization. A bounding positive

aeromagnetic anomaly (with a local low near the bend) encloses most of the showings located so far. Previous experience with this highly prospective combination of lithologies and structural setting makes it likely that metal concentrations of value may have accumulated in the rocks adjacent to the pluton in structurally prepared rocks. In particular, an alteration zone with a core of pyritic sericite might explain the magnetic low ("the porphyry copper model").

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 runs in a typical U shaped valley, between tall hills trending roughly the same northerly direction. Local areas of till have been noted in lower areas where road construction has laid it bare. 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.

The river largely follows the outcrop trend of the Quatsino Limestone. Adjacent creeks seem to occupy north or northwest trending high strain/fault zones. The hills are variably covered with colluvium which overlie thin till deposits; only where logging roads expose subcrops, or in outcrops on cliff faces and/or steep sided valleys are bedrock visible.

Regional Geology

Contacts between country rock and batholith are possible regions of metal concentrations. Basalts of the Karmutsen Formation, limestones of the Quatsino Formation and slivers of the Parson bay Formation are deformed, metamorphosed and metasomatised in the locally sulphidized contact of the Adam River Batholith (See figure 2).

Units

Vancouver Group

The units 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, 2006, 2007) and Nixon has published maps and descriptions of these units to the west (Nixon et al, 2007).

The Vancouver Group (Karmutsen, Quatsino, and Parson Bay Formations) underlies much of the region of the claims.

The *Karmutsen Formation* (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 lower 2500 to 3000 m. invariably consists of classical

closely packed pillow lava. the next 600 to 1000m consist of pillow breccia and aquagene tuff, typically with unsorted beds ½ to 2 m thick in the lower half.

The upper 3000m is composed of amygdaloidal and non-amygdaloidal basalt flows intercalated with, particularly in the upper third of the unit, sporadic and commonly incomplete sequences of 3 to 20 m thick consisting of thin discontinuous bioclastic, micritic, cherty or tuffaceous limestone. These are overlain by closely packed pillows, which are in turn overlain by pillow breccia and then, thick massive flows.

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 faults and well developed linears trend north and north westerly directions as well as easterly directions and separate large panels of gently dipping lavas. Slickenlines indicate that the preserved directions of slip are largely transverse.

The volcanic rocks have been regionally metamorphosed into upper zeolite ranging upward into lower greenschist grades. Albitized feldspars, amygdules and veins of pumpellyite, prehnite, epidote, calcite, and chlorite are widely noted. Near contacts with later intrusives, higher grade amphibolite bearing assemblages are more common.

Considerable regional variation is shown on aeromagnetic map, including local positive anomalies, within the area underlain by the Karmutsen, indicating that magnetite concentrations of the volcanic rocks are not uniform and/or 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. Recently it has been demonstrated that more magnesian members are much less likely to be magnetic.

The Quatzino Formation 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 a coarsely bioclastic, light grey, indistinctly bedded and non fissile (Carlisle, 1972). Where deformed near plutons it becomes a light grey, finely recrystallized limestone. 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 is poorly defined on large scale geophysical maps shown on MapPlace although the limestone is not magnetic. More detailed aeromagnetic surveys are necessary to delineate in detail, the outcrop pattern.

The Parson Bay Formation is considered to overlie the Quatsino Limestone. According to Carlisle, 1972, it is characterized by thinly laminated alternating fissile and non fissile black

carbonaceous limestone with extremely fine grained siliceous matrix. Small slivers were recognized along the contact with the pluton, mainly northwest of Keta Lake, but it seems to disappear to the northwest, as the Adam Lake Pluton cuts through the unit to impinge directly on the Quatsino further to the northwest. Other outcrops are located in the vicinity of Tlowils Lake. It is also possible that some of the silty reaction skarns intercalated with black limestone noted on the property, north of the 250km marker may represent some hitherto unrecognized relic thin lenses of Parson Bay Formation along the western flank of the Adam River Batholith.

Jurassic Intrusives

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 10km.

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. 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.

Carson (1973), suggested that the Adam River was emplaced as a sill, along the Quatsino Formation horizon. He suggested that the sill was shaped as a gentle syncline and figured the geology in the general Adam River area on his Fig. 15 (Carson, op cit). An anticline has been postulated to the west currently expressed at surface by the Karmutsen Formation. The sense of movement of a synkinematic sill would be upper units to move away from the synclinal core. That would predict an east over west component in folds and faults. Continued examination of this hypothesis over five years of field work by this author has resulted in it being *rejected*. The intrusive contact is vertical and crosscuts units, cross cutting the Parsons Bay Formation in the vicinity of Keta and Tlowils Lakes and intruding the underlying Quatsino further to the northwest. The Karmutsen Formation across the Adam River to the west, has dips that are directed to the north-north-east and would be expected to young in that direction. Instead they seem to be structurally thickened by cross faults. The younger Quatsino and Parsons Bay Formations rocks are found adjacent to (ie along strike length) and in probably fault contact with a thick section of basalt, and the predicted Quatsino and Parsons Bay Formations have not been located at the top of the dipping basalts to the north as mentioned above.

Instead, given that an apophyses of granodiorite crosses the Adam River (and the Quatsino limestone), and is emplaced in the Karmutsen, it seems highly 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 Parson Bay to the east.

K-Ar dates of 160 Ma. on Hornblende and 155 Ma. on biotite from a quartz diorite of this batholith 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.

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. Orientations are steep and complex at near the contact. There is much evidence that the Karmutsen is in fault contact with the overlying Quatsino Limestone, and not in a simple stratigraphic relationship.

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

Felsic dykes

Based on very preliminary evidence, supported in part by observations made by Carlisle (1972), there appears to be at least three sets of granitoid dykes in area. The dykes observed so far, are near the intrusive contact of the main pluton.

From oldest to youngest they are:

Feldspar Porphyry "folded into tight folds" may predate the main plutonic mass.

Deformed, and argillically altered and mineralized porphyries (locally brecciated).

and later "fresh" Feldspar and Hornblende porphyries with planar or irregular contacts.

In the northern part of the claim group late basaltic dykes cut metamorphosed basalts and are metamorphosed themselves. In the more southerly part of the claims late basaltic/gabbroic dykes cut limestone of uppermost Karmutsen and Quatsino formations.

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 on 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. A bend in a fault marking the western contact of the pluton provides some potential; for an alteration zone.

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. 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, are found near Keta Lake, or far southeast of where they would be expected, in a simpler structural milieu.

Apparently, a fault along the Adam River which post dates the pluton, probably with strike slip motion; the fault is probably long lived, since it seems that it predates the pluton as well with a 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 to the south, implying an east west trending syncline.

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

The region is noted for copper bearing veins and have been described as "copper veins in basalts. Muller et al.(1974) repeat this categorization and assigns the showings in the vicinity of the claims to his category C; "veins in basalts". Minfiles in area include 092L-163, 170, 249, 222, 165, 166, 167, and 168.

Regional Geophysics

The magnetic character of the Adam River Batholith is well expressed on regional aeromagnetic maps. Of some interest is a magnetic domain of similar magnitude seemingly located over Karmutsen Basalts as shown in Figure 2. The contact, between the magnetic batholithic rocks and the non magnetic limestone is not well defined on the low resolution aeromagnetic map. Instead a sharp magnetic boundary is located several km to the west separating non magnetic basalt from magnetic basalt. The boundary is not parallel with strikes and dips determined for the basalts, but cross cuts across them instead, to be roughly parallel with the contact of the Adam River pluton.

The Cu-Ag vein showings and prospects are located within in this anomalously magnetic region.

Property geology

Introduction

Karmutsen Formation of the Vancouver Group largely underlies the claims under discussion, especially west of the river, the Quatsino Formation underlies the Adam River and the Jurassic Intrusives are found largely on the northeast side of the river. (see Figure 2).

Formations

The area to the west of the Adam River is mainly underlain by the upper part of the Karmutsen Formation 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 limey sandstones all cut by thin dolerite/gabbro sills. Several textural types of basalt have been noted in area. Most common are feldspar phryic fine grained basalts. Local variant include those with abundant microlites and

altered glass in the groundmass. Others are some what coarser of grain. All varieties are locally amygdaloidal, varying from showing small occasional spherical amygdales filled with low temperatre 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.

The basalts are locally seen in stacked, massive, many metre thick units. Locally lava tops have been recognized. Local pillow basalts are well exposed quarries (where they yield excellent road metal); locally a pillow sequence of closely packed, sub meter sized pillows have been seen to pass laterally into a massive flow. The basalt units generally dip north to northeasterly with shallow to moderate dips. The basalts are variously veined and fractured.

Previously a suite of "unaltered" basalts from this general area show background values of about 110 ppm copper and 0.3 or less ppm silver.

The Quatzino Formation is a thin ribbon traversing the country in a north-northwest direction, to the northeast of the Karmutsen Formation. It is seen in recrystallized and deformed ribbon in roadcuts along the highway. The thickness is not known. The Adam River follows part of its outcrop pattern. Where deformed near plutons, as in these claims, it becomes a light grey, finely recrystallized limestone. The limestones are remarkably pure calcite. Small elliptical grains of calcite and the prominent cleavage direction are elongated in direction of the layering. Locally, where intruded, they host reaction and ore skarns.

The expected negative aeromagnetic signature is scarcely noticeable on a map of aeromagnetic field (Figure 2) although the limestone is not magnetic. More detailed aeromagnetic surveys are necessary to delineate the outcrop pattern.

The Parson Bay Formation is considered to overlie the Quatsino Limestone. According to Carlisle, 1972, it is characterized by thinly laminated alternating fissile and non fissile black carbonaceous limestone with extremely fine grained siliceous matrix. Several skarnified outcrops on the east side of the river, near the granodiorite contact were visited and sampled. Although rusty, economically interesting mineral concentrations have not been found to date.

Jurassic Intrusives

In the claims under discussion Jurassic granodiorite to diorite/gabbro underlies the area to the east-northeast of the Adam River. It consists mainly of mesozonal quartz gabbro/diorite. Rocks studied are mainly medium to fine grained biotite hornblende granodiorite and quartz diorite with a locally elevated content of mafic minerals. 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 mafic volcanic rock inclusions are transformed into dioritic inclusions, limestones become skarn and marble rafts and siliceous siltstones become rusty hornfels. At the contact, orientations of bedded host rocks are steep and complex. Locally, in the southern portions of the Claim a logging road passes through locally malachite stained, potash feldspar altered and chlorite veined granodiorite. Highway 19 exposes some wonderful ore skarns near 250 km marker.

Based on observations from a few locations along road cuts and river banks , porphyry.

dykes of granodioritic composition (sensu lato) with both irregular (folded?) and planar walls have been seen to cut Karmutsen basalt and Quatsino limestone.

Mineralization

Mineralization in the form of amygdular fillings, skarns, shear zones and veins filled with quartz, epidote, bornite (+/-local chalcocite) were noted in the earlier prospecting. Locations of stations with grab samples with an excess of .4% copper are shown in figure 2.

Previous work in the general area has located copper mineralization. In the sixties a few selected mineral samples with 25% copper and 0.78 opt gold from Boyes Creek excited the prospecting community. Exploration work was carried out sporadically in the area over the next 4 decades. The Kringle-consolidated Claims currently covers about 5700 ha, a large area of local mineralized showings including Minfiles 092L-163, 170 and 249 in the north and 092L-165, 166, 167, 168, and 222 in the south. They also include several newly located showings as noted in several recent ARIS Reports. Early trenching at minfile 092L165 (Boyes Creek) showed by chip sampling 13 trenches over a length of 300 m an average 3.25% over 1.3 m width.(AR1993, 3795) At 092L222 11 trenches over 450 m showed about 0.89% over approximately 5 m width. A chip sample from a new locality (Puff) yielded .98% copper over 2.2 m. (AR27070)

Previous drilling on the property is documented in several minfiles. The best results were obtained at minfile 092L-222 (Adam West) where 6 Xray drill holes and 11 BQ drill holes were drilled. A several metres thick mineralized zone was outlined some 10's of meters below a thin limestone member for about 300 m along strike and about 200 metres downdip. The best intersection was A6 which yielded 2.11% copper over 5 m. (AR22409). At minfile 092L-163, 5 holes were drilled, only a small part of the core was analysed, and the best result was including 0.53% over 1.5 m, at hole 1. At minfile 092L-249 a partially analysed hole yielded 0.48% over 3.6 m..(AR 3795)

New showings, found by the author, have been detailed in recent assessment reports (ARIS: 26930, 27070, 27463, 27736, 27745, and one AR still in review) with at least fourteen locations with large (1 kg or larger) grab samples containing well over a percent copper, silver values up to 67 ppm and gold values up to 1169 ppb. They are shown on a map in appendix B. These values indicate the presence of locally interesting mineralization but give no indication of grades or volumes.

Detailed sampling results

Prospecting

No new showings were found. Locations said to be mineralized in previous reports were also visited at the specified locations The region east of the Adam River between Tlowils Lake in the south and Keta Lake in the north provided no evidence of mineralization. Near Tlowils lake small barren pyrrhotite veins were noted. This area is part of the retained claims.

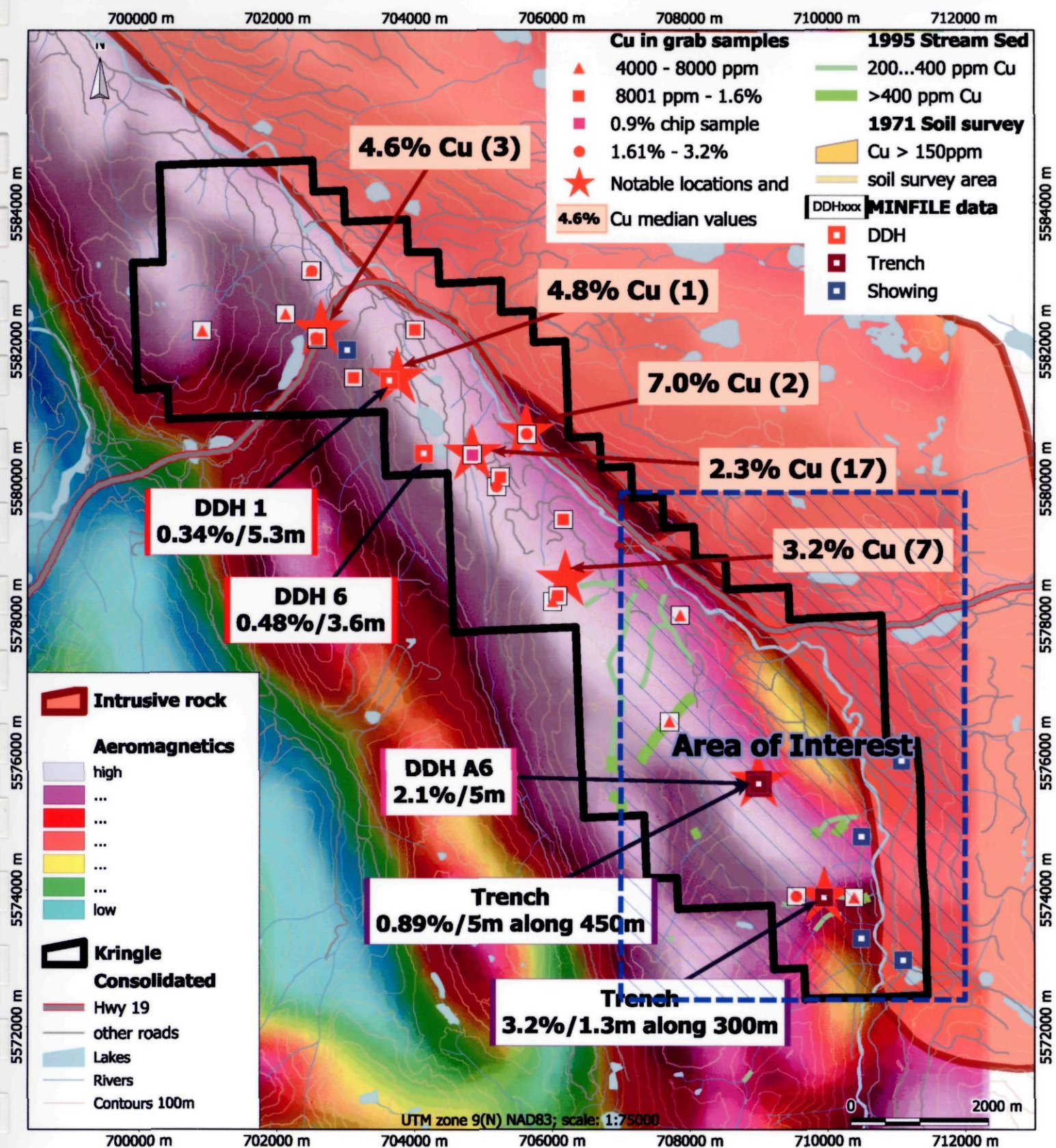


Figure 2
Area of Interest
(Geology, Aeromag, Geochemistry)
July 2008
 GIS by TBT, Jul/2008

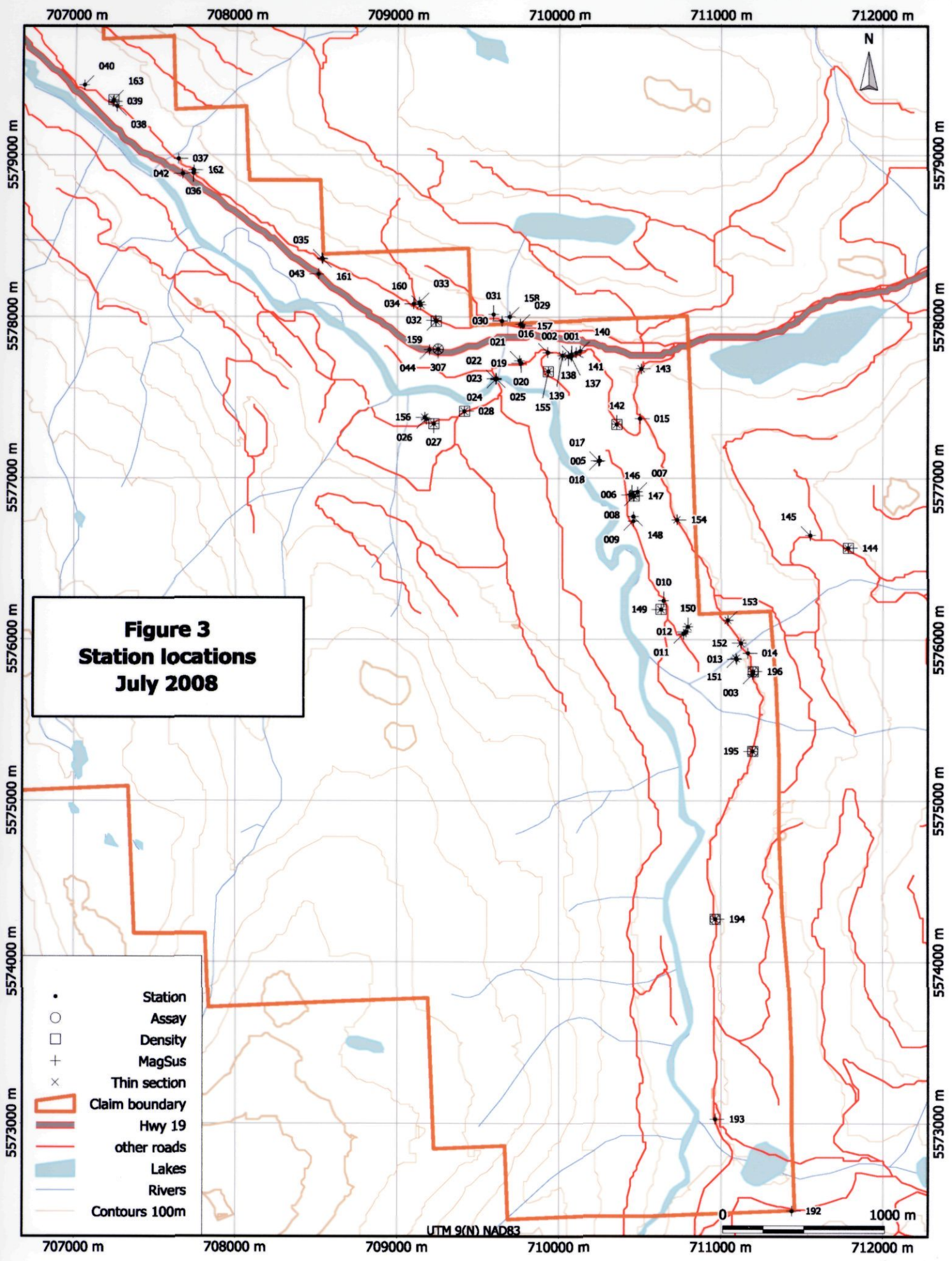


Figure 3
Station locations
July 2008

- Station
- Assay
- Density
- ⊕ MagSus
- × Thin section
- Claim boundary
- Hwy 19
- other roads
- Lakes
- Rivers
- Contours 100m

UTM 9(N) NAD83

0 1000 m

Geology.

The goal of the project was to locate an alteration zone like those seen in porphyry systems. Location of the area of interest is shown on Figure 2. Locations of samples taken are shown in figure 3.

No porphyry related alteration zone was found. Instead evidence of complex faulting was encountered. Some of these cataclasites were altered, but as indicated in the petrology section most of the alteration was calcic and in the form of low temperature prehnite formation. In only one instance did a sample show sericite; a clayey cataclasite contains a matrix rich in sericite. The hoped for pyrite halo did not occur. The center of the magnetic low that sparked the interest is in the middle of a private shooting reserve and permission is required to visit it. This permission was only gained for this visit. Figure 4 shows geology of area.

Assays

Samples were taken for general interest, since mineralization was not noted. The rocks were assayed confirming the lack of mineralization. The values are shown in figure 5.

Returned values were low, the best molybdenum value was 3.3 ppm :the best copper returned was 221 ppm and the best gold was 7.3 ppb.

Petrography

Standard thin sections were prepared by Vancouver Petrographics and were studied by A wild Binocular Stereoscope and by a Nikon Labophot-pol petrographic microscope.

Locations of detailed results are presented on figures 3, and 4, and in detail in Appendix B. Plates 1 to 3 at back of manuscript present photomicrographs of selected textures.

Mineralogy

Primary Minerals

Plagioclase was euhedral, 2 8 mm prisms of largely normally zoned well twinned crystal.

Quartz was largely interstitial and variably abundant.

Potash feldspar was identified only a few times, low refractive index, low

birefringence, untwinned and slightly mottled and stained brown, in contrast to the quartz.

Hornblende was the name given to a poorly pleochroic, beige, amphibole with a well developed basal cleavage or parting. It is locally twinned and has a higher index of refraction than actinolite and chlorite, but much less than the enclosed fragments of pyroxene.

Biotite is brown pleochroic and is mainly associated with opaque grains

Pyroxene is present as inner portions of of amphibole, locally it is adjacent to a biotite grain,

Opagues are small irregular shaped grains. Local cubic cross sections noted. Mainly magnetite.

Secondary Minerals

Saussurite has replaced some of the interiors of plagioclase (the more calcic portions)

Pumpellyite has been identified in some calcic cores of plagioclase. Greeny blue high relief among the saussurite

Chlorite (grey birefringence) rims and partly replaces biotite with a an associated release of small opaque grains

Actinolite was identified by the green pleochroic colours, its habit of overgrowing the hornblende and showing cleavage.

Prehnite is present in veins and locally replaces the complete rock.

Textures of note

Primary

Mafic minerals are clumped together around a plagioclase crystal. The texture is reminiscent of ophitic texture in gabbro.

Granodiorite have appearance of being mixtures of salic minerals and a diorite precursor.

Secondary

The rocks vary from being fresh to broken veined and locally replaced. The mineral most associated with the alteration is prehnite.

The deformed rocks show different textures. Marble shows bent cleavages indicating brittle deformation after recrystallization. Cataclasite are also indicators of brittle deformation.

Based on the mineralogy and textures seen it is concluded that there is not a hydrothermal center such as ones usually associated with porphyry copper in this

neighborhood.

Low temperature fluids were active in faults and veins and are now represented by local low grade alteration assemblage and prehnite quartz veinlets.

Petrophysical results

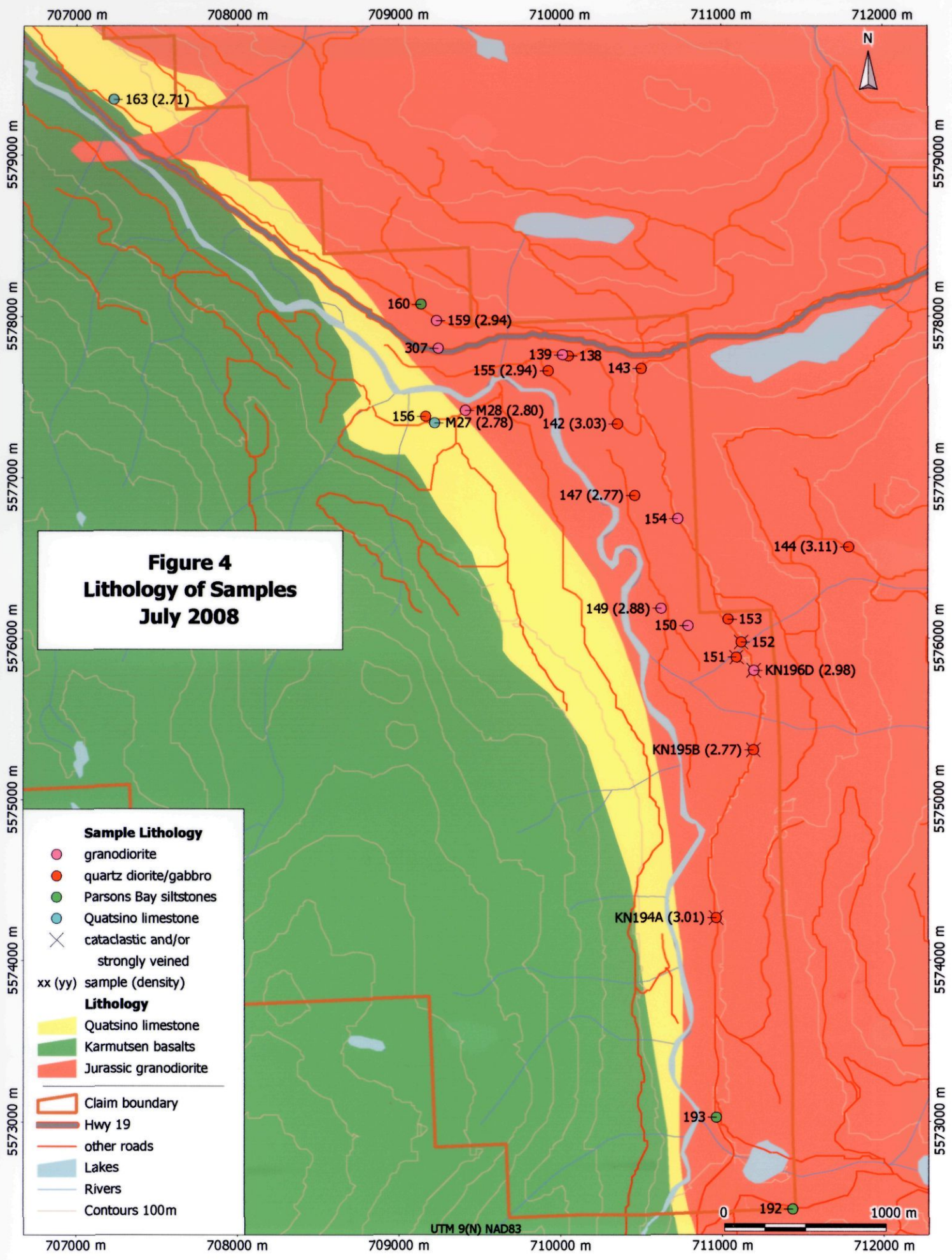
Density

The density of the specimens was determined on cutoff samples by weighing and determining displaced volume. The small size of the specimens therefore represents the density of a very small piece

The precision is dictated by the triple balance scale which reads to the nearest .2 gm but the accuracy of the scale is considered good since it is calibrated with official brass weights of 100 and 50 gms. The cutoffs are in part treated with epoxy which probably decreases the density a small amount. Samples of marble, determined in this sample set return realistic values so the values determined are probably reliable in the first decimal place.

Sample	Density
194A	3.01
195B	2.77
196D	2.98
142	3.03
144	3.11
147	2.77
149	2.88
155	2.94
159	2.85
163	2.71
M27	2.78
M28	2.80

The values reported for fresh plutonic material from the Adam River pluton are somewhat greater than the values reported in Muller. This is likely a real effect, rooted in the larger proportion of mafic minerals in these samples. He also makes a note of the more mafic edges of pluton in this area. They are shown in figure 4.

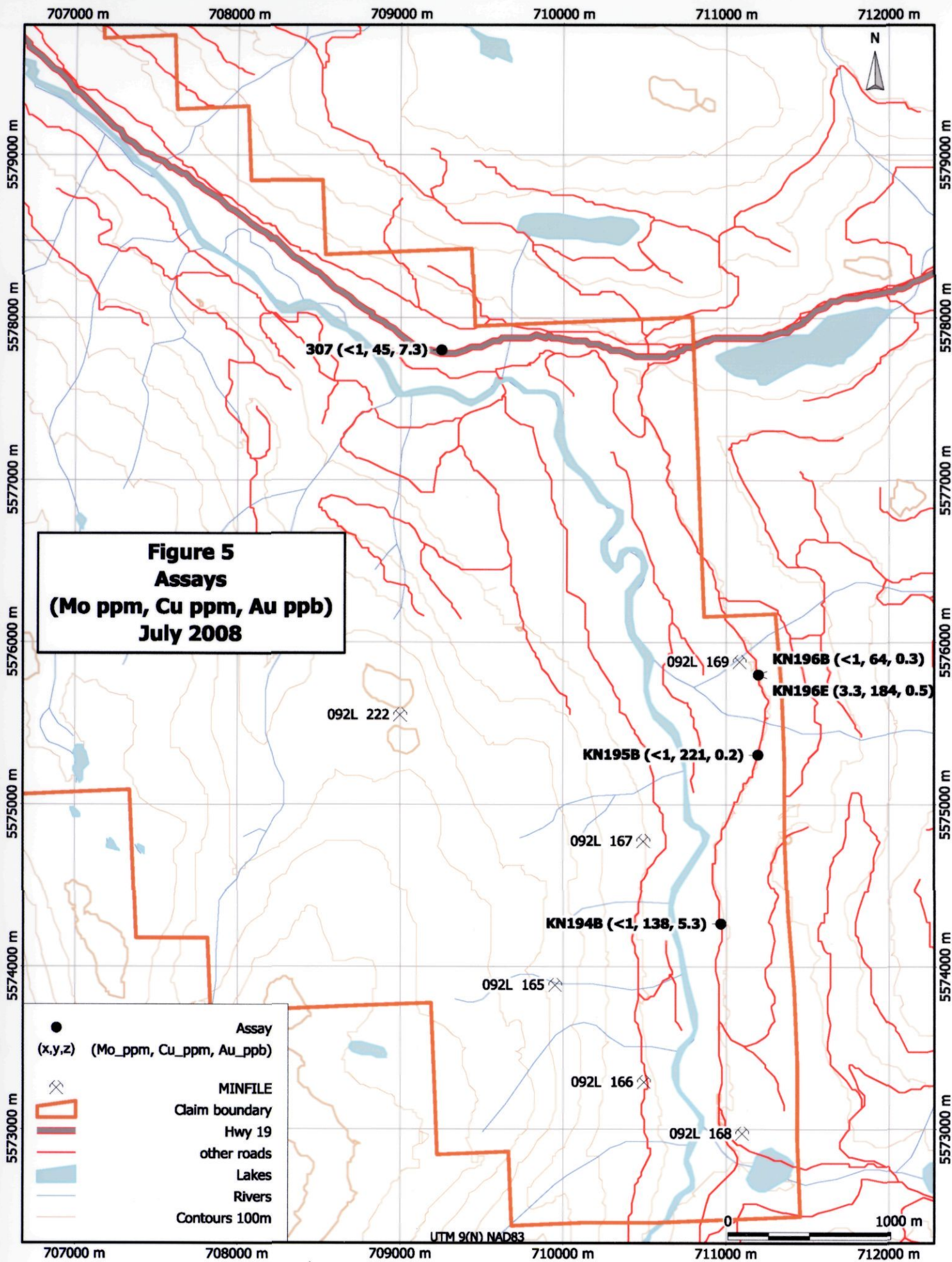


**Figure 4
Lithology of Samples
July 2008**

- Sample Lithology**
- granodiorite
 - quartz diorite/gabbro
 - Parsons Bay siltstones
 - Quatsino limestone
 - × cataclastic and/or strongly veined
 - xx (yy) sample (density)
- Lithology**
- Quatsino limestone
 - Karmutsen basalts
 - Jurassic granodiorite
- Other Features**
- ▭ Claim boundary
 - ▬ Hwy 19
 - ▬ other roads
 - Lakes
 - ▬ Rivers
 - ▬ Contours 100m

UTM 9(N) NAD83

0 1000 m



Conductivity

Conductivity was measured on all specimens using a multimeter. (GB Instruments GMT-12A, analog multimeter). None of the 23 specimens was found to be conductive.

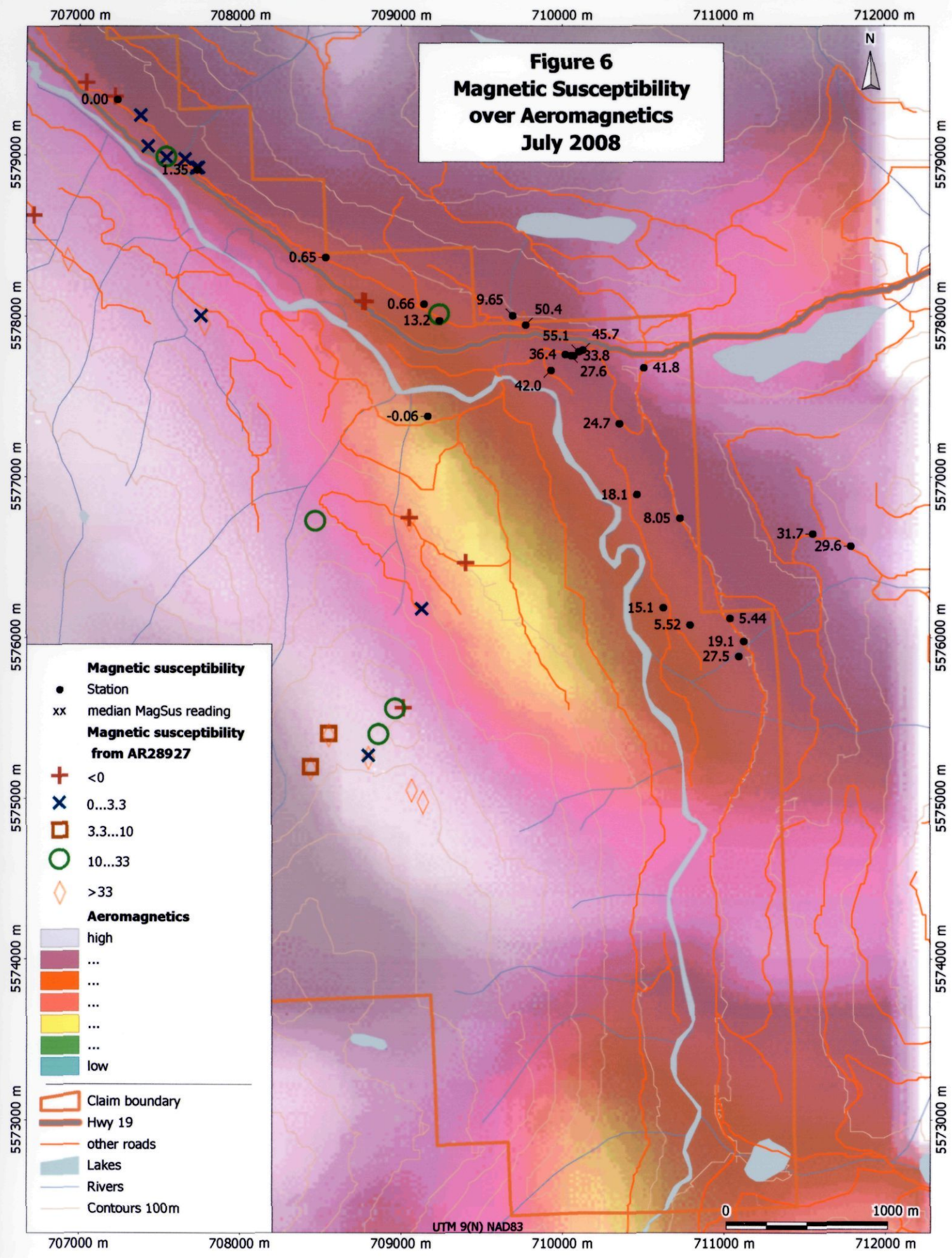
Sample	conductivity
138	none measurable
139	none measurable
142	none measurable
143	none measurable
144	none measurable
147	none measurable
149	none measurable
150	none measurable
151	none measurable
152	none measurable
153	none measurable
154	none measurable
155	none measurable
156	none measurable
159	none measurable
160	none measurable
163	none measurable

Magnetic properties

Magnetic properties were investigated at several scales. The project was formulated to investigate the cause of the large aeromagnetic low in the midst of a wide positive anomaly which previously has been shown to be due in part to original magnetism of a magnetite bearing mafic quartz diorite, to be due to contact metamorphic breakdown of ilmenite-magnetite grains to form small grains of magnetite () and to be due to introduced magnetite in the form of veins and replacements.

Magnetic susceptibility was determined with a KT9 which is a versatile hand held instrument which measures the susceptibility over a great range. The unit was operated in pin mode. The locations are shown on Figure 3 and median values of host rock are shown on fig 6.

Figure 6
Magnetic Susceptibility
over Aeromagnetics
July 2008



Magnetic susceptibility

- Station
- xx median MagSus reading
- Magnetic susceptibility from AR28927**
- + <0
- x 0...3.3
- 3.3...10
- 10...33
- ◇ >33

Aeromagnetics

- high
- ...
- ...
- ...
- ...
- ...
- low

- Claim boundary
- Hwy 19
- other roads
- Lakes
- Rivers
- Contours 100m

UTM 9(N) NAD83

0 1000 m

The preferred result would have been that the magnetic low was an indicator of elevated alteration such as seen in porphyry deposits. In the claim area samples from the centre of the low are seen to be relatively fresh quartz diorite, but a fault is interpreted to traverse the valley of the nearby Adam River. Contrary to the map, outcrops of Parsons Bay and Quatsino are more widespread in this general region, and the geology more complex, possibly indicating dextral lateral offset of the contact between pluton and host rock.

Measurements show that the magnetic contrast between rock formations is large. Apparently the magnetic low is due to a larger amount of Parsons Bay Formation and Quatsino Limestone than was previously apparent.

veins in plutonic rocks largely prehnite and quartz, some epidote	0.73
mafic intrusives of Adam River pluton (median of medians)	27.6
Parsons Bay	0.65
Quatsino Limestone	-0.20
Karmutsen in rest of claim area (AR 28927) 1	12-110

Interpretations

Petrographic studies indicate that the magnetic low is not due to the type of phyllic alteration halo associated with porphyry coppers. Instead they indicate that some faulting (in the brittle domain) generated cataclasites after the emplacement of the Adam River Pluton. Veins in the plutons locally carry prehnite, indicating a calcic and relatively low temperature fluid regime at time of vein filling (which accompanies or follows the fracturing).

It is possible that some of the alteration types of pyroxene seen in thin section was once orthopyroxene, in which case the rocks would be noritic diorites.

No olivine (or altered equivalent) was noted. Minor biotite (or altered version) was noted.. The biotite with quartz association may be in lieu of potash feldspar and pyroxene, which is a higher temperature or "drier" association.

Prospecting did not yield any new showings this time out. Assays from the small number of samples are not encouraging. The faults are not obviously mineralized.

Geophysical measurements indicate that the intrusive rocks are more mafic than previously understood. They are more dense and quite magnetic. Ground truthing would appear to be mandatory any geophysical result in this region given the complex geophysical responses.

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 was deformed and faulted along orogen parallel transverse faults, along which, 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.

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

Within the Kringle-consolidated Claims sulphide accumulations studied over the years, include laminated bornite bearing calcite veins, 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 prospects and showings lie along a sixteen km length of a three km wide magnetic anomaly developed along the edge of Adam River pluton. The localities and anomaly are shown on figure 2.

A magnetic low within the positive magnetic anomaly was postulated to have been the locus of ascending mineralization fluids. By analogy with porphyry systems such an area would be marked by sericitic or argillic alteration. A petrographic survey was instituted to test the postulate.

The petrographic data (from 25 thin sections) indicates that minor alteration attended faulting of host rocks including the Island Intrusions. The host rocks comprise Upper Karmutsen plagiophyric basalts, fine grained Quatsino Formation limestone and silty or tuffaceous Parsons Bay Formation metamorphosed to regional very low grade rocks, and in the immediate neighborhood of the Adam River pluton to amphibolite grade hornfels as well as the Adam River pluton itself. The Island intrusions are mainly quartz diorite/gabbro in this area. No halo of sericitic alteration was located. The magnetic low was due to stratigraphic and tectonic factors and not to hydrothermal alteration

Assay values (5) of copper silver and gold were low. The magnetic low was not mineralized. The copper porphyry model does not apply where sampled.

The work reported here has been focused on determining whether a magnetic low within

the aeromagnetic high was due to a core of alteration such as is often encountered in moly-copper-gold porphyry deposits. .Previously it was suggested (AR 28927) that there was a possibility that the magnetic low is marked an area of more complete alteration. The sampling attempted to locate such an alteration halo but did not succeed. This study concludes instead that the aeromagnetic low is due to local alteration associated with post pluton faulting superposed on areas underlain by Quatsino limestone, Parsons Bay metasediments and cataclased intrusive.

The Kringle-consolidated claim group is is a grass roots project with many local showings. The location and extent of a postulated hydrothermal system is still being explored. There is a possibility that all new showings and already located Minfile locations in the country rock are part of a single and large mineralizing system, in which case, this region may become a significant prospect. 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.

Recommendations for future work

The following (northern) tenures have been extended until next spring. New work can localize newer showings and better constrain their volumes.

Name	Record	Ha	Good to Date
	515027	247.37	May 27, 2009
	515028	226.82	May 27, 2009
	515029	82.50	May 27, 2009
	515030	123.67	May 27, 2009
	515032	20.62	May 27, 2009
	515033	61.86	May 27, 2009
	515034	103.08	May 27, 2009
kringle-last	515386	20.61	May 27, 2009
	515924	41.23	May. 27,2009
	515925	20.61	May 27, 2009
	515926	20.62	May 27, 2009
	515930	206.21	May 27, 2009
	516017	20.62	May 27, 2009
kringle-2	521073	495.08	May 27, 2009
kringle-mi.	529780	206.30	May 27, 2009

It is further recommended that the copper anomaly in the retained claims be more completely characterized. A work program could include:

Silt sampling of all creeks (above or away from roads with suspect road metal)
 samplers Chip sampling at localities that previously yielded high assay values from grab
 Soil sampling along subsoil "extensions" of mineralized trends

To find the extent the magnetic phases (magnetite, pyrrhotite) of the ore skarn (positive anomalies) and local shears and veins (negative anomalies), a magnetic survey is clearly indicated. To find the extent of conductive portions (sulphide concentrations) of the mineralized zones one of several types of electromagnetic survey can be contemplated; the size of the exploration commitment would seem to dictate the method. A low flying helicopter survey combining aeromagnetic and EM methods may be most efficient method to focus ground based exploration. With enough interest, perhaps an airborne gravity survey could also be appended. The extensive magnetic susceptibility and density database already collected in several assessment reports would provide local control data.

Interpretations of the geophysical surveys will challenge the explorationist. The presence of the many roads with their infill of materials trucked in from unknown sources will pose a problem. The Adam River valley with the deep (glacio)- fluvial fill will shield anomalies located along the (major) fault traces situated in the valley bottom. Nevertheless, if enough surface anomalies along the valley sides are successfully tested, then deeper exploration (in part under the river or creek channels) will be easier to justify.

It is further recommended that tenures named below be dropped, since there is no way to obviously advance these tenures at this time..

....

Name	Tenure #	Ha	Good to Date
kranse	504026	516.076	May 17, 2008
kage	504357	432.832	May 20, 2008
loaf	505622	515.917	May 02, 2008
bun	506339	515.905	May 08, 2008
kringle-nw	529363	329.87	May 03, 2008

The southern tenures noted below are to be retained to re-evaluate their commercial potential.

"Klejne"	509556	165.19	Feb. 19, 2010
Klejne-wrap	513280	516.14	May 25, 2009

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Surdam, RC, 1968

The Stratigraphy and Volcanic History of the Karmutsen Group, Vancouver Island, BC; University of Wyoming Contributions to Geology, V.7, p.15-26.

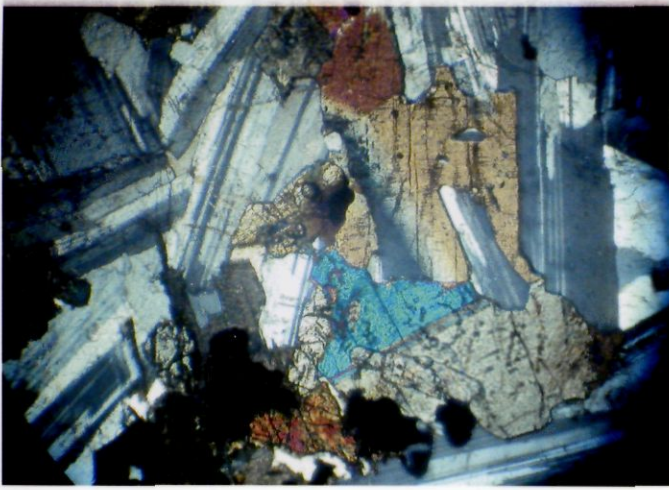


Plate 1a, 139, xpl, fov 4 mm, Fresh Quartz Diorite

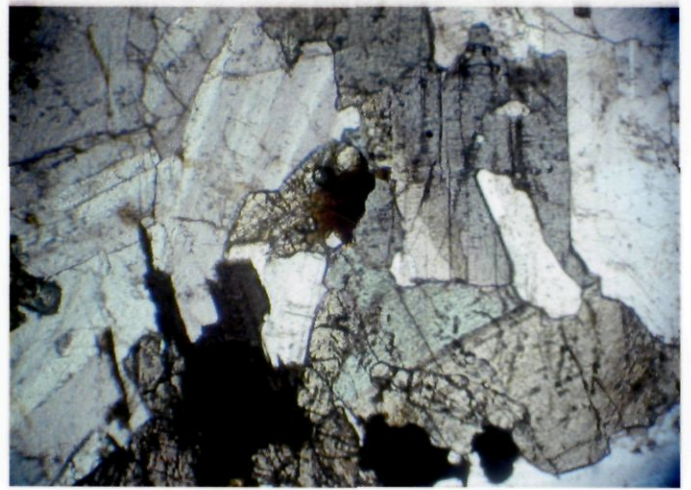


Plate 1b, Fov 4 mm, same view of Quartz Diorite ppl,

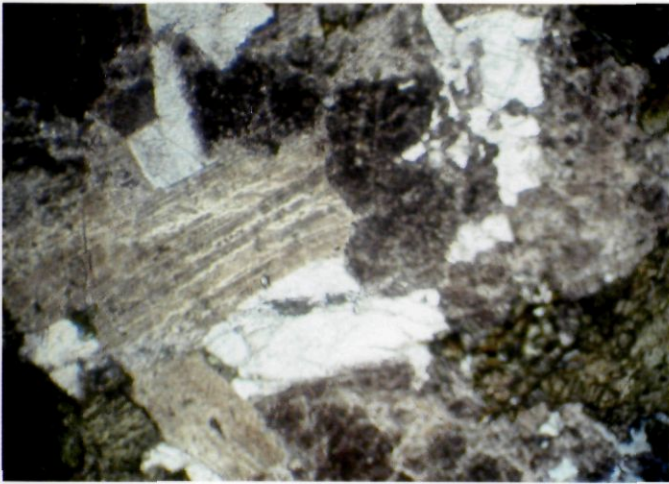


Plate 1c, altered feldspars in quartz diorite (154B) XPL

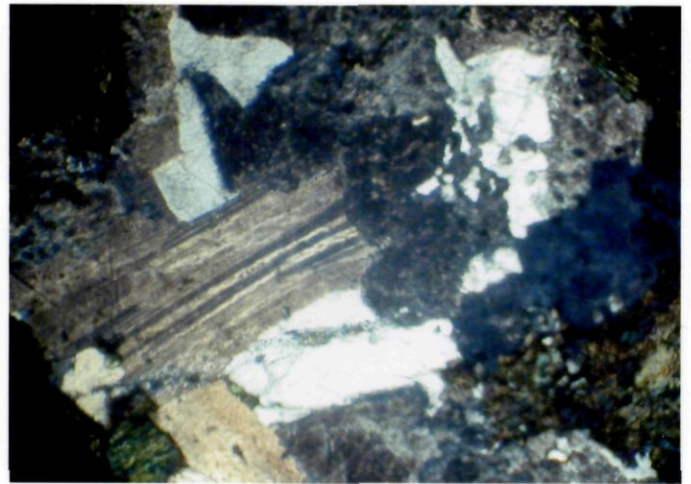


Plate 1 d, fov 4 mm, 154B ppl view of same scene

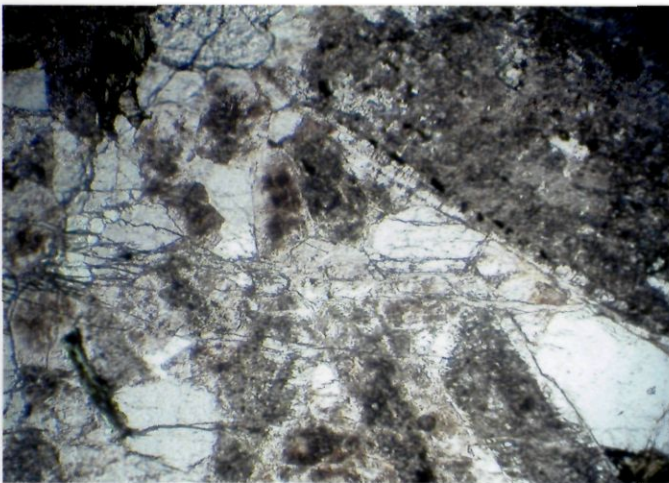


Plate 1e, fov 4 mm, ppl of M28, saussuritized feldspars

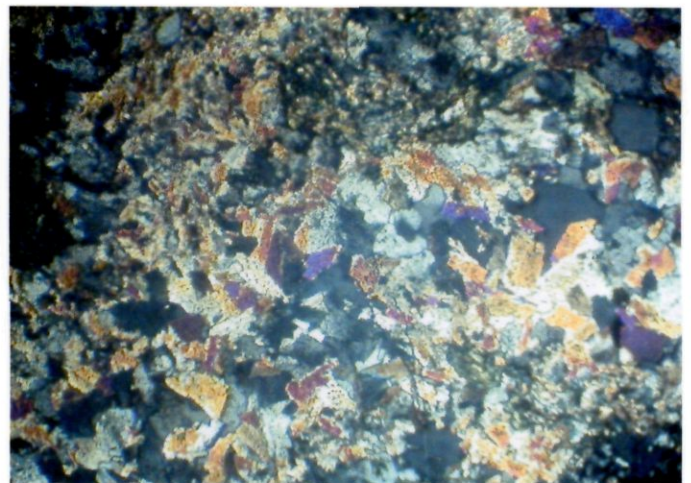


Plate 1f, fov 4 mm, xpl, 151 prehnite recrystallization.

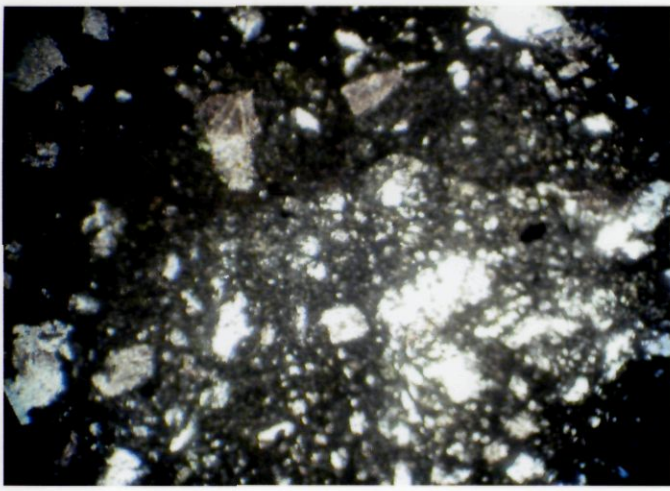


Plate 2a, fov 4 mm, cataclasite vein in 154B

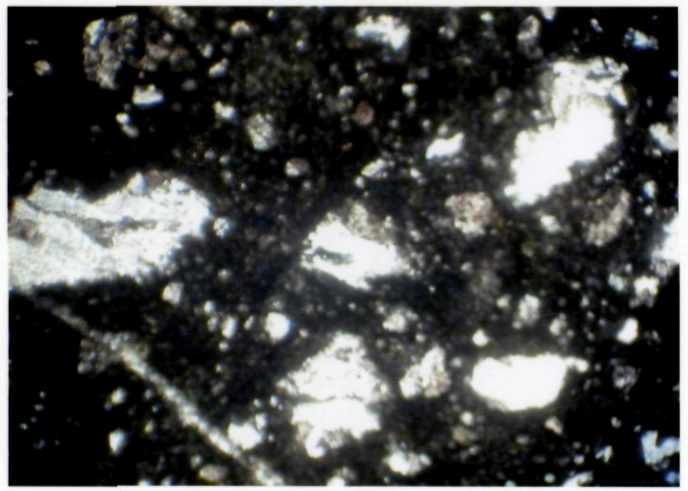


Plate 2b, fov 4mm, ppl, cataclasite vein in 154B

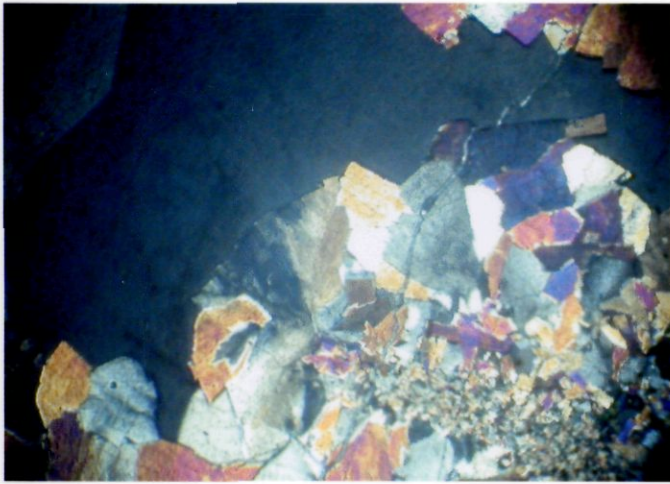


Plate 2c, fov 4 mm, xpl, prehnite quartz vein in 153



Plate 2d, fov 4 mm, ppl Vein cutting granitoid (138)

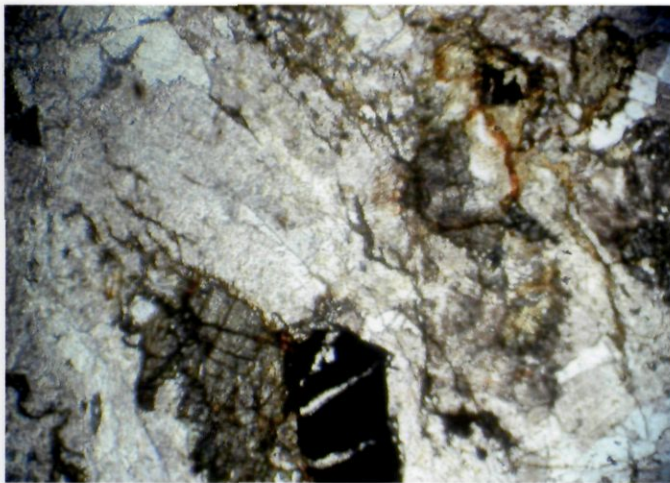


Plate 2e fov 4 mm, ppl, broken crystals in 138

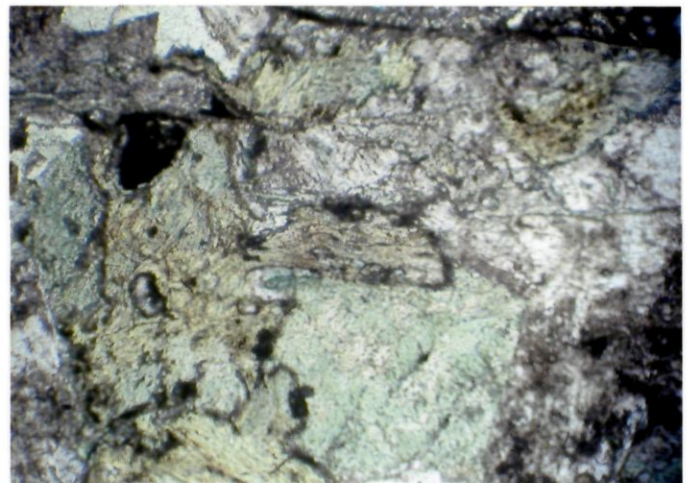


Plate 2f, fov 4 mm, ppl, broken and veined mafics, 138.

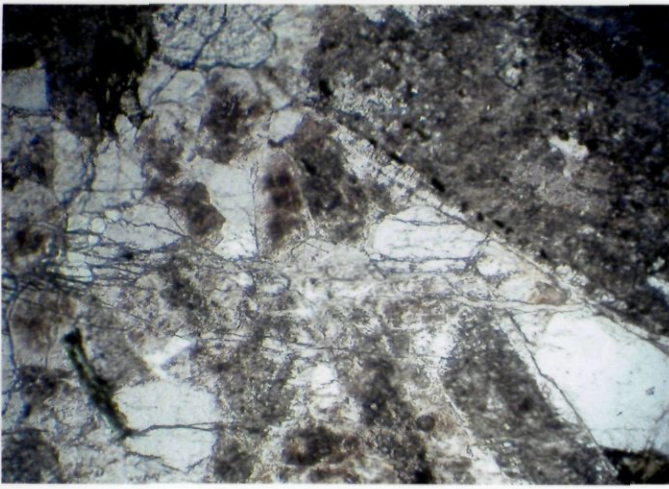


Plate 3a, fov 4 mm, ppl, granodiorite (M28)

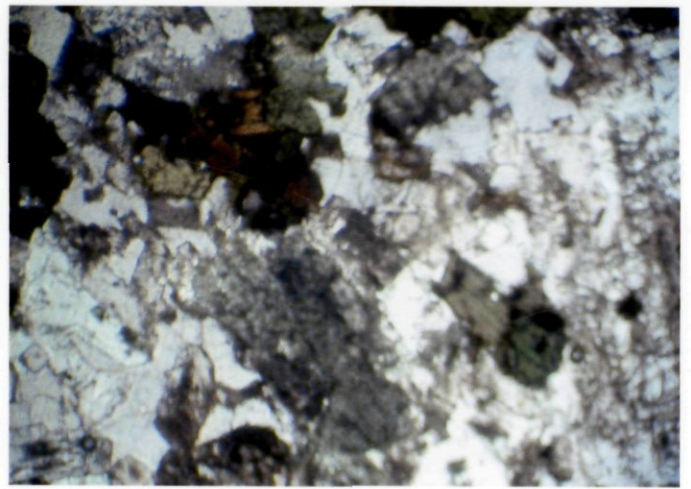


Plate 3b fov 4 mm, ppl, granodiorite 159

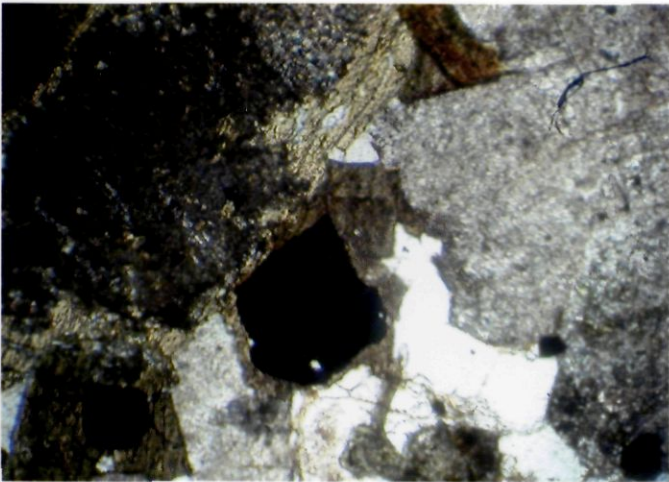


Plate 3c, fov 4 mm, ppl, mafic clump in quartz diorite 149A

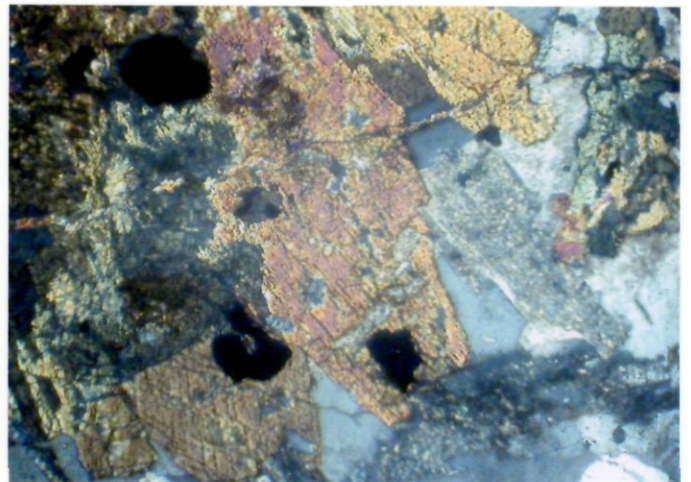


Plate 3d, fov 4 mm, xpl, quartz diorite 149A

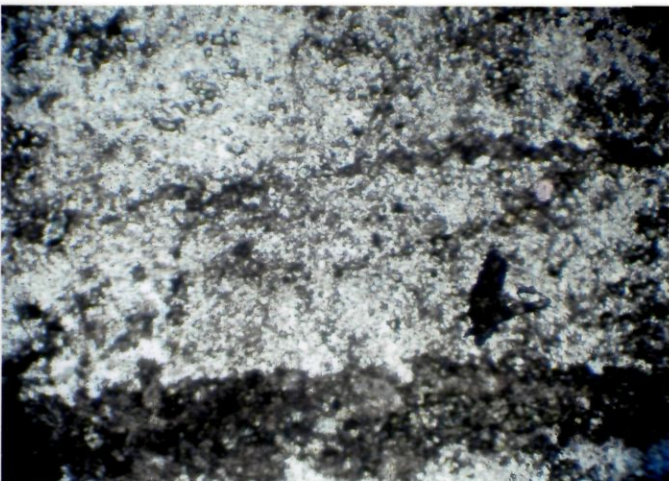


Plate 3e, fov 4 mm, ppl, layers in Parsons Bay siltstone 160

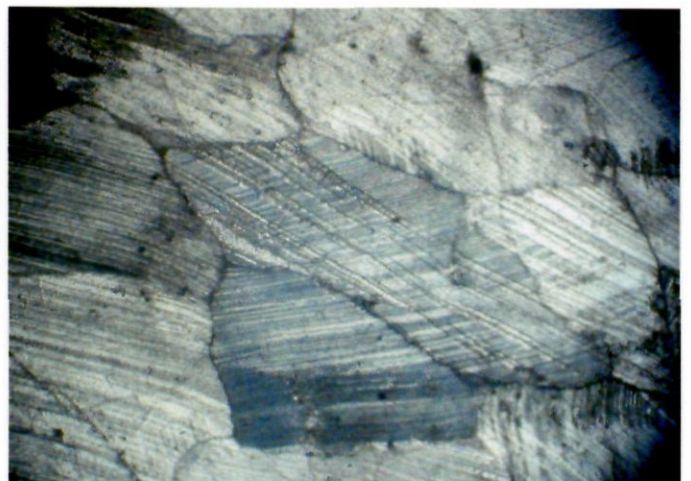


Plate 3f, fov 4 mm, xpl, cleaved deformed marble M27

Author's qualifications

I, Mikkel Schau

have been a rock hound, prospector and geologist for over 50 years. My mineral exploration experience has been with Shell, Texas Gulf Sulfur, Kennco, Geophoto, Cogema and several 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 13 years I have prospected and mapped in Nunavut, Nunavik, Yukon, Ontario and BC.

I reside at 1007 Barkway Terrace, Brentwood Bay, BC, V8M 1A4

My formal education is that of a geologist, I graduated with an honours B.Sc. in 1964 and Ph.D. in Geology in 1969, both, from UBC.

I am a P.Geol. licensed (L895) in Nunavut and NT, and a P.Geol. (25977) in BC and Ontario (1047). I am currently a BC Free Miner, # 142134.

I have 100% interest in the claims in question.

I am the author of the report entitled "ASSESSMENT REPORT * Part 2: On Alteration in southern part of KRINGLE-Consolidated Claim Group, Nanaimo Mining District " and dated July 26, 2008.

Signed

Mikkel Schau, P. Geo.
(25977)

, dated July 26, 2008

Appendices

Appendix A; specimen descriptions and table of selected assay values

	Mo ppm	Cu ppm	Au ppb
Location 194 Thin section N- 9 KN194B 331718 2 cm prehnite vein in granodiorite	<1	138	5.3
Location 195 Thin section N-10 KN195B 331717 relatively fresh diorite w/ thin coxcomb vein	<1	221	0.2
Location 196 196 previously visited quarry, intersecting fault zones, altered grnd			
Thin section N- 11 KN196B 331721 cataclasite and white veins	<1	64	0.3
Thin section N- 13 KN196E 331719 cataclastic breccia with sericite matrix	3.3	184	0.5
Location 307 Thin section N- 30 307 331716 Amphibole pegmatite	<1	45	7.3

Itemized cost statement

Wages

June 2: ½ day; September 25: ½ day	September 26: 1 day	September 28: ½ day	21/2 days
Mikkel Schau @ 500/day	1250		
Alec Tebbutt @ 250/day	625	\$1875.00	

R and Board (in Sayward)

3 days 2 people	\$ 472.00
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Travel

shared with other projects	\$211.00
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Analytical Services

Acme A704672 shared with other projects

5 prepare rock @ 5.58	27.90
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5 Group 1F-MS @ 18.18	90.90
-----------------------	-------

1 diskette	1.50
------------	------

GST 6%	7.19
--------	------

total	\$ 126.99
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Petrographic analysis

25 TS @ 125	\$3125.00
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Density

11 @ 5	\$ 55.00
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Conductivity.

23 @ 2	\$ 46.00
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Magnetic susceptibility

25 locations @ 6/location	\$ 150.00
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Report Writing

\$500.00

TOTAL	\$ 6550.99
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Appendix B Petrography

SAMPLE ID 159 UTM 709238, 5577972 *P

NAME Heterogeneous granodiorite

HANDSPECIMEN Fine grained granodiorite with 1 mm fp and 1 mm mafic 20% w/ scarce 7 mm mafic clusters with feldspar centers. Mainly greyish white with local pinkish patches.

Magnetism 2 Not Conductivity Specific gravity 2.85

THIN SECTION BX-15

Plagioclase 50% euhedral to subhedral, in part with normal zoning and some oscillatory zoning between An₂₀-An₇₀ but average composition is about An₄₀₋₅₀. Rims of albite often rim grains. Cores are replaced by saussurite with possibly very fine grained pumpellyite. Grains may include hb

Quartz 20% occurs in clear anhedral grains as well as interstitial masses, sometimes with small areas of graphic textured intergrowth with clay altered potash feldspar.

Hb 10% Khaki 1 mm or so subhedral, locally twinned with cores of altered but locally lamellar twinned pyroxene and crowded with opagues

Biotite 10% subhedral brown beige grains 1 mm or so show some opagues as inclusions

Pyroxene 2% 0.5 mm fragments in amphibole coating.

Opague grains 2% 0.1 mm rounded grains

Titanite grains are small and accessory

Scattered apatite

Texture;

Mafic minerals cluster around plagioclase crystals showing sub ophitic textures
Quartz and alkaline feldspar include plagioclase, hornblende, biotite and opagues.

Alteration

Pumpellyite/saussurite replacing more calcic plagioclase, and hornblende replacing pyroxene. The biotite is relatively fresh and chlorite scarce. Clays have replaced a low relief feldspar interpreted to be K-spar.

Comment: The clusters of mafic minerals and plagioclase are reminiscent of gabbro textures. The rock could well be a mixture of a quartz albite biotite rich magma with a traditional gabbro magma.

Would appear to be affected by low grade regional metamorphism.

SAMPLE ID M28 UTM 709414/5577415 *P

NAME granodiorite

HANDSPECIMEN sample from near contact with limestone. Fine grained (1-2 mm) fp and 20% mafics,

scattered larger fp up to 1 cm, Cut by one small wall paper vein.

Magnetism 2 Conductivity none density 2.80

THIN SECTION BX-24

Plagioclase 50% mainly 1 mm euhedral to subhedral, in part with normal zoning and some oscillatory zoning the core is mainly replaced by saussurite with possibly very fine grained pumpellyite Rims of albite often rim grains. Local clustering of grains, up to 4 mm of several plagioclase crystals only.

...
Quartz 20% occurs in clear anhedral grains as well as interstitial masses, sometimes with small areas of graphic textured intergrowth with clay altered potash feldspar.

Potash feldspar? 10% brown clay stained very low relief feldspar in anhedral masses (some show albite lamellae and cant be Kspar, but other grains are twin free and show very low negative relief

Biotite 10 % subhedral brown beige grains 1 mm or so show some opagues as inclusions variably altered to chlorite with grey birrefringence and opagues

Hornblende 5% Khaki to pale green 3 mm or so subhedral, possibly two amphiboles, the greener one along with opagues replacing the browner amphibole

Opague grains 4% 0.1 mm rounded grains

Titanite grains are small and accessory

Texture;

Heterogeneous granodiorite with variable grain sizes over short distances.

Quartz and alkaline feldspar include plagioclase, hornblende, biotite and opagues.

Alteration

Pumpellyite/saussurite replacing more calcic plagioclase, The biotite is replaced by chlorite and opagues. Hornblende is replaced by actinolite and opagues in a rim. Clays have replaced low relief feldspar some of which have albite lamellae but others could well be K-spar.

Veins:

Aa 0.2 mm thick prehnite vein is cut by a 0.1 mm thick vein of a fibrous zeolite?

Would appear to be affected by low grade regional metamorphism.

SAMPLE ID 138 UTM 138 710055 5577754 #[TS]

NAME Disrupted and altered quartz diorite

HANDSPECIMEN medium grained speckled quartz diorite cut by a planar vein 6mm across with a 5 mm wide whitened selvage

magnetism 1 ½ not conductive

THIN SECTION BX-1

Plagioclase with stained clay alteration, especially along cleavage traces, twinned, zoned, euhedral 2 mm across

Mafics disrupted and broken and now largely replaced by chlorite (relic pyroxene, hornblende and biotite)

Biotite is pseudomorphed by chlorite and opagues.

Chlorite alteration well developed near microveins

Veins are slip veins with dark gouge and a variable thickness

1. mm wide prehnite and quartz
2. small fibrous zeolite filled vein, cuts a prehnite vein.

Comment see Plate 2d,e and f

SAMPLE ID 149 UTM 710629 5576185 #[TS]

NAME Quartz diorite

HANDSPECIMEN medium grained speckled quartz diorite with some fp stained a pink colour

magnetism 2 not conductive density 2.88

THIN SECTION BX-7

plagioclase 60%, euhedral, saussuritized and prehnite rplacement, with relic twinning

quartz, 20% occurs in clear anhedral grains as well as interstitial masses
and kspar may form small interstitial masses with the quartz

Green pleochroic hornblende is locally altered to chlorite

and reddish brown biotite, anhedral to subhedral are separate or intimately mixed with hornblende and opagues. It is extensively altered to chlorite and opagues as well.

Minor relict pyroxene is present, included in a coat of amphibole, locally the pyroxene is altered leaving a chlorite core inside hornblende

local apatite prisms noted.

Comment: see plate 3c and d

SAMPLE ID 151 UTM 711094 5575883 #[TS]

NAME Prehnitized quartz diorite

HANDSPECIMEN Veined and brecciated specimen of speckled quartz diorite largely altered to quartz, epidote,

magnetism in altered part 1, in veins nil not conductive

THIN SECTION BX-9 ALTERED

Prehnite 50% sub mm grains has replaced and recrystallized the rock.

Quartz 20% large clear masses among the prehnite

Mafic minerals are now chlorite clay and opagues. Vague outlines suggest a plutonic texture

Comment see plate 1 f.

SAMPLE ID 154B UTM 710730 5576742

NAME Crushed granodiorite

HANDSPECIMEN pink stained medium grained speckled quartz diorite with a cm wide quartz epidote vein

magnetism 2 not conductive

THIN SECTION BX-12 CRUSHED

Plagioclase 50% is stained by a clay alteration , with twinning and euhedral in shape.

Quartz and orthoclase? 30% associated dark stained low refractive index non twinned mineral is potash feldspar. Locally contact with quartz is wormy.

Green hornblende 10% with locally well developed cleavage

Relic Px in hornblende

Chlorite and opagues 10% probably in part after biotite

Rock has many small fractures

Cataclastic Vein/fracture 5 mm across contains ½ mm fragments of quartz and rarer feldspar set in a black matrix.

Comment See plate 1c and d, as well as 2a and b.

SAMPLE ID 142 UTM 710356 5577332

NAME Fresh quartz diorite

HANDSPECIMEN Speckled Medium grained quartz diorite with clumps of .5 to 1 cm clusters of dark mafics set in white feldpars.

Magnetism 2 1/2 not conductive density 3.03

THIN SECTION BX-3 FRESH

Plagioclase 65%, is generally fresh, euhedral, in part with normal zoning and some oscillatory zoning average composition is An 40-50. Grains may include hb and are quite fresh

Quartz 3% small amounts in interstitial gaps

Hornblende 25% mainly beige Hornblende overgrown by green pleochroic amphibole (actinolite?) Grains are twinned, show a basal parting, and may include small grains of plagioclase.

Pyroxene 5% as high relief cores in hornblende and as small altered grains altered to actinolite? Largely near biotite grains.

Biotite 10% pleochroic brown, 1 mm - locally altered to chlorite and opagues. Chlorite rims the grains.

Opagues 5% are present as .2 mm blebs near chlorite alteration and also as .3 mm grains scattered through the slide.

Titanite grains are rimmed by chlorite.

Veins

Chlorite veinlets .1 mm across are throughout rock.

The rock is a quartz diorite. The plagioclases are euhedral and probably were in large part crystallized first. The hornblende biotite and pyroxene titanite and opages show textures that suggest roughly coeval crystallization. Later alteration includes rimming of mafics by actinolite and chlorite and with a concomitant secondary release of opagues.

SAMPLE ID 307 UTM 709250 5577800

NAME Amphible pegmatite

HANDSPECIMEN Amphibole pegmatite, amphiboles decimeters long in outcrop.

magnetism nil, not conductive

THIN SECTION BX-40

Mineralogy

quartz clear grains

feldspar both albite (twinned) and kspar (not twinned) form a large part of this rock
some grains of Kspar? 2 cm across Quartz and feldspars locally intimately
intergrown.

2 cm long Amphiboles are brownish purple and are probably a less common form.

Zircon are locally seen. (the chemical analysis indicates a lot of Zr in this rock.

Comment Would be a candidate for an age determination.

SAMPLE ID KN196B UTM 710356, 5577332,

NAME Broken altered plutonic rock, part of section mainly a vein

HANDSPECIMEN

magnetism ½ not conductive

assay 331721

THIN SECTION N-11

Cataclastic granodiorite with feldspar and quartz grains floating in a black very fine grained matrix. One fragment of biotite pseudomorphed by chlorite and mainly opagus was noted
Mafic fragments in the less disrupted part of the rock are chloritized, feldspar are locally prehnitized but still retain twinning

SAMPLE ID KN194A UTM 710967, 5574265 [TS, A, B]{@,A}_

NAME Grey Granodiorite

HANDSPECIMEN A speckled granodiorite with mafic clusters a cm or so across. Feldspar cleavage faces flask, .4 mm long.

Magnetism 2 not conductive density 3.01

THIN SECTION N-8 FRESH

Plagioclase 40% relatively fresh twinned, local patches are replaced by small grains of prehnite.

quartz 15% variable sizes of clear grains. Locally interstitial.

graphic granite 10% in interstices

hornblende 30% the beige type being overgrown by a green pleochroic variety. These clusters also contain relic pyroxene. The clusters are up to 4 mm across.

Scarce biotite 5% and opagues, locally chloritised, saw one grain with a prehnite bowtie replacing part of it.

Apatite is present, near biotite

SAMPLE ID KN196D UTM 711199, 5575801

NAME Granodiorite

HANDSPECIMEN fine grained salmon coloured granodiorite with 1 mm fp and mafics CI about 15, a greyish tinge to hs.

Magnetism 1 not conductive density 2.98

THIN SECTION N-12

QD

Plagioclase 60% brown clay stained altered feldspar,

Quartz 20% clear grains and interstitial material,

Potash feldspar is locally present also as stained grains but with no twinning.

Hornblende 15% and local Biotite largely replaced by chlorite

Titanite and Apatite were noted as accessories

veins .5 mm wide with prehnite

SAMPLE ID 144 UTM 711789 5576569 #[TSL]

NAME Quartz diorite

HANDSPECIMEN Dark grey speckled quartz diorite with 30% 2-6 mm darker clumps of mafics set in 2-4 mm sized fresh feldspars (cleavages still preserved)

Magnetism 2 ½ not conductive density 3.11

THIN SECTION BX-5 FRESH

Plagioclase 65%, is generally fresh, euhedral, in part with normal zoning and some oscillatory zoning average composition is An 40-50. Grains may include hb and are quite fresh

Quartz 3% small amounts in interstitial gaps

Hornblende 25% mainly beige Hb overgrown by green pleochroic amphibole (actinolite?) Grains are twinned, show a basal parting, and may include small grains of plagioclase.

Pyroxene 5% as high relief cores in hornblende and as small altered grains altered to actinolite? Largely near biotite grains.

Biotite 10% pleochroic brown locally green, 1 mm - locally altered to chlorite and opagues. Chlorite rims the grains.

Opagues 5% are present as .2 mm blebs near chlorite alteration and also as .3 mm grains scattered through the slide.

Titanite grains are rimmed by chlorite.

The rock is a quartz diorite. The plagioclases are euhedral and probably were in large part crystallized first. The hornblende biotite and pyroxene titanite and opages show textures that suggest roughly coeval crystallization. Later alteration includes rimming of mafics by actinolite and chlorite and with a concomitant secondary release of opagues.

SAMPLE ID 147 UTM 710464 5576889 #[TSL]

NAME granodiorite

HANDSPECIMEN medium grained speckled granodiorite

magnetism 1 ½ not conductive density 2.77

THIN SECTION BX-6

plagioclase 50% euhedral, twinned, locally saussuritized and locally in clusters with dark minerals

Graphic granite 23% with potash feldspar well developed, but stained deep brown by clay alteration. Good graphic texture

Amphibole 20% Both beige hornblende and later overgrowing green hornblende are present.
Local biotite 7% brown pleochroic

SAMPLE ID 150A UTM 710795 5576078

NAME Prehnitised Granodiorite

HANDSPECIMEN heterogeneous fine grained granodiorite with a 2 mm quartz vein

magnetism 2 not conductive

THIN SECTION BX-8

feldspar largely replaced by prehnite, but relic twinning is preserved, fp is probably albite
quartz 20%
some dark stained non twinned low refractive index material is probably potash feldspar (orthoclase)
lots of prehnite veins and quartz
chlorite altered mafics

alteration

prehnite with locally developed bowtie structure, lots of quartz

SAMPLE ID 142 UTM 710356, 5577332,

HANDSPECIMEN Speckled Medium grained quartz diorite with clumps of .5 to 1 cm clusters of dark mafics set in white feldspars.

Magnetism 2 1/2 not conductive density 3.03

THIN SECTION BX-3 FRESH

Plagioclase 65%, is generally fresh, euhedral, in part with normal zoning and some oscillatory zoning average composition is An 40-50. Grains may include hb and are quite fresh

Quartz 3% small amounts in interstitial gaps

graphic granite

Hornblende 25% mainly beige Hb overgrown by green pleochroic amphibole (actinolite?) Grains are twinned, show a basal parting, and may include small grains of plagioclase.

Pyroxene 5% as high relief cores in hornblende and as small altered grains altered to actinolite? Largely near biotite grains.

Biotite 10% pleochroic brown, 1 mm - locally altered to chlorite and opaques. Chlorite rims the grains.

Opagues 5% are present as .2 mm blebs near chlorite alteration and also as .3 mm grains scattered through the slide.

Titanite grains are rimmed by chlorite.

Veins

Chlorite veinlets are throughout rock.

The rock is a quartz diorite. The plagioclases are euhedral and probably were in large part crystallized first. The hornblende biotite and pyroxene titanite and opages show textures that suggest roughly coeval crystallization. Later alteration includes rimming of mafics by actinolite and chlorite and with a concomitant secondary release of opagues.

SAMPLE ID 153 UTM 711043 5576119

NAME Veined granodiorite

HANDSPECIMEN finegrained granodiorite cut by a 7 mm thick planar vein with a compound structure and a thin selvage

Magnetism ½ not conductive

THIN SECTION BX-11 REXALLISED

plagioclase rexallized with pumpellyite?? zoisite albite relic feldspar shapes

clear quartz

prehnite with bowtie structure, pumpellyite replacing feldspar

chlorite replaces mafics

VEIN

Prehnite with quartz center

Comment See plate 2c

SAMPLE ID 163 UTM 707239 5579341 #[TS]

NAME Diopside marble (Quatsino Limestone)

HANDSPECIMEN Very fine grained grey limestone Local ½ mm cleavage spots

Magnetism none Not conductive Density 2.71

THIN SECTION BX-17

Calcite 95% elongate calcite grains, .5 to 2 mm in size, defines a crude foliation to rock. Cleavage is well developed in each grain, Fishtail grains with good cleavage are noted. calcite fine grained

Diopside 5% much finer grains arranged along the foliation. A few of the larger grains are themselves elongate along the foliation.

Foliation is not obvious in handspecimens

This is a dynamically metamorphosed limestone.

SAMPLE ID KN195B UTM 711197, 5575307 [TS, B]{@ B}_

NAME Altered quartz diorite

HANDSPECIMEN fine grained speckled quartz diorite with a thin 1mm wide quartz epidote vein.(possibly clayey?)

Magnetism 1 ½ not conductive density 2.77

Assay 331717

THIN SECTION N-10 (thick section)

Feldspars 60%, broken brown stained , not deeply altered but crystals are broken disrupted broken fp with quartz 15% interstitial

hornblende 20% green pleochroic with local chlorite rims

biotite and opagues 5% altered to chlorite

veins cut through half of section: prehnite rich alteration is at edge of vein.

A broken quartz diorite downgraded and sealed by prehnite veins.

SAMPLE ID 155 UTM 709931 5577662

NAME Quartz diorite

HANDSPECIMEN medium grained dark coloured diorite

Magnetism 2 not conductive density 2.94

THIN SECTION BX 13

Plagioclase 65 % about 3 to 5 mm, generally fresh, euhedral, mainly with normal zoning and average composition about An 40-50.. Grains may include hornblende Texture is subophitic. Also small grains in Hornblende.

Quartz 5% in anhedral interstitial grains.

"Hornblende" 25% to 3 mm interstitial to plagioclase, may include some plagioclase grains. The amphibole is not very pleochroic, mainly in very pale beige colours, It is locally twinned, and many grains show a closely basal parting. Extinction angles against the prismatic cleavage are about 30-35 degrees. Contains inclusions of higher relief pyroxenes.

Actinolite 5% overgrown rims on above hornblende.

Biotite 5% 1 mm grains, pleochroic in beige to deep brown, replaced by grey birefringent chlorite,

Pyroxene inclusions 2% about 1 mm or less in size, mainly in hornblende, but also in a few biotites. These are largely replaced by chlorite and brown serpentine like material.

Opagues (magnetite) 4% about .5mm especially as blebs near biotite and as scattered blebs

Accessory green tourmaline and scattered apatite prisms near the mafic minerals..

Veins

Lacy network of very thin chlorite veinlets cut most minerals.

SAMPLE ID M27 UTM 709225 5577337 [TS]

NAME Contact marble

HANDSPECIMEN Light grey, fine grained, slightly mottled, limestone/marble near contact with M28

Magnetism none not conductive density 2.78

THIN SECTION BX-23

Mineralogy

Calcite, 99%, uniform 2-3 mm across with well developed cleavage, locally bent

Comment

Well recrystallized limestone, now marble probably metamorphosed by nearby M28.

SAMPLE ID 139 UTM 710019 5577761

NAME Relatively fresh speckled quartz diorite

HANDSPECIMEN medium grained speckled quartz diorite

Magnetism 2 not conductive

THIN SECTION BX-2 FRESH

plagioclase

plagioclase 60%, 3 to 6 mm, is generally fresh, euhedral, in part with normal zoning with an average composition of about An 40-50. grains may include hb and is altered to saussurite sericite and some cases larger flakes of muscovite

quartz, the next most abundant mineral occurs in clear anhedral grains as well as interstitial masses

a
Kspars form small interstitial masses filling spaces between euhedral to somewhat corroded plagioclase and biotite (other mafics, px cores

Clusters of

"hornblende" with basal parting, minor pleochroism and maximum extinction 34 degrees.
higher relief higher birefringence pyroxene enclosed in amphibole
brown pleochroic biotite and
opaque grains
are partially rimmed with green actinolitic amphibole and chlorite.

SAMPLE ID KN194B UTM 710967, 5574265

NAME broken quartz diorite

HANDSPECIMEN medium grained speckled quartz diorite with a cm wide quartz epidote vein and a very narrow foliated selvage

magnetism host 1/2 vein nil vein and host not conductive density

assay 331718

THIN SECTION N-9

Feldspars 60%, broken brown stained, not deeply altered but crystals are broken disrupted broken fp with quartz 15% interstitial

hornblende 20% green pleochroic with local twinning

biotite and opaques 5%

local chlorite alteration

sThick prehnite vein cuts through half of section, width is in excess of 2 cm. A selvage of prehnite rich alteration is at edge of vein.

A broken quartz diorite downgraded and sealed by prehnite veins.

Vein
prehnite and quartz +

SAMPLE ID 143 UTM 710506 5577677 *P

NAME Fresh diorite

HANDSPECIMEN greyish medium grained speckled diorite.

magnetism 2 1/2 not conductive

THIN SECTION BX-4 FRESH

Plagioclase 65 % about 2-3 mm, generally fresh, euhedral, well twinned, mainly with normal zoning and average composition about An 40-50.. Grains may include hornblende Texture is subophitic

"Hornblende" 25% to 5 mm interstitial to plagioclase, may include some plagioclase grains. The amphibole

50/55

is not very pleochroic, mainly in very pale beige colours, It is locally twinned, and many grains show a closely basal parting. Extinction angles against the prismatic cleavage are about 30-35 degrees. Contains inclusions of higher relief pyroxenes.

Biotite 5% 1 mm grains, mildly pleochroic in beiges, with prehnite along some cleavage planes, and local rims now replaced by grey birefringent chlorite,

Pyroxene inclusions 2% about 1 mm or less in size, mainly in hornblende, but also in a few biotites.

Opagues (magnetite) 2% about .5mm especially as blebs near biotite

Accessory titanite noted near opagues.

Veins

Lacy network of very thin chlorite veinlets cut most minerals.

No quartz recognized.

Texture is reminiscent of a gabbroic texture, with plagioclase laths and interstitial mafics. The main difference is that mafic is hornblende and the plagioclase appears to be mainly andesine.

quartz and feldspar include plagioclase, hornblende, biotite and opagues.

SAMPLE ID 160 UTM 709142 5578073

NAME Parson's Bay Formation hornfelsed calcic siltstone.

HANDSPECIMEN Fine grained dark rock

magnetism ½ not conductive density

THIN SECTION BX-16

Quartz 50% very fine grained (.1mm or less) anhedral grains showing recrystallised textures containing various amounts of clinozoisite disposed in layers (relic bedding). Some layers are darker, presumably from graphite staining mineral grains.

Clinozoisite 50% very fine grained (.1mm or less) anhedral grains showing recrystallised textures layers are about 3 to 8 mm apart and about a mm thick.

Veins

Prehnite veins .2 mm thick cut the bedding

SAMPLE ID 152 UTM 711124 5575977 #[TS]

NAME broken quartz diorite downgraded and sealed by prehnite veins.

HANDSPECIMEN deformed medium grained speckled quartz diorite with clay and chlorite rich regions

magnetism 2 not conductive

51/55

THIN SECTION BX-10

Feldspars 60%, broken stained , not deply altered but crystals are broken disrupted broken fp with lots of quartz 15% interstitial

hornblende 20% green pleochroic with local twinning

biotite and opagues 5%

local chlorite alteration

small prehnite veins seal fractures in feldspar.

A broken quartz diorite downgraded and sealed by prehnite veins.

Appendix C: Magnetic Susceptibility of selected sites

ID	UTME	UTMN	MS in Six10 ⁻³ units
"KR07AT137",	710072,	5577754,"	,35.5, 32.8, 33.8
"KR07AT138",	710055,	5577754,	27.6, 19.6, 28.7, 15.7, 27.8
"KR07AT139",	710019,	5577761	35.6, 36.4, 38.1
"KR07AT140",	710129,	5577789	46.3, 41.6, 45.7
"KR07AT141",	710103,	5577779,	41.2, 55.1, 56.9
"KR07AT142",	710356,	5577332,	24.7, 23.9, 35.5, 31.4, 17.8
"KR07AT143",	710506,	5577677,	,43.8, 39.8, 41.8
"KR07AT144",	711789,	5576569,	32.1, 29.6, 24.8
"KR07AT145",	711554,	5576647,	31.7, 30.8, 33.5
"KR07AT147",	710464,	5576889,	15, 18.1, 19.7
"KR07AT49",	710629,	5576185,	15.4, 15.1, 14.3
"KR07AT150",	710795,	5576078,	
"in place in creek at Wpt UTM",			16.2, 16.5, 16.2
"in creek near veining",			4.97, 5.52, 5.03
"near rock sample but off vein",			1.23, 1.07, 2.05
"on vein",			0.73, 1.12, 1.12
"pinkish 0.5m off vein",			22.6, 21.4, 24
"KR07AT151",	711094,	5575883,"	,27.1, 27.5, 30.3
"KR07AT152",	711124,	5575977,	19.1, 17, 21.6
"KR07AT153",	711043,	5576119,	
"on pink grnd",			10.2, 10.3, 7.76
"on greenish black, veined surface",			5.44, 4.43, 6.5
"on epidote",			0.14, 0.48, 0.77
"KR07AT154",	710730,	5576742,	
pink grnd			8.43, 8.24, 8.05
on flat white vein surface",			0.41, 0.41, 0.4

"KR07AT155",	709931,	5577662	45, 37.8, 42
"KR07AT156",	709169,	5577377	-0.01, -0.06, -0.27
"KR07AT157",	709774,	5577944,	50.4, 46.1, 56.1
"KR07AT158", on pink granodiorite on grey granodiorite?	709693,	5578001 ",	9.65, 9.58, 9.35 10.7, 12.6, 12.9
"KR07AT159",	709238,	5577972	13.2, 13.6, 13.1
KR07AT160",	709142,	5578073	0.66, 0.29, 0.74
KR07AT161",	708533,	5578361,	0.65, 0.76, 0.64
"KR07AT162",	707740,	5578904,	1.45, 1, 1.35
"KR07AT163",	707239,	5579341,	-0.04, 0.02, 0.0

Appendix D Analytical Certificates

Acme certificate A704672



GEOCHEMICAL ANALYSIS CERTIFICATE

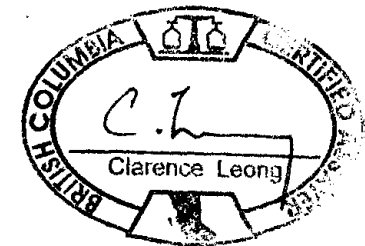
Schau, Mikkel File # A704672 (a)

1007 Barkway Terrace, Brentwood Bay BC V8M 1A4 Submitted by: Mikkel Schau

Table with columns: SAMPLE#, Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Au, Th, Sr, Cd, Sb, Bi, V, Ca, P, La, Cr, Mg, Ba, Tl, B, Al, Na, K, W, Sc, Ti, S, Hg, Se, Te, Ga. Rows include sample IDs like G-1, RE 331710, 331715, and STANDARD DS7.

GROUP 1F - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP/ES & MS. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY. - SAMPLE TYPE: ROCK R150 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data 1 FA DATE RECEIVED: JUL 9 2007 DATE REPORT MAILED: July 25/07





GEOCHEMICAL ANALYSIS CERTIFICATE



Schau, Mikkel File # A704672 (b)

1007 Barkway Terrace, Brentwood Bay BC V8M 1A6 Submitted by: Mikkel Schau

SAMPLE#	Cs ppm	Ge ppm	Hf ppm	Nb ppm	Rb ppm	Sn ppm	Ta ppm	Zr ppm	Y ppm	Ce ppm	In ppm	Re ppb	Be ppm	Li ppm	Pd ppb	Pt ppb
G-1	2.96	.1	.10	.32	39.7	.6	<.05	1.7	4.98	17.7	.02	<1	.4	27.5	<10	<2
331707	.40	<.1	.04	.03	9.1	.1	<.05	1.2	2.21	4.5	<.02	2	.1	22.4	<10	<2
331709	1.07	<.1	.03	.03	13.6	.1	<.05	1.2	2.12	5.1	<.02	1	.1	38.5	<10	<2
331709	.52	.1	.02	.08	5.6	.1	<.05	.6	4.29	14.8	<.02	<1	.2	18.3	<10	<2
331710	.83	.1	.33	.21	2.1	.3	<.05	10.5	8.23	6.0	<.02	52	.3	1.1	<10	<2
RE 331710	.80	.1	.36	.25	2.1	.3	<.05	11.2	8.32	6.0	<.02	53	.5	1.0	<10	<2
331711	.93	.1	.05	.02	17.3	.2	<.05	2.0	1.93	4.0	<.02	1	.2	9.9	<10	<2
331712	.16	.2	.14	.04	1.4	.2	<.05	3.6	6.72	12.7	.02	<1	.2	12.0	<10	<2
331713	.03	.2	.09	.04	1.3	.3	<.05	2.6	7.60	13.6	<.02	<1	.2	3.4	<10	<2
331714	.05	.1	.18	.07	1.9	.5	<.05	4.7	18.30	37.1	.02	1	.2	12.6	<10	2
331715	.25	.1	.05	.02	3.8	.2	<.05	1.4	3.32	6.9	<.02	<1	.2	4.8	<10	2
331716	.04	.1	.29	.06	2.5	.4	<.05	7.8	5.99	19.3	<.02	<1	.2	3.0	<10	<2
331717	.12	.2	.52	.26	2.8	.8	<.05	8.7	13.47	29.0	.02	<1	.5	5.0	<10	<2
331718	.10	.5	.12	.05	1.3	.8	<.05	3.6	14.63	26.7	.03	1	1.1	8.5	<10	<2
331719	.07	.3	.20	.17	.9	.9	<.05	7.2	21.98	40.7	.02	1	.7	3.4	<10	<2
331720	.44	.1	.69	.07	1.5	.4	<.05	12.6	7.44	32.3	<.02	2	2.0	.3	<10	<2
331721	.04	1.5	.15	.08	.2	.9	<.05	5.5	15.62	22.8	.02	<1	2.5	1.7	<10	<2
331722	.30	.1	.04	.02	4.1	.3	<.05	1.6	3.86	7.3	<.02	<1	.1	4.5	11	4
331723	1.33	.1	.04	.02	4.9	.3	<.05	1.3	5.52	11.1	.02	<1	.4	8.6	<10	<2
331724	.01	.4	.12	.05	.1	.3	<.05	3.7	9.55	20.3	<.02	1	.4	4.0	<10	<2
331725	.02	.3	.15	.07	.2	.5	<.05	4.6	17.02	36.8	.02	1	.4	12.6	<10	2
331726	.89	.2	.07	.03	2.7	.3	<.05	2.0	8.48	17.4	<.02	1	.3	8.7	<10	2
331727	.70	<.1	.09	.14	5.1	.2	<.05	1.7	4.23	10.3	<.02	<1	.1	1.7	<10	<2
331728	.73	.4	.21	.08	1.1	3.0	<.05	5.0	7.27	8.1	.25	<1	.4	21.8	<10	2
331729	.38	.4	.03	.09	.2	.7	<.05	.6	4.50	8.7	.09	1	<.1	8.1	<10	<2
331731	2.10	.1	.05	.03	2.0	.2	<.05	2.7	6.75	2.6	<.02	2	.1	8.0	12	3
331732	.15	.2	.05	.13	.7	1.1	<.05	5.8	26.38	31.6	.04	<1	.3	3.9	<10	<2
331733	.39	.2	.17	.06	2.2	.3	<.05	5.6	8.61	9.9	.03	<1	.3	12.4	<10	<2
331734	1.61	.1	.06	.02	1.4	.2	<.05	2.5	5.63	2.2	<.02	<1	.1	6.9	<10	3
STANDARD DS7	6.31	.1	.13	.61	35.2	4.8	<.05	5.6	5.01	37.4	1.66	5	1.8	29.5	63	35

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