

85-863-14678.



Province of British Columbia

Ministry of Energy, Mines and Petroleum Resources

ASSESSMENT REPORT
TITLE PAGE AND SUMMARY

TYPE OF REPORT/SURVEY(S)	TOTAL COST
GEOCHEMICAL:PROSPECTING	\$6,602.50

AUTHOR(S) T. DONNELLY SIGNATURE(S) N/A

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED SEPT. 7, 1985 YEAR OF WORK 1984

PROPERTY NAME(S) PETEKA 1 to 4 inclusive

COMMODITIES PRESENT Cu, Au, Ag

B.C. MINERAL INVENTORY NUMBER(S), IF KNOWN OMENICA

MINING DIVISION NTS 93 D/2

LATITUDE 56°10'N LONGITUDE 126°58'W

NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property [Examples: TAX 1-4, FIRE 2 (12 units); PHOENIX (Lot 1706); Mineral Lease M 123; Mining or Certified Mining Lease ML 12 (claims involved)]:

PETEKA 1 (6614) : PETEKA 2 (6615) : PETEKA 3 (6616) : PETEKA 4 (6617).

OWNER(S) SUNCOR INC.

MAILING ADDRESS

P.O. BOX 38, 500 - 4th AVE., S.W.
CALGARY, ALBERTA T2P 2V5

FILMED

OPERATOR(S) (that is, Company paying for the work)

(1) AS ABOVE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

MAILING ADDRESS

AS ABOVE

14,678

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size, and attitude):

ANOMALOUS VALUES IN STREAM SEDIMENTS AND ROCKS OCCUR IN A BELT OF JURASSIC AGE HAZELTON GROUP SUBAQUEOUS TO SUBACRIAL BASALT TO ANDESITIC VOLCANIC ROCKS. SULPHIDE MINERALIZATION OCCURS AS DISSEMINATIONS AND IN GENERALLY NORTHEAST STRIKING VEINS AND SHEARS.

REFERENCES TO PREVIOUS WORK

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	COST APPORTIONED
GEOLOGICAL (scale, area)			
Ground			
Photo			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for)			
Soil	31 samples, Cu, Au, Ag	Peteka 1,2,4	392.15
Silt			
Rock	14 samples, Cu, Au, Ag	Peteka 1,4	177.10
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying	6 man days	Peteka 1,2,4	4,721.25
Petrographic			
Mineralogic			
Metallurgic			
PROSPECTING (scale, area)	150,000, 3 claims plus surrounding area - Peteka 1,2,4		
	Reporting & Drafting		1,292.00
PREPARATORY/PHYSICAL			
Legal surveys (scale, area)			
Topographic (scale, area)			
Photogrammetric (scale, area)			
Line/grid (kilometres)			
Road, local access (kilometres)			
Trench (metres)			
Underground (metres)			
			TOTAL COST
			6,602.50

FOR MINISTRY USE ONLY	NAME OF PAC ACCOUNT	DEBIT	CREDIT	REMARKS:
Value work done (from report)				
Value of work approved				
Value claimed (from statement)				
Value credited to PAC account				
Value debited to PAC account				
Accepted Date	Rept. No.			Information Class

	<u>Page</u>
SUMMARY	1
LOCATION MAP	
LOCATION AND ACCESS	1
PHYSIOGRAPHY	2
PROPERTY DEFINITION	2
TABLE OF FORMATIONS	
GEOLOGY	3
SUMMARY OF WORK IN 1984	3
LIST OF MAPS	4
RECOMMENDATIONS AND CONCLUSIONS	5
APPENDIX	
AUTHOR'S QUALIFICATIONS	
ANALYTICAL PROCEDURES	
GEOCHEMICAL RESULTS	
MAP POCKET, CONTAINING	
SEDIMENT SAMPLE LOCATION	FIGURE #RD - 84 - 271B
ANALYTICAL RESULTS, Au., Ag.	FIGURE #RD - 84 - 271C
ANALYTICAL RESULTS, Cu.	FIGURE #RD - 84 - 271D
ROCK SAMPLE LOCATIONS	FIGURE #RD - 84 - 271E
ANALYTICAL RESULTS, Au., Ag.	FIGURE #RD - 84 - 271F
ANALYTICAL RESULTS, Cu	FIGURE #RD - 84 - 271G

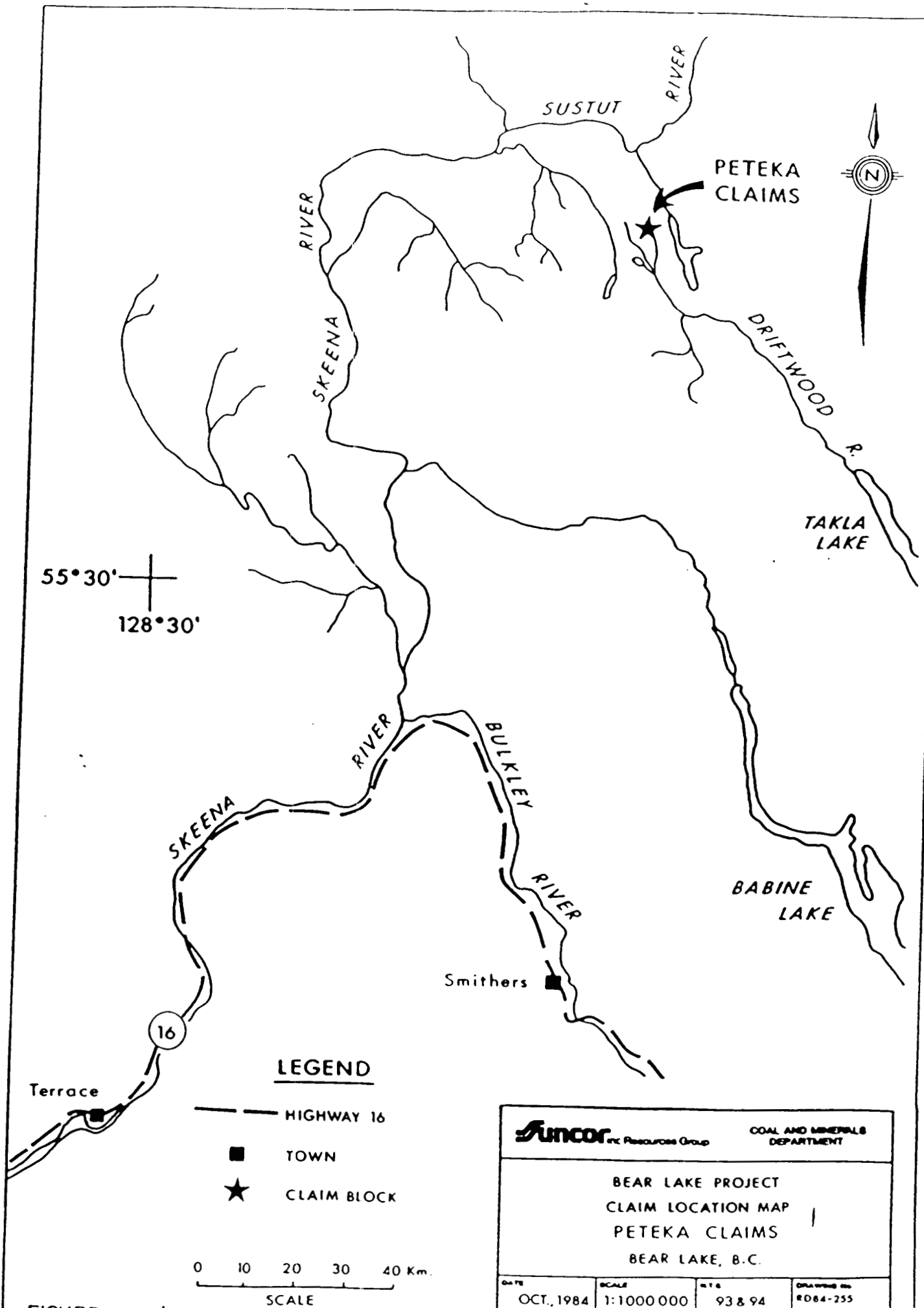


FIGURE no 1

LEGEND

- HIGHWAY 16
- TOWN
- ★ CLAIM BLOCK

0 10 20 30 40 Km.
SCALE

		COAL AND MINERALS DEPARTMENT	
BEAR LAKE PROJECT CLAIM LOCATION MAP PETEKA CLAIMS BEAR LAKE, B.C.			
DATE	SCALE	BY	DRAWING NO.
OCT., 1984	1:1000 000	93 & 94	RD84-255

SUMMARY

The Peteka 1-4 claims are a copper-gold-silver prospect consisting of 4 claims of 20 units. They are located 155 km north of Smithers, B.C. in the Omineca M.D. They are roughly centered at latitude: 56° 10' N and longitude: 126° 58' W. They were staked August 19 and 20, 1984 and recorded on September 7, 1984.

Subsequent to staking eight (8) man-days and six (6.0) hours of helicopter time were expended with 31 stream sediment samples collected, and 14 rock samples from the claims proper.

All samples were analysed for Au, Ag and Cu. The total cost of this work was \$7,447.20.

LOCATION AND ACCESS

The Peteka 1-4 claims are located at the headwaters of the Driftwood River in the range of mountains immediately west of Bear Lake. Bear Lake is located 155 km north of Smithers, B.C. The four claims have a common legal corner post at the south end of a small lake at latitude: 56° 10' N and longitude: 126° 58' W.

Access to this area is possible only by aircraft at the present time. An airstrip capable of handling small fixed wing aircraft is located near the Bear River 2 km north of Bear Lake. Good camping areas are located adjacent to the airstrip. An abandoned rail line belonging to B.C. Rail runs along the east shore of Bear Lake but is impassable south of Bear Lake due to washouts. Access to the claims from the airstrip is by helicopter. Most of the area covered by the claims is above treeline and landing sites are numerous.

PHYSIOGRAPHY

This area is rugged, mountainous terrain with a maximum relief of approximately 1500 m. The peaks rise to elevations about 2300 m with the valleys at 800 m. Treeline is generally around 1500 m. The peaks and ridges are steep sided with extensive development of talus slopes. Below treeline, vegetation consists of heavy stands of spruce, pine and fir trees. Above treeline grasses and juniper are the most common vegetation.

PROPERTY DEFINITION

The Peteka 1-4 claims are situated in the Omineca Mining Division. They are wholly owned and operated by Suncor Inc., of Calgary. They are defined as follows:

<u>CLAIMS</u>	<u>NO. UNITS</u>	<u>RECORD NO</u>	<u>RECORD DATE</u>
Peteka 1	20	6614 (09)	Sept. 7, 1984
Peteka 2	20	6615 (09)	Sept. 7, 1984
Peteka 3	20	6616 (09)	Sept. 7, 1984
Peteka 4	20	6617 (09)	Sept. 7, 1984

Table of Formation

Hazelton Group

Basalt to andesite, massive, fine grained to aphanitic, dark green

Andesite, dark red-purple, tuffs and agglomerates

Metasedimentary - interbedded red conglomerates siltstones and mudstones

Katsberg Intrusions

Diabase dykes - medium-grained, equigranular dark grey

Feldspar porphyry - medium grained, light grey, with plagioclase phenocrysts.

GEOLOGY

The Peteka claims cover an area underlain by volcanoclastic and flow rocks of the upper division of the Hazelton Group. These rocks are Jurassic in age (Table of Formations). They consist of a sequence of tuffs, agglomerates and lava flows of basaltic to andesitic composition. The majority of the rocks on the claims are greenish, epidotized tuffs and breccias, except for a gossanous area 1.5 km square in the southern part of the claim group, where all the rocks are highly altered and rusty-weathering.

Adjacent to the southeast corner of the property, these volcanics are intruded by a tabular body of feldspar-porphyry of the Katsberg group intrusives.

SUMMARY OF WORK IN 1984

The Peteka claims were staked on August 20, 1984. Subsequent to that, between August 22 - 23, 1984, six (6) man-days were expended doing stream sediment sampling and prospecting on the claims by the following personell.

C. Cross	August 23
T. Donnelly	August 22, 23
R. Smith	August 22,23
D. Safton	August 22

A total of 31 stream sediment samples was taken and analyzed for Au, Ag, and Cu, and from the claims, prospecting resulted in the collection of 14 rocks which were geochemically analyzed for Au, Ag and Cu.

Stream sediment samples were collected from Driftwood Creek, Patcha Creek Peteka Creek and their tributaries during a program of regional prospecting to identify anomalous areas.

The area to the northwest of the Peteka claims is characterized by low values for gold and silver. Of the Copper values recorded in the area only one (920 P.P.M.) is anomalous.

These low values are related to an area underlain by purple tuffs which were most likely deposited under subaerial conditions.

Stream sediment sampling on the Peteka claims appears to yield values which better represent anomalous conditions. Three samples show anomalous copper-gold values lying in the valley of the Driftwood River.

Limited prospecting was undertaken on the claim blocks and to the northwest off the claim block. Work on the claims proper was limited to the valley of the Driftwood River (in Peteka 4) and northwest of a small lake (in Peteka 1).

The bedrock found was essentially andesitic volcanics and agglomerates. Calcite veining was common and narrow inlier of sandstone (?) was rolled on Peteka 4. A general description of the rocks collected are listed in Table-1.

Since this was essentially a prospecting type examination, particular attention was paid to sulphide mineralization, and the rocks collected and analyzed reflect this bias.

In general very high geochemical values for gold, silver and copper were received from the analyses of the rocks, as noted on the accompanying plan. Pyrite was generally well disseminated throughout the samples collected and malachite staining common. Chalcopyrite could be identified on fracture surfaces and in generally north to northeast trending erratic calcite veins. Few fragments of specularite were noted in the river bed, but the location for this material was not followed up.

RECOMMENDATIONS AND CONCLUSIONS

Additional work is warranted in the Driftwood River Valley. Soil sampling, geological mapping and grid construction is warranted to determine the extent and nature of the anomolous stream sediments and to follow up the highly anomalous copper and precious metal values.

PETAKA CLAIMS
TABLE 1

ROCK SAMPLE DESCRIPTIONS

Sample #	Description
840656	andesitic tuff; qtz. alteration; disseminated pyrite.
840657	qtz. feldspar porphyry; silicic alteration; rusty weathering
840658	?float; malachite staining.
840659	green aphanitic volcanic with disseminated py, ccp; vein 1-2cm - py, ccp, malachite.
840660	volcanics with calcite veining; 10% sulphide in blebs-ccp, py.
840661	dark green volcanics; calcite veining; disseminated py, ccp; malachite staining.
843687	float; brecciated volcanics with qtz and calcite veining; py, ccp on fracture surfaces.
843692	porphyritic andesite; feldspar porphyroblasts; calcite vein with malachite and pyrite.
843693	calcite-py vein in sandstone. (?)
843694	porphyritic andesite; disseminated pyrite.
TD3688	purplish agglomerate; minor pyrite
TD3689	agglomerate-rhyolite dyke contact; calcite vein with py, ccp, malachite, azurite.
843690	purple agglomerate; extensive malachite (5%).
843691	agglomerate-clasts up to 30mm; veining along fractures-calcite, malachite, azurite, py.

PETEKA CLAIMS

1984

COST SUMMARY

PETEKA 1 (6614-09), PETEKA 2 (6615-099), PETEKA 3 (6616-09), PETEKA 4,
(6617-09)

SALARIES AND WAGES

D. Cross	1 man-day	@	\$186	\$	186.00
T. Donnelly	2 man-days	@	\$150		300.00
R. Smith	2 man-days	@	\$150		300.00
D. Safton	1 man-day	@	\$110		110.00
				\$	<u>896.00</u>

FOOD AND ACCOMMODATION

8 man-days @ \$50/day \$ 400.00
(includes helicopter pilot for 2 days)

TRANSPORTATION

Northern Mountain Helicopters Bell 206-B
6.1 hours @ \$390/hour \$ 2,379.00
6.1 hours fuel @ 22 gals/hr x \$3.50/gal 469.70
Central Mountain Air Services - Twin Beech
1 flight @ 205 miles x \$2.65/mile 543.25
Van Alphen Exploration Services (Expediter)
1 day @ \$100/day 100.00

GEOCHEMISTRY

31 stream sediment samples @ \$12.65 each 392.15
14 rock samples @ \$12.65 each 177.10

REPORT PREPARATION

2 man-days @ \$186 372.00
46 hours drafting @ \$20/hour 920.00
\$ 6,649.20

OVERHEADS - \$798.00 : Total \$ 7,447.20

Author's Qualifications

I, Timothy Donnelly of the City of Edmonton, Alberta, do hereby certify that;

1. I hold an Honours Bachelor of Science Degree from the University of Alberta, 1982.
2. I have practiced my profession since graduation.
3. I personally supervised the field crew carrying out work detailed in the attached report.
4. I am employed by Suncor Inc. as a Temporary Geologist.

Timothy Donnelly

APEX ANALYTICAL LABORATORIES, CALGARY

SAMPLE PREPARATION

ROCKS AND DIAMOND DRILL CORE:

These samples are crushed by a primary jaw crusher then through a secondary cone crusher to a particle size of 1/4 inch. The sample is now riffled and a 200 gram portion is kept and pulverized in a terner mill to -200 mesh fraction. The remainder of the sample is kept as a reject. The pulverized sample is rolled to make sure it is well mixed and is then weighed and analyzed.

SOILS

Soil samples are dried and then screened through a 80 mesh stainless steel screen. The -80 mesh sample fraction is then weighed and analyzed. If a soil sample contains an excess of pebbles or is too small, then the entire sample must be pulverized to -200 mesh. This is the only way in which enough material may be found for analysis.

GEOCHEMICAL ANALYSIS - AQUA REGIA DIGESTION

- 1) Place 18 x 150 mm test tubes in aluminum digestion blocks.
- 2) Weigh 0.5 g of sample into test tubes.
- 3) Intersperse samples with blanks, checks and certified reference materials.
- 4) If samples are highly organic, dry ash in aluminum blocks on hot plates with hot plates set at 6-7 for 2-3 hours. Cool.
- 5) Add 2 ml conc. HNO_3 and heat 40-45 minutes with hot plates set a 5. Cool.
- 6) Transfer to wire racks but leave aluminum blocks on hot plates.
- 7) Add 3 ml conc. HCl . Let sit 15-25 minutes.
- 8) Add 2 ml H_2O to the blanks.
- 9) Place test tubes back in aluminum blocks, one row at a time watching for any samples that might have too violent a reaction.

If samples start to overflow, cool test tubes in a beaker of cold water and then place back in aluminum blocks.
- 10) Digest samples for 2 hours.
- 11) Add 1.0 ml of ammonium acetate solution to each tube and leave on a hot plate a further 15 minutes.
- 12) Remove samples from aluminum blocks, transfer to wire racks and let cool.
- 13) Dilute to 10 ml with 1 N HNO_3 : vortex and allow to stand for 3 hours.
- 14) Read on A.A. against similarly prepared standards.

NOTE: Arsenic analysis by semi quantitative method, is run from the above solutions using a varian AA-5 spec. and recorder (if necessary to graph results).

FIRE ASSAYING

The following is a brief outline of the mechanics of fire assaying for gold and silver.

The ore is mixed with litharge (PBO) and various fluxed and a reducing agent or oxidizing agent is added, (flour or niter) to form a lead button which weighs between 25 and 35 grams. The whole mix is melted in a fire clay crucible at around 1000°C for 30-40 minutes. The lead collects all the gold, silver and precious metals. The molten assay is taken from the furnace and poured into cone shaped iron molds and due to the differences in the specific gravity of the lead and the slag, the lead collects in the bottom of the mold. When cooled the lead button is separated from the slag and hammered into a cube for ease of handling. The button is then placed in a pre-heated cupel in a furnace with the temperature set at around 900°C. A current of air passes over the top of the cupel containing the lead. The lead is converted back to litharge and is absorbed by the cupel.

Gold and silver are not affected and so remain in the cupel as a small bead. After cupellation is complete (about 60 minutes), the cupel is removed from the furnace. The small bead is then cleaned, flattened with a hammer and transferred to a parting cup. This flattened bead consists of a mixture of gold and silver.

The bead is weighed on a gold balance or micro balance. The bead is parted by placing it in hot, dilute nitric acid which dissolves all the silver but leaves the gold intact. The gold is washed free of silver nitrate by decantations with water and dilute ammonium hydroxide and then annealed at red heat and weighed as pure gold. The difference between the two weighings is the weight of silver.

The bead is weighed in milligrams and the results expressed in ounces per ton in the original sample.

METHOD FOR THE DETERMINATION OF GOLD BY FIRE ASSAY

PRECONCENTRATION AND ATOMIC ABSORPTION ANALYSES

1. A 1 assay ton (29.166g) sample is weighed into a 30 g crucible, 1 mg of Ag is added as a collected agent.
2. Enough flux reducing or oxidizing reagent is added to produce a lead button.
3. The sample is transferred into an assay furnace and heated to 2000°F for 40-45 minutes.
4. The fusion is poured into a iron mould.
5. The slag is separated from the lead button in which Au and Ag has been alloyed.
6. The lead button is again transferred to a cupel in the assay furnace.
7. By heating slightly below melting point of Ag, Lead is eliminated either by vaporizing or absorbing into the cupel in about 40 minutes.
8. A bead which contains all the Au in the 1 assay ton sample is recovered on the cupel.
9. The bead is transferred to a 16 x 150 mm test tube, 1 ml of concentrated HNO₃, and 4 ml of 1:1 HCl are added to the tube.
10. The tube is heated on the hot plate for approximately 1 hour, or until all the residue is dissolved in the tubes.
11. The volume is adjusted to 10 ml with 1:1 HCl and the samples are mixed.
12. Samples are read on a Varian AA5 Atomic absorption spectrophotometer.

GEOCHEM BASE METALS

Procedure:

Sample wt. .5 gms into 18 x 150 mm test tube

Test tubes are placed into Aluminum Blocks

3 mls HCL plus 2mls HNO₃ are now added.

Blocks are placed on hot-plate at low heat for 1 hour
then medium heat for 1 hour more.

Blocks are cooled and 1 ml of 20% Ammonium Acetate
solution is added.

Volume is now brought up to 10 mls with distilled
water.

Samples are then vortexed and allowed to settle for
two hours.

Base metals are run on Varian 475 Atomic Absorption
Spectrometer.

Silver must be run two hours after settling.

METHOD FOR THE DETERMINATION OF GOLD BY FIRE ASSAY

PRECONCENTRATION AND ATOMIC ABSORPTION ANALYSES.

1. A 1 assay ton (29.166g) sample is weighed into a 30 g crucible, 1 mg of Ag is added as a collected agent.
2. Enough flux, reducing or oxidizing reagent is added to produce a lead button.
3. The sample is transferred into an assay furnace and heated to 2000° F for 40-45 minutes.
4. The fusion is poured into an iron mould.
5. The slag is separated from the lead button in which Au and Ag has been alloyed.
6. The lead button is again transferred to a cupel in the assay furnace.
7. By heating slightly below melting point of Ag, Lead is eliminated either by vaporizing or absorbing into the cupel in about 40 minutes.

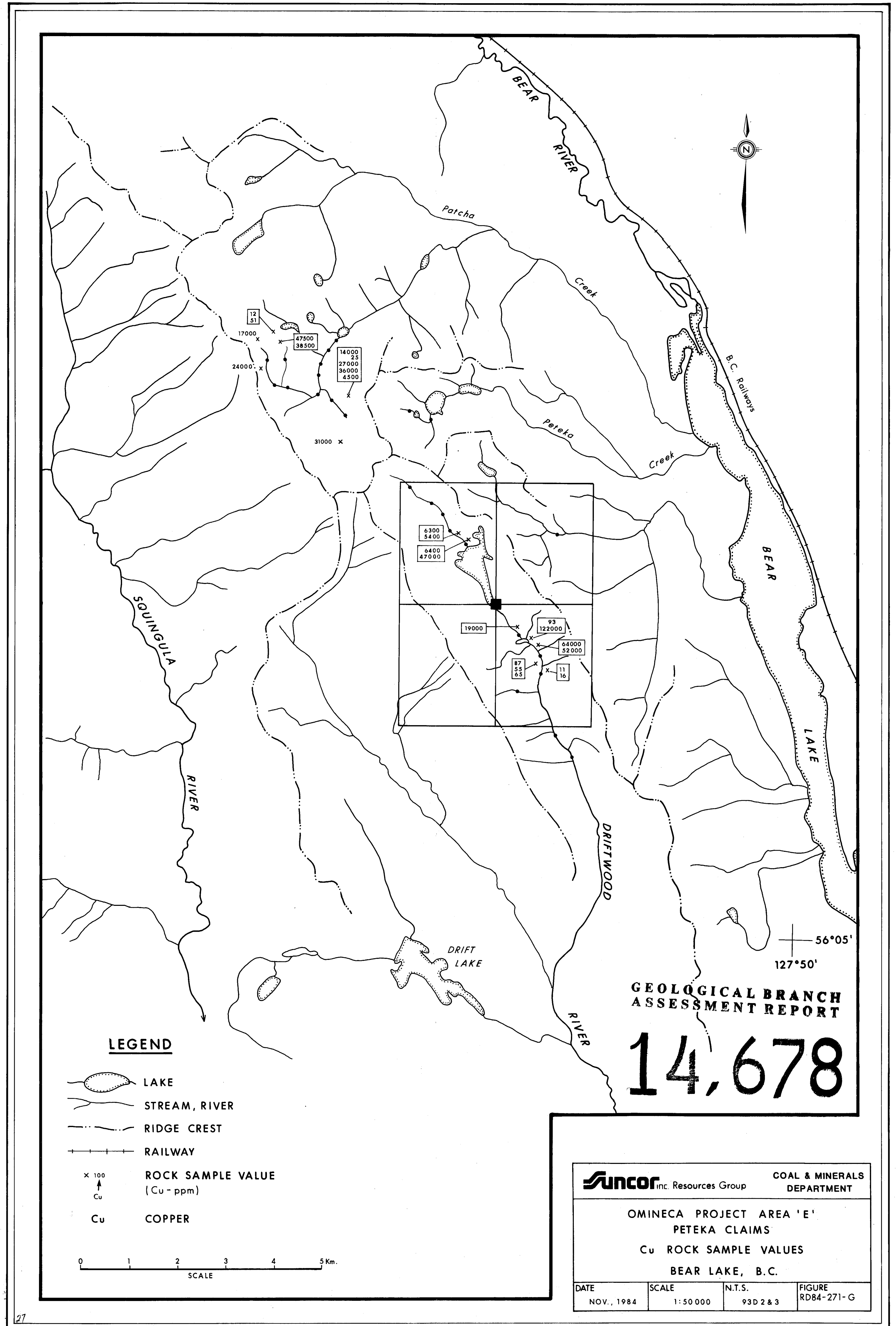
8. A bead which contains all the Au in the 1 assay ton sample is recovered on the cupel.
9. The bead is transferred to a 16 x 150 mm test tube, 1 ml of concentrated HNO₃, and 4 ml of 1:1 HCl are added to tube.
10. The tube is heated on the hot plate for approximately 1 hour, or until all the residue is dissolved in the tubes.
11. The volume is adjusted to 10 ml with 1:1 HCl and the samples are mixed.
12. Samples are read on a Varian AA5 Atomic absorption spectrophotometer.

SAMPLE PREPARATION

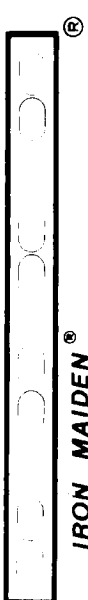
Rocks - crushed in Jaw Crusher. Then through Cone Crusher, reducing size R 1/4 inch, mechanically split. Minimum 200 grams taken and pulverized to -200 mesh.

Soils - screened to -80 mesh, if insufficient material then entire sample must be pulverized to -200 mesh.

R.D.84-271-G



R.D.84-271-E

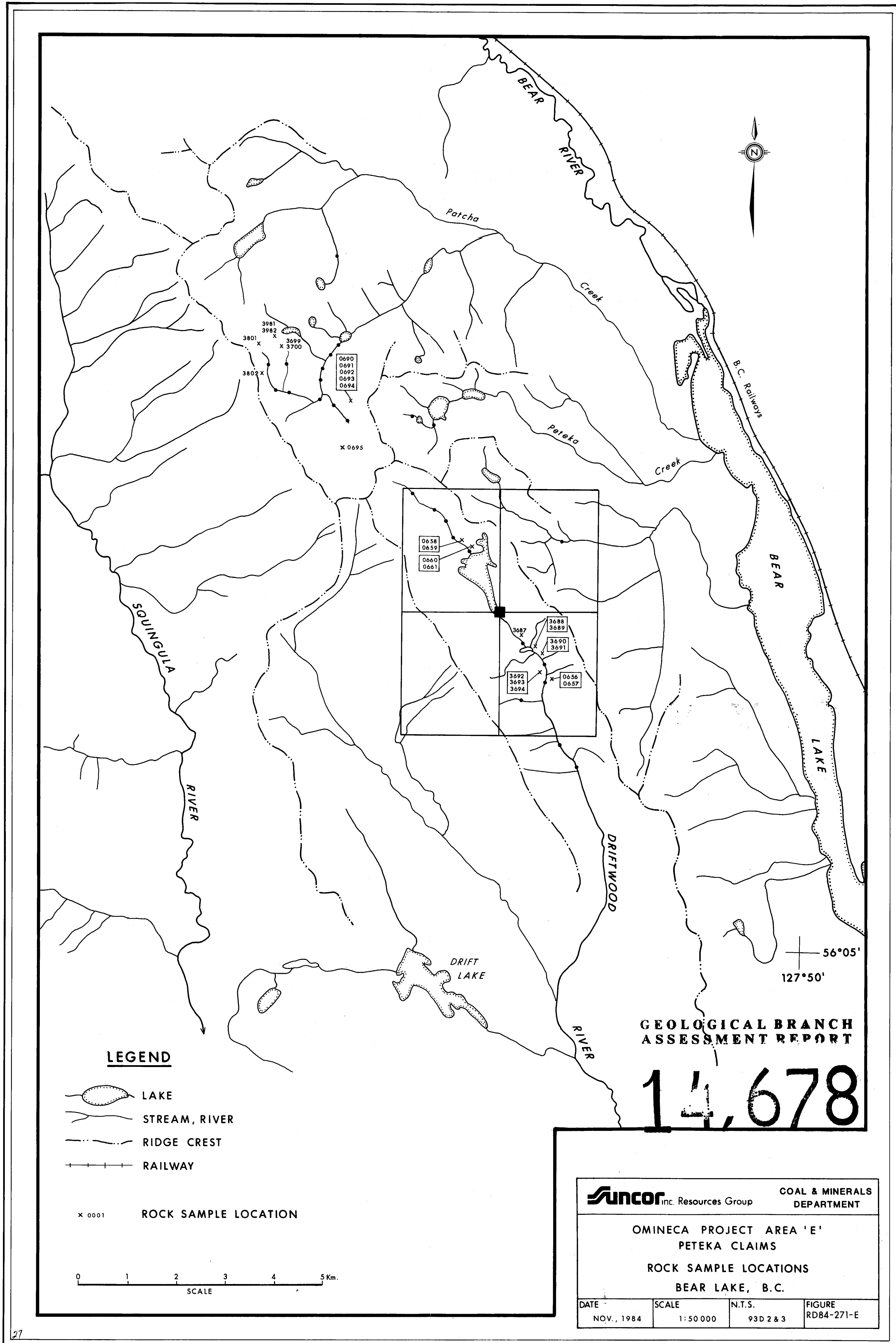


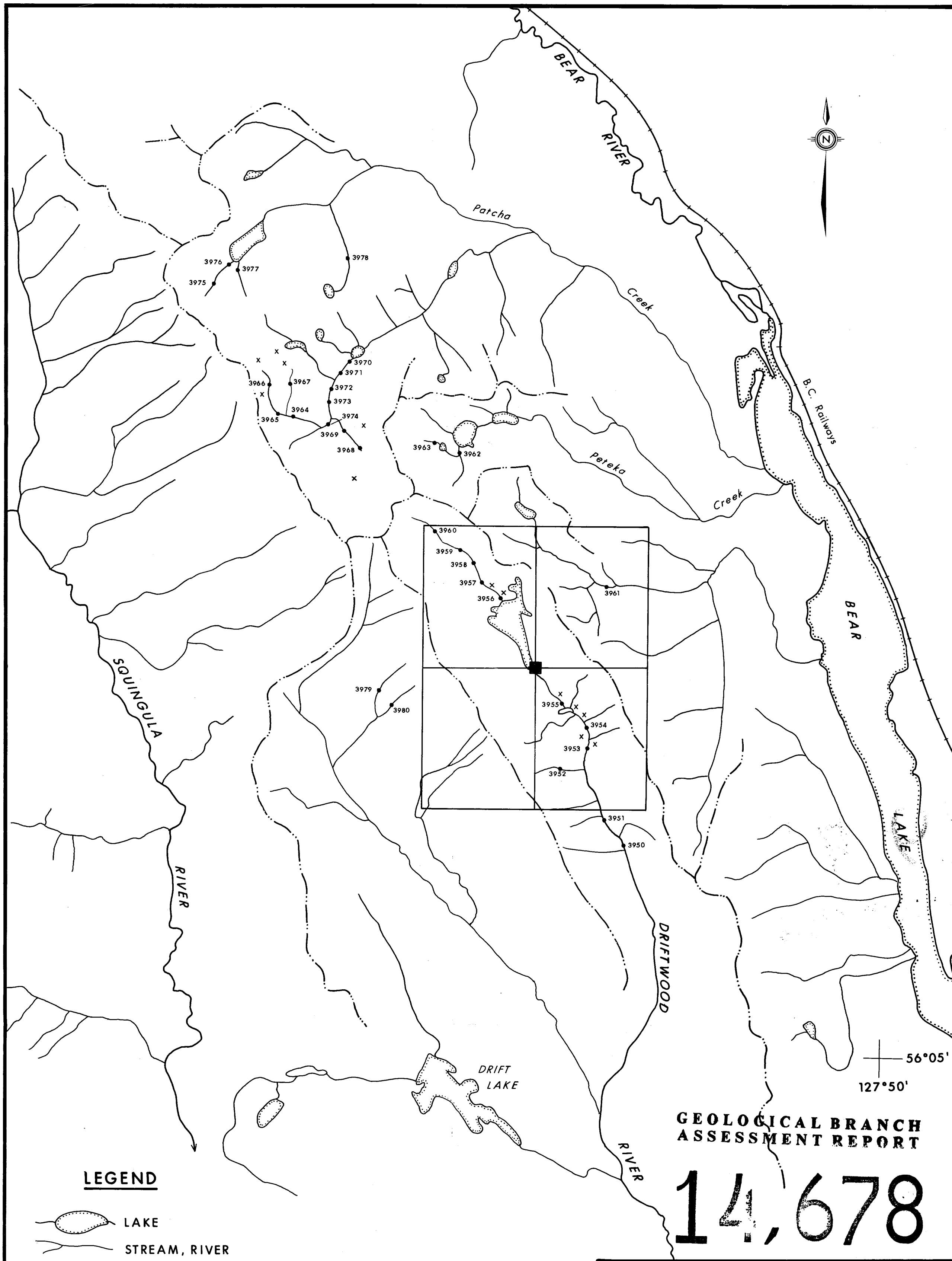
IRON MAIDEN®
 U.S.A. DESIGN PATENT 4139248-1979
 CANADIAN IND. DESIGN REG. NO. 42524
 CANADIAN PATENT 1065729-1979



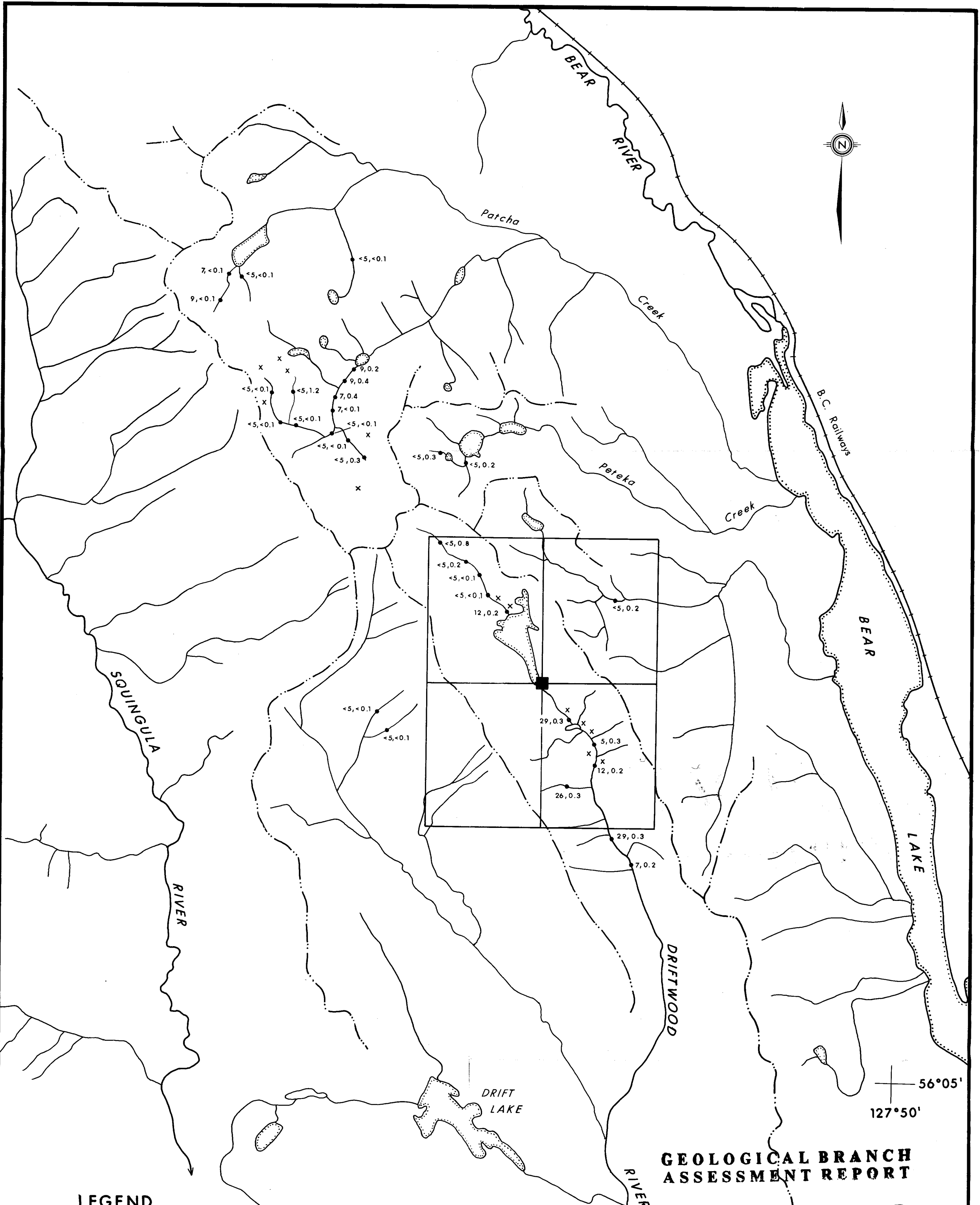
IRON MAIDEN® SYSTEMS CALGARY, ALBERTA, CANADA

IM 42





Suncor Inc. Resources Group		COAL & MINERALS DEPARTMENT	
OMINECA PROJECT AREA 'E' PETEKA CLAIMS SEDIMENT SAMPLE LOCATIONS BEAR LAKE, B.C.			
DATE NOV., 1984	SCALE 1:50 000	N.T.S. 93D 2 & 3	FIGURE RD84-271-B



LEGEND

- LAKE
- STREAM, RIVER
- RIDGE CREST
- RAILWAY
- SEDIMENT SAMPLE VALUE
(Au - ppb, Ag - ppm)
- Au, Ag GOLD, SILVER



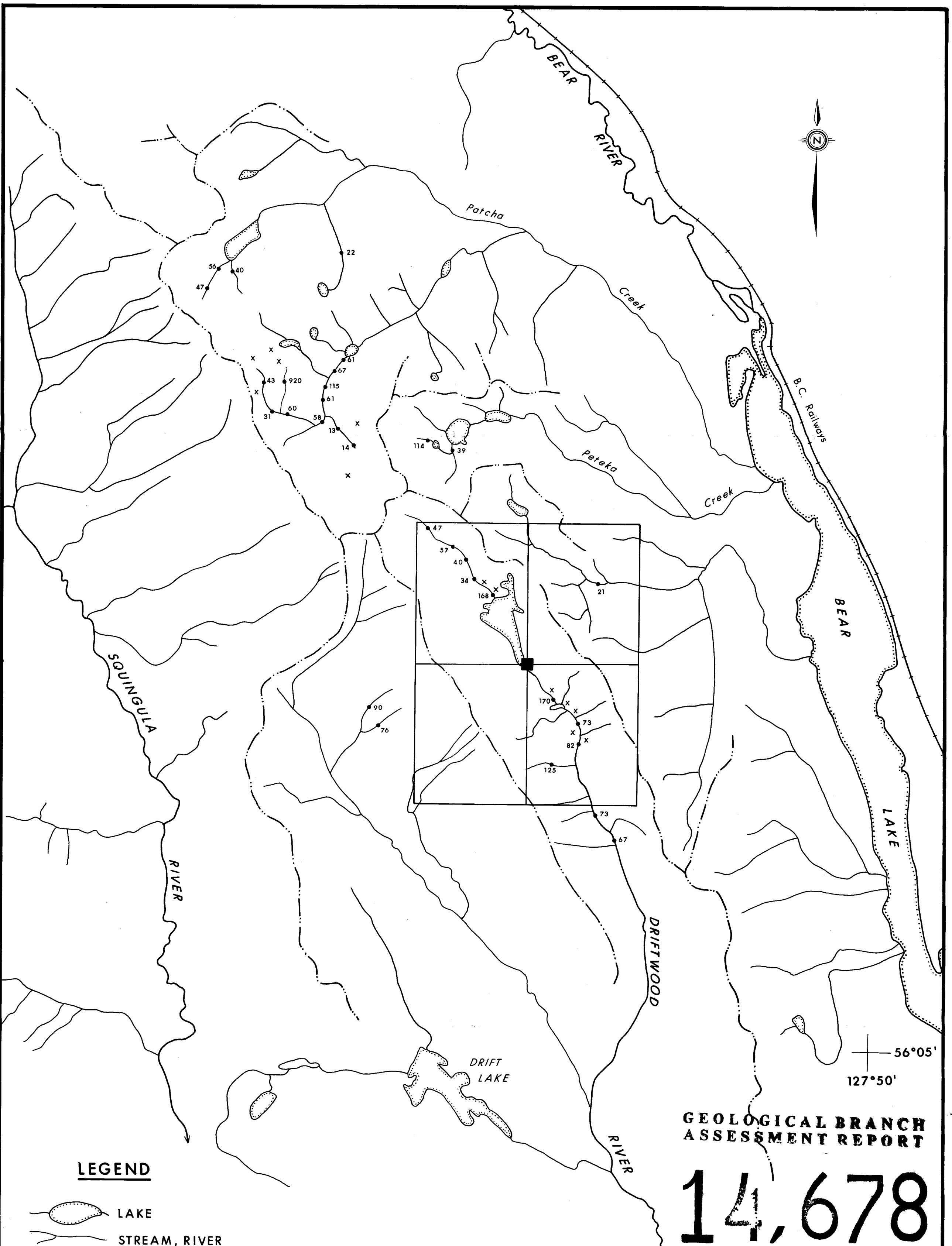
GEOLOGICAL BRANCH ASSESSMENT REPORT

14,678

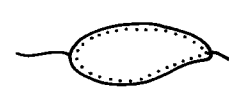

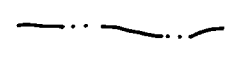
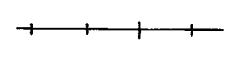
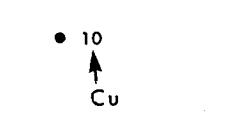
SUNCOR Inc. Resources Group COAL & MINERALS DEPARTMENT

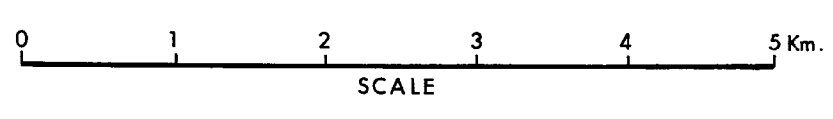
OMINECA PROJECT AREA 'E'
PETEKA CLAIMS
Au, Ag SEDIMENT SAMPLE VALUES
BEAR LAKE, B.C.

DATE NOV., 1984	SCALE 1:50 000	N.T.S. 93D 2 & 3	FIGURE RD84-271-C
--------------------	-------------------	---------------------	----------------------



LEGEND

-  LAKE
-  STREAM, RIVER
-  RIDGE CREST
-  RAILWAY
-  SEDIMENT SAMPLE VALUE
(Cu - ppm)
- Cu** COPPER



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

14,678

Suncor Inc. Resources Group		COAL & MINERALS DEPARTMENT	
OMINECA PROJECT AREA 'E' PETKA CLAIMS Cu SEDIMENT SAMPLE VALUES BEAR LAKE, B.C.			
DATE NOV., 1984	SCALE 1:50 000	N.T.S. 93D 2 & 3	FIGURE RD84-271-D

RD84-271-F



IRON MAIDEN®
 U.S. A. DESIGN PATENT 4139248-1979
 CANADIAN IND. DESIGN REG. NO. 42524
 CANADIAN PATENT 1065729-1979



RD 1977

IRON MAIDEN® SYSTEMS CALGARY, ALBERTA, CANADA

IM 42

