1993 GEOLOGICAL and LITHOGEOCHEMICAL REPORT on the CM PROPERTY

Barriere, B.C.

including, in Appendix I:
GEOCHEMICAL and TERRAIN ANALYSIS ASSESSMENT REPORT of the CM CLAIMS

CM 1 to 7 Claims

KAMLOOPS MINING DIVISION

NTS 92P/8E

Lat: 51° 18'N Long: 120° 07'W

Owner:
Stanley J. Hoffman
1531 West Pender Street
Vancouver, British Columbia, V6G 2T1

Operator:
INCO EXPLORATION AND TECHNICAL SERVICES INC. (IETS)
Suite 2690, 666 Burrard Street
Vancouver, B.C.
V6C 2X8

Scott Casselman, P.Geol.
December 9, 1993

SUMMARY

The CM property (CM 1-7 claims) is located in a favourable geological environment for volcanogenic massive sulphide deposits. The Chu Chua deposit (Minfile # 092P 140) with reserves of 5 million tonnes grading 1.5 % copper is located 9 km northeast of the CM property. The deposit is classified as a "Besshi-type" VMS and occurs in the Devonian - Permian Fennel Formation, which also underlies the CM claims.

Copper mineralization on the CM property is hosted in a chert sequence within a tholeiitic basaltic volcanic package. Geological mapping in 1993 determined that there are a number of sub-parallel, north-northeast trending chert beds. Previous drill programs were established to trace a north-northwest trending structural feature, and did not thoroughly test the north-northeast-trending mineralized horizon(s). The main mineralized horizon is exposed at the Upper and Lower showings, where it is faulted and intensely fractured and has proven difficult to trace. Coincident geophysical and geochemical targets north and south of the Upper and Lower Showing area remain to be tested.

Recommendations for further work on the property are to conduct geological mapping, lithogeochemical and soil geochemical surveying, followed by diamond drilling of existing and future targets.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1.0 Introduction

1.1 General

In the April of 1993, INCO Exploration and Technical Services (IETS) geologists visited the CM base/precious metal property. A number of subsequent trips were made to the property to gather further geological information. This report documents the geological and lithogeochemical work conducted by IETS personnel on the property during the summer of 1993. As well, a review of past soil geochemical data was conducted by S.J. Hoffman of Prime Geochemical Methods Ltd. with an accompanying terrain analysis study by T.H.F. Reimchen of Pegasus Earth Sensing Corp. A separate report was written by Hoffman and Reimchen, it is included in Appendix I.

1.2 Location and Access

The CM property is located 15 km north of the community of Barriere, B.C., or 70 km north of Kamloops (Figure 1). The claims lie on the east side of the Thompson River on NTS map 92P/8E. The claim group is centered at latitude 51° 18' north, longitude 120° 07' west.

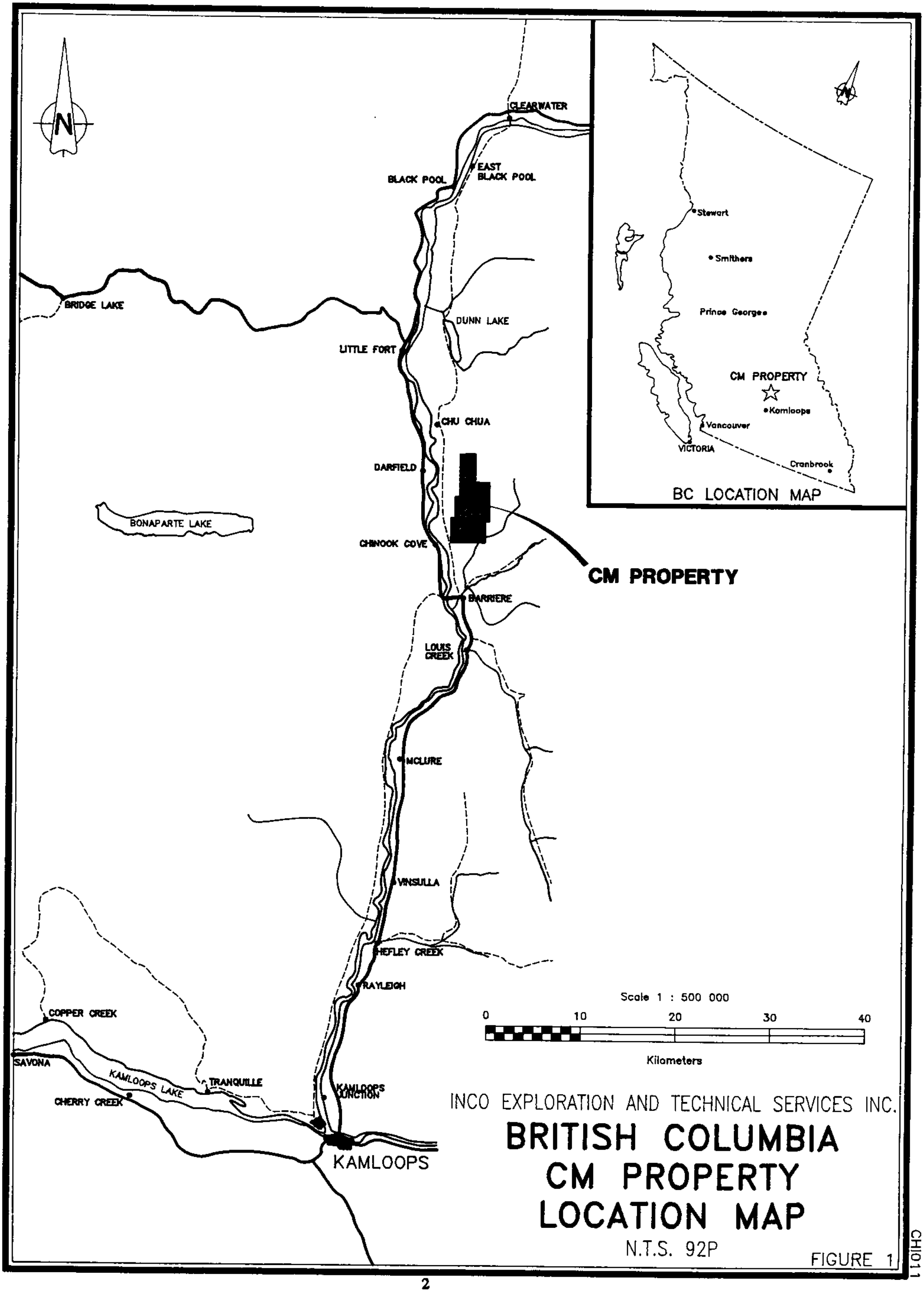
Access to the property is by way of Highway #5 from Kamloops to Barriere. The Dunn Lake Road extends 15 km from Barriere to the Indian village of Chu Chua on the east side of the Thompson river. From Chu Chua, the Cold Creek logging road runs east a few kilometers up to the property.

Access on the property is provided by the Cold Creek road which winds through the property providing roadside access to the major showings. The road is in fair shape; in poor weather, 4X4 vehicles are recommended. Further access is provided by several gravel spur roads. Recent logging activity on the southern part of the property provides additional access.

1.3 Physiography

The CM property covers the west slope of Chinook Mountain. Elevations on the property range from 610 m in the west to 1370 m in the east. Thus, drainage on the property is predominantly from east to west and is by way of Newhykulston Creek which flows through the north-central portion of the property. Newhykulston Creek flows into the North Thompson River 1 km west of the claim boundary. The North Thompson River flows from north to south and is at an elevation of 390 m at the valley floor.

The mountain slopes are covered by second-growth spruce, fir, pine and poplar trees, and has recently been re-logged in the southern part of the claims. The area has a hot, dry summer climate, fairly mild winter climate and receives moderate amounts of snow, generally from November to March.


N
CLEARWATER
EAST BLACK POOL
BLACK POOL
BRIDGE LAKE
DUNN LAKE
LITTLE FORT
CHU CHUA
DARFIELD
BONAPARTE LAKE
CHINOOK COVE
CM PROPERTY
BARRIERE
LOUIS CREEK
MCLURE
VINSULLA
HEFLEY CREEK
RAYLEIGH
COPPER CREEK
SAVONA
KAMLOOPS LAKE
TRANQUILLE
CHERRY CREEK
KAMLOOPS JUNCTION
KAMLOOPS
Stewart
Smithers
Prince George
CM PROPERTY
Kamloops
Vancouver
VICTORIA
Cranbrook
BC LOCATION MAP
Scale 1 : 500 000
0 10 20 30 40
Kilometers
INCO EXPLORATION AND TECHNICAL SERVICES INC.
BRITISH COLUMBIA
CM PROPERTY
LOCATION MAP
N.T.S. 92P
FIGURE 1
CHI011

1.4 Claim Information

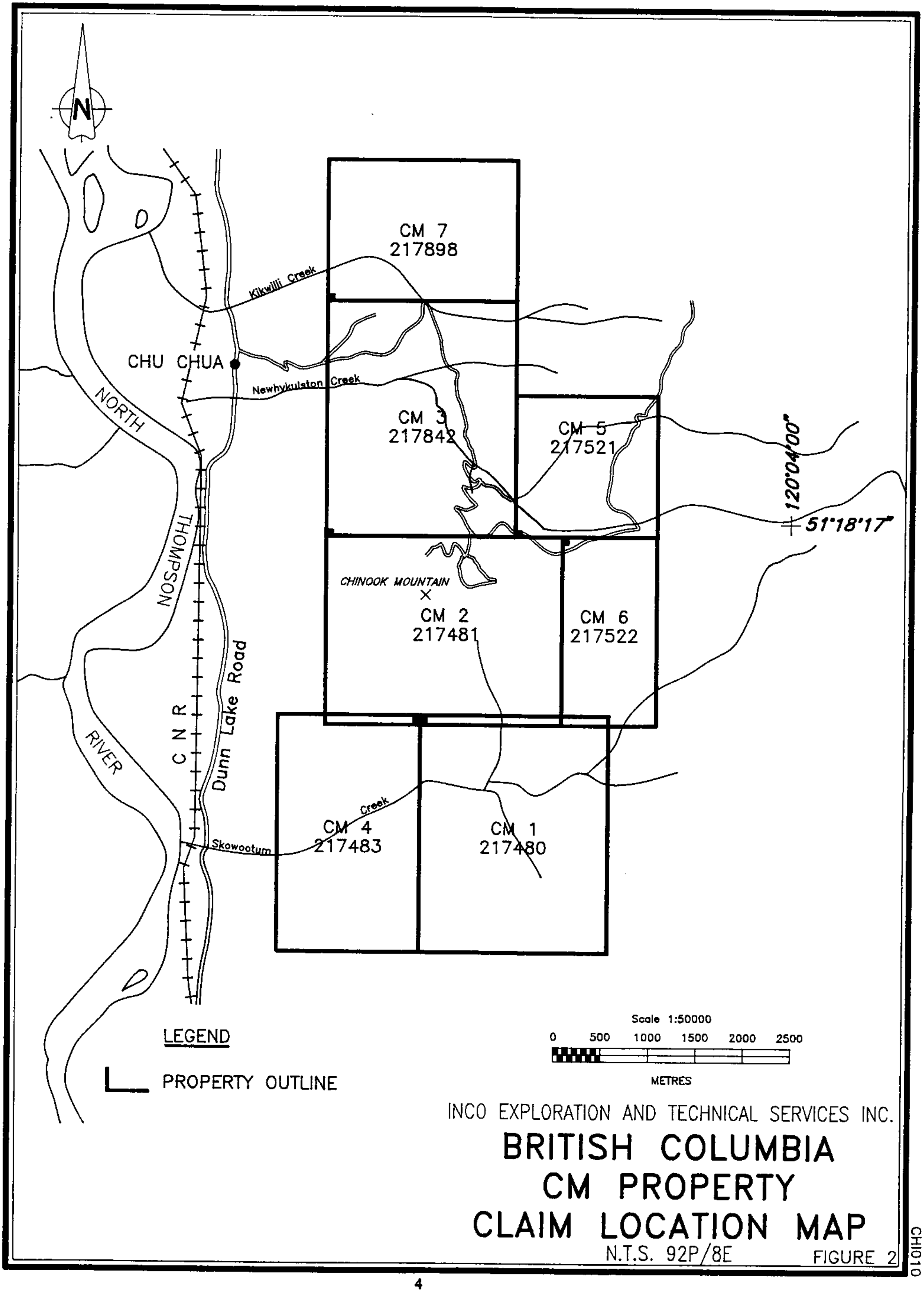
The CM property is in the Kamloops Mining Division and consists of 7 mineral claims, comprising 104 claim units, covering 2600 hectares (6425 acres). The claims have been divided into two claim groups; the Chinook Group consists of the CM 1, CM 3, CM 5, CM 6 and CM 7 claims; and the Chinook 1 Group consists of the CM 2 and CM 4 claims (Figure 2). Claim data is as follows:

Table 1. CM Property Claim Information.

NAME	TENURE #	# OF UNITS	RECORD DATE day/mo/yr	EXPIRY DATE * day/mo/yr
CM 1	217480	20	13/09/85	13/09/94
CM 2	217481	20	13/09/85	13/09/94
CM 3	217482	20	13/09/85	13/09/94
CM 4	217483	15	13/09/85	13/09/94
CM 5	217521	9	30/12/85	30/12/94
CM 6	217522	8	30/12/85	30/12/94
CM 7	217898	12	03/11/87	03/11/94

* Expiry date is based on this report being accepted for assessment.

The claims are owned by Stanley J. Hoffman of Vancouver. Inco Exploration and Technical Services Limited is the operator of the project.



INCO EXPLORATION AND TECHNICAL SERVICES INC.

BRITISH COLUMBIA
CM PROPERTY
CLAIM LOCATION MAP

N.T.S. 92P/8E

FIGURE 2

1.5 Property History

The Barriere area has undergone extensive exploration since the 1950's, when massive sulphide mineralization was first discovered on Newhykulston Creek on what is presently the CM property. This activity led to the discovery of the Chu Chua VMS deposit located 9 km north-northeast of the CM property. Reserves at Chu Chua are approximately 5 million tonnes grading 1.5 % copper in a "Besshi-type" volcanogenic massive sulphide deposit. The ground covered by the CM 1 to 7 claims has been explored by numerous companies since the initial discovery. Table 2, below outlines some of the more recent companies involved and the type of exploration programs performed on the CM 1 to 7 claims:

Table 2. CM Property Historical Work Programs.

YEAR	COMPANY	WORK PERFORMED
1979	Noranda Exploration Company Limited	- established grid - 1021 soil and silt samples (Cu, Zn, Pb and Mo) - 48 line-km of vertical shootback E.M. and magnetic surveys
1979	Craigmont Mines Ltd.	- 2274 line-km of Airborne DIGHEM II surveying; part of which covered the CM claims - survey involved magnetic and EM data collection
1985 and 1986	BP Resources Canada Ltd.	- established 4 small grids (22.3 line-km) - MAX/MIN (444 and 1777 Hz) and magnetic surveys
1987	BP Resources Canada Ltd.	- expanded grids by 7.3 line-km - 6.6 line-km of MAX/MIN (444 and 1777 Hz) - 563 soil samples (32 ele. by ICP and Au by AAS) - 2 diamond drill holes totalling 243 m
1988	BP Resources Canada Ltd. and Skylark Resources Ltd.	- geological mapping - 3 line-km MAX/MIN (444 and 1777 Hz) - extended soil geochem grid 200 m west, collected 150 samples (30 ele. by ICP and Au by AAS) - 9 trenches totaling 355 m - 17 diamond drill holes totalling 1,985 m
1989	Minnova Inc.	- 25.7 line-km of grid work - geological mapping and lithogeochemical sampling (204 rocks for whole rock analysis) - 992 soil samples (Ag, As, Cu, Pb, Sb, Zn and Au) - 26 line-km of MAX/MIN (444 and 1777 Hz) and magnetic surveys - minor trenching - 5 diamond drill holes totalling 585 m
1990	Minnova Inc.	- 22.5 line-km of grid work (mainly on grid C north) - geological mapping and lithogeochemical sampling (69 rocks for whole rock analysis) - 647 soil samples (Ag, As, Ba, Cu, Pb, Sb, Zn, Au) - 19.1 line-km of HLEM surveying on grid C north - 37 reconnaissance soil samples (Ag, As, Ba, Cu, Pb, Sb, Zn and Au) west of Gold Zone - HLEM (2.4 line-km) and Pulse EM (7.72 line-km) surveys on Grid C South - 3 diamond drill holes totaling 594 m

1.6 1993 Work Program

The 1993 work program on the CM property consisted of geological mapping, lithogeochemical sampling and a review of past geophysical and geological information. Field work consisted of 20 man-days on the property between April 21 and June 18, 1993. A review of the 1989 and 1990 Minnova Inc. geochemical data, by S. Hoffman of Prime Geochemical Methods Ltd, revealed that analytical values were erroneously reported for approximately 10% of the soil samples. Prime Geochemical Methods Ltd. was contracted by IETS to identify the reporting errors and to generate corrected soil geochemical plots. As well, a Terrain Analysis/Surficial Geology study was commissioned by Prime Geochemical to Pegasus Earth Sensing Corporation.

2.0 Geology

2.1 Regional Geology

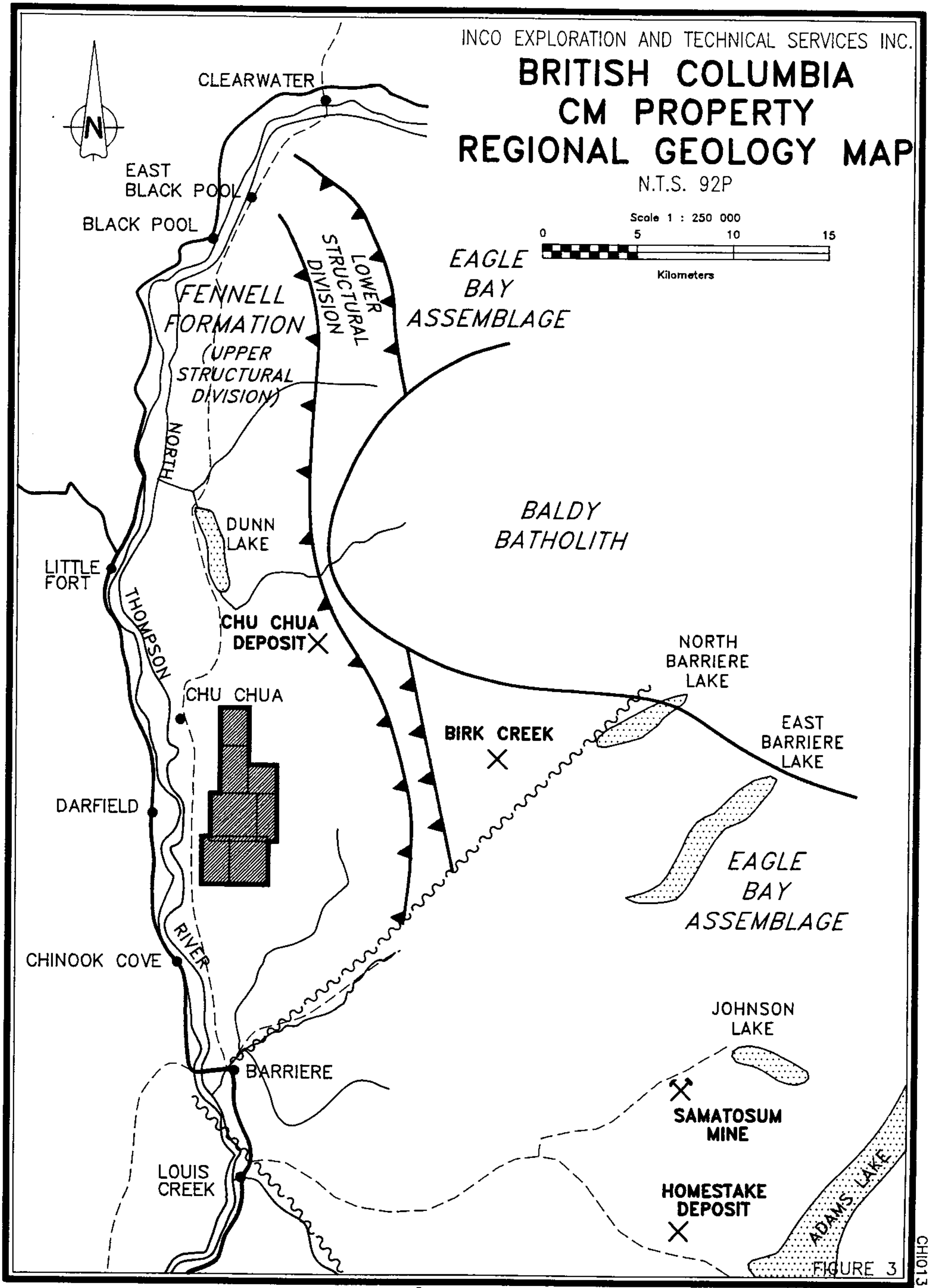
The Adams Plateau-Clearwater-Vavenby map area was mapped at 1:100,000 scale by Schiarizza and Preto (1987). The area occurs on the western edge of the Omineca Belt and is underlain by the Fennel Formation of the Slide Mountain Assemblage to the West and by the Eagle Bay Assemblage to the East (Figure 3).

The Early Cambrian to Mississippian Eagle Bay Assemblage is included within pericratonic Kootenay Terrane and consists of metasedimentary and metavolcanic rocks which are repeated in four northwest-dipping thrust sheets. The assemblage is comprised of a Lower Paleozoic succession of clastic metasediments, carbonate and mafic metavolcanic rocks, and an overlying Devono-Mississippian succession of felsic to intermediate metavolcanic rocks and metasediments. The Homestake (Minfile # 082M 025) and Rea (Minfile # 082M 191) volcanogenic massive sulphide deposits are hosted by intermediate to felsic metavolcanic rocks of the Lower Devono-Mississippian succession.

The Slide Mountain Assemblage is part of Slide Mountain Terrane and in the area consists of the Devonian to Middle Permian Fennel Formation. The formation is an oceanic sequence which has been divided into two major units. The structurally lower (eastern) division comprises a heterogeneous assemblage of bedded chert, gabbro, diabase, pillowed basalt, clastic metasediments, quartz-feldspar-porphyry rhyolite and intraformational conglomerate. The upper (western) division consists almost entirely of pillowed and massive basalt with minor bedded chert and gabbro. Both intrusive and extrusive mafic igneous rocks have tholeiitic chemistry. Tops indicators throughout the succession consistently face to the west.

The Fennel Formation and Eagle Bay Assemblage are intruded by mid-Cretaceous granodiorite and quartz-monzonite of the Raft and Baldy batholiths. Locally, the package is overlain by Eocene Kamloops Group volcanic and sedimentary rocks and Miocene lavas.

Structurally, the map area is dominated by easterly directed thrust faults which imbricate the Fennel Formation and separate it from the underlying Eagle Bay Assemblage. There is no significant metamorphism and no development of foliation associated with this thrusting event. Tectonic emplacement of the Fennel Formation over the Eagle Bay Assemblage was followed by southwesterly-directed folding and associated thrust faulting. Folding and fabrics associated with this second structural event are evident in the Eagle Bay Assemblage, but are rarely seen in the Fennel Formation.


INCO EXPLORATION AND TECHNICAL SERVICES INC.
BRITISH COLUMBIA
CM PROPERTY
REGIONAL GEOLOGY MAP
N.T.S. 92P
Scale 1 : 250 000
0
5
10
15
Kilometers
N
CLEARWATER
EAST BLACK POOL
BLACK POOL
FENNELL FORMATION (UPPER STRUCTURAL DIVISION)
LOWER STRUCTURAL DIVISION
EAGLE BAY ASSEMBLAGE
NORTH
THOMPSON
RIVER
DUNN LAKE
LITTLE FORT
BALDY BATHOLITH
CHU CHUA DEPOSIT
CHU CHUA
NORTH BARRIERE LAKE
EAST BARRIERE LAKE
BIRK CREEK
DARFIELD
EAGLE BAY ASSEMBLAGE
CHINOOK COVE
JOHNSON LAKE
BARRIERE
SAMATOSUM MINE
LOUIS CREEK
HOMESTAKE DEPOSIT
ADAMS LAKE
FIGURE 3
CHI013

2.2 Property Geology

The property is underlain by massive and pillowed basalt, andesite, gabbro and diorite with interbedded argillite and chert of the Fennel Formation. The sequence is assumed to young westwards, in agreement with regional trends. The basalt on the CM 5 claim is intruded by a small granitic plug related to the Baldy Batholith.

The Fennel Formation consists of a repetitive sequence of massive and pillowed basalt flows interbedded with argillite and exhalative chert. The lowermost units on the property are pillowed and massive basalt intruded by diorite and gabbroic sills and dykes. The basalt is generally pale to dark green and fine grained with pillowed varieties locally variolitic. The diorite and gabbroic rocks are fine grained and dark grey-green.

The argillite beds range from non-graphitic to highly graphitic, and locally siliceous near chert beds, with gradational contacts between the two. Generally the argillite is massive and locally contains 2-3% pyrite as disseminations and blebs. At the Lower Showing, drill core of the argillite is commonly graphitic or siliceous, with little to no pyrite.

The chert beds range from less then 1 m to approximately 10 m thick. The chert is typically amorphous, light grey, weakly bedded and is interpreted to be of exhalative origin. Locally, chert horizons are argillaceous or tuffaceous. Generally, the chert horizons contain only minor amounts of finely disseminated sulphides (mainly pyrite). However, chert in the Lower and Upper showing areas and in drill core contain up to 10% sulphides and variable amounts of magnetite.

The Lower Showing (elevation = 980 m) occurs within the Newhykulston Creek Fault zone and consists of a 10-m wide highly-fractured, gossanous gouge zone. The zone consists of massive and disseminated sulphides (pyrite > chalcopyrite > sphalerite) in chert and cherty tuff/sediments. Petrographic sample RX 52520 from the showing is interpreted to be a very finely interlaminated assemblage of mixed sulphide-silicate-rich chemical sediment (Jago, 1993). The footwall rocks (to the East) are brittley-fractured, chloritized basalts and the hanging wall rocks (to the West) are brittley-fractured chert, cherty tuff and basalts. The intense fracturing in the fault zone has made drilling of this target difficult. As well, the disruption in the zone makes it difficult to identify the geological contacts and to determine an orientation to the mineralized horizon.

The Upper Showing (elevation = 1000 m) is also within the Newhykulston Creek Fault Zone and is located 100 m south of the Lower Showing. The exposure consists of a 10-m thick, sulphide-chert-magnetite horizon, bounded on the footwall and hanging wall by basalt. Petrographic sample RX 52523 of the massive magnetite is interpreted as a weakly sulphide-mineralized, banded oxide/silicate-facies iron formation (Jago, 1993). The hanging-wall basalt is chloritic with 5 % sulphide stockwork in 1 to 2-mm wide veinlets. The horizon can be traced for 15 m along strike to the North and South; any further extension is covered by overburden. Fault-related disruptions have made it difficult to trace the chert-magnetite-sulphide horizon laterally and down-dip by both diamond drilling and surface geophysical techniques.

At line 103+00 N/95+00 E, 900 m south of the Lower Showing, an interesting outcrop was observed. It consists of a volcanic breccia with angular fragments of chert in a fine-grained, silicified basalt matrix. This unit was observed only at this location, but, because of its distinctive composition, it may serve as a useful marker horizon. Further mapping in the area is required to determine the spatial relationship and significance of this unit.

Previous mapping on the property determined the bedding orientation to be striking 160°, parallel to the surface trace of the Newhykulston Creek Fault, with a steep westerly dip. Within the fault zone a single chert/sediment horizon was mapped as a series of en echelon fault blocks which were rotated to a 010° orientation. Field mapping in 1993 suggests that the 010° trend is the actual bedding orientation of unrotated bedrock and that the series of chert/sediment slices are separate, individual beds that have been cut by the fault.

3:0 Geochemistry

3.1 Analytical Procedure

A total of 35 rock samples were collected from surface and drill core in 1993 to test the applicability of lithogeochemical techniques. Twenty six were sent for whole rock analysis by inductively coupled plasma (ICP) to Chemex Labs in Vancouver, BC and for induced neutron activation analysis (INAA) to Activation Laboratories in Ancaster, Ontario; 5 were sent for 32 element ICP analysis and for gold analysis by fire assay with atomic absorption finish (FA-AAS) at Chemex Labs; 4 were sent for whole rock, ICP, gold and INAA analysis; the remaining two samples were sent to IETS Central Services for thin section preparation and microscope studies. Rock sample descriptions and thin section descriptions are included in Appendix II and geochemical analytical certificates in Appendix III. Sample locations are plotted on Figure 4.

3.2 Lithogeochemistry (Whole Rock Analyses)

Figures 5 to 10 are plots of whole rock and INAA analytical data to determine volcanic rock type, chemical affinity, and alteration intensity. Figure 5 is a plot of Na2O+K2O versus SiO2 and shows the majority of the samples to be of basaltic composition. One sample, sample RX 52554, is of basaltic-andesite composition and samples RX 52541, 53 and 64 plot in the high-MgO basalt field. A comparison with the Pearce Element Ratio plots (Figures 9 and 10) indicates sample RX 52554 has been altered by silica addition, thus it may have had an original basaltic composition. Figure 9 indicates that alkali depletion of the latter 3 samples may be the reason for them plotting in the high-MgO field.

Volcanic rock affinity was determined by using the AFM plot (Figure 6), the FeO/MgO-SiO2 plot (Figure 7) and a Y versus Zr plot (Figure 8). The AFM plot shows the majority of the samples to plot on the border between tholeiitic and calc-alkaline affinity. One sample, RX 52558 plots clearly in the calc-alkaline field. Whereas 5 samples plot in the tholeiitic field. The FeO/MgO-SiO2 plot also shows the majority of the samples to plot near the calc-alkaline - tholeiitic boundary, with a slight favouring towards tholeiitic affinity. Samples RX 52563 and 65 plot completely within the calc-alkaline field. Finally, the Y-Zr plot shows all but one of the samples to be of tholeiitic affinity; sample RX 52548 is transitional between tholeiitic and calc-alkaline.

Figures 9 and 10 are Pearce Element Ratio plots generated to determine the presence of alteration in the volcanic rocks. The plots each show that plagioclase and mafic mineral fractionation of the volcanic melt has occurred. Also, it is evident that alteration has occurred and that it can be detected geochemically. The type and magnitude of geochemical alteration may be useful in vectoring towards exhalative centres. Samples RX 52541, 52, 54, and 62 have undergone alkali and Fe-Mg depletion and silica addition. These chemical changes are to be expected in an area that has undergone hydrothermal alteration and indicate that a lithogeochemical survey may be useful in determining zones of alteration.

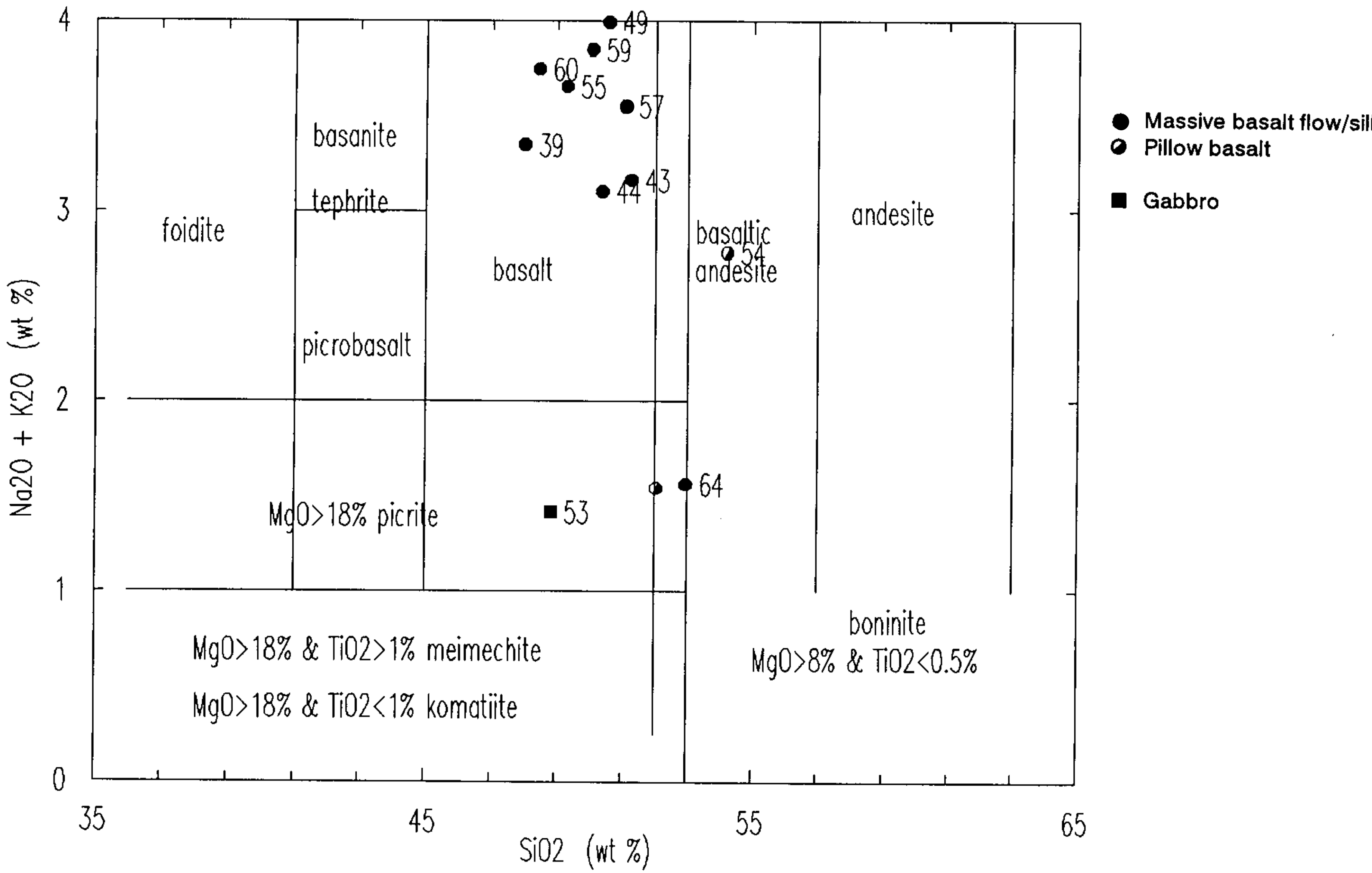


Figure 5. Plot of (Na2O + K20) versus SiO2 (Le Maitre, 1989).

Note: only last two digits of sample #'s are used for display purposes

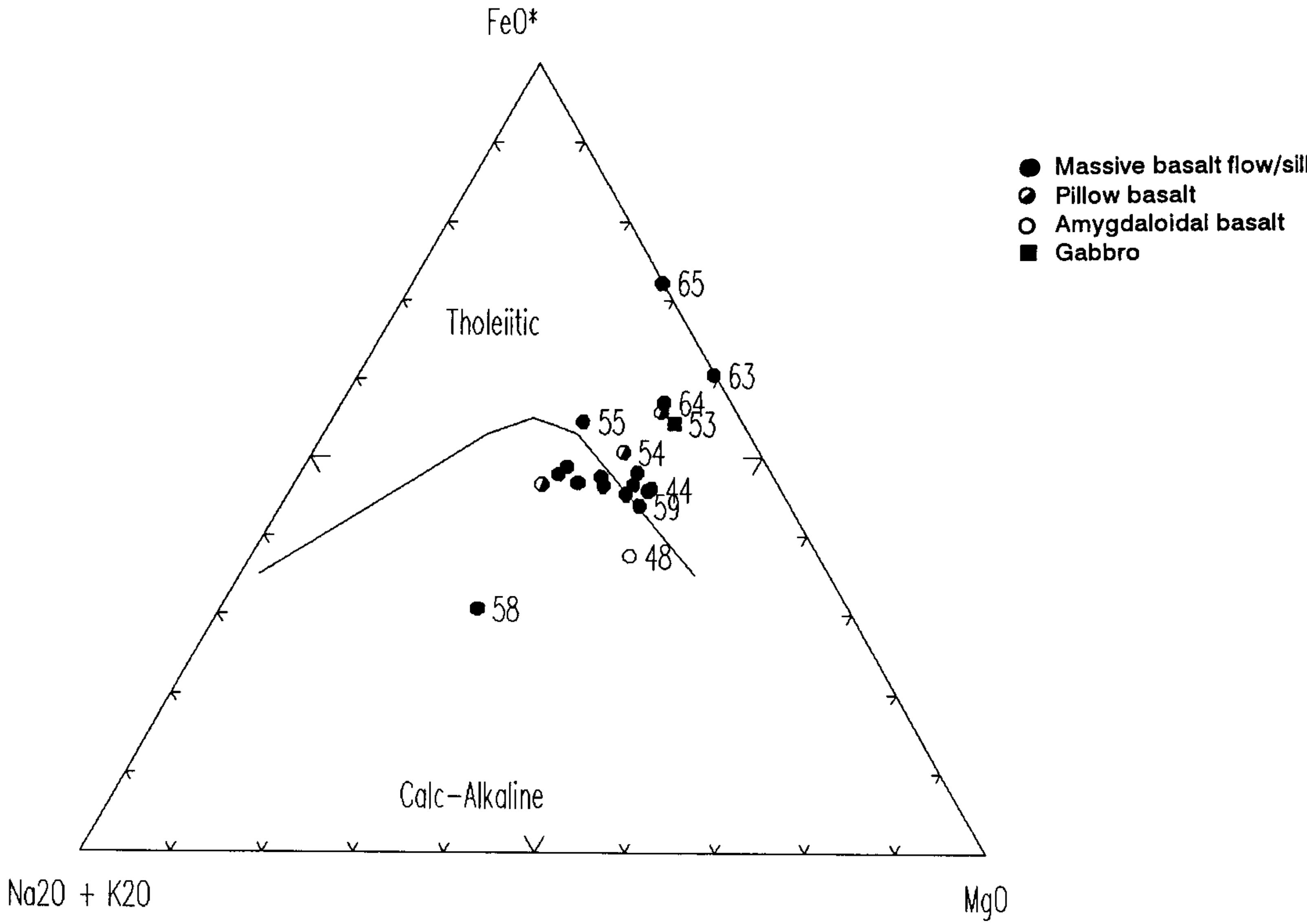


Figure 6. AFM plot (Irvine and Baragar, 1971).

Note: only last two digits of sample #'s are used for display purposes

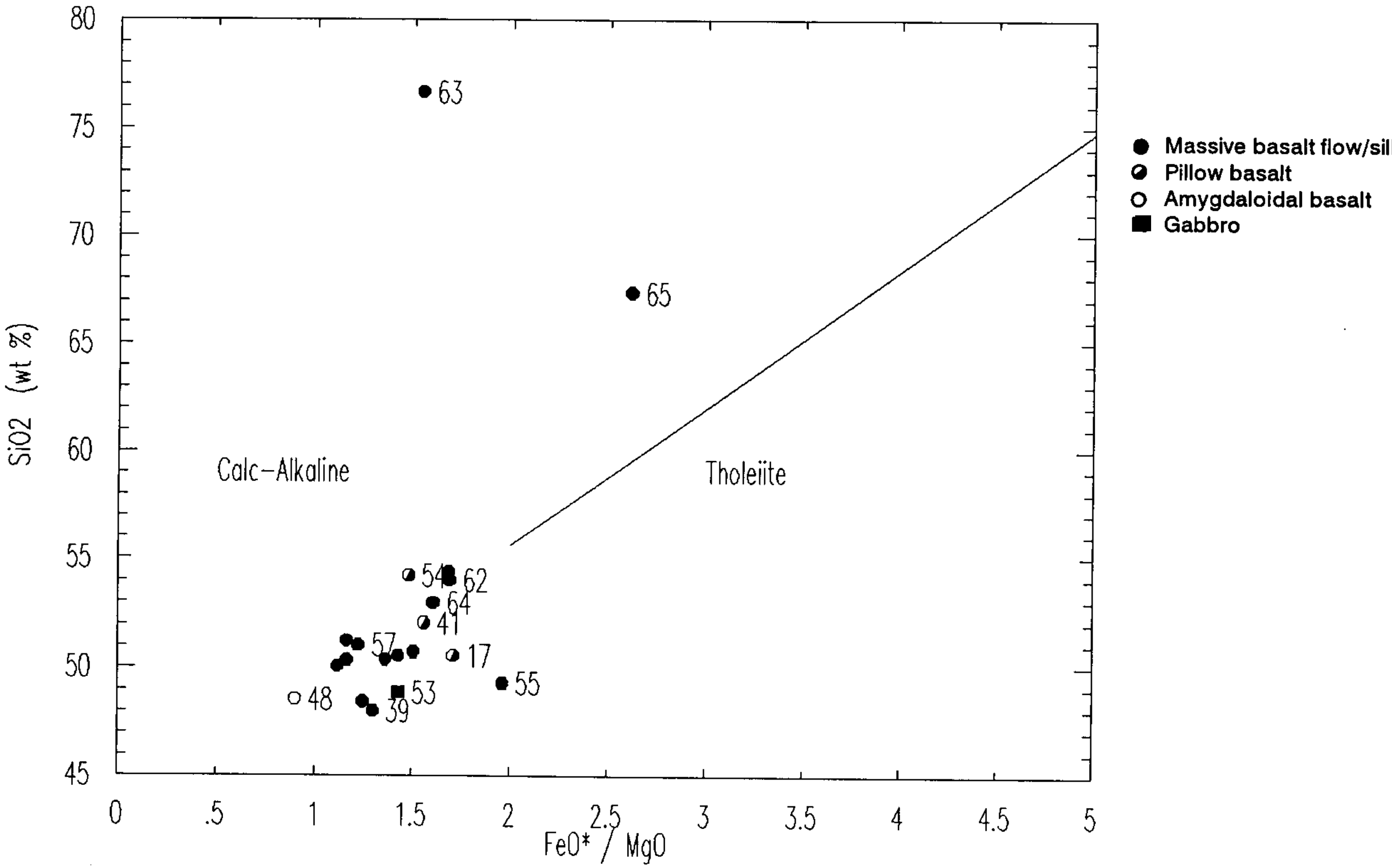


Figure 7. Plot of SiO2 versus FeO/MgO (Miyashiro, 1974).

Note: only last two digits of sample #'s are used for display purposes

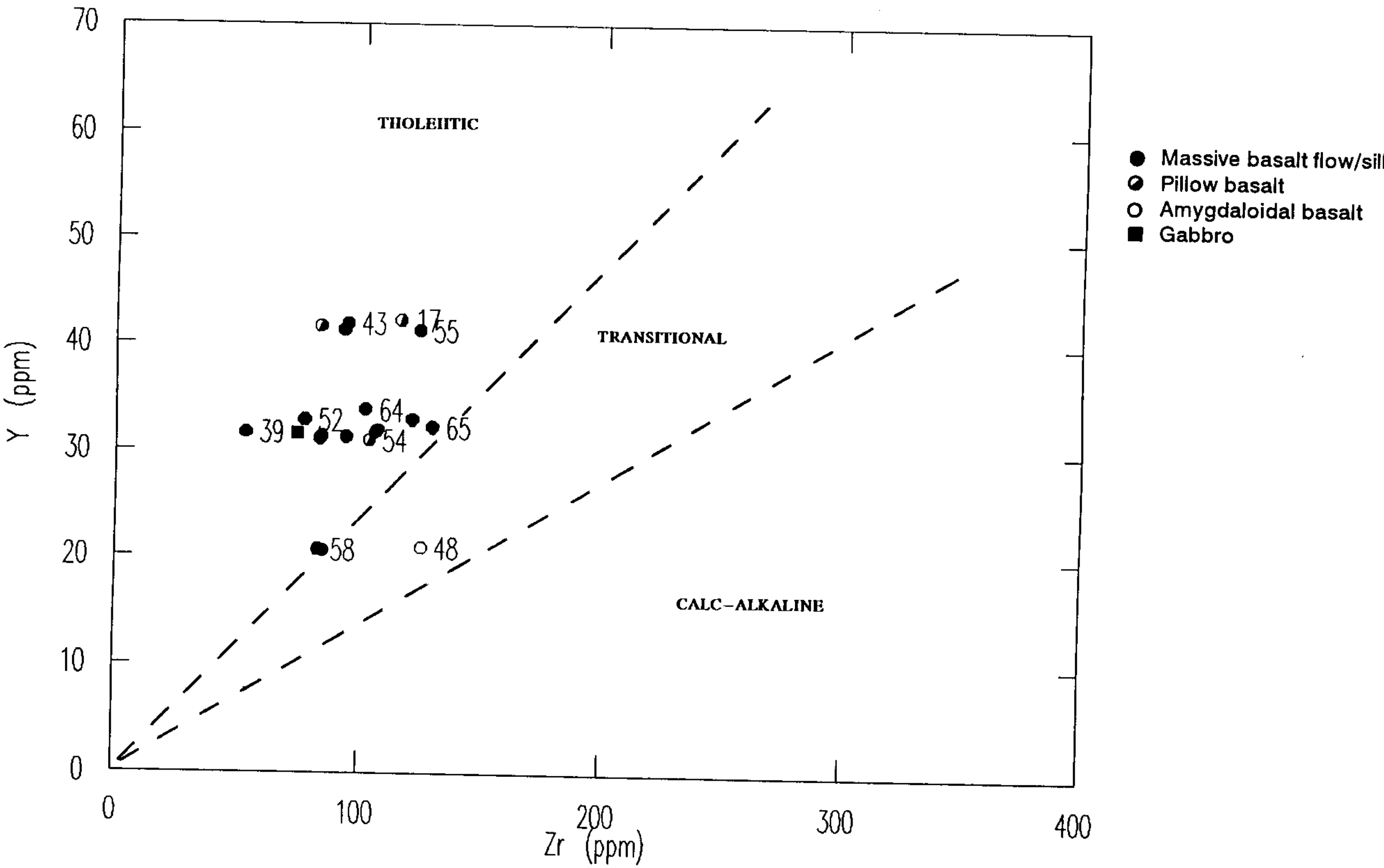


Figure 8. Plot of Y versus Zr

Note: only last two digits of sample #'s are used for display purposes

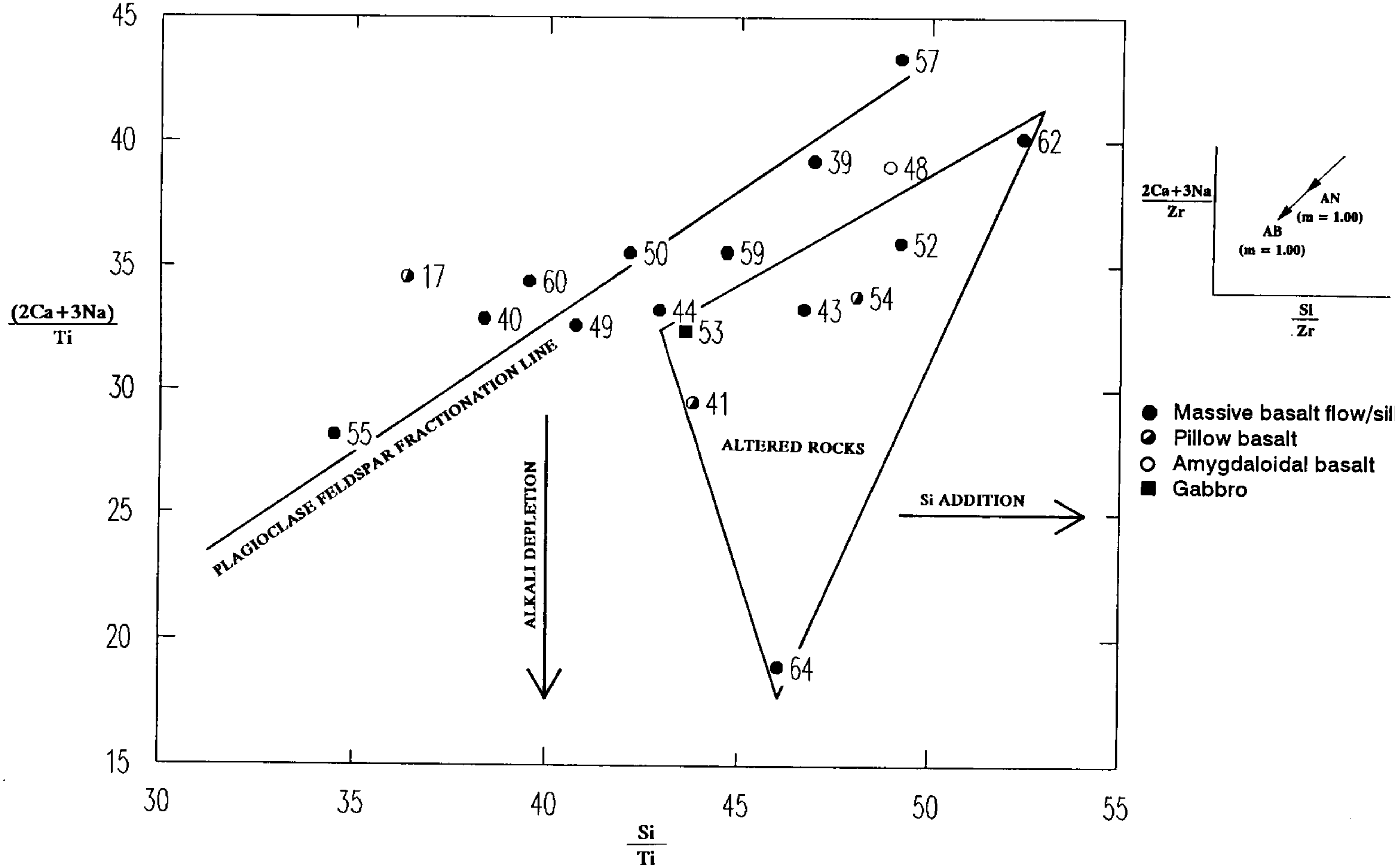


Figure 9. Pearce Element Ratio plot of (2Ca + 3Na) versus Si/Ti

Note: only last two digits of sample #'s are used for display purposes

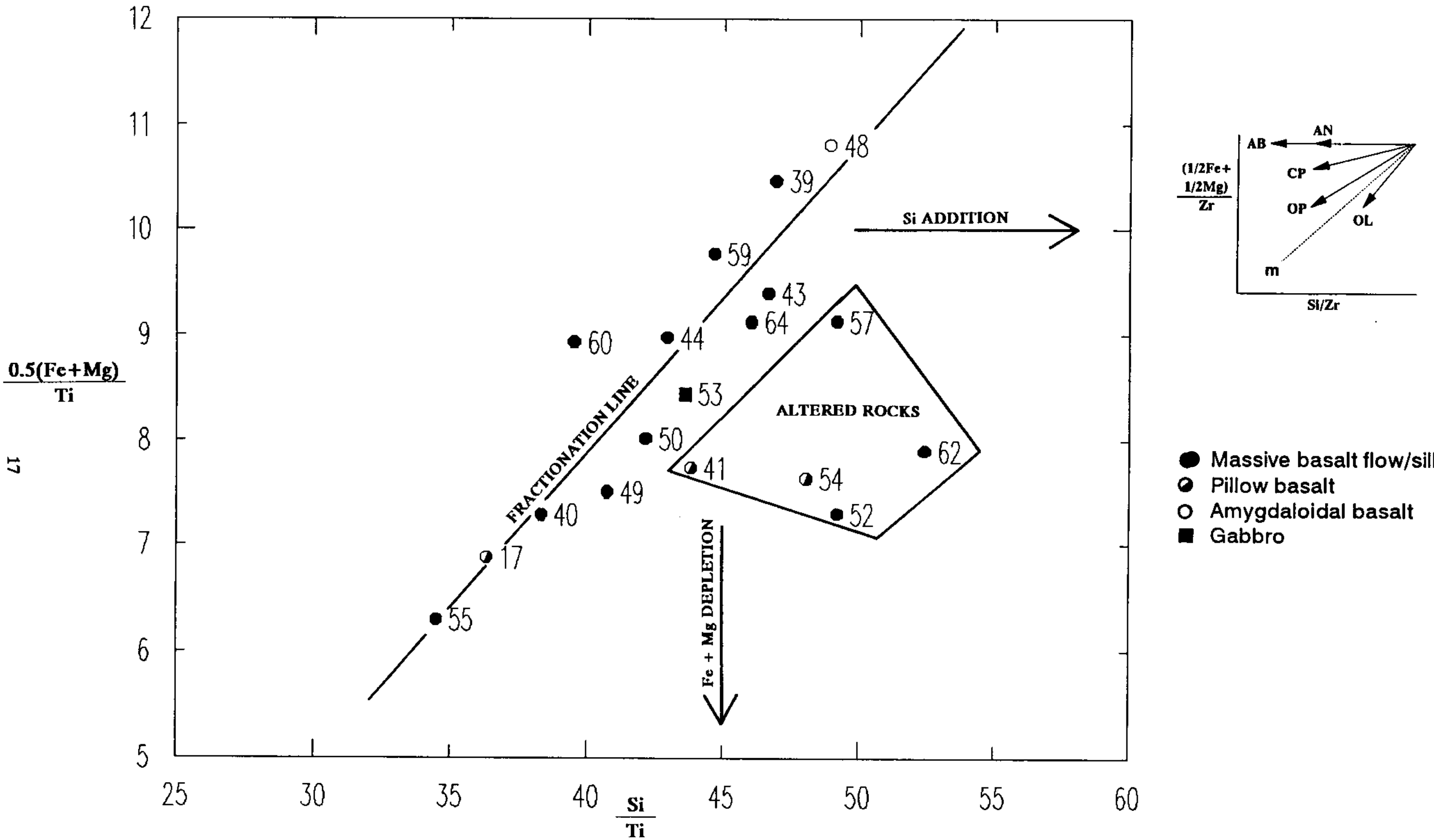


Figure 10. Pearce Element Ratio plot of 0.5(Fe + Mg) versus Si/Ti

Note: only last two digits of sample #'s are used for display purposes

3.3 Rock Sample Results (ICP and Assay Results)

Three samples from the Lower and Upper Showing mineralized zones confirmed the earlier trench results with copper values ranging from 4.2 to 8.6 % (see Appendix II). Sample RX 52518 from the Lower Showing also contained 4.23 g/t Au, 30.0 g/t Ag, and 0.39 % Zn. The remaining four samples were taken from various locations on the property and returned no significant base or precious metal values.

3.4 Soil Geochemical Survey Re-interpretation

A study was commissioned by IETS to Prime Geochemical Methods Ltd. to reinterpret the soil geochemical data when S. Hoffman of Prime Geochemical noted that geochemical data documented by Minnova in 1990 was erroneously recorded. The error was due to computer-downloading misplacement of barium data for approximately 210 samples being recorded in the copper column rather than the barium column. The data scatter was not recognized and consequently a new geochemical interpretation had to be undertaken. The reinterpretation involved rectifying the geochemical listing, plotting and interpreting the data. Appendix I contains the report entitled "Geochemical and Terrain Analysis Assessment Report of the CM Claims" by S.J. Hoffman and T.H.F. Reimchen.

4:0 Geophysics

With the new interpretation of the orientation of the geological features on the property it was decided a re-evaluation of past geophysical surveys was warranted to establish the response of the geological units along strike. Thus, the MAXMIN, Pulse EM and magnetometer survey data was evaluated by INCO geophysicists. The following is from an internal memo by IETS geophysicist Bob Lo (Lo, 1993).

> " The geophysical data from the CM claims were reviewed. In particular the MAXMIN data from the "mini grid" and Crone PEM data over the same area (CM 3 claim) were interpreted to determine if the mineralization intersected in the drilling at the Upper and Lower Showings can be detected, and whether any extensions of the mineralization can be detected by geophysics. Magnetic intensity data in digital form was also examined in colour and contour form, but, as severe levelling problems exists in the data, no interpretation was made from the data.
>
> **Upper and Lower Showing Grids**
>
> The MAXMIN data (150 m cable, 444 Hz only) detected anomalies at L10/9+10E and at L12/8+85E with an ambiguous response on L11N. The entire waveform of the anomalies were not detected as they are near the east edge of the grid. These anomalies may be due to topographic effects as the anomaly is mostly inphase only. This may also suggest a very conductive source. This anomaly was interpreted by Minnova personnel to be a continuous conductor. Minnova also suggests that the conductor had been tested by borehole CM88-4, which located a "thin weakly mineralized sedimentary horizon". It is doubtful that CM88-4 did, in fact, test the MAXMIN conductor. The description of the source does not suggest that the conductor (if real) was tested as the high conductance seen in the data suggests more sulphides (or graphite) than was reported.
>
> Crone PEM data over the area (but not the same grid) only detected one conductor in the south-east portion of the grid. This conductor is located from lines 105N to 110N at about 99+00E. The anomaly is detected over the first ten channels. The location of the conductor roughly corresponds to a fault which is the probable source of the anomaly. The EM anomaly interpreted by Minnova and representing a possible extension of the Upper and Lower Showings was not detected.

CM 7 Claim

In the MAXMIN data, topographical problems can clearly be seen. Minnova attributed all of the response, except for one, as being due to topographical effects. The exception is a conductor located from L136N/95+55E to L137N/96+55E to L138N/96+65E to L140N/97+05E to L141N/96+75E. The source of the conductor is not known.

Conclusion

An assessment of the geophysics suggests that EM conductors which may represent the Upper and Lower Showings and their strike extensions were not detected. This can be interpreted to mean that the showings do not have any significant size or continuity and that significant amounts of sulphides are not present in the survey areas. The only possibility that significant amounts of sulphides are located in the survey areas is for the sulphides to be electrically discontinuous. Extensive shearing and faulting of the sulphide body can dissect the sulphides to the extent that they will not respond to EM techniques. There are indications that the ground in the area of the sulphides is very blocky and is heavily fractured. If this is believed to be the case, EM methods are not an appropriate method for evaluating this project and other techniques (such as IP) must be used. "

5.0 Conclusions and Recommendations

The sulphide mineralization in the Upper and Lower showings and in drill core is of a primary, exhalative origin. Re-sampling of the showings confirmed previously reported copper values and returned significant precious metal values.

Geological mapping on the property suggests the bedding attitude to be 010° with a steep westerly dip. Previous drilling in the Upper and Lower showing areas focused on a north-northwest trending fault structure and not the north-northeast bedding orientation. Thus, the Upper and Lower showings have not been thoroughly drill tested.

Reinterpretation of the erroneously documented soil geochemical data has identified a number of anomalies which remain to be tested. The Upper and Lower showings are defined by Cu, Au, Pb, Zn, Ba, As, and Mg anomalies which extend in a 1200-m long linear zone to the North and South. At least two other linear geochemical anomalies have been identified and are defined by Cu and As.

Rock sampling and lithogeochemical analysis indicates the majority of the volcanic rocks to be of basaltic composition with tholeiitic to transitional tholeiitic-calc-alkaline affinity. Pearce Element Ratio plots of lithogeochemical data have identified that fractionation of the mafic melt has occurred, and that alteration of the rocks exists and can be detected by lithogeochemical evaluation.

A reinterpretation of geophysical data has determined that mineralization in the Upper and Lower showings probably does not respond well to EM techniques because of the intense fracturing in this area by the Newhykulston Creek fault. A different geophysical technique, such as Induced Polarization (IP), may prove more effective in this area.

Recommendations for future work on the property are to conduct detailed geological mapping and lithogeochemical sampling to obtain a better understanding of the orientation of bedding, to identify and trace horizon(s) which are favourable hosts for volcanogenic massive sulphide mineralization and to determine zones of alteration related to mineralization. Soil geochemical surveys should be expanded to the South and the full suite of ICP data from past soil geochemical programs should be further analyzed. This program should be followed by drilling of Pulse EM conductors, soil geochemical anomalies and lithogeochemically-defined alteration-related targets.

STATEMENT OF EXPENDITURES

CM 1-7 PROPERTY
KAMLOOPS MINING DIVISION
NTS 92P/8E

Personnel

Project Geologist, S. Casselman	April 21-Sept. 3/93 27 days @ $210/day	$5,670	
Senior Geologist J. Morin	April 21-Sept. 3/93 6 days @ $400/day	2,400	
AutoCad Technologist I. Casidy	May 1-Sept. 3/93 5 days @ $180/day	900	
		——	$8,970

Consulting Work (see invoice in Appendix I)

Prime Geochemical Methods Ltd.
Stan J. Hoffman, geochemist

Consulting services	3 days @ $500/day	$1,500	
Computer charges		3,129	
Miscellaneous labour costs (digitizing)		380	
Miscellaneous Costs (reproductions, etc.)		2,004	
		——	$7,013

Geochemical Charges

24 rock samples for whole rock and neutron activation (INAA) analysis @ $40/sample		$960	
4 rock samples for whole rock and ICP analysis plus gold @ $49/sample	196		
3 rock samples for ICP plus gold and fire assay for copper @ $33/sample	99		
2 rock samples for ICP plus gold @ $25/sample		50	
		——	$1,305

Transportation

4 X 4 truck rental (including fuel)	April 21-June 18/93 13 days @ $110/day		$1,430

Subsistence

Room and board	April 21-June 18/93 14 man-days @ $90/man-day		$1,260

Miscellaneous

Flagging, sample bags, mylar, etc.	$ 140	
Reproductions, photocopying, etc.	450	
Secretarial assistance, computer usage, etc.	1,180	
		$1,770

TOTAL	$21,748

Allocation Declaration

1) 65% of the total cost or $14,136 is filed for assessment on the Chinook Group (CM 1, CM 3, CM 5, CM 6 and CM 7)

2) 35% of the total cost or $7,612 was filed for assessment on the Chinook 1 Group (CM 2 and CM 4).

STATEMENT OF QUALIFICATIONS

I, Scott Casselman, residing at #304 - 145 West 5th Street, North Vancouver, British Columbia, V7M 1J7, certify that:

1) I graduated from Carleton University, Ottawa, Ontario, with a Bachelor of Science Degree in Geology in the spring of 1985.

2) I have practiced the profession of geology since graduation.

3) I am a member of the Association of Professional Engineers and Geoscientists of British Columbia as a Geoscientist.

4) I was employed by INCO Exploration and Technical Services in 1993.

5) The work documented in this report was conducted by myself and staff of INCO Exploration and Technical Services in the summer of 1993.

Dated this 9th day of December, 1993, Vancouver, British Columbia

Scott Casselman, BSc., P.Geol.

REFERENCES

Clarke, Tiro 1990, 1989 Annual Report on the CM 1-7 Claims, Minnova Inc. private report.

Farmer, R., 1985, Barriere Project: Summary Report - 1985, BP Resources Company Report.

_______, 1988, Barriere Lake Project; CM Claims; 1988 Diamond Drilling, BCMEMPR Assessment Report #18039.

Farmer, R. and Hoffman, S.J. 1989, 1988 Summary Report on the Barriere Lakes Project, CM Claims, Trenching and Diamond Drilling, Prime Geochemical Methods Inc. private report.

___________________, 1989, Summary Report - 1989: Barriere Lakes Project; CM Claims; Trenching and Diamond Drilling, BP Resources Company Report.

French, A and Clarke, T. 1990, 1990 Annual Report on the CM 1-7 Claims, Minnova Inc. private report.

Jago, B, 1993, Textural Analysis of Sulphide- and Magnetite-Rich Rocks from the CM Property, Adams Plateau, B.C., INCO Exploration and Technical Services internal memo.

Lo, B., 1993, CM Property Geophysics Review, B.C., NTS 92P/8E, INCO Exploration and Technical Services internal memo.

Preto, V.A. and Schiarizza, P. 1984, Geology of the Adams Plateau - Clearwater - Vavenby Area, BCMEMPR Paper 87-2.

APPENDIX I

Geochemical and Terrain Analysis
Assessment Report
of the
CM Claims

By: S.J. Hoffman and T.H.F. Reimchen

GEOCHEMICAL and TERRAIN ANALYSIS
ASSESSMENT REPORT
of the
CM CLAIMS

Located near Chinook Mountain,
approximately 15 km north of Barriere, B.C.

Kamloops Mining Division
NTS: 92P/8E

Latitude 51°18'N, Longitude 120°7'W

Mr. T.H.F. Reimchen, P.Geo.
Pegasus Earth Sensing Corp.

Dr. S.J. Hoffman, P.Geo.
Prime Geochemical Methods Ltd.

PGML 93-8

September, 1993

TABLE of CONTENTS

LIST of APPENDICES

SUMMARY

Soil sampling on the CM claims was conducted in 1986, 1989 and 1990 by BP Resources (1986) and Minnova (1989, 1990). Analysis was performed by Acme Analytical (1986) and Min En Laboratories (1989, 1990). The BP data have been reported upon previously, but the Minnova data, although submitted for assessment purposes, were erroneous. This report rectifies the previous error and has identified seven geochemical anomalies on the CM claims aligned primarily along a northerly or north-northwesterly direction. A concurrent terrain analysis by Reimchen determined overburden over much of the claims to be relatively thin, and derived from the northwest. If accurate, diamond drill testing has thus far avoided evaluation of probable bedrock sources responsible for soil anomalies, instead focussing on geophysical targets reflecting a chert-graphitic argillite unit.

The BP work recognized four anomalies and located the southern limit of a fifth anomaly. Two of these zones are associated with massive sulphide occurrences. The three western anomalies align in a north-northwesterly direction are highlighted by Zn accumulation. Geochemical anomalies associated with the main zone massive sulphide are defined by Cu, Au, Pb, Zn, Ba, As and Mg enrichment along a 1200 m long zone parallel to and 200 m west of the chert-graphitic argillite unit. Multielement analysis has identified other elements, such as Fe, Mn, Ca, Mg, Al, Ti, K, and others, as being distributed in a fashion indicative of geologic control and/or related to a massive sulphide system in the southwest. Critical findings include the need for a 1 ppb detection limit for Au and it is recommended that neutron activation analysis (INAA) be used to provide Au and soda depletion data (as well as other elements) in future work.

The Minnova work located three additional anomalous soil zones, including a northward trending linear 3 km long extending from 200 m northeast of the main massive sulphide occurrence. Cu enrichment varies along the trend which appears to mark a boundary between mafic and felsic volcanics (as suggested by lithogeochemical data). The northern extension of the chert-graphitic argillite unit is the second anomaly and a third zone centering along L126N and 95E is reflected by a high contrast Cu-As feature. The lithogeochemical work identified Mg-rich zones associated with the 3 km long anomaly trend. Further interpretation of the meaning of geochemical distributions is limited by a paucity of available element determinations. This can be rectified by acquisition of the full multielement suite from Min-En Laboratories.

Continued follow-up is highly recommended. In addition to data acquisition, additional surveying is warranted in the southwest and southeast. Follow-up work, including analysis of drill core pulps should require both the INAA and the ICP methods of analysis to be used for maximum benefit. Targets on CM appear to have multielement and alteration element signatures which need to be documented by ongoing work in order to better position subsequent diamond drill holes.

RECOMMENDATIONS

1. Multielement analysis of soils conducted by Minnova are available at Min-En Laboratories, although for purposes of ground evaluation Minnova elected to receive data for only 7 elements (Cu, Pb, Zn, Ag, As, Sb and Au). Elements remaining from the 32 element ICP package are available from Min-En at a price to be negotiated. Acquisition and evaluation of the additional information is highly recommended, as it will facilitated recognition of geological trends (i.e. Ni, Cr, V), estimate sample quality (Ca, Sr, Al, Fe, Mn), and suggest alteration (Mg, Al, Ba, Ti) and geochemical halos.

2. Some discrepancy exists between the location of the grid as depicted on BP Resources work from that shown on Minnova maps. The author was involved in soil sampling of the BP grid and tie lines were used to provide control. Minnova appeared to shift the BP grid. It is critically important that accurate grid locations be determined, and it is suggested a GPS system be used to locate the grid and diamond drill hole locations accurately.

3. The property has potential for massive sulphide deposits (carrying Au and Ag), as well as significant Au bearing quartz veins. Follow-up of BP Resources Au anomalies was successful in locating Au-bearing structures and the massive sulphide in the southwest. The Minnova Au data are not suitable for follow-up, in view of their too high 5 ppb detection limit (a number of Au-bearing structures were located by following up >7 ppb values amongst BP data (detection limit 1 ppb)). Au analysis for future soil, rock or drill core analytical projects should use instrumental neutron activation analysis (INAA). The approach will provide for Au to a 1 ppb detection limit, recognition of Na depletion zones, and will suggest focal points for follow-up based on the As,

Sb, W and other element distributions. Remaining elements of the Au +34 element package will prove useful in mapping geology. Base metal analysis will require an aqua regia-ICP determination on a split of the same samples analyzed above by INAA.

4. Two areas of interesting magnetic signatures in the southwest and in the southeast have no soil results. This should be rectified by extending the grid and using a 25 m sample interval along lines 100 m apart (these should exist in view of the available magnetic data). The distribution of Zn suggests additional sampling is warranted to cover at least 200 to 300 m to the west of the existing grid, in the southwest.

5. Drill core pulps from 1988 have been located at Acme Analytical and are available for reanalysis using INAA and other methods. The original ICP data have never been plotted in a one hole - many element format which is useful in fingerprinting ore and halo associations and geology from hole to hole. Reanalysis using INAA and plotting of all data is recommended to determine the relative location of existing drill holes with respect to each other based on geochemical patterns.

INTRODUCTION

The CM Claims were purchased by Dr. Stan J. Hoffman, P.Geo. in late 1982. A review of exploration data which accompanied the transaction revealed an error in the geochemical survey completed by Minnova Inc. (now Metall Inc.) whereby about 10% of the samples reported the wrong analytical values. This is apparent on the data listings provided by Minnova in their assessment report, but went unrecognized until 1993. The error was due to downloading of Ba data for about 210 samples, which were recorded in the Cu column. Other elements were similarly shifted. The Minnova procedure to define geochemical anomalies was thus faulty, and Minnova maps showing anomalous conditions are in error. This has been rectified in the present report, and sample locations were digitized to reflect their more accurate location on the ground.

Although almost 300 rock chips were taken, Minnova did not produce geochemical maps displaying the distribution of the whole rock and base metal data. In view of the importance such information might have on continued exploration, maps were prepared showing the distribution of all elements. The method of selection of contour intervals for the size coded dots used to portray geochemical results can be found in Appendix 1. Findings from these evaluations can be found in a subsequent section.

Interpretation of geochemical data and prediction of the location of bedrock sources to explain soils anomalies requires an understanding of the distribution, origin and thickness of glacial overburden conditions. Such information has been provided by T.H.F. Reimchen, P.Geo. who reviewed air photographs and determined overburden thickness to be generally less than 5 m deep, with a transport direction from the northwest to southeast. Deeper overburden conditions are common along the western margin of the property and associated with westward-flowing creeks draining the property.

Reimchen also offered an interpretation of lineaments believed to reflect structural trends in underlying geology. That work defined two approximate east-west trends in the south which had not been recognized by previous geological work.

Ground magnetic surveys on CM were conducted by BP Resources in 1986 and by Minnova in 1989 and 1990. Each survey was evaluated by previous landholders in an independent fashion, with only the 1990 work being entered into the computer file for contour plotting. The two earlier surveys were contoured by hand. Both BP Resources and Minnova attached little significance to the magnetic data.

The 1986 and 1989 magnetic data were key entered in 1993. Each of the three surveys was evaluated independently using the histogram method previously described in Appendix 1. Findings of the reevaluation were outstanding. On the southern grid (the 1986 survey), marked east-west trends were noted which correspond to the structures predicted by Reimchen. The massive sulphide main showing was found to lie along a series of magnetic lows. The second massive sulphide occurrence in the southwest (location indicated by drilling) lies at the margin of a magnetic feature possibly reflecting a volcanic center. Several other volcanic centers can be suggested based on the character of magnetic highs.

The central survey (circa 1989) is associated with systematically higher backgrounds. Magnetic readings were taken at 25 m intervals compared to 12.5 m intervals seen in the south and north. This has the effect of broadening background variations which are probably related to major variations in underlying geology. Several positive and negative magnetic anomalies are outlined independent of regional trends.

The northern grid (circa 1990) continues trends seen on the central grid. A number of positive and negative magnetic anomalies exhibiting high contrast to background are recognized. Several of these have an anomalous soil geochemical signature suggesting they represent exploration targets.

To fully understand the exploration potential of the ground, EM and IP anomalies were summarized at the same scale as the working maps (i.e. 1:10,000). These have been synthesized to identify exploration targets meriting drill testing.

GEOCHEMICAL SURVEY - SOILS

Cu anomalies are defined by values exceeding 40 ppm to in excess of 125 ppm Anomalous zones cluster, particularly 200 m west of the north northwestward trending chert - graphitic argillite zone which has been the focus of the previous exploration and the location of the main massive sulphide showing. The area of interest is 1200 m long and 200 to 300 m wide. Cu accumulation also characterizes a region approximately 400 m X 400 m northwest of the southwestern massive sulphide. The terrain analysis suggests likely bedrock sources should be along the western side of the geochemical anomaly, corresponding to IP and EM anomalies. Over the northern half of the survey, fifteen Cu - rich zones are outlined, several exhibiting high contrast to background. Typical dimensions are 200 m to excess of 1000 m long and 100 to several hundred m wide. Anomalous zones tend to be peripheral to magnetic highs.

Pb threshold has been established at 18 ppm, and most high values range at the 25 to 50 ppm level, occasionally higher. Pb enhancement is most common over the northern half of the property, where Pb-rich zones are commonly found within cores of Cu accumulation zones. Pb backgrounds are lower in the southwest, in association with BP sampling. This may reflect a systematic analytical artifact in Pb backgrounds determined by Acme Analytical in 1986 compared to Min-En Laboratories in 1989 and 1990. Anomaly threshold in the southwest has been lowered to 14 ppm and Pb-rich zones accompany Cu anomalies.

The Zn distribution focuses attention to the southwest where an anomaly threshold of 110 ppm extends to the 150 to 200 ppm range. The largest zone of Zn enhancement can be described at 1500+ m long and 400 to 500 m wide. The southwestern massive sulphide lies along the eastern margin of the Zn feature which is open to the west and south. High contrast Zn accumulation is common to the west of the drill pattern testing the main massive sulphide occurrence. Several Zn-rich zones lie to the south, flanking the unit of chert and graphitic argillite. Zn accumulation is subdued in the north. Where present, Zn enrichment correlates with Cu and Pb-rich zones.

Au concentrations are not often above detection limits, except in the southwest and associated with the main massive sulphide zone. Detection limits over this portion of the survey area was 1 ppb (threshold 8 ppb), and follow-up of a number of anomalies led to discovery of Au mineralization of greater than 1 ppm to 40 ppm across widths of 20 cm to 1.2 m, associated with quartz-filled structures. Au concentrations in 1989 and 1990 had to exceed a 5 ppb detection limit (threshold of 20 ppb), and patterns are erratic. Future grid work or follow-up sampling requires the lower detection limit to be effective.

Ag concentrations determined by Min-En in 1989 and 1990 are significantly higher than backgrounds determined by Acme Analytical in 1986. Min-En is noted for averaging 1.0 to 1.5 ppm higher than other Vancouver Laboratories as a systematic variation. Ag is an element which can be adversely affected by sampling artifacts, and the abundance of anomalies seen in north, several line related, suggests their validity must be confirmed. This can be accomplished by reference to multielement data residing at Min-En. Elements such as Ca, Al, Sr, Fe and Mn would be invaluable to assessing the sample quality factor.

Variation in As concentration is exceptional, with anomaly threshold for Acme data set at 10 ppm (detection limit 2 ppm) and for Min-En data at 20 ppm (detection limit 5 ppm). As accumulation is more common in the north, with maximum values extending from 100 ppm to 250 ppm. As-rich zones are relatively long elongated features following topography, such as in the northeast. As accumulation also characterizes east-west trending blocks of grounds, for example, between L 133 N and L 127 N and L 121 N and L 118 N. These east-west trends following the grid may reflect systematic analytical variation, although the northern trend corresponds to a terrain unit of Reimchen. The lower As values seen in the north also correspond to the boundary of the 1989 and 1990 surveys, suggesting a major change in laboratory procedures from one year to the next. In the south, As enrichment follows the trend of the chert-graphitic argillite, but As-rich zones typically lie peripheral to the chert-graphitic argillite. A northeastward trending As zone corresponding with Au mineralization and the southwestern massive sulphide lies at the western margin of a magnetic low. All major Cu, Pb and Zn anomalies appear to have an As signature.

Sb accumulation is most common in the north, reflecting Min-En analysis (5 ppm detection limit). Most anomalies comprise one or two point features, and several values are exceptionally large. These need to be confirmed prior to investment in a significant follow up effort. In the southwest, Acme data are much more subdued (2 ppm detection limit). Sb does accompany the main massive sulphide and may be weakly elevated in background in the southwest.

Ba values are available for a portion of the grid. The main massive sulphide zone is reflected by high Ba, and several areas to the north report in excess of 500 ppm aqua regia leachable Ba. Such levels could be indicative of the occurrence of barite.

Distributions of other elements are currently available only amongst BP data from 1986. That work highlighted the southwestern massive sulphide to be associated with Fe, Mn, V, Mg, K, Al and Ti enrichment whereas the main massive sulphide is characterized by Mg enrichment.

GEOCHEMICAL SURVEY - ROCKS

All lithogeochemical sampling was conducted by Minnova, and with two exceptions did not evaluate the two areas of massive sulphide mineralization.

Cu distribution highlights an area 200 to 300 m northeast of the main massive sulphide as interesting, as well as a zone along the creek at the northwestern end of the chert-graphitic argillite belt. In the north, a belt of enhanced Cu backgrounds of greater than 65 ppm to almost 100 ppm trends north-south at about 701400 m E.

Pb follows Cu, but anomaly contrast defines several clusters of high values along the regional trend. Several values exceed 50 ppm Pb. Zn generally corresponds with Pb and/or Cu in the distribution of anomalous conditions. Ag generally follows Cu, with maximum values of 3 to 4 ppm. These represent an unusually high background, and in part are probably due to the 1.0 to 1.5 ppm elevated background normally associated with Min-En data. Au values, with the odd exception, are all at a 5 ppb detection limit. As over the southern half of the grid follows Cu. Values are much lower in the north, corresponding to 1990 sampling. This is probably an analytical artifact. The odd rock sample appears enriched in Sb.

Whole rock analysis was undertaken on the lithogeochemical samples. That work defined the eastern half of the property to be associated with iron-rich rocks (concentrations of 10% to 12%) whereas the area north of the southwestern massive sulphide reports iron contents of 9 to 11%. Mn is likewise higher in the east (0.2% to 0.25%) compared to the west (0.13% to 0.2%). Total and aqua regia leachable Ba distributions are similar, with highest values corresponding to the chert-graphitic argillite unit in the southwest.

Distribution of CaO follows that of iron, being higher in the east (11 to 14%) and lower in the west (7 to 11%). By contrast, MgO backgrounds are more consistent across the property, although values are notably lower in the northeast. Soda levels tend to range from 3% to 5%, with high values clustering into anomalous zones 300 m northeast of the main massive sulphide and 1.5 km north northeast of the zone. Soda depletion zones defined by values of less than about 1% are found over local areas throughout the survey area. The two samples taken over the main massive sulphide are soda-depleted.

Potash variation highlights three areas as distinctive, including an anomaly in the north, a zone along the northern limit of the chert-graphitic argillite, and a region north of the southwestern massive sulphide. The clustering of potash-rich zones suggests felsic intrusion or sericitic alteration. Distribution of alumina defines clusters of high values, particularly on the northern mapsheet. Anomalous conditions are defined by values exceeding 16% to 18% alumina. Titania generally follows alumina. Phosphate is relatively homogeneously distributed across the property. Silica content is enriched in the west to values of 70 to 85%. Clusters of comparable silica contents trend north-south along 701500 m E in the north. Rocks containing sulphur are erratically distributed, many following the chert-graphitic argillite trend.

DISCUSSION OF RESULTS

Geochemical surveys have constituted an integral part of exploration on the CM claims, beginning in 1986. Initial work in the southwest defined a 1200 m long, 200 m wide Cu-rich zone trending north-northwest following a unit now recognized as chert-graphitic argillite. Other elements accompanying Cu include Pb, Zn, As, Ba and Mg. The geochemical anomaly is actually displaced 200 m to the west of the chert-graphitic argillite. Interpretation of glacial dispersion orientation by Reimchen (1993) predicts a bedrock source(s) for the soil anomaly may be a further 100 m ± westward. The Cu anomaly lies along a drainage feature, suggesting hydromorphic dispersion from bedrock underlying the soil feature or lying to the west may be the mechanism of anomaly genesis. By contrast to this geochemical interpretation, diamond drill follow-up has focussed on geophysical anomalies generated by the chert-graphitic argillite unit. Success was achieved only at the main zone massive sulphide, where geophysical and geochemical anomalies coincide. The main massive sulphide intersection has been interpreted as comprising a fault block based on an inability to trace the intersection beyond one hole.

The southwestern massive sulphide zone was located during follow-up of a Au-bearing structure. The Cu distribution suggests potential exists northwest of the known zone which appears reflected by a northeast trending geochemical zone of Cu, Zn, Au, Fe, Mn, V, Ca, Mg, K, Al and Ti accumulation. The geochemical trend, at its northeastern limit, is continued by a magnetic low which extends to the main massive sulphide zone area. These observations suggest a northeasterly structure may connect the two massive sulphide occurrences, an interpretation to be monitored during future work.

The southwestern grid is associated with significant anomalies for Zn, Mn, Fe, V, Ba, Mg, K, Al and Ti. These suggest the northeasterly trend described previously, and zones to the north are prospective. Extension of the grid to the west and south is warranted based on the unclosed nature of Zn and other anomalous features and previously defined interesting magnetic anomalies. Occurrence of Mg enrichment at both massive sulphide zones suggests this potential alteration element should be monitored carefully during future work.

Geochemical surveying in 1989 and 1990 has not previously been evaluated. That work has defined a 3 km long zone of intermittent Cu enrichment trending north-south at about 701500 m E. The Cu anomaly lies along a boundary between Fe-rich and Fe-poor rocks. Mg enrichment in bedrock from 130N to 140N may be an indication of Mg alteration. Geochemical analysis of soils did not include Mg, although Mg data can be acquired from Min-En Laboratories from their computer data base. Acquisition of other elements, such as Ca, could prove effective in deciding if any of the high contrast Cu anomalies are due to sampling of organic-rich soil.

In addition to the north-trending linear which commences about 200 m northeast of the main massive sulphide zone, a high contrast feature is defined between L125N and L127N; at about 95E. The northwestern limit of the chert-graphitic argillite unit is reflected by anomalous conditions. These anomalies should be followed-up.

The northern survey area is associated with systematic variations in the distribution of As and Ag, and the Au detection limit of 5 ppb is too high to be useful. Definition of anomalous conditions from the Cu, Pb, Zn and limited Ba data has been successful, but appreciation of anomalous zones, their geologic setting, and evidence of alteration can only be accomplished by purchasing the remainder of the multielement data from Min-en (or by resurveying anomalous zones). Assessment of the full multielement suite for evidence of sampling artifacts might downgrade some anomalies and upgrade others. Reanalysis of pulps by other methods is not an option, as Minnova pulps were destroyed in 1992.

Soil distributions in the south suggest massive sulphide occurrences will be accompanied by Mg enrichment, clay (Al-Ti) alteration halos, Mn halos, and Fe enrichment. Felsic intrusions may be indicated by K enrichment. Zonation amongst Cu, Pb, Zn, Au and Ba data suggests these elements are reflecting portions of the same system, accompanied by As. Variations amongst Ca, Sr, Cr, and Ni and other elements may reflect the changing character of underlying bedrock, or they may be due to alteration accompanying massive sulphide deposition.

Historical work has demonstrated the value of multielement analysis. Limitations can be imposed by the selection of analytical procedures. The following recommendations are made to guide future selection of analytical methods for both soil and drill core pulps.

1. Neutron activation analysis (INAA). This method is preferred for determination of Au, and for recognition of Na depleted zones. Elements anticipated to be valuable in an interpretation include total Ba, Sb, W, Se and As in addition to the rare earths and other elements. It is the lowest cost procedure to deliver Au and Ba concentrations, although turnaround would be 2 to 3 weeks.

2. Aqua regia digestion - inductively coupled emission spectroscopy (ICP) determination. This procedure is needed to provide base metal and Ag data.

Elements of the package, including Mg, Al, Ca, Ti, Cr, Ni, V, Fe, Mn, Mo, K and others are needed to defined geological environments and alteration zonation. The laboratory performing the ICP analysis would weigh the pulps into vials and send them for INAA analysis.

Geochemical surveying on CM has been effective in defining mineral potential of the claims. A continued role for an expanded suite of elements is likely to assisting ongoing exploration, particularly in association with diamond drill testing. Closer evaluation of ground magnetic data and other geophysical survey parameters and their relationship to geochemical anomalies may provide additional targets for drill testing.

CONCLUSIONS

A total of 7 geochemical Cu anomalies lying along three north-northwesterly to northerly trends and one independent zone has been outlined on the CM claims. An appreciation of glacial dispersion oriented southeastward has suggested bedrock sources for soil geochemical anomalies lies to the west of metal-rich soils. Continued exploration is warranted on a high priority basis, involving an expanded suite of multielement analysis to accompany additional soil sampling and diamond drill testing.

APPENDIX 1
METHOD of HISTOGRAM INTERPRETATION

METHOD OF HISTOGRAM INTERPRETATION

RULES FOR CHOICE OF SIZE CODING OR CONTOURING INTERVALS

1. Examine both arithmetic and logarithmic histograms for each geochemical survey. Choose the histogram which most closely approximates a normal (or lognormal) distribution. If several populations are present on the histograms, subjectively divide the data into a series of (overlapping?) normal or lognormal distributions. Always avoid interpreting histograms which are strongly skewed. Portions of arithmetic or logarithmic histograms may be chosen over specific metal concentration intervals, if this allows for the best portrayal of the data in graphical form.

2. Choose, as two of the coding intervals, points which represent between 90% and 95%, and 95% and 97.5% of the data; two different numbers. These choices highlight from 1 in 10 to 1 in 20 samples which are considered slightly anomalous and definitely anomalous, respectively. These limits are optimistic in that the two categories are defined to be anomalous regardless of the distribution of values on the remainder of the histograms. A rigorous statistical approach would suggest that only values above the 97.5 percentile should be considered anomalous. Choice of any of the above percentiles is entirely subjective and meant to highlight the highest values of the survey.

3. Divide the remaining portion of the histogram into recognizable populations. The dividing point of each of these populations is chosen as a coding interval. Artifacts introduced as a consequence of detection limit considerations are ignored. These artificial breaks in the histograms can be recognized by referring to the laboratory reports and scanning data results.

4. For each population, choose one or two numbers which correspond to the 90% and 95% cumulative frequencies for the population (1 in 10 and 1 in 20 samples for that population). These will also be used to represent anomalous conditions for each population. Coding intervals can be no closer than 2X the detection limit for each element being considered.

5. A maximum of six numbers can be chosen to plot symbol maps. This number is dictated by the ability to present data in graphical form with sufficiently different symbol sizes for them to be easily distinguishable, particularly if maps are to be reduced. The seven defined concentration classes are normally sufficient to represent geochemical data on a map. More intervals can be chosen if data are to be contoured. Avoid choosing arithmetic intervals without considering rules (1) and (4).

6. Maps plotted using the preceding instructions might result in two areas being distinguished from each other by a relatively uniform density of symbol sizes, yet only poor contrast anomalies are indicated. Difference between the two areas, A and B, might be due to underlying geology, overburden character, soils etc. Whatever the cause, the data are not well displayed. If the underlying control distinguishing A and B can be recognized, the data can be divided and reinterpreted following steps (1) to (5). Two sets of maps can be drawn, or both sets of interpreted data can be plotted on a single map. For such superimposed geochemical maps, symbol sizes lose their absolute meaning but assume a more important stance, that of reflecting anomalous conditions regardless of the underlying control. To illustrate, consider the case where A and B are areas underlain by very different geology. Anomalous conditions for low background rock types might be concentrations which are much lower than average values for the high background rock types. Nevertheless, anomalies defined in each area are considered significant. Reliance on absolute concentrations can be misleading in such cases.

APPENDIX 2

TERRAIN ANALYSIS - T.H.F. REIMCHEN

PEGASUS
earth sensing
corporation

4761 COVE CLIFF ROAD
NORTH VANCOUVER, BRITISH COLUMBIA
CANADA V7G 1M8
TELEPHONE: (604) 929-0244
FACSIMILE: (604) 929-7231

April 7, 1993

Prime Geochemical Methods Ltd.
1531 West Pender Street
Vancouver, B.C.
V6G 2T1

Dear Sir:

CM CLAIMS- BARRIERE, B.C.
MASSIVE SULPHIDE PROJECT
PEG 253--0193

Thankyou for giving me the opportunity of interpreting aerial photographs for terrain analyses/surficial geology of the CM Claims, east of Little Fort in 92P/8. These interpretations are portrayed on a map at a scale of 1:10,000.

Prior to interpretation of soil anomalies in any terrain, it is mandatory to understand the geomorphological processes that generated the landscape. Are some of these processes still active and how have they transformed the surface? A terrain analyses solves some of these problems by assigning a genetic origin to landform units and the probable source direction? Only detailed field work can give a more localized source area and distance of movement.

Regional movement by the latest glacial advance in this area is from northwest to southeast on the upland.

If one thinks of alpine glaciation as opposed to continental glaciation several differences are immediately evident. Continental glaciers moved as broad masses in relative straight lines over long distances. In Western Canada, continental ice moved south and southwest, up the regional slope to Western Alberta. The general low relief of the prairies did not cause large flow deflections.

In opposition to this are alpine glaciers which flowed around and between the mountains as well as over the tops of most of the peaks. Measuring ice directions then is very important in the field as aerial photograph interpretation generally only gives the regional movement.

I know you have probably read this before but I put it in in case not. Initiation of Cordilleran Glaciation began with Alpine glaciers originating in plateau ice centers. Ice flowed as ice river/streams down small valleys coalescing to form major valley glaciers which flowed downslope (south in this area).

In this area glaciers moving from the northwest scoured residual soils from the area scraping the weathered part of the hills bare. Upon deglaciation, very little material was deposited as till, bedrock is close to the surface. A map unit **sMbv**, signifys that much of the polygon has less than 1.5 meters separated by thicker zones of glacial till up to 3 meters thick.

Upon deglaciation, glacial ice on tops of hills in the east half of this area would melt first. Streams would run on the ice and generally along the ice boundary. Abandoned stream channels, cut into the underlying bedrock/glacial till are observed on the hills in the northwest cornor of the map area. As one approaches the North Thompson Valleys one can observe high level deltas (**sbFd**) on the side of the valley. This shows that the base level of erosion was about 700 meters Elevation and that the streams flowed onto a valley glacier still plugging the main valley. (I personally favor this latter explanation other than we know that tectonic uplift/iso-static rebound is about 200 meters in this area.)

Although much of the Cordilleran of Western North America has been glaciated several times beginning as early as the Miocene it is reasonable to assume that the existing soils developed on materials which were eroded/mobilized/redeposited by the last glacial advance. For much of the area this is the case and the soils will all be Recent.

In the west part of this Property, surface soils will have a thin cover of washed fluvial materials and soil samples should probably get below this material into the C horizon of the soil. Actually this could be recognized by a grey material rather than rusty zones higher up. The problem of sampling in the washed material is a placerizing?? effect to some of the minerals--mainly gold.

LINEAMENTS

Glacial lineaments have been plotted on the terrain analysis interpretation. In addition, I have tried to separate non-glacial lineaments and depicted them as normal? faults. Yellow are ice directions, red are faults?-normal.

TERRAIN ANALYSIS

A modified terrain analyses legend has been developed for this area The terrain analyses units have been separated firstly on the basis of genetic origin, then morphology, texture and thickness in a universal formula such as:

sbMv

sa this would be interpreted as a sandy bouldery Morainal veneer (less than 1.5 meters in thickness over Rock).

Genetic Materials

C **COLLUVIAL:** Colluvium consists of materials which have moved downslope under the force of gravity. In this area colluvial sediments will consist of mainly of moraine, and unweathered to weathered rock particles that have rolled or slid down steep slopes or were transported there by avalanching to materials that have been slightly washed forming colluvial fans, to unaltered rock debris on the tops of the mountains.

F **FLUVIAL:** Fluvial materials are usually derived from the subglacial washing of bedrock and basal moraine as In this area more that 80% of the erratics and 100% of the fines will come from local areas.

Fluvial sediments range from silt derived from colluvial/alluvial fans to dirty gravel washed out from the local tills. In this area fluvial sediments are confined to stream valley except in the southwest cornor. In the Thompson valley (west part of the map sheet) very thick fluvial sediments occur as high deltas, terraces and just fluvial on the floodplain.

M **MORAINAL:** Moraine, commonly called glacial till or diamicton, is usually composed of the 90 - 95% of comminuted fragments of local bedrock. In this area the moraine always consists of a silty sand intermixed with subangular boulders and angular rubble.

Thickness and Morphology

v veneer < 1.5 meters thick
b blanket > 1.5 meters thick
d delta
f fan shaped
l level
p plain
r ridged
t terraced

Texture(modified Wentworth)

s	silt
s	sand
b	bouldery
g	gravelly
r	rubbly

Linear Features

↗ glacial ice flow
〰 rock structure

I hope that you are able to use this interpretation for your program. I would be pleased to answer any questions that you might have.

Sincerely,

THF REIMCHEN P. Geo., P. Geol.

APPENDIX 3
STATEMENT of QUALIFICATIONS

Dr. Stan J. Hoffman, P.Geo.
Mr. Ted H.F. Reimchen, P.Geo.

STATEMENT OF QUALIFICATIONS

I, Stanley J. Hoffman of 2834 West 24th Avenue, Vancouver, British Columbia, hereby certify that:

1. I am a consulting geochemist with office at 1531 West Pender Street, Vancouver, B.C., V6G 2T1;

2. I hold the degrees of Bachelor of Science in geology and geochemistry from McGill University of Montreal (1969), a Master of Science in Geochemistry from the University of British Columbia (1972) and a Doctor of Philosophy in Geochemistry from the University of British Columbia (1976);

3. I have practised the profession of geologist/geochemist continuously since 1973.

4. My list of publications include:

   2 - Theses (unpublished)
   18 - Scientific papers in referred journals (1 in the last 3 years)
   1 - Published Geochemical Manual (report writing)
   2 - Published Directories: 1990 and 1992 AEG Membership Listing and Directory of Geochemical Exploration and Environmental Services
   1 - Unpublished Manual - Organization of a Geochemical Symposium
   2 - Books (Reviews in Economic Geology - Volume 3, Writing Geochemical Reports)
   Many- Scientific papers in unreferred journals

5. My memberships include:

   1. Member Geological Association of Canada, 1967-1991; Fellow since 1986
   2. Canadian Institute of Mining and Metallurgy, 1973-1991
   3. Association of Exploration Geochemists, since 1972
   4. American Society of Agronomy, since 1973
   5. Geochemical Society, 1983 - 1990
   6. International Association of Geochemistry and Cosmochemistry, since 1986
   7. American Chemical Society, since 1989

6. Other qualifications include:

   1. Association of Exploration Geochemists council, (1980-1986, 1988-1990), president (1987-1988), business manager (1988-1992).

   2. Lecturer, B.C. Department of Mines Prospecting Course, (1977-1991), B.C. & Yukon Chamber of Mines (1987-1991), Short Course, Prospectors and Developers Association (1990), Short Course, Calgary MEG (1989), Short Course, AIME (1988), Short Course, Northwest Mining Association (1979, 1985, 1988), Brokers Course (1984, 1985).

   3. Chairman, GOLD-81 and GEOEXPO-86 Geochemical Exploration Symposia, Vancouver, B.C.

   4. Committee for professional registration, province of British Columbia (1980-1983, 1990-1992).

   5. Regular contributor to the Association of Exploration Geochemists EXPLORE Newsletter (1987-1992).

   6. P. Geo. (B.C.) Accreditation as a professional geoscientist of British Columbia, since 1991.

Dated this 9th day of December, 1993, Vancouver, British Columbia

Stanley J. Hoffman, Phd, P.Geo.

PEGASUS
earth sensing
corporation

4761 COVE CLIFF ROAD
NORTH VANCOUVER, BRITISH COLUMBIA
CANADA V7G 1M8
TELEPHONE: (604) 929-0244
FACSIMILE: (604) 929-7231

CERTIFICATE

I, TED. H.F. REIMCHEN OF 4761 COVE CLIFF ROAD, North Vancouver, in the Province of British Columbia, Canada, DO HERBY CERTIFY:

1. THAT I am a Professional Geoscientist(1991) and Professional Geologist(1972) with an office at the above address.

2. THAT I am a graduate of the University of Alberta located at Edmonton, Alberta where I obtained a BSc. and MSc. Degree in Geology in 1966 and 1968 respectively.

3. THAT I have been practicing my profession as a Professional Consulting Geologist in the Province of British Columbia, since 1972.

4. THAT I am a registered **Professional Geoscientist in the Association of Professional Engineers and Geoscientists of British Columbia (1991) and a Professional Geologist in the Association of Professional Engineers, Geologists and Geophysicists of Alberta since 1972.**

5. THAT I have personally prepared a portion of this report found in Appendix 1.

Dated this 09 day of June, 1993 at the City of Vancouver in the Province of British Columbia.

T.H.F.REIMCHEN, P. Geol. (1972, Alta.), P. Geo. (1991 B.C.)

APPENDIX 4

STATEMENT of COSTS

APPENDIX 4

STATEMENT OF COSTS

A.	**Consulting Services**		
	Stan Hoffman, geochemistry		
	3 days @ $500.00/day	$1,500.00	$1,500.00
B.	**Computer Processing and Plotting**		
	2425 soils @ $1.00	2425.00	
	263 rocks @ $1.25	329.00	
	Data entry/Check plots, 1985 magnetic survey,		
	1989 magnetic survey	200.00	
	Computer Charges	175.00	
		3,129.00	3,129.00
C.	**Miscellaneous Labour Costs**		
	17.5 hrs @ $16.00/hr, digitizing	280.00	
	Secretarial	100.00	
		380.00	380.00
D.	**Miscellaneous Costs (cost + 25%)**		
	Norman Wade # 98-03874	62.00	
	Maps B.C.	82.00	
	Chong # 93-033	310.00	
	Mylar	24.00	
	Ted Reimchen, terrain analysis INV 253-01	1125.00	
		1603.00	
	+25%	401.00	
		2004.00	2004.00
	Total		**$7,013.00**

APPENDIX II

Rock Sample Descriptions
and
Petrographic Report

IETS

TRAVERSE NUMBER: ______ PROJECT: **CM Property** GEOLOGIST(S): **S. Casselman**

N.T.S: **92P / 08E** AREA: **Barriere, B.C.** DATE: **November, 1993**

SAMPLE NUMBER	SAMPLE TYPE RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm / % / g/t) Cu ppm	Zn ppm	Pb ppm	Ag ppm	Au ppb	
RX 52517	ROCK		GRAB			– Sample taken 3.2 km north of Barriere on Dunn Lk. Rd	Sample sent for Whole Rock and INAA analysis					
						– "typical" unaltered Fennel Formation Basalt						
						– moderate to well foliated						
						– foliation strikes roughly N–S, dipping subvertical						
						– some clastic fragments possible in outcrop, suspect pillow basalt						
						– differential chlorite alteration – pervasive and wispy						
						– sample fairly homogeneous and believed to be representative						
RX 52518	ROCK		GRAB	2 m		– Lower Showing – CM Property	86500	3860	180	30.0	4230	
						– massive, fine grained, dark grey sulphide – py and cp						
						– sample taken over 2 m – representative of sulphide material – not continuous chip						
						– minor cherty fragments						
RX 52519	ROCK		GRAB			– Lower Showing	Sample sent for Whole Rock and INAA analysis					
						– 10 cm chert lense in basaltic volcanic rock, 3 m west of massive sulphide in Lower Showing						
						– <2 % fine disseminated pyrite						
						– intensely brittly fractured, in hangingwall to massive sulphide mineralization						
RX 52520	ROCK					– Lower Showing	Sample sent for polished section work					
						– massive to banded fine grained pyrite						
						– character sample – trench grab						
						– sample for slabbing and polished section work						
RX 52521	ROCK		GRAB			– Upper Showing	44000	428	< 2	4.0	80	
						– massive magnetite with up to 5 % wispy py stringers and 1 to 2 % chalcopyrite						
						– very hard, slightly cherty rock						

IETS

TRAVERSE NUMBER: PROJECT: CM Property GEOLOGIST(S): S. Casselman
N.T.S: 92P / 08E AREA: Barriere, B.C. DATE: November, 1993

SAMPLE NUMBER	SAMPLE TYPE RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm / % / g/t) Cu ppm	Zn ppm	Pb ppm	Ag ppm	Au ppb	
RX 52522	ROCK		GRAB			– massive magnetite (90 %)	42200	400	< 2	3.6	60	
						– up to 7 % wispy, fine pyrite stringers and 1 to 2 % chalcopyrite						
						– also very hard and cherty						
RX 52523	ROCK		GRAB			– from east side of Upper Showing	Sample sent for polished section work					
						– cherty magnetite, massive and aphanitic						
RX 52524	ROCK		GRAB			– Upper Showing hangingwall	Sample sent for Whole Rock and INAA analysis					
						– chloritic basalt with minor sulphide stockwork						
						– oxidized along fractures						
RX 52539	ROCK		GRAB			– on road at 113+10N / 99+35E	Sample sent for Whole Rock and INAA analysis					
						– intermediate volcanic tuff/flow?						
						– light grey color, minor thin alteration bands						
						– altered portions not collected in sample						
						– sample for whole rock analysis						
						– <1 % very fine grained pyrite						
RX 52540	ROCK		GRAB			– at 113+00N/101+50E in creek gorge	Sample sent for Whole Rock and INAA analysis					
						– massive, intermediate to mafic flow						
						– fine grained, homogeneous						
						– no alteration, < 0.5 % fine disseminated pyrite						
						– minor limonite on fractures in sample						
						– cleaned sample as best as possible						
						– calcite veining observed in outcrop, not in sample						
						– bedding at 010 deg. dipping subvertically						
RX 52541	ROCK		GRAB			– at 113+00N/103+30E	Sample sent for Whole Rock and INAA analysis					
						– pillow basalt – andesite?						
						– up to 3% calcite veining						
						– weak to no alteration, little to no sulphides						
						– weak weathering – fairly fresh						

IETS

TRAVERSE NUMBER: ______ PROJECT: **CM Property** GEOLOGIST(S): **S. Casselman**

N.T.S: **92P / 08E** AREA: **Barriere, B.C.** DATE: **November, 1993**

SAMPLE NUMBER	SAMPLE TYPE RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm / % / g/t) Cu ppm	Zn ppm	Pb ppm	Ag ppm	Au ppb	
RX 52542	ROCK		GRAB			– at 113+25N/ 101+25E	33	28	< 2	< 0.2	75	
						– quartz–calcite vein in andesite/basalt flow/tuff						
						– possibly some barite, 1% pyrite, sphalerite?						
RX 52543	ROCK		GRAB			– at 112+50N/ 94+50E	Sample sent for Whole Rock and INAA analysis					
						– massive basalt/andesite? flow						
						– homogeneous, fine to medium grained						
						– no alteration, little to no sulphides						
						– minor limonite on fracture surfaces						
RX 52544	ROCK		GRAB			– at 113+00N/92+80E	Sample sent for Whole Rock and INAA analysis					
						– massive basalt/andesite? flow						
						– homogeneous, fine to medium grained						
						– no alteration, little to no sulphides						
						– rare calcite veinlets (not included in sample)						
						– fairly fresh – little limonite on fracture surfaces						
RX 52545	ROCK		GRAB			– at 113+00N/95+00E	14	18	< 2	< 0.2	< 5	
						– angular chert boulders in trench mixed with graphitic sediments with minor dolomite						
						– ~ 1 % pyrite – barite?						
RX 52546	ROCK		GRAB			– at 103+00N/97+00E	45	34	< 2	< 0.2	< 5	
						– subcrop just west of road in area which has been logged within the last year						
						– numerous angular pieces of chert horizon in cat tracks						
						– chert appears to be locally derived						
						– light grey laminated chert						
						– up to 1% disseminated pyrite						
						– some pieces very gossanous						
						– sample for whole rock and ICP analysis						

IETS

TRAVERSE NUMBER: ______ PROJECT: **CM Property** GEOLOGIST(S): **S. Casselman**

N.T.S: **92P / 08E** AREA: **Barriere, B.C.** DATE: **November, 1993**

SAMPLE NUMBER	SAMPLE TYPE: RX Rock, Talus	SAMPLE TYPE: SX Stream Silt, Soil	SAMPLE TYPE: Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm / % / g/t) Cu ppm	Zn ppm	Pb ppm	Ag ppm	Au ppb	
RX 52547	ROCK		GRAB			– at 103+00N/95+50E	11	16	< 2	< 0.2	< 5	
						– siliceous volcanic breccia with angular fragments of chert in basalt/andesite matrix – ash tuff?						
						– very hard, concoidal fracture						
						– < 1 % fine disseminsted pyrite						
RX 52548	ROCK		GRAB			– at 103+00N/95+00E	Sample sent for Whole Rock and INAA analysis					
						– amygdaloidal basalt flow						
						– amygdules filled with calcite and epidote						
						– weak alteration, poor sample for whole rock analysis						
						– weathered						
RX 52549	ROCK		GRAB			– at 103+00N/97+25E	Sample sent for Whole Rock and INAA analysis					
						– massive basalt to andesite flow						
						– homogeneous fine– to medium grained						
						– no alteration, no sulphides						
						– good sample – no weathering						
RX 52550	ROCK		GRAB			– at 124+00N/95+25E	Sample sent for Whole Rock and INAA analysis					
						– massive, homogeneous, fine grained basalt/andesite? flow						
						– no alteration, minor calcite veinlets (<1%, 1–2 mm)						
						– no calcite in sample						
						– rare very fine grained pyrite						
						– minor iron staining on fractures						
						– sample from large outcrop/subcrop in talus slope, believed to be at or near source						
RX 52551	ROCK		GRAB			– at 124+30N/94+25E	80	76	< 2	< 0.2	< 5	
						– light grey chert						
						– up to 30 % calcite filling fractures						
						– fairly fractured and brittle						
						– slightly laminated						
						– up to 10 % limonite on fractures						
						– little to no sulphide mineralization						

IETS

TRAVERSE NUMBER: ____ PROJECT: **CM Property** GEOLOGIST(S): **S. Casselman**

N.T.S: **92P / 08E** AREA: **Barriere, B.C.** DATE: **November, 1993**

SAMPLE NUMBER	SAMPLE TYPE RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm / % / g/t) Cu ppm	Zn ppm	Pb ppm	Ag ppm	Au ppb	
RX 52552	ROCK		GRAB			– at 124+30N/94+20E	Sample sent for Whole Rock and INAA analysis					
						– massive? basalt flow						
						– quite fractured with up to 10% spary calcite filling						
						fractures up to 1 cm wide						
						– moderately weathered						
						– little to no sulphides visible						
RX 52553	ROCK		GRAB			– at 124+00N/93+75E, on cliff in Newhykulston Creek	Sample sent for Whole Rock and INAA analysis					
						– very hard – concoidal fracture						
						– fine– to medium grained						
						– gabbroic subvolcanic flow or basalt flow						
						– no alteration, < 0.5 % pyrite						
						– 3 % white plagioclase crystals, rounded						
						– much more competent than surrounding basalt, which						
						is highly fractured						
RX 52554	ROCK		GRAB			– at 123+85N/97+00E	Sample sent for Whole Rock and INAA analysis					
						– subcrop of pillow basalt						
						– large angular piece, numerous pillow basalt boulders						
						nearby						
						– fine grained medium– to dark grey–green						
						– minor (5 %) of selvage in sample						
						– small amount of weathered surface in sample						
RX 52555	ROCK		GRAB			– at 124+00N/98+60E	Sample sent for Whole Rock and INAA analysis					
						– massive? basalt/andesite						
						– trace of coarse disseminated pyrite						
						– weakly altered						
						– weak foliation at 010 deg., dipping steeply east						
						– sample slightly weathered						

IETS

TRAVERSE NUMBER: PROJECT: CM Property GEOLOGIST(S): S. Casselman

N.T.S: 92P / 08E AREA: Barriere, B.C. DATE: November, 1993

SAMPLE NUMBER	SAMPLE TYPE RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel	SAMPLE LENGTH, WIDTH, AREA	LATITUDE LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm / % / g/t) Cu ppm	Zn ppm	Pb ppm	Ag ppm	Au ppb	
RX 52556	ROCK		GRAB			– at 117+75N/96+50E	< 1	8	< 2	< 0.2	< 5	
						– chert – very dirty (ie. silty)						
						– hard, fairly competent and resistent layer						
						– fractures coated with calcite						
						– outcrops on west bank of Newhykulston Creek						
						– orientation at 010 deg. dipping steeply						
RX 52557	ROCK		DDH core	0.2 m		– sample from DDH CM–88–7 at 36.0 to 36.2 m	Sample sent for Whole Rock and INAA analysis					
RX 52558	ROCK		DDH core	0.1 m		– sample from DDH CM–88–7 at 43.8 to 43.9 m	Sample sent for Whole Rock and INAA analysis					
RX 52559	ROCK		DDH core	0.2 m		– sample from DDH CM–88–7 at 65.5 to 65.7 m	Sample sent for Whole Rock and INAA analysis					
RX 52560	ROCK		DDH core	0.2 m		– sample from DDH CM–88–11 at 54.0 to 54.2 m	Sample sent for Whole Rock and INAA analysis					
						– hangingwall basalt						
RX 52561	ROCK		DDH core	0.2 m		– sample from DDH CM–88–11 at 84.5 to 84.7 m	Sample sent for Whole Rock and INAA analysis					
						– chert						
RX 52562	ROCK		DDH core	0.2 m		– sample from DDH CM–88–9 at 23.0 to 23.2 m	Sample sent for Whole Rock and INAA analysis					
						– footwall basalt						
RX 52563	ROCK		DDH core	0.2 m		– sample from DDH CM–88–13 at 102.1 to 102.3 m	Sample sent for Whole Rock and INAA analysis					
RX 52564	ROCK		DDH core	0.1 m		– sample from DDH CM–88–13 at 115.5 to 115.6 m	Sample sent for Whole Rock and INAA analysis					
RX 52565	ROCK		DDH core	0.2 m		– sample from DDH CM–88–13 at 82.0 to 82.2 m	Sample sent for Whole Rock and INAA analysis					
						– mafic tuff above mineralization and fault zone						

RECEIVED JUN 2 5 1993

INCO

INCO EXPLORATION AND TECHNICAL SERVICES INC.
MEMORANDUM

Petrographic Report

TO J. Morin ✓

FROM B. C. Jago DATE June 24, 1993

SUBJECT **BRITISH COLUMBIA/KAMLOOPS: TEXTURAL ANALYSIS OF SULPHIDE- AND MAGNETITE-RICH ROCKS FROM THE CM PROPERTY, ADAMS PLATEAU, B. C. NTS: 92-P-8, 9**

Textural information was recorded and interpreted from sulphide- and magnetite-rich rocks (RX052520 and RX052523, respectively) suspected to be part of a mixed volcanic-chemical/clastic sedimentary environment known to host base metal mineralization. The samples form part of a larger suite collected during a field visit to the CM Cu prospect that is located approximately 12 km north of Barrier, B.C. and 30 km northwest of the Samatosum Cu-Zn Mine. The property most recently has been worked by B.P. Resources and Minnova who declined to further their interest. The property is available, once again, for option (see attachment).

Conclusions

The sulphide-rich samples (RX052520) are interpreted to be mixed sulphide-silicate-rich chemical sediments. It is not possible to determine if these were deposited in a proximal or distal sedimentary or volcanic environment, although the high chalcopyrite content strongly suggests a proximal environment. The magnetite-rich samples (RX052523) are interpreted as a weakly sulphide-mineralized, banded oxide/silicate facies iron formation. Magnetite-rich assemblages from intrusive-related skarns generally are distinguished from this type of occurrence by coarser grained magnetite.

Additional exploration on this property is recommended in light of the syngenetic nature of the sulphide mineralization provided that a due-diligence review of previous exploration data is favourable.

Sulphide-rich Samples

The sulphide-rich samples (RX052520) are composed of porous, weakly recrystallized, very finely banded and interlaminated assemblages composed of major pyrite (60-85%) and lesser amounts of chalcopyrite (5-30%) and chert (5-15%). Large (5 x 15 mm) pore spaces are lined with euhedral pyrite and fracture fillings often are filled by secondary goethite. Chalcopyrite is concentrated in chert-rich laminations. In relatively strongly deformed portions of the samples, chalcopyrite has been remobilized into adjacent pyrite-dominated layers forming flame-like structures. Deformation has resulted in remobilization, boudinage, in-situ rotation and brecciation of chert layers with accompanying sulphide remobilization into strain shadows. None of the pyrite has a frambroidal form, which suggests that the assemblage was not deposited in a very shallow, aqueous environment.

Magnetite-rich Samples

The magnetite-rich samples (RX052523) are composed of modestly folded (?), inter-banded, massive to modestly foliated, extremely fine grained magnetite (2-4 cm thick), fine to medium grained, strongly intergrown magnetite-amphibole (2-4 cm thick) and intensely foliated, medium grained amphibole-sericite-rich (1 cm thick) assemblages. Where magnetite is intergrown with amphibole, it is coarse grained compared to magnetite in the essentially mono-mineralic, magnetite-rich bands. Narrow, 1-2 mm wide pyrite-stringers cross-cut the magnetite- and magnetite-amphibole-rich bands and are largely weathered to goethite. Magnetite-amphibole-rich assemblages contain 1-2% pyrite and chalcopyrite which is finely intergrown with the host oxide and silicate.

Bruce Jago

/dh
Attachment
x.c.: R. A. Alcock P. J. Rush File

Appendix III

Geochemical Analytical Certificates

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: INCO EXPLORATION AND TECHNICAL SERVICES INC.

2690 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project : PEPD
Comments: ATTN: JIM MORIN CC: SCOTT CASSELMAN

Certificate Date: 29-APR-93
Invoice No. : I9313505
P.O. Number :
Account :KPJ

CERTIFICATE OF ANALYSIS A9313505

SAMPLE	PREP CODE		Al2O3 %	CaO %	Cr2O3 %	Fe2O3 %	K2O %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	TiO2 %	LOI %	TOTAL %	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Y ppm	Zr ppm
RX052517	208	274	14.75	5.84	< 0.01	11.80	0.30	6.22	0.17	5.68	0.25	47.89	1.85	5.10	99.86	240	< 10	< 5	80	40	110
RX052519	208	274	7.82	0.32	< 0.01	6.99	1.46	2.58	0.26	0.13	0.24	74.18	0.47	3.75	98.21	>10000	< 10	50	30	20	110
RX052524	208	274	5.07	0.20	< 0.01	7.15	0.02	5.46	0.04	0.08	0.08	78.21	0.27	4.51	101.10	5060	< 10	< 5	< 10	< 10	60

Activation Laboratories Ltd.   Work Order: 5097   Report: 5065

Sample description	AU PPB	AG PPM	AS PPM	BA PPM	BR PPM	CA %	CO PPM	CR PPM	CS PPM	FE %	HF PPM	HG PPM	IR PPB	MO PPM	NA PPM	NI PPM	RB PPM	SB PPM	SC PPM	SE PPM	SN %	SR %	TA PPM	TH PPM
RX 052517	5	<5	<2	270	<1	3	39	130	<2	7.77	3.1	<1	<5	<5	40800	<50	<30	0.2	36	<5	<0.01	<0.05	<1	<0.5
RX 052519	20	<5	41	10000	<1	<1	11	170	<2	4.65	4.1	<1	<5	<5	488	190	37	6.4	12	12	<0.01	<0.05	<1	4.5
RX 052524	<5	<5	8	5100	<1	<1	11	72	<2	4.75	2.4	<1	<5	8	215	<50	<30	1.4	5.1	<5	<0.01	<0.05	<1	2.7

Activation Laboratories Ltd. Work Order: 5097 Report: 5065

Sample description	U PPM	W PPM	ZN PPM	LA PPM	CE PPM	ND PPM	SM PPM	EU PPM	TB PPM	YB PPM	LU PPM	Mass g
RX 052517	<0.5	<4	92	4.3	13	11	3.6	1.3	0.9	3.7	0.49	1.944
RX 052519	2.2	<4	200	22.5	41	21	4.4	1.2	0.7	2.7	0.40	1.802
RX 052524	1.1	<4	96	7.2	16	7	1.2	0.4	<0.5	1.2	0.19	1.777

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: INCO EXPLORATION AND TECHNICAL SERVICES INC.

2690 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project : PEPD
Comments: ATTN: JIM MORIN CC: SCOTT CASSELMAN

Certificate Date: 03-MAY-93
Invoice No. : I9313504
P.O. Number :
Account :KPJ

CERTIFICATE OF ANALYSIS A9313504

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
RX052518	205	274	4230	30.0	0.77	300	< 0.5	< 2	0.08	11.0	123	86	>10000	22.9	0.02	0.44
RX052521	205	274	80	4.0	0.13	70	< 0.5	< 2	0.11	< 0.5	161	15	>10000	>25.0	0.04	1.15
RX052522	205	274	60	3.6	0.14	80	< 0.5	< 2	0.25	< 0.5	136	20	>10000	>25.0	0.04	1.38

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: INCO EXPLORATION AND TECHNICAL SERVICES INC.

2690 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project : PEPD
Comments: ATTN: JIM MORIN CC: SCOTT CASSELMAN

Certificate Date: 03-MAY-93
Invoice No. : I9313504
P.O. Number :
Account :KPJ

CERTIFICATE OF ANALYSIS A9313504

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)			
RX052518	205	274	205	146	0.03	23	20	180	6	0.05	52	90	3860			
RX052521	205	274	2050	293	0.05	2	< 10	< 2	3	< 0.01	4	80	428			
RX052522	205	274	2530	145	0.04	3	< 10	< 2	10	< 0.01	6	90	400			

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: INCO EXPLORATION AND TECHNICAL SERVICES INC.

2690 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project : PEPD
Comments: ATTN: JIM MORIN CC: SCOTT CASSELMAN

Page Number : 1
Total Pages : 1
Certificate Date: 11-MAY-93
Invoice No. : I9313918
P.O. Number : NONE
Account : KPJ

CERTIFICATE OF ANALYSIS A9313918

SAMPLE	PREP CODE		Cu %
RX052518	244	--	8.65
RX052521	244	--	4.40
RX052522	244	--	4.22

CERTIFICATION: ACSmithe

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: INCO EXPLORATION AND TECHNICAL SERVICES INC.

2690 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project :
Comments:

Page Number :1
Total Pages :1
Certificate Date: 03-JUN-93
Invoice No. : I9314796
P.O. Number :
Account :KPJ

CERTIFICATE OF ANALYSIS A9314796

SAMPLE	PREP CODE	Al_2O_3 %	CaO %	Cr_2O_3 %	Fe_2O_3 %	K_2O %	MgO %	MnO %	Na_2O %	P_2O_5 %	SiO_2 %	TiO_2 %	LOI %	TOTAL %	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Y ppm	Zr ppm
RX052539	208 274	15.76	9.40	< 0.01	11.35	0.11	7.87	0.19	3.06	0.13	45.43	1.36	4.44	99.11	70	< 10	< 5	150	30	50
RX052540	208 274	14.65	7.94	< 0.01	11.36	0.52	6.80	0.17	4.31	0.17	49.10	1.76	2.21	99.00	50	< 10	14	140	40	90
RX052541	208 274	13.32	12.11	< 0.01	10.95	0.15	6.33	0.19	1.33	0.13	50.01	1.58	2.64	98.75	30	< 10	7	70	40	80
RX052543	208 274	14.16	9.27	< 0.01	10.33	0.44	8.00	0.17	2.58	0.14	48.92	1.46	3.22	98.70	310	< 10	16	180	40	90
RX052544	208 274	14.13	9.94	0.02	10.64	0.20	8.24	0.17	2.79	0.15	48.50	1.56	3.36	99.70	420	< 10	12	180	30	80
RX052546	299 200	6.03	0.77	< 0.01	2.76	0.92	1.28	0.06	1.00	0.12	85.34	0.35	1.98	100.60	1190	< 10	35	40	10	80
RX052547	299 200	6.66	1.81	< 0.01	3.56	0.15	2.46	0.10	1.76	0.33	81.48	0.42	1.90	100.65	490	< 10	12	120	20	130
RX052548	208 274	14.76	9.53	0.01	9.15	1.77	9.15	0.15	2.85	0.52	46.43	1.32	3.29	98.93	930	20	39	860	20	120
RX052549	208 274	15.44	8.94	< 0.01	10.55	0.46	6.66	0.17	3.37	0.17	48.45	1.65	3.17	99.04	340	< 10	19	170	30	80
RX052550	208 274	14.91	9.09	< 0.01	10.54	0.35	6.97	0.18	3.63	0.16	48.15	1.59	3.62	99.20	310	< 10	12	200	30	80
RX052551	299 200	9.23	0.89	< 0.01	4.36	2.26	1.60	0.08	0.48	0.11	78.03	0.49	3.03	100.55	1000	< 10	93	20	10	80
RX052552	208 274	14.06	6.91	< 0.01	9.50	0.56	5.08	0.15	3.68	0.16	49.60	1.47	8.29	99.47	490	< 10	19	250	30	70
RX052553	208 274	15.04	13.06	0.01	10.61	0.23	6.69	0.18	1.11	0.13	46.35	1.49	3.66	98.56	40	< 10	12	40	30	70
RX052554	208 274	13.21	10.41	0.01	10.04	0.19	6.11	0.18	2.50	0.14	52.43	1.50	2.67	99.39	60	< 10	< 5	90	30	100
RX052555	208 274	16.44	9.15	< 0.01	12.14	0.21	5.57	0.20	3.33	0.19	47.74	1.90	2.76	99.64	80	< 10	< 5	190	40	120
RX052556	299 200	6.06	0.60	0.03	2.16	0.15	1.40	0.02	2.46	0.08	85.87	0.27	1.25	100.35	170	< 10	6	20	< 10	70
RX052557	208 274	13.76	11.01	0.02	9.81	0.05	7.23	0.18	3.39	0.13	48.90	1.38	3.42	99.28	50	< 10	< 5	40	30	80
RX052558	208 274	6.66	4.56	0.04	2.24	0.35	1.85	0.04	2.33	0.15	77.86	0.40	4.27	100.75	200	< 10	7	30	20	80
RX052559	208 274	14.15	8.81	0.04	10.73	0.37	8.67	0.18	3.32	0.17	47.98	1.49	3.35	99.26	570	< 10	7	170	30	90
RX052560	208 274	14.27	9.25	< 0.01	11.22	0.13	8.11	0.19	3.38	0.16	45.39	1.63	5.01	98.75	400	< 10	< 5	140	30	100
RX052561	208 274	7.77	4.22	0.02	2.98	0.24	2.57	0.08	1.33	0.32	74.48	0.40	5.87	100.30	480	< 10	6	50	20	80
RX052562	208 274	13.25	8.29	< 0.01	9.57	0.53	5.10	0.16	3.41	0.17	49.12	1.37	8.49	99.47	620	< 10	13	110	30	110

CERTIFICATION: Hart Bichler

Activation Laboratories Ltd.   Work Order: 5322   Report: 5254

Sample description	AU PPB	AG PPM	AS PPM	BA PPM	BR PPM	CA %	CO PPM	CR PPM	CS PPM	FE %	HF PPM	HG PPM	IR PPB	MO PPM	NA PPM	NI PPM	RB PPM	SB PPM	SC PPM	SE PPM	SN %	SR %	TA PPM	TH PPM
RX 052539	<5	<5	5	160	<1	6	41	270	<2	7.38	2.1	<1	<5	<5	22100	<67	<30	4.4	35	<5	<0.01	<0.05	<1	<0.5
RX 052540	<5	<5	<2	<100	<1	6	42	200	2	7.48	3.1	<1	<5	<5	31700	<72	<30	0.3	34	<5	<0.01	<0.05	<1	<0.5
RX 052541	<5	<5	4	<100	<1	9	40	220	<2	7.18	2.6	<1	<5	<5	9850	<57	<30	0.4	33	<5	<0.01	<0.05	<1	<0.5
RX 052543	<5	<5	<2	300	<1	8	42	300	3	6.84	3.0	<1	<5	<5	19000	370	<30	0.3	37	<5	<0.01	<0.05	<1	<0.5
RX 052544	<5	<5	<2	130	<1	8	44	360	3	7.29	2.8	<1	<5	<5	21100	<69	<30	0.5	39	<5	<0.01	<0.05	<1	<0.5
RX 052548	<5	<5	<2	820	<1	7	45	400	<2	6.24	3.1	<1	<5	<5	21800	<66	<30	0.6	27	<5	<0.01	0.12	2	8.4
RX 052549	<5	<5	<2	480	<1	9	58	250	<2	10.7	4.5	2	<5	<5	37700	<100	<30	0.5	50	<5	<0.01	<0.05	<1	0.8
RX 052550	<5	<5	<2	410	<1	7	39	200	<2	7.21	2.8	<1	<5	<5	27300	390	<30	<0.2	36	<5	<0.01	<0.05	<1	<0.5
RX 052552	<5	<5	8	410	<1	5	39	210	<2	6.38	2.8	<1	<5	<5	27300	<69	<30	1.1	32	<5	<0.01	<0.05	<1	<0.5
RX 052553	<5	<5	<2	120	<1	10	41	280	<2	7.17	2.6	<1	<5	<5	8440	<57	<30	0.3	35	<5	<0.01	<0.05	<1	<0.5
RX 052554	<5	<5	21	160	<1	8	36	230	<2	6.67	2.7	<1	<5	<5	18100	<64	<30	1.4	31	<5	<0.01	<0.05	<1	<0.5
RX 052555	<5	<5	3	<100	<1	6	37	40	<2	8.21	3.6	<1	<5	<5	24400	<68	40	0.6	31	<5	<0.01	<0.05	<1	<0.5
RX 052557	<5	<5	<2	<100	<1	8	42	260	<2	6.61	2.3	<1	<5	<5	25100	<65	<30	0.3	35	<5	<0.01	<0.05	<1	0.6
RX 052558	24	<5	<2	230	<1	4	10	320	<2	1.54	1.9	<1	<5	<5	16900	<50	<30	0.9	12	<5	<0.01	<0.05	<1	3.7
RX 052559	<5	<5	<2	460	<1	8	45	320	<2	7.11	3.0	<1	<5	<5	24100	<65	<30	0.2	39	<5	<0.01	<0.05	<1	0.5
RX 052560	6	<5	3	340	<1	7	43	230	<2	7.52	2.7	<1	<5	<5	24600	<67	<30	0.8	38	<5	<0.01	<0.05	<1	<0.5
RX 052561	<5	<5	<2	390	<1	3	10	220	3	1.88	1.9	<1	<5	<5	9200	230	<30	0.3	10	<5	<0.01	<0.05	<1	4.9
RX 052562	<5	<5	18	470	<1	6	33	100	<2	6.18	3.4	<1	<5	<5	24300	<57	31	1.7	29	<5	<0.01	<0.05	<1	<0.5

Activation Laboratories Ltd.   Work Order: 5322   Report: 5254

Sample description	U PPM	W PPM	ZN PPM	LA PPM	CE PPM	ND PPM	SM PPM	EU PPM	TB PPM	YB PPM	LU PPM	Mass g
RX 052539	1.3	<4	210	5.0	14	9	2.9	1.5	<0.5	2.9	0.45	1.602
RX 052540	<0.5	<4	180	5.1	15	10	3.7	1.4	1.1	3.7	0.56	1.587
RX 052541	<0.5	<4	180	4.4	15	12	3.3	1.4	<0.5	3.5	0.54	1.779
RX 052543	0.7	<4	120	4.6	15	9	3.3	1.3	0.8	3.4	0.52	1.732
RX 052544	<0.5	<4	110	4.9	16	12	3.4	1.4	<0.5	3.4	0.54	1.679
RX 052548	1.7	<4	130	63.6	94	39	6.4	2.2	<0.5	1.9	0.38	1.750
RX 052549	1.2	<4	<50	7.4	23	14	5.1	2.1	<0.5	5.2	0.81	1.063
RX 052550	<0.5	<4	85	5.2	16	13	3.5	1.2	0.9	3.4	0.57	1.541
RX 052552	<0.5	<4	<50	4.3	14	9	3.0	0.9	<0.5	3.2	0.46	1.623
RX 052553	0.6	<4	200	4.4	15	9	3.3	1.3	1.0	3.4	0.53	1.951
RX 052554	<0.5	<4	<50	4.1	14	10	3.1	1.2	1.0	3.2	0.50	1.615
RX 052555	<0.5	<4	200	5.2	18	12	4.1	1.5	<0.5	4.2	0.71	1.645
RX 052557	<0.5	<4	150	3.7	12	10	3.0	1.1	0.9	3.3	0.51	1.827
RX 052558	1.2	<4	51	17.2	27	19	3.8	0.8	<0.5	2.3	0.39	1.731
RX 052559	<0.5	<4	120	4.7	14	9	3.2	1.3	1.0	3.2	0.52	1.972
RX 052560	<0.5	<4	<50	4.4	14	9	3.4	1.2	0.9	3.5	0.54	1.635
RX 052561	1.7	<4	99	23.8	36	19	4.2	1.0	<0.5	2.4	0.41	1.733
RX 052562	<0.5	<4	<50	5.0	15	11	3.5	1.1	1.1	3.9	0.60	1.870

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: INCO EXPLORATION AND TECHNICAL SERVICES INC.

2690 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project :
Comments:

Certificate Date: 01-JUN-93
Invoice No. : I9314795
P.O. Number :
Account : KPJ

CERTIFICATE OF ANALYSIS A9314795

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
RX052542	205	274	75	< 0.2	1.56	50	< 0.5	< 2	14.20	< 0.5	19	158	33	3.41	0.45	1.19
RX052545	205	274	< 5	< 0.2	2.94	290	0.5	< 2	0.37	< 0.5	10	277	14	1.30	0.24	0.84
RX052546	205	274	< 5	< 0.2	3.03	1170	0.5	< 2	0.47	< 0.5	13	143	45	1.81	0.68	0.72
RX052547	205	274	< 5	< 0.2	3.49	480	0.5	< 2	1.10	< 0.5	17	192	11	2.24	0.10	1.40
RX052551	205	274	< 5	< 0.2	4.84	980	0.5	< 2	0.54	< 0.5	15	77	80	2.83	1.64	0.91
RX052556	205	274	< 5	< 0.2	3.14	160	< 0.5	< 2	0.34	< 0.5	9	172	< 1	1.35	0.11	0.79

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: INCO EXPLORATION AND TECHNICAL SERVICES INC.

2690 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project :
Comments:

Certificate Date: 01-JUN-93
Invoice No. : I9314795
P.O. Number :
Account : KPJ

CERTIFICATE OF ANALYSIS A9314795

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
RX052542	205	274	1485	< 1	0.04	33	240	< 2	200	0.16	74	< 10	28
RX052545	205	274	430	3	1.30	21	660	< 2	46	0.16	60	< 10	18
RX052546	205	274	425	2	0.74	17	430	< 2	46	0.19	58	< 10	34
RX052547	205	274	650	< 1	1.29	31	1400	< 2	116	0.22	80	< 10	16
RX052551	205	274	545	< 1	0.40	27	330	< 2	21	0.27	73	< 10	76
RX052556	205	274	170	3	1.64	17	160	< 2	28	0.14	61	< 10	8

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: INCO EXPLORATION AND TECHNICAL SERVICES INC.
ATTN: SCOTT CASSELMAN
2690 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project : 60501
Comments: ATTN: SCOTT CASSELMAN

Page Number :1
Total Pages :1
Certificate Date: 12-JUL-93
Invoice No. :19316035
P.O. Number :
Account :KPJA

CERTIFICATE OF ANALYSIS A9316035

SAMPLE	PREP CODE		Al2O3 %	CaO %	Cr2O3 %	Fe2O3 %	K2O %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	TiO2 %	LOI %	TOTAL %	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Y ppm	Zr ppm
RX 52563	208	274	7.13	0.68	0.04	8.37	0.03	4.88	0.06	< 0.01	0.53	72.56	0.40	3.60	98.29	>10000	< 10	< 5	10	30	100
RX 52564	208	274	14.50	5.55	0.06	11.71	0.11	6.56	0.18	1.27	0.23	46.90	1.53	9.76	98.36	380	< 10	< 5	40	30	90
RX 52565	208	274	8.20	0.91	0.04	14.73	0.03	5.07	0.20	< 0.01	0.67	62.58	0.51	4.94	97.89	150	< 10	< 5	20	30	120

CERTIFICATION: ________

Activation Laboratories Ltd. Work Order: 5276 Report: 5210

Sample description	AU PPB	AG PPM	AS PPM	BA PPM	BR PPM	CA %	CO PPM	CR PPM	CS PPM	FE %	HF PPM	HG PPM	IR PPB	MO PPM	NA PPM	NI PPM	RB PPM	SB PPM	SC PPM	SE PPM	SN %	SR %	TA PPM	TH PPM
RX 52563	11	<5	8	11000	<1	<1	16	160	<2	6.00	5.0	<1	<5	6	243	<50	<30	1.2	11	20	<0.01	<0.05	<1	5.0
RX 52564	<5	<5	<2	350	<1	4	45	250	<2	8.25	2.8	<1	<5	<5	16800	<50	<30	0.4	37	<5	<0.01	<0.05	<1	0.6
RX 52565	9	<5	5	220	<1	<1	39	160	2	10.3	3.0	<1	<5	20	427	170	<30	2.8	14	8	<0.01	<0.05	<1	4.9

Activation Laboratories Ltd. Work Order: 5276 Report: 5210

Sample description	U PPM	W PPM	ZN PPM	LA PPM	CE PPM	ND PPM	SM PPM	EU PPM	TB PPM	YB PPM	LU PPM	Mass g
RX 52563	1.1	<4	220	32.0	49	33	6.8	2.0	1.1	3.8	0.62	1.118
RX 52564	<0.5	<4	270	4.3	16	10	3.3	1.1	0.9	3.6	0.53	0.8660
RX 52565	2.8	<4	330	31.4	48	38	7.0	1.8	1.1	4.5	0.71	1.003

N
NEWHYKULSTON CREEK
NEWHYKULSTON CREEK FAULT ZONE
L126N
L124N
L122N
L120N
L118N
L116N
L114N
L112N
L110N
L108N
L106N
L104N
L102N
CM 5
CM 3
CM 2
RX 052551
RX 052550
RX 052552
RX 052553
RX 052554
RX 052555
RX 052517
RX 052556
LOWER SHOWING
(Massive Sulphide horizon)
RX 052561
RX 052560
RX 052520
RX 052518
CM-88-11
CM-88-9
RX 052562
RX 052519
RX 052539
RX 052542
RX 052540
RX 052541
RX 052544
RX 052545
RX 052543
CM-88-1
CM-88-10
RX 052521
RX 052522
RX 052523
CM-88-8
CM-88-17
CM-88-6
RX 052524
CM-88-12
UPPER SHOWING
(Massive Magnetite in chert horizon)
CM-88-16
CM-88-2
CM-88-14
CM-88-13
RX 052564
RX 052563
RX 052565
CM-88-15
GOLD ZONE
CM-88-4
MCM-89-4
CM-87-1
MCM-89-3
MCM-89-1
CM-87-2
CM-90-8
CM-88-3
MCM-89-5
MCM-89-2
CM-88-5
CM-90-7
RX 052559
RX 052558
RX 052557
CM-88-7
RX 052548
RX 052547
RX 052546
RX 052549
x CHINOOK MOUNTAIN
CM-90-6
NEWHYKULSTON CREEK
FAULT ZONE
LEGEND
5 GRANODIORITE
4 ARGILLITE
3 CHERT
2 GABBRO
1 BASALT
1a MASSIVE BASALT
1b PILLOW BASALT
1c BASALT BRECCIA
1d AMYGDALOIDAL BASALT
ROCK SAMPLE ANALYZED FOR 32 ELEMENT ICP AND Au
ROCK SAMPLE ANALYZED BY WHOLE ROCK AND INAA ANALYSIS
ROCK SAMPLE SENT FOR PETROGRAPHIC STUDY
PULSE EM ANOMALY
CM-87-1 DIAMOND DRILL HOLE LOCATION
FAULT
GEOLOGICAL CONTACT
OUTCROP LOCATION
CLAIM LINES
ROAD
Scale 1:2500
0 50 100 150 200 250
METRES
AR 23155
INCO EXPLORATION AND TECHNICAL SERVICES INC.
Vancouver, B.C. V6C 2X8
Project: CM PROPERTY
Area: BARRIERE, B.C.
1993 COMPILATION MAP
SHEET
FIGURE 4
Supervisor: Jim Morin
Instrument:
Survey date:
Compiled by: Scott Casselman
Drawn by: Ian Casidy
Date drawn: 12/08/93
Revised: 07/12/94
Scale: 1 : 2500
File: CHI005.DWG
N.T.S. 92P/8E


700250
700500
700750
701000
701250
701500
701750
702000
702250
5691500
5691250
5691000
5690750
5690500
5690250
5690000
5689750
5689500
5689250
5689000
5688750
5688500
5688250
5688000
5687750
5687500
5687250
5687000
5686750
5686500
5686250
CM 7
CM 3
CM 5
CM 2
massive sulphide zone
LEGEND
—80— > 80 PPM Cu
—60— > 60 - 80 PPM Cu
—40— > 40 - 60 PPM Cu
50 0 50 100
Scale in Metres
INCO EXPLORATION AND TECHNICAL SERVICES INC.
CM CLAIMS
BARRIERE PROJECT - B.C.
1986-1990 SOIL SURVEYS
Copper (ppm)
DATE: SEP/93
PROJECT#: 164
AMS: 92P/8
SCALE 1: 5000
AR 23155

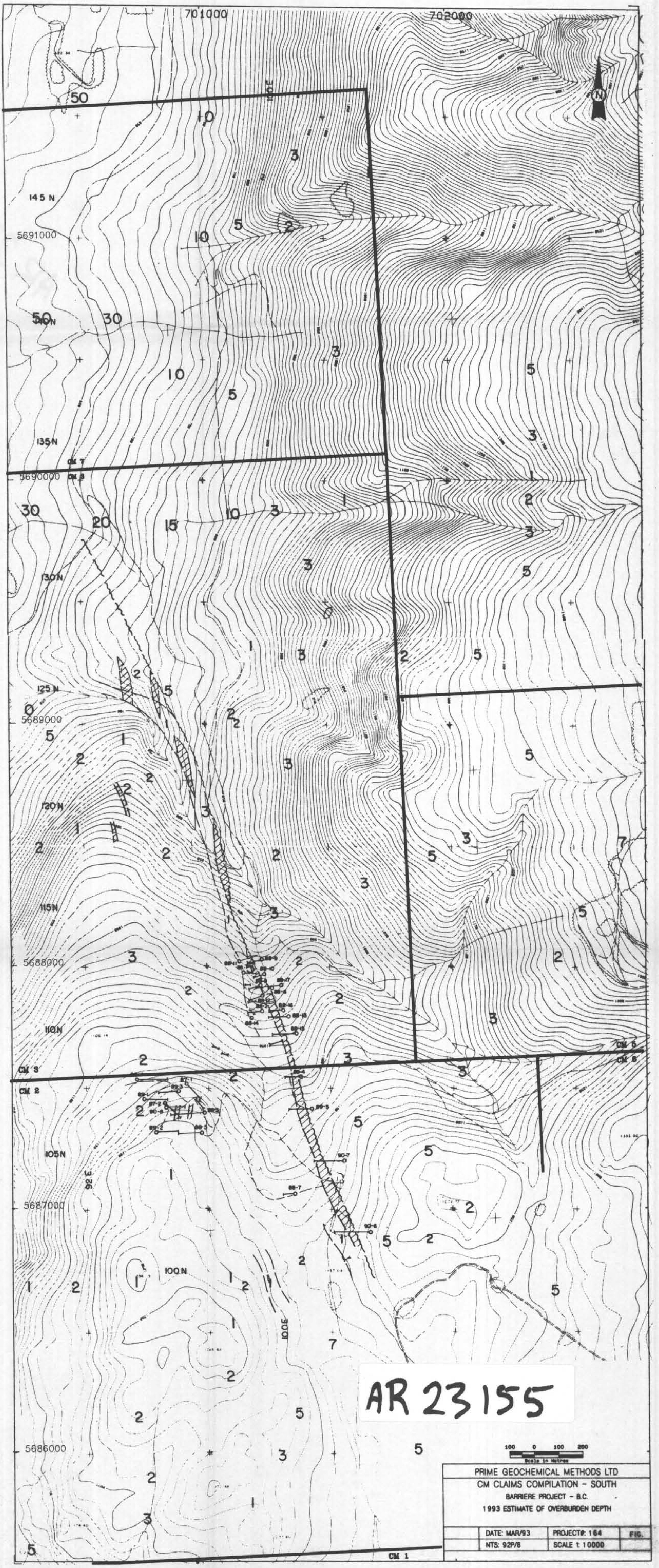
CM 7
CM 3
massive sulphide zone
CM 5
CM 3
CM 2
AR 23155
LEGEND
—75— >75 PPB Au
—25— >25-75 PPB Au
—10— >10-25 PPB Au
50 0 50 100
Scale in Metres
INCO EXPLORATION AND TECHNICAL SERVICES INC.
CM CLAIMS
BARRIERE PROJECT - B.C.
1986-1990 SOIL SURVEYS
Gold (ppb)
DATE: SEP/93
PROJECT#: 164
AMS: 92P/8
SCALE 1: 5000
700250
700500
700750
701000
701250
701500
701750
702000
702250
5691500
5691250
5691000
5690750
5690500
5690250
5690000
5689750
5689500
5689250
5689000
5688750
5688500
5688250
5688000
5687750
5687500
5687250
5687000
5686750
5686500

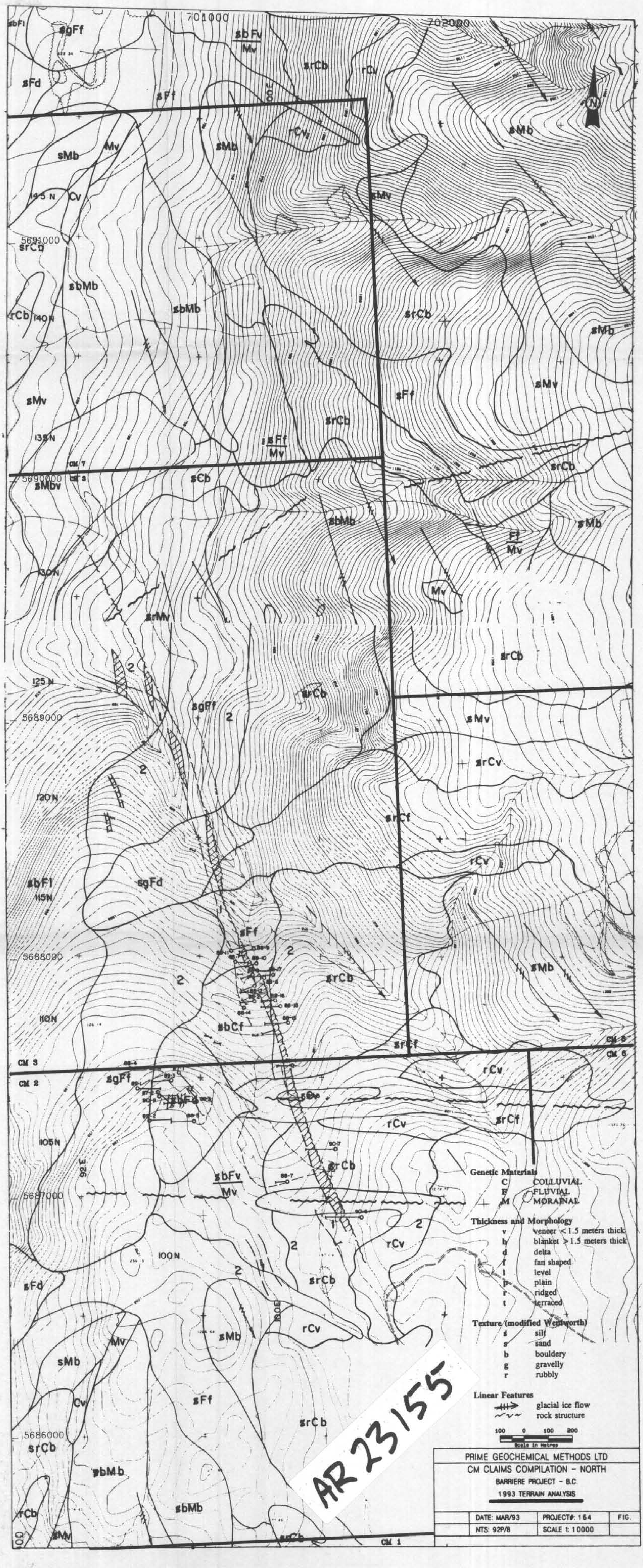

700250
700500
700750
701000
701250
701500
701750
702000
5691250
5691000
5690750
5690500
5690250
5689750
5689500
5689250
5689000
5688750
5688500
5688250
5688000
5687750
5687250
5687000
5686750
5686500
CM 7
CM 3
CM 5
CM 3
CM 2
AR 23155
50 0 50 100
Scale in Metres
INCO EXPLORATION AND TECHNICAL SERVICES INC.
CM CLAIMS
BARRIERE PROJECT - B.C.
1986-1990 ROCK CHIP SURVEYS
SAMPLE LOCATION MAP
DATE: SEPT/93
PROJECT#: 164
NTS: 92P/8
SCALE 1: 5000


700250
700500
700750
701000
701250
701500
701750
702000
702250
5691500
5691250
5691000
5690750
5690500
5690250
5690000
5689750
5689500
5689250
5689000
5688750
5688500
5688250
5688000
5687750
5687500
5687250
5687000
5686750
5686500
5686250
CM 7
CM 3
CM 5
CM 3
CM 2
massive sulphide zone
AR 23155
50 0 50 100
Scale in Metres
INCO EXPLORATION AND TECHNICAL SERVICES INC.
CM CLAIMS
BARRIERE PROJECT - B.C.
1986-1990 ROCK CHIP SURVEYS
Copper (ppm)
DATE: SEPT/93
PROJECT#: 164
NTS: 92P/8
SCALE 1: 5000


700250
700500
700750
701000
701250
701500
701750
702000
702250
5691500
5691250
5691000
5690750
5690500
5690250
CM 7
CM 3
5690000
5689750
5689500
5689250
5689000
5688750
5688500
5688250
5688000
massive sulphide zone
5687750
CM 5
CM 3
CM 2
5687500
5687250
5687000
5686750
5686500
5686250
AR 23155
50 0 50 100
Scale in Metres
INCO EXPLORATION AND TECHNICAL SERVICES INC.
CM CLAIMS
BARRIERE PROJECT - B.C.
1986-1990 ROCK CHIP SURVEYS
Gold (ppb)
DATE: SEPT/93
PROJECT#: 164
NTS: 92P/8
SCALE 1: 5000


700250
700500
700750
701000
701250
701500
701750
702000
702250
5691000
5691250
5691000
5690750
5690500
5690250
5690000
5689750
5689500
5689250
5689000
5688750
5688500
5688250
5688000
5687750
5687500
5687250
5687000
5686750
5686500
5686250
CM 7
CM 3
CM 5
CM 3
CM 2
AR 23155
50 0 50 100
Scale in Metres
INCO EXPLORATION AND TECHNICAL SERVICES INC.
CM CLAIMS
BARRIERE PROJECT - B.C.
1986-1990 SOIL SURVEYS
SAMPLE LOCATION MAP
DATE: SEPT/93
PROJECT#: 164
NTS: 92P/8
SCALE 1: 5000


701000
702000
N
50
10
3
145 N
5691000
5
2
50
140N
30
135N
CM 7
CM 8
5690000
30
20
15
1
130N
125 N
0
5689000
120N
115N
5688000
110N
CM 3
CM 2
105N
5687000
100N
100E
7
AR 23155
5686000
CM 5
CM 6
CM 1
100 0 100 200
Scale in Metres
PRIME GEOCHEMICAL METHODS LTD
CM CLAIMS COMPILATION - SOUTH
BARRIERE PROJECT - B.C.
1993 ESTIMATE OF OVERBURDEN DEPTH
DATE: MAR/93
PROJECT#: 164
FIG.
NTS: 92P/8
SCALE 1: 10000


701000
702000
5691000
5690000
5689000
5688000
5687000
5686000
CM 7
CM 3
CM 2
CM 5
CM 6
CM 1
sbFv
Mv
sFf
Mv
Ff
Mv
Genetic Materials
C COLLUVIAL
F FLUVIAL
M MORAINAL
Thickness and Morphology
v veneer <1.5 meters thick
b blanket >1.5 meters thick
d delta
f fan shaped
l level
p plain
r ridged
t terraced
Texture (modified Wentworth)
s silt
s sand
b bouldery
g gravelly
r rubbly
Linear Features
glacial ice flow
rock structure
100 0 100 200
Scale in Metres
PRIME GEOCHEMICAL METHODS LTD
CM CLAIMS COMPILATION - NORTH
BARRIERE PROJECT - B.C.
1993 TERRAIN ANALYSIS
DATE: MAR/93
PROJECT#: 164
FIG.
NTS: 92P/8
SCALE 1: 10000
AR 23155