

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT

9272  
NO.

DU PONT OF CANADA EXPLORATION LIMITED

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE FIRE 1,2,3 CLAIMS

OMINECA MINING DIVISION

LAT. 57°08', LONG. 126°58'

NTS: 94-E-2W & 3E

OWNER OF CLAIMS: Du Pont of Canada Exploration Limited

OPERATOR: Du Pont of Canada Exploration Limited

*GA Harron*  
Author: G. A. Harron

Date Submitted: 1981 JUN 10

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LIST OF MAPS

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Drwg. No. AR-80-249      Geochemistry	"

I INTRODUCTION(a) Location

The Fire 1-3 claims are located 7.2 km SSW of Drybrough Peak on the north side of the Firesteel River. Elevations on the property range from 1128 m along the southern boundary to 1585 m along the central part of the northern boundary. The claims lie on the southern termination of a NNW trending ridge. Approximately 40% of the property is above the tree line and the remainder is covered with a moderate stand of spruce and poplar trees.

(b) Access

Access to the claims is most convenient by rotary-wing aircraft from the Sturdee River airstrip; a distance of 10.4 km to the northwest.

(c) Claim Definition

The Fire 1-3 represents 45 contiguous units with record numbers, tag numbers, and record dates as listed below:

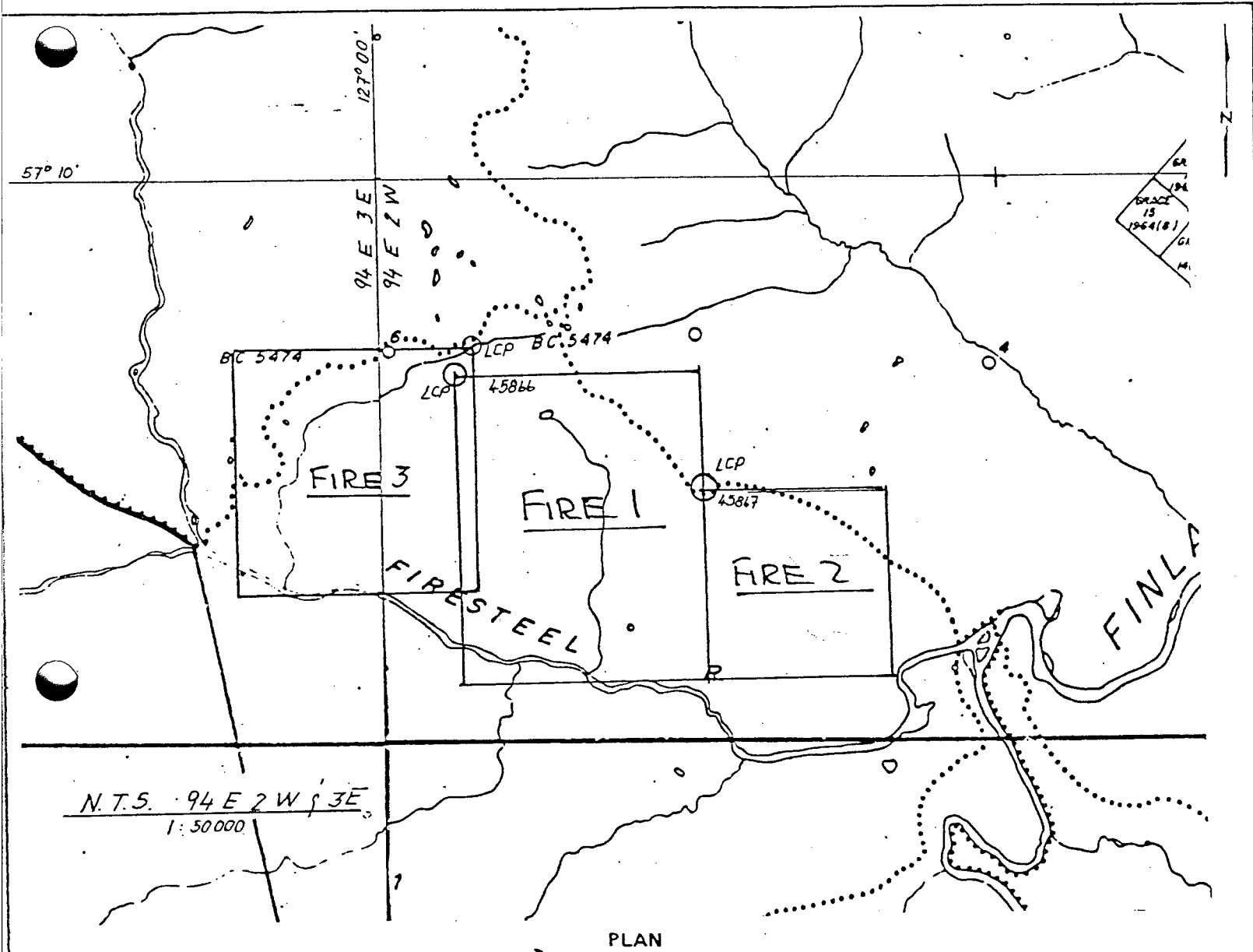
Claim (units)	Record Number	Tag Number	Record Date
Fire 1 (20)	2978	45866	July 25, 1980
Fire 2 (9)	2979	45867	July 25, 1980
Fire 3 (16)	3075	45837	July 31, 1980

The current owner and operator of the claims is Du Pont of Canada Exploration Limited. The claims were staked to facilitate work on an auriferous geochemical anomaly.

(d) Summary of Work Performed

A total of 16 stream sediment samples, 4 soil samples, and 8 rocks were collected for analyses. Geological mapping utilizing the geochemical sampling line for control, at a scale of 1:10,000 was undertaken.

The geology is plotted on Drwg. No. Ar80-248, and the geochemical results are plotted on Drwg. No. Ar80-249.



Indicate claim boundaries, permanent watercourses, access road and distance to nearest town, proposed roads, test pits, trenches, adits, drill sites, and camp sites.

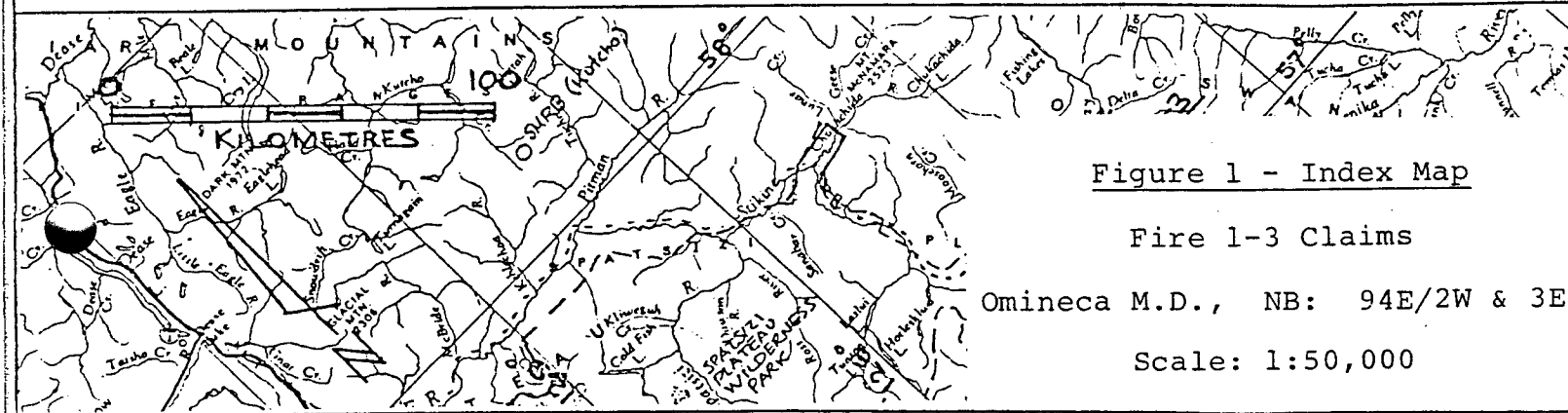


Figure 1 - Index Map

Fire 1-3 Claims

Omineca M.D., NB: 94E/2W & 3E

Scale: 1:50,000

II GEOLOGY(a) Introduction

The Fire 1-3 claims are in the eastern portion of the Intermontane Belt, of Mesozoic volcanic, sedimentary, intrusive rocks, and minor amounts of Paleozoic rocks. The eastern margin of the Intermontane Belt is about 22 km east of the claims. Published geology of the area suggests that the claims cover the contact between a lower Jurassic quartz monzonite on the north and upper Triassic Takla Group volcanics on the south.

(b) Lithology

Seven lithologic units were noted during the course of the mapping. The relative stratigraphic position of the units is indicated in the legend of drawing Ar80-248

i) Plagioclase Porphyry Andesite

This rock type contains up to 25% white platy plagioclase feldspars up to 3 mm long, either isolated or arranged in rosettes set in a fine grained greenish grey matrix. The feldspars are mainly unaltered. The outcrops observed suggest that this rock unit occurs as flows. No zones of alteration were noted, nor were sulphide minerals present.

ii) Plagioclase Porphyry Lahar

This rock unit conformably overlies the plagioclase porphyry andesite. On both weathered and fresh surfaces, the larger clasts are maroon in colour with up to 25% white plagioclase phenocrysts up to 2 cm in length. Clasts comprise about 60% of the rock, set in a fine grained maroon matrix. It is suggested that this unit represents an oxidized flow top breccia to the subjacent unit.

iii) Basalt

This unit is black on both weathered and fresh surfaces and is very fine grained. Outcrops are severely fractured, however it is considered that the basalt forms massive flows, and no pillow structures were noted. The contact with the underlying lahar was not observed.

iv) Mafic Agglomerate

This unit consists of black angular fine grained clasts up to 25 cm hosted in a black very fine grained matrix. The clasts comprise about 50% of the volume, and the matrix does not show bedding. The contact between this and the underlying unit was not observed. However, it is suggested that this unit represents a flow top breccia to the subjacent basalt.

v) Andesite

This is the most common rock type observed. On both fresh and weathered surfaces the rock is medium to dark greenish-grey and aphanitic, and forms massive flows. Most outcrops are moderately fractured and in places calcite veinlets are common. The contact with the underlying units was not observed.

vi) Rhyolite Agglomerate

After andesite, this is the second most abundant rock encountered. On both weathered and fresh surfaces the unit consists of reddish-brown clasts averaging 10 cm in diameter in a greenish-grey matrix. Both the clasts and the matrix are fine grained and break with a conchoidal fracture. In all outcrops observed disseminated pyrite in amounts up to 15% were noted, although the average is about 5%.

vii) Greywacke

This rock type was only noted in the western portion of the claim group. The rock is greyish-brown on both the weathered and fresh surfaces, and is medium to coarse grained. Bedding is discontinuous, and is characterized by 1 cm pebbles of mafic volcanics in the bedding planes. The contacts with other units was not observed, however, it is assumed that this unit unconformably overlies andesite.

viii) Feldspar Porphyry

This rock type occurs as a dyke intruding rhyolite agglomerate. The colour is pink, and consists of about 25% orthoclase phenocrysts in a fine grained pink matrix. Contacts with the rhyolite agglomerate are sharp, but lack contact metamorphic effects.

(c) Structure

Attitudes of bedding are diverse and in some cases contradictory. Rationalization would include discontinuities within the volcanic rocks and the presence of faults. However, not enough data was collected to provide a satisfactory resolution of the structure.

A mineralized shear zone was noted to trend  $110^{\circ}$  and dip vertically.

The feldspar porphyry dyke has a trend of  $80^{\circ}$  and dips vertically.

(d) Mineralization

The mineralized shear zone referred to above consisted of disseminated to massive granular pyrite and pyrrhotite over a width of 0.6 m in sheared and carbonatized andesite. An assay over the 0.6 m returned the following: 0.01% Pb, 0.01% Zn, 0.003% Cu, 0.01 oz/ton Ag, 0.002 oz/ton Au.

Additionally, 6 other rock samples were collected and geochemically analyzed. The locations of the samples are shown on drawing No. AR80-249

<u>Sample No.</u>	<u>Au</u> ppb	<u>Ag</u> ppm	<u>Cu</u> ppm	<u>Pb</u> ppm	<u>Zn</u> ppm	<u>Description</u>
4973	20	0.6	6	10	40	25% diss.py, rhyolite agglon float
4974	35	1.4				10% diss.py, rhyolite agglon
8001	15	1.9	11	29	15	10% diss.py, andesite
8002	20	1.3	82	19	48	10% diss.py, andesite
8003	15	1.2	65	29	88	5% pyrrhotite, rhyolite float
8004	10	1.1	78	14	50	5% diss.py, andesite

(e) Conclusions

The area of the claim groups investigated were found to be underlain by Takla Group volcanic and sedimentary rocks and intruded by a small dyke thought to be a part of the Toodoggone Group of rocks. The attitude of the rocks is diverse and further work is required to elucidate the structure. Sampling of sulphide mineralization yielded low, but anomalous values in Au and Ag.

### III GEOCHEMICAL SURVEY

#### (a) Sample Collection, Preparation, and Analyses

A total of 16 stream sediment samples were collected from the drainage of two creeks on the Fire 1 & 3 claims. Sample intervals were 200 m measured with a "hip chain", and the sample line followed the stream courses. At each sample site a metal scoop was used to collect about 500 gms of silt-sand sized material from the stream bed and placed in a wet strength soil sample envelope. The sample was numbered and specific information describing the sample and the sample site was recorded on a data card. A flag bearing the sample number was placed at the collection site.

A total of 4 soil samples were collected on the Fire 3 claim. Sample intervals were 200 m measured with a "hip chain", and the sample line followed a prominent linear. At each sample site, a mattock was used to collect about 500 gms of the C or rock detritus horizon. The soil material was placed in a wet-strength kraft paper envelope and numbered. Specific information describing the sample and the sample site were recorded on a data card. A flag bearing the sample number was placed at the collection site.

The stream sediment and soil samples were sent to Min-En Laboratories in North Vancouver for preparation and analysis for Au. The samples were oven dried and sieved to collect the -80 mesh fraction. This fraction was analyzed for Au according to the procedures outline in Appendix A.

Further analyses for Ag, Cu, Pb, Zn, Mo, and Cr were performed on the pulps by Riocanex, using standard techniques equivalent to those listed in Appendix A.

#### (b) Results and Interpretation

Drawing Ar.80-249 shows the sample numbers, locations, and the values for Au, Ag, Cu, Pb, Zn, Mo, and Cr obtained. The following table summarizes the results:

<u>No. of Samples</u>	<u>Element</u>	<u>Range</u>	<u>Units</u>
20	Au	5-4700	ppb
17	Ag	0-1.5	ppm
17	Cu	10-134	ppm
17	Pb	5-13	ppm
17	Zn	25-139	ppm
17	Mo	0-26	ppm
17	Cr	8-31	ppm

Samples 9501A and 4293D contain elevated contents of Ag, Zn, Mo, and according to published maps, are adjacent to a quartz monzonite-granodiorite pluton of Lower Jurassic age. Field mapping indicated the presence of feldspar porphyry dykes in the vicinity of these samples, which may be apophyses of the pluton. Thus, these samples reflect hydrothermal mineralization peripheral to the pluton.

Sample 8000D reported 4700 ppb Au, but the cause of this anomalous value is not known, and further investigations are required.

IV COST STATEMENT

(a) <u>Wages</u>	<u>Daily</u> <u>Rate</u>	<u>Spec.</u> <u>Dates</u>	<u>No.</u> <u>Days</u>	<u>Cost</u>
Geologist	\$ 172.00	Aug.15/80, Apr.15/81	2	\$ 344.00
Geological Asst.	50.82	Aug.15/80	1	50.82
Field Asst.	39.18	Aug.15/80, Jan12,13/81	3	117.54
Field Asst.	46.58	Aug.15/80	1	46.58
				<u>558.94</u>

(b) Room and Board

Per diem rate of \$49.56 applies to the 4 person days for August 15, 1980 198.24

(c) Transportation

Transportation to the field area: The total cost of transporting the field crew to the Sturdee River airstrip is \$6170.63, and is prorated over 19 claim groups. The charges to the claim are: 324.77

In support of field work:

Terr-Air Invoice #931, including:

0.6 hours @\$365/hr on Aug. 15, 1980

18 gallons of fuel @ \$3/gal.

273.00  
597.77

(d) Analytical Services

<u>No. of</u> <u>Samples</u>	<u>Type</u>	<u>Elements</u>	<u>Unit Cost</u>	
5	Rock	Cu, Pb, Zn	\$2.25	11.25
6	Rock	Au	4.25	25.50
4	Rock	Ag	1.75	7.00
6	Rock	Preparation	2.00	12.00
1	Rock	Assay, Au, Ag, Cu, Pb, Zn	31.00	31.00
1	Rock	Preparation	2.50	2.50
20	Soil & Stream	Au	4.25	85.00
20	Soil & Stream	Preparation	0.60	12.00
17	Soil & Stream	Cu, Pb, Zn, Mo, Ag, Cr	4.75	80.75
				<u>267.00</u>

(e) Report Preparation

	<u>Daily</u> <u>Rate</u>	<u>Spec.</u> <u>Date</u>	<u>No.</u> <u>Days</u>	
Drafting	\$147	May 14/81	1	147.00
Typing	62	May 13/81	1	62.00

GRAND TOTAL

\$1830.95

QUALIFICATIONS

I, Gerald A. Harron, do hereby certify that:

1. I am a geologist residing at 2810 Sechelt Drive, North Vancouver, British Columbia and employed by Du Pont of Canada Exploration Limited.
2. I am graduate of the University of Western Ontario with a M.Sc. degree in geology.
3. I am a registered Professional Engineer in the Province of Ontario.
4. I have practised my profession in geology continuously for the past 11 years in various provincial jurisdictions in Canada.
5. Between 1981 August 15 and 1981 May 14, I supervised/directed a field programme on the Fire 1-3 claims on behalf of Du Pont of Canada Exploration Limited.

*Gerald A. Harron*

Gerald A. Harron  
1981 May 14

APPENDIX A

*MIN-EN Laboratories Ltd.*

*Specialists in Mineral Environments*

Corner 15th Street and Bewicke  
705 WEST 15th STREET  
NORTH VANCOUVER, B.C.  
CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORK

PROCEDURE FOR GOLD GEOCHEMICAL ANALYSIS.

Geochemical samples for Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 5.0 or 10.0 grams are pre-treated with  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

At this stage of the procedure copper, silver and zinc can be analysed from suitable aliquote by Atomic Absorption Spectrophotometric procedure.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.

*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*

Corner 15th Street and Bewicke

705 WEST 15th STREET

NORTH VANCOUVER, B.C.

CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORKPROCEDURES FOR Mo, Cu, Cd, Pb, Mn, Ni, Ag, Zn, As, F

Samples are processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer.

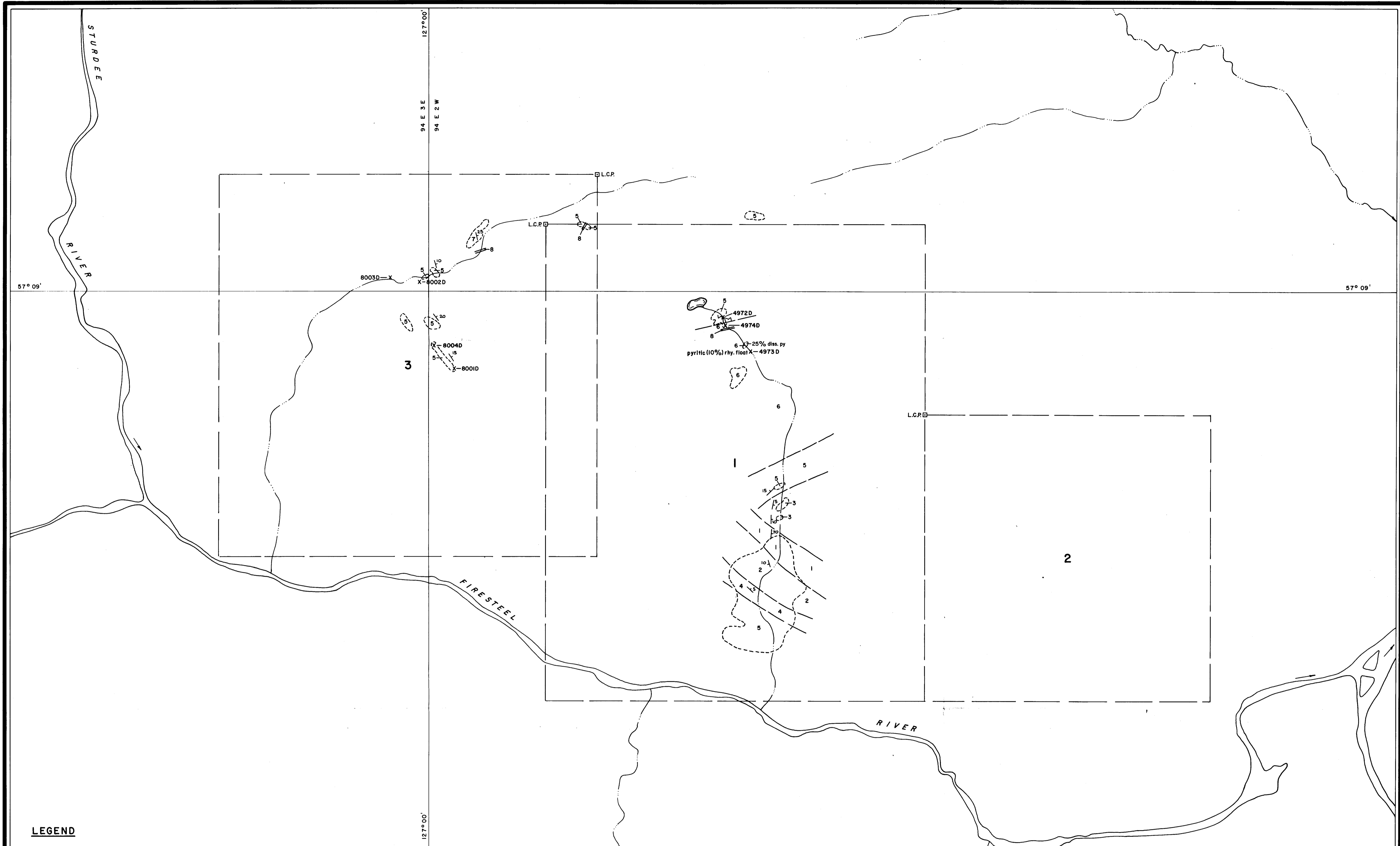
1.0 gram of the samples are digested for 6 hours with  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture.

After cooling samples are diluted to standard volume. The solutions are analyzed by Atomic Absorption Spectrophotometers.

Copper, Lead, Zinc, Silver, Cadmium, Cobalt, Nickel and Manganese are analysed using the  $\text{CH}_2\text{H}_2$ -Air flame combination but the Molybdenum determination is carried out by  $\text{C}_2\text{H}_2$ - $\text{N}_2\text{O}$  gas mixture directly or indirectly (depending on the sensitivity and detection limit required) on these sample solutions.

For Arsenic analysis a suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Gutzit method using  $\text{Ag CS}_2\text{N} (\text{C}_2\text{H}_5)_2$  as a reagent. The detection limit obtained is 1.2 ppm.

Fluorine analysis is carried out on a 200 milligram sample. After fusion and suitable dilutions the fluoride ion concentration in rocks or soil samples are measured quantitatively by using fluorine specific ion electrode. Detection limit of this test is 10 ppm F.



**LEGEND**

- 8 FELDSPAR PORPHYRY DYKE
- 7 GREYWACKE
- 6 RHYOLITE AGGLOMERATE
- 5 ANDESITE
- 4 MAFIC AGGLOMERATE
- 3 BASALT
- 2 PLAGIOCLASE PORPHYRY LAHAR
- 1 PLAGIOCLASE PORPHYRY ANDESITE

**SYMBOLS**

- OUTCROP
- CONTACT
- BEDDING, STRIKE & DIP
- SHEAR
- X-8000D ROCK SAMPLE LOCATION & No.
- CLAIM BOUNDARY & LEGAL CORNER POST

ROCK GEOCHEMISTRY					
Tag No.	Au P.P.B.	Ag P.P.M.	Cu P.P.M.	Pb P.P.M.	Zn P.P.M.
4973 D	20	0.6	6	10	40
4974 D	35	1.4			
8001 D	15	1.9	11	29	15
8002 D	20	1.3	82	19	48
8003 D	15	1.2	65	29	88
8004 D	10	1.1	78	14	50

ROCK ASSAYS					
Tag No.	Au ozs/ton	Ag ozs/ton	Cu %	Pb %	Zn %
4972 D	0.002	0.01	0.003	0.01	0.01

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**DUPONT EXPLORATION**  
CANADA

**ARGONAUT PROJECT**  
**FIRE CLAIMS**  
**GEOLOGY**

CHAPPELLE AREA, BRITISH COLUMBIA

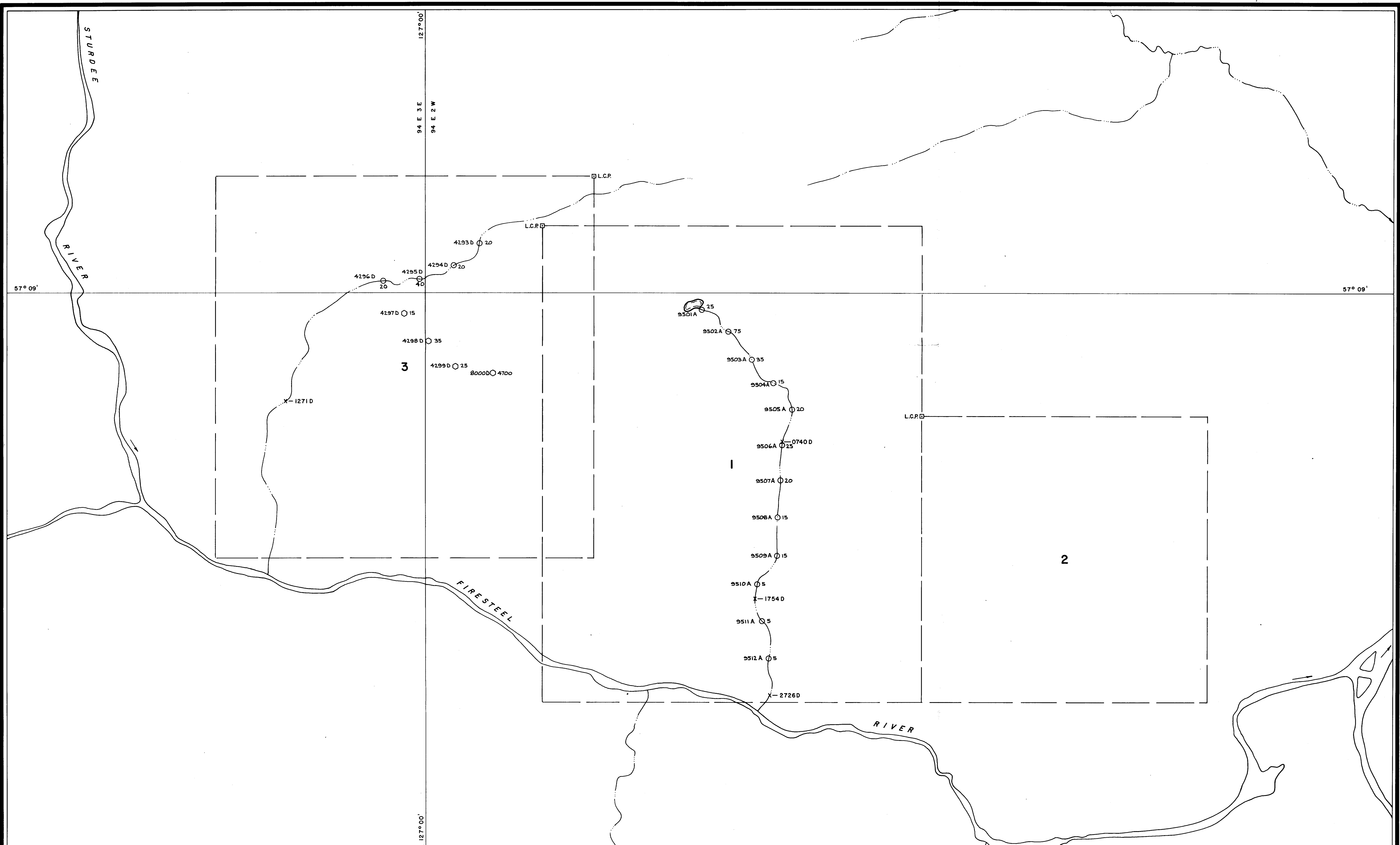
*J.A. Harro*

M 300 0 10000 300 600 m

SCALE

ft. 1000 0 1 INCH = 833 FEET 1000 2000 ft.

MAPPED BY: S.A.H.	REVISED:	N.T.S. No.: 94 E 2W 3SE
DATE: 90 08 15		ACCT No.: 347-63
DRAWN BY: K.L.J.		DRWG. No.: AR.80-248
DATE: 81 08 11		



**LEGEND**

- 9511A ○ STREAM SEDIMENT SAMPLE LOCATION & No.
- 4298D ○ SOIL SAMPLE LOCATION & No.
- 5 -80 MESH VALUE FOR Au IN P.P.B. (SILT)
- 35 -80 MESH VALUE FOR Au IN P.P.B. (SOIL)
- X-2726D ORIGINAL STREAM SEDIMENT SAMPLE LOC. & No.

Tag	Mesh	Au P.P.B.	As P.P.M.	Pb P.P.M.	Cu P.P.M.	Ag P.P.M.	%H.M.
0740	- 20	15					1.29
	-100	5	<1	3	26	0.7	
1754	- 20	60					2.53
	-100	No Results					
2726	- 20	445					3.91
	-100	No Results					
1271		No Results					

**Note Regarding Original Sample Results:**  
 The results of the analysis of the heavy mineral concentrate from the -20(-20 +100 mesh) fraction are not weighted.

**FOLLOW SOIL SAMPLE RESULTS (-80 MESH)**

Sample No.	Ag P.P.M.	Cr p.P.M.	Cu P.P.M.	Mo P.P.M.	Pb P.P.M.	Zn P.P.M.
4293D	.5	21	58	10	10	119
4294D	.5	22	53	3	8	95
4295D	.3	19	47	1	6	93
4296D	.0	24	36	2	13	66
4297D	.0	11	10	2	5	25
4298D	.3	8	13	4	8	43
4299D	.0	22	89	0	5	53
9501A	1.5	25	134	26	9	101
9502A	.3	31	128	8	5	95
9503A	.1	30	67	2	7	63
9504A	.0	26	45	0	7	56
9505A	.1	24	31	0	9	47
9506A	.1	25	40	1	7	49
9507A	.3	26	52	1	7	58
9508A	.0	22	30	0	4	48
9511A	.0	26	46	0	7	47
9512A	.1	26	54	0	6	49

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**DUPONT EXPLORATION**  
 CANADA

**ARGONAUT PROJECT**  
**FIRE CLAIMS**  
**GEOCHEMISTRY**  
 Au IN P.P.B. & Ag, Cr, Cu, Mo, Pb, Zn IN P.P.M.  
 CHAPPELLE AREA, BRITISH COLUMBIA

SCALE: 1" = 10000 FEET

MAPPED BY: G.A.H. DATE: 80 08 15  
 DRAWN BY: K.L.J. DATE: 81 08 12

N.T.S. No: 84 E SW 35  
 ACCT No: 547-63  
 DRWG No: AR.80-249