

DU PONT OF CANADA EXPLORATION LIMITED

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE TO 1 CLAIMS

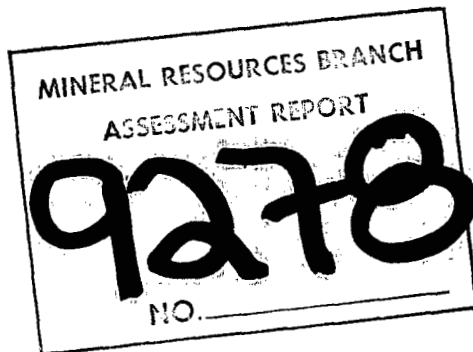
OMINECA MINING DIVISION

LAT. 57°25', LONG. 126°59'

NTS: 94-E-7W

Owner of Claims: Du Pont of Canada Exploration Limited

Operator: Du Pont of Canada Exploration Limited



DA Harron
Author: G.A. Harron

Date Submitted: 1981 June 10

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LIST OF MAPS

Drwg. No. AR. 80-254	Geology	In Pocket
Drwg. No. AR. 80-255	Geochemistry	"

I

INTRODUCTION(a) Location

The TO 1 claim is located on the lower 2.5 km of Mulvaney Creek, immediately west of Toodoggone Lake. Elevations on the property range from 1190 m along the southern boundary to 1710 m in the northeast corner. The claim is about 75% covered with a mature spruce forest, and an alpine flora above 1525 m in the northeastern corner.

(b) Access

Access to the claim is most convenient by rotary wing aircraft from the Sturdee River airstrip; a distance of 23 km to the SSW.

(c) Claim Definition

The TO 1 claim consists of 20 units and has a tag number of 45841, a record number of 3069, and record date of July 31, 1980.

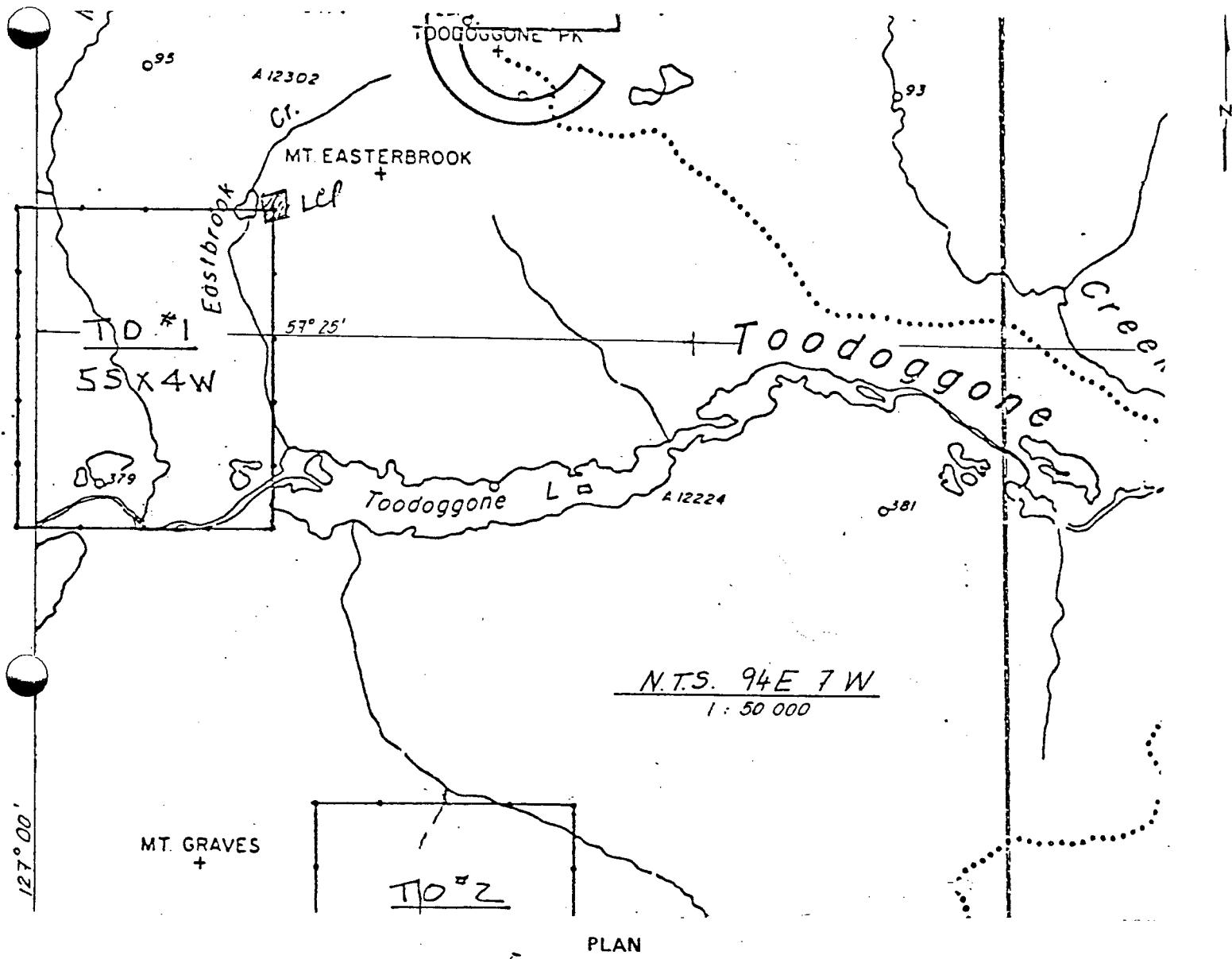
The current owner and operator of the claim is Du Pont of Canada Exploration Limited. The claim was staked to facilitate work on an auriferous geochemical anomaly.

(d) Economic Assessment of the Property

There has been no extensive previous exploration on the property, to the writer's knowledge. No significant economic mineralization was noted during the course of the present investigation.

(e) Summary of Work Performed

A total of 8 stream sediment samples were collected at 200 m intervals along the course of Mulvaney Creek. Geological mapping was conducted in the same area at a scale of 1:10,000 utilizing the sampling line and claim lines for control. A total of 2 person days were required for this work.



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

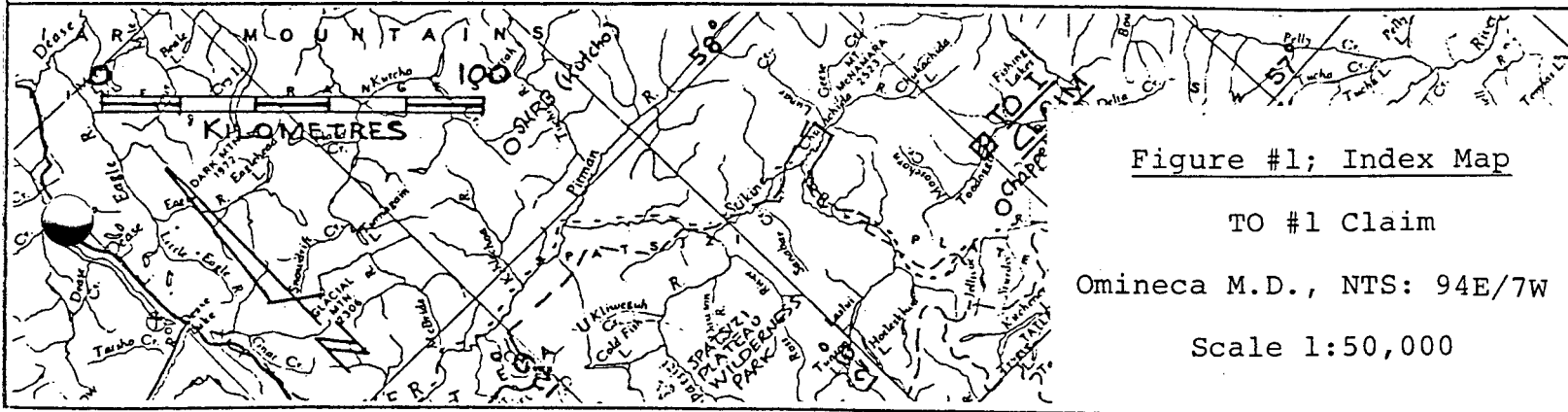


Figure #1; Index Map

TO #1 Claim

Omineca M.D., NTS: 94E/7W

Scale 1:50,000

II

GEOLOGY(a) Introduction

The TO #1 claim is located in the Intermontane Belt of Mesozoic volcanic, sedimentary, and plutonic rocks. Minor amounts of Paleozoic rocks are also present. Published geological maps indicate that the claim group is underlain by Hazelton Group volcanic rocks of Lower Jurassic age. The distribution of rock types noted on the property are shown on Drwg. No. AR.80-254.

(b) Lithologyi) Porphyritic Andesite

This rock type is medium green in colour on fresh surfaces and is medium to coarse grained. Phenocrysts of plagioclase feldspar averaging 3 mm in length constitute up to 25% of the rock. The phenocrysts appear to be altered to clay minerals and epidote. Narrow veinlets of epidote are common in all of the outcrops.

ii) Basalt

This rock type is very fine grained and black in colour on both fresh and weathered surfaces. The outcrops examined are moderately fractured, with abundant epidote in the fractures.

iii) Granite

This rock type is pink to red in colour on both fresh and weathered surfaces. Typically the rock is coarse grained, and contains less than 5% mafic minerals. Biotite was the only mafic mineral observed, along with euhedral white quartz and about 50% subhedral to euhedral potassic feldspar crystals. Epidote minerals in the fractures are common. Small apophyses of granitic composition were observed to intrude the basalt.

(c) Structure

The porphyritic andesite flows trend generally 275-300° and dip 35-45° south. The basalt flow was found to diverge from this trend at 250°/45°NW which implies a discontinuity within the volcanic rocks. The contact between the andesite and the basalt was not observed.

(d) Mineralization

No mineralization of economic significance was noted during the course of the mapping. The alteration of feldspar phenocrysts and epidote veining implies pervasive hydrothermal alteration of the volcanic rocks.

(e) Conclusions

The claim was found to be underlain by generally west trending and south dipping mafic volcanic rocks. These rocks have been intruded and hydrothermally altered by a granitic pluton. No mineralization of economic significance was noted.

III GEOCHEMICAL SURVEY(a) Sample Collection, Preparation and Analyses

A total of 8 stream sediment samples were collected from the drainage of Mulvaney Creek. Sample intervals were 200 m, measured with a "hip-chain", and the sampling line followed the creek. The starting point for the sampling line was the northern boundary of the claim.

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 collection site was recorded on a data card. A flag bearing the sample number was placed at the sample site.

The stream sediments 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 outlined 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 No. AR.80-255 shows the sample numbers, locations, and the values obtained for Au, Ag, Cu, Pb, Zn, Mo, and Cr. The following table summarizes the results:

<u>No. of Samples</u>	<u>Element</u>	<u>Range</u>	<u>Units</u>
7	Au	5 - 285	ppb
4	Ag	0.0 - 0.2	ppm
4	Cu	18.0 - 30.0	ppm
9	Pb	14.0 - 24.0	ppm
4	Zn	238 - 280	ppm
4	Mo	0.0 - 2.0	ppm
4	Cr	6.0 - 10.0	ppm

Gold values are at background levels, except for sample #9517 which contained 285 ppb. Bedrock adjacent to this sample site was hydrothermally altered porphyritic andesite, which lacked visible sulphide mineralization. Further investigations in the vicinity of this sample site are warranted.

The elevated values for zinc (238-280 ppm) are related to the use of a galvanized metal scoop to collect the samples.

Stream sediment sampling was not conducted in the vicinity of the original auriferous heavy mineral sample, thus its significance is unknown.

IV
COST STATEMENT

(a) Wages

	<u>Daily Rate</u>	<u>Spec. Dates</u>	<u>No. of Days</u>	<u>Cost</u>
1 geologist	\$ 172.00	Aug.16/80, Feb.12/81	2	\$ 344.00
1 assistant	39.18	Aug.16/80, Apr.29/81	2	<u>78.36</u>
				422.36

(b) Room and Board

A per diem rate of \$49.56 applies to 2 person days for August 16, 1980. 99.12

(c) Transportation

i) 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 this claim are \$324.77 324.77

ii) In support of field work:
 Terr Air invoice #932, including:
 1.0 hours @ \$365/hr on August 23
 30 gallons fuel @ \$3/gal 455.00
 779.77

(d) Analytical Services

<u>No. of Samples</u>	<u>Type</u>	<u>Elements</u>	<u>Unit Cost</u>	
7	Stream sediment	Au	\$4.25	29.75
8	Stream sediment	Preparation	0.60	4.80
4	Stream sediment	Ag, Cu, Pb, Zn, Mo, Cr	4.75	<u>19.00</u>
				53.55

(e) Report Preparation

	<u>Daily Rate</u>	<u>Dates</u>	<u>No. of Days</u>	
Drafting	\$ 147.00	May 15/81	1	147.00
Typing	62.00	May 15/81	1	<u>62.00</u>
				209.00

GRAND TOTAL: 1563.80

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 a 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 August 23, 1980 and May 19, 1981, I supervised/directed a field programme on the TO #1 Claim on behalf of Du Pont of Canada Exploration Limited.

Gerald A. Harron
Gerald A. Harron

May 19, 1981

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^oC 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 HNO₃ and HClO₄ 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.
CANADAANALYTICAL 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.

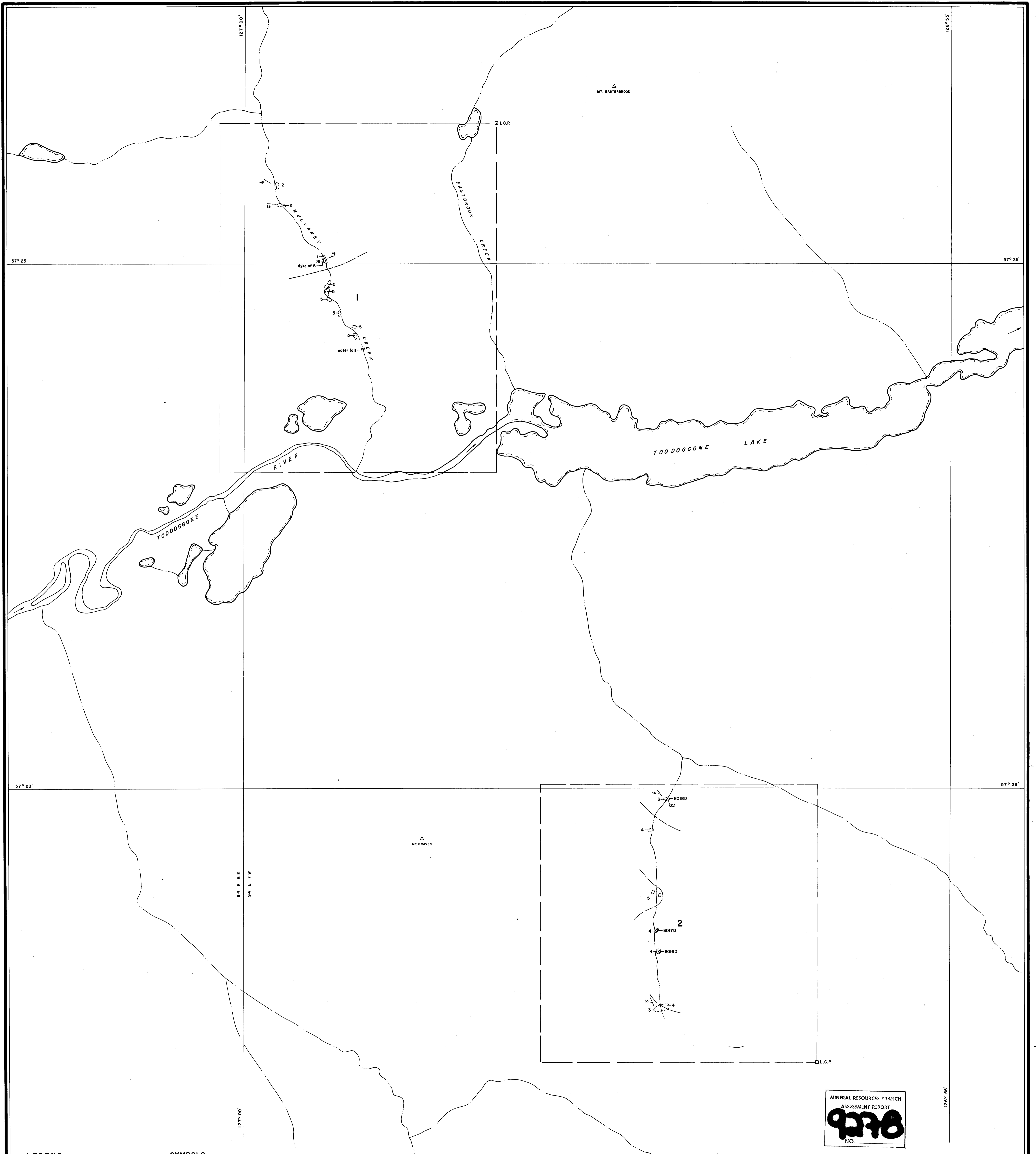
1.0 gram of the samples are digested for 6 hours with HNO_3 and HClO_4 mixture.

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 CH_2H_2 -Air flame combination but the Molybdenum determination is carried out by C_2H_2 - N_2O 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 Gutzeit 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



- LEGEND**
- 5 GRANITE
 - 4 DACITE
 - 3 LITHIC TUFF
 - 2 PORPHYRITIC ANDESITE
 - 1 BASALT

- SYMBOLS**
- OUTCROP
 - CONTACT
 - 35 — BEDDING, STRIKE & DIP
 - X-8016D ROCK SAMPLE LOCATION & No.
 - Q.V. QUARTZ VEIN
 - CLAIM BOUNDARY & LEGAL CORNER POST

ROCK ASSAYS					
Tag No.	Au ozs/ton	Ag ozs/ton	Cu %	Pb %	Zn %
8018D	0.002	0.19	0.276	0.10	0.52

ROCK GEOCHEMISTRY					
Tag No.	Au P.P.B.	Ag P.P.M.	Cu P.P.M.	Pb P.P.M.	Zn P.P.M.
8016D	25				
8017D	25				

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9278
NO.



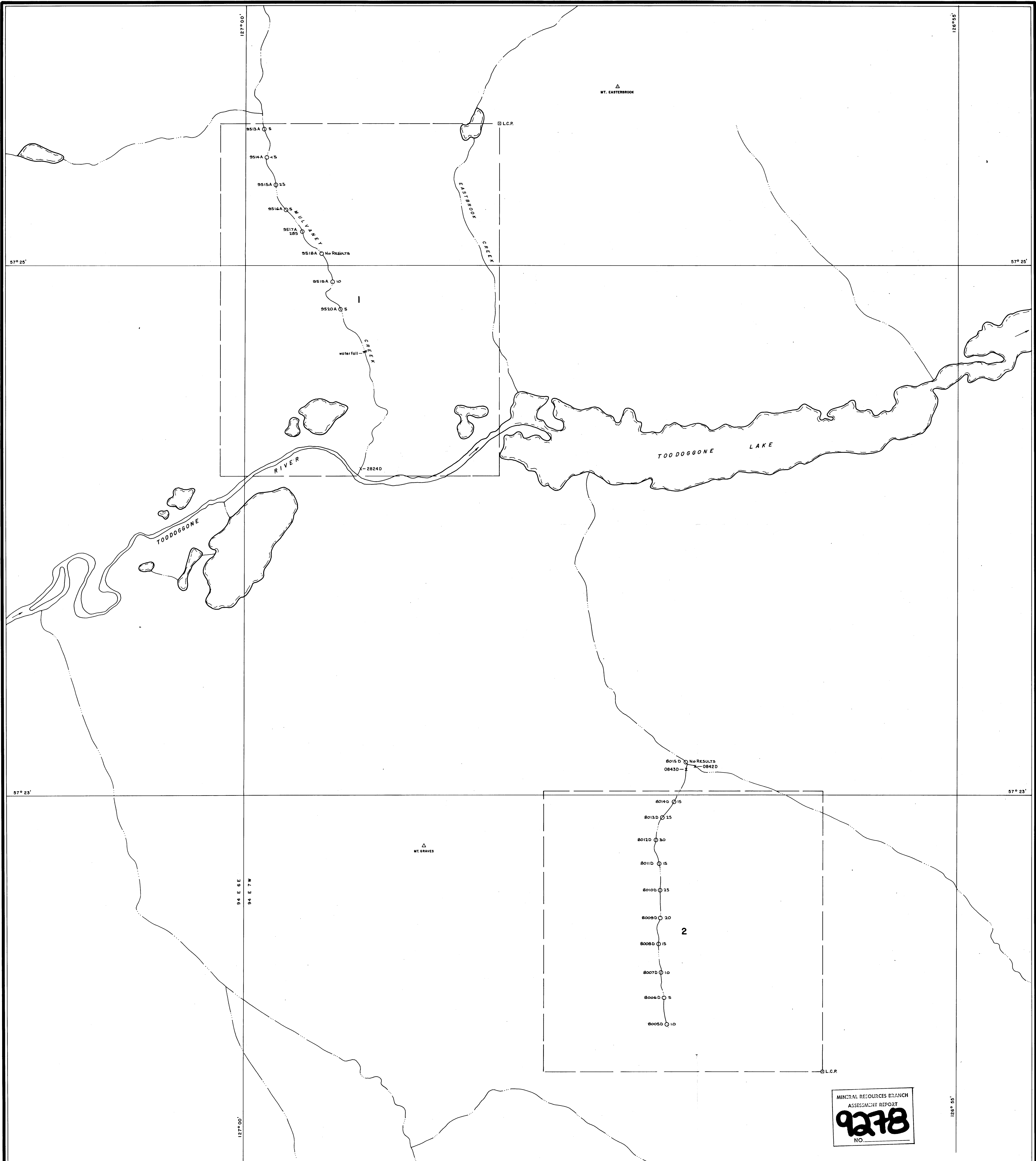
EXPLORATION
CANADA

**ARGONAUT PROJECT
TO CLAIMS
GEOLOGY**

CHAPPELLE AREA, BRITISH COLUMBIA

Scale: 1:10000
1 INCH = 833 FEET

MAPPED BY: G.A.M. REVISIONS: N.T.S. No.: 94 E 7W
DATE: 30th 1982 DRAWN BY: K.L.J. ACCT No.: 347-74 & 79
DATE: 18th 82 DRWG No.: AR.80-254



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9278
NO.

LEGEND

- 80100 O STREAM SEDIMENT SAMPLE LOCATION & No.
- O 25 -80 MESH VALUE FOR Au IN PPB.
- X-0842D ORIGINAL STREAM SEDIMENT SAMPLE LOC. & No.

ORIGINAL SAMPLE RESULTS

Tag	Mesh	Au P.P.B.	As P.P.M.	Pb P.P.M.	Cu P.P.M.	Ag P.P.M.	% H.M.
2824	-20	35	4	32	23	0.8	9.65
	-100	700					
0842	-20	15	11	54	154	1.7	4.07
	-100	15					
0843	-20	40	5	31	34	0.7	4.56
	-100	1200					

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

FOLLOW UP 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.
8006D	.6	9	33	4	103	208
8007D	.6	12	43	4	117	249
8009D	.8	9	44	1	81	340
8011D	.5	11	66	1	93	330
8012D	.3	8	123	1	101	282
8013D	.3	6	88	0	48	208
8014D	.6	8	73	0	103	313
9514A	.0	8	30	0	24	280
9515A	.2	9	34	1	25	294
9517A	.1	10	25	2	22	207
9520A	.0	6	18	0	14	238

-20 mesh

QUIPON EXPLORATION
CANADA

ARGONAUT PROJECT
TO CLAIMS
GEOCHEMISTRY
A IN PPB. & Ag, Cr, Cu, Mo, Pb, Zn IN PPM.
CHAPPELLE AREA, BRITISH COLUMBIA

SCALE
1:10000
1 INCH = 833 FEET

MAPPED BY: S.A.H. REVISION: N.T.S. No.: 94 E 7W
DATE: 80 08 02 DRAWN BY: K.L.J. ACCT No.: 247-74 B 79
DATE: 81 08 22 DATE: DRWG No.: AR-80-255