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**ASSESSMENT REPORT  
ON THE  
RAP PROPERTY**

**Omineca Mining Division, British Columbia  
NTS 94C/3  
Latitude: 56°7' North  
Longitude: 125°5' West**

**Prepared For**

**DAVID G. DuPRE  
Vancouver, B.C.**

**Prepared By**

**Ernie G. Olfert  
800 - 900 West Hastings Street  
Vancouver, B.C.  
V6C 1E5**

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**22,808**

December 02, 1992

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## **1.0 SUMMARY**

The Rap (28 units) property was staked in March, 1992 and is registered in the name of David G. DuPré of Delta, B.C. The property is situated in north-central B.C., approximately 200 kilometres north of Fort St. James. Access to the property is via logging roads which originate at Fort St. James or MacKenzie.

The Rap property straddles the boundary of the Cassiar and Harper Ranch Terranes which, in the area of the claims, consists of basinal Devonian/Mississippian argillites of the Earn Group and Mississippian/Permian dacitic tuffs of the Lay Range assemblage. These basinal argillites are important hosts to Pb/Zn stratiform deposits to the north in the Kechika trough (i.e. the Cirque deposit with reserves of 32 million tons @ 7.9% Zn, 2.1% Pb, 48 g/t Ag. Cominco's stratiform Pb/Zn PAR showing is located about 2.5 km east of the Rap claims.

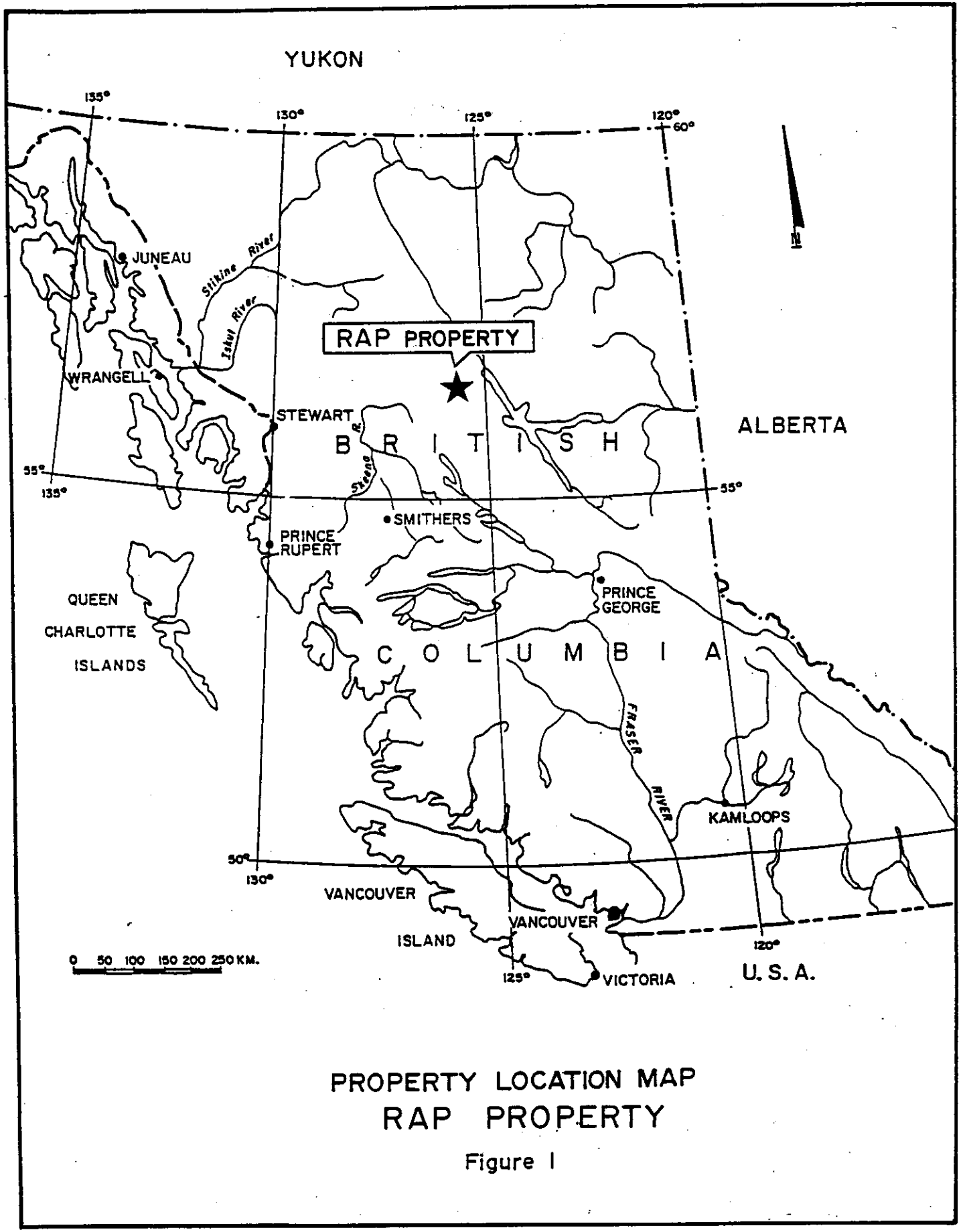
Field work done in 1992 consisted of contour stream and soil geochemical sampling over part of the claim group. A number of silt samples returned anomalous Zn values and one sample returned both Pb and Zn anomalous results. Most of the area is tree covered and characterized by minimal outcrop making exploration difficult.

## **2.0 INTRODUCTION**

This report on the Swan property was commissioned by David G. DuPré and is based on available published information, assessment files, research by Pegg (1992) and field work done on the property by the author during August of 1992.

### **2.1 Location and Access**

The Rap property is located in north-central British Columbia, some 200 kilometres north of the town of Fort St. James (Figure 1).



PROPERTY LOCATION MAP  
RAP PROPERTY

Figure 1

The Rap property is centred upon 56° 7' North latitude and 125° 5' West longitude. This is within the 94C/3 NTS map sheet.

Road access to the general area of the property is via the gravel, all-season Omineca mining road which extends north from Fort St. James. An alternate route is via a major forestry haulage road, which originates from Highway 97, at the south end of Williston Lake, and adjoins the Omineca road, north of Germanson Landing. The northern part of the claim block is accessible by logging roads along the north side of the Osilinka River. A new logging access road is planned along the south side of the Osilinka River in preparation for future logging which is planned in the area of the claims.

The Osilinka Logging Camp, located 4 km northwest of the property, was used as a base for the 1992 field program.

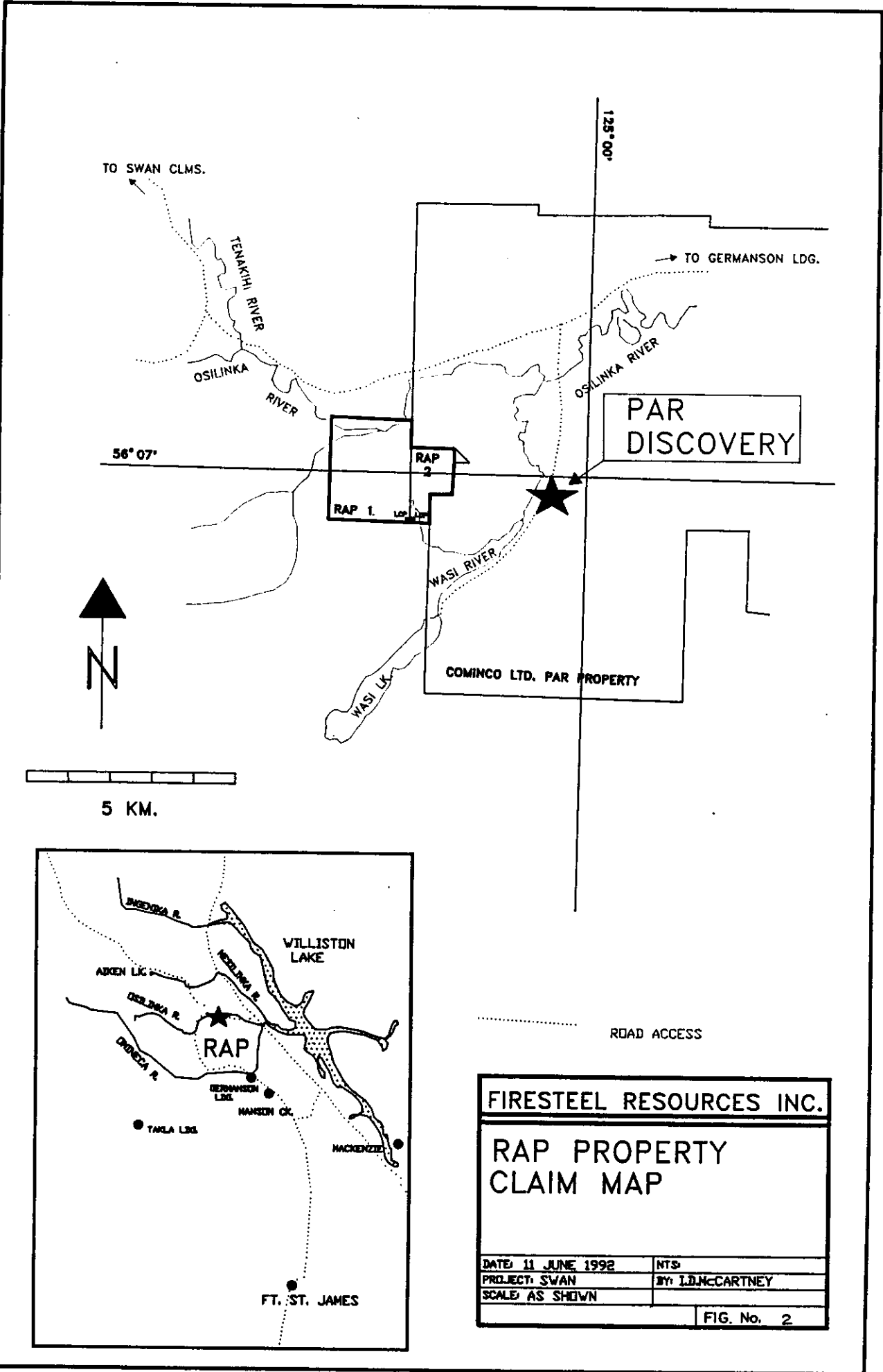
## **2.2 Physiography and Climate**

The Rap property's relief is approximately 650 m. Elevations range from 1,500 metres in the southwest corner to 850 metres along the Osilinka River valley. Mature stands of coniferous trees cover the lower elevations, while smaller growth bush, in old burns, cover the higher elevations. Only a few rock outcrops occur, especially along creek banks on steeper slopes.

The climate in the area is typified by cold winters and moderate summers. Snow accumulations are generally less than two metres.

## **2.3 Property Status**

The Rap property (Figure 2) comprises 2 contiguous mineral claims (28 units). These claims are registered in the name of David G. DuPré and are located within the Omineca Mining Division. Their status is summarized as follows:



TO SWAN CLMS.

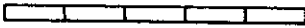
125° 00'

TO GERMANSON LDG.

56° 07'

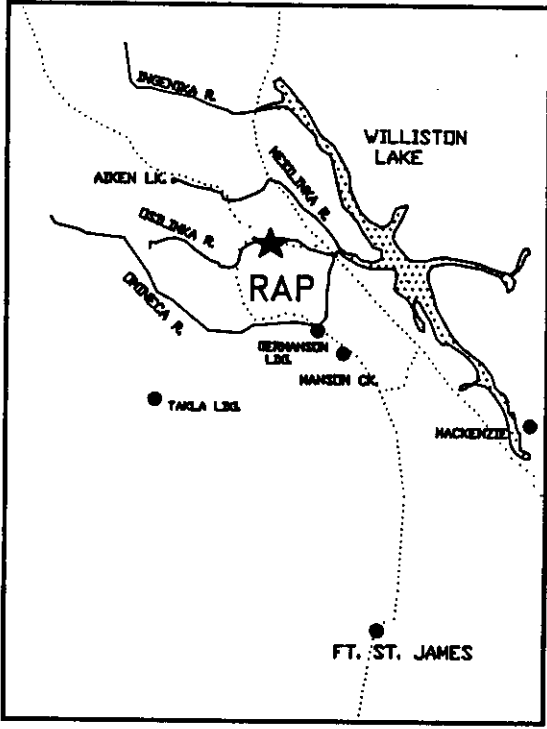
RAP 1  
RAP 2

PAR  
DISCOVERY



5 KM.

COMINCO LTD. PAR PROPERTY



ROAD ACCESS

<b>FIRESTEEL RESOURCES INC.</b>	
<b>RAP PROPERTY CLAIM MAP</b>	
DATE: 11 JUNE 1992	NTS
PROJECT: SWAN	BY: I.D. McCARTNEY
SCALE: AS SHOWN	
FIG. No. 2	

TABLE 1: Rap Property Claim Status				
Claim Name	No. of Units	Record No.	Record Date	Expiry Year
Rap 1	20	308217	March 20, 1992	1993
Rap 2	8	308218	March 20, 1992	1993
<b>Total</b>	<b>28</b>			

#### 2.4 History of Exploration

A review of the assessment files and Minfile data indicates that no previous exploration work has been reported from the area presently covered by the Rap property. During 1991, the G.S.C. collected three stream sediment samples from creeks which partially drain the Rap property. The G.S.C. also did regional (1:50,000) geologic mapping at that time (Figure 6).

Previous exploration in the general area was restricted to the areas underlain by Paleozoic carbonates. A number of relatively small sized showings of Pb/Zn/Ag/Ba are known to occur within the carbonates. In 1990/91 Cominco discovered high-grade stratiform Pb/Zn sulphides (PAR Showing), 2½ km east of the Rap claims. This prompted extensive staking in the area by Cominco and others.

In March of 1992, the Rap claims were acquired by staking the area adjacent to the PAR claims.

In 1974, SEREM completed a diamond drill program which totalled 13 holes (2,155 feet), on their Rain property (G.E.M., 1974) which is situated 50 km northwest of the Rap property. It appears that SEREM did not file the drilling program for assessment purposes and the property was allowed to lapse.

In 1992, a brief field program was conducted by the author which is the subject of this report.



## **2.5 Objectives of the 1992 Work Program**

The goal of the field program was to evaluate the lead/zinc potential of the property by way of reconnaissance soil and silt geochemistry.

## **3.0 GEOLOGY**

### **3.1 Regional Geology**

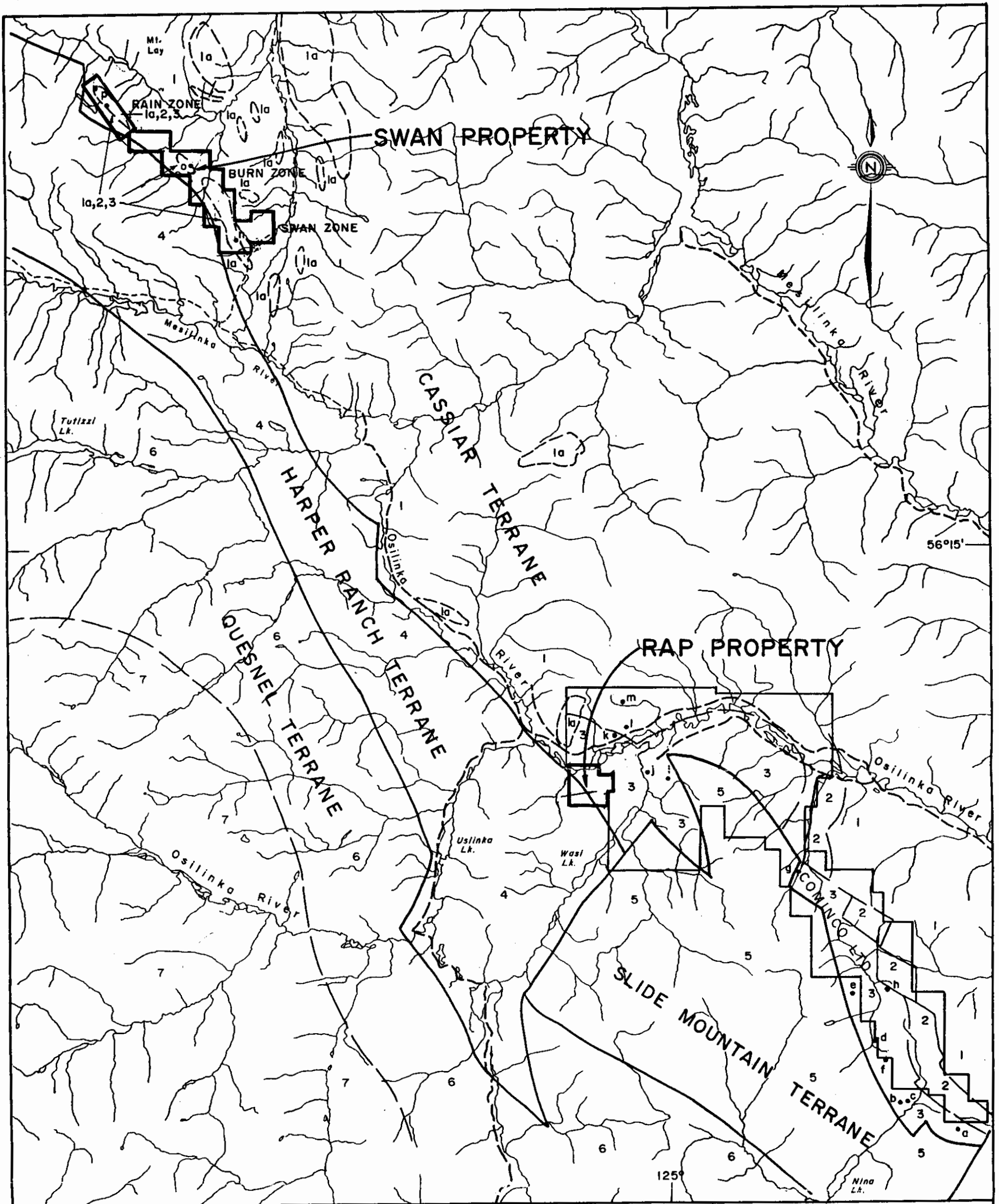
The area of interest covers the boundary between the Omineca and Intermontane tectonostratigraphic belts of the Canadian Cordillera (Figure 4). This area encompasses at least four separate terranes. On the west are island-arc rocks of the Quesnel Terrane (Mesozoic age). On the east are displaced continental rocks of the Cassiar Terrane (Upper Proterozoic to Devonian-Mississippian age). These are separated by the oceanic Slide Mountain and the volcanic (arc?) - sedimentary Harper Ranch terranes (Upper Proterozoic).

Northwest trending faults are the most prominent structural feature in the area. Strike-slip and dip-slip movements have been postulated.

The Rap property is underlain by the Cassiar terrane on the east in fault contact with the Harper Ranch Terrane on the west.

#### **North American Cassiar Terrane**

These strata are predominantly clastics with carbonate rocks becoming more abundant higher in the stratigraphy. The lower portion of this sequence is polydeformed and metamorphosed to amphibolite grade. The Cassiar Terrane, generally, trends north-northwest and is locally folded and faulted (Figure 4). Strata include the Upper Proterozoic Ingenika Group through to the Devonian-Mississippian Big Creek Group (Figure 5).



**LEGEND**

**QUESNEL TERRANE**

- 7 Jurassic to Cretaceous Intrusions. (Hogem Intrusive Complex).
- 6 Upper Triassic to Lower Jurassic Takla Group. (Mainly Volcanics).

**SLIDE MOUNTAIN TERRANE**

- 5 Pennsylvanian to Permian Slide Mtn. and Nina Ck. Groups. (Basalt, Argillite, Minor Gabbro).

**HARPER RANCH TERRANE**

- 4 Mississippian to Permian Lay Range Assemblage. (Siltstone, Shale, Sandstone, Limestone, Basalt, Gabbro).

**CASSIAR TERRANE**

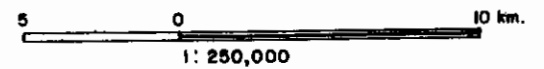
- 3 Ordovician to Middle Devonian Sandpile, Kechika, McDame and Earn Groups. (Mainly Limestone with Minor Dolomite and Shale).

- 2 Lower Cambrian Atan Group. (Limestone and Quartzite).

- 1/1a Upper Proterozoic Ingenika Group. (Siltstone, Shale and Metamorphosed Equivalents, 1a - Limestone).

**Pb/Zn Showings**

- a Sheila.
- b W. Vernon.
- c Vernon
- d Blddy.
- e Crin.
- f Jemima.
- g New.
- h Osl
- i Critter.
- j Carie/PAR
- k Quarry.
- l Regent
- m Beveley
- n Swan.
- o Burn.
- p Rain.



**OSILINKA RIVER AREA  
GEOLOGY**

Revised by R. Pegg (June, 1992)

Approved by: D. Dupre, P. Geol. Scale: 1: 250,000

Date: MAY, 1992 Figure No: 4

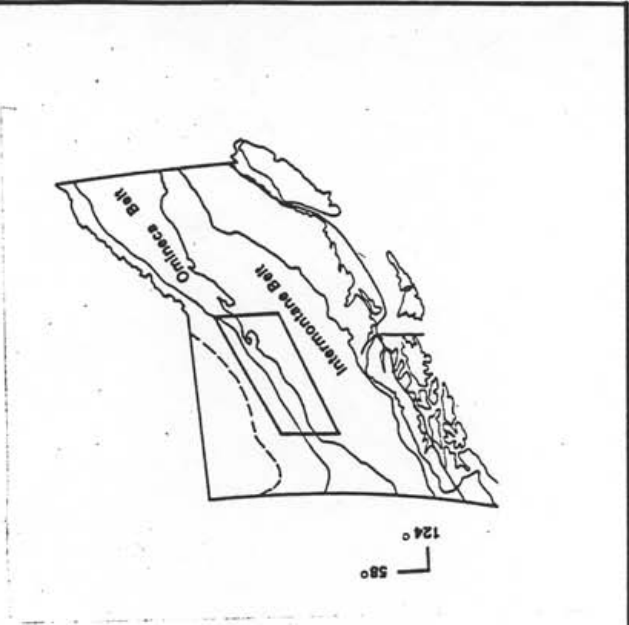
Figure no. 3

Date: Nov, 1992

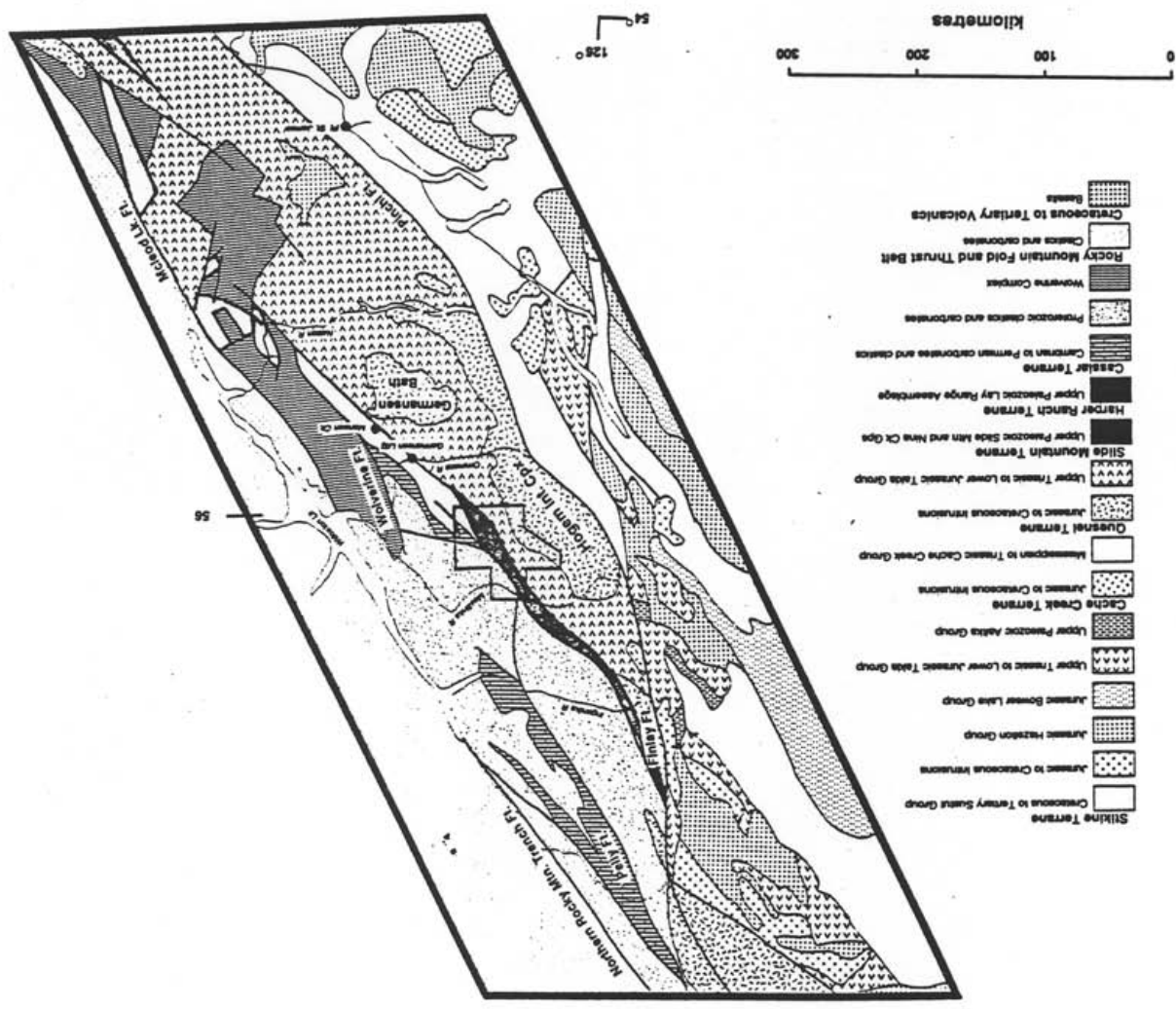
Approved by: D. Dupre, P. Geol.

Scale: See bar scale

**REGIONAL GEOLOGY**

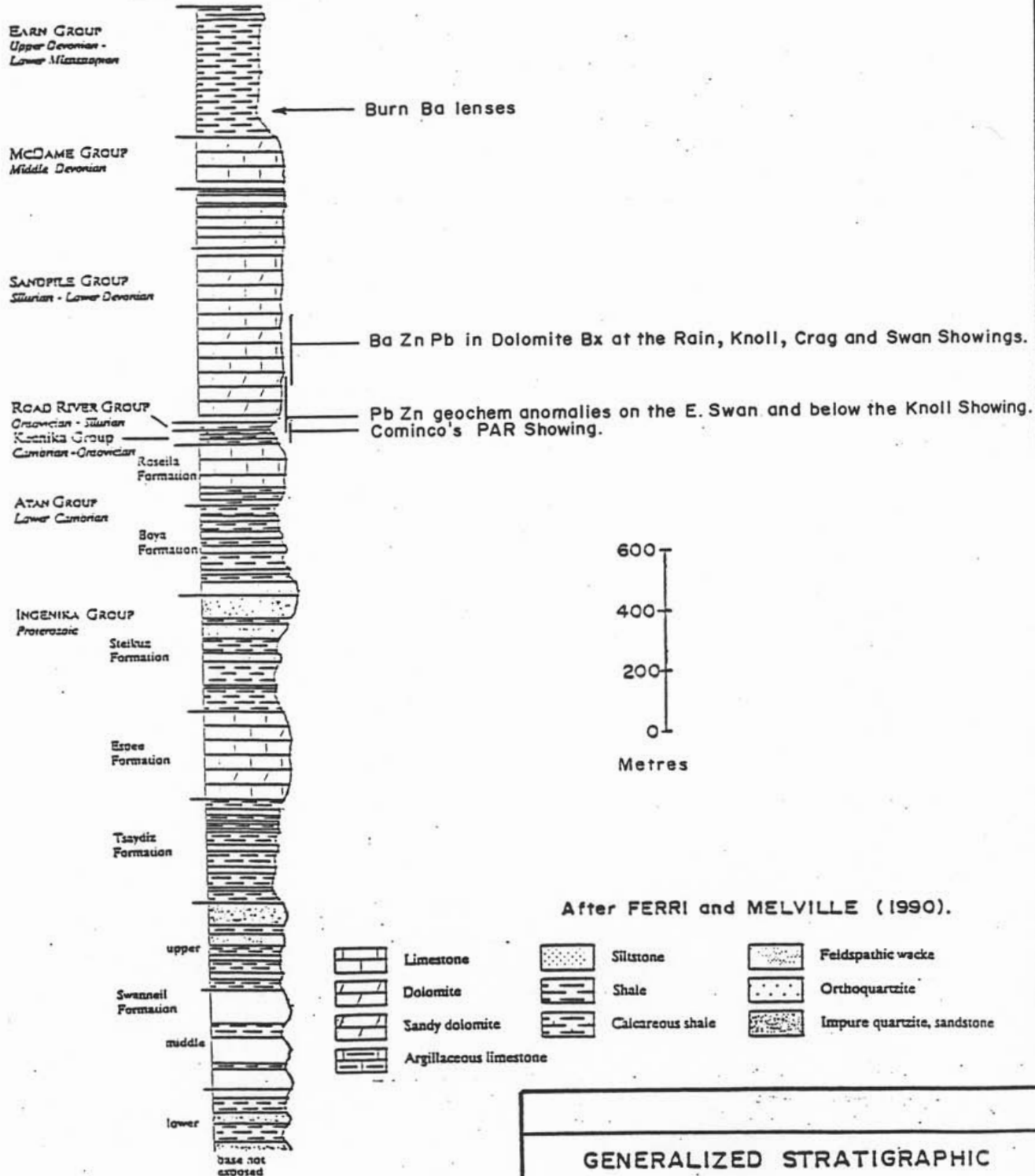


From FERRI et al (1992).



**STRATIGRAPHY**

**MINERALIZATION**



**GENERALIZED STRATIGRAPHIC COLUMN  
OF THE CASSIAR TERRANE  
WITHIN THE  
OSILINKA RIVER AREA**

Approved by: D. Dupre, P. Geol.	Scale: See bar scale
Date: May, 1992	Figure No. 5

### Late-Proterozoic

#### Ingenika Group

The Ingenika Group is estimated to be at least several kilometres thick and is composed of quartz and feldspathic wackes, limestone, impure quartzite, sandstone, siltstone, argillite and their metamorphosed equivalents. It has been subdivided (Mansy and Gabrielse, 1987) into, in ascending order, the Swannell, Tsaydiz, Espee and Stelkuz formations.

### Paleozoic

A 40 km long belt of Paleozoic carbonate and clastic rocks is exposed along and to the south of the Osilinka River. A 15 km long belt of the same rocks occurs to the north of the Mesilinka River and is covered by the Swan property (Figure 4). This package ranges from Early Cambrian to Early Mississippian in age. Ferri (BCDM) is presently in the process of mapping the northern belt of rocks. From his work in the Southern package, Ferri (1991) has divided the Paleozoic into five main groups (see Figure 5).

#### Atan Group (Lower Cambrian)

Ferri (1991) has subdivided this group into two formations. The lowermost Mount Brown Formation (Boya Formation equivalent) is divided into two sections. The upper portion consists of moderately to thickly bedded, grey-brown and maroon, impure quartzite and sandstone. These are interlayered with thin to thickly bedded, dark grey to grey-green phyllite and siltstone. The phyllite-siltstone sequence reportedly contains local limestone nodules, up to 40 cm long. The basal unit, not observed in the Osilinka River area, consists of a white, grey, beige or maroon, massive to thickly bedded orthoquartzite. This is typically fine to medium grained, but thin beds of quartz-granite conglomerate have also been noted. The overlying Mount Kison Formation (Rosella Formation equivalent) consists of dark grey to grey, thinly bedded and platy, finely crystalline and argillaceous limestone. This is overlain

by massive, thick bedded, finely to coarsely crystalline limestone and rare dolomite. This formation is poorly exposed in the Osilinka River area.

Some archeocyathids have been found within the Cambrian strata.

#### Razorback Group (Cambrian to Ordovician)

The Razorback Group is a name now applied by Ferri (1991) to units previously called the Kechika and Road River groups. Dark grey and grey, thinly layered shales and argillites are typically overlain by dark grey, thinly layered, argillaceous to dolomitic limestone. Tuffaceous sericitic phyllite with disseminated pyrite is also present. These strata typically display recessive weathering.

#### Echo Lake Group (Middle Ordovician to Early Devonian)

These strata were originally equated with the Sandpile Group to the south. Dark grey and grey graptolitic argillites, associated with planar-bedded limestones and argillaceous limestones are exposed at the base of this section. These beds are overlain by buff weathering, pale grey to medium grey, thin to massively bedded, medium grained, sugary dolomites and limestones. Discontinuous or thinly interlayered, light and dark grey mottled dolomite is also present. Bioclastic limestone, oolite and carbonate breccia horizons and sporadic quartz replacement of layers are locally displayed. The thick quartzite and dolomite units, which are common to the south, were not noted in the Osilinka River area.

#### Otter Lakes Group (Middle Devonian)

This was originally mapped as the McDame Group, to the south. It is typified by thin to medium bedded, grey to dark grey, fetid, fine to medium grained, crystalline dolomite and limestone. Fossiliferous horizons and vugs filled with pyrobitumen, graphite or calcite are common. Locally, the unit is coarsely recrystallized.

### Big Creek Group (Late Devonian to Early Mississippian)

Similar rocks to the south and north have been assigned to the Earn Group. This section is characterized by dark grey, blue-grey and black, thin to very thinly bedded, platy to wavy shales, argillites and siltstones.

### Harper Ranch Terrane (Mississippian to Permian)

This terrane encompasses the Lay Range assemblage which includes Upper Paleozoic tuffs, argillites, mafic to ultramafic igneous rocks, grits, limestone and chert. This assemblage is subdivided into four units, as follows:

#### Dacitic Tuff Unit

This unit is characterized by a grey to dark grey, massive quartzofeldspathic tuff which commonly displays a weak to strong penetrative cleavage. The tuff is comprised of up to 30 percent fine to coarse grained quartz, feldspar and rare mica clasts. Grey to dark grey phyllites, quartz-feldspar wackes and arkosic sandstones are locally present. This unit, apparently, structurally overlies argillites of the Big Creek Group.

#### Argillite - Grit - Limestone Unit

This unit is comprised of black argillite, shale, phyllite, dark grey to black limestone, quartzite and quartz-feldspar wackes. Locally, large limestone boudins are found within the argillites. This unit is fairly well exposed in the vicinity of the Tutizika River.

#### Mafic Tuff Unit

Thick sequences of green, thin to thickly bedded, very fine tuffs and tuffaceous siltstones are common. Lapilli tuff, agglomerate, basalt and lesser argillite, chert,

gabbro and limestone are also present. A strike-slip fault system bounds this sequence to the southwest. Ferri (1991) has postulated a transitional contact of this unit with the dacitic tuff unit.

### Mafic-Ultramafic Unit

Dark green, massive to pillowed, olivine(?) - bearing basalt, gabbro, serpentinite and minor amphibolite comprise this unit. Ferri (1991) indicates that this is a fault-bounded structural sequence in the middle of the mafic tuff unit.

### **3.2 Rap Property Geology (Figures 6 & 7)**

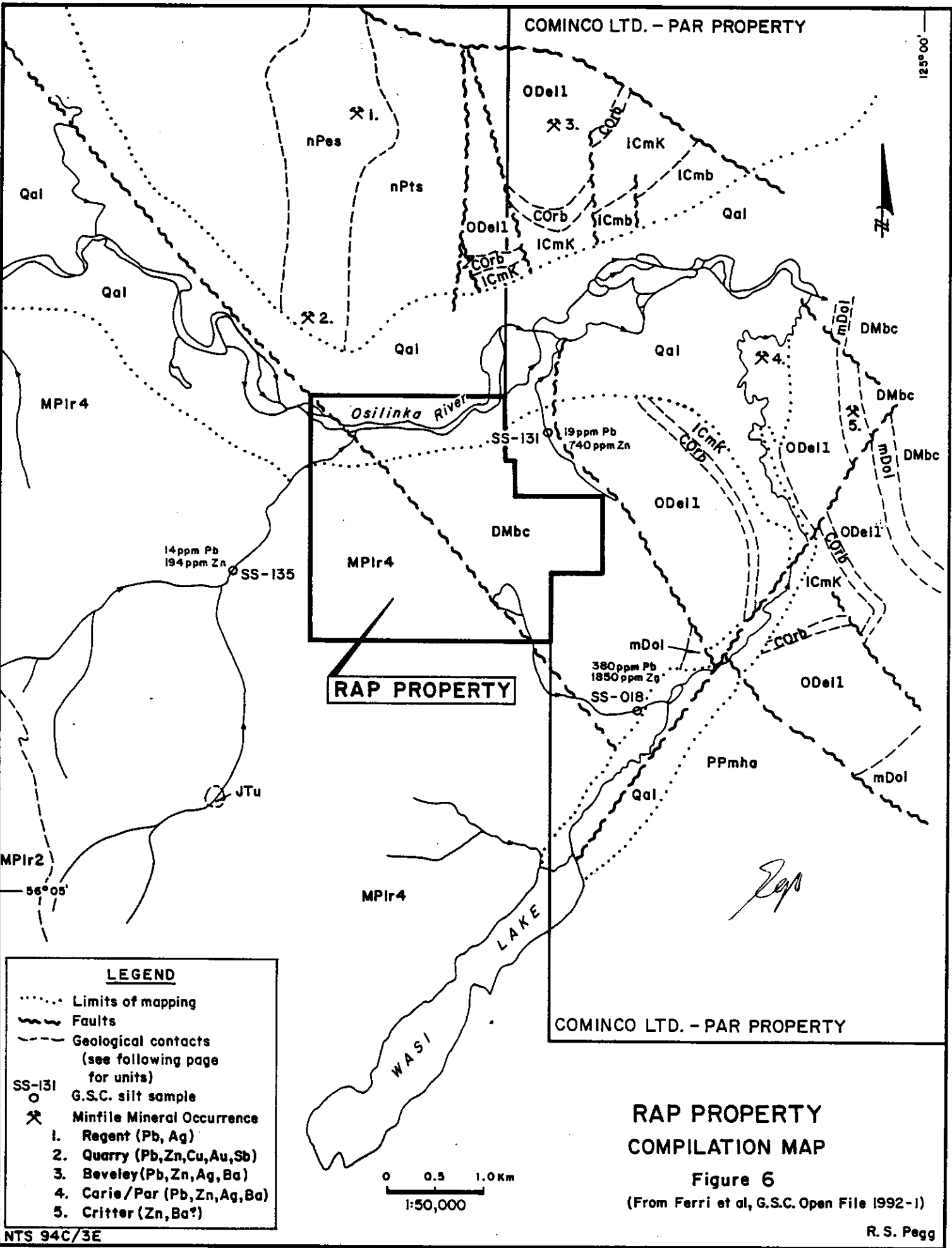
The Rap claims cover the contact between the Cassiar Terrane to the northeast and Harper Ranch Terrane to the southwest. This contact is marked by a regional northwest/southeast trending fault. According to BCDM mapping (Ferri et al., GSC Open File 1992-1), the northwest section of the property is underlain by the Devonian-Mississippian Big Creek Group (Earn Group) characterized by dark grey, blue-grey thin-bedded argillites and siltstones. The southwest section of the property is underlain by a Mississippian to Permian dacitic tuff unit of the Lay Range Assemblage which structurally overlies the argillites of the Big Creek Group. Mapping by the author suggests that the dacitic outcrops occur more towards the centre of the property straddling the projected regional fault, while the argillite occurrences appear more predominant further away from the projected fault. Generally, outcrops are few and far between, restricted to the steeper parts of the property.

The prospective Paleozoic carbonate and clastic stratigraphy, which underlies the Devonian/Mississippian Big Creek Group (Earn Group), is present several kilometres to the east of the Rap claims on Cominco's PAR property.

### **3.3 Mineralization**

No mineral occurrences are known to occur on the property. Only traces of disseminated pyrite were found during the course of the 1992 field program. Proterozoic and





**LEGEND**

- ..... Limits of mapping
- ~~~~~ Faults
- - - - Geological contacts  
(see following page  
for units)
- SS-131  
○ G.S.C. silt sample
- x Minfile Mineral Occurrence
- 1. Regent (Pb, Ag)
- 2. Quarry (Pb, Zn, Cu, Au, Sb)
- 3. Beveley (Pb, Zn, Ag, Ba)
- 4. Carie / Par (Pb, Zn, Ag, Ba)
- 5. Critter (Zn, Ba?)

**RAP PROPERTY  
COMPILATION MAP**

**Figure 6**  
(From Ferri et al, G.S.C. Open File 1992-1)

R. S. Pegg

## GEOLOGY LEGEND

### CENOZOIC

#### QUATERNARY

**Qal** Thick Glacial Deposits

### JURASSIC TO TERTIARY

**JTu** Uslika Fm: conglomerates and sandstones

### PENNSYLVANIAN AND PERMIAN

**PPmha** Mount Howell Fm: argillites, silstones and chert

### MISSISSIPPIAN TO PERMIAN

#### LAY RANGE ASSEMBLAGE

**MPlr2** mafic tuff unit

**MPlr4** dacitic tuff unit

### DEVONIAN AND MISSISSIPPIAN

**DMbc** Big Creek Gp: shale, argillite and siltstone

### DEVONIAN

**mDol** Otter Lakes Gp: dolomite and limestone

### ORDOVICIAN TO DEVONIAN

**ODel1** Echo Lake Gp: dolomite and limestone

### CAMBRIAN AND ORDOVICIAN

**COrb** Razor Back Gp: argillite, limestone and shale

### CAMBRIAN

**lCmk** Mount Kison Fm: limestone

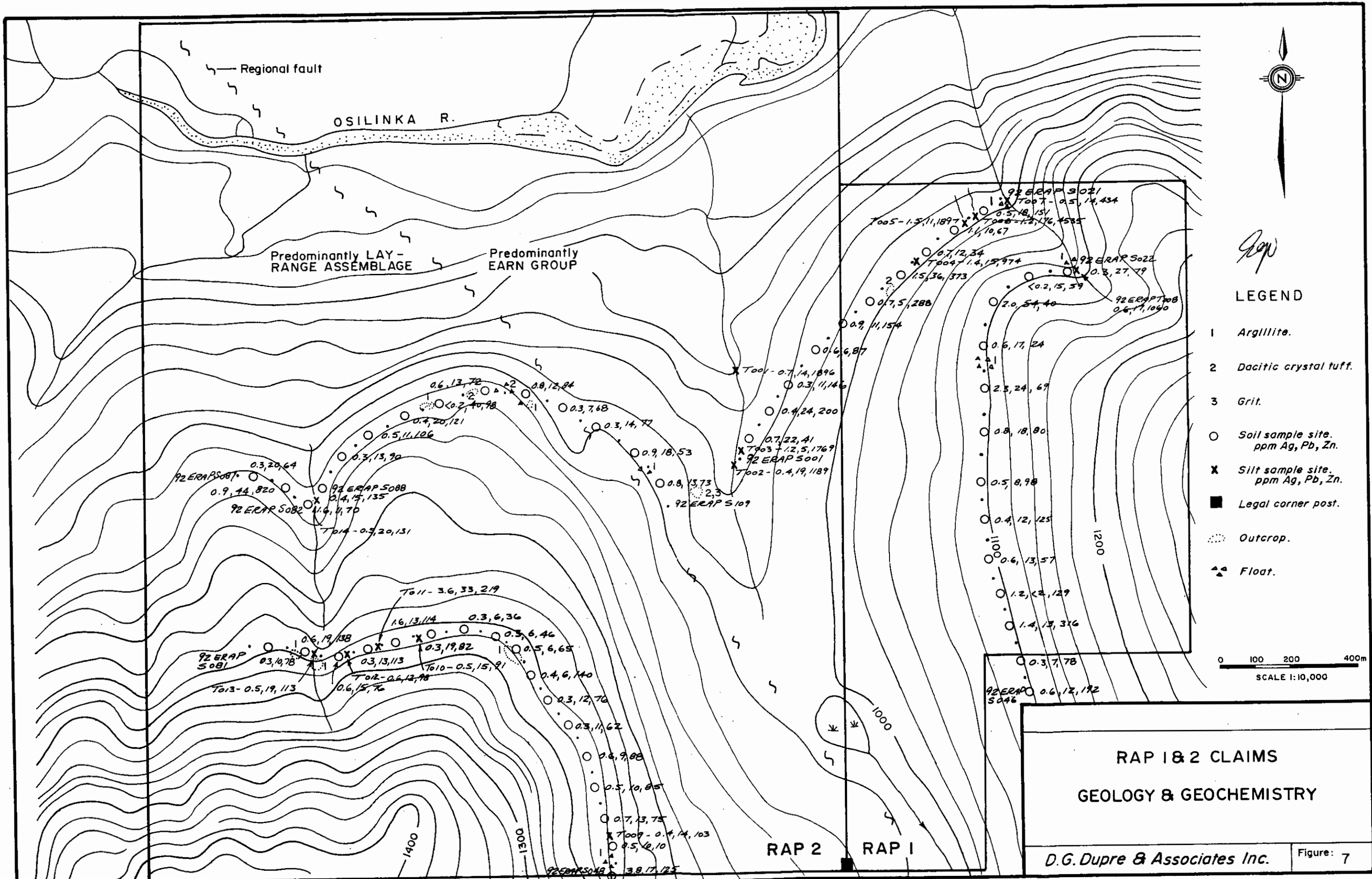
**lCmb** Mount Brown Fm: sandstone, quartzite, siltstone and phyllite

### NEO-PROTEROZOIC

#### IGENIKA GROUP

**nPes** Espee Fm: limestone

**nPts** Tsaydiz Fm: slate, phyllite and limestone; sandstone, siltstone and feldspathic wacke



Paleozoic carbonates and clastics to the north and east of the property host a number of vein, stratabound and stratiform Pb, Zn, Ag, Ba occurrences. The occurrence of greatest potential is Cominco's Par showing which contains semi-massive to massive stratiform galena, sphalerite and pyrite over a thickness of several metres. The mineralization is hosted by tuffaceous phyllites, argillites and carbonates of the Cambrian/Ord. Razorback Group (Kechika Group).

#### **4.0 EXPLORATION PROGRAM**

##### **4.1 Research**

In June of 1992, Rex Pegg researched the published government information and mapping done by the G.S.C. and B.C.D.M. in this area. The results of this research is covered in a Summary Report by Rex Pegg.

##### **4.2 Geological Mapping**

Reconnaissance prospecting and mapping was done on several traverses totalling 11 line-kilometres utilizing a hip chain, compass and altimeter for control. Results have been plotted on a 1:10,000 scale topo-map (Figure 7).

##### **4.3 Geochemistry**

A total of 109 soil and 14 silt samples were collected. Contour soil sampling was done on 50 m spacing intervals sampling the "B" soil horizon. Half of the soil samples, and all the silt samples were analyzed for Pb, Zn, Ag by Bondar-Clegg using the atomic absorption method. The sample locations and analytical results are plotted on Figure 7 (scale 1:10,000). Anomalous levels have been visually estimated at 50 ppm Pb, 200 ppm Zn and 1.0 ppm Ag.

The most anomalous values were obtained from the silts in the eastern to northeastern part of the property with values commonly greater than 1,000 ppm Zn. The highest Pb/Zn values in silts occur in sample 92ERAPT005, containing 176 ppm Pb and 4,535 ppm Zn; this sample contains the only anomalous Pb value analyzed. Soil sample results appear to be much lower in Pb and Zn than

the silts with only three anomalous Zn values, no anomalous Pb values and four anomalous Ag values.

The results of three silt samples collected off the property by BCDM (1991), are reported as follows (see Figure 6).

<b>TABLE 2. SILT SAMPLE RESULTS (Ferri et al., 1991)</b>		
<b>Sample No.</b>	<b>ppm Pb</b>	<b>ppm Zn</b>
SS-018	380	1,850
SS-131	19	740
SS-135	14	194

Samples SS-018 and SS-131 were collected from streams which drain parts of the Rap 1 claims. Of particular significance is sample no. SS-018 containing 380 ppm Pb.

## **5.0 CONCLUSIONS**

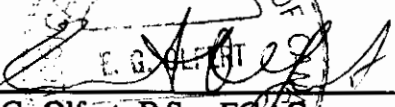
1. The Rap property is underlain by black argillites and dacitic tuffs which comprise the Devono-Mississippian Big Creek - Earn Group and the Mississippian Permian Lay Range Assemblage respectively.
2. No Pb/Zn mineralization was found by prospecting and geochemical results are generally not anomalous.

## **6.0 RECOMMENDATIONS**

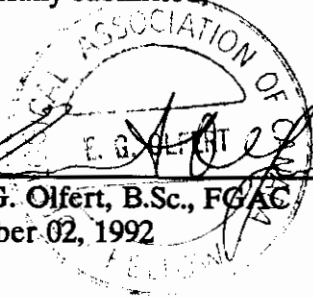
Minor additional follow-up prospecting and soil sampling should be done in the northeast area around silt sample ERAPT005 (176 ppm Pb, 4,535 ppm Zn) and in the southeast corner of the property in the drainage of B.C.D.M. silt sample #SS-018 (380 ppm Pb, 1,850 ppm Zn).

Future logging roads proposed along the south side of the Osilinka River (northern part of Rap 2) should also be prospected.

Respectfully submitted,



Ernie G. Olfert, B.Sc., FGAC  
December 02, 1992



**7.0 STATEMENT OF EXPENDITURES**

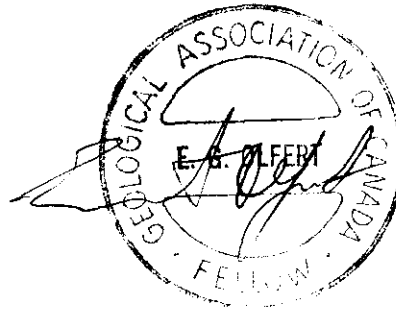
Research	\$ 2,244.00
Drafting	1,573.97
Field Work (contract costs)	5,733.29
Geochemistry (lab costs)	1,248.96
Field Expenses	1,058.87
Truck	500.00
Helicopter	1,807.31
Miscellaneous	19.20
Report Writing	2,500.00
Supervision (D. DuPré)	<u>1,625.00</u>
<b>TOTAL:</b>	<b><u>\$18,310.60</u></b>

**Swan Portion (80%):**

**\$14,648.48**

**Rap 1 & 2 Claims (20%):**

**\$ 3,662.12**



**8.0 STATEMENT OF QUALIFICATIONS**

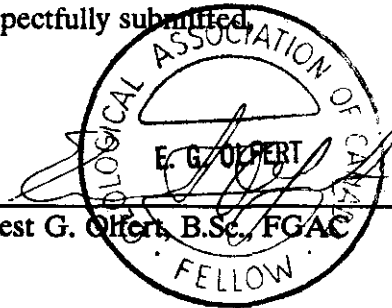
I, ERNEST G. OLFERT, of Keewatin Engineering Inc. with a business address of Suite 800 - 900 West Hastings Street, Vancouver, B.C. do hereby certify that:

1. I am a Consulting Geologist registered with the Geological Association of Canada as a Fellow. I am also registered as a Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
2. I hold a B.Sc. (Honours) Degree in Geology (1970) from the University of Calgary, Alberta.
3. I have practised my profession as a geologist continuously since 1970, having worked in Canada, Mexico, Greenland and Europe. I have worked for Cominco from 1970 - 1983 and for a number of small public companies from 1983 to 1990 before joining Keewatin Engineering Inc.
4. I have based this report mainly on field work conducted by the author during the 1992 field season, and partly on literature research done by Rex Pegg in the spring of 1992.
5. I have no financial interest in the property described in this report and will receive only standard consulting fees for the preparation of this report.

Dated at Vancouver, British Columbia this 30th day of November 1991.

Respectfully submitted,

Ernest G. Olfert, B.Sc., FGAC





## 9.0 BIBLIOGRAPHY

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**APPENDIX I**

**Geochemical Lab Report by Bondar-Clegg**

Bondar-Clegg & Company Ltd.  
 130 Pemberton Avenue  
 North Vancouver, B.C.  
 V7P 2R5  
 Tel: (604) 985-0681  
 Fax: (604) 985-1071



Geochemical  
 Lab Report

REPORT: V92-00959.0 ( COMPLETE )

REFERENCE:

CLIENT: FIRESTEEL RESOURCES  
 PROJECT: NONE GIVEN

SUBMITTED BY: UNKNOWN  
 DATE PRINTED: 4-SEP-92

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ag Silver	164	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
2	Pb Lead	164	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
3	Zn Zinc	164	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SILL	142	1 -80	157	CRUSH/SPLIT <10 TB	7
T STREAM SED, SILT	15	2 -150	7	PULVERIZATION	7
R ROCK	7			DRY, SIEVE -80	157
				DRYING	157

REPORT COPIES TO: MR. DAVE DUPRE

INVOICE TO: MR. DAVE DUPRE

Bondar-Clegg & Company Ltd.  
 130 Pemberton Avenue  
 North Vancouver, B.C.  
 V7P 2R5  
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Geochemical  
 Lab Report

DATE PRINTED: 4-SEP-92

REPORT: V92-00959.0 ( COMPLETE )

PROJECT: NONE GIVEN

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Pb PPM	Zn PPM	SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Pb PPM	Zn PPM
S1 92CA S001		0.3	54	219	S1 92CSW S020		0.6	94	455
S1 92CA S002		<0.2	21	78	S1 92CSW S021		0.4	166	914
S1 92CA S003		<0.2	18	70	S1 92CSW S022		0.9	85	559
S1 92CA S004		<0.2	12	59	S1 92CSW S023		0.5	91	358
S1 92CA S005		0.5	60	170	S1 92CSW S024		0.4	103	563
S1 92CA S006		0.8	36	25	S1 92CSW S025		1.0	93	1051
S1 92CA S007		0.6	58	70	S1 92CSW S026		0.5	35	212
S1 92CA S008		<0.2	66	153	S1 92CSW S027		0.4	38	464
S1 92CA S009		0.3	79	440	S1 92CSW S028		0.4	72	625
S1 92CA S010		0.7	309	872	S1 92CSW S029		0.7	63	525
S1 92CA S011		0.4	134	781	S1 92ERAP S002		0.7	22	141
S1 92CA S012		<0.2	62	154	S1 92ERAP S004		0.4	24	200
S1 92CA S013		1.0	421	1105	S1 92ERAP S006		0.3	11	146
S1 92CA S014		0.9	382	966	S1 92ERAP S008		0.6	6	87
S1 92CA S015		1.8	1128	2450	S1 92ERAP S010		0.9	11	154
S1 92CA S016		2.6	1928	5533	S1 92ERAP S012		0.7	5	288
S1 92CA S017		2.2	652	3680	S1 92ERAP S014		1.5	36	373
S1 92CA S018		1.6	1026	2712	S1 92ERAP S016		0.7	12	34
S1 92CA S019		<0.2	51	186	S1 92ERAP S018		1.1	10	67
S1 92CA S020		0.5	119	488	S1 92ERAP S020		0.5	18	151
S1 92CA S021		0.5	119	489	S1 92ERAP S022		0.3	27	79
S1 92CSW S001		3.7	2237	9291	S1 92ERAP S024		<0.2	15	59
S1 92CSW S002		1.4	937	3562	S1 92ERAP S026		2.0	54	40
S1 92CSW S003		0.8	194	1072	S1 92ERAP S028		0.6	17	24
S1 92CSW S004		0.4	76	1841	S1 92ERAP S030		2.3	24	69
S1 92CSW S005		0.8	170	2885	S1 92ERAP S032		0.8	18	80
S1 92CSW S006		10.5	819	4782	S1 92ERAP S034		0.5	8	98
S1 92CSW S007		0.8	576	2610	S1 92ERAP S036		0.4	12	125
S1 92CSW S008		2.6	1343	2560	S1 92ERAP S038		0.6	13	57
S1 92CSW S009		4.9	1391	9132	S1 92ERAP S040		1.2	<2	129
S1 92CSW S010		0.6	182	1061	S1 92ERAP S042		1.4	13	316
S1 92CSW S011		0.7	108	327	S1 92ERAP S044		0.3	7	78
S1 92CSW S012		1.0	312	1122	S1 92ERAP S046		0.6	12	192
S1 92CSW S013		1.1	432	1500	S1 92ERAP S048		3.8	17	125
S1 92CSW S014		0.4	55	222	S1 92ERAP S050		0.5	10	10
S1 92CSW S015		0.3	228	532	S1 92ERAP S052		0.7	13	75
S1 92CSW S016		0.3	157	629	S1 92ERAP S054		0.5	10	85
S1 92CSW S017		0.3	157	398	S1 92ERAP S056		0.6	9	88
S1 92CSW S018		0.9	64	561	S1 92ERAP S058		0.3	11	62
S1 92CSW S019		0.3	164	637	S1 92ERAP S060		0.3	12	76

S001-S010

S011-S020

S021-S030

S031-S040

S016-S020

S015-S019

DATE PRINTED: 4-SEP-92

REPORT: V92-00959.0 ( COMPLETE )

PROJECT: NONE GIVEN

PAGE 2

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Pb PPM	Zn PPM	SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Pb PPM	Zn PPM
S1 92ERAP S062		0.4	6	140	S1 92ESW L017		0.7	435	2171
S1 92ERAP S064		0.5	6	65	S1 92ESW L018		0.9	285	2094
S1 92ERAP S066		0.3	6	46	S1 92ESW L019		0.4	133	912
S1 92ERAP S068		0.3	6	36	S1 92ESW L020		0.7	58	590
S1 92ERAP S070		0.3	19	82	S1 92ESW L021		0.4	56	518
S1 92ERAP S072		1.6	13	114	S1 92ESW L022		<0.2	53	557
S1 92ERAP S074		0.3	13	113	S1 92ESW L023		0.2	47	394
S1 92ERAP S076		0.6	15	76	S1 92ESW L024		0.5	118	931
S1 92ERAP S078		0.6	19	138	S1 92ESW L025		0.4	33	396
S1 92ERAP S080		0.3	10	78	S1 92ESW L026		0.4	23	422
S1 92ERAP S082		1.6	11	70	S1 92ESW L027		0.8	32	669
S1 92ERAP S084		0.9	44	820	S1 92ESW L028		0.3	80	476
S1 92ERAP S086		0.3	20	64	S1 92ESW L029		0.6	53	788
S1 92ERAP S088		0.4	15	135	S1 92ESW L030		1.0	47	660
S1 92ERAP S090		0.3	13	90	S1 92ESW L031		1.3	71	705
S1 92ERAP S092		0.5	11	106	S1 92ESW L032		0.9	64	644
S1 92ERAP S094		0.4	20	121	S1 92ESW L034		4.0	4953	10993
S1 92ERAP S096		<0.2	40	98	S1 92K S001		<0.2	295	637
S1 92ERAP S098		0.6	13	72	S1 92K S002		0.4	340	1031
S1 92ERAP S0100		0.8	12	84	S1 92K S003		0.3	613	1340
S1 92ERAP S0102		0.3	7	68	S1 92K S004		1.3	702	934
S1 92ERAP S0104		0.3	14	77	S1 92K S005		0.8	368	1011
S1 92ERAP S0106		0.9	18	53	T1 92ERAP T001		0.7	14	1896
S1 92ERAP S0108		0.8	13	73	T1 92ERAP T002		0.4	19	1189
S1 92ESW L001		11.1	6238	4592	T1 92ERAP T003		1.2	5	1769
S1 92ESW L002		0.5	132	335	T1 92ERAP T004		1.4	15	974
S1 92ESW L003		0.4	132	349	T1 92ERAP T005		1.5	11	1897
S1 92ESW L004		0.4	100	390	T1 92ERAP T006		1.2	176	4535
S1 92ESW L005		6.9	4416	7024	T1 92ERAP T007		0.5	14	434
S1 92ESW L006		1.1	713	1613	T1 92ERAP T008		0.6	17	1060
S1 92ESW L007		3.4	4718	7559	T1 92ERAP T009		0.4	14	103
S1 92ESW L008		1.7	1042	4910	T1 92ERAP T010		0.5	15	91
S1 92ESW L009		1.3	894	6629	T1 92ERAP T011		3.6	33	219
S1 92ESW L010		4.5	1860	6223	T1 92ERAP T012		0.6	12	98
S1 92ESW L011		0.9	389	1701	T1 92ERAP T013		0.5	19	113
S1 92ESW L012		0.7	603	6899	T1 92ERAP T014		0.5	20	131
S1 92ESW L013		0.7	351	1409	T1 92ESW T001		1.0	188	926
S1 92ESW L014		0.6	534	1795	R2 92CSW R002		7.5	3975	17562
S1 92ESW L015		0.6	165	1189	R2 92CSW R003		21.8	9877	16088
S1 92ESW L016		0.8	361	1597	R2 92CSW R004		4.3	3141	1371

*Run*

*Sample*

*RAP*

*Swan*

## **APPENDIX II**

### **Sample Descriptions**

# KEEWATIN ENGINEERING INC.

SOIL SAMPLES

Project: Five steel  
 Area (Grid): Rep #2 Channel & Rep #1  
 Collectors: E-OLFERT

Silts

Results Plotted By: \_\_\_\_\_  
 Map: \_\_\_\_\_ N.T.S.: \_\_\_\_\_  
 Date: \_\_\_\_\_

Sample Number	Sample Location		Notes	Topography			Vegetation					Soil Data											
	Line	Station		Valley Bottom	Direction of slope	Hill Top	Level Ground	Heavily Wooded	Sparsely Wooded	Burnt	Lagged	Grassland	Swampy	Horizon Sampled	Depth to Horizon Sample	Horizon Good	Horizon Poor	Development	Parent	Material	Colour		
92 ERAP		T001	Rep #1 = Saddle drainage ELV 925m																				N. Flowing stream 2'x2" coarse sand, rx, silt.
		T002	Rep #1 saddle drainage 960m ELV - upstream of T001 sirt of constant soil-line																				N. Flowing 2'x2" good silt
		T003	47m E of T002 on constant soil-line																				dry - Avg. Flood in ch.
		T004	7145m on soil-line (from T002)																				Flowing M.W. (trickle) mostly black organic + black silt.
		T005	9+25m on soil-line (from T002)																				Flowing N.W. (trickle) black rx chips + silt.
		T006	9+60m on soil-line (from T002)																				Flowing N.W. (trickle) gravel sand and silt.
		T007	11400m on soil-line (from T002) ELV 1010																				Flowing N. large gulch 2'x2" st-bed. gravel sand silt black rx + 0.5% chips (fine)
		T008	ELV 1100m upstream from T007.																				3.5m E of soil-constant station ERAP 9227 0900 stream 1'x3" black rx
92 ERAP		T009	1140m on upper line <del>Rep</del> RAP #1 ≈ 1155m ELV																				Basaltic prep good silt/gravel
		T010	11+25m on upper line RAP #1 ≈ 1170m ELV																				Devils club (weep) <del>rx/silt</del>
		T011	12+80m on upper line RAP #1 ELV ≈ 1170m																				small gulch weep mud/silt/rx
		T012	13+90m trickle weep small gulch ≈ 1170m ELV																				
		T013	15+08m on upper soil line ELV 1170m																				LARGE GULCH 1'x2" stream Mixed TUFF + ARG. Flood.
		T014	0+27m E on lower soil line ELV 1050m (Downstream from T013)																				good silt (Avg rx + Frag)





# KEEWATIN ENGINEERING INC.

## SOIL SAMPLES

Project: Five Steel

Results Plotted By: \_\_\_\_\_

Area (Grid): RAK # 2 ± 1

Map: \_\_\_\_\_ N.T.S.: \_\_\_\_\_

Collectors: E. OLKERT / C. Kous.

Date: \_\_\_\_\_

Sample Number	Sample Location		Notes	Topography			Vegetation					Soil Data							
	Line	Station		Valley Bottom	Direction of slope	Hill Top	Level Ground	Heavily Wooded	Sparsely Wooded	Burnt	Logged	Grassland	Swampy	Horizon Sampled	Depth to Horizon Sample	Horizon Development		Parent	Material
															Good	Poor	Drift	Bedrock	
92ERAP	S0	31	4+50		W								A	40	✓			✓	GR
		32	5+00		W								A	40	✓			✓	
		33	5+50	10 organic / 10 frags	W									40	↑			✓	
		34	6+00		W									30				✓	
		35	6+50	10 frags	W									40					
		36	7+00		W									40					
		37	7+50		W									40					
		38	8+00		W									40					
		39	8+50		W									30					
		40	9+00											30					
		41	9+50											30					
		42	10+00	cross AAR E/W cl. line (PAR12)										40					
		43	10+50											40					
		44	11+00											A	40			✓	GR
		45	11+50											B	30	↓		✓	RB
		46	12+00											B	20	✓		✓	RB
		47	12+50	End of contour line (12+40m elev)										B	30	✓		✓	RB

# KEEWATIN ENGINEERING INC.

## SOIL SAMPLES

Project: Firesteel

Results Plotted By: \_\_\_\_\_

Area (Grid): RAP #1 Contour soils

Map: \_\_\_\_\_ N.T.S.: \_\_\_\_\_

Collectors: E. OLFEIT / C. Kauer

Date: \_\_\_\_\_

Sample Number	Sample Location		Notes	Topography				Vegetation					Soil Data							
	Line	Station		Valley Bottom	Direction of slope	Hill Top	Level Ground	Heavily Wooded	Sparsely Wooded	Burnt	Logged	Grassland	Swampy	Horizon Sampled	Depth to Horizon Sample	Horizon Development		Parent Material		Colour
																Good	Poor	Drift	Bedrock	
92 ERAP	S048	0+00	(ELV - 116cm) <del>from</del> E/W		E								A	40	✓			✓	DB	
	049	0+50	RAP 1 CL-line										A	30	✓			✓	DB	
	050	1+00	5 org										A	40	✓			✓	DB	
	051	1+50											A	40	✓			↑	DB	
	052	2+00											A	40	✓				Br	
	053	2+50											A	40	✓				Gr	
	054	3+00											A	30	✓				Gr	
	055	3+50											A	30	✓				DB	
	056	4+00											A	40	✓				Gr	
	057	4+50											A	30	✓				er	
	058	5+00	116cm ELV.										A	40	✓				Br	
	059	5+50											A	40	✓				Gr	
	060	6+00											A	40	✓				Gr	
	061	6+50											A	40	✓				Gr	
	062	7+00											A	40	✓				Gr	
	063	7+50											A	30	✓				LB	
	064	8+00											A	40	✓				Gr	
	065	8+50											A	30	✓				LB	
	066	9+00	5% frags										A	40	✓				LB	
	067	9+50	5 org / 5 frags										A	30	✓				LB	
	068	10+00	ELV <del>1175m</del> 1175m										A	40	✓				LB	
	069	10+50											A	40	✓				RB	
	070	11+00											B	40	✓				RB	
	071	11+50											A	30	✓				B1	
	072	12+00											B	40	✓				RB	
	073	12+50											A	40	✓				B1	
	074	13+00											B	30	✓				RB	
	075	13+50											B	30	✓				RB	
	076	14+00											B	40	✓				RB	
	077	14+50											B	40	✓				RB	

# KEEWATIN ENGINEERING INC.

## SOIL SAMPLES

Project: Fire steel

Results Plotted By: \_\_\_\_\_

Area (Grid): RAP#1 Contain soils

Map: \_\_\_\_\_ N.T.S.: \_\_\_\_\_

Collectors: E. OLFERT C Kause

Date: \_\_\_\_\_

Sample Number	Sample Location		Notes	Topography				Vegetation					Soil Data						
	Line	Station		Valley Bottom	Direction of slope	Hill Top	Level Ground	Heavily Wooded	Sparsely Wooded	Burnt	Logged	Grassland	Swampy	Horizon Sample	Horizon Development		Parent Material		Colour
															Good	Poor	Drift	Bedrock	
92 ERAP	S078	15+00			N								B	40	✓			✓	RB
	S079	15+80											B	30	✓			✓	LB
	S080	16+00											B	30	✓			✓	RB
	S081	16+50	ELV 1155m 10% org		↓								B	40	✓			✓	RB
	S082	17+00			↓								B	30	✓			✓	RB
92 ERAP	S083	0+06W											B	30	✓			✓	RB
	S084	0+50W	ELV - 1050m										A	40	✓			✓	Gr
	S085	1+00W											A	40	✓			✓	LB
	086	1+50W											B	30	✓			✓	RB
	087	2+00W											B	40	✓			✓	RB
	88	0+50 E											B	40	✓			✓	LB
	89	1+00 E											B	40	✓			✓	RB
	90	1+50 E											A	40	✓			✓	Gr
	91	2+00 E											B	40	✓			✓	RB
	92	2+50 E											A	40	✓			✓	LB
	93	3+00 E	20 frags										A	40	✓			✓	LB
	94	3+50 E											B	40	✓			✓	RB
	95	4+00 E											B	30	✓			✓	RB
	96	4+50 E											A	30	✓			✓	BI
	97	5+00 E	1020m ELV		↓								A	40	✓			✓	LB
	98	5+50 E											B	30	✓			✓	RB
	99	6+00 E	10 organic		NE								B	40	✓			✓	RB
	100	6+50 E											B	30	✓			✓	RB
	101	7+00 E											A	40	✓			✓	Gr
	102	7+50 E											B	30	✓			✓	LB
	103	8+00 E											A	40	✓			✓	RB
	104	8+50 E											A	30	✓			✓	BI
	105	9+00 E											A	40	✓			✓	BI
	106	9+50 E											A	40	✓			✓	LB

