

DU PONT OF CANADA EXPLORATION LIMITED

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE PARK 1-3 CLAIMS

LIARD MINING DIVISION

LAT. 57°46'N, LONG. 127°45'W

NTS: 94-E-13 E&W

OWNER OF CLAIMS: Du Pont of Canada Exploration Limited

OPERATOR: Du Pont of Canada Exploration Limited

Author: L. Eccles

Date Submitted: 1981 JUN 10

*L. Eccles*

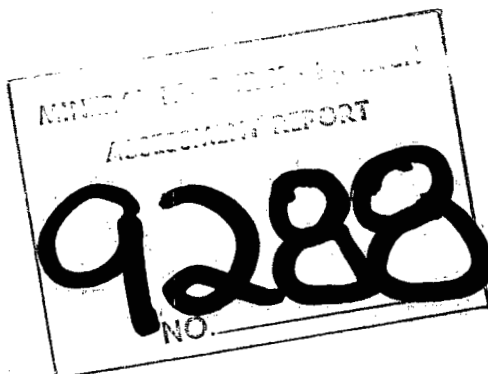


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## I

INTRODUCTION(a) Location

The PARK 1-3 claims are located in northcentral British Columbia within the Liard Mining Division, NTS 94-E-13. The property is located 10 kilometres northwest of Mt. Albert Dease. The claims cover both the north and south walls, and the valley of an unnamed creek that flows south-east to Park Creek. Elevations on the property range from 1220 metres above sea level where the creek crosses the eastern boundary to 1985 metres in the northeast and southeast corners of the claim group. The valley floor is covered with low scrubs and grasses, and at elevations in excess of 1525 metres, talus slopes and alpine flora prevail.

(b) Access

At present access into the property is via helicopter from the Sturdee River airstrip which is located 72 kilometres to the southeast of the claims.

Smithers, which represents the major supply center in the region, is situated 260 kilometres south of the Sturdee River airstrip.

(c) Claim Status

The PARK 1-3 claims represent 42 contiguous units, as listed below:

<u>Claim (units)</u>	<u>Record No.</u>	<u>Tag No.</u>	<u>Date Recorded</u>
PARK 1 (15)	1492	45869	July 25, 1980
PARK 2 (12)	1491	45870	July 25, 1980
PARK 3 (15)	1493	45871	July 25, 1980

Adjoining to the south and west are the BILL 1 and 3 claims (Record #1199 and 1201)

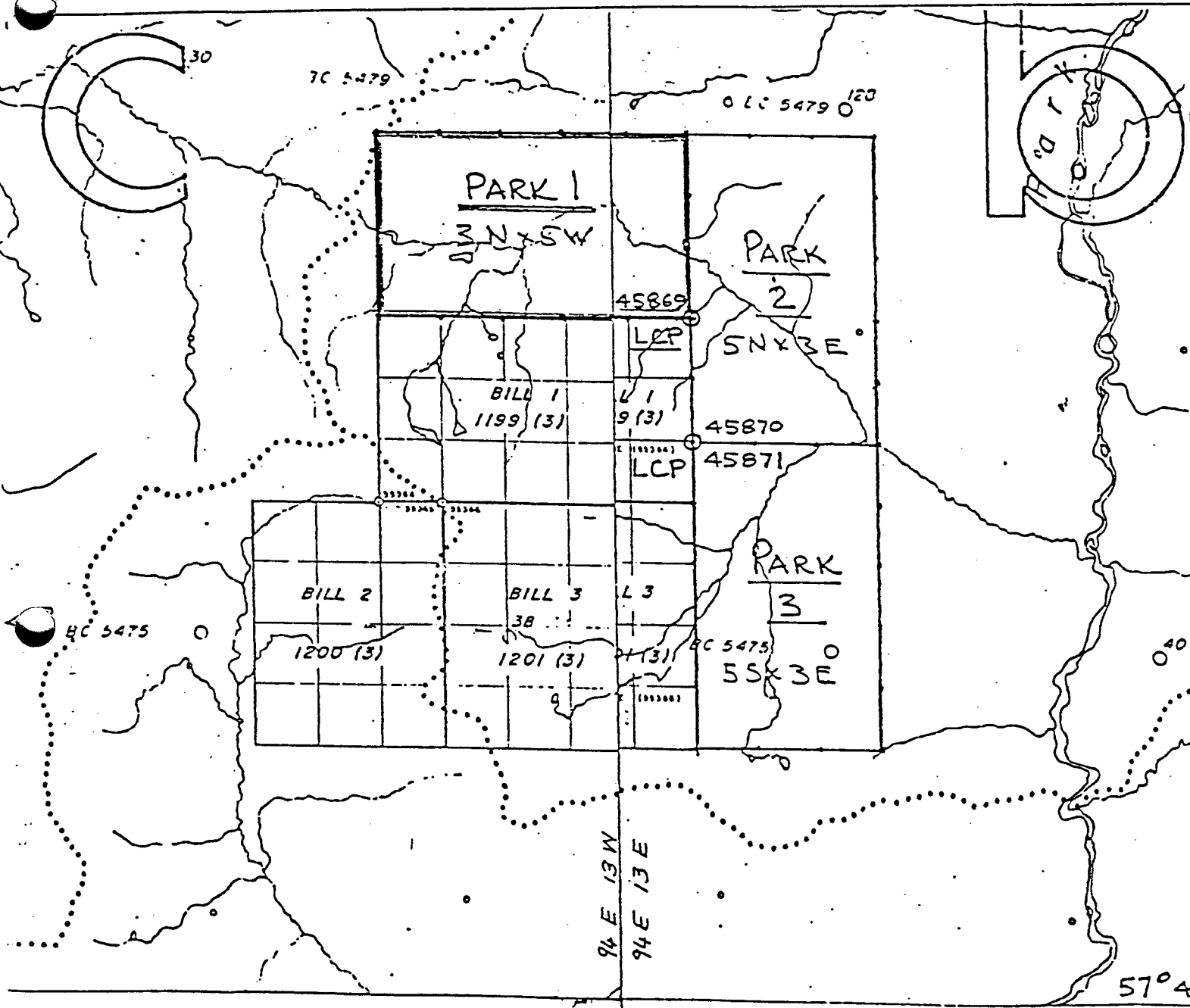
The PARK claims are presently owned and operated by Du Pont of Canada Exploration Limited. The property was staked as a result of the discovery of an auriferous heavy mineral concentrate anomaly within the creek which crosses the eastern boundary.



Fig. 2 INDEX MAP

PARK 1-3 CLAIMS

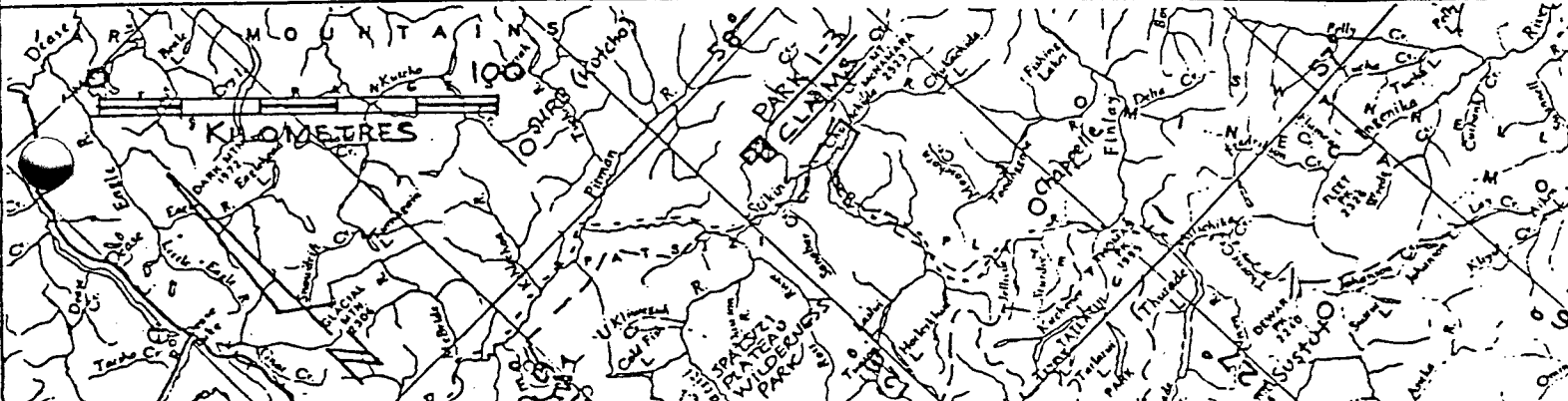
Lat. 57°46'N  
127°45'W



N.T.S. 94E 13W  
1:50 000

127°45' LIARD MINING DIVISION

National Boundary  
 Bridge



(d) History and Economic Assessment of the Property

No evidence was found in the field to indicate that extensive exploration had occurred on the property in the past. No significant showings of economic mineralization were located during the present exploration program.

(e) Summary of Work Performed

On August 17th and 18th, 1980, a three-person crew conducted a preliminary investigation of the property. Work entailed geological mapping of the claims and stream sediment sampling of the two principal streams draining PARK 1, 2, & 3. A total of two rock samples were obtained and assayed for Au, whereas 53 stream sediment samples were geochemically analysed for Au, Ag, Cu, Mo, Cr, Pb, and Zn.

II GEOLOGY(a) Regional Geology

The PARK claims lie within the eastern edge of the Intermontane belt. Here granitic rocks of Lower Jurassic age intrude Upper Palaeozoic to Lower Mesozoic volcanics.

The Plutonic rocks range in composition from medium grained quartz monzonite to fine to medium grained granodiorite.

Upper Triassic Takla Group volcanics occur to the north and east and consist of coarse bladed plagioclase porphyry, augite porphyry, tuff, and agglomerate. Small patches of Hazelton Group volcanics occur to the east and west of the property and include volcanic conglomerate, breccia, lahar, and abundant pink feldspar porphyry dikes and sills.

According to G.S.C. Open File #483, the PARK property is underlain by Permian Asitka Group metasediments consisting of sericitic and chloritic phyllites. Intruding the northern portion of PARK 1&2 is a Jurassic quartz monzonite batholith.

(b) Property Geology

The PARK property is underlain by Permian (?) phyllite, chert and tuffaceous sediments, and Triassic (?) fine grained andesitic to dacitic volcanics which have been intruded along the north boundary by a quartz monzonite-diorite batholith. Associated with the emplacement of the intrusive rocks is the development of impressive gossans along the contact. Chert, containing abundant disseminated pyrite appears to be chiefly responsible for the gossans.

Intruding the phyllite and chert are narrow fine-medium grained granodiorite to diorite dikes.

Two limited areas of carbonate alteration occur within the phyllite in PARK 3. Not related with these zones minor barren quartz veins occur along foliation and are hosted by the phyllite.

The following is a brief description of the various rock types observed on the claims.

i) Phyllite (Unit 1A)

Occurring within PARK 3, this unit is grey-green in colour, is locally weakly chloritized and exhibits a well-developed schistose character. Two minor occurrences of carbonate alteration are noted in an area between two principal areas of exposure (Drwg. AR 80-246). Minor quartz veining, up to 6 cm in width, is locally observed occurring along foliation.

ii) Chert (Unit 1)

This unit is extensively distributed within PARK 2 and within the extreme northeast margin of PARK 1. It predominantly consists of chert with lesser tuffaceous sediments and minor andesitic volcanics. The chert is generally grey and pink in colour and although it displays a tuffaceous character the unit is quite massive. The emplacement of several intrusive bodies to the north appears to have led to the development of a contact zone of intense alteration and associated gossans.

iii) Andesite, Dacite (Unit 2)

This unit consists of fine grained, green volcanics, possibly belonging to the Takla Group. The two areas of exposure occur in the northwest corner of PARK 1. In part, these volcanics are gossaneous.

iv) Diorite (?) (Unit 3)

The intrusive occurs within the northeast and north-central sectors of PARK 1 and is in contact within units 1 and 2. It is medium grained, pink and green in colour, and weathers a pink/buff colour. Several fine-medium grained dikes, dark grey in colour and containing epidote intrude the chert unit. It is unknown whether these dikes represent offshoots of the main diorite body or are separate entities.

v) Quartz Monzonite - Granodiorite (Unit 4)

This unit appears to exhibit several phases varying from a rhyolitic phase to that of granodiorite. It is medium grained, the mafics have been chloritized and the unit particularly along the contact exhibits intense alteration and the development of gossans.

Limited structural information has been obtained within the property. A foliation measurement within the phyllites in PARK 3 indicates a SSE strike and a westerly dip. Regional orientations, as derived from GSC Open File #483, although erratic, suggests a general east-west strike for the Permian phyllites. No attitudes with respect to the chert and andesitic-dacitic units have been obtained. Within the northeast corner of PARK 1, a fault is assumed to trend NNE across the dioritic intrusive.

(c) Mineralization

No significant economic mineralization has been observed on the PARK property to date.

Proximal to the intrusive-chert and intrusive-andesite/dacite contacts within PARK 1 and PARK 2 considerable pyrite occurs as disseminations. The sulfides are particularly hosted by the quartz monzonite/granodiorite body and to a greater degree by the chert. The presence of a gossaneous zone is best attributed to the pyrite bearing chert.

In the southeast corner of PARK 1, and occurrence of coarse, 1-cm euhedral pyrite crystals are hosted by phyllite.



Three rock samples, one of which was obtained outside the claim boundary, were obtained and assayed for Au(oz/ton). All three sampled a gossaneous, pyrite bearing and intensely altered chert. The results are shown below:

<u>Sample No.</u>	<u>Au (oz/ton)</u>
#3494D	0.002
#3495D	0.002
#3496D	0.001

(d) Conclusions

PARK 3 is underlain by Permian Asitka Group phyllites. No significant economic mineralization has been noted.

PARK 1 and 2 claims are underlain by Asitka and/or Takla Group chert, tuffaceous sediments and andesitic-dacitic volcanics which have been intruded by rocks of diorite to quartz monzonite composition. Pyritization and the development of an extensive gossan accompanied the intrusions. No significant economic mineralization has been observed within this zone to date. Results from the three rock assays proved negative in terms of gold.

III GEOCHEMISTRY(a) Procedure

A total of 2 rock and 53 stream sediment samples were obtained from the PARK claims. The rock samples were obtained in the northeast corner of PARK 2. The stream sediment samples were collected from two creeks draining the property. The north branch of the Park Creek tributary is centered across the PARK 1 and 2 claims whereas the south branch drains PARK 3.

Samples were obtained at 100-200 metre intervals and placed in numbered wet strength sample envelopes and the various locations were flagged indicating their respective sample numbers.

The stream sediments and two rock samples were shipped to Min-En Laboratories in North Vancouver for preparation and analysis. The rock samples were assayed for Au (oz/ton). Results are described under 'mineralization'. All stream sediment samples except #9782 and #9783 were sieved to -80 mesh and analysed for Au (ppb), according to the procedure outlined in Appendix A. Samples #9782 and 9783 were prepared to -20 mesh. Subsequent determinations through Rio Canex Laboratory in North Vancouver were performed for Ag (ppm), Cr (ppm), Cu (ppm), Mo (ppm), Pb (ppm), and Zn (ppm).

(b) Results

Drawing Ar80-247 denotes the various sample locations and their respective results.

Stream sediment samples were obtained from two branches of a tributary of Park Creek. This was undertaken in order to define the source of anomalous gold concentrations obtained during a regional survey.

Results obtained from the regional sampling program indicated several anomalous gold samples. The drainage area reflected by these anomalous samples extends from the central portion of PARK 1 in the northwest to PARK 3 in the south. The best, #1314, analysed 145 ppb Au for the -100 mesh fraction and 3400 ppb with respect to the -20 mesh size (3.12% H.M.)

Stream sediment follow up along both the North and South Branches revealed a widely distributed area of highly anomalous, although erratic, gold values. The most significant anomaly is outlined within the lower reaches of the South Branch. Specifically two consecutive samples #5945D and #5944D analysed 2000 and 3500 ppb Au respectively.

No geological mapping was conducted within the immediate vicinity of this anomaly. Along the course of both streams spot highs of greater than 100 ppb Au are noted

These include:

<u>Claim</u>	<u>Sample No.</u>	<u>Au (ppb)</u>
PARK 1	9785A	150
PARK 1	9781A	520
PARK 1	9777A	580
PARK 2	9765A	1550
PARK 2	9756A	240
PARK 3	5941D	850
PARK 3	5942D	390
PARK 3	5944D	3500
PARK 3	5945D	2000
---	5960D	130

It is presently unknown whether these anomalies actually reflect an underlying mineralized bedrock source or rather represent a 'dumping' zone. The lack of geological data and more detailed follow-up precludes such a determination.

Additional analyses in regards to Ag, Cr, Mo, Cu, Pb, and Zn indicate relatively uniform amounts which reflect various lithological background concentrations and the proximity and influence of the pyritization and the emplacement of the intrusive to the north.

Lead and zinc analyses indicate no significant trends with Pb ranging from 3-15 ppm and Zn from 65-113 ppm. Two consecutive samples at the headwaters of the South Branch contained 254 and 334 ppm Zn. With the exception of sample #9766A, which contains 1.5 ppm Ag (50 ppb Au), all samples returned negative results (< 0.5 ppm) with respect to silver. Chromium results appear to clearly indicate a lithological contrast across the property. The North Branch uniformly contains 17-28 ppm Cr, whereas the concentration along the South Branch ranges from 34-57 ppm Cr with the two samples further upstream containing 89 and 108 ppm Cr.

Weakly anomalous or elevated copper concentrations and moderately anomalous molybdenum results are obtained along the lower half of the North Branch and appear to clearly outline the zone of pyritization and the emplacement of the intrusive body to the north. Within the South Branch, molybdenum concentrations reflect background amounts of 2-3 ppm, even within the highly gold anomalous samples.

In summary, the stream sediment follow-up along both branches of a tributary of Park Creek reveals the presence of scattered, highly anomalous gold concentrations. Although somewhat erratic, the best results were obtained along the lower segment of the South Branch. No anomalous silver concentrations are associated on the property. No outcrop has been mapped and sampled in the immediate vicinity of these anomalous samples and therefore, the source of these values is presently unknown. Copper and molybdenum results reveal weak-moderate anomalies along the lower half of the North Branch. These values appear to reflect the pyritization and emplacement of the intrusive to the north and do not appear to be related to the gold concentrations. No relationship or trend appears to be evident between the Au and the other elements analysed.

IV COST STATEMENT(a) Wages

1 Geologist	\$ 120.00	Aug.17,18,1980	2	\$ 240.00
1 Jr. Field Assistant	46.58	Aug.17,18,1980	2	93.16
1 Jr. Field Assistant	39.18	Aug.17,18,1980	2	78.36
1 Technical Assistant	39.18	Jan.21,22,1981	2	78.36
1 Geologist	172.00	Apr. 23, 1981	1	<u>172.00</u>
				661.88

(b) Room and Board

Per diem rate of \$49.56 based on 6 person days				297.36
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(c) Transportation

General transportation (to/from area)				324.77
Terr-Air Charter Ticket No. 933 (1.15 hours @ \$366.00/hr)				420.90
Terr-Air Charter Ticket No. 934 (1.05 hours @ \$366.00/hr)				384.30
Fuel: 66 gallons @ \$3.00/gal				<u>198.00</u>
				1327.97

(d) Analytical Services

Min-En Laboratories Invoices #7349 & 7351				
53 stream sediments, preparation (@ \$0.60 ea.)				31.80
53 stream sediments, Au (@ \$4.25 ea.)				225.25
2 rocks, preparation (@ \$2.50 ea.)				5.00
2 rocks, Au-Fire (@ \$7.50 ea.)				<u>15.00</u>
				277.05

## Riocanex Laboratory

53 stream sediments, Ag, Cu, Cr, Mo, Pb,&Zn (@ \$4.75 ea.)				<u>251.75</u>
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Total Analytical Services:				528.80
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(e) Report Preparation

Drafting	\$ 127.00	May 12/81	1	127.00
Typing	64.80	May 13/81	1	<u>64.80</u>
				191.80

GRAND TOTAL:				<u>\$3007.81</u>
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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 25 and 1980 August 31, I supervised/directed a field programme on the PARK 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 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.  
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  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture.

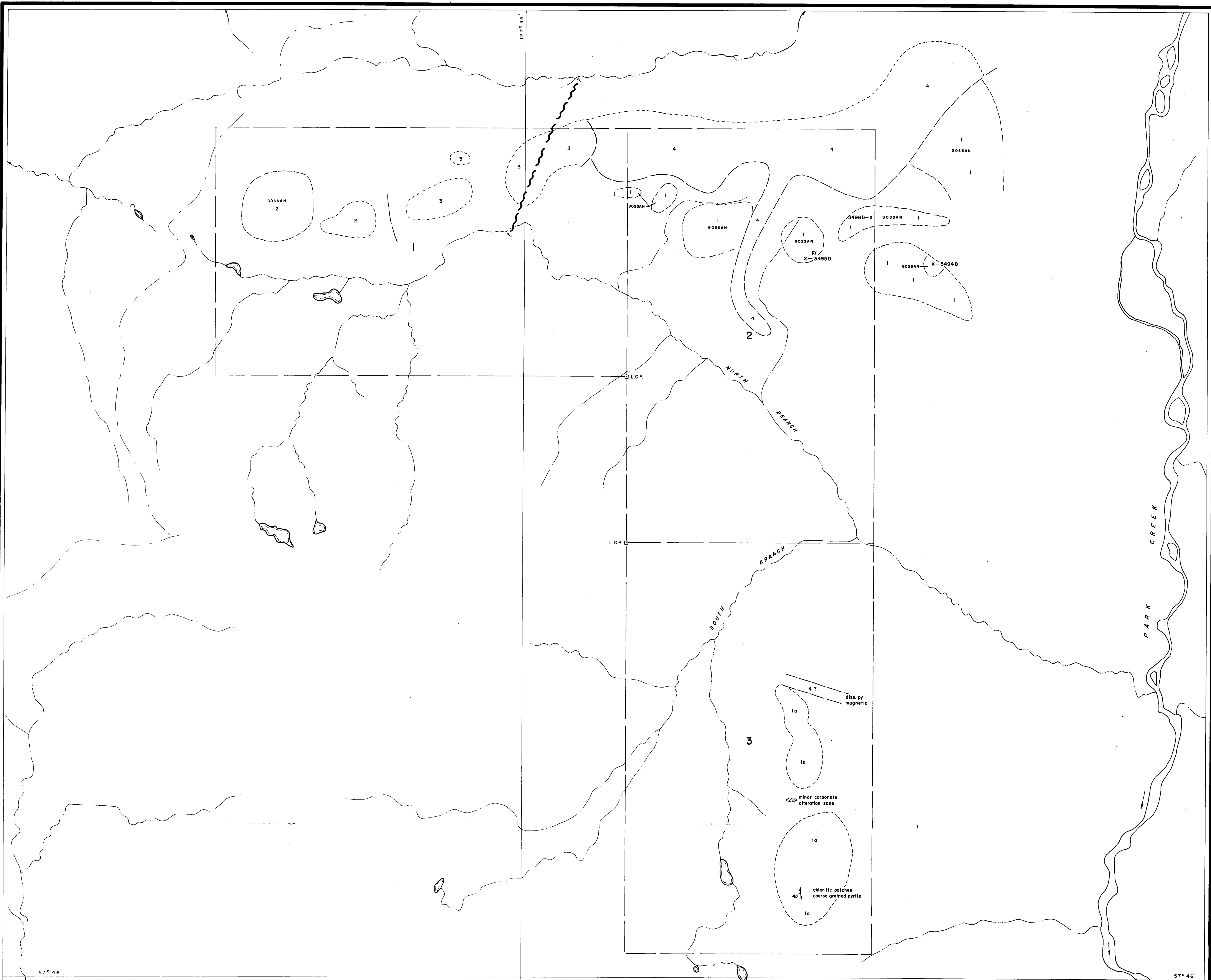
After cooling samples are diluted to standard volume. The solutions are analyzed by Atomic Absorption Spectrophotometers.

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 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 10 ppm F.





**LEGEND**

- JURASSIC**
- 4 GRANODIORITE - QUARTZ MONZONITE
  - 3 DIORITE (?)
- TRIASSIC**
- TAKLA GROUP
- 2 ANDESITE, DACITE
- PERMIAN**
- ASITKA GROUP
- 1 0 CHERT, TUFFACEOUS SEDIMENTS  
MINOR VOLCANICS
  - a) PHYLITE

**SYMBOLS**

- AREA OF EXPOSURE / OUTCROP
- CONTACT
- FAULT (ASSUMED)
- FOLIATION, STRIKE & DIP
- GOSSAN
- CARBONATE ALTERATION
- ROCK SAMPLE LOCATION & No.
- CLAIM BOUNDARY & LEGAL CORNER POST

**ROCK ASSAYS**

Tag No.	Au ozs/ton
3494 D	0.002
3495 D	0.002
3496 D	0.001

MINERAL RESOURCES BRANCH  
**9288**  
 NO.

**LOWPON EXPLORATION**  
 CANADA

**ARGONAUT PROJECT  
 PARK CLAIMS  
 GEOLOGY**

CHAPPELLE AREA, BRITISH COLUMBIA

M 300 0 10000 200 500 m  
 SCALE  
 1 INCH = 833 FEET

MAPPED BY: L.K.E. REVISION: N.T.S. No.: 94 E 13 E & W  
 DATE: 80 08 17 18 ACCT No.: 347-66  
 DRAWN BY: K.L.J. DATE: 81 05 13 DRWG No.: AR.80-246



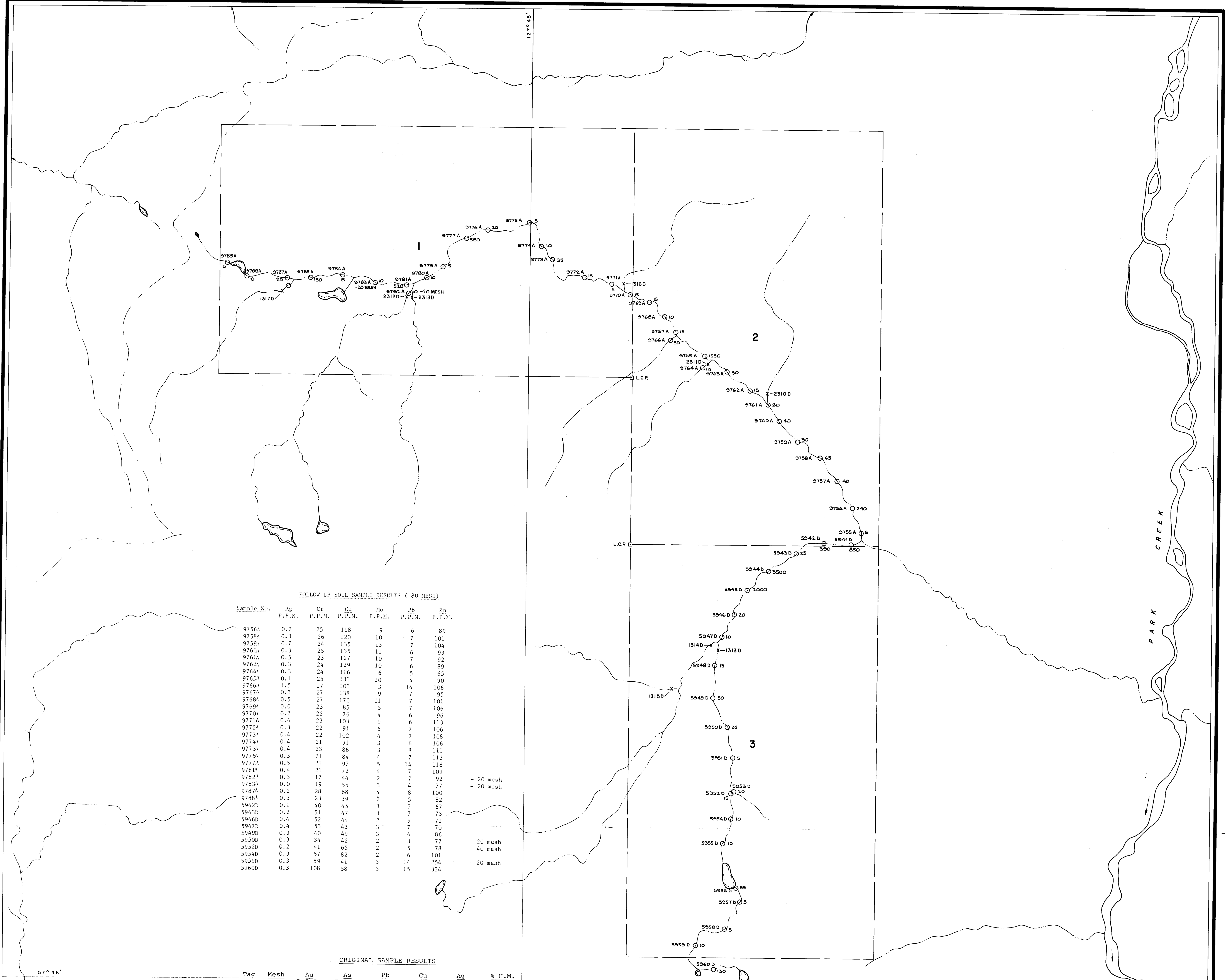
*L. K. E.*

57° 46'

57° 46'

127° 45'

127° 45'



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.
9756A	0.2	25	118	9	6	89
9758A	0.3	26	120	10	7	101
9759A	0.7	24	135	13	7	104
9760A	0.3	25	135	11	6	93
9761A	0.5	23	127	10	7	92
9762A	0.3	24	129	10	6	89
9764A	0.3	24	116	6	5	65
9765A	0.1	25	133	10	4	90
9766A	1.5	17	103	3	14	106
9767A	0.3	27	138	9	7	95
9768A	0.5	27	170	21	7	101
9769A	0.0	23	85	5	7	106
9770A	0.2	22	76	4	6	96
9771A	0.6	23	103	9	6	113
9772A	0.3	22	91	6	7	106
9773A	0.4	22	102	4	7	108
9774A	0.4	21	91	3	6	106
9775A	0.4	23	86	3	8	111
9776A	0.3	21	84	4	7	113
9777A	0.5	21	97	5	14	118
9781A	0.4	21	72	4	7	109
9782A	0.3	17	44	2	7	70
9783A	0.0	19	55	3	4	77
9787A	0.2	28	68	4	8	100
9788A	0.3	23	39	2	5	82
5942D	0.1	40	45	3	7	67
5943D	0.2	51	47	3	7	73
5946D	0.4	52	44	2	9	71
5947D	0.4	53	43	3	7	70
5949D	0.3	40	49	3	4	86
5950D	0.3	34	42	2	3	77
5952D	0.2	41	65	2	5	78
5954D	0.3	57	82	2	6	101
5959D	0.3	89	41	3	14	254
5960D	0.3	108	58	3	15	334

- 20 mesh  
- 20 mesh

- 20 mesh  
- 40 mesh

- 20 mesh

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.
1313	- 20	250	66	4	56	1.1	4.59
	-100	1800					
1314	- 20	3400	249	11	36	0.6	3.12
	-100	145					
1315	- 20	20	250	12	32	0.7	9.68
	-100	900					
1316	- 20	325	18	11	1160	0.8	8.01
	-100	60					
1317	- 20	30	5	21	74	0.9	7.24
	-100	15					
2310	- 20	150					12.98
	-100						
2311	- 20	65	18	10	84	0.8	4.69
	-100	5					
2312	- 20	70	31	15	52	1.0	2.03
	-100	15					
2313	- 20	450	155	10	80	0.8	1.32
	-100	1350					

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.

LEGEND

- 5959D STREAM SEDIMENT SAMPLE LOCATION & No.
- 10 -80 MESH VALUE FOR Au IN P.P.B.
- X-1315D ORIGINAL STREAM SEDIMENT SAMPLE LOC. & No.

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**9288**  
110

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

MAPPED BY: L.K.E. REVISION: N.T.S. No.: 94 E 13 E & W  
DATE: 800817/18 ACCT No.: 347-66  
DRAWN BY: K.L.J.  
DATE: 81 05 13 DRWG No.: AR-80-247



*L. Kelly*