GEOLOGICAL & GEOCHEMICAL REPORT
ON THE
KETCHAN PROPERTY
ASPEN GROVE AREA, BRITISH COLUMBIA

PREPARED FOR

MOAG COPPER - GOLD RESOURCES INC.

Latitude 49°44' – 49°55' N; Longitude 120°30' – 120°39' W

By

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FOR MOAG COPPER GOLD RESOURCES INC.

INTRODUCTION

The present report was prepared at the request of Moag Copper-Gold Resources Inc., the owner of the Ketchan Property ("the Property"). It was prepared to satisfy the assessment work requirements on the Property.

The published sources of information consulted for this report are listed under "References". Details of the drilling programs carried out during 2005-2007 were derived from assessment reports by Thomson (2006, 2007). Most of the data on the geology of the Ketchan Property and its surroundings was derived from field mapping and photo-geological interpretation by the author. The MMI geochemical sampling was done under my supervision.

I have carried out more than 60 days of geological and geophysical field work within the area covered by the Property during the past 10 years. It should be pointed out that only the field work and the photo-geological interpretation carried out during the "assessment work period" is included in the Statement of Work.

PROPERTY DESCRIPTION

The Ketchan Property is comprised of 29 unpatented mineral tenures in one block covering an area of 13,563 hectares (135.6 square kilometres. or about 52 square miles). It is located in the Southern Interior of British Columbia, mid-way between the towns of Merritt and Princeton. The approximate centre of the claim group is located at Latitude 49°49', Longitude 120°34'.

TABLE 1

Tenure Number	Owner	Tenure Type	Tenure Sub Type	Map Number	Issue Date	Area (ha)
509139		Mineral	Claim	092H	2005/mar/17	520.534
509142	**Moag Copper Gold**	Mineral	Claim	092H	2005/mar/17	416.588
509148	**Resources Inc.**	Mineral	Claim	092H	2005/mar/17	458.576
515563	**22807**	Mineral	Claim	092H	2005/jun/29	499.391
516069		Mineral	Claim	092H	2005/jul/05	729.005
516070		Mineral	Claim	092H	2005/jul/05	625.125
516083		Mineral	Claim	092H	2005/jul/05	521.827
516085		Mineral	Claim	092H	2005/jul/05	730.186
516110		Mineral	Claim	092H	2005/jul/06	500.084
516114		Mineral	Claim	092H	2005/jul/06	562.792
516118		Mineral	Claim	092H	2005/jul/06	417.254
516122		Mineral	Claim	092H	2005/jul/06	604.729
516123		Mineral	Claim	092H	2005/jul/06	417.036
516125		Mineral	Claim	092H	2005/jul/06	333.518
516126		Mineral	Claim	092H	2005/jul/06	520.991
516127		Mineral	Claim	092H	2005/jul/06	500.942
516128		Mineral	Claim	092H	2005/jul/06	438.329
516129		Mineral	Claim	092H	2005/jul/06	500.724
516131		Mineral	Claim	092H	2005/jul/06	312.728
516132		Mineral	Claim	092H	2005/jul/06	520.968
517479		Mineral	Claim	092H	2005/jul/12	103.976
520089		Mineral	Claim	092H	2005/sep/16	521.41
587682		Mineral	Claim	092H	2008/jul/08	479.9443
587690		Mineral	Claim	092H	2008/jul/08	500.4662
587695		Mineral	Claim	092H	2008/jul/08	417.236
587710		Mineral	Claim	092H	2008/jul/08	521.7656
604539		Mineral	Claim	092H	2009/may/15	499.4768
604540		Mineral	Claim	092H	2009/may/15	520.6207
604542		Mineral	Claim	092H	2009/may/15	333.3806

Surface rights are held by other parties (mainly by Douglas Lake Ranch and Quilchena Cattle Co.) on portions of the Property. The extent of these rights is indicated on Figure 1.

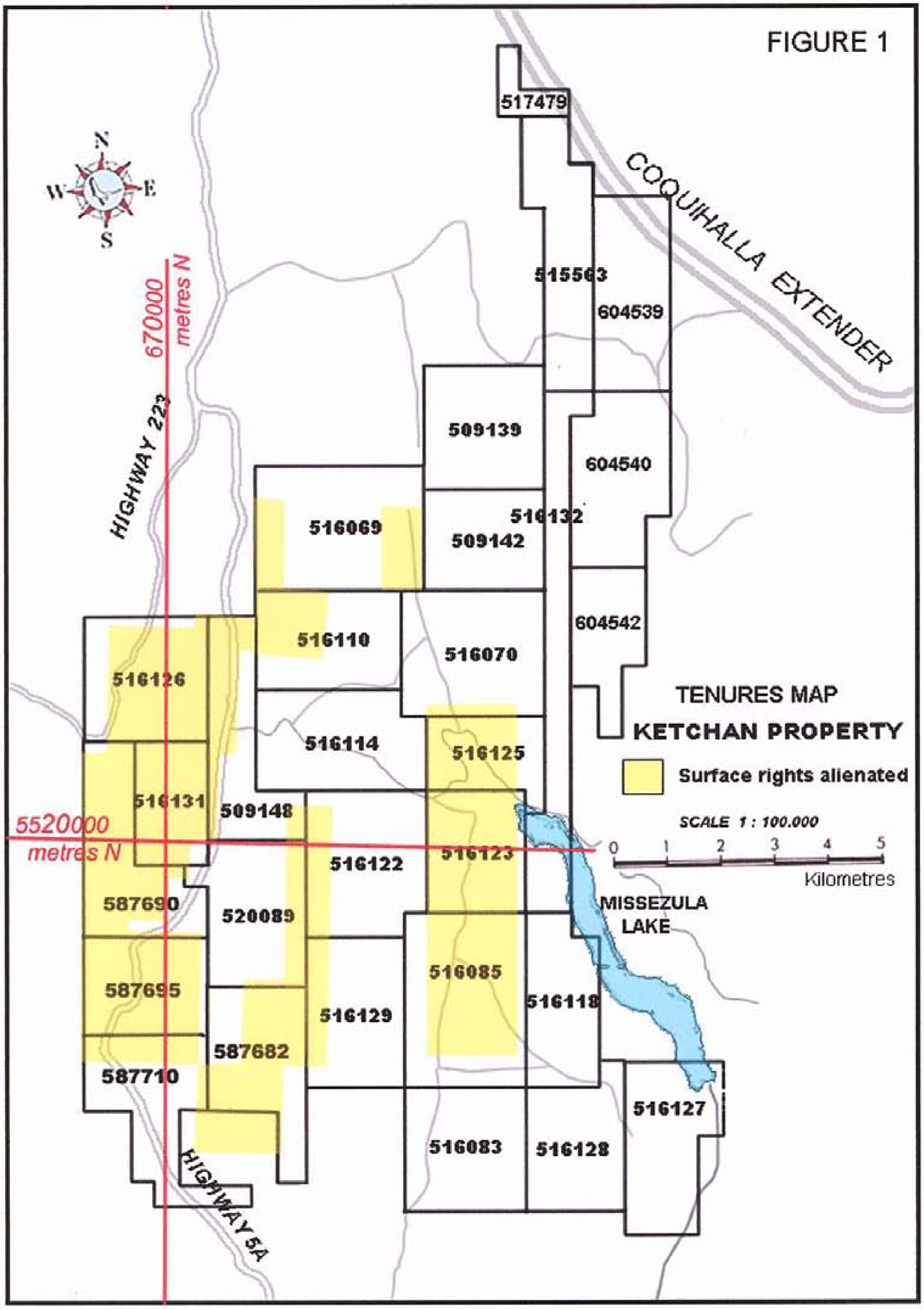
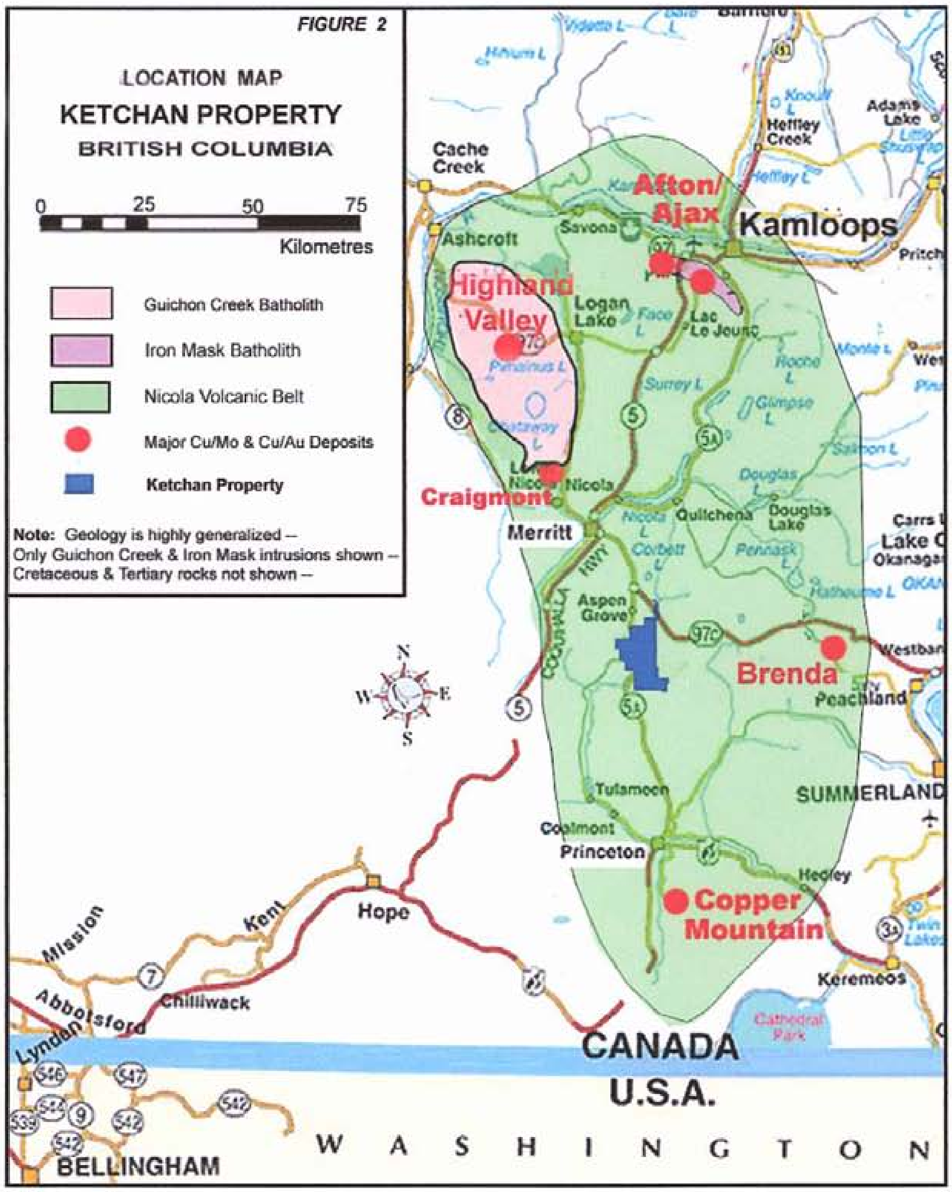


FIGURE 1
TENURES MAP
KETCHAN PROPERTY
Surface rights alienated
SCALE 1 : 100.000
0 1 2 3 4 5
Kilometres
N
S
E
W
COQUIHALLA EXTENDER
HIGHWAY 223
HIGHWAY 5A
MISSEZULA LAKE
670000 metres N
5520000 metres N
517479
515563
604539
509139
604540
516069
509142
516132
604542
516110
516070
516126
516114
516125
516131
509148
516122
516123
587690
520089
516085
587695
516129
516118
587682
587710
516127
516083
516128

LOCATION, ACCESS, & CHARACTER OF THE REGION

The Ketchan Property is located midway between the towns of Merritt and Princeton in south-central British Columbia, about 200 kilometres east of Vancouver. The western part of the Property, south of the hamlet of Aspen Grove, is traversed by Highway 5a and Highway 223. A north-eastern appendage of the Property intersects the Coquihalla Extender, a portion of a freeway that connects the Okanogan Valley with Vancouver, via Merritt. All parts of the Ketchan claims are accessible via a network of gravel and dirt roads.

FIGURE 2



The Ketchan tenures occupy a rolling upland, the southern extension of the Fairweather Hills, with a maximum elevation of 1500 metres. Local relief is moderate in most of the area. However, the south-eastern part of the Property, in the vicinity of the old Shamrock "mine," follows the steep-sided gorge occupied by Summers Creek below the southern end of Missezula Lake; here local relief exceeds 300 metres. Otter Creek, within the western part of the claims, follows a somewhat less precipitous depression between high, rolling hills.

A mixture of open forest and grassland characteristic of the semi-arid environment is found throughout the region. Ranching and logging are the main economic activities. Large areas of grassland devoted to grazing are found in the relatively flat terrain in the western part of the Property and around Ketchan Lake.

The climate is characterized by hot, dry summers and cold winters. This has not proven to be a hindrance to year-round operations at the large open-pit mines in the region.

HISTORY

The area covered by the present claims has had a long and complex history of exploration. Recorded mineral production consists solely of a shipment of copper ore from the Shamrock mine in 1929.

General

- 1929: A small shipment from the Shamrock "mine" averaged 5.78% copper (Minfile).
- 1963: Consolidated Woodgreen carried out trenching on the Shamrock prospect and completed 3 diamond drill holes (Minfile).
- 1979: Cominco Ltd. drilled 6 percussion holes in the central part of present claims, based on I.P., magnetic and geochemical surveys. Only two holes reached bedrock. One hole reportedly averaged 0.141% Cu over 32 metres. Further mapping and drilling were recommended (Mehner, 1979, Scott, 1979, Osatenko, 1979). There is no record of follow-up.
- 1985: Vanco Exploration carried out geochemical and geological mapping on central part of present claims. They also mapped and

sampled the Shamrock prospect (Lisle, 1985). There is no record of follow-up exploration.

- 1988: Laramide Resources carried out a geochemical survey for gold in the northern part of the present claims (Watson, 1988).
- 1990: Minequest Exploration carried out 56 kilometres of I.P. surveying on central part of present claims (Gourlay, 1990).
- 1991: Rayrock Yellowknife Mines drilled 9 percussion holes on the Minequest property. No significant Cu or Au values are reported, but a significant, but untested, copper prospect on Zig 3 Claim was noted (Gourlay, 1991).
- 2004-2005: Copper Hill Exploration Corp. and Copper Belt Resources carried out geological and photo- geological mapping of the entire claim block, along with magnetometer and VLF surveying of one Minequest 1990 IP anomaly area (Bergey, 2005).

<u>Ketchan Lake Prospect</u>

- 1962: Plateau Metals Ltd. staked the present Ketchan Lake prospect area. Later the same year, they carried out a magnetometer survey and completed 3 diamond drill holes (Minfile).
- 1966: Adera Mining Ltd. optioned the property and carried out geological and geophysical surveys, along with trenching and 512 metres of diamond drilling (Lammle, 1966; Schurr. 1966).
- 1973: Bethlehem Copper Corporation staked Log Group of mineral claims following a large-scale regional exploration program.
- 1974: Bethlehem Copper carried out geological mapping and geochemical sampling, followed by drilling of 10 percussion holes (Nethery, 1974).
- 1975: Bethlehem Copper completed 351 metres of diamond drilling in 4 holes (Anderson, 1975; Anderson, 1976). Assay results from this drilling were not published.
- 1979: Bethlehem Copper completed 410 metres in 2 diamond drill holes to test the results of an I.P. survey carried out earlier in the year (Anderson, 1979; Simpson,1979,).
- 1991: Cominco Ltd. completed 15 percussion drill holes -- 1067 metres (Aulis, 1991).
- 1992:Cominco Ltd drilled 8 percussion holes -- 640 metres (Aulis, 1992).
- 2005: Copper Belt Resources drilled 10 diamond drill holes – 1210 metres (Thomson, 2006).

- 2006: Copper Belt Resources drilled 2 diamond drill holes – 485 metres (Thomson, 2007).
- 2007: Copper Belt Resources drilled 5 diamond drill holes – 931 metres (Thomson, 2007).

PAR Prospect

- 1962-1965: Tormont Mines Ltd, completed 2759 metres of diamond drilling in 18 holes, ostensibly to test a skarn Cu showing west of Otter Creek (Nekrosov, 1965).
- 1970: Andrew Robertson completed a vertical diamond drill hole to a depth of 123 metres at the site of the original showing.
- 1998-2004: W.R.Bergey carried out detailed mapping supplemented by magnetometer and VLF-EM surveys (Bergey, 2002; Bergey,2004).

Coke Prospect

- 1962: The Coke prospect was discovered by Plateau Metals Ltd., along with the Rum prospect to the south.
- 1963-67: Geochemical & geophysical surveys, and several shallow diamond drill holes were completed by Plateau Metals and Adera Mining (Lammle, 1967).
- 1971: Amax Exploration carried out regional geological, geochemical and geophysical exploration, mainly south of the present Property. The geological map indicates a large mass of intrusive breccia west of the Rum and Coke prospects (Christofferson, 1971).
- 1981 Cominco carried out reconnaissance geochemical sampling (Mehner, 1981). Scattered strong copper anomalies were indicated.
- 1985 Peto (1985) collected soil and rock-chip geochemical samples along the Rum/Coke mineralized trend. His results indicated highly anomalous gold values associated with the mineralized zones. He also noted that "transported overburden" overlay the bedrock within the mineralized areas.
- 1987 Mingold Resources carried out a geochemical soil survey on the Coke prospect. Semi-continuous copper anomalies and scattered gold anomalies were indicated (Yarrow, 1987).

GEOLOGICAL SETTING

Preamble

Most of the discussion in this section is based on field mapping and photo-geological interpretation carried out intermittently by the author throughout the region between Kamloops Lake and Allison Lake over the past 10 years. Since my interpretation of the geology of the region differs to a very considerable extent from that revealed in published geological reports and maps, a discussion of the methods employed is in order.

Photogeology should not be confused with the identification and interpretation of linear topographic features. To be effective, photogeology must be based on reliable field geological data and it should be re-interpreted constantly as the mapping and other exploration work proceeds. Under favourable circumstances photo-geological interpretation can be made through continuous proximally transported till cover to provide geological information that is difficult or impossible to obtain from field mapping. At the same time, it can identify areas covered by distally transported surficial material that would preclude the effective use of conventional geochemical exploration methods. As it happens, the region surrounding the Property has well above average favourability for the application of photogeology, in large part because the nearly total cover of till presents a serious hindrance to field geology.

My approach in this project was to examine pairs of government air photos at nominal scales of 1:75,000 (black and white) and 1:15,000 (colour) at 2x and 4x magnifications. The regional geology discussed below is based on detailed field mapping and air-photo interpretation in the area surrounding the Ketchen Property, as well as on two similar field and air-photo studies: one that covered a large area extending west from the Iron Mask batholith near Kamloops (Bergey, 2008), and one that covered the western portion of the Guichon Creek batholith and its environs (Bergey, 2009). My field work between these three areas was erratically distributed, and only 1:75,000 photographs were available for interpretation.

The author has utilized air-photo interpretation on occasion as an important adjunct to other mineral exploration methods in a number of countries during the past 50 years.

Regional Geology

The regional geology is illustrated in highly simplified form on Figure 2. The oldest rocks in the region (except for possible remnants of an older rock unit within the local uplift termed the "Nicola Horst") are volcanic and sedimentary rocks of the Nicola Group of Late Triassic age. These formed the southern portion of a small tectonic plate known as Quesnellia that became accreted to the North American continent late in the Jurassic. A number of batholiths of calc-alkaline granitic rock were intruded into the Nicola rocks at about the end of the Triassic. (Only the Guichon Creek batholith, host to the very large Cu/Mo deposits of the Highland Valley, is shown on Figure 1.) The calc-alkaline deposits appear to have been introduced during the late stages of the introduction of these batholiths.

Some time after the intrusion of the calc-alkaline rocks (according to my interpretation, which is discussed in detail later in the present report) a large number of smaller bodies of alkaline rock were intruded into the rocks of the Nicola Group. The largest, and the most important economically, of these is the Iron Mask batholith, which hosts the Afton and Ajax Cu/Au deposits.

My geological mapping and photo-geological studies in the region over the past 7 years strongly suggest that the alkaline intrusions cover a very much larger area than is generally assumed. These intrusive bodies include large volumes of intrusive breccia that previously were identified as part of the Nicola Group volcanic sequence. I have lumped a number of brecciated and unbrecciated intrusive assemblages into an Alkalic Intrusive Complex. This Complex appears to make up at least 50 % of the rocks that previously were included in the Nicola Group.

A number of sedimentary and volcanic rock formations were deposited intermittently from Late Jurassic up to Recent time. These stratified rocks cover large portions of the region. They are not illustrated on Figure 2.

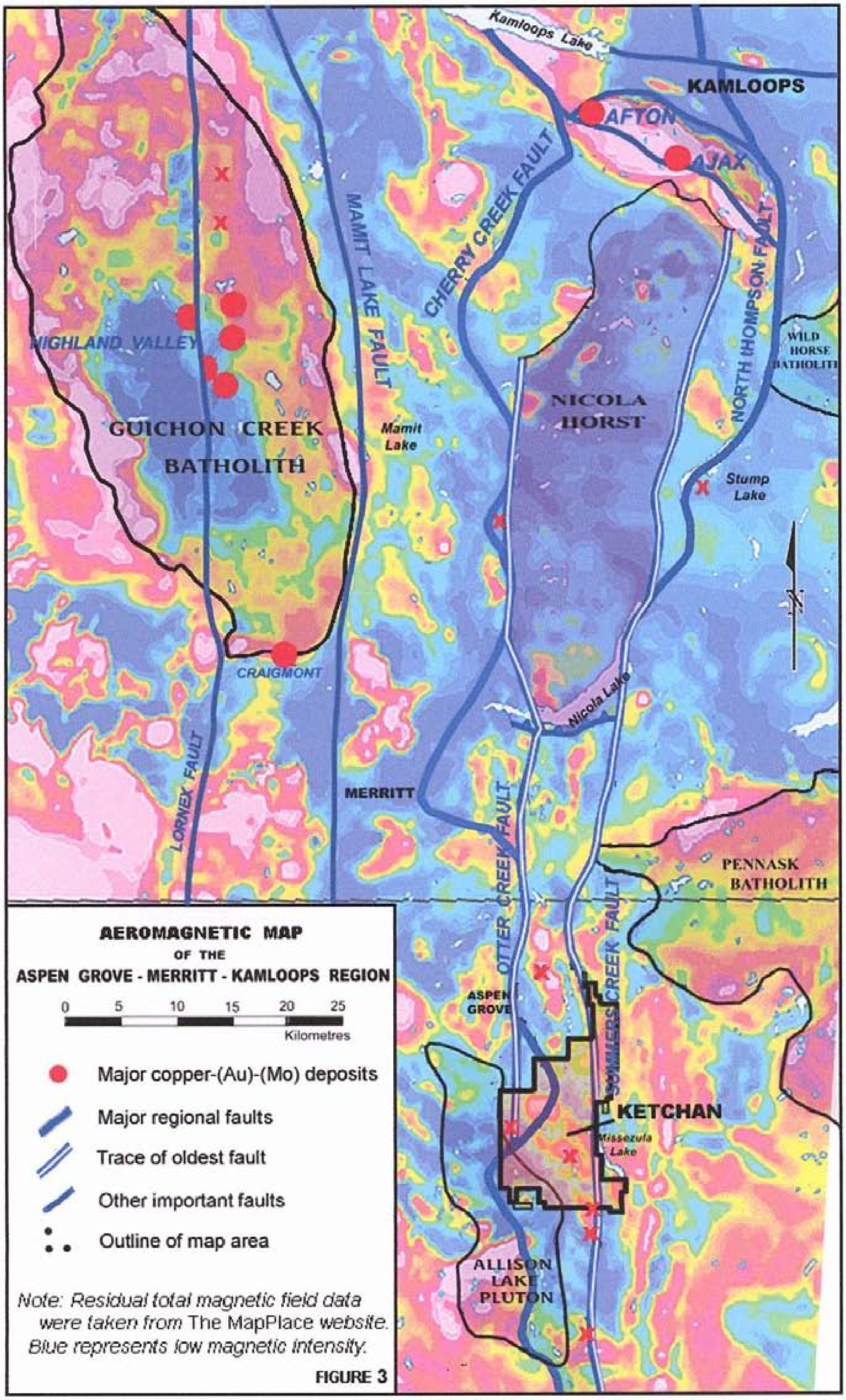
Most of the Nicola Belt has been presented on geological maps at an extremely small scale (ca. 1:250,000), and little sub-division of stratigraphic units was possible. However, the area between Merritt and Merritt, which includes the Property, was mapped at the intermediate scale of 1:50,000 (Preto, 1979). Preto recognized three major divisions within the volcanic sequence -- Western, Central and Eastern facies -- separated by a pair of regional faults. He believed that they accompanied Nicola volcanism.

My recent work tends to confirm Preto's tripartite division of the Nicola volcanic rocks. I have extended the interpretion of the two faults identified by Preto (1979) from south of the Ketchan Property to Kamloops Lake, a distance of 125 kilometres. The earliest movement took place late in the Triassic, and the upper portions of the deep-seated faults were obliterated by later intrusions and covered by younger stratified rocks. However, it is evident from the air-photo interpretation that major faulting continued to follow the deep-seated zones of weakness at least into the early Tertiary.

My interpretation is that the precursor structures followed a comparatively straight, north-south path. Where these faults were offset by cross-faults or by intrusion, younger north-south fault zones tended to follow the general structural trend initiated by the early deep-seated crustal fractures, as suggested by Preto (1979).

The Otter Creek structural zone (previously named the Allison fault) which follows a very straight north-south path (followed by Otter Creek) for about 15 kilometres within and north of the western part of the Property. The deep-seated fault is intruded along a portion of this path by porphyritic granitic intrusive rocks related to the Allison Lake pluton. South of the Property its linear course is interrupted close to the margin of the main mass of the pluton, where the Otter Creek also takes a sharp bend. A successor fault is indicated on the air photos to continue on a rather sinuous, but relentlessly southerly, course through the pluton. A similar situation is apparent in the northern extension of the Otter Creek structural zone southwest of Kamloops. The eastern structural zone, designated the Summers Creek fault by Preto (1979), is less well delineated since it has been intruded by younger rocks along much of its course. The interpreted trace of the original structure is defined along the eastern margin of the Nicola Horst but it has not been clearly distinguished from the later faults elsewhere.

The reason for this discourse on the regional faulting is the apparent economic significance of north-south faults in the region. The alkalic copper-gold deposits within the Nicola Belt appear to lie between or adjacent to the deep-seated faults (Figure 3). The Mt. Polley mine and the Copper Mountain deposits, north and south of Figure 3 respectively, also are interpreted to be located between these faults. The Iron Mask batholith is interpreted to be bounded by a pair of east-west faults that intersect the regional north-south structures and may be related to them.


Kamloops Lake
KAMLOOPS
AFTON
AJAX
CHERRY CREEK FAULT
MAMIT LAKE FAULT
NORTH THOMPSON FAULT
WILD HORSE BATHOLITH
HIGHLAND VALLEY
GUICHON CREEK BATHOLITH
Mamit Lake
NICOLA HORST
Stump Lake
CRAIGMONT
Nicola Lake
LORNEX FAULT
MERRITT
OTTER CREEK FAULT
SUMMERS CREEK FAULT
PENNASK BATHOLITH
ASPEN GROVE
KETCHAN
Missezula Lake
ALLISON LAKE PLUTON
N
AEROMAGNETIC MAP OF THE ASPEN GROVE - MERRITT - KAMLOOPS REGION
0 5 10 15 20 25
Kilometres
Major copper-(Au)-(Mo) deposits
Major regional faults
Trace of oldest fault
Other important faults
Outline of map area
Note: Residual total magnetic field data were taken from The MapPlace website. Blue represents low magnetic intensity.
FIGURE 3

Geology of the Aspen Grove Area

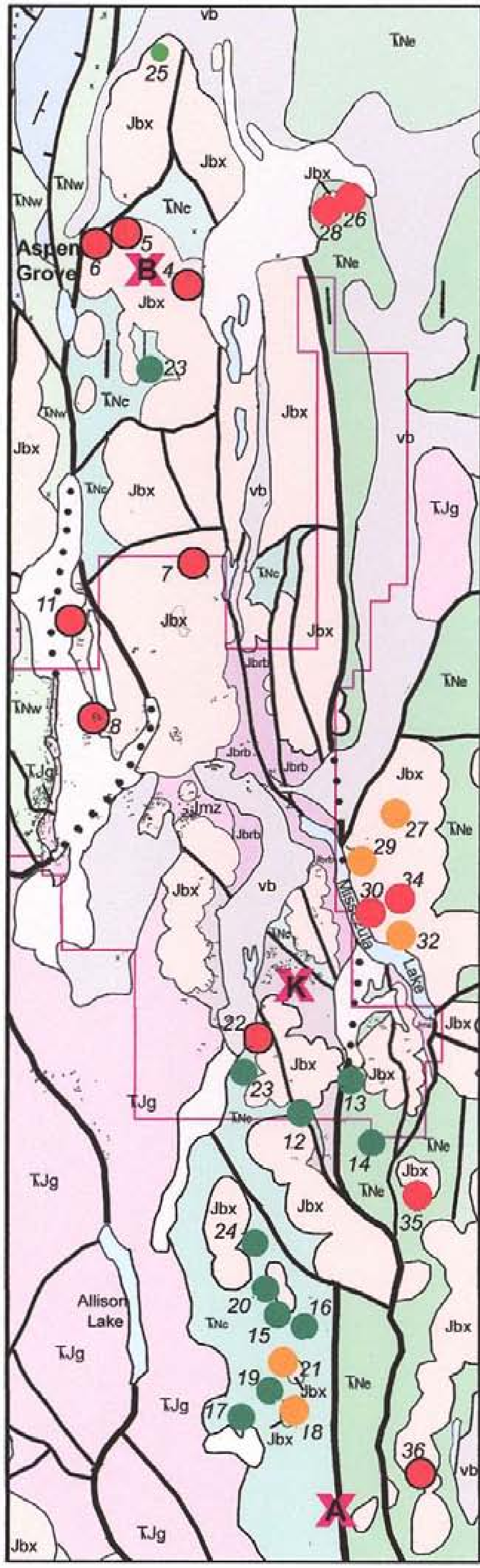
A revised photo-geological interpretation was carried out over the area that surrounds the Ketchan Property in order to include the nearby Big Kidd and Axe advanced prospects, and also to cover the entire area where samples of volcanic rocks mapped as Nicola Group were selected by Preto (1979) for chemical and petrographic analyses. Air photographs at a scale of 1:75.000 were used for this purpose. The results are shown on Figure 3 at a scale of 1:150,000. [The geological units are described under "Property Geology."]

The Big Kidd Prospect appears to be centered on the Big Kidd breccia pipe. The mineralization extends into diorite and intrusive breccia of the Alkalic Intrusive Complex, and also is found within rocks of the Nicola Group. It appears to be confined to the area between the regional faults.

The Axe Prospect includes a cluster of mineralized zones that mainly are located south of the major concentration of rocks of the Alkalic Intrusive Complex in the area. Its origin is enigmatic since some of the mineralization apparently occurs in small bodies of both alkaline and calc-alkaline intrusive rocks, and since both Cu/Au and Cu/Mo are present locally. Two of the main zones were emplaced along a zone of intense deformation in volcanic rocks that I believe represents the original deep-seated fault zone that separates the Central and Eastern belts of the Nicola Group.

Preto (1979) collected 40 samples of rocks that he regarded as volcanic rocks of the Nicola Group. I was able to locate 29 of them, and these I plotted on my photo-geological interpretation. The results are shown on Figure 4.

The samples fell into three general categories -- tholeiitic basalt (11), trachybasalt, potassic alkali series (13), mugearite & hawaiite, sodic alkali series (5). All of the tholeites came from areas that I interpreted as underlain by volcanic rocks. All of the alkalic samples came from areas that I interpreted as intrusive breccia.



GEOLOGICAL MAP OF THE ASPEN GROVE AREA

SHOWING LOCATIONS OF ANALYSED ROCKS

SCALE 1:150,000

0 2 4 6 8 10 12

Kilometres

LEGEND

ALKALIC INTRUSIVE COMPLEX

- Mainly intrusive breccia
- "Brick-red basalt" [see text]
- Monzonite & syenite
- Diorite
- Calc-alkaline granitic intrusive rock

NICOLA GROUP

- Western facies
- Central facies
- Eastern facies

Generalized petrographic classification of analysed rocks:

- Tholeitic andesite & basalt [11]
- Red trachybasalt & trachyandesite -- potassic alkali series [8]
- Green trachybasalt -- potassic alkali series [5]
- Mugearite & hawaiite -- sodic alkali basalt series [5]

Ketchan property

Advanced prospects:
B = Big Kidd; K = Ketchan; A = Axe

Notes:

1. The descriptions of the analysed rocks are taken from "Geology of the Nicola Group between Merritt and Princeton" by V.A.Preto, 1979.
2. The geology shown on the map is based in part on photo-geological interpretation by W.R.Bergey.

FIGURE 4

Clearly we are dealing with two groups of rocks that are very dissimilar, both chemically and petrographically. It cannot be a coincidence that these two rocks also appear to be very different in the field and on the air photos. The tholeites tend to be recessive, and they typically show some evidence of stratification. The alkalic rocks tend to form bold outcrop areas, and they typically are massive.

I located several of the sample sites in the field. Each of these outcrops was composed of intrusive breccia. The samples appear to have been selected from portions of the outcrops where a rock type that I refer to as "brick-red basalt" (BRB) formed the matrix of the breccia. [This unit is discussed in detail in the next section, since it lies at the heart of the controversy.] There is a large area of unbrecciated BRB north of Misssezula Lake on the Ketchan Property, but the rock tends to be poorly exposed. The intrusive breccia is well exposed in most of the Aspen Grove area, and the BRB occasionally forms an abundant matrix. Since it is the only rock type in the intrusive breccia that resembles a volcanic, it is the one that was sampled.

Property Geology

Nicola Group

The Western Volcanic facies (Unit "**Nw**") of the Late Triassic Nicola Group is confined to the westernmost part of the Property. Exposures are fairly abundant along the western slope of Otter Creek, but they tend to be small and they offer little structural information except for a pervasive NNE-trending cleavage. The rocks are predominantly intermediate to felsic tuff, andesitic tuff and lava, and minor limestone.

The Central Volcanic facies (Unit "**Nc**") is exposed mainly in the southern part of the Central Belt. The rocks are mainly andesitic tuff and tuff breccia. Sedimentary rocks appear to be rare. A single outcrop area of laminated felsic ash tuff of indeterminate affiliation was located in the west-central part of the belt (Figure 5b).

The Eastern Volcanic facies (Unit "**Ne**") crops out along the eastern boundary of the property. The few outcrops that I examined were composed of andesitic flows and pyroclastics. The rocks of the Eastern and Central facies could not be distinguished because of the sparse amount of data available.

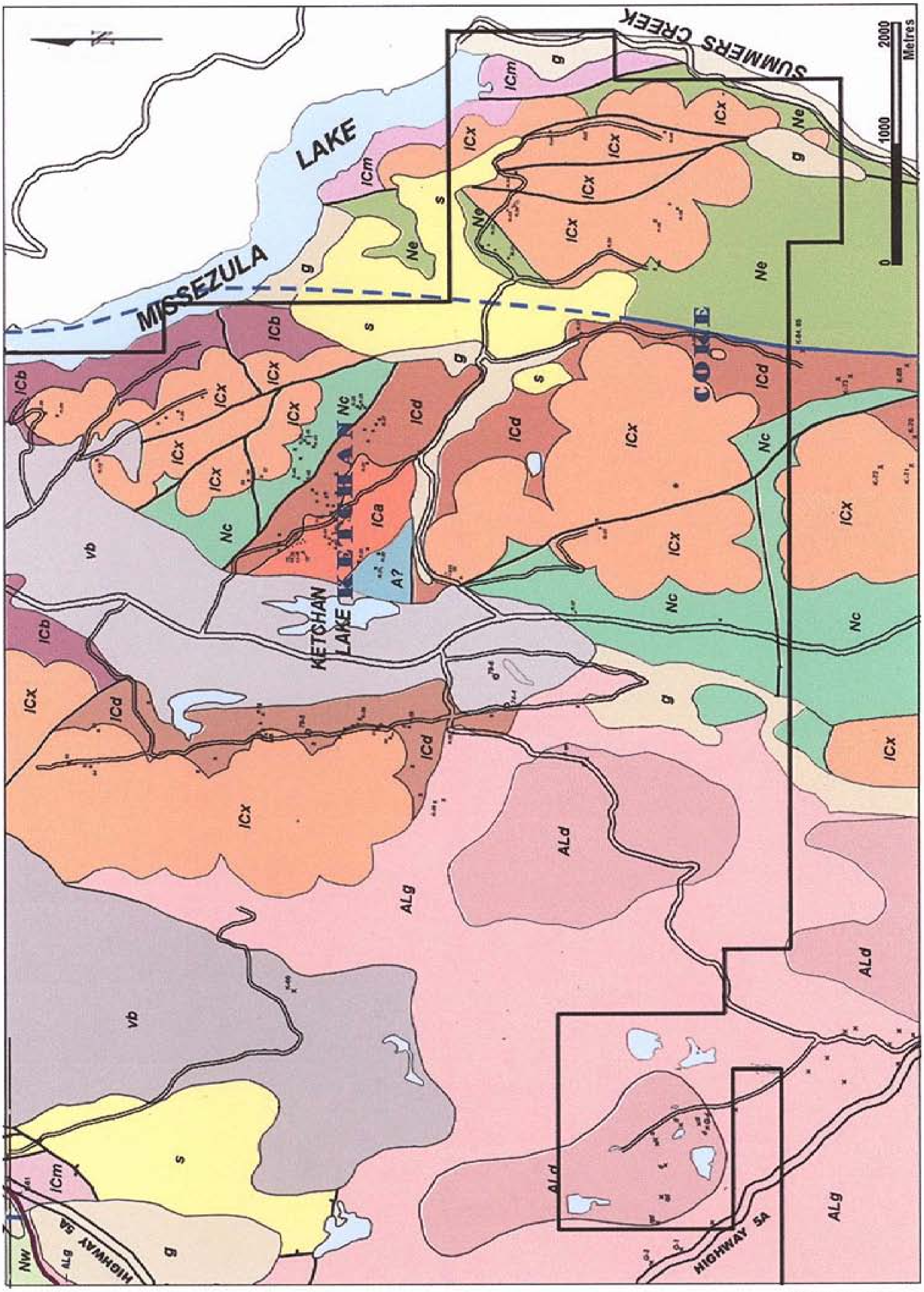


Figure 5a

GEOLOGICAL MAP (South Sheet)

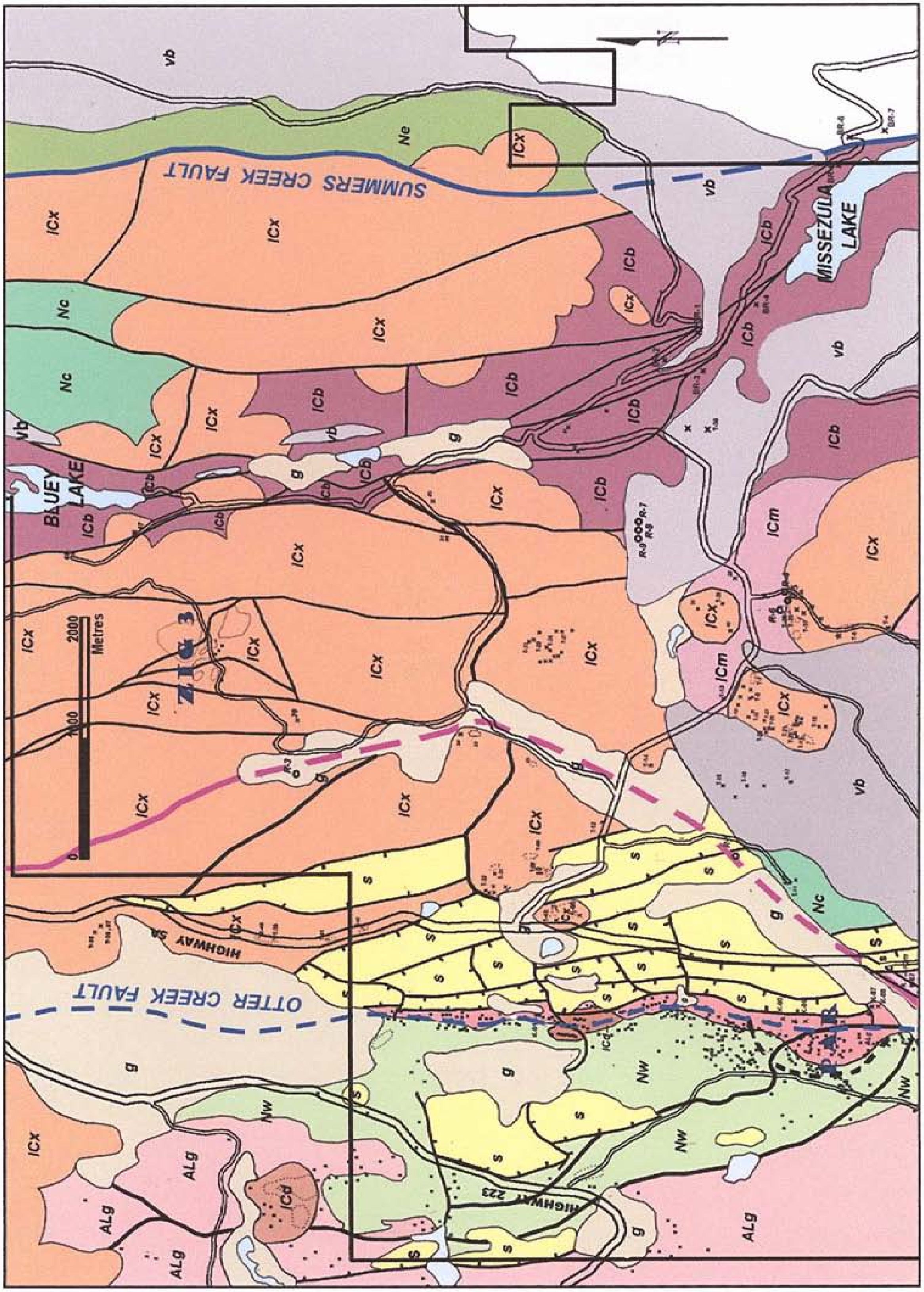


Figure 5b

GEOLOGICAL MAP (North Sheet)

FIGURE 6

LEGEND FOR GEOLOGICAL MAPS
(Figures 5a and 5b)

QUATERNARY

g	Mainly late-glacial ice-contact deposits; also alluvial & colluvial deposits
vb	"Valley basalt"

TERTIARY (?)

s	Flat-lying sedimentary rocks -- very poorly exposed -- correlations uncertain

LATE JURASSIC (?)

A?	Ashcroft Formation (?) -- interbedded graphitic argillite, sandstone, pyroclastic rocks

EARLY JURASSIC

ALKALIC INTRUSIVE COMPLEX

ICa	Fractured and hydrothermally altered diorite & intrusive breccia
ICx	Intrusive breccia (coalescent pipes)
ICm	Monzonite & syenite
ICb	Porphyritic basalt & gabbro, mainly red - probably sub-volcanic intrusion (BRB)
ICd	Diorite

LATE TRIASSIC AND/OR EARLY JURASSIC

CALC-ALKALINE INTRUSIVE ROCKS OF THE ALLISON LAKE PLUTON

ALg	Granite & granodiorite
ALd	Diorite & quartz diorite
ALp	Porphyritic granitic rocks of Otter Creek

LATE TRIASSIC

VOLCANIC FACIES OF THE NICOLA GROUP

Ne	Eastern volcanic facies
Nc	Central volcanic facies
Nw	Western volcanic facies

Major fault

Regional fault

Late-Tertiary normal fault

Zone of brecciation at PAR prospect

Although Preto (1979) considered basaltic flows to be the dominant lithology in the Central facies -- and Monger (1989) evidently used them in revising Preto's sub-divisions -- my field mapping suggests that they are rare in this area. I believe that BRB is responsible for the confusion, as discussed below.

Calc-alkaline Intrusive Rocks

The eastern margin of the Allison Lake pluton, smallest of the Late Triassic to Early Jurassic batholithic intrusions in the region, follows the western border of the Property. The dominant lithology of the pluton within and adjacent to the property is coarse-textured granite typified by large, rounded quartz phenocrysts (Unit "**ALg**"). The granite appears to have engulfed an earlier, more mafic, intrusive phase composed of diorite and quartz diorite (Unit"**ALd**"). Porphyritic rocks (Unit "**Alp**"), including fine-textured quartz-feldspar porphyry and a distinctive quartz porphyry with large quartz "eyes" in an ultrafine groundmass, intrude the Otter Creek fault in the vicinity of the PAR prospect and northward beyond the Property.

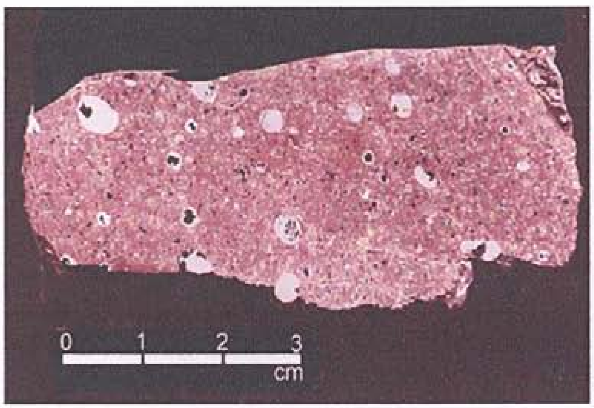
Radiometric dating from a sample of granite collected along Highway 5a near the south-western corner of Figure 5a yielded an age of 200+/-5 Ma (Preto, 1979). This date places the Allison Lake pluton close to the Triassic-Jurassic boundary. Field and air photo evidence strongly suggests that the pluton was emplaced prior to intrusion of the rocks of the alkalic intrusive suite.

Alkalic Intrusive Complex

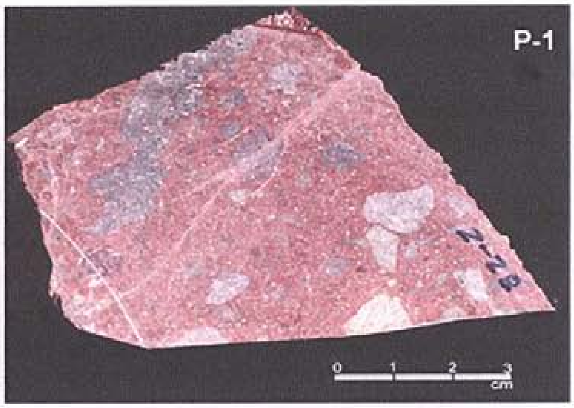
The geological map of the area between Merritt and Princeton (Preto, 1979) displays a number of small, isolated bodies of diorite (Unit "**ICd**"), and of monzonite & syenite (Unit "**ICm**") within the Nicola Group outcrop area. The largest of the alkaline intrusions within the Property is a body of diorite that underlies the broad valley in the vicinity of Ketchan Lake and extends south to the south boundary of the property.

During 2004 the author identified large areas of intrusive breccia (Unit "**ICx**") that were made up mainly of clasts of the rock types that composed the alkaline intrusions described by Preto (1979). Since that time, my mapping identified a very much larger area covered by similar rocks close to Kamloops that included the Iron Mask batholith (Bergey, 2008). The brecciated and unbrecciated rocks were combined as an Alkalic Intrusive Complex (Bergey, 2008), and the same designation is used herein.

The 2004 mapping of the Ketchan Property revealed that a common component of the alkalic complex is a fine-textured red to purple mafic rock that I named "Brick-red Basalt" (BRB) in field mapping (Unit "**ICb**"). Unbrecciated exposures of this rock are found within an area that extends for 4 kilometres northwest from Missezula Lake. The rock is pyroxene-plagioclase-phyric, with a holocrystalline groundmass that varies from very fine- to fairly coarse-textured. While most of the BRB is indeed red, some reddish-green or even green rocks are included in the BRB. Quartz amygdules were noted at the "discovery" outcrop (below), one of only two examples that I found on the property. I believe that BRB is a sub-volcanic intrusive since I have not uncovered any indication of stratification in the field or on the air photos. There is a no evidence to suggest an association of BRB with Nicola volcanic rocks.



"Brick-Red Basalt" (BRB)

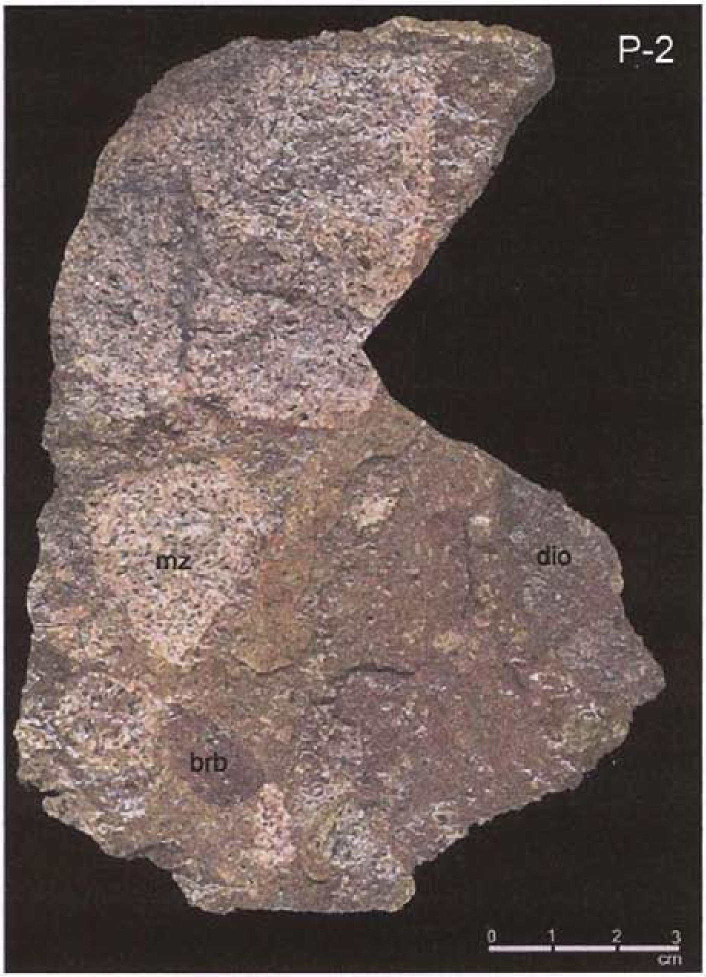


Intrusive Breccia with BRB Groundmass

BRB is particularly significant because it consistently has been identified as a volcanic rock of the Nicola Group. [Preto (1979) analysed 40 samples of "Nicola rocks" from the Aspen Grove area that clearly included many analyses of BRB matrix in intrusive breccia. This subject was discussed above under "Geology of the Aspen Grove Area"]. The presence of this putative volcanic material as fragments and/or matrix in breccia evidently encouraged field geologists to attach a volcanic origin to the breccia.

Small bodies of monzonite and syenite occur throughout the Intrusive Complex. Despite its rather limited areal extent, Preto (1979) analysed 16 samples of monzonite and syenite compared with only 3 samples of diorite, a much more extensive unit. Like the diorite, the syenite and monzonite tend to be fine textured and pyroxene is the common primary mafic mineral.

The dominant component of the Aspen Grove Intrusive Complex is intrusive breccia. This unit comprises a number of separate bodies that appear to be clusters of coalescent pipes. Individual pipes vary considerably in size, but they are generally between 400 metres and 1000 metres in diameter.



Heterolithic Intrusive Breccia

The breccia commonly is composed of a heterolithic assemblage of the other rock types of the Complex. The texture of the material is highly variable both in the degree of rounding of the fragments and in the amount and composition of the matrix. Clast size also is variable – from a few centimetres down to a highly milled variety that resembles an unstratified clastic sedimentary rock or tuff. I have not seen any clasts that I consider to be unequivocally volcanic in origin. The presence of BRB in the mix no doubt accounts for the common misidentification of the intrusive breccia as a volcanic rock that contains "coeval" intrusive rock fragments.

Intrusive breccia has been examined and identified in thin section only at the Ketchan Lake porphyry copper-gold prospect, where altered and mineralized diorite (unit "**ICa**" on Figure 5a) has been intruded by small bodies of breccia (Dunne & Thompson, 2006). However, I have examined a large number of samples of intrusive breccia under the binocular microscope.

The Alkalic Intrusive Complex appears to be younger than the granitic rocks of the Allison Lake pluton, which have been dated at about 200 Ma (i.e., close to the Triassic-Jurassic boundary), it and is older than Late Jurassic volcanic rocks elsewhere in the region. Accordingly, the Complex is considered to be Early Jurassic in age.

Ashcroft Formation (?)

An enigmatic assemblage of thin-bedded sedimentary and volcanic rocks (Unit "**A?**") was noted in drill holes and in sparse outcrops in the vicinity of Ketchan Lake. Exposures of sandstone were noted east of the south end of the lake (Figure 5a). The rocks appear to be in unconformable contact with altered diorite. A drill hole at the road junction 500 metres to the east intersected graphitic argillite with thin interbeds of andesitic volcanic rocks at the base of the overburden (Thomson, 2006). Similar rocks were encountered at depth in fault contact with mineralized diorite about 200 metres to the west (Thomson, 2007). A drill hole located approximately a kilometre southwest of Ketchan Lake reportedly intersected andesitic volcanic rocks and minor graphitic argillite apparently related to the same unit (Simpson, 1979). These disparate occurrences apparently are located within a zone of complex faulting.

The rocks of this unit stand out in contrast to the intense deformation, alteration and mineralization of adjacent rocks of the Alkalic Intrusive Complex. They have been assigned tentatively to the Ashcroft Formation of Late Jurassic age based on lithology, structure and metamorphic grade.

These rocks are of particular interest because of their graphite content. This conductive mineral may be responsible for strong positive chargeability results in induced polarization surveying, a behaviour that is difficult to distinguish from the response due to disseminated sulphides in the adjacent Ketchan porphyry copper-gold system.

Upper Tertiary (?) Sedimentary Rocks

Outcrops of weakly lithified mudstone and sandstone (Unit "**s**") were noted during geological mapping in the north-western part of the Property. Subsequent detailed photo-geological interpretation indicated features suggestive of a flat-lying sedimentary unit within large areas in the west, particularly in the valley followed by Highway 5a. A smaller area was identified near Missezula Lake in the southeast. Evidence of the nature of the unit was limited to a few exposures of very weakly indurated sandstone and conglomerate.

All of the regional faults, including ones that offset lower Tertiary rocks elsewhere in the region, terminate against this unit. However, a number of normal faults that clearly down-drop lower Tertiary(?) rocks have been identified.

Valley Basalt

Flows of vesicular, grey and red olivine basalt of Pleistocene age (Unit "vb") discontinuously underlie a fairly narrow, but laterally extensive, area that extends from south of Ketchan Lake through the north end of Missezula Lake and continues to the north for many kilometres. A smaller outcrop area underlies the southern part of part of a broad valley in the west-central part of the Property. The Valley Basalt that was intersected in a number of drill holes close to Ketchan Lake had an indicated thickness is about 30 metres on average.

Glacial and Post-glacial Deposits

Deposits of till (more specifically, basal or lodgement till) forms a thin, but nearly continuous, blanket on the bedrock in the region. This material impedes geological mapping but does not seriously inconvenience photo-geological interpretation. Till is considered to be a good medium for geochemical soil sampling.

The till is overlain locally by ice-contact deposits (Unit "**g**") that formed during the waning stages of glaciation. These deposits are particularly abundant along north-trending valleys in the western part of the Property. Characteristic landforms that can be identified on air photos are eskers, kames and kame terraces. Conventional geochemical soil sampling should not be attempted in areas covered by ice-contact deposits, even very thin ones.

Thin alluvial deposits are found along portions of Summers Creek and Otter Creek. These, along with local landslide deposits are included in unit "**g**".

Faulting

The nature and possible significance of the major structural zones, Otter Creek and Summers Creek faults, were discussed under Regional Geology. The fundamental faults themselves have been almost entirely obliterated within the Property by later intrusions. However, subsequent faulting that is partially coincident with the original faults appears to have been controlled to a considerable extent by the deep-seated structural zone, as suggested by

Preto (1979) who hypothesized that the original faulting was associated with Nicola volcanism. This may well be true. However, I favour the hypothesis that these deep-seated regional struetures were transcurrent faults related to transverse movement of the plate that later became the Qnesnellia accreted terrane. The major fault zones are locally reflected on magnetic surveys reflected as magnetic "lows." A particularly pronounced north-south magnetic "low" follows Otter Creek for more than 25 kilometres. .

A number of regional faults are interpreted along and adjacent to Summers Creek. The fault highlighted on Figure 5a is interpreted to be the original trace of the fault based on the presence of zones of intense shearing in adjacent volcanic rocks at several places.

A west-northwest-trending fault marks the north contact of the diorite that is the host of the Ketchan copper-gold porphyry system. A sub-parallel fault along the overburden-covered south margin of the intrusion is suspected.

Two north-south faults that cut the Nicola volcanics and the calc-alkaline intrusives appear to be older than rocks of the alkalic intrusive complex. These faults bracket the zone of brecciation that hosts the PAR prospect. There is some evidence that north-south-trending faults of this relative age are closely associated with the major copper mines and significant copper prospects in the Guichon Creek batholith and in Nicola volcanic rocks elsewhere in the region.

Block faulting of apparent late Tertiary age is displayed in the low-lying area between Otter Creek and Highway 5a. The faults are relatively minor structures that can be readily interpreted only because of their effects on the thin blanket of upper Tertiary(?) sedimentary rocks that covers much of the area.

DEPOSIT TYPES

Mineral deposits of two types are currently under investigation – alkalic porphyry copper-gold deposits and calc-alkaline porphyry copper deposits. A third deposit type – volcanic redbed copper deposits accounts for many of the plethora of showings and prospects described in Minfile for the Property and its environs (Figure 6). (The term "redbed" refers to the characteristic colour that reflects the oxidizing environment in which the host rocks were formed). Most, if not all, of the "redbed" occurrences in the Aspen Grove area are found in intrusive breccia rather than in volcanic rocks. However, the ingredients that are believed to be essential to the formation of these deposits – copper-rich source rocks and a reducing environment for precipitation of the metals – are present within the Alkalic Intrusive Complex. Despite an abundance of showings, no significant prospects of this class of deposit have been identified.

The Ketchan alkalic porphyry copper-gold system is a representative of the group of porphyry deposits associated with alkalic intrusive complexes that appear to follow the trend of Preto's deep-seated north-south faults. These deposits include the Copper Mountain deposits to the south, as well as the Afton and Ajax deposits in the Iron Mask batholith and the Mount Polley deposits to the north. Intrusive breccias appear to be present in all of the copper-gold deposits within Alkalic Intrusive Complexes.

Calc-alkaline porphyry copper (+/- molybdenum) deposits are associated with the granitic plutons that lie both east and west of the zone followed by the Alkalic Intrusive Complexes. The major deposits of the Highland Valley group are located near the centre of the Guichon Creek batholith and the Craigmont deposit lies at its margin (Figure 3). The latter is usually considered to be a skarn deposit, but the definition is flexible. It could be interpreted as a porphyry copper deposit of the Highland Valley type where the mineralization was precipitated partly by limestone. The grade of the mineralization in the Highland valley porphyry copper deposits is closely related to fracture density. The PAR prospect in the western part of the Property displays some similarities. The original showing is of the "skarn" type, but most of the known mineralization was deposited in an apophysis of the Allison Lake pluton that follows the Otter Creek fault. The various "Mob" showings near the south-western corner of the Property (Figure 7) are of the calc-alkaline porphyry-copper type (Minfile). The mineralization, like that at the PAR prospect, has a highly elevated silver content.

The two advanced exploration projects adjacent to the Property have published resource estimates in accordance with NI 43-101:

1. Big Kidd (Christopher James Gold Corp.), which lies 8 kilometres to the north of the Ketchan Property, is located on the northern part of the Aspen Grove alkalic intrusive complex. The original discovery was made in an intrusive breccia pipe (Preto, 1979). The mineralized zone extends into other alkalic intrusive rock types.

2. Axe (Weststar Resources) is located about 10 kilometres south of the Ketchan Property. The deposit area overlaps the southern margin of the alkalic intrusive complex. Some of the mineralization was emplaced in calc-alkaline intrusive rocks. The relatively low gold grade and the presence of some molybdenum suggest that the deposit may contain both alkalic and calc-alkalic types of porphyry copper mineralization.

MINERALIZATION

A search of MINFILE uncovered 43 mineral prospects and showings within and adjacent to the property (Figure 7). Most of these (29) were categorized as "volcanic redbed Cu" occurrences, "alkalic porphyry Cu-Au" had 8 references, "calc-alkaline porphyry Cu" had 5, and there is a single "quartz-stockwork Au" prospect mentioned. Almost all of the occurrences are located in rocks interpreted to be part of the Alkalic Intrusive Complex or are in the Allison Lake pluton. There are no MINFILE references for the portion of the Western Belt that lies within the Property except for the PAR prospect, which is a porphyry-type occurrence with calc-alkaline affiliations that is located adjacent to the regional fault that follows Otter Creek.

Most of the mineralized showings indicated on Figure 6 were examined by the author. The "volcanic redbed Cu" showings (and the Shamrock "mine") contained chalcocite stringers with some pyrite enclosed in intrusive breccia.

The mineralization of interest that was uncovered in the more significant showings as a result of "historical" exploration work is described in the next two sections of this report.

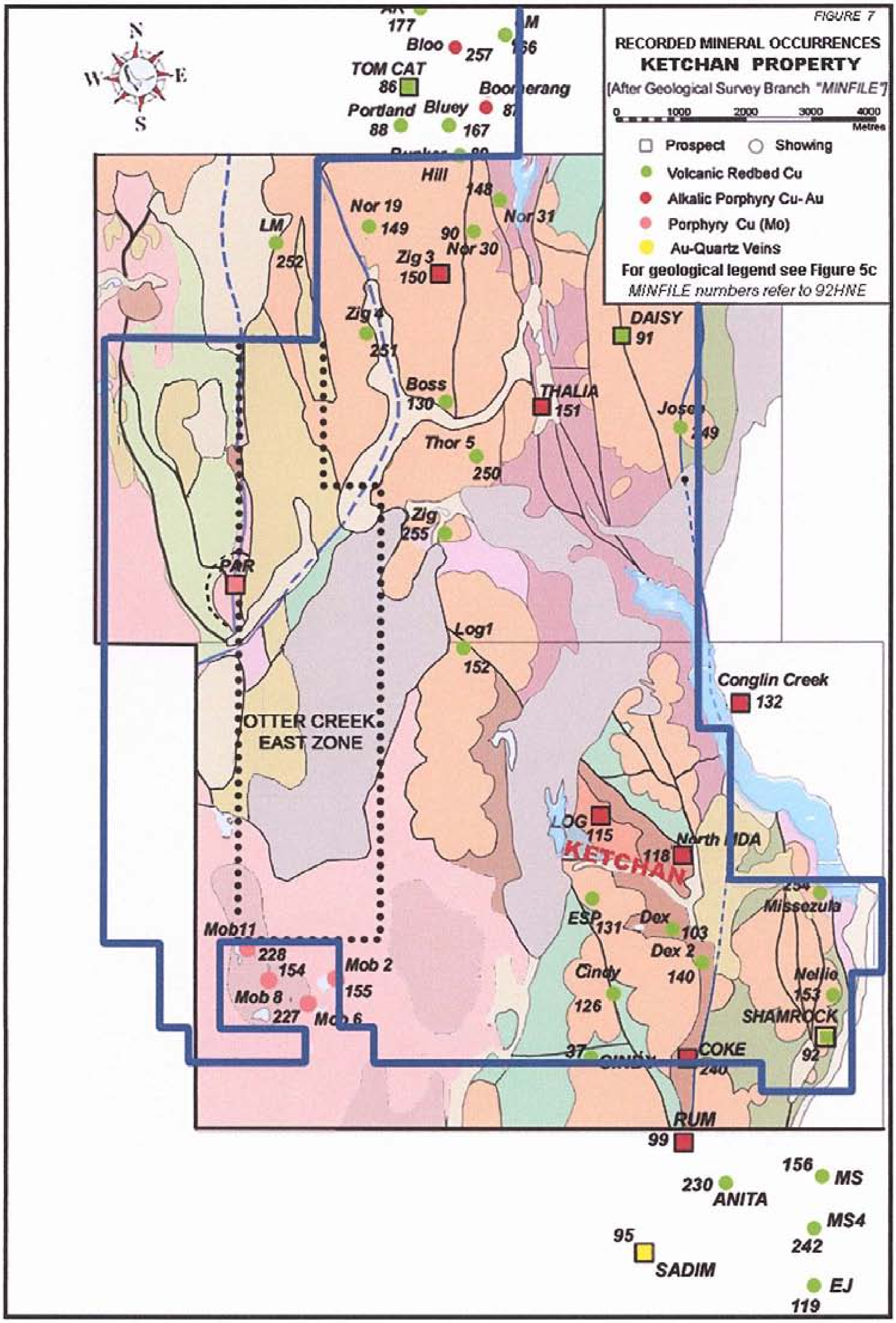
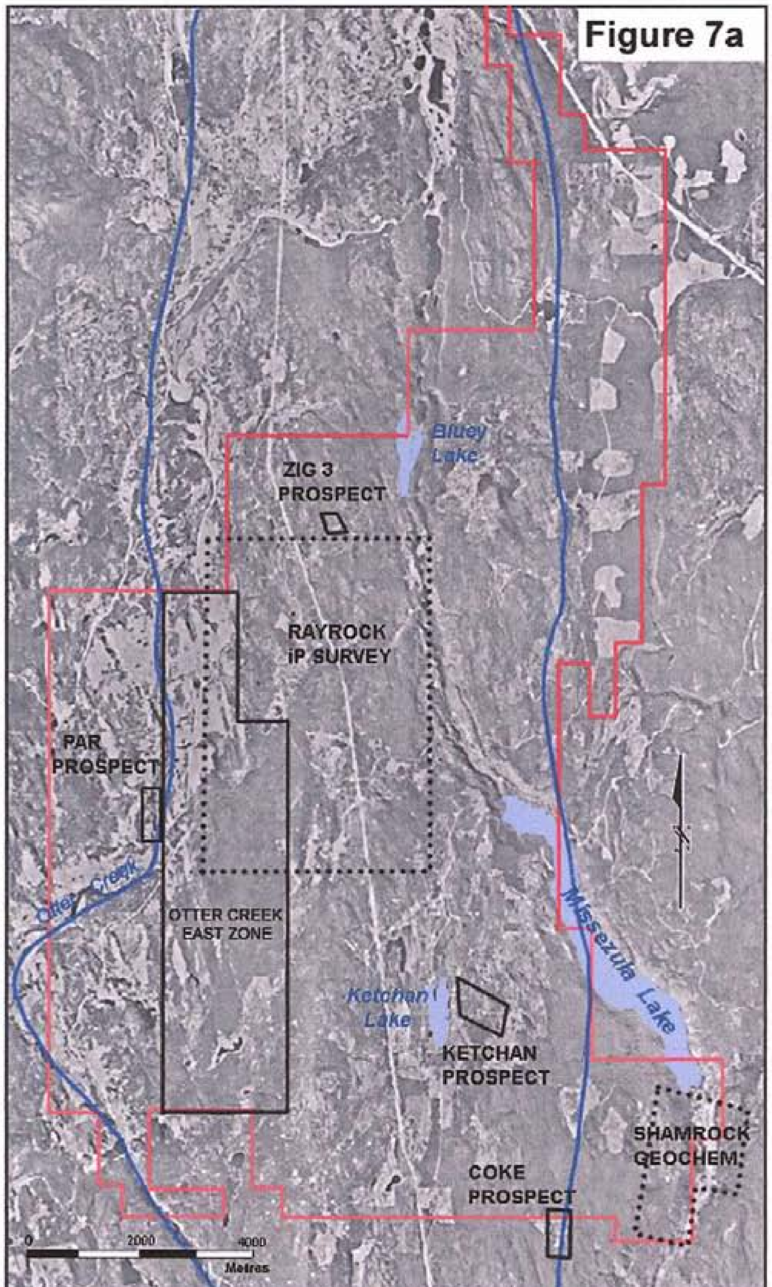


FIGURE 7
RECORDED MINERAL OCCURRENCES
KETCHAN PROPERTY
[After Geological Survey Branch "MINFILE"]
0 1000 2000 3000 4000
Metres
Prospect
Showing
Volcanic Redbed Cu
Alkalic Porphyry Cu-Au
Porphyry Cu (Mo)
Au-Quartz Veins
For geological legend see Figure 5c
MINFILE numbers refer to 92HNE
N
E
S
W
177
Bloo 257
TOM CAT
86
Portland 88
Bluey 167
Hill
148
Nor 19
149
90
Nor 31
Nor 30
LM
252
Zig 3
150
Zig 4
251
DAISY
91
Boss
130
THALIA
151
Thor 5
250
Zig
255
PAR
Log1
152
Conglin Creek
132
OTTER CREEK
EAST ZONE
115
118
KETCHAN
Missezula
ESP
131
Dex
103
Dex 2
140
Cindy
126
Nellie
153
SHAMROCK
92
Mob11
228
154
Mob 2
155
Mob 8
227
COKE
RUM
99
156
MS
230
ANITA
MS4
242
95
SADIM
EJ
119

DISCUSSION OF PREVIOUS EXPLORATION

The main objectives of this section are to describe the results some of the more important of the numerous "historic" exploration projects and to expand on these results within the framework of the revised geological interpretation expounded in the present report.



PROSPECTS & SURVEYS DESCRIBED IN REPORT

In general, the initial exploration results were inadequately followed up. The exceptions were the Coke Prospect and the Ketchan Prospect, both of which were discovered by Plateau Metals in 1962. They were explored nearly continuously for many years afterwards, the former until 1987 and the latter until the present.

The following account of "historic" exploration covers the projects that appear to be of greatest interest. The order of these descriptions does not imply a ranking.

PAR Prospect

Diamond drilling programs by Tormont Mines Ltd. from 1962 to 1965 and by Andrew Robertson in 1970 were virtually the only serious exploration efforts in the area, the property having been tied up by non-performers from that time until 2000. My more recent work (Bergey, 2002; Bergey, 2004) was aimed mainly at placing the drilling results into a more reasonable geological perspective and in expanding the target for economic mineralization beyond the immediate drilling area.

The Tormont program comprised 2759 metres of diamond drilling in 17 holes. The work was based on a copper showing in a geological setting that suggested skarn-type mineralization, although no nearby intrusive rock had been identified at that time. The core was not preserved, and the drill logs are all but indecipherable. Fortunately, the assay results appear to be complete and reliable, and the drill hole locations were found to be accurate.

The author's mapping (Bergey, 2004) indicated that the magnetite-rich skarn mineralization at the original discovery was deposited in andesitic tuff marginal to granitic intrusive rocks related to the Allison Lake pluton. The bulk of the local intrusion is coarsely porphyritic granite that occupies a portion of the Otter Creek valley. Quartz-feldspar intrudes the granite along the Otter Creek fault, and it appears to host most of the mineralization. (The drill logs are not helpful.) A distinctive quartz porphyry, characterized by abundant large quartz "eyes" in an extremely fine-grained, siliceous groundmass, intrudes the other granitic rocks and the adjacent volcanics. The quartz porphyry is found in small exposures throughout the drilling area and to the north. The only large outcrop area of porphyry is located close to Otter Creek (Figure 8). The drilling logs indicate that the porphyry extends across the fault at this point. The granitic rocks and the immediately adjacent volcanic rocks in the drilling area have been subjected to intense brecciation within an ovoid zone, with a maximum dimension of about a kilometre along Otter Creek The quartz porphyry alone appears to have escaped brecciation, and may well have accompanied the deformation. The fragments in the breccia tend to be homolithic and they are infrequently rotated, unlike the intrusive breccia of the Alkalic Intrusive Complex. However, the zone could represent the uppermost portion of a breccia pipe of unknown affiliation.

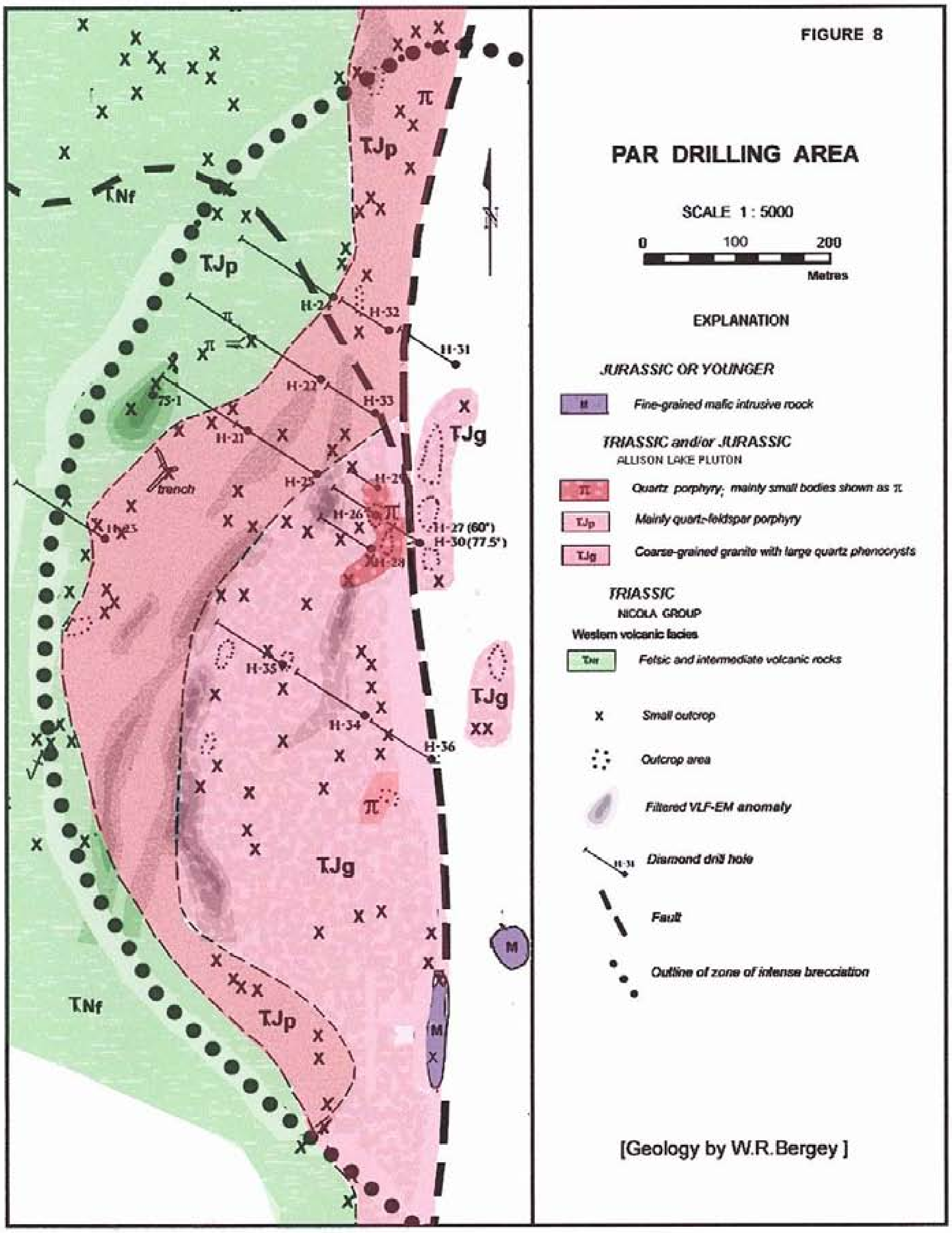
The best drill holes in the Tormont program are centrally located within the brecciated area, and they appear to be associated with the largest exposed body of quartz porphyry, although the porphyry itself is not mineralized except for sparse pyrite. Only two drill holes, H-27 and H-30, were drilled beneath Otter Creek and both of these collared in quartz porphyry and continued in this roek through the assumed trace of the fault. H-31 was the only hole to test the eastern side of the fault. It was abandoned in "caving ground, with heavy water inflow" at the presumed location of the fault.

A number of holes surrounding the large porphyry outcrop contained disseminated pyrite-chalcopyrite mineralization throughout most of their lengths according to the logs. The selection of samples was somewhat erratic, and only short sections of core were analyzed for most of the holes. The following are the most significant assays, from south to north. The hole locations are shown on Figure 8. The assay results are unverified. However, the copper values appear to reflect the descriptions indicated in the drill logs.

Hole 26: 1.4% Cu, 5g/t Ag, <0.1g.t Au / 6 metres; 0.3% Cu, 5 g/t Ag, .1 g/t Au / 9 metres.
Hole 27: 0.90% Cu, 41 g/t Ag, < 0.1 g/t Au / 20 metres; including 1.9% Cu, 64 g/t Ag / 6.7m.
Hole 29: 0.50% Cu, 12 g/t Ag, 0.25 g/t Au / 34 metres [entire hole except for quartz porphyry]
Hole 31: 0.37% Cu, 34 g/t Ag, 0.6 g/t Au / 1.5 metres [last core before hole lost in fault]

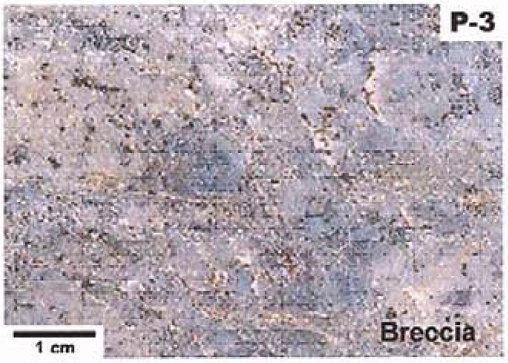
No drilling was done east of the Otter Creek fault except for Hole 31. The fault itself was not tested. Holes 27 and 30 were located east of Otter Creek, but both holes started in quartz porphyry, which appears to occupy the fault zone in this part of the area. (The best Cu-Ag in the core drilling was intersected in Hole 27 immediately west of the porphyry.) Hole 29 was drilled a short distance west of the fault. A short section of significant Cu-Ag-Au mineralization was found in Hole 31 adjacent to the fault zone.

North of the drilling area, exposures of granitic intrusive rocks, mainly quartz-feldspar porphyry are confined mainly to the immediate vicinity of Otter Creek (Bergey, 2004). The porphyry, as well as adjacent volcanic rocks along the margins of beaver ponds, tend to be highly fractured or sheared, and commonly are altered and limonite-stained. The flooded area has a fairly uniform average width of 50 metres.



Several VLF-EM anomalies were detected (Figure 8). These generally trend north to north-northeast, and they have lengths of up to 400 metres. Some of the shorter zones can be correlated with known mineralization (e.g. the local anomaly in the vicinity of skarn mineralization in the discovery area) but the much more continuous anomalies farther south have no obvious cause, although "specks and seams of graphite" were reported from Hole 34. [In view of the uneven quality of the core logging, there is a possibility that the "graphite" could be molybdenite.] VLF-EM anomalies also were detected within quartz-feldspar porphyry and adjacent volcanic rocks north of the drilling area. They tend to be associated with small exposures of quartz porphyry and with a ferruginous breccia of recent origin.

The author's interpretation of the sequence of faulting and intrusion close to Otter Creek is as follows. 1) The granitic intrusive rocks that follow the creek were emplaced in the regional Otter Creek fault zone that marks the boundary between the Central and Western volcanic facies of the Nicola Group. (This feature is marked by a north-south-trending topographic linear and by a pronounced magnetic "low" for a distance of more than 25 kilometres north from the main body of the Allison Lake pluton.) 2) The shearing within the granitic rocks adjacent to the creek probably appears to be related to a fault with a relatively small displacement. However, it may be of economic interest. 3) The quartz porphyry appears to have been unaffected by the shearing, but this may be evidence of its unyielding nature rather than of its age. 4) The dominant "successor" to the regional Otter Creek fault is interpreted to lie to the east of Otter Creek in this part of the area. 5) The ages of the mineralization and of the brecciated zone have not been determined. I believe that they most likely are related to the later stages of the Allison Lake pluton and are older than the Alkalic Intrusive Complex. The fault in the NW corner of Figure 8 appears, on air-photo evidence, to be related to the swarm of the north-south early Jurassic faults that are younger than the calc-alkaline plutons but are older than the Alkalic Intrusive Complex. Faults of this swarm are closely associated (in space) with many calc-alkaline porphyry copper and skarn deposits in the region (Bergey, 2009).



Coke Prospect

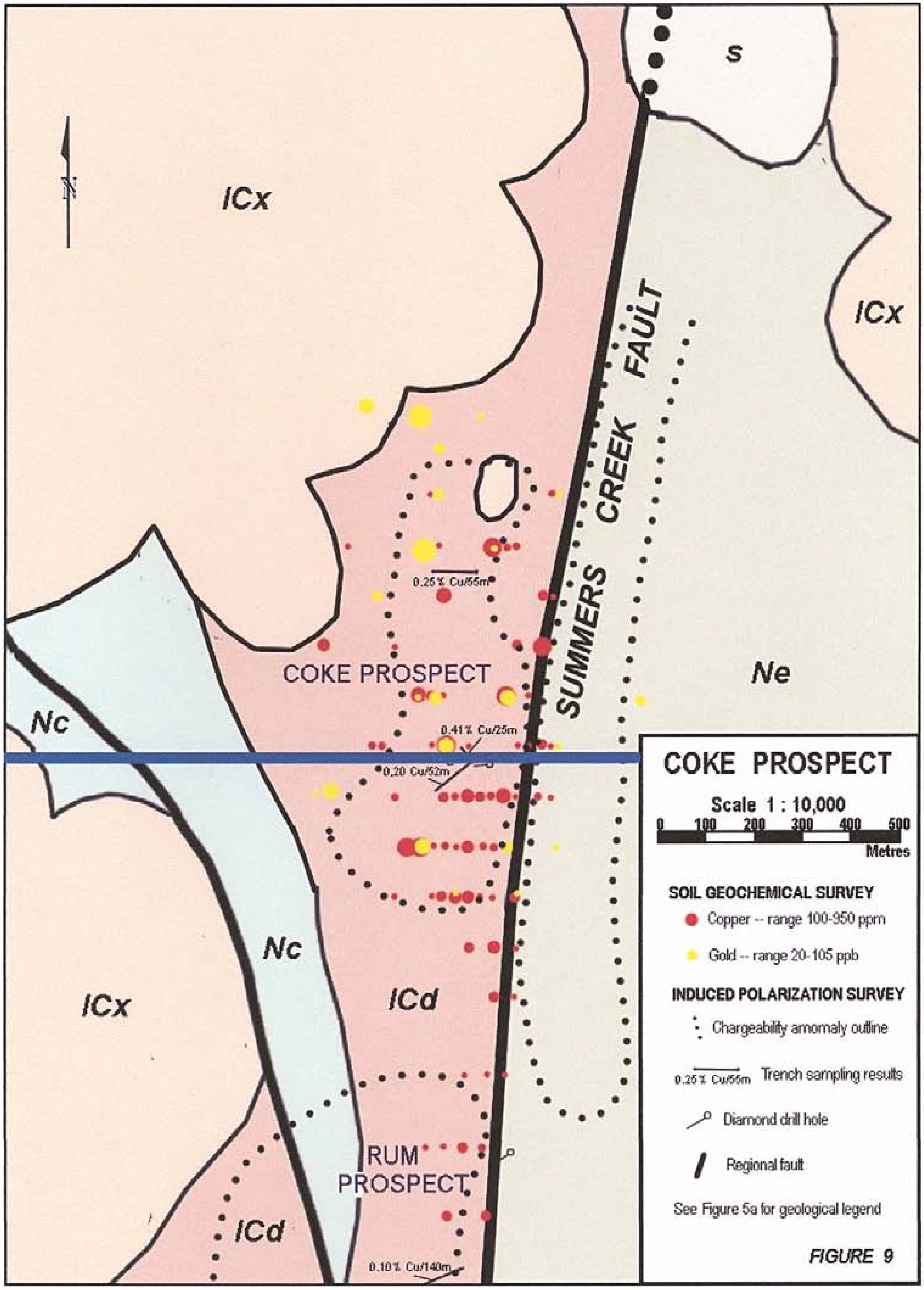
The Coke Prospect along with the Rum Prospect, which lies about one kilometre to the south, were discovered by Plateau Metals in 1962. Exploration work in the area included detailed geological mapping, several soil geochemical surveys, induced polarization (IP) and magnetic surveys, trenching and a minor amount of drilling.

The Amax geological survey that included the Coke Prospect comprises the largest area of detailed mapping in the region (Christofferson et al., 1971). It outlined a large body of intrusive rocks and intrusive breccia that forms a part of the Alkalic Intrusive Complex described in the present report. [This is the only reference to a large body of intrusive breccia that I have uncovered in the geological literature of the region. The results of the Amax survey were not used in the preparation of the later government geological map (Preto, 1979), which shows only Nicola volcanic rocks in the area.]

The rocks of the Alkalic Intrusive Complex are truncated on the east by a major regional fault that I believe follows close to the trace of the original Summers Creek fault, the boundary between the Central and Eastern facies of the Nicola volcanic sequence. The rocks immediately east of the fault are mapped as north-south-trending bedded volcanics of the Nicola Group, but I have not confirmed this.

The Amax IP survey detected two weak chargeability anomalies, each about a kilometre in length along the western side of the Summers Creek regional fault. The known mineralization at the Coke and Rum Prospects is enclosed within these anomalies (Figure 9). A considerably stronger IP anomaly follows the eastern side of the fault for two kilometres and is open to the north. The geological environment and the shape of the anomaly suggest two possible interpretations: 1) the anomaly is related to mineralization in shearing and fracturing adjacent to the north-striking fault; 2) the anomaly reflects graphite in the north-striking bedded rocks.

Anomalous copper and gold soil geochemical values are confined almost entirely to the IP-anomaly areas (Peto, 1985; Yarrow, 1987). However, the regional Summers Creek fault occupies an ancient valley that contains remnants of Tertiary(?) sedimentary rocks and glacial ice-contact deposits. Both of these are composed of transported material, which is an unsatisfactory soil-sampling medium. Accordingly, samples collected over the eastern IP anomaly may not reflect an underlying source.



s
ICx
ICx
SUMMERS CREEK FAULT
0.25% Cu/55m
COKE PROSPECT
Ne
Nc
0.41% Cu/25m
0.20 Cu/52m
Nc
ICx
ICd
RUM PROSPECT
ICd
0.10% Cu/140m
COKE PROSPECT
Scale 1 : 10,000
0 100 200 300 400 500
Metres
SOIL GEOCHEMICAL SURVEY
Copper -- range 100-950 ppm
Gold -- range 20-105 ppb
INDUCED POLARIZATION SURVEY
Chargeability anomaly outline
0.25% Cu/55m Trench sampling results
Diamond drill hole
Regional fault
See Figure 5a for geological legend
FIGURE 9

Mineralization at the Coke Prospect is composed of disseminated pyrite and chalcopyrite in altered microdiorite. Copper values in three trenches are described in assessment reports (Figure 9). The only available information on the results of diamond drilling was a given in MINFILE for one hole, which was reported as 0.23% Cu over 83.2 metres. This result falls within the range of the trench samples. Analysis of gold was not carried out. More recent rock and soil geochemical data indicates that values in gold are highly variable, but that gold is present in the samples in approximately the same ratio as at the Ketchan Lake Prospect described later in the present report. Coke also shows a close similarity to the Ketchan Lake prospect in that the mineralization is hosted by hydrothermally altered microdiorite that apparently has been invaded by pre-mineralization intrusive breccia (Christofferson et al., 1971).

It is of particular interest to note that the known mineralization at Coke apparently is closely associated with a regional fault that is interpreted to follow the Otter Creek fault zone. The projection of this fault north of the Coke prospect intersects the easterly extension of the Ketchan Lake porphyry copper-gold system in an area that is overlain by thin cover of post-mineralization sedimentary rocks. This highly prospective area has not been tested by IP surveying or by drilling, and previous geochemical surveys are not meaningful because of the transported cover material.

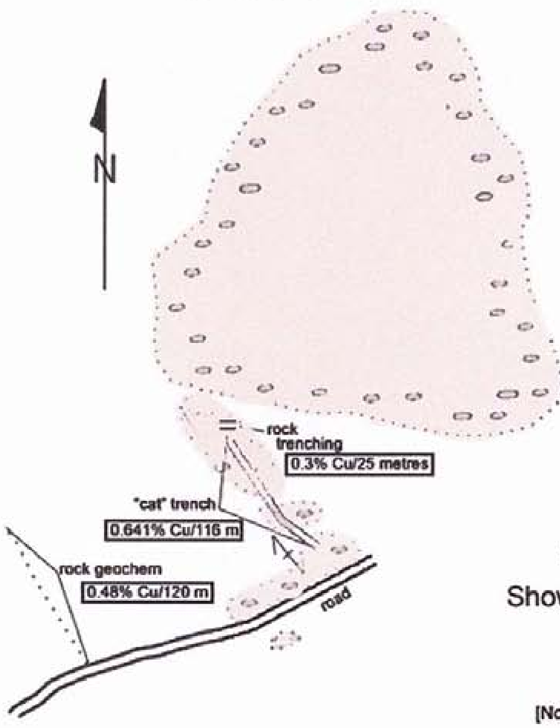
Zig 3 Prospect

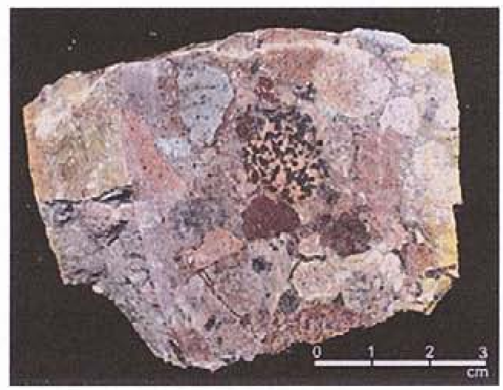
I examined the Zig 3 Prospect area on my first visit to the main part of Property. As it happened, this also was my first introduction to both alkalic intrusive breccia and "brick-red basalt" (BRB). The former was previously recorded in the region only as localized breccia pipes – e.g., the pipe at the Big Kidd deposit, eight kilometres to the north. Mapping in the vicinity indicated that the intrusive breccia covered an area of at least 600 metres by 400 metres. The BRB in this area occurs sparsely as both matrix and fragments in the breccia. The dominant clasts are monzonite and monzodiorite.

It was discovered subsequently that previous work in the immediate area had been carried out by Vanco Explorations (Lisle, 1985) and by Rayrock Yellowknife (Gourlay, 1991), *inter alia*. The designation "Zig 3" is the name given to a showing described in MINFILE (#092HNE150). The showing is stated to consist of, "native copper and chalcocite in augite plagioclase porphyritic andesite and red volcanic breccia."

A more detailed examination by the author noted that the chalcocite and native copper appear to be localized in small patches, and that disseminated chalcopyrite and pyrite are more widely distributed. A sample of disseminated sulphides taken from the relatively unaltered breccia sample shown in Figure 10 assayed 0.34% Cu, 0.06 grams/tonne Au and 1 gram/tonne Ag. A sample of malachite-coated material containing some chalcocite collected nearby assayed 2.6% Cu and 97 g/t Ag. These very preliminary observations suggest that mineralization at the Zig 3 Prospect includes both porphyry Cu-Au and redbed Cu types.

FIGURE 10





SKETCH OF ZIG 3 PROSPECT AREA
Showing trenching and intrusive breccia outcrops

0 250
Metres

[Note: Assays were taken from assessment reports and are not verified. See text of report for descriptions.]

Vanco Explorations carried out rock geochemical sampling along two bulldozer trenches at the Zig 3 showing (Lisle, 1985). Results from the westerly trench averaged revealed 0.64% Cu over 116 metres, and the easterly trench averaged 0.48% Cu over 120 metres. These results have not been verified except for the "grab" samples noted above

Rayrock Yellowknife re-sampled a rock trench of unknown provenance during their exploration of an area that coincides with the northern and central parts of the Ketchan property. An assay value of 0.3% copper across 25 metres is shown at a locality near the northern border of the Zig 3 claim. This obviously corresponds to the "rock" trench in intrusive breccia shown on the sketch (Figure 10).

Induced Polarization Survey (1991)

Rayrock Yellowknife Resources Ltd. carried out 54 kilometres of induced polarization surveying that covered about 30 square kilometres in the central part of the Property (Gourlay, 1990). It was followed up with a poorly conceived 8-hole percussion drilling program that tested small portions of four anomalies (Gourlay, 1991). Disseminated pyrite was encountered in several of the holes. The survey did not cover any of the prospects described in the present report.

The survey was re-interpreted in the light of our current geological concept (See Figure 11). Six anomalous zones of interest were selected by the author, based in large part on the opinions expressed by Phillip Hallof, Consulting Geophysicist, in Gourlay (1990). Six of the eight shallow percussion drill holes were designed to test the two lowest rated anomalies.

Zone C is located within an area of fairly abundant outcrops of relatively unaltered monzonite/syenite and related breccia. Three closely spaced holes encountered modest amounts of pyrite. Drilling of Zone D penetrated a valley basalt flow in all three closely spaced holes and ended in weakly pyritized "brick-red basalt. Zone E the southern extension of Zone D", has not been tested. The single percussion hole on Zone F did not reach bedrock. This anomaly has been dismissed by Gourlay (1990), without any real evidence, as caused by clay minerals in the overburden. It appears to follow a north-south fault.

In the writer's opinion, no additional work is warranted on Zones C, D and F at this time. Field checking of the area surrounding Zone E should be undertaken.

I believe that Zones A and Zone B are of considerably greater interest based on their size and on the geological setting. All of the anomalies occur at the western end of the survey lines, where they reached the property boundary. Presumably they are wider than indicated. The chargeability and resistivity anomalies tend to be coincident on all of the lines that cross Zone A and Zone B. Regarding the most southerly of the lines in Zone A, Hallof (in Gourlay, 1990) states that, "***the zone of metallic mineralization must be at least 1000 metres in width***."

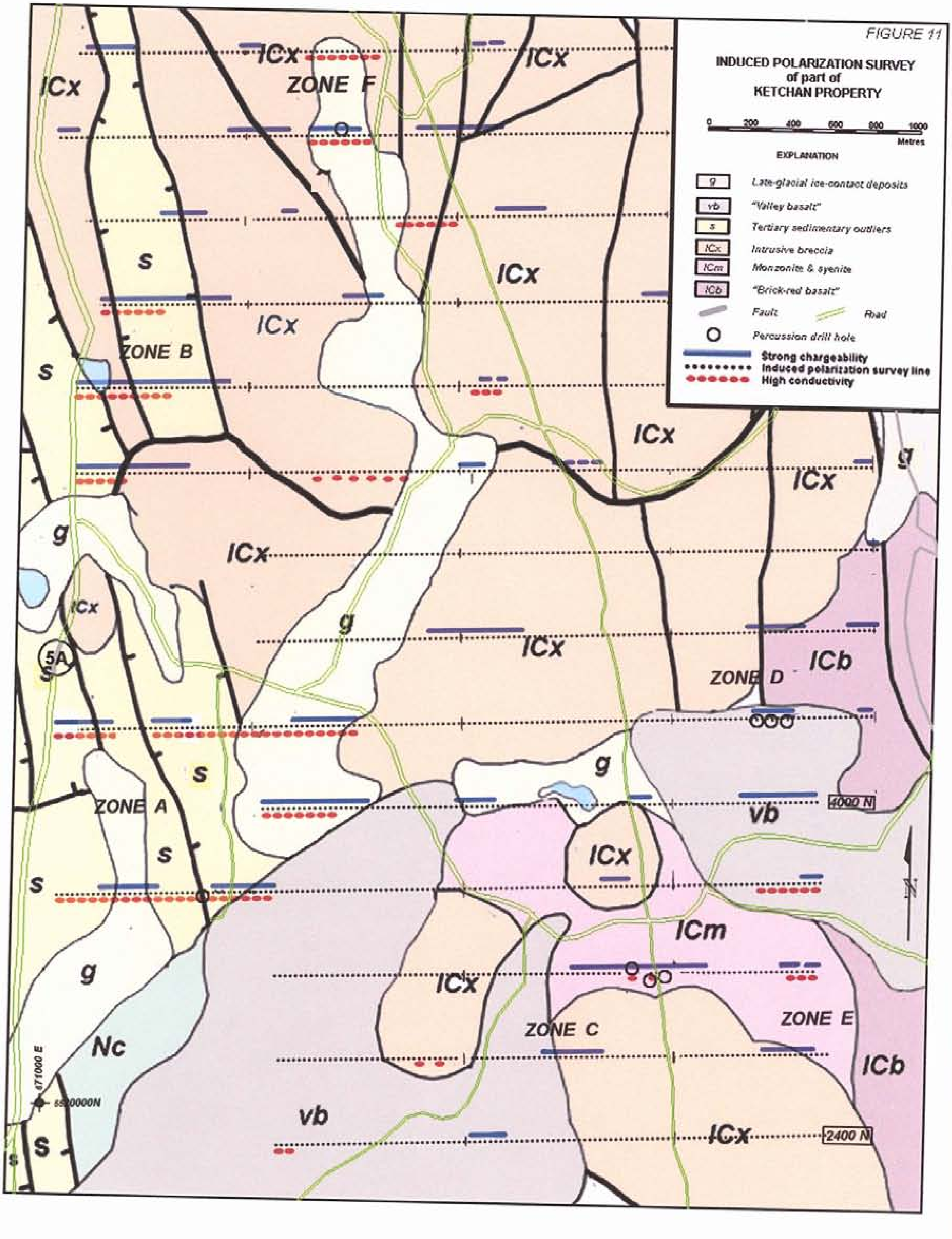


FIGURE 11
INDUCED POLARIZATION SURVEY
of part of
KETCHAN PROPERTY
0 200 400 600 800 1000
Metres
EXPLANATION
g Late-glacial ice-contact deposits
vb "Valley basalt"
s Tertiary sedimentary outliers
ICx Intrusive breccia
ICm Monzonite & syenite
ICb "Brick-red basalt"
Fault
Road
Percussion drill hole
Strong chargeability
Induced polarization survey line
High conductivity
ZONE F
ZONE B
ZONE A
ZONE C
ZONE D
ZONE E
4000 N
2400 N
5A

A single shallow percussion drill hole at the southern limit of surveying of Zone A comprised the entire follow-up on Zones A and B. The cuttings were examined under the microscope and identified as "dacite." A detailed description of the rock indicates a fine-textured qnartz-feldspar porphyry that could be either volcanic, as inferred by Gourlay (1990), or intrnsive in origin. Lavas of dacitic composition are uncommon in the Central volcanic facies of the Nicola Group. However, the description closely matches the quartz-feldspar porphyry at the PAR Prospect.

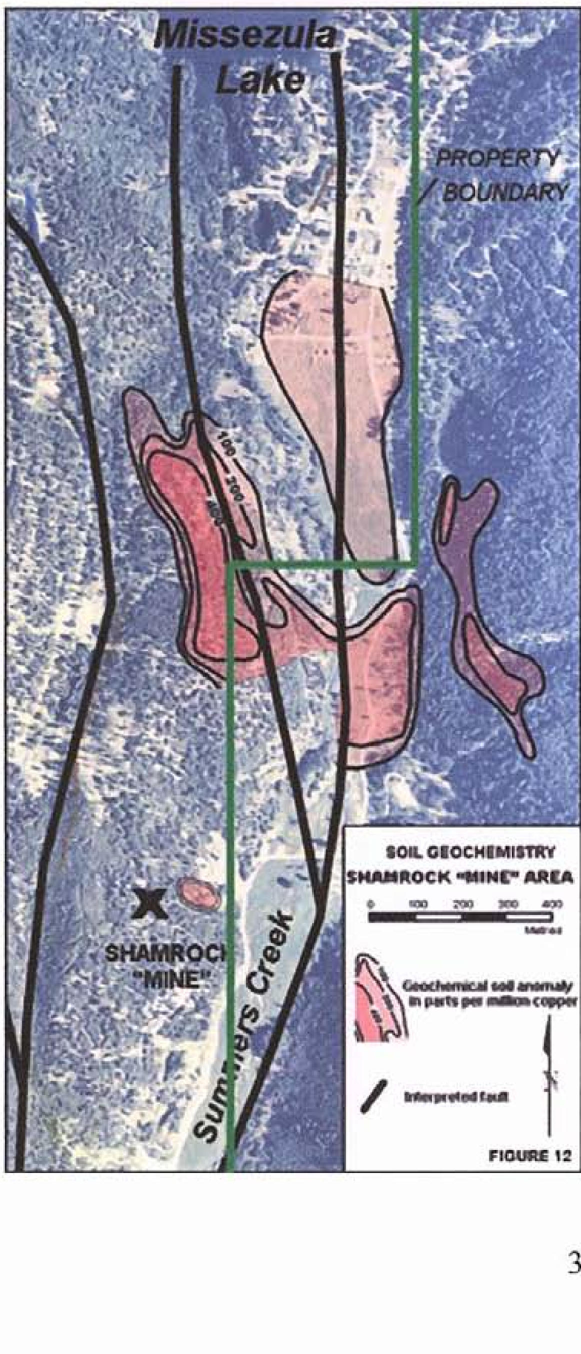
Zones A and B are situated within the broad lowland west of Otter Creek that is followed by Highway 5a. The older rocks in this valley are almost entirely masked by a thin cover of late Tertiary to Recent sediments and lavas. Granitic rocks of the Allison Lake pluton underlie the southern end of the valley about 6 kilometres to the south of the anomalies. The geological interpretation for this area suggests that the lowland is underlain by faulted and sheared Nieola volcanic rocks that were intruded by granitic rocks related to the Allison Lake pluton. The more resistant rocks of the Alkalic Intrusive Complex to the east form the topographically prominent Fairweather Hills and their southward extension to Missezula Mountain. A reasonable interpretation of indueed polarization Zones A and B is that the low resistivity (high conductivity) is due to permeable zones of fracturing and shearing related to the deep-seated crustal deformation accompanying the Otter Creek fault. The chargeability most likely reflects disseminated sulphide minerals. It should be stressed that the IP surveys are not able to identify economic minerals within these sulphides. Follow-up conventional soil geochemical sampling to determine the presence of copper or gold is hindered by the nearly continuous cover of transported sedimentary rocks and valley basalt.

Calc-alkaline porphyry copper mineralization is recorded within this structural belt at the Mob claims near the south end of the valley (Figure 7), and at the PAR Prospect, along its western margin (Bergey, 2004). In both cases the copper is accompanied by very significant amounts of silver. The area of interest that includes Zone A and Zone B, designated herein as the **Otter Creek East Zone**, has a width of two kilometres and a length of nine kilometres. Tbe general ontline of this zone is shown on Figures 7 and 7a.

Shamrock "Mine" Area

The Shamrock "Mine" shipped a token amount of copper ore in 1929. A program of trenching and diamond drilling in 1963 failed to produce encouraging results. The deposit evidently is of the type designated as "volcanic redbed copper." It occurs in intrusive breccia of the Alkalic Intrusive Complex.

During 1972 Belcarra Explorations Ltd. carried out a soil geochemical sampling program for copper that covered an area of about 6 square kilometres surrounding the "mine" (Gutrath, 1972). There was no anomalous response at the mine site. A localized anomaly east of the adits and trenches probably reflects downslope movement of copper from dump material.



The geochemical survey detected a cluster of copper anomalies within an area of about one square kilometre. The strongest portion of the anomalous zone, and the only part that is located within the Property lies midway between Shamrock "mine" and the south end of Missezula Lake. The strongest part of the anomaly has a length of 500 metres and a width of about 100 metres, with copper values mainly in the range of 400 to 600 ppm. There is no record to indicate that the recommended follow-up exploration program was completed. The anomaly is of sufficient size and intensity to warrant serious follow-up exploration.

I have not done any mapping in the immediate vicinity of the anomaly. The photo-geology indicates that the strongest anomaly is located in a narrow slice of Nicola volcanic rocks along the west side of a branch of the Summers Creek fault system.

Ketchan Lake Prospect

Although Ketchan Lake Prospect is by far the most intensively explored portion of the Property it is treated last in this section of the report, which deals mainly with an interpretation of "historical" exploration data, in order to juxtapose it with the "Drilling" section that covers most of the exploration work carried out on behalf of the Owner.

The original discovery was made by Plateau Metals Ltd. in 1962. Geological mapping, geophysical surveys and diamond drilling were carried out by Plateau Metals and by Adera Mining Ltd. in 1966 under an option arrangement. Bethlehem Copper Corp. acquired the Ketchan Lake property in 1973. Geophysical surveys and drilling were undertaken intermittently between 1973 and 1980 by Bethlehem Copper and, during 1991 and 1992, by Cominco Ltd, following its takeover of Bethlehem Copper. Percussion drills of limited depth capability were utilized for most of the "historic" drilling.

Induced polarization and magnetic geophysical surveys were carried out by Plateau/Adera and by Bethlehem/Cominco. The results of the various sets of surveys are not in conflict. Condensed results of the most recent geophysical surveys are shown in Figure 13.

The writer carried out geological mapping at Ketchan Lake on behalf of the Owner and Copper Belt Resources, the Optionee, during 2005 (Bergey, 2005). This work indicated that the mineralization was hosted by the largest body of diorite in the Aspen Grove intrusive complex. The diorite in the mineralized area has been highly fractured and altered. Small exposures of intrusive breccia, monzonite and syenite were noted in the central part of the zone, but fracturing, alteration and a scarcity of outcrops inhibited the delineation of these rock types.

Thirty-seven drill holes were completed within the area surrounding Ketchan Lake prior to 2005 (Figure 13). Twenty-two of the holes were drilled within a northwest-trending zone that includes the known mineralization at the Ketchan Prospect. This zone is approximately 1.5 kilometres in length by 0.5 kilometres in width. This drilling should be considered "historic" since sample handling and data verification cannot be assured.

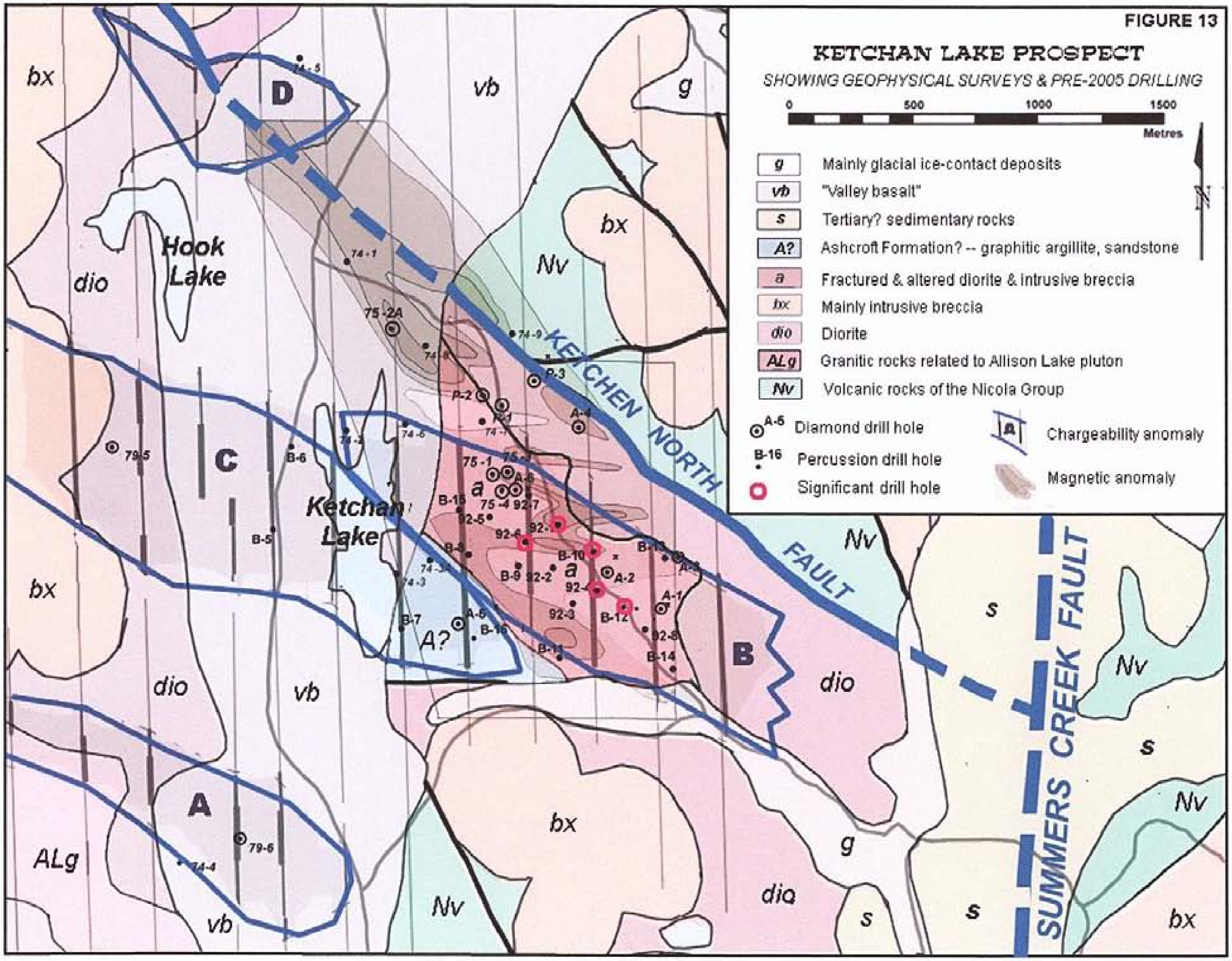


FIGURE 13
KETCHAN LAKE PROSPECT
SHOWING GEOPHYSICAL SURVEYS & PRE-2005 DRILLING
0
500
1000
1500
Metres
g Mainly glacial ice-contact deposits
vb "Valley basalt"
s Tertiary? sedimentary rocks
A? Ashcroft Formation? -- graphitic argillite, sandstone
a Fractured & altered diorite & intrusive breccia
bx Mainly intrusive breccia
dio Diorite
ALg Granitic rocks related to Allison Lake pluton
Nv Volcanic rocks of the Nicola Group
A-5 Diamond drill hole
B-16 Percussion drill hole
Significant drill hole
A Chargeability anomaly
Magnetic anomaly
Hook Lake
Ketchan Lake
KETCHEN NORTH FAULT
SUMMERS CREEK FAULT
A
B
C
D
bx
vb
g
dio
Nv
a
A?
s
ALg

Both magnetic and IP surveys can provide valuable assistance in the search for mineralization of the Alkalic Porphyry Cu-Au type, but in neither case is the information definitive of copper-gold mineralization.

Magnetite, by far the most significant magnetic mineral, commonly accompanies alkalic porphyry-copper-gold mineralization in the form of hydrothermal veins and fracture fillings. However, the unmineralized intrusive rocks, particularly diorite, often contain considerable amounts of disseminated magnetite that was introduced as part of the rock-forming process. Also, magnetite can be destroyed (oxidized to non-magnetic hematite) during post-ore hydrothermal alteration, particularly adjacent to major faults (as may have happened at the Coke and Axe Prospects south of Ketchan Lake). Near-surface oxidation in the weathering process may also destroy the magnetic property of the rock (as appears to be the case at the Afton Cu-Au deposit), but there is no evidence of a significant amount of surface oxidation in the Ketchan region. Magnetic anomalies do not have a severe depth limitation. However, the amplitude and definition of anomalies decline with depth from the surface.

The most recent (and most complete) ground-based magnetometer survey outlined an anomalous zone that coincided with the central and western part of the mineralized area east of Ketchan Lake. The magnetic zone extends to the northwest within the Ketchan Lake valley for an additional 1500 metres. In its western portion it follows the trace of the regional Ketchen North fault. The anomalous zone comprises a number of rather discontinuous individual magnetic "highs." This type of pattern is not unusual for hydrothermally introduced magnetite.

Chargeability anomalies detected by IP surveys may reflect disseminated sulphide mineralization. However, other materials also are "chargeable." In the case of Ketchan Lake, the most important of these is graphite. This conductive mineral is present in the poorly delineated sedimentary unit (Unit **A?** on Figure 13) that was encountered in several drill holes along the south margin of the Ketchan prospect It is evident that portions of the IP anomalies in the Ketchan Lake area are due to graphite. This uncertainty as to the probable source of the anomalies complicates the interpretation of the IP surveys.

Three west-northwest-trending chargeability anomalies have been outlined. Anomaly A appears to reflect graphite – at least in its western portion, where

DDH 75-4 intersected graphitic argillite interbedded with pyroclastic volcanic rocks. The large central anomaly through Ketchan Lake is derived from several sources, and I have sub-divided it into Anomalies B and C. Anomaly B, coincides with the known area of mineralization at the Ketchan Lake Prospect. It is open to the east. Anomaly C has at least two sources. The south-eastern portion overlies sedimentary rocks that are known to contain graphite elsewhere in the area, although none has been encountered here. The valley to the west is underlain by valley basalt and no information has been recorded on the four percussion drill holes in the area. The western part of the anomaly is underlain by diorite and intrusive breccia. DDH 75-5 reported disseminated pyrite with very low copper values in intrusive rocks in this area. Anomaly D is weak and localized. It appears to follow the regional northwest-trending fault that forms the north-eastern boundary of the diorite, but it has no known cause.

A significant feature of the geophysical surveys is the divergence of the overlapping magnetic and IP anomalies at the western edge of the known mineralization (Figure 13). The broad IP anomaly extends to the west under Ketchan Lake, whereas the magnetic feature continues to the northwest.
There is a possibility that the absence of a coincident IP anomaly along the northwest trend is due in part to the deep cover of younger rocks in this area. Diamond drill hole 75-2A is the only hole along this trend for which information on the geology is available. DDH 75-2A penetrated glacial overburden (0-22m), valley basalt (22-64m) and semi-consolidated valley fill (64-105 m) before reaching "bedrock" between 105 and 107 metres, where the hole was lost. The material is described as "soft intrusive bedrock with strong pyrite." Only a few pieces of core were recovered. No assaying was carried out. The hole is located on a magnetie anomaly, but there is no IP expression of the pyrite (Figure 13). There are two earlier percussion holes in the area but there is no information on the results of the drilling and no indication that either of them had reached pre-Tertiary bedrock.

The possibility of south-eastward extension of the Ketchan Lake mineralized structure has not been explored seriously. The IP and magnetic surveys terminated a short distance east of the most easterly drill hole. The deep-seated Summers Creek fault has been interpreted about 1500 metres southeast of the drilling area. The intervening ground is mostly covered by glacial ice-contact deposits and by Tertiary? sedimentary rocks. The Coke and[Rum prospects are located along the Summers Creek regional fault, about 1500 metres south of the projected intersection of the Ketchan Lake mineralized zone with the fault.

Complete drill logs and analytical data are available for only the more recent historical drilling – i.e. the 1991and 1992 Cominco programs. The most significant holes were drilled in the eastern part of the drilling area. The locations of the drill holes are shown on Figure 3.

The results of the best Cominco percussion drill holes are as follows (all of the holes were drilled vertically):

B-10 averaged 0.38% Cu / 0.123 grams/tonne Au over 86.6m (open);
B-12 averaged 0.23% Cu / 0.135 grams/tonne Au over 80/5m (open);
B-13 averaged 0.13% Cu / 0.126 grams/tonne Au over 90.6m (open);
92-1 averaged 0.19% Cu / 0.10 grams/tonne Au over 48.8m (open);
92-4 averaged 0.26% Cu /0.124 grams/tonne Au over 81.4m (open);
92-6 averaged 0.165 Cu / 0.155 grams/tonne Au over 89.1m

The locations of the drill holes are shown on Figure 13.

DRILLING

The factual data contained in this section of the report was taken from Thomson (2007). The author initiated the 2005 program and visited the site from time-to-time during the successive drill programs but was not directly involved in their planning or execution.

2005 Diamond Drill Program

In 2005, a diamond drill program was designed to test the area around Cominco percussion drill holes B-10 and 92-4, as both holes contained promising copper-gold values over significant intervals. The 2005 diamond drill program consisted of 10 drill holes totalling 1202.4 meters and was carried out under the direction of Greg Thomson, P. Geo. Several of the drill holes, in particular K07-04, K07-07, K07-08 and K07-09, contained continuous intervals of moderate to locally high grade copper and gold values. Significant copper/gold intercepts are summarized in the following table; the locations of the drill holes are illustrated on Figure 14.

The results of the 2005 diamond drilling programs are summarized in the following table:

TABLE 2

Hole No.	Location	Dip	Azimuth	Length (metres)	Elevation (metres)	From (metres)	To (metres)	Width (metres)	Copper (%)	Gold (g/t)
						101.2	114.2	13.0	0.77	0.15
					Includes	104.25	110.35	6.1	1.38	0.24
						142.4	147.0	4.6	0.84	0.32
K05-01	676273 5516895	-90	0	54.0	1373m	6.4	17.4	11.0	0.35	0.11
K05-10	676273, 5516886	-45	240	195.7	1373m	128.65	143.9	15.25	0.28	0.07
K05-02	676273 5516895	-45	225	54.0	1373m	6.1	17.3	11.2	0.10	0.05
K05-03	676273 5516895	-45	45	104.2	1373m	Negligible				
K05-04	676412 5516719	-90	0	109.8	1395m	9.2	109.8	100.7	0.38	0.10
					Includes	22.0	52.5	30.5	0.58	0.14
					including	22.0	25.0	3.1	1.00	0.32
					including	49.4	52.5	3.1	1.32	0.37
					and	64.7	98.2	33.6	0.51	0.11
K05-05	676412 5516719	-45	80	76.2	1395m	22.0	28.0	6.0	0.30	0.08
						34.2	40.3	6.1	0.88	0.125
K05-06	676900 5516048	-90	0	81.4	1370m	Argillite- No samples				
K05-07	676411 5516721	-60	260	127.4	1395m	22.0	42.1	20.2	0.32	0.14
					Includes	25.2	26.6	1.4	1.50	0.49
						50.3	86.0	35.8	0.54	0.19
					Includes	67.7	70.8	3.1	1.14	0.32
K05-08	676378, 5516640	-90	0	236.3	1379m	9.8	107.3	97.5	0.33	0.09
					Includes	15.9	70.8	54.9	0.42	0.12
						119.5	122.6	3.1	1.28	0.28
					(fault zone)	128.65	143.9	15.25	0.46	0.24
						171.3	177.4	6.1	0.43	0.22
						217.1	236.3	19.2	0.46	0.36
					includes	217.1	220.1	3.1	0.17	1.25
					includes	223.15	232.3	9.15	0.78	0.29
K05-09	676378, 5516640	-60	80	171.4	1379m	52.45	74.0	21.55	0.51	0.14

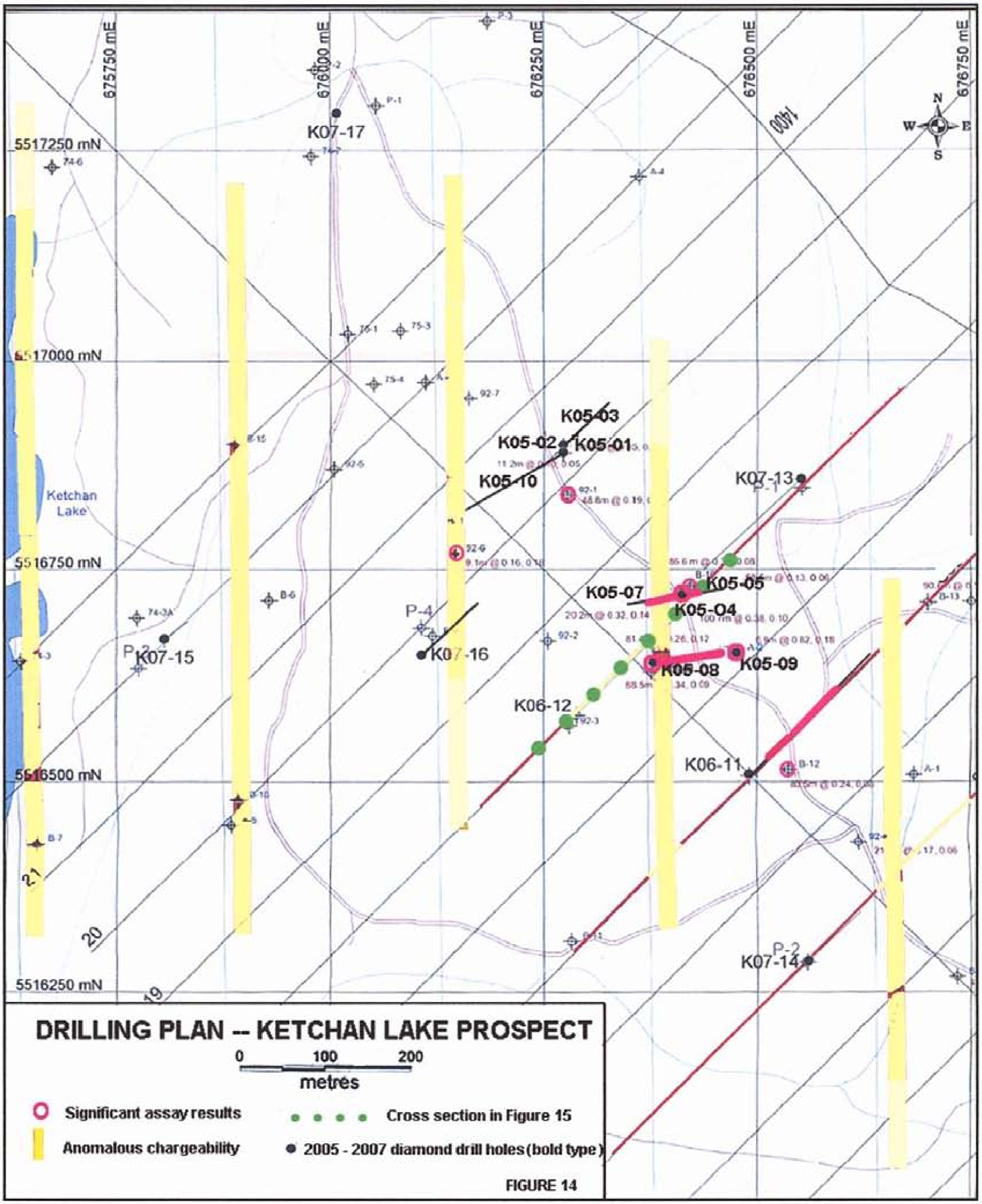
2006 and 2007 Diamond Drill programs

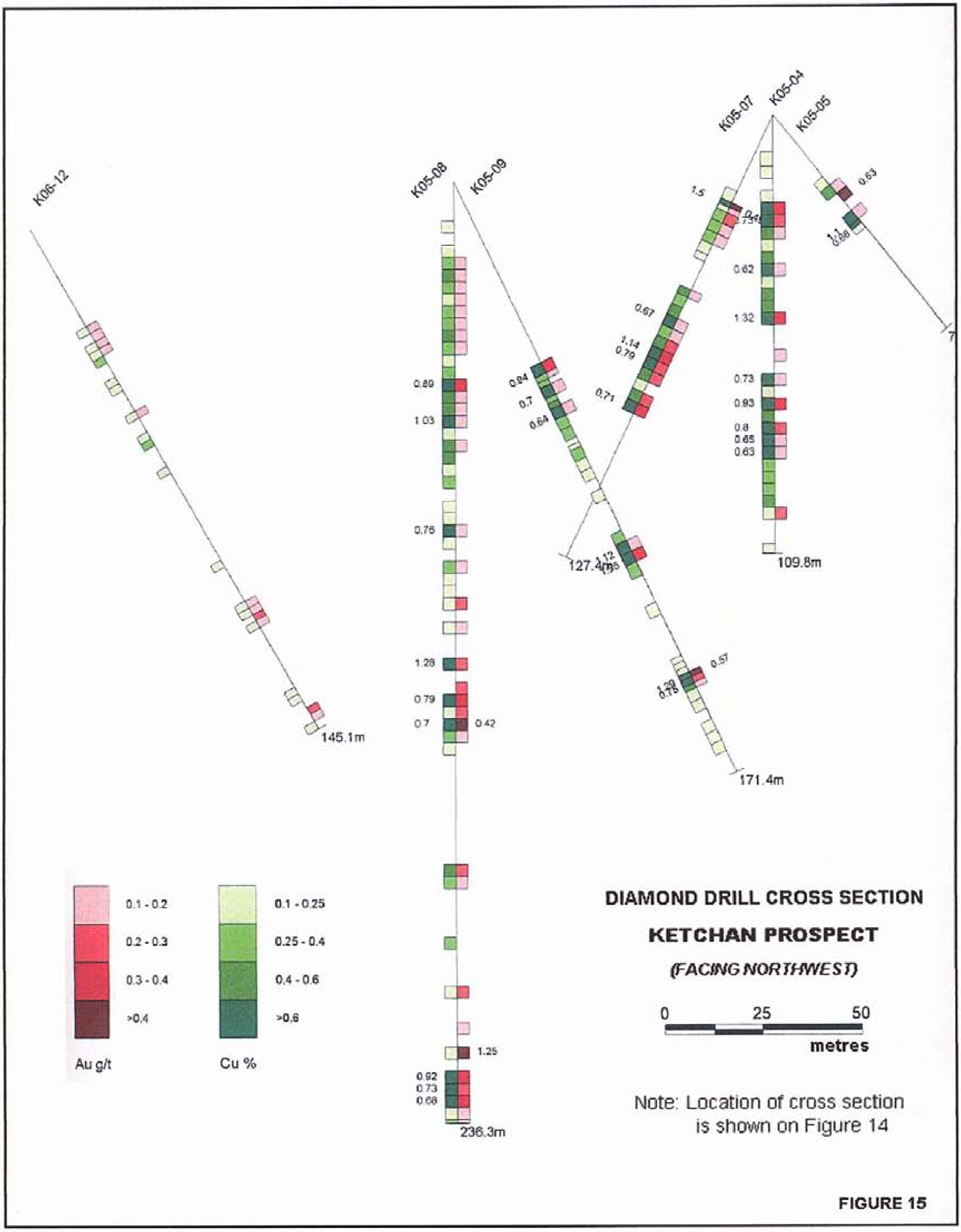
A two-hole diamond drill program, totalling 485.0 metres was carried out on the Ketchan Lake mineralized zone during the period November 26 to December 16, 2006. The work was carried out under the direction of Equity Engineering Ltd. Drill hole K06-11 was drilled to 339.1 metres depth. Anomalous copper values were obtained in drill hole K06-11 with results summarized on the following data table. Due to drilling difficulties, drill hole K06-12 was terminated well short of its target depth and contained generally insignificant copper or gold values throughout its length of 145.1 metres.

A diamond drill program was carried out on the Ketchan property during March, 2007 under the direction of G. Thomson, P. Geo. A total of 931 meters of drilling was carried out in five drill holes over the drilling period. The majority of these drill holes were drilled beyond the area of the significant drill holes of the 2005 drill program and for the most part contained only weak to moderate locally anomalous copper+/- gold values. The results of the 2006 and 2007 diamond drilling programs are summarized in the following table:

TABLE 3

Hole No.	Location	Dip	Az.	Length	Elev.	From	To	Width	Copper	Gold
				(m)	(m)	(m)	(m)	(m)	(%)	(g/t)
K06-11	676491, 5516506	-60	47	339.9	1375	107.65	145.3	37.65	0.24	0.115
						204.47	241.22	36.75	0.29	0.17
K06-12	676289, 5516578	-60	47	145.1	1367.6	Negligible				
K07-13	676553, 5516856	-60	227	314.9	1404	97.0	105.0	8.0	0.13	
						177.0	181.0	4.0	0.7	0.23
K07-14	676559, 5516285	-60	47	172.8	1365	88.0	114.0	26.0	0.2	0.19
						124.0	134.0	10.0	0.2	0.13
K07-15	675806, 5516668	-60	53	68.0	1304	Argillite				
K05-16	676107, 5516649	-60	47	181.7	1352	130.0	144.0	14.0	0.1	0.1
K05-17	676008, 5517294	-90	0	193.55	1337	Negligible				


675750 mE
676000 mE
676250 mE
676500 mE
676750 mE
5517250 mN
5517000 mN
5516750 mN
5516500 mN
5516250 mN
N
W
E
S
1400
K07-17
K07-13
K07-15
K07-16
K07-14
K05-03
K05-02
K05-01
K05-10
K05-07
K05-05
K05-O4
K05-08
K05-09
K06-12
K06-11
Ketchan Lake
P-4
P-2
20
19
DRILLING PLAN -- KETCHAN LAKE PROSPECT
0
100
200
metres
Significant assay results
Anomalous chargeability
Cross section in Figure 15
2005 - 2007 diamond drill holes (bold type)
FIGURE 14



K06-12
K05-08
K05-09
K05-07
K05-04
K05-05
145.1m
236.3m
171.4m
127.4m
109.8m
0.1 - 0.2
0.2 - 0.3
0.3 - 0.4
>0.4
Au g/t
0.1 - 0.25
0.25 - 0.4
0.4 - 0.6
>0.6
Cu %
DIAMOND DRILL CROSS SECTION
KETCHAN PROSPECT
(FACING NORTHWEST)
0
25
50
metres
Note: Location of cross section is shown on Figure 14
FIGURE 15

The best copper and gold values revealed in the drilling programs were located within a northeast-trending zone about 500 metres in length in the central portion of the known mineralized area. All of the "significant" holes from both the historical and recent drilling (highlighted on Figures 13 and 14) fall within this zone.

The following account is excerpted from Thomson (2007).

To date, the highest concentrations of copper mineralization (mainly chalcopyrite) are closely associated with strong to semi-massive zones of fine-grained magnetite as found in several of the 2005 drill holes (ie. K05-04, K05-07).

The strongest alteration is prevalent within sections that have been variably faulted and brecciated. It is within these zones of greatest disruption that the highest sulphide concentrations occur. The main observed sulphide forms of mineralization were fine-grained disseminations and local fracture fills of pyrite and intimately-associated chalcopyrite. Minor traces of sporadic bornite have also been observed.
Zones of strong alteration, where present are dominantly chlorite +/- epidote +/- magnetite with local areas of patchy potassic alteration. Silicification was not prevalent throughout most of the drill holes, however zones of silicification (+/- sericite) were noted within drill hole K05-09, from approximately 45.0 to 77.0 m, which also contained fine-grained associated chalcopyrite.

Strong correlation exists between higher copper and gold values. Generally, anomalous gold values range between 0.1 to 0.2 grams per ton gold, with narrower sampled intervals returning 0.2 to 0.7 g/t Au.
The highest gold assay of 1.25 g/t Au was returned from drill hole K05-08, over the interval 217.1-220.1 metres.

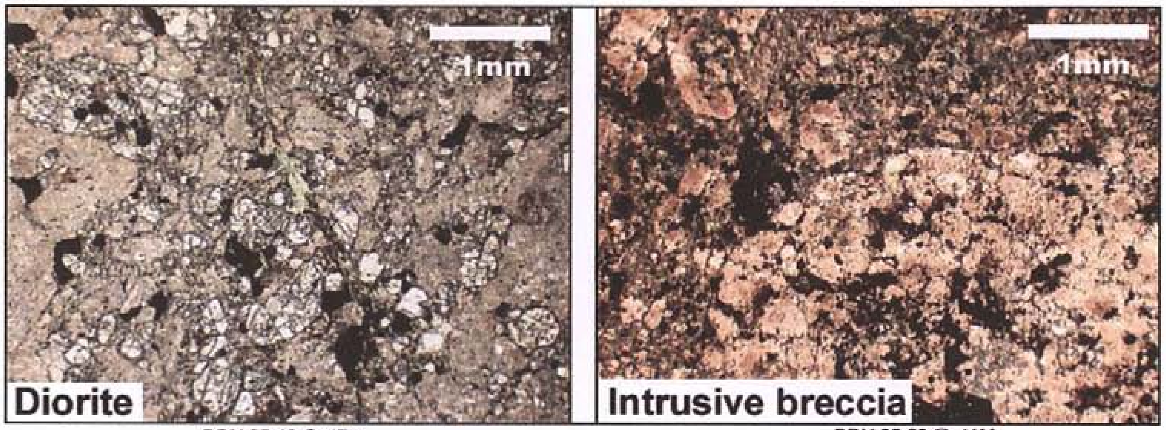
There is also a good correlation of higher copper-gold values with increased silver values. Copper values of greater than 0.5% copper are often accompanied by 1.5 to 4.5 ppm silver. Silver values may act as a potential credit towards the valuation of mineralized zones at the Ketchan porphyry copper-gold zone.

In several of the drill holes, molybdenum was found to be associated with areas of stronger copper mineralization. Although not visibly apparent, anomalous molybdenum values were returned in several of the drill holes, however molybdenum does not appear to occur in high enough value or consistent widths for economic consideration.

PetraScience Consultants carried out petrographic analyses on eight core samples taken from drill holes DH05-03, 04, 07, 08 and 10 (Dunne & Thompson, 2006). All of the samples except the one from DH05-10 came from holes that contained significant Cu/Au values. The petrographic report states, "***Lithologies are dominated by a variety of breccias including intrusive breccia and crackle breccia*** [emphasis mine]. *The intrusive breccia comprises subrounded to subangular fragments of plagioclase porphyry and locally fine-grained equigranular plagioclase aggregate in a fine to medium-grained, seriate, inequigranular, altered intrusive rock.*"

The following excerpt describes the alteration and mineralization:

> K-feldspar alteration is recognized in several sections as pervasive replacement of plagioclase in breccia fragments, matrix or groundmass. Selective replacement of plagioclase by muscovite (sericite) is recognized in section DH05-10@47m and pervasive muscovite (sericite) replacement of host rock occurs in section DH05-08@50.5m. Illite, pyrite and rutile occur as selective replacement of plagioclase in section DH05-04@62.1m. Propylitic alteration including selective actinolite-epidote-chlorite-pyrite±magnetite±carbonate, chlorite-magnetite-clay or chlorite-carbonate-pyrite replacement of former mafic phases is found in most sections. Overprinting of pervasive sericite alteration by patchy rhombohedral carbonate (likely dolomite) occurs in section DH05-08@50.5m.
>
> Sulphides include minor to major amounts of pyrite which occurs in most sections disseminated, as patchy aggregates, in stringers or in veinlets, trace to major amounts of chalcopyrite which occur typically disseminated or enclosing and infilling fractured pyrite, traces of bornite as peripheral replacement of chalcopyrite (in 3 sections) and locally chalcocite and covellite partly replacing the copper sulphides. Veins include pyrite-calcite-chlorite-(epidote-chalcopyrite), quartz-carbonate-(pyrite-chalcopyrite), chlorite-clay, chlorite-chalcopyrite±quartz±rutile±clay, chlorite-calcite-carbonate, calcite-chalcopyrite-clay, and epidote-chalcopyrite-(pyrite-carbonate-chlorite-quartz)

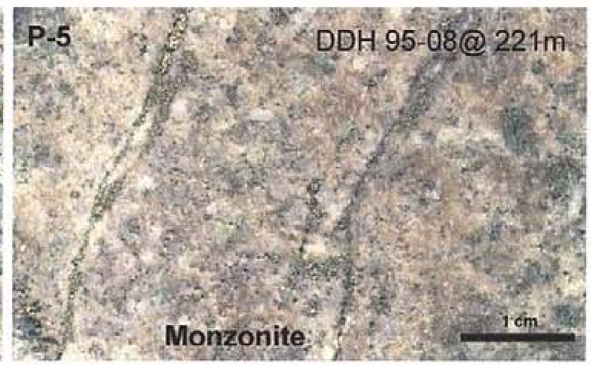


DDH 05-10 @ 47m DDH 05-03 @ 41M

PHOTOMICROGRAPHS OF DRILL CORE **P-4**

The only one of the samples that was composed of equigranular diorite, the rock type that constitutes the "country rock" in the area surrounding the Ketchan Lake Prospect, was taken from DH5-10 which is located along the north-western margin of the zone of "significant" mineralization.

I was impressed by the ubiquity of crackle breccia throughout the core that I examined. Most of the rock is composed of altered fine-textured diorite (or "microdiorite" – the term preferred by Thomson [2007] in his drilling logs). Intrusive breccia is relatively uncommon. The intrusive breccia described by Dunne & Thompson (2006) was quite fine grained. Most of the intrusive breccia seen in outcrop within the Alkalic Intrusive Complex is much coarser-textured. However, coarser varieties of intrusive breccia also are found in the core. Monzonite and syenite also were noted in the higher-grade zones. Potassic alteration is widespread in the Ketchan porphyry system, so it is possible that the K-spar in these rocks was due to alteration. This mode of origin is cited frequently with regard to monzonite and syenite of the Cherry Creek phase at the Afton mine.



My interpretation based on the recent drilling is that small bodies of intrusive breccia intruded into the diorite, which appears to be the earliest phase of the Alkalic Intrusive Complex. The crackle breccia may have been a consequence of this injection. These two breccia types would constitute favourable sites for later precipitation of the mineralization. This setting – i.e., localized pipes closely associated with alkalic porphyry copper-gold deposits -- is common in the zone extending from Copper Mountain to Kamloops, and at the Mount Polley mine in the equivalent belt to the north. A good description of a breccia pipe at the Pothook mine, located close to the Afton mine, is given by Stanley et al. (1994): "*In the center of the open pit, and seen only in drill core, there is a large body of hydrothermal breccia that contains rotated clasts of Pothook diorite, Cherry Creek monzonite, Sugarloaf diorite, and Nicola volcanics in a matrix of rock flour. In places, especially toward the center of the breccia, these clasts are well rounded due to milling, range in size from 5 to 100 millimetres, and are clast supported. Toward the margins of the breccia, fragments are larger and more angular*." The economic mineralization at the mine was emplaced both in the intrusive breccia and in crackle breccia in the intruded rocks.

MOBILE METAL ION TEST SURVEY

The photo-geological study indicated that large portions of the property were covered by various types of transported overburden that had not been mapped previously. These included weakly indurated upper Tertiary(?) sedimentary rocks, late-glacial sand & gravel, and valley basalt. The cover of overburden prevented geological mapping and prospecting and precluded the effective use of conventional geochemical soil sampling.

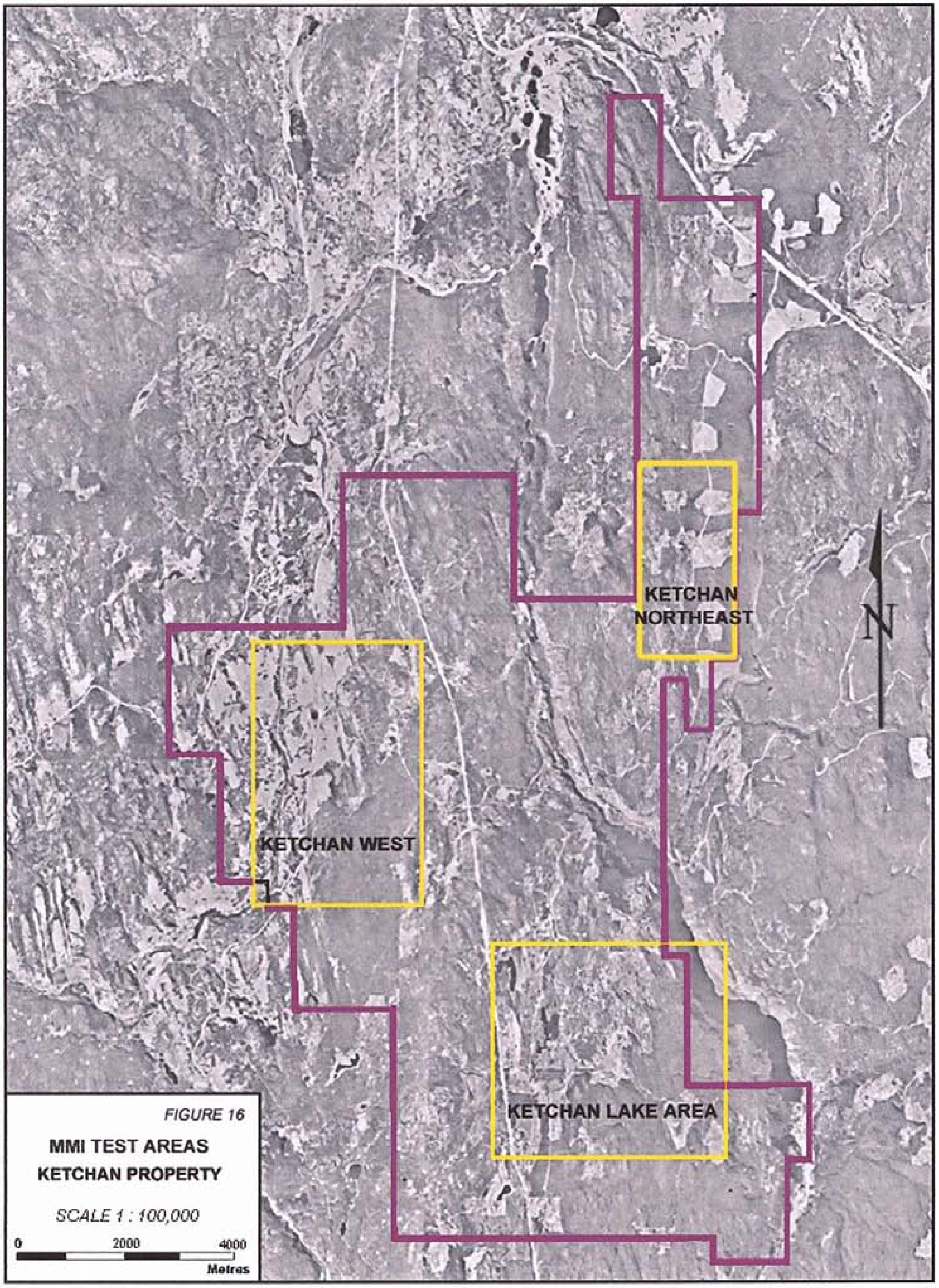
The Mobile Metal Ion (MMI) geochemical sampling and extraction technique was developed in Australia for use in prospecting for deeply buried and highly oxidized mineralization. "Mobile Metal Ions" is a term used to describe ions that have moved in the weathering zone and that are only weakly or loosely adsorbed by surface soil particles. The methodology is based on the assumptions that these ions the metals were derived from oxidation of a mineralized source, that they move directly upward, and that they accumulate in surface soils. The mechanism that drives the upward movement is poorly understood. Capillary rise is thought to be a very important process in the near surface environment (above the water table), including the maintenance of the anomalies.

MMI is a partial digestion and, like all partial digestions, the results are very difficult to interpret. An even more serious problem is that we are dealing with a technique that was developed for use under a completely different set of conditions – e.g., shallow water table, lack of deep oxidation, glaciation. Furthermore, the case histories presented by the proponents of the technique for surveys done under the local conditions are mainly unconfirmed reports.

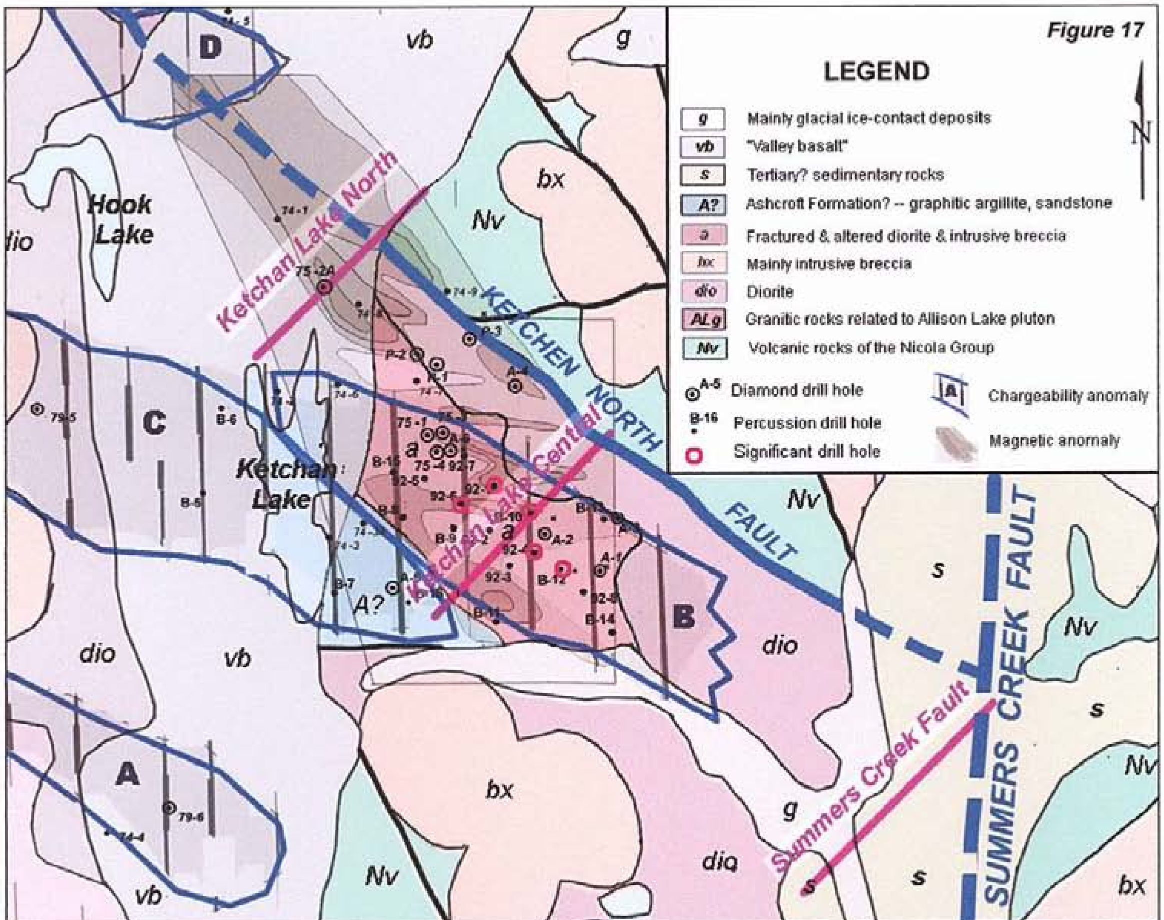
I have examined the results of a number of surveys that were carried out in interior British Columbia. Most of these were performed in till-covered areas, where the use of MMI was unnecessary since conventional soil sampling would have been far easier to interpret. However, in several cases there was evidence that zones of mineralization were detected beneath shallow transported cover. In one example, conspicuous changes in several elements detected two regional faults beneath deep overburden. A strong molybdenum anomaly that was not found in an earlier soil survey also was noted. My conclusion is that MMI can detect metals through transported cover material, but that the effects on the anomalous response due to various types of material and to the depth of the source is undetermined for the local environment.

Scope of the Survey

Three general areas were selected for test surveys as indicated on Figure 16. In all case the samples were collected at 50-metre intervals along the lines.



Ketchan Lake Area



MOBILE METAL ION TEST LINES IN THE KETCHAN LAKE AREA

Three MMI lines were sampled along the indicated mineralized trend. The samples were collected at 50-metre intervals.

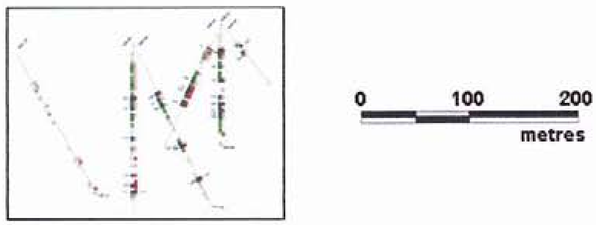
The central line was intended as a test of the best mineralization that was encountered in the diamond drilling programs. (It approximately follows the cross section shown in Figure 15.) Soil samples were analysed by total digestion as well as for MMI content. A comparison of the Cu results of the two digestions is shown on Figure 18. The total digestion detected weakly anomalous copper values (130-140 ppm) across the zone. The MMI results showed comparably anomalous Cu values within the same area, along with several weakly anomalous Au & Ag values.

34.7	23.5	21.5	24.1	24	26.2	37.1	27.8	123.5	140.5	22.1	128.5	25.4	97	48.6	96	49.3	36.3	24.6	45.2

COPPER IN SOIL BY TOTAL DIGESTION (PARTS PER MILLION)

1260	560	510	510	670	310	590	460	1830	2270	330	4530	340	1370	540	4040	860	630	340	1420

COPPER IN SOIL BY MMI EXTRACTION (PARTS PER BILLION)



COMPARISON OF MOBILE METAL ION AND TOTAL DIGESTION OF SOIL SAMPLES OVER MINERALIZED ZONE AT KETCHAN LAKE

[Note: Diamond drill cross-section taken from Figure 15]

FIGURE 18

The western line was intended to test a ground magnetic anomaly north of Ketchan Lake that follows Ketchan North fault, which separates diorite of the Alkalic Intrusive Complex from Nicola volcanic rocks. The MMI line traversed a portion of a valley filled with pre-glacial sediments overlain by valley basalt. The only drill hole to reach bedrock (DDH 75-2A) penetrated glacial overburden (0-22m), valley basalt (22-64m) and semi-consolidated valley fill (64-105 m) before reaching bedrock between 105 and 107 metres, where the hole was lost. The log for the final two metres reported altered and mineralized diorite. The results of the MMI test showed weak but distinctly anomalous Cu and Au values (2x-5x background) at the beginning and end of the traverse.

The eastern line was intended to test the major deep-seated Summers Creek fault along the south-eastern extension of the Ketchan mineralized zone. The area is covered by upper Tertiary(?) sediments. No significant anomalous indications were detected for any of the 54 elements analyzed.

The MMI results along the western and eastern lines are plotted below.

	Ag	Au	Cu
0		0.1	270
50SE	7	0.6	3160
100	14	0.2	1170
150	8	0.2	960
200	6	0.1	330
250	15	0.1	1630
300	4	0.1	460
350	7	0.1	430
400	6	<0.1	260
450	7	<0.1	240
500	9	<0.1	360
550	23	0.1	330
600	7	0.1	360
650	6	<0.1	860
700	11	0.1	610
750	17	<0.1	290
800	10	<0.1	670
850	13	0.5	1930
900	11	<0.1	1190
950SE	9	0.2	600

KETCHAN LAKE NORTH

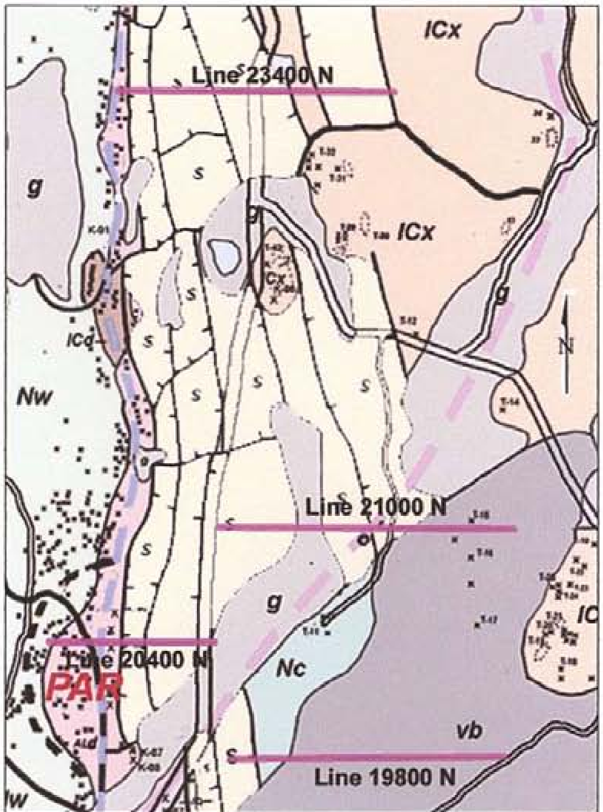
	Ag	Au	Cu
450NE	8	<0.1	1020
400	20	<0.1	620
350	22	0.1	730
300	13	<0.1	530
250	9	<0.1	370
200	7	<0.1	430
150	17	<0.1	340
100	19	<0.1	500
50NE	29	<0.1	760
0	24	<0.1	720
50SW	9	<0.1	570
100	37	0.3	910
150	46	<0.1	680
200	33	<0.1	360
250	36	<0.1	610
300	37	<0.1	450
350	24	<0.1	750
400	19	0.2	710
450SW	33	<0.1	940

SUMMERS CREEK FAULT

[Mobile Metal Ion values in parts per billion]

FIGURE 19

Ketchan West Area



MOBILE METAL ION TEST LINES IN THE KETCHAN WEST AREA
[See Figure 6 for legend]
Figure 20

A broad valley, about one kilometre in width, follows the east side of Otter Creek. The valley is floored by upper Tertiary(?) sedimentary rocks that have been preserved within a local graben. The south-eastern part of the valley is underlain by valley basalt. The area is of economic interest due to its proximity to the deep-seated Otter Creek fault, and because induced polarization surveys by Rayrock Yellowknife indicated two wide zones of high chargeability and low resistivity along the east side of the valley (see Figure 11). Lines 21000N and 23400N tested Rayrock anomalies "A" and "B" respectively.

Four MMI traverses were completed.

Three of the test areas were interpreted to be completely underlain by younger transported material. The fourth extended over the PAR Prospect, which is located along and west of the deep-seated Otter Creek fault. Figure 19 shows the MMI results for the elements that exhibited significantly anomalous values. These elements are Ag, Au, Co, Cu, Mo and Zn. It seems clear that the anomalous metal content came from beneath the cover materials. The interpretation of the results is particularly difficult for MMI because the anomalous metals are assumed to come from an uncertain depth.

A number of anomalous Cu, Ag, Au, Mo and Zn values were identified at the PAR Prospect. The mineralization at the PAR occurs in porphyritic rocks related to the calc-alkaline Allison Lake pluton and in adjacent skarn. Cu, Ag and Au were the metals of interest noted in the previous drilling. (Mo and Zn were not analyzed.)

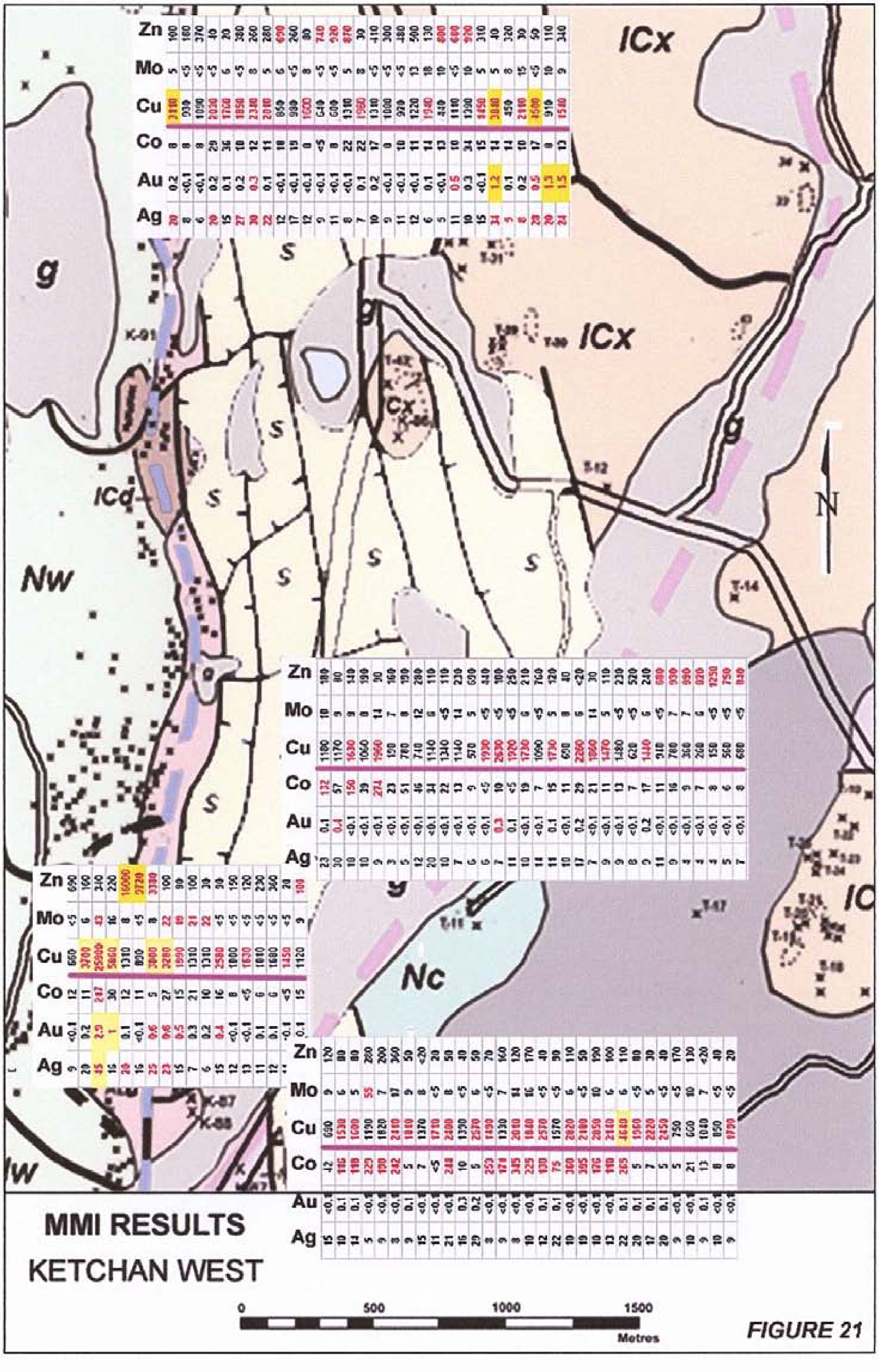

Zn
Mo
Cu
Co
Au
Ag
ICx
g
S
ICd
Nw
Nc
N
MMI RESULTS
KETCHAN WEST
0
500
1000
1500
Metres

FIGURE 21

Ketchan Northeast Area

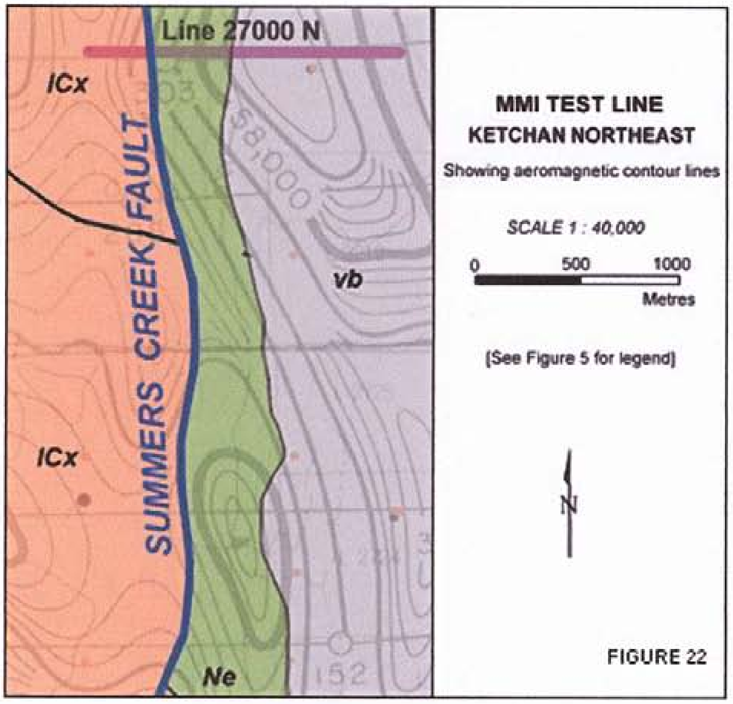


FIGURE 22

The MMI line was intended to test an aeromagnetic anomaly that followed the eastern side of the Summers Creek fault for a distance of several kilometres. The anomaly is almost entirely covered by "valley basalt."

The results of the MMI survey do not indicate any anomalous metal values of interest. However, the values west of the major fault are distinctly higher than those to the east. This probably represents higher "background" levels in the volcanic rocks of the Nicola Group and the intrusive breccia of the Alkalic Intrusive Complex than in the "valley basalt."

TOTAL DIGESTION IN PARTS PER MILLION

Au	Ag	Cu
<	0.06	12.9
<	0.05	25
<	0.06	11.1
<	0.02	9.62
0.4	0.03	27.9
<	0.01	13.7
<	0.05	13.5
14.2	0.05	12.85
0.2	0.03	18.65
<	0.03	13.3
<	0.09	11.6
1.7	0.05	15.55
0.2	0.06	14.9
<	0.10	12.05
<	0.05	13.4
<	0.06	11.3
<	0.08	13.7
<	0.04	15.25
<	0.07	21.6
<	0.07	17.6
<	0.10	33.6
<	0.04	25.7
<	0.08	47.9
<	0.08	9.96
<	0.07	11.35
0.9	0.04	24.4
1.5	0.09	60.6
<	0.04	7.61
0.2	0.04	7.5
<	0.04	11

MMI EXTRACTION IN PARTS PER BILLION

<0.1	7	350
<0.1	7	740
0.1	9	140
<0.1	15	650
<0.1	12	300
<0.1	10	280
<0.1	11	560
0.3	9	100
0.1	13	660
<0.1	10	290
0.2	5	710
<0.1	2	400
<0.1	<1	600
<0.1	7	670
<0.1	6	580
0.2	4	610
<0.1	7	260
0.2	11	160
0.5	9	380
<0.1	16	920
0.1	20	140
<0.1	14	220
<0.1	11	310
<0.1	14	430
<0.1	9	340
<0.1	14	590
<0.1	12	490
<0.1	15	760
<0.1	8	1000
<0.1	12	800
0.3	17	1930

0 200 400
metres

FIGURE 23

A strong association of magnetite with the more significant mineralized intersections was noted in the core logging (Thomson, 2007). Anomalies in ground magnetic surveys correlate with the mineralized zone, and they continue well beyond the areas tested by drilling. In particular, the surveys indicated that the anomalous magnetic indications extend to the northwest for at least 1.5 kilometres, beyond the chargeability anomaly that is coincident with the known mineralized zone. This extension is located mainly in the Ketchan Lake valley where the overburden is indicated to reach a depth of more than 100 metres. A chargeability anomaly was noted at the north-western end of the magnetic anomaly, where the overburden is less thick. There is a possibility that the older induced polarization survey did not detect mineralization within the deepest part of the paleo-valley due to the physical properties of the overburden.

A semi-continuous mineralized zone that includes the Coke and Rum Prospects follows the major Summers Creek fault zone that separates the Central and Eastern Facies of the Nicola volcanic rocks. Portions of the indicated copper resource at the Axe prospect to south of the Property appear to have been emplaced in sheared zones associated with the same structure. To the north, the Summers Creek fault intersects the south-eastern extension of the Ketchan Lake mineralized zone about 1.5 kilometres from the nearest drill hole. This area is almost entirely covered by sedimentary rocks and by late-glacial deposits. The induced polarization and magnetic surveys did not extend to the southeast beyond the area tested by drilling.

Contemporary induced polarization techniques are capable of providing reliable chargeability data for possible drill targets below the deepest drill holes at the Ketchan Lake prospect. An IP survey that would test the zone at depth and to the northeast and southwest is warranted.

The PAR Prospect has been tested by a moderate amount of drilling, but I believe that much of the drilling was wasted due to application of a flawed deposit model. Several significant intersections of copper-gold-silver that were obtained close to the regional Otter Creek fault were not followed up, and the fault zone itself was not tested. The known mineralization was emplaced within a circular zone of brecciation. The breccia is unlike that in the breccia pipes of the Alkalic Intrusive Complex, but it could represent a zone of fracturing above a breccia pipe or stock of unknown affiliation. Deeper testing of the Otter Creek fault and the breccia zone are warranted.

than 100 metres in length, but the true width of the mineralization and its strike continuity are unknown. Unlike the extensions of the Ketchan Lake and Coke prospect areas, overburden is thin in the vicinity of Zig 3 Prospect. Conventional geochemical soil sampling, in conjunction with prospeeting and geological mapping, is an obvious choice prior to drill testing in a later stage of exploration.

The Mobile Metal Ion test did not offer any new information on the known mineralized zone at Ketchan Lake. However, it is clear that in some cases MMI appears to be capable of detecting metals at moderate depth beneath a variety of transported materials. This is particularly apparent within the broad, overburden–covered valley in the western part of the Property. Two MMI lines over very wide IP anomalies, which were underlain by sedimentary and volcanic cover rocks, detected significant copper-gold-silver anomalies. The copper results over the PAR prospect are compatible with the results of the previous drilling. The MMI data suggest that molybdenum and zinc may also be present in the mineralization.

RECOMMENDATIONS

It is recommended that field exploration be carried out in five areas within the very large Ketchan Property. I have not divided the program into stages since the various components may be undertaken concurrently for mutual corroboration and planning.

The porphyry copper-gold system that has been identified east of Ketchan Lake has received by far the most attention from previous operators and it is recommended that this area, along with its interpreted extensions to the west and to the east, again receive the bulk of the exploration effort. One objective is to raise the status of the most intensely mineralized portion of the system into the category of an "Indicated Resource.

The other areas that are recommended for exploration work in the next phase of exploration are designated as the PAR Prospect, the Otter Creek East Zone, the Coke East Prospect, and the Zig 3 Prospect.

In some cases diamond drilling is recommended in conjunction with geophysical and geochemical surveys. However, the drilling is not contingent on the results of the surveys. The cost estimate for diamond drilling includes mobilization & demobilization, travel & living expenses, supervision, core logging & storage, and environmental remediation.

Cost Estimate

Ketchan Lake Zone	
Induced polarization survey: 30 kilometres @ $2800./km.	$ 84,000.
MMI geochemical survey: 120 samples @ $50./sample	6,000.
Diamond drilling:	
Main Zone -- 2000 metres in 5 holes @ $200./ metre	400,000.
West Extension – 300 metres in 2 holes @ $200./metre	60,000.
East Extension – 300 metres in 2 holes @ $200./metre	60,000.
Total	**$610,000**

PAR Prospect	
Induced polarization: 10 kilometres @ $2800./km.	$ 28,000.
Diamond drilling: 600 metres in 3 holes @ $200./metre	120,000.
Total	**$148,000.**

Otter Creek East Zone	
Diamond drilling: 400 metres in 4 holes @ $200./metre	$ 80,000.
MMI geochemical survey: 60 samples @ $50./sample	3,000.
3D induced polarization survey 10 kilometres @ $2800,/km.	28,000.
Total	**$111,000.**

Coke East Prospect	
Geological mapping & prospecting: 10 days @ $1000./day	$ 10,000.
Geochemical survey: 500 samples @ $30./sample	15,000.
Total	**$ 25,000.**

Zig 3 Prospect	
Geochemical survey: 500 samples @ $30./sample	$ 15,000.
Geological mapping & prospecting: 10 days @ 1000./day	10,000.
Total	**$ 25,000.**

Grand Total	**$919,000.**

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Respectfully submitted,

W. R. Bergey, P.Eng.

STATEMENT OF COSTS

Type of Work	Days	Cost/day	Cost
Geological			
W.R.Bergey, P.Eng.			
Geological mapping	5	$ 600.	$ 3,000.
Specimen preparation/examination	1	600.	600.
Literature review, data plotting	6	600.	3,600.
Photo-geological interpretation	15	600.	9,000.
Map & report preparation	5	600.	3,000.
G.Lovang			
Geological field assistant	5	200.	1,000.
Field & Office Expenses			
Meals & accommodation			1,400.
Vehicle expenses			640.
			$ 19,540.
Geochemical			
Sample Collection [May 2 -25, 2011]			
G. Lovang 19 days	19	$200.	$ 3,800.
G. Brown 22 days	22	200.	4,400.
P. Forrester 22 days	22	200.	4,400.
Meals & accommodation			3,000.
Vehicle expenses			1,600.
Field supplies			720.
Laboratory Expenses			
Conventional soil samples (ACL Laboratory) [51 samples]			$ 1,670.
Mobile metal ion samples (SGS Laboratory) [231 samples]			13,650.
			$ 33,240.

TOTAL EXPENDITURES $ 52,780.

STATEMENT OF QUALIFICATIONS

I, William Richard Bergey of 25789 - 8^{th} Ave., Aldergrove, B.C., do hereby certify that:

1. I am a Professional Engineer (Geological) in the Province of British Columbia.

2. I have been employed in mining and mineral exploration for the past 64 years.

3. I have had many years of experience in geological mapping, geochemical prospecting and photo-geological interpretation related to mineral exploration.

4. I personally conducted all of the recent geological work described in the above report.

W.R.Bergey, P.Eng. November 7, 2011

APPENDIX A

Mobile Metal Ion analytical results

Ketchan Property

ANALYTE		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
METHOD	**MMI**	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5
DETECTION		1	1	10	0.1	10	1	10	1	5	5	100	0.5	10	1	0.5	0.5
UNITS		ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
	North of Ketchan Lake																
G094051	*76000E 18000N*		107	<10	0.1	990	<1	270	4	287	51	100	0.7	270	44	24.6	11.2
G094052	**50SE**	7	18	<10	0.6	2410	<1	390	2	141	272	<100	<0.5	3160	22	12	6.6
G094053	100	14	26	<10	0.2	2590	<1	320	2	179	8	<100	0.9	1170	25	12.9	7.5
G094054	150	8	94	<10	0.2	1870	<1	210	2	318	156	100	1.3	960	31	16.6	8.2
G094055	200	6	139	<10	0.1	1080	<1	120	5	221	25	<100	3.3	330	32	16.2	8.2
G094056	250	15	63	<10	0.1	2840	<1	390	5	184	10	<100	0.7	1630	27	14.2	8
G094057	300	4	108	<10	0.1	770	<1	150	2	165	11	<100	2.6	460	20	9.5	5.9
G094058	350	7	85	<10	0.1	1470	<1	270	3	88	21	<100	1.3	430	9	4.4	2.6
G094059	400	6	97	<10	<0.1	890	<1	260	6	116	9	<100	1.2	260	16	8.2	4
G094060	450	7	124	<10	<0.1	760	<1	150	5	91	19	<100	2.9	240	13	7.1	3.6
G094061	500	9	118	<10	<0.1	930	<1	190	6	103	18	<100	1.9	360	24	13.1	5.6
G094062	550	23	104	<10	0.1	810	<1	260	6	43	8	<100	2.2	330	6	3.3	1.8
G094063	600	7	102	<10	0.1	2250	<1	170	3	184	10	<100	2.9	360	21	10.6	5.4
G094064	650	6	105	<10	<0.1	920	<1	100	3	113	139	<100	2.9	860	13	6.7	3.1
G094065	700	11	87	<10	0.1	1470	<1	170	3	105	51	<100	2.8	610	8	3.7	2.2
G094066	750	17	123	<10	<0.1	1030	<1	140	5	114	6	<100	3.5	290	20	10.3	5.2
G094067	800	10	104	<10	<0.1	1040	<1	100	5	137	98	<100	3	670	11	5.5	2.9
G094068	850	13	10	<10	0.5	2800	<1	620	3	35	5	<100	<0.5	1930	17	8.5	5.4
G094069	900	11	41	<10	<0.1	1930	<1	440	7	200	5	<100	0.5	1190	30	15.3	9.2
G094070	950**SE**	9	88	<10	0.2	1500	<1	190	3	168	18	<100	1.4	600	18	8.9	5.4
	Ketchan Zone	Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
G094071	*76400E 16700N*	43	129	<10	0.1	1080	<1	130	9	186	33	<100	2.4	1420	33	16.9	7.6
G094072	50NE	18	132	<10	<0.1	1280	<1	160	7	154	50	<100	1.9	340	19	10	4.9
G094073	100	29	118	<10	0.1	1360	<1	180	9	185	25	<100	1.4	630	30	16.2	7.7
G094074	150	26	73	<10	0.1	820	<1	290	15	56	7	<100	1.6	860	7	3.4	1.9
G094075	200	27	81	<10	0.1	1910	<1	290	6	210	21	<100	0.9	4040	22	11.3	6.2
G094076	250	31	94	<10	<0.1	1110	<1	180	6	84	<5	<100	4.2	540	18	9.2	4.4
G094077	300	47	63	<10	0.6	3500	<1	280	3	116	7	<100	1.7	1370	13	5.6	3.9
G094078	350	27	137	<10	<0.1	1530	<1	170	6	185	17	<100	1.9	340	24	11.2	6.2
G094079	400	64	11	<10	0.4	1120	<1	410	12	20	12	<100	<0.5	4530	7	3.2	2.1
G094080	**450NE**	53	73	<10	<0.1	1760	<1	200	8	128	27	<100	1.2	330	10	4.9	3
G094081	**50SW**	23	122	<10	0.2	1750	<1	150	10	196	35	<100	3.4	2270	17	8.5	4.5
G094082	100	28	92	<10	0.3	1600	<1	190	7	144	18	<100	2.8	1830	14	6.8	3.8
G094083	150	19	114	<10	<0.1	890	<1	180	10	102	14	<100	2.2	460	15	7.6	3.5
G094084	200	27	92	<10	0.1	690	<1	190	11	109	7	<100	1.4	590	19	9.5	5.3
G094085	250	19	117	<10	<0.1	1100	<1	180	8	110	14	<100	1.6	310	12	5.4	3
G094086	300	13	118	<10	<0.1	1280	<1	210	14	252	63	<100	0.9	670	34	18	8.5
G094087	350	21	79	<10	0.1	1400	<1	240	5	152	13	<100	1.2	510	16	8	4.7
G094088	400	16	120	<10	0.6	1670	<1	180	5	235	33	<100	2.1	510	21	10.3	5.7
G094089	450	21	96	<10	0.3	1260	<1	180	5	182	195	<100	0.5	560	18	8.5	4.8
G094090	**500SW**	18	39	<10	0.2	1360	<1	440	9	71	7	<100	<0.5	1260	18	8.7	5.4
	Summers Creek Fault																
G094091	77800 15650	24	118	<10	<0.1	470	<1	130	6	113	28	<100	3	720	20	11.1	5.2
G094092	**50NE**	29	130	<10	<0.1	570	<1	130	5	103	30	<100	3.6	760	18	9.1	4.7
G094093	100	19	107	<10	<0.1	830	<1	140	4	113	18	<100	2.7	500	15	7.5	4.5
G094094	150	17	118	<10	<0.1	1050	<1	140	4	147	13	<100	4.3	340	21	10.3	6
G094095	200	7	131	<10	<0.1	870	<1	180	6	107	16	<100	3.2	430	20	10.4	5.4
G094096	250	9	143	<10	<0.1	750	<1	150	8	131	17	<100	3.3	370	26	13.9	6.2
G094097	300	13	127	<10	<0.1	590	<1	110	4	185	19	<100	3.4	530	32	17.3	8.3
G094098	350	22	117	<10	0.1	660	<1	140	7	126	14	<100	4.1	730	27	14.5	7
G094099	400	20	112	<10	<0.1	580	<1	160	4	114	12	<100	2.8	620	19	9.7	5.7
G094100	**450NE**	8	58	<10	<0.1	1390	<1	280	2	112	29	<100	0.9	1020	14	7.2	4.1
G094101	**50SW**	9	195	<10	<0.1	500	<1	100	8	85	55	<100	4.7	570	16	8.5	3.9
G094102	100	37	124	<10	0.3	770	<1	180	5	128	16	<100	3.5	910	17	9	5
G094103	150	46	143	<10	<0.1	700	<1	180	25	111	16	<100	3.6	680	22	11.2	5.7
G094104	200	33	87	<10	<0.1	1460	<1	310	9	111	31	<100	0.7	360	12	5.9	3.6
G094105	250	36	145	<10	<0.1	470	<1	100	8	127	25	<100	5.2	610	18	9.7	5
G094107	300	37	165	<10	<0.1	460	<1	100	6	140	24	<100	4.1	450	15	7.7	4.6
G094108	350	24	123	<10	<0.1	1060	<1	160	5	115	14	<100	4	750	21	11.4	5.8
G094109	400	19	141	<10	0.2	1280	<1	160	6	141	14	<100	2	710	16	7.7	4.5
G094110	**450SW**	33	152	<10	<0.1	1990	<1	120	5	286	31	<100	2.3	940	41	21.4	11.9
	Ketchan NE																
	Line 27000																
G094111	**50W**	9	126	<10	0.3	1060	<1	180	4	104	9	<100	2.2	100	8	4.2	2.6
G094112	100	13	56	<10	0.1	1620	<1	260	3	173	170	<100	0.6	660	5	2.4	1.6
G094113	150	10	120	<10	<0.1	740	<1	180	3	66	102	<100	2.6	290	5	2.3	1.4
G094114	200	5	50	<10	0.2	1890	<1	250	2	117	167	<100	0.8	710	5	2.3	1.7
G094115	250	2	90	<10	<0.1	940	<1	120	3	222	8	<100	4.6	400	31	15	10.2
G094116	300	<1	80	<10	<0.1	2240	<1	140	2	377	79	<100	3	600	20	9	6.8
G094117	350	7	38	<10	<0.1	4850	<1	260	4	362	119	<100	1	670	17	7.9	5.8
G094118	400	6	36	<10	<0.1	3170	<1	240	3	105	127	<100	<0.5	580	7	3.6	2.4
G094119	450	4	56	<10	0.2	3920	<1	320	6	383	112	<100	<0.5	610	28	12.8	8.2
G094120	500	7	86	<10	<0.1	3380	<1	200	5	171	23	<100	1.9	260	9	3.9	2.7
G094121	550	11	122	<10	0.2	1500	<1	210	5	104	17	<100	1.9	160	9	4.5	2.7
G094122	600	9	126	<10	0.5	830	<1	190	3	133	18	<100	1.8	380	9	4.4	2.9
G094123	650	16	53	<10	<0.1	1040	<1	300	16	131	55	<100	<0.5	920	9	4.7	3
G094124	700	20	132	<10	0.1	590	<1	230	12	64	10	<100	2	140	5	2.6	1.6
G094125	750	14	107	<10	<0.1	1730	<1	230	6	524	55	<100	0.8	220	34	16.4	9.6
G094126	800	11	82	<10	<0.1	420	<1	320	7	74	11	<100	1.1	310	7	3.6	2.3
G094127	850	14	98	<10	<0.1	810	<1	220	26	83	98	<100	2.6	430	7	3.7	2
G094128	900	9	64	<10	<0.1	1050	<1	300	11	167	11	<100	<0.5	340	13	6	4.1
G094129	950	14	37	<10	<0.1	1640	<1	390	8	57	7	<100	<0.5	590	8	3.6	2.6
G094130	1000	12	80	<10	<0.1	700	<1	310	18	46	43	<100	1.2	490	4	2.2	1.2
G094131	1050	15	46	<10	<0.1	1960	<1	360	15	193	5	<100	0.5	760	32	15.6	10.5
G094132	1100	8	20	<10	<0.1	1690	<1	390	9	120	13	<100	<0.5	1000	24	11.9	8.8
G094133	1150	12	32	<10	<0.1	1790	<1	520	3	300	59	<100	<0.5	800	36	17	11.3
G094134	1200W	17	6	<10	0.3	2070	<1	930	11	8	5	<100	<0.5	1930	5	2.6	1.1
G094135	*0*	11	77	<10	<0.1	1850	<1	220	5	240	55	<100	1.9	560	16	7.7	4.9
G094136	50E	10	91	<10	<0.1	1980	<1	210	7	144	67	<100	0.9	280	7	3.5	2
G094137	100	12	129	<10	<0.1	1890	<1	230	7	124	43	<100	1.7	300	7	3.3	2
G094138	150	15	110	<10	<0.1	1570	<1	210	3	190	113	<100	1.3	650	13	6.3	4
G094139	200	9	88	<10	0.1	940	<1	280	5	42	7	<100	0.8	140	4	2.1	1.3
G094140	250	7	86	<10	<0.1	2430	<1	200	3	195	94	<100	1.3	740	8	3.7	2.4
G094141	300E	7	97	<10	<0.1	2920	<1	210	4	206	21	<100	2.7	350	12	5.6	4

Fe	Ga	Gd	Hg	In	K	La	Li	Mg	Mn	Mo	Nb	Nd	Ni	P	Pb	Pd	Pr	Pt
MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5
1	1	1	1	0.5	0.1	1	5	1	10	5	0.5	1	5	0.1	10	1	1	1
ppm	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb
73	20	52	<1	<0.5	37.5	79	<5	47	9780	10	3.1	163	224	6.2	70	<1	36	<1
48	44	29	<1	<0.5	37.7	55	<5	92	14100	10	1.8	108	203	1.1	<10	<1	23	<1
36	48	34	<1	<0.5	28.3	56	<5	84	230	<5	1.8	118	93	2.4	<10	<1	25	<1
120	36	36	<1	<0.5	31.9	76	<5	33	12000	7	4.8	136	167	4	40	1	31	<1
60	28	36	<1	<0.5	35.3	65	<5	12	3290	<5	2.6	123	60	4.9	80	2	28	<1
38	49	36	<1	<0.5	19.6	66	<5	58	590	<5	2.2	124	92	1.8	30	<1	27	<1
39	18	24	<1	<0.5	129	46	<5	19	930	10	1.4	88	43	3.7	50	<1	20	<1
45	28	11	<1	<0.5	56.8	26	<5	26	2450	<5	2.5	44	45	5.4	20	<1	10	<1
43	17	17	<1	<0.5	35.5	27	<5	45	2310	<5	2.6	54	90	6.6	40	<1	12	<1
55	19	15	<1	<0.5	32.3	26	<5	17	7000	<5	2.5	49	90	6.6	70	<1	11	<1
61	20	25	<1	<0.5	43.3	31	<5	21	2700	<5	2.3	70	89	6.5	60	<1	15	<1
32	16	7	<1	<0.5	62.6	11	<5	26	710	<5	1.6	22	54	5.8	40	<1	5	<1
34	44	24	<1	<0.5	83.7	51	<5	25	1150	<5	1.5	84	22	3	40	1	20	<1
112	19	13	<1	<0.5	101	29	<5	11	21500	10	4.3	48	52	7.8	50	2	11	<1
65	29	9	<1	<0.5	44.5	30	<5	27	14900	<5	4.1	41	43	6.6	30	1	10	<1
40	24	23	<1	<0.5	60.9	38	<5	11	1760	<5	1.9	74	40	4.1	40	1	16	<1
110	22	12	<1	<0.5	47.3	33	<5	12	32300	10	4.5	51	50	6.1	40	2	12	<1
11	47	25	<1	<0.5	17.6	27	<5	83	410	<5	0.8	70	278	1	<10	<1	13	<1
27	34	42	<1	<0.5	20.4	62	<5	119	710	<5	0.6	135	249	0.9	20	<1	28	<1
30	30	23	<1	<0.5	71.4	53	<5	33	5880	<5	1.3	91	41	2.7	20	1	21	<1
Fe	Ga	Gd	Hg	In	K	La	Li	Mg	Mn	Mo	Nb	Nd	Ni	P	Pb	Pd	Pr	Pt
82	24	34	<1	<0.5	98	44	<5	14	3430	10	3.6	94	93	7.7	100	1	20	<1
81	26	21	<1	<0.5	33.4	38	<5	25	3840	<5	3.6	69	66	5.4	120	1	16	<1
65	26	34	<1	<0.5	60.9	50	<5	32	1930	6	2.4	103	79	3.7	90	<1	23	<1
38	16	9	<1	<0.5	226	19	<5	50	1840	8	2.2	31	86	4.7	30	<1	7	<1
50	35	26	<1	<0.5	46.6	54	<5	61	1420	<5	2	92	63	2.9	70	<1	21	<1
26	23	20	<1	<0.5	72.7	30	<5	20	2120	<5	0.5	62	26	1.9	50	<1	13	<1
28	62	16	<1	<0.5	65.3	38	<5	38	740	<5	1.2	53	46	3.1	20	<1	12	<1
67	31	26	<1	<0.5	78.6	49	<5	22	4820	<5	3.7	81	66	6.4	80	2	19	<1
6	19	9	<1	<0.5	21.1	10	<5	287	2930	<5	<0.5	26	117	0.5	10	<1	5	<1
43	33	12	<1	<0.5	38.2	29	<5	39	3360	<5	2.2	45	57	2.8	40	<1	11	<1
48	36	20	<1	<0.5	79.1	47	<5	14	6180	10	2.8	73	85	4.8	70	2	17	<1
39	31	18	<1	<0.5	69.3	39	<5	26	2160	8	2.1	61	37	3.6	30	1	14	<1
50	20	16	<1	<0.5	65.2	23	<5	29	3740	6	1.8	47	110	4.6	80	<1	10	<1
34	14	22	<1	<0.5	407	33	<5	56	1690	5	1.1	70	86	4.4	30	<1	15	<1
62	23	13	<1	<0.5	72.8	26	<5	28	4900	7	3.2	42	100	9.6	60	<1	10	<1
91	25	37	<1	<0.5	88.4	61	5	43	6090	14	3.8	113	181	9.3	170	<1	25	<1
49	26	20	<1	<0.5	86.1	40	<5	39	2050	<5	1.9	69	96	6.2	40	<1	15	<1
75	33	24	<1	<0.5	70.2	50	<5	28	4140	6	5	82	104	10.7	80	2	19	<1
74	24	20	<1	<0.5	149	50	<5	26	19600	6	2.8	75	118	9.3	60	1	18	<1
28	24	24	<1	<0.5	61.6	34	<5	60	770	<5	0.7	76	212	2.7	20	<1	16	<1
32	15	23	<1	<0.5	30.4	32	<5	8	2220	9	0.8	70	43	2.2	100	1	15	<1
46	19	20	<1	<0.5	34.6	36	<5	8	3990	<5	1.1	65	44	2.9	140	<1	15	<1
34	18	20	<1	<0.5	61.8	36	<5	16	1800	<5	0.6	68	28	2.3	60	<1	15	<1
37	23	25	<1	<0.5	34.5	51	<5	14	2760	<5	1.4	88	24	2.9	50	1	20	<1
38	21	24	<1	<0.5	29.2	45	<5	16	3520	<5	1.2	82	66	2.9	70	1	18	<1
43	19	28	<1	<0.5	39.1	43	<5	14	4860	<5	1	89	59	2.9	80	1	19	<1
52	20	37	<1	<0.5	43.9	59	<5	6	3570	7	1.1	119	43	3	70	2	28	<1
36	18	32	<1	<0.5	39.2	49	<5	10	2540	<5	<0.5	98	36	2.1	70	<1	21	<1
32	15	25	<1	<0.5	72	46	<5	13	1950	<5	<0.5	88	33	2.9	40	<1	19	<1
45	24	18	<1	<0.5	20.1	41	<5	95	470	<5	1.2	69	79	2.1	20	<1	16	<1
92	21	15	<1	<0.5	43.2	29	<5	13	5860	7	2.6	47	104	6.2	180	1	11	<1
30	18	22	<1	<0.5	64.1	43	<5	23	1290	8	<0.5	76	36	1.5	60	1	17	<1
44	17	24	<1	<0.5	43.4	36	<5	13	2910	<5	1.2	69	52	2.7	130	<1	15	<1
59	25	15	<1	<0.5	32.6	32	<5	49	980	<5	1.4	50	81	4	90	<1	11	<1
63	21	21	<1	<0.5	49.5	38	<5	5	5700	<5	2.4	72	57	6.6	90	2	16	<1
41	19	18	<1	<0.5	26.2	44	<5	4	4570	<5	0.7	72	55	2.6	70	1	17	<1
31	24	25	<1	<0.5	25.8	47	<5	4	3820	<5	<0.5	84	27	1.5	90	<1	19	<1
34	27	19	<1	<0.5	32.1	38	<5	8	4070	<5	0.8	62	25	2.1	90	1	15	<1
54	40	49	<1	<0.5	31.9	87	<5	8	2490	<5	1.9	164	30	3	110	2	37	<1
43	22	11	<1	<0.5	37.6	26	<5	21	4350	8	2.9	42	72	6.6	50	<1	10	<1
82	27	6	<1	<0.5	50.2	37	<5	67	3430	6	4.2	33	111	10.2	30	1	9	<1
64	15	6	<1	<0.5	76.2	15	<5	29	5110	5	3.2	21	97	9	60	<1	5	<1
55	32	7	<1	<0.5	74.2	33	<5	60	18300	12	3.4	40	60	5.5	10	<1	10	<1
15	22	45	<1	<0.5	36.3	110	<5	8	1180	7	<0.5	194	14	1.6	40	<1	44	<1
60	38	30	<1	<0.5	107	116	<5	32	14000	12	6	161	24	6.8	30	2	41	<1
58	78	25	<1	<0.5	32	105	<5	94	10200	8	2.8	131	164	2.8	20	1	34	<1
58	50	10	<1	<0.5	71.3	39	<5	77	10700	12	3.1	53	139	4.7	20	<1	13	<1
44	61	38	<1	<0.5	60.3	121	<5	95	350	<5	2	171	195	2.9	40	2	42	<1
53	54	11	<1	<0.5	68.4	43	<5	48	3640	8	4.6	51	67	7.1	50	1	13	<1
48	26	11	<1	<0.5	119	31	<5	43	1590	8	4.1	47	101	11.1	40	1	12	<1
42	16	12	<1	<0.5	125	36	<5	25	1080	<5	4.1	52	36	11.9	50	1	13	<1
61	16	13	<1	<0.5	109	39	<5	50	13700	7	2.7	61	186	5.3	20	<1	15	<1
38	12	7	<1	<0.5	93.6	16	<5	23	1610	<5	2.7	26	55	12.5	40	<1	6	<1
65	28	40	<1	<0.5	98.5	121	<5	56	2800	<5	5	170	95	7.5	80	2	44	<1
38	7	10	<1	<0.5	113	21	<5	30	1030	<5	2	42	65	11.9	30	<1	9	<1
69	14	9	<1	<0.5	80.2	22	<5	28	34100	15	2.5	39	109	6.4	30	<1	9	<1
29	17	18	<1	<0.5	222	40	<5	50	770	<5	1.2	75	85	11	30	<1	18	<1
31	26	11	<1	<0.5	119	26	<5	66	310	<5	1.3	47	90	6.4	10	<1	11	<1
43	12	5	<1	<0.5	97.7	12	<5	38	2860	6	2.6	23	63	12	30	<1	5	<1
25	31	45	<1	<0.5	142	79	<5	71	860	<5	0.6	165	287	4	20	<1	36	<1
22	26	37	<1	<0.5	71.1	68	6	116	1430	<5	0.6	139	250	2.8	10	<1	30	<1
21	29	49	<1	<0.5	37	103	10	113	2840	<5	0.7	191	220	1	20	<1	44	<1
4	30	5	<1	<0.5	41.9	2	6	68	330	<5	<0.5	9	109	0.7	<10	<1	2	<1
53	31	21	<1	<0.5	63.4	63	<5	56	11000	9	2.1	103	87	5.2	30	<1	24	<1
67	34	9	<1	<0.5	68.1	25	<5	43	29500	13	2.8	41	225	8	30	<1	10	<1
56	33	8	<1	<0.5	97.4	27	<5	41	3730	<5	4.1	34	103	9.3	70	1	9	<1
53	27	17	<1	<0.5	84.8	52	<5	44	15400	8	2.9	74	94	6.8	40	1	18	<1
40	15	5	<1	<0.5	83.1	12	<5	38	1110	<5	2.1	21	98	8.8	40	<1	5	<1
75	38	11	<1	<0.5	101	46	<5	41	20700	17	3.8	58	64	5.9	30	1	15	<1
41	47	17	<1	<0.5	76.6	56	<5	34	2090	6	4.1	77	41	5.1	40	2	20	<1

Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5
5	1	5	1	1	10	1	1	10	0.5	3	0.5	1	1	5	1	20	5
ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
54	<1	58	42	<1	930	<1	8	<10	21.2	230	<0.5	11	2	233	20	70	171
35	<1	23	25	<1	1890	<1	4	<10	12.5	26	<0.5	24	2	123	10	<20	79
51	<1	18	28	<1	1620	<1	5	<10	14.4	42	<0.5	19	2	143	10	50	83
83	<1	60	32	<1	670	<1	6	<10	26.5	502	<0.5	19	2	150	14	50	210
125	<1	64	31	<1	320	<1	6	<10	18.9	427	<0.5	12	1	150	13	150	258
51	<1	25	30	<1	1320	<1	5	<10	13.8	44	<0.5	19	<1	156	11	<20	79
106	<1	47	22	<1	260	<1	4	<10	11.1	216	<0.5	12	1	89	7	30	151
79	<1	22	10	<1	830	<1	2	<10	11.4	218	<0.5	8	<1	44	4	30	111
56	<1	28	14	<1	750	<1	3	<10	10.2	241	<0.5	8	<1	82	6	290	117
105	<1	35	13	<1	360	<1	3	<10	12.4	430	<0.5	7	<1	67	6	580	134
91	<1	43	20	<1	500	<1	4	<10	11.9	323	<0.5	9	<1	127	10	500	136
123	<1	16	6	<1	540	<1	1	<10	6.1	154	<0.5	6	<1	31	3	70	70
179	<1	64	21	<1	690	<1	4	<10	11	250	<0.5	12	<1	99	8	140	175
130	<1	52	11	<1	280	<1	2	<10	15.1	688	<0.5	13	1	58	6	40	243
127	<1	30	9	<1	490	<1	2	<10	16	552	<0.5	8	1	35	3	170	212
163	<1	49	19	<1	280	<1	4	<10	12.7	335	<0.5	11	<1	94	8	70	188
140	<1	40	11	<1	270	<1	2	<10	15.5	678	<0.5	12	1	47	5	40	217
46	<1	6	19	<1	1810	<1	4	<10	4.9	22	<0.5	11	<1	94	6	<20	34
42	<1	12	34	<1	1500	<1	6	<10	13.9	30	<0.5	15	<1	170	12	330	42
101	<1	53	21	<1	650	<1	4	<10	12.3	307	<0.5	13	<1	85	8	200	186
Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
121	<1	63	27	<1	410	<1	6	<10	19.7	512	<0.5	15	<1	155	13	170	226
115	<1	46	18	<1	490	<1	4	<10	21.2	500	<0.5	9	<1	89	8	100	176
91	<1	43	28	<1	520	<1	6	<10	18.1	290	<0.5	11	<1	150	12	180	132
190	<1	18	7	<1	790	<1	1	<10	7.9	104	<0.5	9	<1	33	3	310	83
87	<1	33	22	<1	1100	<1	4	<10	12.9	104	<0.5	10	<1	113	9	50	104
160	<1	39	17	<1	480	<1	3	<10	5.8	81	<0.5	14	<1	84	7	90	103
98	<1	18	13	<1	880	<1	3	<10	12.6	99	<0.5	8	<1	57	4	150	93
101	<1	60	21	<1	420	<1	4	<10	19.6	499	<0.5	11	<1	108	8	550	249
18	<1	<5	7	<1	3480	<1	1	<10	2.4	13	<0.5	2	<1	36	3	40	12
73	<1	29	11	<1	760	<1	2	<10	13.2	323	<0.5	6	<1	41	4	950	121
214	<1	39	18	<1	450	<1	3	<10	18.8	472	<0.5	12	<1	73	7	400	229
161	<1	31	15	<1	640	<1	3	<10	14.8	299	<0.5	11	<1	63	5	50	157
121	<1	31	13	<1	510	<1	3	<10	12.2	321	<0.5	6	<1	67	6	230	134
217	<1	31	19	<1	390	<1	4	<10	8.2	168	<0.5	11	<1	85	7	240	96
93	<1	37	11	<1	460	<1	2	<10	12.7	436	<0.5	8	<1	49	4	710	155
104	<1	52	30	<1	440	<1	6	<10	18.7	366	<0.5	10	<1	174	14	1780	148
84	<1	34	17	<1	850	<1	3	<10	12.8	206	<0.5	9	<1	78	6	180	115
107	<1	53	21	<1	550	<1	4	<10	22.2	849	<0.5	10	<1	98	8	190	269
42	<1	49	17	<1	560	<1	3	<10	15.4	374	<0.5	9	<1	79	6	90	158
37	<1	9	20	<1	1230	<1	4	<10	7.4	39	<0.5	8	<1	88	7	150	34
93	<1	33	19	<1	230	<1	4	<10	11	177	<0.5	12	<1	92	8	40	161
98	<1	29	17	<1	190	<1	3	<10	12.1	277	<0.5	11	<1	80	8	270	159
118	<1	31	17	<1	310	<1	3	<10	10.4	198	<0.5	10	<1	66	6	90	122
143	<1	44	22	<1	310	<1	4	<10	14.5	297	<0.5	12	<1	97	8	90	188
103	<1	42	21	<1	440	<1	4	<10	13.5	265	<0.5	13	<1	97	8	170	207
129	<1	41	24	<1	310	<1	5	<10	14.1	244	<0.5	12	<1	129	11	320	180
107	<1	54	32	<1	200	<1	6	<10	14.8	237	<0.5	16	<1	155	14	40	196
118	<1	48	27	<1	280	<1	5	<10	9.4	164	<0.5	15	<1	133	12	120	152
140	<1	41	22	<1	280	<1	4	<10	8.1	154	<0.5	12	<1	89	8	50	129
77	<1	19	16	<1	920	<1	3	<10	8.1	126	<0.5	9	<1	72	6	30	63
109	<1	35	13	<1	220	<1	3	<10	13.2	516	<0.5	7	<1	77	7	160	161
138	<1	37	19	<1	280	<1	3	<10	10.6	177	<0.5	13	<1	86	7	50	165
112	<1	44	19	<1	340	<1	4	<10	12.4	269	<0.5	11	<1	105	9	390	166
47	<1	25	12	<1	1100	<1	2	<10	10	104	<0.5	7	<1	57	4	190	70
133	<1	48	19	<1	130	<1	3	<10	13.3	441	<0.5	12	<1	79	8	160	207
100	<1	26	17	<1	160	<1	3	<10	13.9	214	<0.5	8	<1	73	6	60	155
112	<1	36	22	<1	180	<1	4	<10	9.9	150	<0.5	16	<1	106	9	140	146
119	<1	33	16	<1	260	<1	3	<10	15.1	289	<0.5	10	<1	74	6	90	175
99	<1	67	42	<1	250	<1	8	<10	21.4	454	<0.5	15	<1	204	16	50	281
96	<1	24	10	<1	520	<1	2	<10	11.8	612	<0.5	6	<1	38	3	840	142
54	<1	29	6	<1	1300	<1	1	<10	24.6	295	<0.5	9	<1	22	2	70	177
74	<1	21	5	<1	590	<1	<1	<10	10.1	369	<0.5	8	<1	22	2	80	143
92	<1	14	7	<1	1670	<1	1	<10	15.7	190	<0.5	10	<1	23	2	20	132
159	<1	37	44	<1	460	<1	7	<10	5.6	69	<0.5	16	<1	143	12	30	93
171	<1	33	32	<1	830	<1	4	<10	20.2	499	<0.5	20	<1	86	8	50	309
72	<1	29	24	<1	1910	<1	4	<10	30.3	151	<0.5	17	<1	82	6	170	156
46	<1	18	10	<1	1470	<1	2	<10	16.3	229	<0.5	9	<1	36	3	200	104
64	<1	43	36	<1	2350	<1	6	<10	31.8	84	<0.5	20	<1	128	10	70	244
94	<1	29	11	<1	990	<1	2	<10	21.4	398	<0.5	12	<1	38	3	190	194
125	<1	25	11	<1	730	<1	2	<10	13.2	428	<0.5	7	<1	41	4	260	173
97	<1	27	12	<1	550	<1	2	<10	14.7	367	<0.5	11	<1	40	3	60	182
47	<1	17	13	<1	1110	<1	2	<10	14.3	110	<0.5	9	<1	47	4	340	79
81	<1	15	6	<1	520	<1	1	<10	8.2	289	<0.5	7	<1	24	2	420	95
77	<1	70	38	<1	770	<1	7	<10	49.3	328	<0.5	11	<1	136	13	440	325
73	<1	13	9	<1	1130	<1	2	<10	8	164	<0.5	10	<1	35	3	500	78
71	<1	22	8	<1	640	<1	1	<10	10.2	224	<0.5	9	<1	33	3	460	86
33	<1	15	17	<1	1210	<1	3	<10	16.9	105	<0.5	8	<1	57	5	140	70
24	<1	11	11	<1	1670	<1	2	<10	8.6	68	<0.5	12	<1	36	3	90	64
90	<1	11	5	<1	1360	<1	<1	<10	9.1	151	<0.5	9	<1	20	2	350	89
48	<1	18	40	<1	1560	<1	7	<10	21.1	63	<0.5	18	<1	154	12	120	87
31	<1	14	33	<1	1890	<1	5	<10	18.6	32	<0.5	15	<1	128	9	130	64
50	<1	17	44	<1	2140	<1	7	<10	38.2	34	<0.5	21	<1	164	13	20	103
16	<1	<5	3	<1	2310	<1	<1	<10	0.7	9	<0.5	3	<1	25	2	<20	5
94	<1	25	21	<1	1090	<1	3	<10	13.1	260	<0.5	14	<1	71	6	220	134
56	<1	27	9	<1	880	<1	1	<10	13.5	346	<0.5	6	<1	32	3	1090	113
100	<1	36	8	<1	680	<1	1	<10	21.1	450	<0.5	8	<1	31	3	990	206
63	<1	42	16	<1	890	<1	3	<10	13.7	316	<0.5	14	<1	63	5	320	156
76	<1	14	5	<1	1010	<1	<1	<10	7.4	158	<0.5	5	<1	20	2	500	65
97	<1	22	11	<1	1070	<1	2	<10	14.8	494	<0.5	11	<1	35	3	250	183
134	<1	26	17	<1	1210	<1	3	<10	16	446	<0.5	10	<1	52	5	270	204

ANALYTE		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
METHOD		MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5
DETECTION		1	1	10	0.1	10	1	10	1	5	5	100	0.5	10	1	0.5	0.5
UNITS		ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
	Ketchan West Line 23400N																
G094142	71800	20	38	<10	0.2	1210	<1	500	26	131	8	<100	0.5	3110	48	23.9	16.1
G094143	71750	8	44	<10	<0.1	1100	<1	530	28	103	8	<100	0.5	930	28	13.6	9.4
G094144	71700	6	63	<10	<0.1	1190	<1	440	30	82	8	<100	0.6	1090	38	20.8	10.5
G094145	71650	20	6	<10	0.2	770	<1	480	9	<5	29	<100	<0.5	2030	8	4.1	1.6
G094146	71600	15	11	<10	0.1	810	<1	540	9	<5	36	<100	0.6	1760	4	2.3	0.6
G094147	71550	27	44	<10	0.2	1340	<1	550	35	46	10	<100	0.7	1850	26	11.7	9.4
G094148	71500	30	18	<10	0.3	960	<1	730	29	9	12	<100	0.5	2340	13	6.8	3.6
G094149	71450	22	56	<10	0.1	1550	<1	550	30	56	11	<100	1	2010	29	13.2	9.9
G094150	71400	12	55	<10	<0.1	1160	<1	550	36	56	18	<100	0.7	850	22	11	7.4
G094151	71350	17	32	<10	<0.1	1430	<1	600	27	24	19	<100	0.8	980	15	7.1	4.7
G094152	71300	12	23	<10	<0.1	1050	<1	500	6	24	8	<100	<0.5	1600	19	9.8	5.5
G094153	71250	9	77	<10	<0.1	900	<1	430	35	45	<5	<100	0.5	640	17	8.9	5.2
G094154	71200	11	77	<10	<0.1	960	<1	450	40	54	8	<100	0.9	600	25	13.1	7.5
G094155	71150	8	24	<10	<0.1	1380	<1	550	47	34	22	<100	0.8	1310	20	10	6.3
G094156	71100	7	5	<10	0.1	660	<1	340	8	<5	22	<100	<0.5	1960	1	0.8	<0.5
G094157	71050	10	69	<10	0.2	1180	<1	510	24	68	17	<100	0.6	1310	24	11.8	8
G094158	71000	9	95	<10	<0.1	1320	<1	460	25	78	8	<100	0.8	1080	33	16.7	9.7
G094159	70950	11	78	<10	<0.1	1300	<1	520	28	104	10	<100	0.5	920	28	13.7	8.6
G094160	70900	12	75	<10	<0.1	2180	<1	490	27	299	11	<100	0.5	1220	73	41.1	18.3
G094161	70850	6	103	10	0.1	760	<1	360	15	170	14	<100	0.8	1640	60	36.1	16.3
G094162	70800	5	26	<10	<0.1	1270	<1	560	27	13	13	<100	0.7	440	10	5	2.6
G094163	70750	11	70	<10	0.5	1510	<1	520	43	55	10	<100	0.9	1110	24	11.4	7.6
G094164	70700	10	71	<10	0.3	1620	<1	580	56	87	34	<100	0.9	1390	30	15.5	9.1
G094165	70650	15	31	<10	<0.1	1420	<1	590	28	37	15	<100	1.2	1450	15	7	5.2
G094166	70600	34	6	<10	1.2	1570	<1	750	17	7	14	<100	<0.5	3040	8	4	2
G094167	70550	5	27	<10	0.1	2520	<1	690	37	29	14	<100	<0.5	450	28	13.8	7.2
G094168	70500	8	43	<10	0.2	1730	<1	480	18	190	10	<100	<0.5	2110	77	39.1	22.8
G094169	70450	28	15	<10	0.5	550	<1	420	17	<5	17	<100	0.5	4500	10	5.9	1.3
G094170	70400	20	56	<10	1.3	1250	<1	540	44	75	8	<100	0.6	910	35	18.3	12.5
G094171	70375	24	68	<10	1.5	800	<1	510	30	28	13	<100	0.8	1540	19	9.5	6.2
	Kketchan West Line 21000N																
G094173	72500	23	58	<10	0.1	2250	<1	350	7	239	132	<100	0.8	1180	20	10.3	5.8
G094174	72450	30	12	<10	0.4	1370	<1	510	6	20	57	<100	<0.5	1170	5	2.6	1.5
G094175	72400	18	63	<10	<0.1	2630	<1	330	8	402	150	<100	1.3	1630	47	25.7	14.1
G094176	72350	10	34	<10	<0.1	2550	<1	340	6	242	39	<100	<0.5	1060	28	14.3	8.6
G094177	72300	9	30	10	<0.1	1950	<1	250	4	502	274	<100	<0.5	1960	49	27.8	16.6
G094178	72250	3	112	<10	<0.1	620	<1	210	8	58	23	<100	4.3	190	11	6	2.5
G094179	72200	5	37	<10	<0.1	3660	<1	440	5	170	51	<100	0.5	780	30	13.9	9.8
G094180	72150	12	71	10	<0.1	2250	<1	270	7	209	46	<100	1.4	740	15	6.9	4.2
G094181	72100	20	19	<10	<0.1	3180	<1	460	8	53	34	<100	<0.5	1140	13	6.9	3.9
G094182	72050	10	123	<10	<0.1	580	<1	210	19	103	22	<100	3	1340	27	16.9	6.2
G094183	72000	7	138	<10	<0.1	610	<1	270	10	98	13	<100	2.3	1140	27	16	6.6
G094184	71950	6	125	<10	<0.1	1070	<1	310	19	106	9	<100	2.9	570	35	21.6	7.3
G094185	71900	6	52	<10	<0.1	570	<1	430	29	36	<5	<100	0.8	1930	11	5.8	3.9
G094186	71850	7	50	<10	0.3	700	<1	380	12	40	10	<100	<0.5	2630	43	23.1	13.5
G094187	71800	11	66	<10	0.1	1090	<1	430	28	75	<5	<100	<0.5	1920	30	15.5	9.9
G094188	71750	10	47	<10	<0.1	1450	<1	560	31	56	19	<100	0.7	1730	28	13.5	9.2
G094189	71700	14	139	<10	<0.1	690	<1	300	36	162	7	<100	1.3	1090	46	26.1	12.2
G094190	71650	11	44	<10	0.1	1580	<1	480	21	100	15	<100	<0.5	1730	37	18.5	12.1
G094191	71600	10	152	<10	<0.1	660	<1	280	11	108	11	<100	2.5	690	31	18.4	7.3
G094193	71500	17	6	<10	0.2	800	<1	470	6	7	29	<100	<0.5	2260	8	4	1.8
G094194	71450	7	124	<10	<0.1	990	<1	340	8	334	21	<100	0.6	1860	98	57.5	25.1
G094195	71400	9	135	<10	<0.1	980	<1	340	15	171	11	<100	1.3	1470	63	35.5	16.2
G094196	71350	9	105	<10	<0.1	1070	<1	380	25	274	13	<100	0.9	1480	61	35.3	16.7
G094197	71300	8	98	<10	<0.1	970	<1	400	46	177	7	<100	0.5	620	36	19.5	10.1
G094198	71250	9	79	<10	0.2	840	<1	450	28	78	17	<100	1.2	1440	24	11.7	8.5
G094199	71200	11	63	<10	<0.1	1140	<1	490	37	58	11	<100	1	940	20	9.7	7.1
G094200	71150	9	62	<10	<0.1	930	<1	510	31	70	16	<100	0.7	780	19	9	6.4
G094201	71100	4	68	<10	<0.1	1230	<1	580	32	50	9	<100	0.8	360	20	10.4	6.2
G094202	71050	4	58	<10	<0.1	1320	<1	580	26	26	7	<100	0.6	260	13	6.7	4
G094203	71000	4	96	<10	<0.1	1390	<1	500	27	58	8	<100	0.9	150	16	8.5	4.5
G094204	70950	5	88	<10	<0.1	1170	<1	500	34	53	6	<100	1.5	560	20	9.8	5.9
G094205	70900	7	85	<10	<0.1	1270	<1	500	34	31	8	<100	1.2	680	15	8	4.3

ANALYTE		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
	KETCHAN WEST																
	Line 20400N																
G094206	70000	9	77	<10	<0.1	2160	<1	450	31	81	12	<100	0.8	660	42	20.4	12.7
G094207	70050	20	68	<10	0.2	2080	<1	400	37	63	11	<100	1	3700	38	17.8	12.5
G094208	70100	45	34	<10	2.9	1210	<1	460	24	72	217	<100	1	25900	23	11.1	8.3
G094209	70150	16	29	<10	1	1840	<1	620	37	53	30	<100	<0.5	5860	29	14.2	8.7
G094210	70200	20	86	<10	0.1	930	<1	400	958	78	12	<100	2.1	1310	25	11.9	10.1
G094211	70250	16	146	<10	<0.1	960	<1	300	631	109	11	<100	3.4	890	35	19.8	9.1
G094212	70300	25	47	<10	0.6	330	<1	420	125	29	5	<100	1.1	3000	10	5.3	4
G094214	70400	23	29	<10	0.6	1530	<1	690	28	18	27	<100	<0.5	3280	19	10.1	4.6
G094215	70450	15	20	<10	0.5	2990	<1	790	21	31	15	<100	<0.5	1990	42	18.6	11.6
G094216	70500	7	23	<10	0.3	2500	<1	520	9	94	21	<100	<0.5	1310	55	27.1	14.5
G094217	70550	6	21	<10	0.2	2560	<1	480	8	49	10	<100	<0.5	1310	38	18.8	11
G094218	70600	15	32	<10	0.4	850	<1	490	20	34	16	<100	<0.5	2580	19	9.1	6.7
G094219	70650	12	95	<10	<0.1	1360	<1	420	38	125	8	<100	0.9	1000	37	19.2	11.5
G094220	70700	13	84	<10	<0.1	1420	<1	460	25	23	<5	<100	1.6	1630	19	9.4	6.5
G094221	70750	11	83	<10	0.1	1450	<1	440	35	32	6	<100	1.1	1010	22	10.7	7.2
G094222	70800	12	65	<10	0.1	950	<1	430	30	33	6	<100	0.6	1680	24	11.3	8.1
G094223	70850	11	47	<10	<0.1	1020	<1	410	15	41	<5	<100	0.8	1450	25	11.9	8.3
G094224	70900	9	124	<10	<0.1	790	<1	240	10	113	15	<100	2.3	1120	32	18	8
	KETCHAN WEST																
	Line 20000 N																
G094225	72500	15	107	<10	<0.1	1160	<1	230	5	222	42	<100	1.5	690	35	17.8	9.2
G094226	72500	9	94	<10	<0.1	920	<1	240	5	113	10	<100	1.7	350	19	9.5	4.9
G094227	72450	10	21	<10	0.1	1380	<1	320	3	198	116	<100	<0.5	1530	44	23.2	13.8
G094228	72450	13	18	<10	<0.1	1760	<1	270	5	302	183	<100	<0.5	1560	24	12.1	7.6
G094229	72400	14	20	<10	0.1	1060	<1	360	5	172	118	<100	<0.5	1600	25	11.7	8.1
G094230	72400	9	19	<10	0.2	1510	<1	340	4	216	35	<100	<0.5	780	31	14.5	9.5
G094231	72350	6	48	<10	<0.1	640	<1	250	4	212	112	<100	0.7	1020	37	19.5	11.7
G094232	72350	5	65	<10	<0.1	860	<1	230	9	274	229	<100	0.6	1190	35	18.4	9.3
G094233	72300	9	72	<10	<0.1	1130	<1	240	6	369	190	<100	0.8	1820	52	24.8	14
G094234	72300	5	135	<10	<0.1	1490	<1	220	9	319	222	<100	1	490	65	33.4	13.3
G094235	72250	13	69	<10	<0.1	1160	<1	310	11	220	22	<100	1	1050	25	12.9	6.7
G094236	72250	8	68	<10	<0.1	1390	<1	260	11	222	242	<100	1.3	2410	25	13.2	6.2
G094237	72200	9	62	<10	0.1	1130	<1	320	6	137	5	<100	<0.5	1810	56	28.4	16.6
G094238	72200	7	60	<10	<0.1	1240	<1	340	9	154	6	<100	<0.5	900	44	23	12.1
G094239	72150	15	86	<10	<0.1	730	<1	280	8	164	7	<100	1.2	1370	41	21.5	11.7
G094240	72150	5	93	<10	<0.1	730	<1	250	6	207	10	<100	1	800	48	24.3	13.2
G094241	72100	11	26	<10	<0.1	1700	<1	400	4	39	<5	<100	<0.5	1710	22	10.1	6.9
G094242	72100	8	34	<10	<0.1	1590	<1	400	6	96	6	<100	<0.5	1030	28	12.8	8.2
G094243	72050	21	27	<10	<0.1	1710	<1	300	7	300	244	<100	1	2400	30	15.8	9.5
G094244	72050	12	49	<10	<0.1	1620	<1	240	11	370	301	<100	0.8	1940	33	17.7	9.3
G094245	72000	16	29	<10	0.3	1440	<1	290	5	108	10	<100	<0.5	1390	29	13.8	9.4
G094246	72000	23	53	<10	<0.1	1480	<1	290	5	284	18	<100	<0.5	1040	66	33.6	18.1
G094247	71950	29	22	<10	0.2	1600	<1	380	8	35	5	<100	0.6	2570	16	8.2	4.7
G094248	71950	15	58	<10	0.1	1520	<1	350	8	177	7	<100	0.9	1660	50	27.2	13.8
G094249	71900	8	12	<10	<0.1	2400	<1	350	3	289	253	<100	<0.5	1490	36	16.5	11.6
G094250	71900	4	19	<10	<0.1	3270	<1	300	4	350	253	<100	<0.5	1170	19	8.9	5.8
G094251	71850	9	33	<10	<0.1	1720	<1	260	4	217	171	<100	0.7	1330	37	19.9	10.7
G094252	71850	8	27	<10	<0.1	1820	<1	240	6	378	345	<100	0.6	2010	36	19.5	10.7
G094253	71800	4	21	<10	0.1	2530	<1	280	<1	320	181	<100	<0.5	880	24	10.4	6.8
G094254	71800	6	27	10	<0.1	2710	<1	240	3	358	340	<100	<0.5	1320	20	9.6	6
G094255	71750	12	34	<10	0.1	2210	<1	310	3	225	170	<100	0.5	1370	30	14.3	7.9
G094256	71750	10	33	<10	<0.1	2500	<1	250	5	411	225	<100	0.6	1840	33	17.3	9.5
G094257	71700	12	20	<10	0.1	2120	<1	430	5	122	130	<100	<0.5	2570	26	13.5	7.7
G094258	71700	12	23	<10	<0.1	2790	<1	390	7	371	295	<100	<0.5	3230	35	19.6	11.1
G094259	71650	22	20	<10	0.1	2620	<1	380	4	134	75	<100	<0.5	1570	23	11.8	7.1
G094260	71650	13	28	<10	<0.1	1640	<1	340	5	103	7	<100	0.7	880	20	9.7	6.1
G094261	71600	10	20	10	<0.1	2110	<1	340	5	347	360	<100	<0.5	2820	53	29.4	16
G094262	71600	11	36	10	<0.1	1700	<1	280	5	322	246	<100	<0.5	1690	32	16.1	8.1
G094263	71550	19	22	<10	<0.1	1980	<1	360	4	629	395	<100	0.6	2180	59	27.7	17.8
G094264	71550	13	24	<10	<0.1	2010	<1	350	4	588	472	<100	0.6	1930	48	22.6	14.3
G094265	71500	10	26	<10	<0.1	3330	<1	440	8	186	176	<100	0.5	2850	23	12.2	7.2
G094266	71500	7	55	<10	<0.1	2920	<1	340	18	377	76	<100	<0.5	1020	35	18.6	9.6
G094267	71450	13	50	<10	<0.1	1090	<1	380	8	70	110	<100	0.6	2140	24	13.4	6.1
G094268	71450	8	64	<10	<0.1	1150	<1	320	13	245	39	<100	0.8	1130	37	20.7	9.5
G094269	71400	22	51	<10	0.1	2370	<1	390	7	313	265	<100	0.7	4640	54	31.5	15.3
G094270	71400	13	72	<10	<0.1	2370	<1	300	15	334	149	<100	0.8	1980	48	26.5	11.8
G094271	71350	20	32	<10	0.1	1810	<1	470	11	54	5	<100	<0.5	1960	27	13.4	8.2
G094272	71350	14	42	<10	0.1	1710	<1	460	22	79	5	<100	0.5	1880	28	14.3	8.2
G094273	71300	17	64	<10	0.1	1470	<1	450	21	49	7	<100	0.6	2220	37	19.8	10.3
G094274	71300	8	85	<10	0.5	1390	<1	360	28	163	7	<100	0.5	1230	82	46.6	19.1
G094275	71250	20	40	<10	0.1	2050	<1	430	17	69	5	<100	<0.5	2450	40	21	12.2
G094276	71250	8	51	<10	<0.1	1580	<1	400	26	172	7	<100	<0.5	1370	44	23.2	13.2
G094277	71200	9	59	<10	<0.1	1020	<1	370	23	208	5	<100	0.5	750	48	24.9	14.3
G094278	71200	6	73	<10	<0.1	920	<1	340	30	258	6	<100	0.6	450	62	31.9	16.9
G094279	71150	10	121	<10	<0.1	1160	<1	290	11	220	21	<100	0.8	660	67	37.4	15.2
G094280	71150	7	140	<10	<0.1	1100	<1	270	13	217	31	<100	0.6	590	81	46.6	15.7
G094281	71100	9	45	<10	0.1	1700	<1	570	10	122	13	<100	0.8	1040	38	18.4	10.6
G094282	71100	9	59	<10	<0.1	1470	<1	500	15	122	18	<100	<0.5	690	47	23.8	12.4
G094283	71050	10	65	<10	<0.1	1390	<1	380	11	107	8	<100	<0.5	850	33	16.4	9.1
G094284	71050	6	86	<10	<0.1	1150	<1	320	12	187	12	<100	0.5	700	55	29.5	13.8
G094285	71000	9	61	<10	<0.1	2050	<1	380	12	270	8	<100	0.6	1790	60	30.6	17.5
G094286	71000	6	93	<10	<0.1	1170	<1	280	12	451	32	<100	<0.5	900	95	50.9	23.8

Fe	Ga	Gd	Hg	In	K	La	Li	Mg	Mn	Mo	Nb	Nd	Ni	P	Pb	Pd	Pr	Pt
MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5
1	1	1	1	0.5	0.1	1	5	1	10	5	0.5	1	5	0.1	10	1	1	1
ppm	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb
21	25	70	<1	<0.5	89	59	<5	94	1790	5	0.6	180	365	1.7	<10	<1	32	<1
18	25	43	<1	<0.5	111	35	<5	61	2090	<5	0.6	111	159	0.9	<10	<1	20	<1
23	26	50	<1	<0.5	186	44	<5	66	2360	<5	0.8	120	218	3.8	10	<1	22	<1
7	17	9	<1	<0.5	75.3	<1	<5	39	4870	<5	<0.5	7	243	0.5	<10	<1	<1	<1
8	18	4	<1	<0.5	94.6	<1	10	74	5480	6	0.6	3	349	0.7	10	<1	<1	<1
18	29	39	<1	<0.5	99.3	31	<5	66	1620	<5	<0.5	101	319	1.8	<10	<1	18	<1
12	21	17	<1	<0.5	144	7	<5	68	1750	8	<0.5	30	353	2.4	<10	<1	5	<1
21	32	43	<1	<0.5	156	36	<5	67	1330	5	<0.5	115	403	1.4	<10	2	21	<1
21	26	33	<1	<0.5	154	25	<5	89	3180	6	0.5	83	356	1.4	<10	<1	15	<1
14	31	22	<1	<0.5	161	15	<5	94	3050	<5	<0.5	52	360	1	<10	<1	9	<1
18	24	26	<1	<0.5	306	18	<5	99	1200	8	0.7	61	233	6.2	<10	<1	11	<1
17	21	24	<1	<0.5	107	21	<5	78	1130	<5	0.5	63	134	3.1	10	<1	12	<1
17	22	34	<1	<0.5	135	24	<5	76	1590	<5	0.5	83	260	1.8	<10	<1	15	<1
16	31	28	<1	<0.5	196	17	<5	91	3110	5	0.5	64	337	2	<10	<1	11	<1
8	14	<1	<1	<0.5	41.8	<1	6	300	1800	8	<0.5	1	247	0.4	20	<1	<1	<1
24	25	35	<1	<0.5	141	30	<5	61	2150	<5	<0.5	96	439	1.3	<10	<1	18	<1
20	29	44	<1	<0.5	104	38	<5	78	960	<5	0.6	115	245	2.3	<10	<1	21	<1
29	28	38	<1	<0.5	85	36	<5	45	1830	<5	0.7	107	253	1.6	<10	<1	20	<1
29	45	91	<1	<0.5	162	91	6	93	3100	13	1.3	236	488	2	40	<1	45	<1
58	18	78	<1	<0.5	98.6	84	<5	39	2920	18	2.4	212	175	10.7	40	1	40	<1
9	27	13	<1	<0.5	191	7	<5	193	3210	10	<0.5	24	218	2.8	<10	<1	4	<1
17	33	34	<1	<0.5	161	28	<5	78	1460	<5	<0.5	87	286	1.2	<10	<1	16	<1
26	36	41	<1	<0.5	143	35	<5	64	4160	10	1.2	105	281	3.5	<10	1	20	<1
13	29	24	<1	<0.5	129	18	<5	75	1900	5	0.5	61	359	2	<10	<1	10	<1
4	32	10	<1	<0.5	210	3	<5	146	1160	5	<0.5	14	786	1.4	<10	<1	2	<1
13	52	36	<1	<0.5	204	18	11	181	3080	8	<0.5	68	658	1.3	20	<1	12	<1
24	36	105	<1	<0.5	166	79	<5	76	1890	15	<0.5	250	733	2.2	<10	<1	44	<1
11	12	9	<1	<0.5	68.3	<1	<5	82	1660	<5	<0.5	2	399	0.6	<10	<1	<1	<1
30	25	49	<1	<0.5	82.4	37	<5	84	2750	10	0.7	113	268	1	<10	<1	20	<1
19	17	26	<1	<0.5	65.6	18	<5	98	2010	9	<0.5	58	208	0.8	<10	<1	11	<1
74	45	27	<1	<0.5	43.6	76	<5	37	12800	10	3.6	120	207	5.6	20	1	28	<1
23	28	7	<1	<0.5	93.2	7	<5	43	1470	9	1.8	21	109	6.3	10	<1	4	<1
82	53	66	<1	<0.5	34.8	153	<5	38	17100	9	3.5	272	149	3.9	20	1	61	<1
57	52	40	<1	<0.5	121	92	<5	50	2890	8	3.2	170	209	5.3	20	<1	38	<1
100	41	76	<1	<0.5	83.4	215	<5	96	15900	14	5.3	355	331	4.1	30	1	81	<1
38	16	13	<1	<0.5	91.2	22	<5	20	9680	7	2.3	45	66	5.8	30	<1	10	<1
33	76	45	<1	<0.5	30.1	104	<5	97	8040	8	2.7	185	173	2.7	10	<1	41	<1
69	47	19	<1	<0.5	72.9	65	<5	32	12700	12	5.9	94	49	13.4	40	1	23	<1
22	63	20	<1	<0.5	95.1	33	<5	98	4860	6	1.8	67	198	4.3	10	<1	14	<1
45	15	31	<1	<0.5	35.3	34	<5	17	6510	<5	2.4	82	74	4.7	40	<1	16	<1
45	16	31	<1	<0.5	62.8	41	<5	21	4390	14	2.4	88	136	5.3	50	<1	18	<1
30	26	37	<1	<0.5	62.3	45	<5	30	2120	5	1.7	102	95	2.1	40	1	21	<1
40	13	17	<1	<0.5	88.4	22	<5	67	650	<5	1.4	59	204	6.7	<10	<1	11	<1
26	15	61	<1	<0.5	155	52	<5	68	730	<5	<0.5	160	133	7.2	<10	<1	28	<1
29	23	43	<1	<0.5	78.9	47	<5	52	580	<5	1	130	246	3.6	<10	<1	25	<1
22	29	42	<1	<0.5	122	37	<5	84	2590	6	0.6	112	339	2.7	<10	<1	20	<1
23	15	58	<1	<0.5	138	52	<5	40	1730	<5	1.2	149	196	6.3	30	1	28	<1
24	32	55	<1	<0.5	127	54	<5	78	2300	5	0.8	155	341	2.4	<10	<1	29	<1
30	16	35	<1	<0.5	105	39	<5	37	1970	8	1.5	93	142	2.1	40	1	19	<1
5	16	9	<1	<0.5	176	3	29	229	1480	6	<0.5	14	602	0.5	<10	<1	2	<1
60	22	114	<1	<0.5	85.1	111	<5	41	2560	14	2	304	359	5.1	40	2	58	<1
47	21	75	<1	<0.5	100	82	<5	44	2160	5	2	205	174	6.5	30	1	40	<1
41	22	76	<1	<0.5	71.6	85	<5	35	2120	<5	1.3	220	285	4	20	<1	43	<1
28	21	46	<1	<0.5	99.1	43	<5	41	1580	<5	0.6	123	252	1.1	20	<1	24	<1
22	18	37	<1	<0.5	166	33	<5	62	1820	6	0.6	109	373	2.1	<10	1	20	<1
21	23	31	<1	<0.5	150	29	<5	74	1610	<5	<0.5	91	260	1.3	<10	<1	17	<1
21	20	28	<1	<0.5	195	24	<5	78	2320	7	0.6	80	226	2.6	<10	<1	15	<1
18	25	28	<1	<0.5	166	20	<5	90	2090	7	0.5	70	204	3	10	<1	13	<1
16	26	19	<1	<0.5	257	14	<5	105	1830	6	<0.5	48	179	1.3	<10	<1	9	<1
18	27	21	<1	<0.5	201	17	<5	64	1950	<5	<0.5	53	161	0.9	20	<1	10	<1
15	24	26	<1	<0.5	98.6	22	<5	69	1310	<5	0.6	71	146	1.6	20	<1	13	<1
13	26	20	<1	<0.5	214	15	<5	60	1470	<5	<0.5	48	153	2.2	10	<1	9	<1

Fe	Ga	Gd	Hg	In	K	La	Li	Mg	Mn	Mo	Nb	Nd	Ni	P	Pb	Pd	Pr	Pt
	18	42	57 <1	<0.5		169	42 <5		68	2230 <5	<0.5		134	167	1.1	10 <1		25 <1
	19	41	55 <1	<0.5		103	48 <5		61	1230	6 <0.5		152	195	1 <10	<1		28 <1
	14	24	35 <1	<0.5		127	28 <5		80	8260	43 <0.5		98	258	0.9 <10	<1		17 <1
	13	37	41 <1	<0.5		78.5	19 <5		60	3370	16 <0.5		80	572	0.9 <10	<1		13 <1
	19	20	37 <1	<0.5		287	51 <5		48	1590	8 <0.5		128	286	2.2 <10	<1		25 <1
	18	21	40 <1	<0.5		88	42 <5		21	1490 <5	<0.5		104	140	1.1	30 <1		21 <1
	38	7	15 <1	<0.5		100	17 <5		71	1040	8	0.7	50	75	5.3 <10	<1		9 <1
	14	29	23 <1	<0.5		106	8 <5		121	3510	22	0.5	39	786	2.4	10 <1		6 <1
	9	56	57 <1	<0.5		104	25	8	189	2240	19 <0.5		101	1010	0.9 <10	<1		16 <1
	8	49	71 <1	<0.5		89.4	42	23	264	2610	21	0.7	150	983	1.5	20 <1		26 <1
	13	50	52 <1	<0.5		266	43	9	195	1250	22	0.5	141	999	1.2 <10	<1		25 <1
	17	17	29 <1	<0.5		180	20 <5		59	1760 <5	<0.5		71	505	3.6 <10	<1		12 <1
	22	28	52 <1	<0.5		209	53 <5		58	1170 <5		0.5	147	422	1.1	10 <1		28 <1
	18	28	28 <1	<0.5		178	31 <5		57	440 <5	<0.5		86	171	1 <10	<1		16 <1
	21	29	32 <1	<0.5		141	35 <5		61	710 <5	<0.5		96	266	0.8 <10	<1		19 <1
	22	20	35 <1	<0.5		118	33 <5		68	580 <5	<0.5		101	254	1.8 <10	<1		19 <1
	19	22	37 <1	<0.5		140	41 <5		65	530 <5		0.5	115	298	1.4 <10	<1		22 <1
	46	19	39 <1	<0.5		142	47 <5		25	2760	9	2.2	107	96	9.9	60	1	21 <1
	69	15	44 <1	<0.5		132	69 <5		38	1790	9	4.2	143	177	9.6	60	1	31 <1
	52	12	24 <1	<0.5		201	35 <5		41	2340	8	2.7	75	110	8.6	40 <1		15 <1
	42	14	66 <1	<0.5		94.7	115 <5		72	1310	6	2.6	247	241	6.8 <10	<1		49 <1
	66	18	36 <1	<0.5		80	105 <5		56	13000	11	3.9	171	269	4.7 <10	<1		40 <1
	36	11	38 <1	<0.5		96.5	80 <5		61	3220	5	2.5	155	581	4.9 <10	<1		33 <1
	35	16	47 <1	<0.5		79.8	106 <5		57	1000 <5		2.3	189	439	4.4 <10	<1		41 <1
	47	7	56 <1	<0.5		47.6	105 <5		60	5750	9	2.6	218	353	8.2 <10	<1		46 <1
	79	10	47 <1	<0.5		55.8	82 <5		46	25000	55	3.6	183	637	6.2	10 <1		38 <1
	68	13	69 <1	<0.5		50.5	161 <5		106	3410	7	3.3	271	423	5.5	20	1	58 <1
	112	19	66 <1	<0.5		64.2	118 <5		61	4620	6	4.6	190	617	8.3	90	1	43 <1
	48	13	33 <1	<0.5		66.2	63 <5		51	3460 <5		3.4	117	252	5.1	20 <1		25 <1
	95	16	31 <1	<0.5		57.3	69 <5		48	35100	17	5.3	126	337	4.3	30 <1		29 <1
	34	12	80 <1	<0.5		80.1	115 <5		77	410	9	2.1	263	504	5.2 <10	<1		51 <1
	40	14	61 <1	<0.5		133	91 <5		87	990	10	2.1	192	476	5	20 <1		39 <1
	45	9	56 <1	<0.5		46.7	87 <5		35	480	8	2.5	187	155	6.5	10 <1		38 <1
	52	9	61 <1	<0.5		43.7	86 <5		37	1180	12	3.4	197	193	8.1	20 <1		40 <1
	21	17	34 <1	<0.5		68.5	51 <5		136	320 <5		1.3	117	354	5.1 <10	<1		23 <1
	26	16	40 <1	<0.5		104	69 <5		106	810 <5		1.1	137	443	4.3 <10	<1		28 <1
	60	17	45 <1	<0.5		35.7	120 <5		106	17100	8	3.6	200	278	3.2	10 <1		46 <1
	76	16	44 <1	<0.5		43.7	112 <5		80	42500	17	4.2	193	525	3.1	10 <1		44 <1
	26	15	44 <1	<0.5		110	82 <5		142	750 <5		1.8	163	359	6.5	10 <1		33 <1
	37	15	88 <1	<0.5		66.1	137 <5		127	1500	6	2	285	680	5	20 <1		59 <1
	22	16	24 <1	<0.5		58.6	32 <5		107	560	6	1.1	74	124	6.1 <10	<1		14 <1
	37	16	69 <1	<0.5		52.6	97 <5		67	790	7	1.4	211	215	5.7	10 <1		42 <1
	34	24	56 <1	<0.5		45.1	140 <5		104	3580 <5		2.2	238	315	3.4 <10	<1		54 <1
	50	33	29 <1	<0.5		57	111 <5		67	17500	11	3.3	144	519	3 <10	<1		36 <1
	50	17	53 <1	<0.5		50.5	102 <5		59	7670	7	2	215	245	5.5 <10	<1		46 <1
	76	18	51 <1	<0.5		58.3	138 <5		51	26400	14	3.7	237	329	5.8 <10		1	54 <1
	36	26	32 <1	<0.5		72.5	108 <5		98	1400 <5		2.2	147	252	5.4	20 <1		37 <1
	82	29	29 <1	<0.5		105	107 <5		89	17900	14	5.7	146	309	5.7	20	1	36 <1
	53	23	39 <1	<0.5		69.9	88 <5		62	5300 <5		2.5	150	159	5.8	20 <1		34 <1
	87	26	45 <1	<0.5		71.3	153 <5		50	31400	16	3.1	212	321	3.3	10	1	52 <1
	38	22	37 <1	<0.5		69	60 <5		81	7140 <5		2.1	133	162	5.9	20 <1		27 <1
	66	29	51 <1	<0.5		52.9	134 <5		68	20800	8	2.9	230	323	2.7	10 <1		52 <1
	34	27	34 <1	<0.5		70.2	65 <5		58	3580 <5		2.3	132	113	6.1	10 <1		28 <1
	27	17	29 <1	<0.5		53.2	55 <5		48	1370	6	1.5	112	116	5.4 <10	<1		23 <1
	71	21	78 <1	<0.5		100	191 <5		91	9330	6	3.1	322	214	3.8	20 <1		71 <1
	109	18	38 <1	<0.5		88.1	118 <5		74	16900	14	4.8	177	211	7.1	30	1	42 <1
	56	20	83 <1	<0.5		31.9	251 <5		117	7370 <5		2.8	374	236	3.1	20 <1		89 <1
	62	20	67 <1	<0.5		32.5	199 <5		103	7430	7	3.1	298	206	3.5	20	1	69 <1
	53	34	35 <1	<0.5		58.5	85 <5		76	12000	10	2.9	148	305	2.3	20 <1		33 <1
	57	30	46 <1	<0.5		91.2	91 <5		48	20900	15	2.4	171	441	2.8	30 <1		38 <1
	43	13	32 <1	<0.5		108	36 <5		51	7020	6	2	89	51	6.2	20 <1		17 <1
	48	13	46 <1	<0.5		115	63 <5		34	8220	12	2.5	147	120	6.5	20 <1		29 <1
	64	24	72 <1	<0.5		41.6	133 <5		56	13500	6	3.1	277	76	3.9	20 <1		58 <1
	80	24	57 <1	<0.5		76.6	101 <5		32	19100	8	2.9	204	198	3.3	40	1	44 <1
	21	19	40 <1	<0.5		56.5	46 <5		34	780 <5		1	116	176	3.9 <10	<1		22 <1
	28	18	40 <1	<0.5		57.9	53 <5		33	840	6	1.4	126	222	4.1 <10	<1		24 <1
	25	15	49 <1	<0.5		83.3	50 <5		60	800	5	0.9	127	264	3.9	10 <1		24 <1
	47	15	93 <1	<0.5		111	79 <5		41	1490	10	1.1	218	423	3.3	30 <1		40 <1
	25	21	57 <1	<0.5		120	67 <5		76	600 <5		0.8	168	249	2.3 <10	<1		32 <1
	31	16	62 <1	<0.5		127	73 <5		60	1280 <5		0.9	181	373	2.6	10 <1		35 <1
	24	11	65 <1	<0.5		91.4	64 <5		82	1450 <5	<0.5		178	394	1.4	10 <1		33 <1
	25	10	78 <1	<0.5		163	62 <5		75	2110 <5	<0.5		196	383	2.3	20 <1		35 <1
	42	14	73 <1	<0.5		127	73 <5		45	3540	10	1.6	187	178	3.4	50 <1		37 <1
	62	13	77 <1	<0.5		108	68 <5		39	4940	13	1.7	177	204	4.7	80 <1		35 <1
	13	17	54 <1	<0.5		30.6	47	44	177	1110	7	0.9	135	365	0.6	30 <1		25 <1
	11	15	59 <1	<0.5		91.5	47	50	154	1750	9	0.6	138	366	0.6	60 <1		26 <1
	25	15	43 <1	<0.5		123	47 <5		85	1400 <5		0.8	125	157	1.1	20 <1		24 <1
	31	12	65 <1	<0.5		90.5	60 <5		69	1840 <5		0.8	174	187	1.1	40 <1		33 <1
	26	21	82 <1	<0.5		95.4	98 <5		80	1370 <5	<0.5		251	324	0.6	20	1	50 <1
	39	13	113 <1	<0.5		119	122 <5		55	3570	10	1	326	299	2	50	1	66 <1

Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5	MMI-M5
5	1	5	1	1	10	1	1	10	0.5	3	0.5	1	1	5	1	20	5
ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
82	<1	15	54	<1	1600	<1	10	<10	11.6	16	<0.5	20	<1	264	18	100	91
70	<1	9	33	<1	1650	<1	6	<10	5.2	18	<0.5	25	<1	154	11	180	84
150	<1	15	36	<1	1460	<1	7	<10	6.6	32	<0.5	16	<1	225	16	370	77
51	<1	6	4	<1	1500	<1	1	<10	2.3	10	<0.5	3	<1	47	4	40	18
92	<1	5	2	<1	3100	<1	<1	<10	1.2	16	<0.5	2	<1	25	2	20	14
97	<1	13	31	<1	1940	<1	5	<10	7.6	19	<0.5	19	<1	136	9	380	114
84	<1	12	11	<1	2380	<1	3	<10	2.7	20	<0.5	21	<1	70	5	260	98
114	<1	13	35	<1	2210	<1	6	<10	8.6	29	<0.5	32	<1	143	10	280	219
115	<1	10	27	<1	2210	<1	5	<10	5.2	24	<0.5	14	<1	117	9	690	82
150	<1	9	17	<1	3470	<1	3	<10	4.5	14	<0.5	20	<1	76	6	260	64
50	<1	13	19	<1	1800	<1	4	<10	5.8	37	<0.5	20	<1	102	8	80	66
111	<1	8	19	<1	1340	<1	4	<10	3.4	27	<0.5	9	<1	95	7	740	47
129	<1	9	27	<1	1800	<1	5	<10	3.2	27	<0.5	13	<1	128	10	920	76
144	<1	13	21	<1	2200	<1	4	<10	6.7	29	<0.5	17	<1	99	8	870	97
<5	<1	<5	<1	<1	3460	<1	<1	<10	0.5	11	<0.5	29	<1	6	<1	30	12
97	<1	10	29	<1	2040	<1	5	<10	5.9	31	<0.5	9	<1	122	10	410	80
133	<1	11	35	<1	2120	<1	6	<10	4.8	41	<0.5	16	<1	175	13	300	119
129	<1	11	32	<1	1550	<1	6	<10	5.9	31	<0.5	14	<1	155	11	480	114
87	<1	26	67	<1	2490	<1	14	<10	12.2	29	<0.5	62	<1	437	33	500	124
102	<1	60	58	<1	950	<1	12	<10	14.4	188	<0.5	17	<1	382	29	130	178
93	<1	8	9	<1	2900	<1	2	<10	2.3	26	<0.5	8	<1	52	4	800	28
183	<1	11	27	<1	1750	<1	5	<10	5.6	24	<0.5	18	<1	126	9	680	119
176	<1	18	32	<1	1670	<1	6	<10	9	61	<0.5	33	<1	152	13	920	264
128	<1	10	19	<1	2300	<1	3	<10	7.2	17	<0.5	20	<1	77	5	310	130
64	<1	6	6	<1	3590	<1	2	<10	1.4	11	<0.5	10	<1	43	3	40	27
56	<1	10	24	<1	4040	<1	5	<10	7.4	10	<0.5	15	<1	150	11	320	36
77	<1	21	78	<1	1530	<1	15	<10	15.8	17	<0.5	23	<1	435	30	30	108
106	<1	14	3	<1	1150	<1	2	<10	3	8	<0.5	16	<1	45	6	50	86
49	<1	22	39	<1	1570	<1	7	<10	7.7	18	<0.5	22	<1	202	16	110	79
51	<1	17	20	<1	2070	<1	4	<10	6	16	<0.5	34	<1	97	9	340	94
88	<1	36	24	<1	1600	<1	4	<10	21.6	96	<0.5	15	<1	107	8	180	182
21	<1	8	6	<1	2190	<1	1	<10	1.6	32	<0.5	21	<1	28	2	80	36
140	<1	55	57	<1	1480	<1	10	<10	27.7	124	<0.5	23	<1	263	21	140	217
54	<1	29	37	<1	1650	<1	6	<10	21.1	64	<0.5	21	<1	150	12	190	157
55	<1	46	70	<1	1190	<1	10	<10	29.9	206	<0.5	25	2	308	23	90	218
298	<1	19	11	<1	510	<1	2	<10	4.6	203	<0.5	9	<1	61	5	160	101
76	<1	18	40	<1	2910	<1	6	<10	19	29	<0.5	20	<1	155	10	190	107
115	<1	25	19	<1	990	<1	3	<10	18.7	354	<0.5	14	1	70	6	280	223
46	<1	13	16	<1	2260	<1	3	<10	7.9	35	<0.5	23	<1	76	5	110	66
181	<1	51	23	<1	500	<1	5	<10	9.4	202	<0.5	18	<1	165	15	110	166
107	<1	40	24	<1	520	<1	5	<10	9.4	251	<0.5	14	<1	164	14	230	144
176	<1	38	28	<1	920	<1	6	<10	9	156	<0.5	16	<1	222	19	690	195
72	<1	6	14	<1	1170	<1	2	<10	3.4	43	<0.5	19	<1	63	5	440	41
52	<1	26	45	<1	1220	<1	8	<10	5.8	34	<0.5	19	<1	257	18	100	85
61	<1	14	35	<1	1330	<1	6	<10	8.7	24	<0.5	19	<1	169	13	250	106
130	<1	14	33	<1	1850	<1	6	<10	8.7	25	<0.5	18	<1	151	10	210	111
112	<1	33	42	<1	630	<1	9	<10	8.1	111	<0.5	14	<1	279	21	760	173
85	<1	14	44	<1	1430	<1	8	<10	12.8	28	<0.5	22	<1	199	14	120	113
85	<1	37	27	<1	650	<1	6	<10	10	133	<0.5	12	<1	179	16	40	165
48	<1	<5	6	<1	2950	<1	1	<10	2.2	14	<0.5	6	<1	41	3	<20	19
60	<1	80	87	<1	970	<1	18	<10	20	168	<0.5	21	<1	579	48	30	281
124	<1	58	58	<1	870	<1	12	<10	12.2	239	<0.5	20	<1	388	28	110	220
115	<1	39	61	<1	1020	<1	11	<10	10.5	61	<0.5	20	<1	386	28	230	157
65	<1	15	36	<1	1140	<1	7	<10	5.4	28	<0.5	10	<1	202	16	520	110
122	<1	9	32	<1	2070	<1	5	<10	6.2	42	<0.5	20	<1	116	10	240	165
125	<1	8	26	<1	1630	<1	4	<10	4.8	23	<0.5	11	<1	103	8	680	73
147	<1	7	24	<1	2070	<1	4	<10	4.4	29	<0.5	9	<1	95	7	930	51
207	<1	7	23	<1	2490	<1	4	<10	3.2	29	<0.5	9	<1	102	8	990	49
123	<1	6	14	<1	2580	<1	3	<10	2.6	22	<0.5	10	<1	69	5	820	36
112	<1	7	16	<1	2250	<1	3	<10	1.8	24	<0.5	10	<1	83	7	1250	51
181	<1	6	22	<1	2010	<1	4	<10	3.3	24	<0.5	12	<1	101	8	750	63
117	<1	6	16	<1	1640	<1	3	<10	2.6	30	<0.5	10	<1	77	6	840	54

Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
136	<1	13	42	<1	1530	<1	8	<10	4.6	24	<0.5	18	<1	213	16	690	96
127	<1	14	45	<1	1340	<1	8	<10	10	15	<0.5	26	<1	186	14	160	165
145	<1	11	29	<1	1490	<1	5	<10	8.7	12	<0.5	21	<1	119	9	340	81
55	<1	9	28	<1	1550	<1	6	<10	7.2	8	<0.5	13	<1	148	11	220	31
209	<1	9	34	<1	1180	<1	5	<10	4.4	38	<0.5	23	<1	128	10	16000	88
187	<1	34	31	<1	670	<1	7	<10	6.3	48	<0.5	16	<1	203	17	9720	147
114	<1	14	13	<1	1140	<1	2	<10	5.3	30	<0.5	31	<1	58	5	3380	54
39	<1	9	14	<1	2280	<1	3	<10	3.3	14	<0.5	22	<1	105	9	100	38
43	<1	13	37	<1	3090	<1	8	<10	8.4	7	<0.5	31	<1	209	13	90	52
65	<1	15	50	<1	4530	<1	11	<10	13.8	14	<0.5	46	<1	283	21	100	78
47	<1	14	41	<1	3410	<1	7	<10	16.4	12	<0.5	38	<1	194	15	30	125
55	<1	10	22	<1	1180	<1	4	<10	7.4	19	<0.5	11	<1	99	7	90	70
105	<1	11	42	<1	1230	<1	7	<10	6	19	<0.5	18	<1	203	16	150	125
133	<1	9	24	<1	1320	<1	4	<10	6.5	21	<0.5	22	<1	99	8	120	143
138	<1	8	27	<1	1530	<1	5	<10	4.8	20	<0.5	16	<1	114	9	230	98
86	<1	11	29	<1	1280	<1	5	<10	8.4	29	<0.5	17	<1	121	9	360	132
87	<1	8	32	<1	1290	<1	5	<10	8.7	20	<0.5	15	<1	132	9	20	94
126	<1	43	29	<1	570	<1	6	<10	9.1	270	<0.5	14	<1	182	15	1000	182
87	<1	56	37	<1	830	<1	7	<10	18.2	300	<0.5	13	<1	180	14	120	223
93	<1	29	20	<1	700	<1	4	<10	8.9	174	<0.5	7	<1	95	7	300	102
58	<1	18	56	<1	2040	<1	9	<10	8.8	44	<0.5	30	<1	264	19	80	113
56	<1	21	34	<1	1460	<1	5	<10	16.6	60	<0.5	17	1	126	10	180	127
32	<1	12	35	<1	1370	<1	5	<10	9.8	38	<0.5	23	<1	141	10	80	81
47	<1	15	42	<1	1630	<1	6	<10	14.6	38	<0.5	22	<1	165	11	60	111
77	<1	21	51	<1	1340	<1	8	<10	10	64	<0.5	17	<1	204	15	40	109
69	<1	42	42	<1	1080	<1	6	<10	14.3	120	<0.5	11	<1	184	15	280	147
91	<1	64	60	<1	1450	<1	10	<10	13.6	153	<0.5	22	<1	283	20	200	200
97	<1	88	53	<1	1330	<1	11	<10	22.2	507	<0.5	13	<1	356	25	530	310
132	<1	24	28	<1	1310	<1	5	<10	12.2	78	<0.5	17	<1	139	10	430	134
137	<1	40	28	<1	1280	<1	5	<10	14	172	<0.5	20	<1	139	11	360	175
65	<1	17	68	<1	1590	<1	11	<10	9.6	41	<0.5	14	<1	314	22	50	103
73	<1	20	51	<1	1720	<1	9	<10	9	45	<0.5	11	<1	260	17	40	85
88	<1	32	48	<1	1220	<1	8	<10	8.3	91	<0.5	16	<1	235	17	<20	113
84	<1	42	52	<1	920	<1	9	<10	11.3	188	<0.5	13	<1	259	19	30	166
55	<1	8	28	<1	2340	<1	4	<10	4.6	33	<0.5	25	<1	126	8	20	49
71	<1	10	35	<1	2260	<1	5	<10	8.3	32	<0.5	20	<1	157	10	40	58
86	<1	21	42	<1	1800	<1	6	<10	17.7	53	<0.5	32	<1	170	13	50	129
106	<1	43	41	<1	1400	<1	7	<10	22.8	95	<0.5	26	<1	176	15	240	177
37	<1	11	40	<1	1570	<1	6	<10	9.3	36	<0.5	21	<1	167	11	40	76
61	<1	28	75	<1	1430	<1	13	<10	18.1	49	<0.5	22	<1	351	26	90	135
83	<1	8	19	<1	2330	<1	3	<10	3.4	29	<0.5	26	<1	103	7	50	40
122	<1	28	55	<1	1800	<1	10	<10	10.4	50	<0.5	29	<1	312	22	130	97
66	<1	14	52	<1	1940	<1	8	<10	12	38	<0.5	31	<1	178	12	70	132
30	<1	19	28	<1	1560	<1	4	<10	22.6	63	<0.5	15	<1	93	7	420	147
107	<1	29	47	<1	1490	<1	7	<10	11.1	52	<0.5	23	<1	203	17	160	121
102	<1	35	49	<1	1270	<1	7	<10	15.5	78	<0.5	25	1	198	17	120	170
17	<1	23	30	<1	1670	<1	5	<10	11.2	47	<0.5	28	<1	107	8	20	170
41	<1	38	28	<1	1210	<1	4	<10	26.9	198	<0.5	21	1	104	8	150	275
69	<1	30	34	<1	1560	<1	6	<10	17.7	47	<0.5	27	<1	149	11	110	163
91	<1	46	43	<1	1170	<1	7	<10	35.8	107	<0.5	21	1	185	14	170	195
47	<1	15	33	<1	1770	<1	5	<10	11.5	32	<0.5	30	<1	154	11	40	87
61	<1	31	49	<1	1550	<1	7	<10	29.7	38	<0.5	26	<1	207	17	70	146
65	<1	15	30	<1	1580	<1	5	<10	11.6	38	<0.5	25	<1	128	10	90	103
88	<1	13	26	<1	1300	<1	4	<10	13.5	38	<0.5	16	<1	111	8	170	95
53	<1	39	70	<1	1640	<1	11	<10	15.6	64	<0.5	38	<1	317	24	110	176
78	<1	69	37	<1	1130	<1	6	<10	21.7	219	<0.5	29	1	156	13	340	271
95	<1	32	79	<1	1730	<1	12	<10	23.6	54	<0.5	42	<1	287	21	50	183
91	<1	34	63	<1	1680	<1	10	<10	27.8	69	<0.5	40	<1	236	17	70	218
68	<1	18	31	<1	2220	<1	5	<10	18.6	36	<0.5	32	<1	137	11	190	95
75	<1	36	41	<1	1620	<1	7	<10	22	46	<0.5	20	<1	194	16	1040	144
71	<1	18	24	<1	1560	<1	4	<10	3.6	55	<0.5	29	<1	158	12	100	67
100	<1	33	38	<1	1150	<1	7	<10	9.2	96	<0.5	29	<1	217	17	370	147
62	<1	40	64	<1	2080	<1	10	<10	14.1	60	<0.5	46	<1	326	26	110	155
103	<1	69	49	<1	1310	<1	9	<10	18.2	102	<0.5	31	<1	273	23	330	203
80	<1	9	31	<1	2220	<1	5	<10	6.3	31	<0.5	27	<1	153	10	80	66
139	<1	13	32	<1	2090	<1	5	<10	11.3	39	<0.5	23	<1	160	11	710	99
81	<1	12	38	<1	1870	<1	7	<10	5	29	<0.5	21	<1	229	16	30	61
78	<1	46	68	<1	1400	<1	14	<10	9.3	61	<0.5	21	<1	484	39	80	131
67	<1	13	46	<1	1770	<1	8	<10	10.5	22	<0.5	27	<1	230	16	40	92
113	<1	14	50	<1	1600	<1	9	<10	10.7	43	<0.5	22	<1	262	19	130	98
112	<1	12	53	<1	1390	<1	9	<10	7.4	20	<0.5	14	<1	273	19	170	90
147	<1	14	61	<1	1190	<1	12	<10	6.3	28	<0.5	12	<1	341	25	280	102
58	<1	41	55	<1	1140	<1	12	<10	11.6	163	<0.5	25	<1	357	30	130	213
53	<1	60	56	<1	1050	<1	14	<10	15.1	172	<0.5	22	<1	443	36	160	196
38	<1	5	42	<1	3520	<1	7	<10	15.6	19	<0.5	68	<1	213	14	<20	61
16	<1	<5	45	<1	2960	<1	9	<10	8.7	13	<0.5	56	<1	265	19	20	44
53	<1	6	35	<1	2080	<1	6	<10	8.2	33	<0.5	44	<1	163	13	40	96
78	<1	13	51	<1	1540	<1	10	<10	8.8	39	<0.5	56	<1	273	24	40	143
63	<1	9	68	<1	1880	<1	12	<10	15	21	<0.5	59	<1	310	23	20	179
48	<1	27	94	<1	1140	<1	17	<10	16.1	69	<0.5	53	<1	481	42	50	258

APPENDIX B

Total digestion soil sample results

Ketchan Property

VA11044071 - Finalized
CLIENT : MCOGRE - Moag Copper Gold Resources

SOIL SAMPLES

# of Samples : 50
DATE RECEIVED : 2011-03-17 DATE FINALIZED : 2011-04-08

		Au ppb	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm
	Ketchan Zone										
G-94071	*76400E 16700N*	0.4	0.28	1.66	2.6	<10	124.5	0.29	0.1	0.32	0.08
G-94072	50**NE**	<	0.16	1.49	2.2	<10	100.5	0.26	0.08	0.32	0.06
G-94073	100	0.2	0.23	1.68	2.2	<10	128.5	0.31	0.1	0.37	0.07
G-94074	150	1.9	0.24	1.71	3.3	<10	110	0.37	0.09	0.34	0.1
G-94075	200	79.4	0.21	1.48	2.9	<10	122	0.3	0.08	0.31	0.05
G-94076	250	<	0.21	2.18	4.1	<10	172	0.41	0.09	0.3	0.07
G-94077	300	9.8	0.13	2.07	3.3	<10	183	0.43	0.11	0.38	0.05
G-94078	350	0.2	0.21	1.71	4.0	<10	130	0.32	0.07	0.29	0.06
G-94079	400	4.3	0.35	2.22	4.2	<10	97.3	0.46	0.09	0.71	0.11
G-94080	450**NE**	1.1	0.19	1.5	6.5	<10	91.3	0.24	0.07	0.27	0.08
G-94081	50**SW**	0.3	0.19	1.6	1.9	<10	113.5	0.33	0.09	0.32	0.07
G-94082	100	1.5	0.21	1.67	1.5	<10	109	0.33	0.08	0.36	0.07
G-94083	150	1.1	0.22	1.39	1.7	<10	102	0.27	0.07	0.37	0.06
G-94084	200	1.7	0.21	1.59	2.9	<10	109	0.34	0.06	0.44	0.07
G-94085	250	<	0.11	1.57	3.1	<10	111	0.33	0.08	0.38	0.07
G-94086	300	0.6	0.15	1.45	2.2	<10	104	0.31	0.07	0.46	0.08
G-94087	350	0.2	0.11	1.48	2.7	<10	98.6	0.29	0.07	0.51	0.08
G-94088	400	<	0.12	1.44	2.1	<10	100.5	0.29	0.06	0.4	0.07
G-94089	450	<	0.10	1.39	2.6	<10	95.2	0.29	0.08	0.39	0.05
G-94090	500**SW**	0.4	0.14	1.49	3.4	<10	104	0.37	0.06	0.76	0.09
	Ketchan NE										
	Line 27000										
G-94111	50**W**	<	0.06	1.47	1.2	<10	95.8	0.26	0.07	0.25	0.04
G-94112	100	<	0.05	1.43	1.6	<10	103.5	0.38	0.1	0.43	0.04
G-94113	150	<	0.06	1.65	1.0	<10	124	0.32	0.08	0.25	0.03
G-94114	200	<	0.02	1.32	0.8	<10	79.4	0.25	0.08	0.22	0.03
G-94115	250	0.4	0.03	2.32	2.5	<10	105.5	0.64	0.09	0.25	0.05
G-94116	300	<	0.01	1.79	1.0	<10	123	0.4	0.07	0.21	0.03
G-94117	350	<	0.05	1.48	0.9	<10	117.5	0.33	0.08	0.26	0.03
G-94118	400	14.2	0.05	1.18	1.2	<10	101	0.29	0.18	0.25	0.04
G-94119	450	0.2	0.03	1.66	1.5	<10	117.5	0.34	0.09	0.33	0.06
G-94120	500	<	0.03	1.29	1.0	<10	106.5	0.24	0.08	0.27	0.04
G-94121	550	<	0.09	1.35	1.3	<10	119.5	0.3	0.08	0.24	0.07
G-94122	600	1.7	0.05	1.23	1.7	<10	85.1	0.25	0.07	0.26	0.06
G-94123	650	0.2	0.06	1.26	1.8	<10	82.7	0.24	0.08	0.35	0.09
G-94124	700	<	0.10	1.32	1.8	<10	88.5	0.23	0.08	0.27	0.09
G-94125	750	<	0.05	1.19	1.4	<10	72.9	0.25	0.07	0.28	0.06
G-94126	800	<	0.06	1.2	1.4	<10	76.4	0.23	0.08	0.31	0.08
G-94127	850	<	0.08	1.36	2.2	<10	97	0.25	0.08	0.31	0.16
G-94128	900	<	0.04	1.31	1.6	<10	88.3	0.23	0.08	0.37	0.1
G-94129	950	<	0.07	1.49	2.2	<10	121	0.29	0.09	0.43	0.1
G-94130	1000	<	0.07	1.38	2.6	<10	90.9	0.28	0.1	0.37	0.29
G-94131	1050	<	0.10	1.66	2.6	<10	140	0.34	0.11	0.52	0.21
G-94132	1100	<	0.04	1.58	1.5	<10	115.5	0.32	0.1	0.5	0.19
G-94133	1150	<	0.08	2.02	1.9	<10	122	0.44	0.08	0.82	0.17
G-94135	*0*	<	0.08	1.62	0.8	<10	125	0.29	0.1	0.22	0.04
G-94136	50E	<	0.07	1.23	0.8	<10	117	0.22	0.09	0.27	0.03
G-94137	100	0.9	0.04	1.29	1.9	<10	99.5	0.33	0.11	0.41	0.05
G-94138	150	1.5	0.09	2.34	3.0	<10	147	0.64	0.14	0.59	0.07
G-94139	200	<	0.04	1.2	0.8	<10	91.7	0.2	0.07	0.25	0.02
G-94140	250	0.2	0.04	1.36	0.8	<10	102	0.25	0.08	0.17	0.03
G-94141	300**E**	<	0.04	1.77	0.8	<10	134.5	0.37	0.07	0.23	0.03

Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm
9.85	7.1	19.3	0.68	45.2	2.15	4.94	<0.05	0.11	<0.005	0.022	0.08	3.7	7.4
8.79	8.5	17.8	0.74	24.6	2.04	4.7	<0.05	0.04	<0.005	0.02	0.06	3.3	7.3
11.95	7.2	21	0.86	36.3	2.09	5.14	<0.05	0.07	0.006	0.021	0.07	4.6	10.8
8.05	8.6	17.1	0.85	49.3	2.25	5.36	<0.05	0.08	<0.005	0.021	0.09	3.1	9.1
9.82	6.7	12.4	0.77	96	2.15	4.79	<0.05	0.09	<0.005	0.021	0.07	3.8	8.3
12.15	8.1	16.6	1.27	48.6	2.33	6.16	<0.05	0.2	<0.005	0.023	0.05	4.9	10.2
12.05	8.3	22.9	0.83	97	3.12	5.81	<0.05	0.2	<0.005	0.028	0.08	6.9	11.4
11.15	7.7	18.7	0.85	25.4	2.43	5.27	<0.05	0.09	0.007	0.023	0.06	4.4	9.1
16.3	9.8	17.4	0.62	128.5	2.77	5.58	0.05	0.25	0.029	0.032	0.06	7.2	14.1
9.27	8.6	23.3	0.55	22.1	2.66	4.37	<0.05	0.08	<0.005	0.029	0.07	3.6	8
8.98	9.1	20.2	0.76	140.5	2.41	4.89	<0.05	0.11	<0.005	0.021	0.07	3.6	7.5
8.88	10	17.8	0.75	123.5	2.45	5.22	<0.05	0.14	<0.005	0.02	0.06	3.3	7.5
8.6	6.1	18.1	0.61	27.8	1.93	4.3	<0.05	0.06	<0.005	0.014	0.06	3.4	6.1
13	8	21.2	0.61	37.1	2.36	5.09	<0.05	0.08	<0.005	0.02	0.12	4.9	6.9
8.92	7.2	18.9	0.66	26.2	2.36	4.78	<0.05	0.1	0.015	0.019	0.07	3.5	7.2
10.6	6.4	15.8	0.51	24	2.07	4.52	<0.05	0.07	<0.005	0.017	0.09	3.9	10.6
10.65	7.7	22.1	0.69	24.1	2.51	4.93	<0.05	0.17	<0.005	0.019	0.07	4.6	6.9
9.24	6.8	17.4	0.68	21.5	2.15	4.69	<0.05	0.09	<0.005	0.018	0.07	3.7	6.7
9.51	7	17.7	0.52	23.5	2.39	4.65	<0.05	0.15	<0.005	0.017	0.1	3.8	6.2
13.2	9.2	21.5	0.56	34.7	2.49	4.79	0.05	0.08	0.008	0.022	0.09	6.3	7.3
8.49	6	17.4	0.78	12.9	1.7	4.65	<0.05	0.08	<0.005	0.017	0.08	3.3	6.1
16.15	8	30.3	1.17	25	2.21	4.46	0.05	0.3	<0.005	0.019	0.16	6.6	6.8
7.07	5.9	16.6	0.89	11.1	1.7	4.63	<0.05	0.14	<0.005	0.016	0.08	3	6.3
8.73	5.3	14.7	0.68	9.62	1.52	4.03	<0.05	0.07	<0.005	0.014	0.07	3.3	5.6
17.85	7.4	17.9	0.97	27.9	1.9	6.22	<0.05	0.2	0.012	0.02	0.05	6.6	7.9
10.3	5.8	12.4	0.74	13.7	1.57	5.22	<0.05	0.13	<0.005	0.014	0.07	3.8	7
8.74	6.2	18.2	0.84	13.5	1.81	4.38	<0.05	0.12	<0.005	0.016	0.07	3.6	6.6
7.26	5.3	19	0.73	12.85	1.73	4.07	0.11	0.11	0.013	0.019	0.09	3.2	5.8
10.5	6.8	24.8	0.94	18.65	2.22	4.8	<0.05	0.16	<0.005	0.018	0.11	4.8	7.7
7.83	5.5	17.7	0.72	13.3	1.73	4.37	<0.05	0.13	0.015	0.014	0.07	3.5	6.1
7.39	6.2	17	0.77	11.6	1.66	4.6	<0.05	0.05	0.013	0.015	0.1	2.8	6.1
7.44	5.9	18	0.71	15.55	1.77	4.38	<0.05	0.13	0.012	0.015	0.1	2.9	6.3
9.56	5.4	20.2	0.67	14.9	1.85	4.33	<0.05	0.11	0.011	0.015	0.1	3.7	6.6
6.65	5.7	16.8	0.7	12.05	1.67	4.37	<0.05	0.05	0.01	0.013	0.08	2.6	6.7
11	5.6	19	0.59	13.4	1.84	3.94	<0.05	0.15	0.011	0.015	0.11	3.9	6
8.45	5	16.8	0.71	11.3	1.65	4.12	<0.05	0.11	0.008	0.014	0.09	3.1	6.2
7.77	5.5	16.2	0.97	13.7	1.7	4.87	<0.05	0.07	0.01	0.017	0.08	3.2	7.1
10.25	5.7	17	0.83	15.25	1.8	4.42	<0.05	0.11	0.008	0.016	0.13	3.8	6.8
10.3	7.3	24.7	0.8	21.6	2.2	4.93	<0.05	0.05	0.006	0.019	0.12	4.4	7.6
8.65	6.1	23.7	0.79	17.6	2.02	4.48	<0.05	0.16	0.01	0.018	0.13	3.5	7.3
19.25	11.3	34.2	1.27	33.6	2.62	5.47	0.07	0.13	0.016	0.021	0.24	9.6	8
15.05	8.7	25.7	1.08	25.7	2.39	5.22	0.07	0.1	0.018	0.019	0.2	7.3	7.1
19.35	10.4	20.9	2.03	47.9	2.88	6.24	0.06	0.3	0.018	0.023	0.2	8.5	12.7
7.43	4.8	15.3	0.9	9.96	1.42	4.52	<0.05	0.16	0.009	0.014	0.09	2.8	5.9
7.7	5.9	18.4	0.81	11.35	1.63	4.14	<0.05	0.06	0.009	0.014	0.09	3.2	5.2
15.9	8.1	30.7	1.21	24.4	2.22	4.41	0.06	0.25	0.016	0.018	0.15	6.9	6.4
28.1	11.5	54	1.69	60.6	3.46	7.07	0.11	0.28	0.01	0.029	0.29	13.6	11
4.96	4.3	14.6	0.64	7.61	1.53	4.11	<0.05	0.11	<0.005	0.011	0.08	2.1	6.8
6.46	4	10.6	0.7	7.5	1.37	4.19	0.05	0.09	0.006	0.011	0.06	2.1	6.1
7.21	5.8	16.5	0.75	11	1.71	4.61	<0.05	0.14	<0.005	0.013	0.06	2.7	6.9

Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P %	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm
0.29	363	0.61	0.02	0.99	12	0.10	4.0	7	<0.001	0.01	0.16	3.1	0.3
0.29	270	0.57	0.02	0.98	10.3	0.05	3.9	8	<0.001	0.01	0.17	2.7	0.3
0.29	267	0.47	0.02	1.11	12.6	0.05	4.2	8.5	<0.001	0.01	0.16	3	0.5
0.32	379	0.54	0.02	1.05	11.2	0.09	4.5	7.4	<0.001	0.01	0.17	2.9	0.2
0.25	259	0.37	0.02	0.96	6.8	0.04	4.2	9	<0.001	0.01	0.14	2.7	0.2
0.36	688	0.52	0.02	1.11	12.1	0.15	4.8	5.8	<0.001	0.01	0.18	4.1	0.3
0.5	360	0.59	0.02	0.75	12.1	0.05	4.6	7.6	<0.001	0.01	0.28	4.9	0.4
0.36	499	0.54	0.02	0.89	11.3	0.08	3.9	6.5	<0.001	0.01	0.21	3.9	0.3
0.92	630	0.3	0.03	0.95	12.6	0.03	4.5	5.2	0.001	0.01	0.38	7.8	0.7
0.43	356	0.61	0.01	0.78	14.5	0.03	3.3	6	<0.001	0.01	0.32	4	0.3
0.34	343	0.7	0.01	0.98	14.4	0.06	3.8	8.7	0.001	0.01	0.17	3	0.3
0.34	435	0.7	0.02	0.87	11.9	0.07	3.6	6.5	<0.001	<0.01	0.13	3.1	0.2
0.24	346	0.53	0.02	0.91	10.5	0.09	3.7	5.5	<0.001	0.01	0.14	2.5	0.2
0.31	389	0.62	0.02	1.08	12.5	0.13	4.2	5.7	<0.001	0.01	0.17	3.7	0.2
0.31	412	0.55	0.02	0.86	12.1	0.10	4.2	5.6	<0.001	0.01	0.17	3.2	0.2
0.24	389	0.51	0.03	0.91	8.8	0.05	4.4	5.6	<0.001	0.01	0.14	2.9	0.2
0.37	317	0.47	0.02	0.74	12.6	0.06	4.8	6.7	<0.001	0.01	0.22	3.9	0.4
0.29	358	0.5	0.02	0.99	9.9	0.08	4.7	6	<0.001	0.01	0.17	3.2	0.2
0.31	282	0.44	0.02	0.64	10	0.08	4.5	4.6	<0.001	<0.01	0.18	3.4	0.2
0.39	408	0.53	0.02	1.1	13.2	0.07	6.0	6.4	<0.001	0.01	0.20	4.2	0.5
0.22	266	0.49	0.02	1.04	11.4	0.09	3.1	5.9	<0.001	0.01	0.15	2.1	0.2
0.46	221	0.38	0.02	0.5	16	0.03	3.7	12.7	<0.001	<0.01	0.21	4.6	0.3
0.23	198	0.39	0.02	0.89	11.2	0.10	3.6	6.4	<0.001	0.01	0.11	2.1	<0.1
0.18	276	0.51	0.02	0.86	9.5	0.06	3.0	6.9	<0.001	0.01	0.12	1.8	0.1
0.27	255	0.59	0.03	1.63	15.9	0.16	3.8	5.8	<0.001	0.01	0.14	3.1	0.5
0.17	216	0.38	0.03	0.95	10.7	0.06	2.8	6	0.001	0.01	0.10	1.8	0.3
0.25	166	0.37	0.02	0.82	10.4	0.03	3.5	9.1	<0.001	0.01	0.14	2.4	0.2
0.25	197	0.48	0.02	0.69	9.7	0.02	3.0	11.3	<0.001	0.01	0.31	2.3	<0.1
0.35	261	0.41	0.02	0.79	13.6	0.04	3.6	10.7	<0.001	0.01	0.18	3.3	0.2
0.29	256	0.49	0.02	0.82	10.7	0.03	3.2	6.9	0.001	0.01	0.15	2.4	<0.1
0.22	262	0.53	0.02	0.99	11.1	0.12	3.2	8.2	<0.001	0.01	0.13	2	<0.1
0.23	216	0.38	0.03	0.9	11.6	0.08	2.6	7.4	0.001	0.01	0.15	2.3	<0.1
0.26	294	0.34	0.03	0.89	10.8	0.04	2.9	8.5	<0.001	0.01	0.18	2.4	0.2
0.21	203	0.27	0.02	0.88	9.8	0.10	2.7	7.1	<0.001	0.01	0.13	1.7	0.1
0.22	207	0.32	0.03	0.91	10.5	0.04	2.8	8.5	<0.001	0.01	0.16	2.6	0.1
0.23	208	0.26	0.02	0.81	9.5	0.09	3.0	6.9	<0.001	<0.01	0.13	2.1	<0.1
0.23	429	0.52	0.02	0.98	9.4	0.08	3.5	5.8	<0.001	0.01	0.15	2.1	<0.1
0.23	232	0.4	0.03	0.89	9.3	0.03	3.1	8.6	<0.001	0.01	0.14	2.6	0.2
0.4	232	0.43	0.03	0.93	14.3	0.05	3.5	9.9	<0.001	0.01	0.19	3.2	0.2
0.36	220	0.71	0.03	0.77	13.8	0.08	3.7	11.9	0.001	0.01	0.26	2.8	0.3
0.54	531	0.57	0.03	1.08	21.3	0.04	3.9	14.3	0.001	0.01	0.26	5.4	0.3
0.42	549	0.59	0.03	0.95	15.4	0.03	3.5	13.1	<0.001	0.01	0.20	4.4	0.2
0.5	589	0.49	0.03	0.9	14.7	0.03	4.1	9	0.001	0.01	0.28	5.6	0.4
0.21	191	0.29	0.03	0.38	12	0.03	4.2	10.5	<0.001	0.01	0.09	1.8	<0.1
0.25	277	0.36	0.02	0.74	10.8	0.03	3.3	10.7	<0.001	0.01	0.13	2.1	<0.1
0.47	233	0.45	0.02	0.67	16.3	0.03	3.9	16.3	<0.001	<0.01	0.33	4.6	0.2
0.88	401	0.72	0.02	0.86	29.9	0.05	3.8	20.4	<0.001	<0.01	0.35	9.1	0.4
0.18	272	0.37	0.02	0.71	7.2	0.06	3.0	6.6	<0.001	<0.01	0.13	1.5	<0.1
0.14	349	0.51	0.02	0.89	7.8	0.09	2.9	5.6	<0.001	<0.01	0.11	1.2	<0.1
0.18	201	0.37	0.02	0.92	13.5	0.04	3.1	5.7	<0.001	<0.01	0.10	1.6	0.1

Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
0.4	25	<0.01	0.01	0.8	0.10	0.04	0.31	52	0.10	2.86	59.8	4.2
0.4	23	<0.01	<0.01	0.5	0.10	0.04	0.29	51	0.37	2.6	42.1	1.7
0.4	26	<0.01	0.01	0.6	0.10	0.04	0.34	51	0.08	3.78	55.5	2.8
0.4	27	<0.01	0.04	0.7	0.10	0.03	0.28	58	0.09	2.32	71.5	3.6
0.4	25	<0.01	0.01	0.6	0.08	0.03	0.21	53	0.05	2.57	40	3.2
0.5	26	0.01	0.01	1.1	0.11	0.06	0.43	56	0.09	4.1	74.8	10.3
0.5	29	<0.01	0.01	1.1	0.11	0.04	0.35	80	0.07	5.07	88.6	7.6
0.4	23	<0.01	<0.01	0.9	0.09	0.04	0.31	63	0.07	3.48	78	3.9
0.5	76	<0.01	0.01	1	0.09	0.04	0.15	61	0.06	9.21	71.3	10.4
0.4	19	<0.01	0.01	0.6	0.09	0.04	0.21	64	0.05	2.24	79.1	3.1
0.5	25	<0.01	0.01	1	0.12	0.03	0.3	66	0.12	2.71	52.2	4.6
0.5	29	<0.01	<0.01	0.8	0.13	0.04	0.26	78	0.17	2.81	62.1	4.8
0.4	26	<0.01	0.01	0.6	0.10	0.03	0.26	52	0.07	2.49	36.5	2.6
0.4	30	<0.01	0.01	0.6	0.10	0.03	0.33	62	0.08	3.99	61	3.2
0.4	25	<0.01	0.01	0.8	0.11	0.04	0.29	63	0.08	2.66	59.6	3.9
0.4	26	<0.01	<0.01	0.6	0.10	0.03	0.28	55	0.05	3.17	53.5	2.7
0.4	37	<0.01	0.01	1	0.14	0.04	0.35	74	0.06	3.72	48.7	6.5
0.7	29	<0.01	<0.01	0.6	0.12	0.03	0.26	60	0.06	2.87	54.7	3.8
0.3	29	<0.01	0.01	0.8	0.11	0.03	0.29	68	0.05	3.1	47.4	5.7
0.4	41	<0.01	0.01	0.7	0.12	0.03	0.34	73	0.10	5.88	43.2	3.4
0.4	22	<0.01	<0.01	0.7	0.10	0.04	0.25	41	0.07	2.04	48.5	3.7
0.4	40	<0.01	0.01	1.8	0.15	0.08	0.46	63	0.05	4.01	38.4	14.3
0.4	23	<0.01	0.01	0.9	0.10	0.04	0.27	37	0.06	1.66	54.5	5.5
0.4	23	<0.01	0.01	0.7	0.10	0.05	0.22	37	0.05	1.78	47.7	3.1
0.5	27	0.01	0.02	1.4	0.12	0.05	0.6	41	0.15	4.88	47.6	12.9
0.4	26	<0.01	0.01	0.8	0.10	0.05	0.28	33	0.08	2.27	52.6	6.3
0.4	26	<0.01	<0.01	0.8	0.11	0.05	0.26	41	0.05	1.94	48.3	4.1
1	26	<0.01	0.01	1	0.11	0.05	0.26	42	0.06	1.87	40.4	3.8
0.4	33	<0.01	0.01	1.1	0.13	0.07	0.35	54	0.06	2.9	51.8	6.3
0.4	29	<0.01	0.02	0.9	0.11	0.04	0.21	43	0.05	1.87	49.5	5
0.4	27	<0.01	0.01	0.6	0.09	0.04	0.21	37	0.52	1.54	58.7	2.1
0.3	27	<0.01	0.01	0.8	0.10	0.03	0.21	42	0.06	1.71	46.2	5.3
0.3	30	<0.01	<0.01	0.8	0.10	0.05	0.24	47	0.06	2.23	47.3	4.4
0.3	26	<0.01	0.01	0.5	0.08	0.04	0.2	39	0.06	1.4	52.2	2.1
0.3	26	<0.01	0.01	0.9	0.10	0.05	0.22	45	0.07	2.45	41.5	5.8
0.3	30	<0.01	<0.01	0.7	0.09	0.04	0.23	39	0.05	1.76	47.6	3.9
0.4	27	<0.01	<0.01	0.7	0.09	0.04	0.23	41	0.06	1.77	55.5	3
0.4	34	<0.01	0.01	0.7	0.10	0.05	0.23	45	0.05	2.56	47.1	4
0.4	41	<0.01	0.03	0.7	0.12	0.06	0.3	56	0.06	2.89	48.3	2.2
0.4	35	<0.01	0.01	1	0.12	0.12	0.31	55	0.07	2.21	77.6	5.9
0.4	48	<0.01	0.03	1.1	0.14	0.09	0.43	67	0.07	7.63	59.1	5.7
0.4	45	<0.01	0.02	1	0.13	0.08	0.31	58	0.06	6.39	66.9	4.1
0.4	50	<0.01	0.01	1.4	0.12	0.06	0.24	69	0.07	8.97	53	12.7
0.5	24	<0.01	0.02	0.8	0.11	0.06	0.21	30	0.05	1.43	58.9	5.8
0.4	30	<0.01	0.01	0.7	0.11	0.05	0.22	39	0.05	1.75	52	2.5
0.5	38	<0.01	0.02	1.8	0.15	0.09	0.48	61	0.08	3.62	40.3	10.4
0.5	61	<0.01	0.03	2.7	0.19	0.11	0.81	90	0.11	11.65	63.1	12.4
0.3	24	<0.01	0.01	0.7	0.09	0.04	0.18	35	0.05	1.21	46.9	3.3
0.3	18	<0.01	0.01	0.6	0.08	0.03	0.18	29	0.07	1.19	50.6	3.4
0.4	24	<0.01	0.01	0.7	0.11	0.03	0.2	38	0.09	1.63	44.1	5.2