

DU PONT OF CANADA EXPLORATION LIMITED

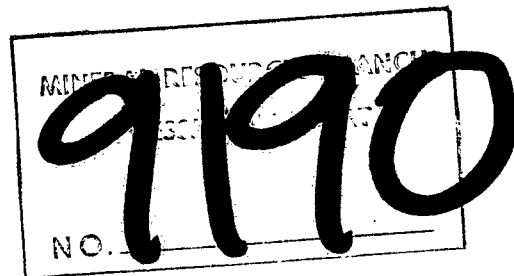
GEOLOGICAL AND GEOCHEMICAL REPORT

BURTON AND CUMMINGS CLAIMS

LIARD MINING DIVISION

56°33'N Lat., 131°07'W Long.

NTS: 104-B-11E



Owner of claim(s): Du Pont of Canada Exploration Limited

Operator: Du Pont of Canada Exploration Limited

L. Eccles

Author: L. Eccles

Date of Report: 1981 June 8

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Dwg. AR 80-173 Burton & Cummings Claims, Geology	In pocket
Dwg. AR 80-174 Burton & Cummings Claims, Geochemistry: Au, Ag, Cu, Pb	"

I

INTRODUCTION(a) Location & Access

The BURTON and CUMMINGS claim groups are located in northwestern British Columbia within the Liard Mining Division, NTS 104-B-11E. The property is situated immediately west of the Jekill River on the east and northeast slopes of Brunt Mountain and are centered by latitude 56°33'N and longitude 131°07'W.

At present, access into the property is exclusively via helicopter either from the Stewart-Cassiar Highway 70 kilometres to the west or from the town of Stewart 100 kilometres to the southeast. Stewart represents the major (Canadian) supply centre within the region.

(b) Physiography

The BURTON-CUMMINGS property is situated within the Boundary Ranges of the Coast Mountains. This geographic province consists of a mountainous and glaciated terrain that exhibits relief in excess of 2000 metres. Tree-line varies from 1000-1200 metres above sea level. Below this point, particularly within the lower valleys, vegetation predominantly consists of a dense growth of conifers. Active glaciation is prevalent in the area particularly in terrain above 1500 metres.

Relief over the BURTON and CUMMINGS claims range from 1750 metres at Brunt Mountain to 230 metres within the Jekill River valley. The entire claim group is drained by steep northeast orientated tributaries of the Jekill River. Slightly greater than half the property occurs above tree-line.

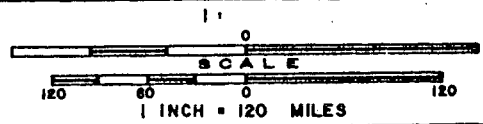
(c) Claim Status

The property consists of two adjoining claim groups which entail a total of 28 units. The BURTON claims comprise 8 units whereas the CUMMINGS, which adjoins to the south, constitutes 20 units. Pertinent data for each group is outlined below.

139° 138° 137° 136° 135° 134° 133° 132° 131° 130° 129° 128° 127° 126° 125° 124° 123° 122° 121° 120° 119° 118° 117° 116° 115°

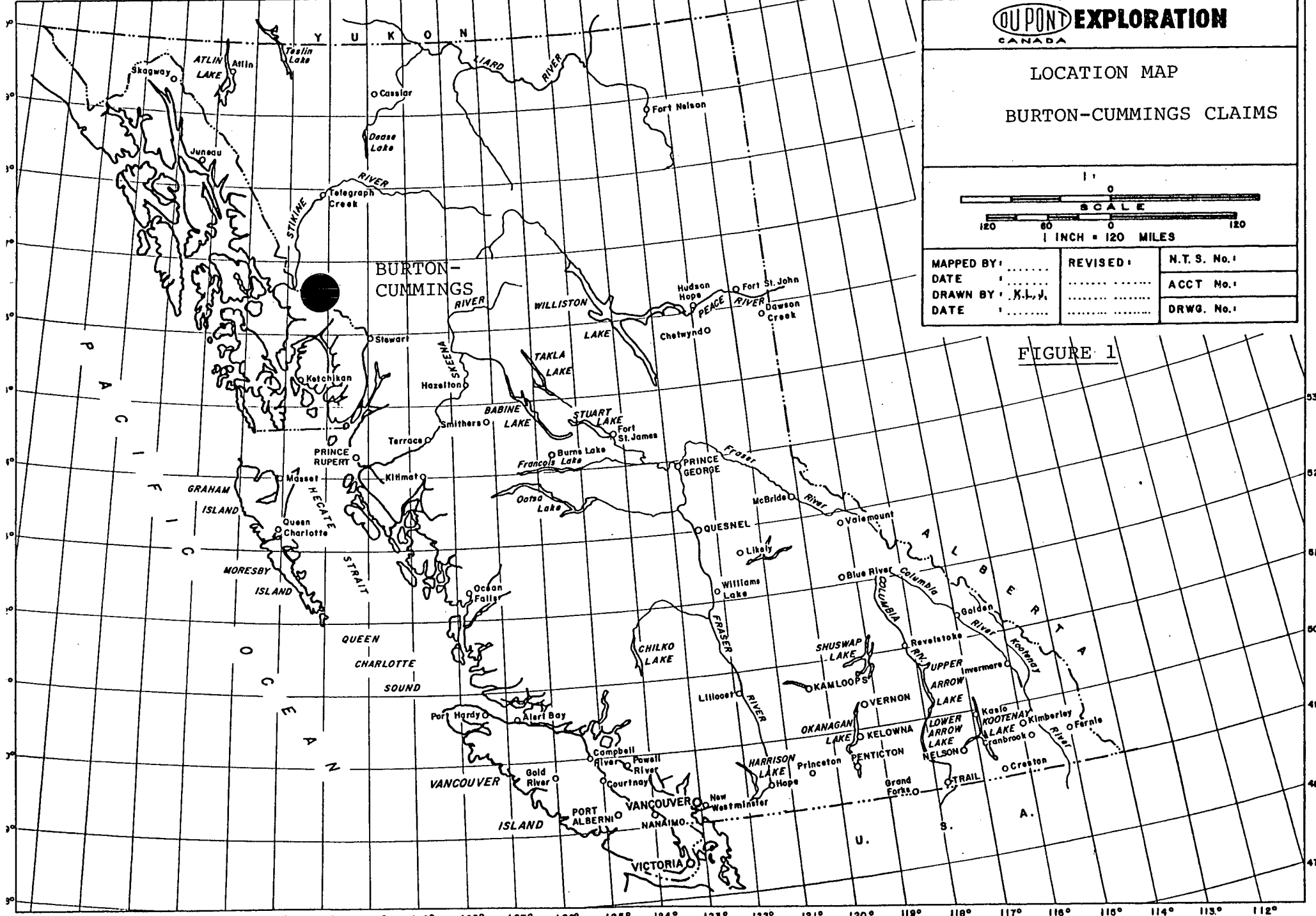
DU PONT EXPLORATION
CANADA

LOCATION MAP
BURTON-CUMMINGS CLAIMS



MAPPED BY:	REVISED:	N.T.S. No. 1
DATE	ACCT No.:
DRAWN BY: K.L.J.	DRWG. No.:
DATE	

FIGURE 1



137° 136° 135° 134° 133° 132° 131° 130° 129° 128° 127° 126° 125° 124° 123° 122° 121° 120° 119° 118° 117° 116° 115° 114° 113° 112°

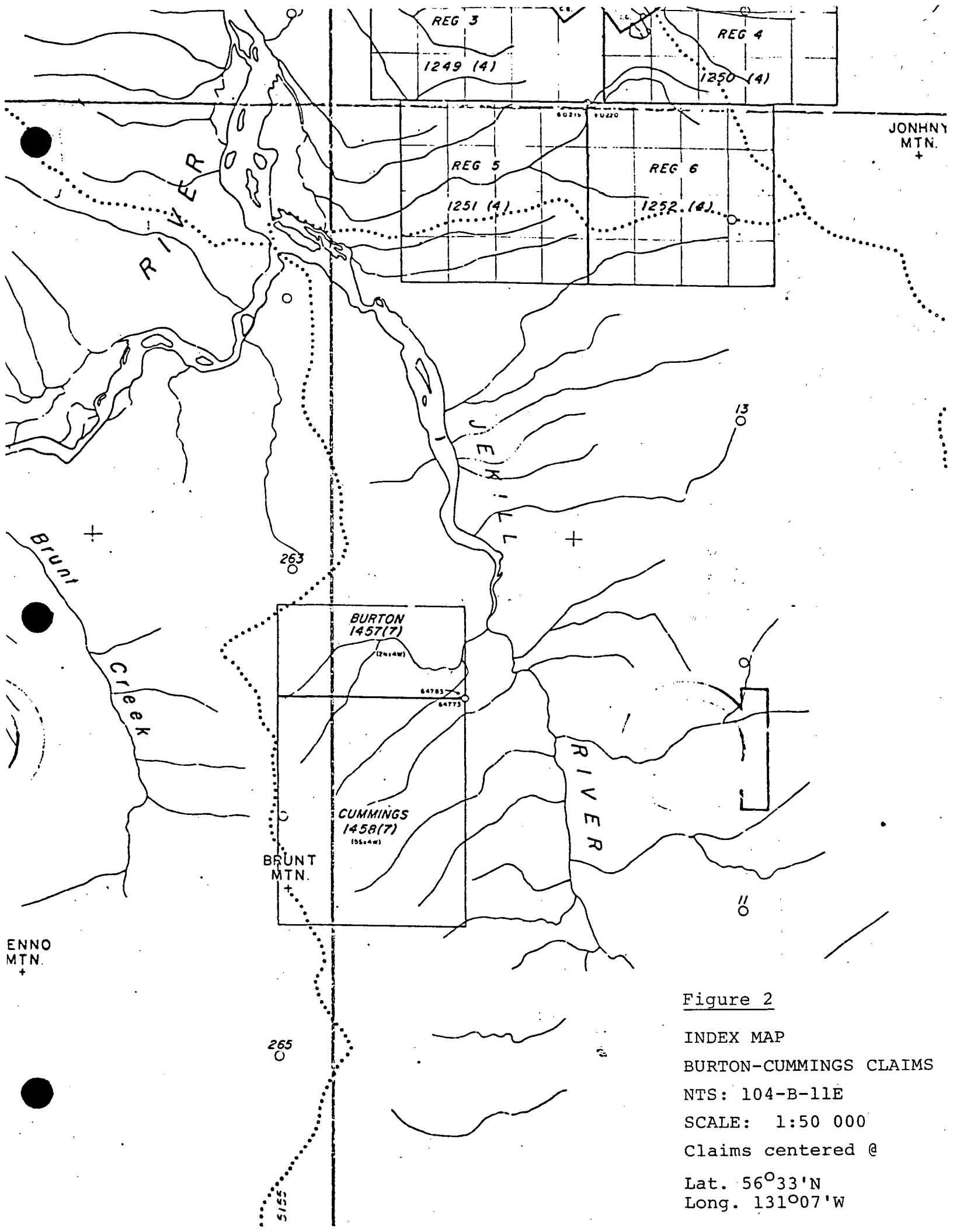


Figure 2
 INDEX MAP
 BURTON-CUMMINGS CLAIMS
 NTS: 104-B-11E
 SCALE: 1:50 000
 Claims centered @
 Lat. 56°33'N
 Long. 131°07'W

BURTON
(8 units)

Record No: 1457
Tag No: 64783
Date Recorded: July 14, 1980

CUMMINGS
(20 units)

Record No: 1458
Tag No: 64773
Date Recorded: July 14, 1980

(d) History and Economic Assessment of Property

Prior to 1980 no known mineral exploration appears to have been conducted in the vicinity of the BURTON-CUMMINGS property.

The evaluation programme undertaken in 1980 encountered several float occurrences of gold bearing quartz and calcite veins that are hosted within tuffaceous sediments and andesites. The nature and extent of these occurrences are presently unknown.

(e) Summary of Work

Subsequent to staking the claims three traverses were run along streams. The geological mapping was conducted at a scale of 1:10 000 (Dwg. AR 80-173) and covered an area of 2000 by 900 metres. In addition to the mapping a total of 8 rock samples and 16 stream sediment samples were obtained.

II GEOLOGY

(a) Regional Geology

The Boundary Ranges of the Coast Mountains occur along the contact of the Intermontane and Coast Crystalline geologic provinces. The latter, the bulk of which occurs across the border in the Alaskan panhandle consists of Tertiary and Cretaceous quartz monzonite and quartz diorite. The Intermontane belt within the Iskut River area consists of Carboniferous and Permian schists and Upper Triassic andesite, basalt and clastic sediments.

Intruding the Intermontane belt within this region are a number of intrusives that include Triassic diorite and monzonite, Jurassic quartz diorite and Cretaceous and Tertiary quartz monzonite.

Pliocene - Recent aerial volcanism extruded rhyolites, basalts and tuffs within the Edziza Peak, Level Mountain and to a lesser extent Iskut River areas.

(b) Property Geology

Geological Survey of Canada map no. 1418A (1974) indicates that the BURTON-CUMMINGS property is underlain by a 7 km x 1 km remnant of Upper Triassic siltstone, chert, sandstone and tuffs. This unit is largely enveloped by Carboniferous and Permian schists and gneisses. The southern segment of these Upper Triassic rocks are truncated by an early Tertiary granodiorite intrusive.

Mapping conducted on the property to date indicates the presence of three prominent lithologies: - argillaceous tuffs, cherty tuffs and andesite. In addition a diorite sill(s) (?) has been observed in the north.

i) Argillaceous Tuffs

These tuffs located in the northern portion of the area investigated are dark grey to green in colour, fine grained and exhibit well developed foliation. The unit is noted to contain minor limestone interbeds.

ii) Cherty Tuffs

The unit is widely distributed throughout the area mapped. It is green-grey in colour, siliceous and is well banded. Along creek 'C' (Dwg. AR 80-173) these tuffs are interbedded with andesite.

iii) Andesite

The unit is green in colour, occurs as a massive flow or as an alternating sequence with cherty tuffaceous beds. Garnet, epidote, actinolite and chlorite are described as being associated with a skarn along streams B and C. Locally this unit is described as being amphibolitized.

iv) Diorite

This intrusive occurs along stream A and appears to represent a sill(s). It is dark green in colour, medium grained and exhibits propylitic characteristics.

With respect to structure, information obtained to date has been minimal. Within the northern portion of the area the lithologies appear to exhibit a gentle-moderate (26-42°) south attitude.

(c) Mineralization

Several occurrences of sulphide mineralization with precious metal values have been encountered on the property. These occurrences which predominantly occur as float are noted in a variety of modes. Along stream A gold values have been obtained from galena bearing quartz fragments and within a massive pyrrhotite sample that is associated with a black limestone interbed. In outcrop, barren quartz veins have been encountered. These veins are up to 1.5 metres in width and appear to be conformable to the attitude of the enveloping sedimentary tuffs.

Along stream B, pyrite, galena, sphalerite and magnetite occur in outcrop within a quartz vein along a tuff-andesite contact and within calcite veins hosted by andesite.

Several rock samples were obtained on the property. The pertinent data is shown below:

Stream A

<u>Samp. No.</u>	<u>Rock Type</u>	<u>Au (o/t)</u>	<u>Ag (o/t)</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Cu %</u>
3482	q.v.-sulph (float)	0.123	1.10	0.64	0.14	0.256
3483	mass.Po (float)	0.030	0.07	0.02	0.02	0.041

Stream B

<u>Samp. No.</u>	<u>Rock Type</u>	<u>Au (o/t)</u>	<u>Ag (o/t)</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Cu %</u>
6447	q.v. (py, gn, sph, mt)	0.118	2.11	1.16	0.01	0.004
6448	andes: calc.v, sulph.	0.009	0.42	0.02	0.03	1.860
4701	Tuff- py, cpy	0.001	0.01	0.01	0.01	0.009
4702	andes: po, calc/ qtz.v	0.001	0.01	0.01	0.01	0.005

Stream C

<u>Samp. No.</u>	<u>Rock Type</u>	<u>Au (o/t)</u>	<u>Ag (o/t)</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Cu %</u>
6439	-	0.001	0.01	0.01	0.01	0.011
6443	andes: (py, gn, mt)	0.001	0.01	0.02	0.029	0.02

(d) Conclusions

The BURTON-CUMMINGS claim group is underlain by andesites and sedimentary tuffs that have been noted to host base metal and precious metal bearing quartz and calcite veins. The mode and extent of this mineralization is at present unknown.

III

GEOCHEMISTRY(a) Procedure

Sixteen stream sediment samples were obtained from three streams draining the BURTON-CUMMINGS property. In the case of each traverse, sampling was terminated as a result of excessively steep terrain. Sampling was performed at an average interval of 250 metres. The stream sediment samples were obtained from the stream bed and deposited in wet strength bags. Each individual station was flagged revealing its appropriate sample number.

The samples were submitted to Min-En Laboratories in North Vancouver, BC for preparation and analysis. The specific procedure with respect to preparation and analysis is outlined in Appendix "A" - Procedure for Gold Geochemical Analysis.

(b) Results

The stream sediment samples were prepared to a -80 mesh fraction and analyzed for gold (ppb), lead (ppm), copper (ppm) and silver (ppm). Drawing AR 80-174 contains the various sample locations and their corresponding results.

Gold values reveal a range of 5 to 9 ppb with a medium value of 20 ppb. No trend appears to be evident, and the results obtained, although weakly anomalous, would not seem to coincide with the gold bearing samples observed along the various streams. Silver and lead results range from 0.9 to 1.5 ppm and 17-36 ppm respectively. The values are uniformly distributed over the area with no clear trends apparent. Copper results in the case of Stream A and C both indicate increasing concentration upstream. Stream A increases from 96 to 135 ppm whereas within Stream C the results range from 140-156 ppm. The significance of these trends is unknown.

In conclusion, with the possible exception of copper, the stream sediment geochemistry fails to corroborate the presence of base or precious metals mineralization observed on the property or the possible source of the mineralized float.

IV COST STATEMENT

(a) Wages

	<u>Rate/ day</u>	<u>Spec. dates</u>	<u>No.days</u>	<u>Cost</u>
1 geologist	\$102.37	July 25/80	1	\$ 102.37
1 junior geologist	50.82	Jul.25-27/80	2.5	127.05
1 field asst.	46.58	Jul.25-27/80	2.5	116.45
1 jr. field asst.	39.18	July 25/80	1	39.18
1 tech.asst.	39.18	November/80	1	39.18
1 geologist	146.92	March 4-6/81	3	440.76
				<hr/>
				\$ 864.99

(b) Room and Board

The per diem rate of \$50.41 applies to 7 person days during July 25-27/80: \$ 352.87

(c) Transportation

Costs to and from the project area during July, pertinent to the BURTON-CUMMINGS claims, are split amongst claims that had work conducted upon.

A. To/From Project Area - Scheduled Carriers

<u>Date</u>	<u>From-To</u>	<u>Via</u>	<u>No.persons</u>	
Jul.13	Van./Stewart	CP/TPA	2 @ \$150.10	300.20
Jul.14	Van./Stewart	CP/TPA	3 @ \$150.10	450.30
Jul.15- 16/80	Whitehorse/ Van./Stewart	CP/TPA	1 @ \$301.00	301.00
Jul.16	Van./Stewart	CP/TPA	1 @ \$150.10	150.10
Jul.21- 22/80	Whitehorse/ Van./Stewart	CP/TPA	1 @ \$301.00	301.00
				<hr/>
				\$1,502.60

BURTON-CUMMINGS portion (7/34 person days) \$ 309.36

Transportation (continued)

Helicopter (Stewart-Camp-Stewart)

Terr-Air Rotary Ltd.

July 16/80 - Invoice #907 (5.5 hrs @ \$366/hr)	\$2,013.00
July 28/80 - Invoice #917 (8.3 hrs @ \$366/hr)	3,037.80

\$5,050.80

Charter split with another area:

\$2,525.40

BURTON-CUMMINGS portion:

\$ 519.94

B. To/From Claims

Terr-Air Inv.#591 (5.4 hours @ \$366/hr) (includes ticket nos. 914, 915 & 917)	\$1,976.40
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Total transportation exp.	<hr/> \$2,805.70
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(d) Analytical Services

Min-En Laboratories Invoice No.6862

8 rock - Preparation (@ \$2.50 each)	\$	20.00
8 rock - Au, Fire (@ \$7.50 each)		60.00
8 rock - Ag (@ \$6.50 each)		52.00
8 rock - Zn (@ \$6.00 each)		48.00
8 rock - Cu, Pb (@ \$11.00 each)		88.00
16 stream sediment, Preparation (@ \$0.60 each)		9.60
16 stream sediment, Au (@ \$4.25 each)		68.00
16 stream sediment, Ag (@ \$0.75 each)		12.00
16 stream sediment, Cu (@ \$0.75 each)		12.00
16 stream sediment, Pb (@ \$1.75 each)		28.00

\$ 397.60(e) Report Preparation

	<u>Rate</u>	<u>Dates</u>	<u>No.days</u>	
Drafting	\$127.00	Mar.2,3/81	2	\$ 254.00
Typing	64.80	Mar.9,10/81	2	129.60

\$ 383.60

(f) Miscellaneous

Cooks wages @ \$86.40/day (July 16-28)	\$1,123.20
BURTON-CUMMINGS portion of expenses (7/34 person days):	<u>231.25</u>
Room and Board - Pilot and Cook	
Per diem rate of \$50.41	\$1,210.66
BURTON-CUMMINGS portion of expenses:	<u>269.84</u>
Total Misc. Exp.	\$ <u>501.09</u>
GRAND TOTAL	<u><u>\$5,305.85</u></u>

V. QUALIFICATIONS

I, Louise K. Eccles, do hereby certify that:

1. I am a geologist residing at 782 West 22nd Avenue, Vancouver, British Columbia and was employed by Du Pont of Canada Exploration Limited at the time of the programme.
2. I am a graduate of the University of British Columbia with a B.Sc. (Honours) degree in geology.
3. I have practised my profession in geology continuously for the past four years in British Columbia, Ontario, the Yukon and Northwest Territories.
4. Between 1980 July 13 - August 31, I directed/supervised a field programme on the BURTON-CUMMINGS property on behalf of Du Pont of Canada Exploration Limited.



Louise K. Eccles

*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 WORKPROCEDURE 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 HNO_3 and 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.

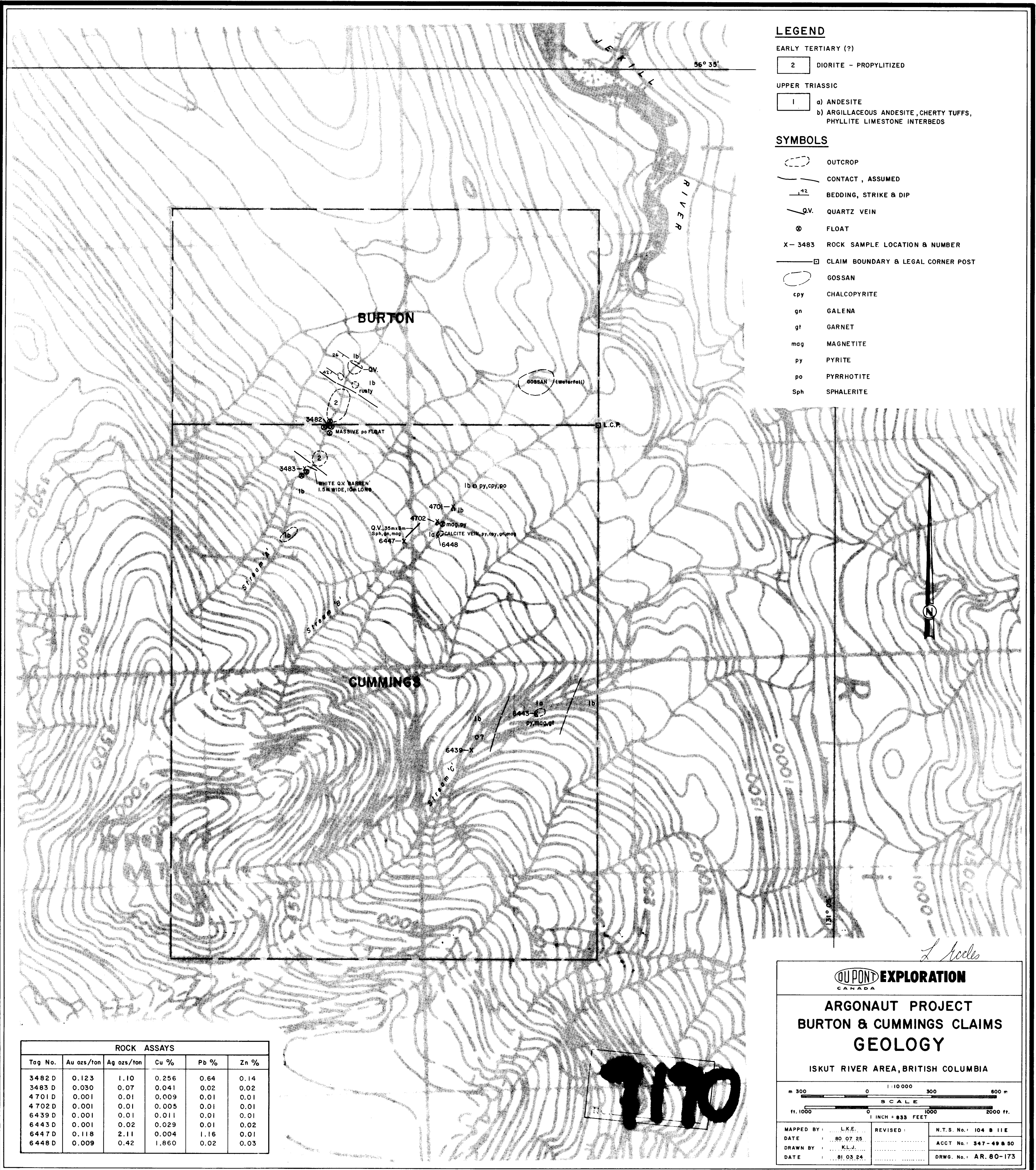
1.0 gram of the samples are digested for 6 hours with HNO_3 and HClO_4 mixture.

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. 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

EARLY TERTIARY (?)
 2 DIORITE - PROPYLITIZED

UPPER TRIASSIC
 1 a) ANDESITE
 b) ARGILLACEOUS ANDESITE, CHERTY TUFFS, PHYLITE LIMESTONE INTERBEDS

SYMBOLS

- OUTCROP
- CONTACT, ASSUMED
- BEDDING, STRIKE & DIP
- QUARTZ VEIN
- FLOAT
- X-3483 ROCK SAMPLE LOCATION & NUMBER
- CLAIM BOUNDARY & LEGAL CORNER POST
- GOSSAN
- cpy CHALCOPYRITE
- gn GALENA
- gt GARNET
- mag MAGNETITE
- py PYRITE
- po PYRRHOTITE
- Sph SPHALERITE

ROCK ASSAYS

Tag No.	Au ozs/ton	Ag ozs/ton	Cu %	Pb %	Zn %
3482 D	0.123	1.10	0.256	0.64	0.14
3483 D	0.030	0.07	0.041	0.02	0.02
4701 D	0.001	0.01	0.009	0.01	0.01
4702 D	0.001	0.01	0.005	0.01	0.01
6439 D	0.001	0.01	0.011	0.01	0.01
6443 D	0.001	0.02	0.029	0.01	0.02
6447 D	0.118	2.11	0.004	1.16	0.01
6448 D	0.009	0.42	1.860	0.02	0.03

DU PONT EXPLORATION
CANADA

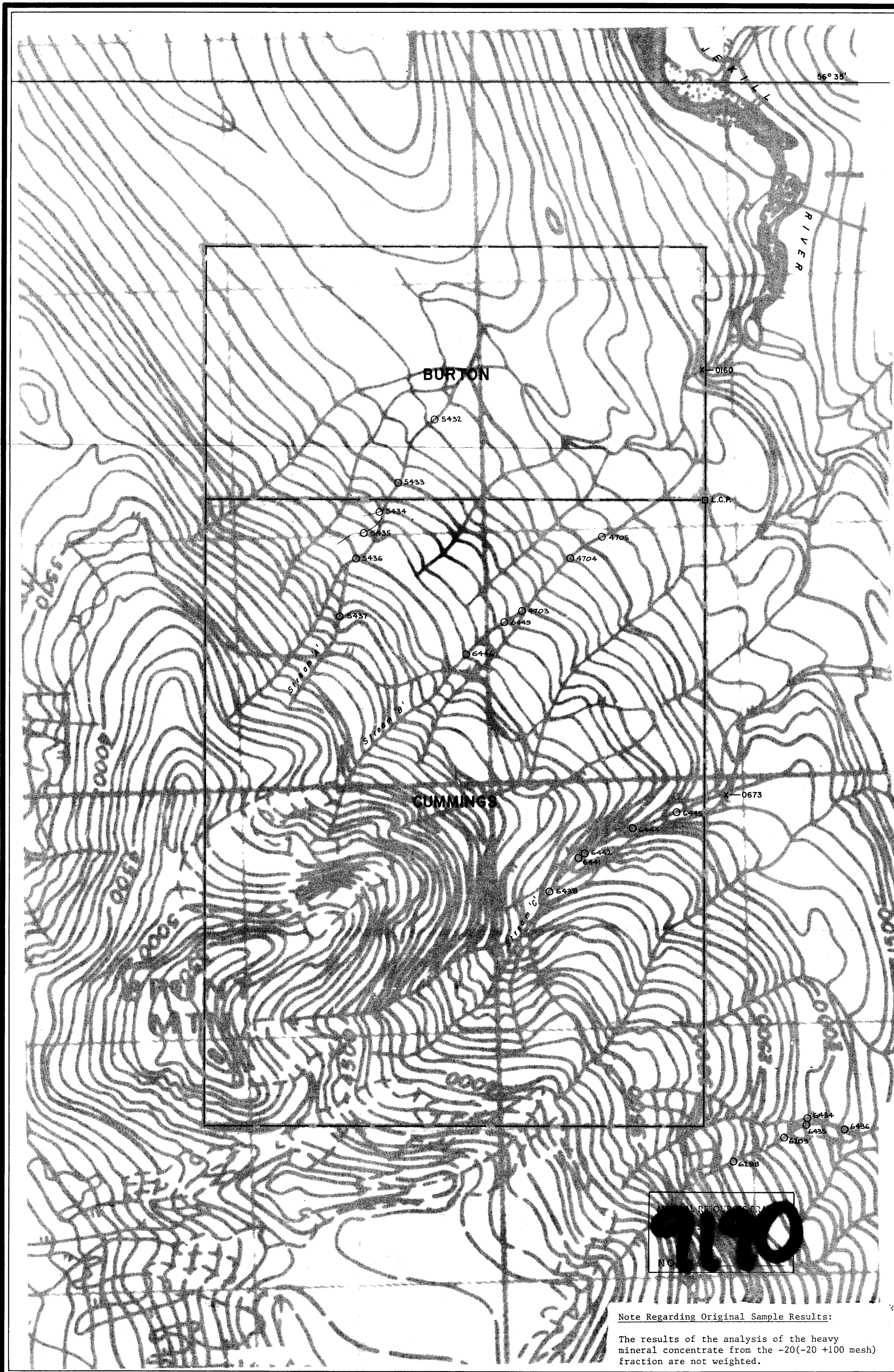
**ARGONAUT PROJECT
BURTON & CUMMINGS CLAIMS
GEOLOGY**

ISKUT RIVER AREA, BRITISH COLUMBIA

m 300 0 1:10000 300 600 m
SCALE
ft. 1000 0 1 INCH = 633 FEET 1000 2000 ft.

MAPPED BY: L.K.E.	REVISED:	N.T.S. No.: 104 B IIE
DATE: 80.07.25		ACCT No.: 347-49 & 50
DRAWN BY: K.L.J.		DRWG. No.: AR. 80-173
DATE: 81.03.24		

1170



LEGEND

5432 O STREAM SEDIMENT SAMPLE LOCATION & No. ('D' SERIES)

X-0160 ORIGINAL STREAM SEDIMENT SAMPLE LOCATION & No.

Tag No.	Mesh	ORIGINAL SAMPLE RESULTS					H.M.Z
		Au ppb	As ppm	Pb ppm	Cu ppm	Ag ppm	
0160	- 20	1150					5.72
	-100	15	11	17	62	1.4	
0673	- 20	10					9.22
	-100	445	6	20	136	1.2	
0666	- 20	5					11.12
	-100	10	<1	6	22	0.8	

FOLLOW-UP STREAM 'A' SAMPLE RESULTS

Tag No.	Au ppb	Pb ppm	Cu ppm	Ag ppm
5432	35	32	96	1.3
5433	15	30	115	1.3
5434	20	31	108	1.1
5435	35	36	128	0.9
5436	15	36	135	1.2
5437	15	27	124	1.5

ALL -80 MESH

STREAM 'B' SAMPLES, -80 MESH

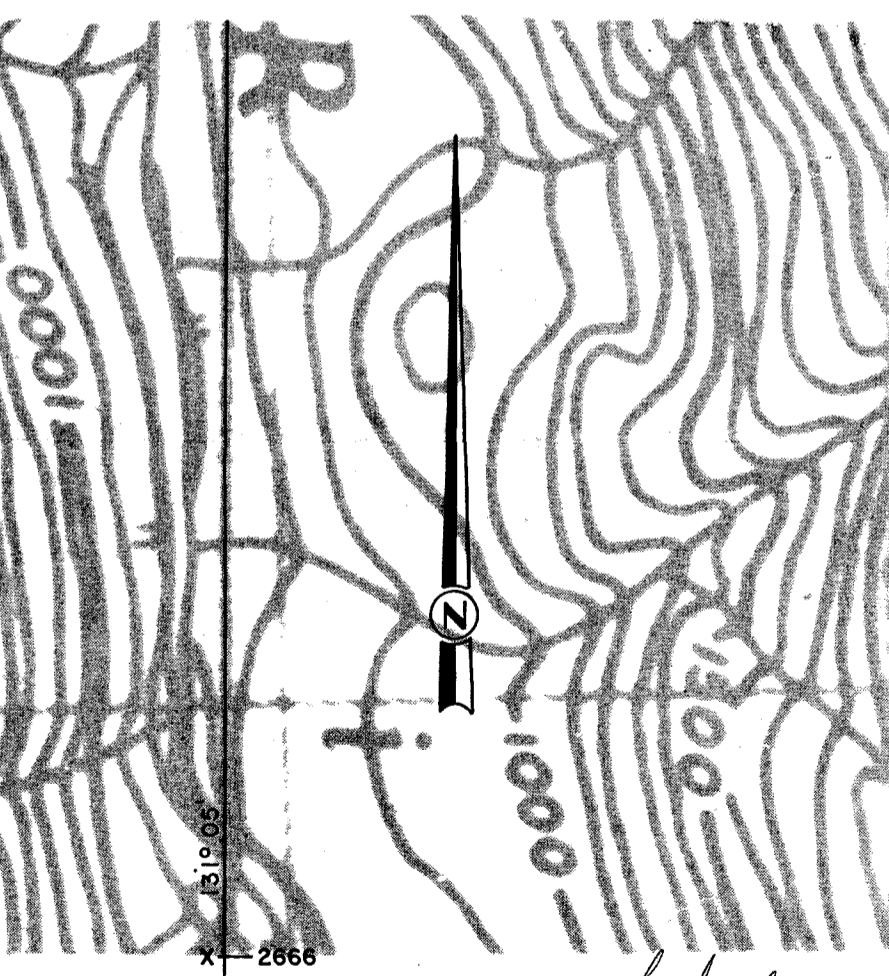
Tag No.	Au ppb	Pb ppm	Cu ppm	Ag ppm
6446	15	17	90	0.9
6449	15	21	88	1.1
4703	5	23	96	1.4
4703	90	22	85	1.3
4704	NO RESULTS			
4705	5	21	99	1.2

STREAM 'C' SAMPLES, -80 MESH

Tag No.	Au ppb	Pb ppm	Cu ppm	Ag ppm
6438	35	30	156	1.0
6441	40	26	138	1.1
6442	40	36	60	1.5
6444	25	32	148	1.0
6445	35	25	140	1.2

FOLLOW-UP STREAM SAMPLE RESULTS, -80 MESH

Tag No.	Au ppb	Pb ppm	Cu ppm	Ag ppm
6298	20	12	26	0.6
6299	10	16	28	0.7
6434	15	18	22	0.9
6435	35	23	26	0.8
6436	15	25	30	0.9



L. L. L.

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DU PONT EXPLORATION
CANADA

ARGONAUT PROJECT
BURTON & CUMMINGS CLAIMS
GEOCHEMISTRY
Au IN PPB. & Ag, Cu, Pb IN PPM.
ISKUT RIVER AREA, BRITISH COLUMBIA

m 300 0 1:10 000 300 600 m
SCALE
ft. 1000 0 1 INCH = 833 FEET 1000 2000 ft.

MAPPED BY: L.K.E.	REVISED:	N.T.S. No. 104 B 11E
DATE: 80.07.25		ACCT No. 347-48 B 50
DRAWN BY: K.L.J.		DRWG. No. AR. 80-174
DATE: 81.03.24		

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