82-#641 - 10683.
7

GEOLOGICAL AND GEOCHEMICAL SURVEY OF THE BLACKFLY CLAIM GROUP, OMINECA MINING DIVISION, B.C.

Claims:	BLACKFLY, BLACKFLY 2
Record Nos.:	3913, 4233
NTS:	93E/15W
Latitude:	53° 53' N
Longitude:	126° 54' W
Owner and Operator	UNION CARBIDE CANADA LIMITED
Report Prepared By:	N. G. Cawthorn
Date:	October 4, 1982

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APPENDICES

MAPS - Blackfly Claim

GEOLOGICAL AND GEOCHEMICAL SURVEY OF THE BLACKFLY CLAIM GROUP, OMINECA MINING DIVISION, B. C.

INTRODUCTION.

The Blackfly (20 units) and Blackfly 2 (20 units) claims were staked by Pavel Mazacek in July and September 1981. A geological and soil geochemical survey of the claim group was carried out in June 1982.

Reconnaissance soil geochemistry has indicated the presence of at least one locality of associated silver, mercury, lead, zinc, barium and strontium values in the western part of the Blackfly claim. This geochemistry coupled with nearby hydrothermal alteration of intermediate felsic volcanics indicates the possible presence of precious and base metal veins in an environment favourable for deposits of this type. It is recommended that a programme of detailed prospecting and soil geochemistry be undertaken in this and other anomalous localities on the property to test for the presence of such veins.

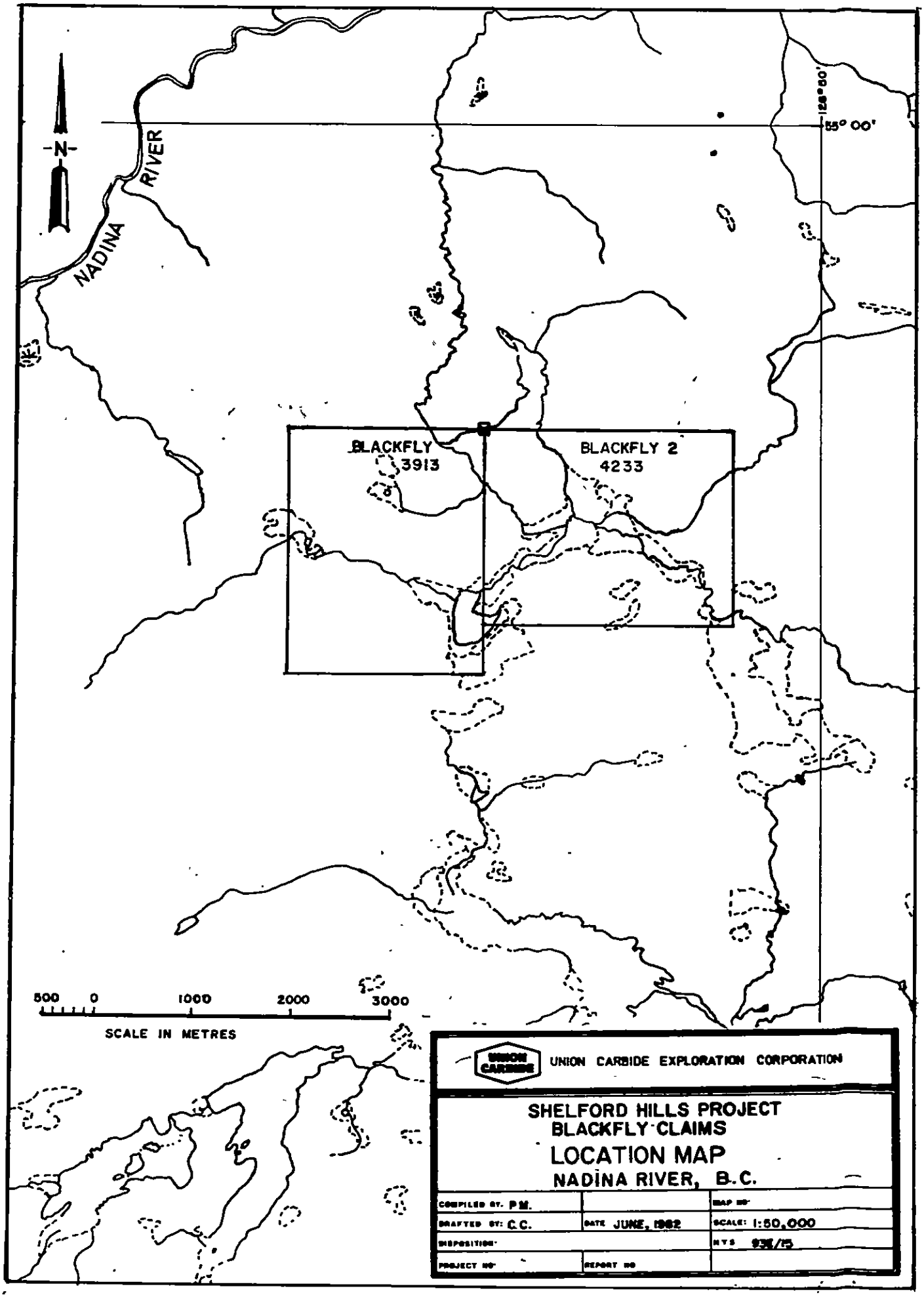
The costs of the programme are set out in the itemised cost statement in Appendix I.

Location and Access

The Blackfly claim group is located in Central British Columbia approximately 50 Km. south of the town of Houston and approximately 5 Km. east of the eastern end of Nadina Lake.

Access to the property is by a good all-weather gravel road from Houston to Francois Lake and then by approximately 30 Km. of seasonal logging roads into the property.

The location of the claim group is shown in Map 1.


N
NADINA RIVER
128° 30'
55° 00'
BLACKFLY
3913
BLACKFLY 2
4233
500 0 1000 2000 3000
SCALE IN METRES
UNION CARBIDE
UNION CARBIDE EXPLORATION CORPORATION
SHELFORD HILLS PROJECT
BLACKFLY CLAIMS
LOCATION MAP
NADINA RIVER, B.C.
COMPILED BY: P.M.
DRAFTED BY: C.C.
DATE JUNE, 1982
SCALE: 1:50,000
DISPOSITION:
NTS 93E/15
PROJECT NO:
REPORT NO

Physiography.

The property is located on the south-western flank of the Shelford Hills - a range of broad rolling hills which attain elevations of approximately 1500 m. Topography within the claim is gentle with elevations ranging from 990 m. in the central and southern part of the claims to 1125 m. in the north and west. The central part of the claim group partially covered by two small lakes and surrounding swamp which drain southerly towards Ootsa Lake. There is a dense forest cover of fir, spruce and pine on the claim which has locally been cleared by logging.

Claim Data.

Claim Name:	Blackfly, Blackfly 2
Mining Division:	Omineca
NTS:	93E/15W
Latitude and Longitude:	53°53' N, 126°54' W
Number of Units:	Blackfly - 20 units
	Blackfly 2 - 20 units
Record No.:	Blackfly - 3913
	Blackfly 2 - 4233
Date Recorded:	Blackfly - 7th July 1981
	Blackfly 2 - 8th September 1981
Expirty Date:	Blackfly - 6th July 1982
	Blackfly 2 - 7th September 1982
Owner/Operator:	Union Carbide Canada Limited

History.

The Blackfly claim was staked in July 1981 over a hydrothermal alteration zone in volcanic rocks of the Upper Cretaceous to Oligocene age Ootsa Lake Group. The Blackfly 2 claim was staked in September 1981 to cover a possible eastern extension of the alteration zone. The alteration zone was found during the course of a reconnaissance programme carried out by Union Carbide in the Shelford Hills area in the summer of 1981. A geological and soil geochemical study of the group was carried out in June 1982.

Scope of Present Work.

A geological mapping programme was carried out over the claim group to define the extent of the hydrothermal alteration zone. As a large portion of the central part of the claim group is covered by lake and swamp and much of the remainder is covered by forest a series of reconnaissance soil geochemical lines were run to assist in defining the extent of the hydrothermal alteration zones and to detect any association of precious and/or base metals with the hydrothermal alteration.

The area mapped totalled 10 square kilometers and was mapped at a scale of 1:10,000.

A total of 147 soil samples were collected on three lines over a total of 6.645 line Km.

GEOLOGY.

The geology of the Blackfly claim group is shown in Map 2. The rock types exposed in outcrop on the Blackfly claims are a series of volcanics and associated intrusives. According to the regional mapping work of the Geological Survey of Canada, and as shown on Map 1064A (Whitesail Lake Map-area, 1:250,000, published 1980), these are part of the Endako group of Eocene to Lower Miocene age. Older volcanic and volcaniclastic rocks, including the Hazelton group of Jurassic age, and the Kasalka group of Upper Cretaceous age, also occur in the Shelford Hills area, with the distribution controlled by fault-bounded blocks and the exposure severely limited by heavy forest cover.

On the Blackfly claims themselves, bedrock is best seen in a cleared area between the two lakes and in small roadside exposures. The preliminary examination which prompted staking in 1981 revealed a large, pyrite-bearing, hydrothermally-altered zone in felsic porphyries. More detailed mapping in June 1982 demonstrated that the rocks are all closely related feldspar-porphyritic extrusives and small intrusives which, with the exception of a single mafic exposure on the western edge of the property, are intermediate to felsic in composition. The lithologies can be subdivided, however, on the basis of phenocryst population and fragmental style, as shown on the accompanying geological map. Although no geological contacts are shown on the property map other than one seen in outcrop, recognizable lighologies form mappable units appearing as a series of zones trending NNW-SSE. The most westerly unit is exposed as a small roadside outcrop of fine-grained, grey, felsic volcanic with rounded quartz eyes and feldspar phenocrysts. A generally horizontal but undulating foliation represents either flow

banding or tuffaceous bedding. Midway along the outcrop is a pronounced alteration zone consisting of highly bleached, rubbly material which is homogeneous in character but patchy in distribution over several meters width. The secondary minerals include kaolinite, sericite and iron oxides. To the north is another small roadside outcrop of massive, dark green, mafic volcanic rock with feldspar and rare pyroxene phenocrysts. In some places the feldspars are stained a reddish colour, suggesting potassic alteration. The next exposure to the east is a fairly large hill of heterolithic lapilli tuff of overall imtermediate composition. Fragments include pumice, felsic and feldspar-porphyritic intermediate lithic material, and are best seen on weathered surfaces without lichen. Another medium-grey, intermediate volcanic which may be tuffaceous but is considerably finer-grained than the larger exposure, and contains both feldspar and biotite phenocrysts, lies to the southeast near the smaller of the two lakes. Just to the east of this, and exposed in several other outcrops between the two lakes along the north-south boundary between the Blackfly and the Blackfly 2 claims, is a feldspar-biotite porphyritic felsic volcanic. This rock is massive, unaltered with blocky weathering. A few fragments and chalcedony-filled vugs are visible. About 200 meters west of this common claim boundary, and 300 meters southwest of the shore of the larger lake, is the large alteration zone noted in 1981. The exposure is a bulldozer-scraped hillock with irregular, bleached crumbly alteration very similar to that noted in the felsic volcanic outcrop near the western edge of the property. In this case, however, the protolith is a maroon, intermediate intrusive with crowded, randomly-oriented feldspar

phenocrysts. The rock is rusty along fractures and sparse pyrite is visible in altered samples. An unaltered version of this same rock type is seen farther to the east where the smooth, rounded outcrop surfaces suggest an intrusive character in contrast to the blocky weathering of the volcanic rocks. To the east, and adjacent to the lake, is an outcrop of very fine-grained, finely-banded, felsic ash tuff. The only other outcrop seen on the property is a large, dome-shaped knob along the northern boundary of the Blackfly 2 claim, which consists of fine-grained feldspar-quartz-biotite porphyritic felsic volcanic material.

The most economically-interesting aspect of the geology of the Blackfly property is the alteration zones examined in two places in 1982 and also noted at the eastern edge of the property in 1981. The secondary mineral assemblage produced is indicative of hydrothermal processes similar to those that produce economic precious-metal mineralization, as suggested by the high mercury and arsenic values noted in the soil geochemistry results from 1981. It is particularly significant that a similar, and easily recognizable style of alteration pervades a varity of rock types in a zone that, if continuous, extends the width of the property.

GEOCHEMISTRY.

A reconnaissance soil geochemical programme was carried out over the property. A total of 147 soil samples were collected within the claim boundary. The samples were collected on two east-west lines spaced 500 m. apart and on one north-south line. The lines were each approximately 2 Km. long and samples were collected at 50 m. or 25 m. intervals. The lines and

sample positions were located by tape and compass. Most of the sampling is on the Blackfly 1 claim as extensive swamp and lake cover prevented effective sampling in the Blackfly 2 area. The soil sample locations are shown in Map 3. All the soil samples were collected from 'B' horizon soils at depths of 15 to 25 cm. Analyses of the soil samples were carried out by VangeochemLab Ltd. of North Vancouver. The samples were analysed by standard atomic absorption methods for gold and mercury (details of the methods are given in Appendix 2). Multi element analyses by Inductively Coupled Plasma with hot aqua regia digestion were also carried out on the samples - giving analyses for Molybdenum, Copper, Lead, Zinc, Silver, Nickel, Cobalt, Manganese, Iron, Arsenic, Uranium, Gold, Thorium, Strontium, Cadmium, Antimony, Bismuth, Vanadium, Calcium, Phosphorus, Lanthanum, Chromium, Magnesium, Barium, Titanium, Boron, Aluminum, Sodium, Potassium and Tungsten (although the leach is partial for Ca, P, Mg, Al, Ti, La, Na, K, W, Ba, Sr, Cr and B). The ICP analyses were carried out on the -80 mesh size fraction of the sample. A 0.5 gram sample was digested with 3 ml of 3:1:3 HCl to HNO_3 to H_2O at 90°C for 1 hour and then diluted to 10 mls with water. The analyses were determined spectrometrically on these solutions. The analytical results are tabulated in Appendix 3. The analytical results are presented in maps 4 and 5. Not all the elements reported in the multi element analyses are significant and consequently only some of these have been plotted on the maps. The gold (AA analysis) mercury and silver analyses are presented on Map 4, and the lead, zinc, strontium and barium analyses are presented on Map 5.

The wide spacing of the reconnaissance soil sample lines prevents contouring of the analytical results. The data does, however, indicate anomalous localities which it is recommended be soil sampled and prospected in more detail.

The arithmetic mean for the gold analytical results is 3.5 ppb Au and the standard deviation is 4.7 ppb Au. Defining the anomalous level as the mean plus two standard deviations then anomalous gold values are those exceeding 13 ppb Au. The highest gold analysis obtained was 30 ppb Au from one sample located at 425S + 800W. Two other samples returned values of 20 ppb Au at 800S + 450W and 900S + 1275W. Thirty-four samples returned values of 10 ppb Au and gold was not detectable in the remainder of the samples.

The mean value for the silver analyses is 0.14 ppm Ag and the standard deviation is 0.09 ppm Ag. Anomalous values are defined as those in excess of 0.3 ppm Ag. The two most highly anomalous samples are 0.7 ppm Ag at 900S + 1925W and 0.5 ppm Ag at 900S + 1975W at the extreme western margin of the Blackfly claim. Several adjacent samples returned values of 0.3 ppm Ag. It is recommended that this locality be prospected and soil sampled in detail and further ground should be staked to cover any western extension of this zone. Two samples gave values of 0.4 ppm Ag at 0 + 150N and 425S + 700W.

The samples were analysed for mercury because of the common association of this element with precious metal deposits. The mean for mercury is 45 ppb Hg and the standard deviation is 34 ppb. Anomalous samples are defined as those in excess of 113 ppb Hg. Seven values exceed this level. The highest value is 260 ppb Hg at 0 + 600S. The anomalous mercury values do not define any distinct zone and are not associated with anomalous gold

and silver values except for a value of 150 ppb Hg (the second highest mercury value obtained) associated with the highest silver value of 0.7 ppm Ag at 900S + 1925W.

Lead and zinc were selected as the most significant base metal analyses because of their common association with precious metal bearing veins.

The mean analytical value for lead is 8.3 ppm and the standard deviation is 3.3 ppm. The anomalous level for lead is defined as 15 ppm Pb. Four analyses exceed this anomalous level. Three of these occur within a 700 m. long zone at the western end of the 900S line including the highest value of 23 ppm Pb at 900S + 1850W. This highest is close to the anomalous silver and mercury sample mentioned above and most lead values in this locality are above background.

The mean analytical value for zinc is 54 ppm and the standard deviation is 27 ppm. The anomalous level is devined as 108 ppm Zn. Seven analytical values exceed this level. These are at scattered locations on the sample lines although the two highest values of 136 and 134 ppm Zn both occur on the 900S line at 700W and 1325W respectively. Samples at the extreme western end of this line again return analyses which are generally above background level in zinc.

An inspection of the remainder of the ICP analyses indicated anomalous localities for Ba and Sr. Statistical analyses of these results were not done as the leach for these elements is partial and the results may therefore not be entirely accurate. However, an inspection of the results indicates a general association of high strontium with high barium results. These are scattered at various localities on the sample lines but in particular it is noted that high Sr and Ba analyses occur

at the western end of line 900S where samples are commonly anomalous in the other elements discussed above - especially noteworthy are values of 59 ppm Sr and 443 ppm Ba associated with the highest silver value of 0.7 ppm Ag at 900S + 1925W. This is significant in that barite is commonly associated with precious and base metal bearing veins as is the case with other deposits of this type in the region.

CONCLUSIONS.

Reconnaissance soil sampling of the Blackfly claim group has indicated the presence of associated anomalous silver, mercury, lead, zinc, barium and strontium values in a zone some 200 m. or more in length at the western end of the 900S line. This lies close to and partially extends outside the present claim boundary. This anomalous zone could represent a precious metal bearing vein possible also carrying galena, sphalerite and barite. Mapping of the area shows the presence of kaolinitic alteration nearby, some 200 m. to the southeast, in a fine-grained, grey, quartz and feldspar porphyritic, felsic volcanic confirming hydrothermal activity at this locality. It is recommended that a further claim be staked to the west of the Blackfly claim to cover any possible western extension of this zone, and that a programme of detailed soil sampling and prospecting be carried out over the anomalous area to define the extent and orientation of the anomalous zone and to locate the source of the anomaly. It is further recommended that the scattered point anomalies elsewhere on the reconnaissance soil sample lines be prospected and resampled to confirm the anomalies and locate their sources. Further reconnaissance soil sampling should also be undertaken in the eastern part of the Blackfly 2 claim as this area remains untested.

REFERENCES

G.S.C. Map 1064A; "Whitesail Lake", Scale 1:253,440, S. Duffell, 1958

STATEMENT OF QUALIFICATION OF AUTHOR

NIGEL G. CAWTHORN: Graduated from Aberdeen University, Aberdeen, Scotland with B.Sc. Degree (Honours) in Geology In June 1970. Graduated from the University of British Columbia, Vancouver, B. C. with M.Sc. Degree in Geology in September 1973.

Experience:

1973 - 1975: Resident Geologist, Canada Tungsten Mining Corp., Tungsten, N.W.T. Duties included exploration within the mine area, drill supervision, geological mapping, grade control and other duties of mine geologist in operating tungsten mine.

1975 - 1978: Project Geologist, Union Carbide Exploration Corp., Brazil. Duties included geological mapping and supervising geochemical, geophysical and drilling programmes related primarily to tungsten exploration in north-eastern Brazil.

1978 - 1981: Project Geologist, Union Carbide Exploration Corp., United Kingdom. Duties included geological mapping and carrying out geochemical and geophysical reconnaissance programmes related primarily to tungsten exploration in south-west England and other areas of the United Kingdom.

1981 - Present; Project Geologist, Union Carbide Exploration Corp., Canada. Duties include carrying out exploration programmes in British Columbia and other areas.

APPENDIX 1

ITEMISED COST STATEMENT

STATEMENT OF EXPENDITURE

BLACKFLY CLAIM GROUP - 1981-82

Blackfly Claim (Record No. 3913)
Blackfly 2 Claim (Record No. 4233)

Omineca Mining Division
NTS. 93E/15W

Salaries:		
1 Geologist - 5 days @ $115.40/day June 23rd-June 27th, 1982	$ 577.00	
1 Junior Geologist - 4 days @ $76.16/day June 20th-June 23rd, 1982	304.64	
1 Field Assistant - 8 days @ $73.86/day June 20th-June 27th, 1982	590.88	
1 Junior Field Assistant - 4 days @ $50.78/day	203.14	$ 1,675.64
Food and Accommodation:		
21 man-days @ $30.00 per man per day during period June 20th-June 27th, 1982		630.00
Transportation:		
Vehicle rental - 8 days @ $28.33 per day June 20th-June 27th, 1982		226.64
Geochemical Analyses:		
147 soil samples @ 13.90 per sample (sample preparation - $0.60, A.A. analysis for Au-$4.30, A.A. analysis for Hg-$3.50, I.C.P. multi-element analysis-$5.50)		2,043.30
TOTAL EXPENDITURES		$ 4,575.58

APPENDIX 2

GEOCHEMISTRY – SAMPLE PREPARATION AND ANALYTICAL METHODS

VANGEOCHEM LAB LTD. 1521 PEMBERTON AVE., NORTH VANCOUVER B.C., CANADA V7P 2S3
986-5211
604-XXXXXXX

June 1, 1982

To: Union Carbide Exploration
Suite 930 - 800 W. Pender St.
Vancouver, B.C. V6C 2V6

RECEIVED
JUN - 3 1982

From: Vangeochem Lab Ltd.
1521 Pemberton Avenue
North Vancouver, B.C. V7P 2S3

Subject: Analytical procedure used to determine Aqua Regia soluble gold in geochemical samples.

1. Method of Sample Preparation

(a) Geochemical soil, silt ot rock samples were received in the laboratory in wet-strength 4 x 6 Kraft paper bags or rock samples sometimes in 8" x 12" plastic bags.

(b) The dried soil and silt samples were sifted by hands using a 8" diameter 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80-mesh fraction was transferred into a new bag for analysis later.

(c) The dried rock samples were crushed by using a jaw crusher and pulverized to 100 - mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for later analysis.

2. Method of Digestion

(a) 5.00 - 10.00 grams of the minus 80-mesh samples were used. Samples were weighed out by using a top-loading balance into beakers.

(b) 20 ml of Aqua Regia (3:1 HCL : HNO_3) were used to digest the samples over a hot plate vigorously.

(c) The digested samples were filtered and the washed pulps were discarded and the filtrate was reduced to about 5 ml.

(d) The Au comples ions were extracted into diisobutyl ketone and thiourea medium. (Anion exchange liquids "Aliquot 336").

... 2

(e) Separate Funnels were used to separate the organic layer.

3. Method of Detection

The gold analyses were detected by using a Techtron model AA5 Atomic Absorption Spectrophotometer with a gold hollow cathode Lamp. The results were read out on a strip chart recorder. A hydrogen lamp was used to correct any background interferences. The gold values in parts per billion were calculated by comparing them with a set of gold standards.

4. The analyses were supervised or determined by Mr. Conway Chun or Mr. Eddie Tang and his laboratory staff.

Eddie Tang
VANGEOCHEM LAB LTD.

ET: jl

VANGEOCHEM LAB LTD. 1521 PEMBERTON AVE., NORTH VANCOUVER, B.C., CANADA 986-5211
604-[illegible]
V7P 2S3

June 1, 1982

To: Union Carbide Exploration
Suite 930 - 800 W. Pender St.
Vancouver, B.C.
V6C 2V6

From: Vangeochem Lab Ltd.
1521 Pemberton Ave.
North Vancouver, B.C. V7P 2S3

Subject: Analytical procedure used to determine Aqua Regia soluble Hg vapour in geochemical samples.

1. Method of Sample Preparations

(a) Geochemical soil, silt or rock samples were received in the laboratory in wet-strength 4 x 6 Kraft paper bags or rock samples sometimes in 8" x 12" plastic bags.

(b) The dried soil and silt samples were sifted by hands using a 8" diameter 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80-mesh fraction was transferred into a new coin envelope for analysis later.

(c) The dried rock samples were crushed by using a jaw crusher and pulverized to 100-mesh or finer by using a disc mill. The pulverized samples were then put in a new bag for later analysis.

2. Method of Digestion

(a) 0.50 gram samples of the minus 80- mesh fraction were weighed out by using a top-loading balance into the test tubes.

(b) The samples were digested with aqua-regia in a hot water bath for an hour.

(c) The samples were shaken and diluted with demineralized water to a fixed volume settled.

... cont.

3. Method of Analysis

(a) An aliquot of the digested samples were mixed with H_2SO_4 acid, NaCl, & hydroxylamine sulphate-stannous sulfate as the reductant.

(b) The vapour of the mixture was then drawn into the absorption cell and the Hg vapour was detected by the Techtron model AA-5 atomic absorption spectrophotometer.

(c) The results were recorded on a strip chart recorder. The concentration were calculated in parts per billion by comparing with a set of Hg vapour standards.

4. The analyses were supervised or determined by Mr. Eddie Tang or Mr. Conway Chun and their laboratory staff.

Eddie Tang
Vangeochem Lab Ltd.

ET:jl

APPENDIX 3

SOIL GEOCHEMISTRY - ANALYTICAL RESULTS

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

Certificate of Geochemical Analyses

• *Specialising in Trace Elements Analyses* •

–IN ACCOUNT WITH–

Union Carbide Exploration
Suite 930, 800 W. Pender St.
Vancouver, B.C. V6C 2V6
Attention:

Report No: 82-93-007 Page 1 of 4
Samples Arrived: June 30, 1982
Report Completed: July 13, 1982
For Project: 107 BF
Analyst: E.T. & VGC Staff
Invoice: 6797 Job # 82-061

Sample Marking	Au ppb	Hg ppb
0 + 00 S	nd	10
50N	nd	15
100N	nd	30
150N	nd	105
200N	nd	70
250N	nd	85
0 + 300N S	nd	150
0 + 50S S	10	90
100S	10	95
150S	nd	35
200S	10	35
250S	nd	35
300S	nd	45
350S	nd	65
400S	nd	125
425S	10	70
450S	nd	60
500S	nd	70
550S	nd	105
600S	10	260
650S	nd	40
700S	nd	120
750S	nd	55
800S	nd	50
850S	nd	40
900S	10	30
0 + 925S S	nd	25
300N + 50W S	nd	15
100W	nd	35
150W	nd	55
200W	nd	20
250W	nd	25
300W	nd	30
350W	nd	30
300N + 370W S	nd	15
350N + 370W S	nd	100
370W + 900S S	10	35
950	nd	60
370W +1000S S	nd	20

REMARKS: One copy sent to Mr. N. Cowthorn at Houston, B.C.
Results for ICP analyses will be sent at a later day.

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VGC

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

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Certificate of Geochemical Analyses

–IN ACCOUNT WITH–

Union Carbide Exploration

Attention:

Report No: 82-93-007 Page 2 of 4
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Au ppb	Hg ppb				
370W + 1050S S	10	30				
1100S	nd	25				
1150S	nd	45				
1200S	nd	25				
1250S	nd	20				
1300S	nd	15				
1350S	nd	35				
1400S	nd	25				
1450S	nd	30				
1500S	nd	35				
1550S	nd	85				
1600S	10	35				
1650S	nd	15				
1700S	nd	30				
1750S	nd	50				
370W + 1800S S	nd	20				
425S + 50E S	nd	50				
100E S	nd	40				
150E	nd	55				
200E	nd	15				
250E	10	30				
300E	nd	50				
350E	nd	50				
400E	10	25				
450E	nd	20				
425S + 500E S	10	65				
425S + 50W S	nd	110				
100W	nd	35				
150W	nd	15				
200W	nd	50				
250W	nd	35				
300W	nd	30				
350W	10	30				
400W	10	50				
450W	nd	25				
500W	nd	25				
550W	nd	35				
600W	10	30				
425S + 650W S	10	30				

REMARKS:

Signed: _____

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH–

Union Carbide Exploration

Attention:

Report No: 82–93–007 Page 3 of 4
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Au ppb	Hg ppb				
425S + 700W S	nd	85				
750W	10	45				
800W	30	20				
850W	nd	20				
900W	nd	15				
0950W	nd	30				
1000W	nd	20				
050W	10	30				
100W	nd	20				
150W	nd	15				
200W	nd	10				
250W	nd	10				
300W	10	10				
350W	nd	25				
400W	nd	20				
425S + 1450W S	nd	35				
450W + 800S S	20	35				
450W + 850S	nd	45				
800S + 500W S	nd	55				
550W	10	40				
600W	10	30				
650W	nd	15				
800S + 700W S	10	30				
900S + 50W S	nd	60				
100W	nd	55				
150W	nd	30				
200W	nd	35				
250W	nd	40				
300W	10	70				
350W	nd	40				
400W	10	45				
450W(A)	nd	30				
450W(B)	10	35				
700W	nd	105				
750W	nd	30				
800W	nd	35				
850W	nd	130				
900W	10	15				
900S + 950W S	nd	15				

REMARKS:

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

VANGEOCHEM LAB LTD.
1521 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.,
CANADA V7P 2S3

TELEPHONE: 986-5211
AREA CODE: 604

• *Specialising in Trace Elements Analyses* •

Certificate of Geochemical Analyses

–IN ACCOUNT WITH– [illegible]

Union Carbide Exploration

Attention:

Report No: 82-93-007 Page 4 of 4
Samples Arrived:
Report Completed:
For Project:
Analyst:

82-93-M PROJECT

Sample Marking	Au ppb	Hg ppb				
900S + 1000W S	nd	25				
1050E	nd	30				
1100W	nd	60				
1150W	nd	30				
1200W	10	25				
1250W	nd	25				
1275W	20	10				
1300W	nd	40				
1325W	10	35				
1350W	nd	25				
1375W	nd	55				
1400W	nd	65				
1425W	nd	35				
1450W	nd	40				
1475W	nd	35				
1500W	nd	20				
1525W	nd	20				
1550W	10	45				
1575W	nd	25				
1600W	10	25				
1625W	nd	25				
1650W	nd	65				
1675W	10	30				
1700W	10	30				
1725W	nd	35				
1750W	nd	45				
1775W	nd	40				
1800W	10	30				
1825W	nd	45				
1850W	nd	60				
1825W	10	45				
1900W	nd	65				
1925W	nd	150				
1950W	nd	80				
900S + 1975W S	nd	95				

REMARKS:

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS, VANCOUVER B.C. PH:253-3158 TELEX:04-53124

ICP GEOCHEMICAL ANALYSIS

A .500 GRAM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 90 DEG.C. FOR 1 HOUR. THE SAMPLE IS DILUTED TO 10 MLS WITH WATER.
THIS LEACH IS PARTIAL FOR: Ca,P,Mg,Al,Ti,La,Na,K,W,Ba,Si,Sr,Cr AND B. Au DETECTION 3 ppb.
SAMPLE TYPE - SOLUTIONS

DATE RECEIVED JULY 14 1982 DATE REPORTS MAILED July 16/82 ASSAYER DEAN TOYE, CERTIFIED B.C. ASSAYER

UNION CARBIDE PROJECT # 107BF SOLUTIONS FROM VANGEOCHEM FILE # 82-0592 PAGE # 1

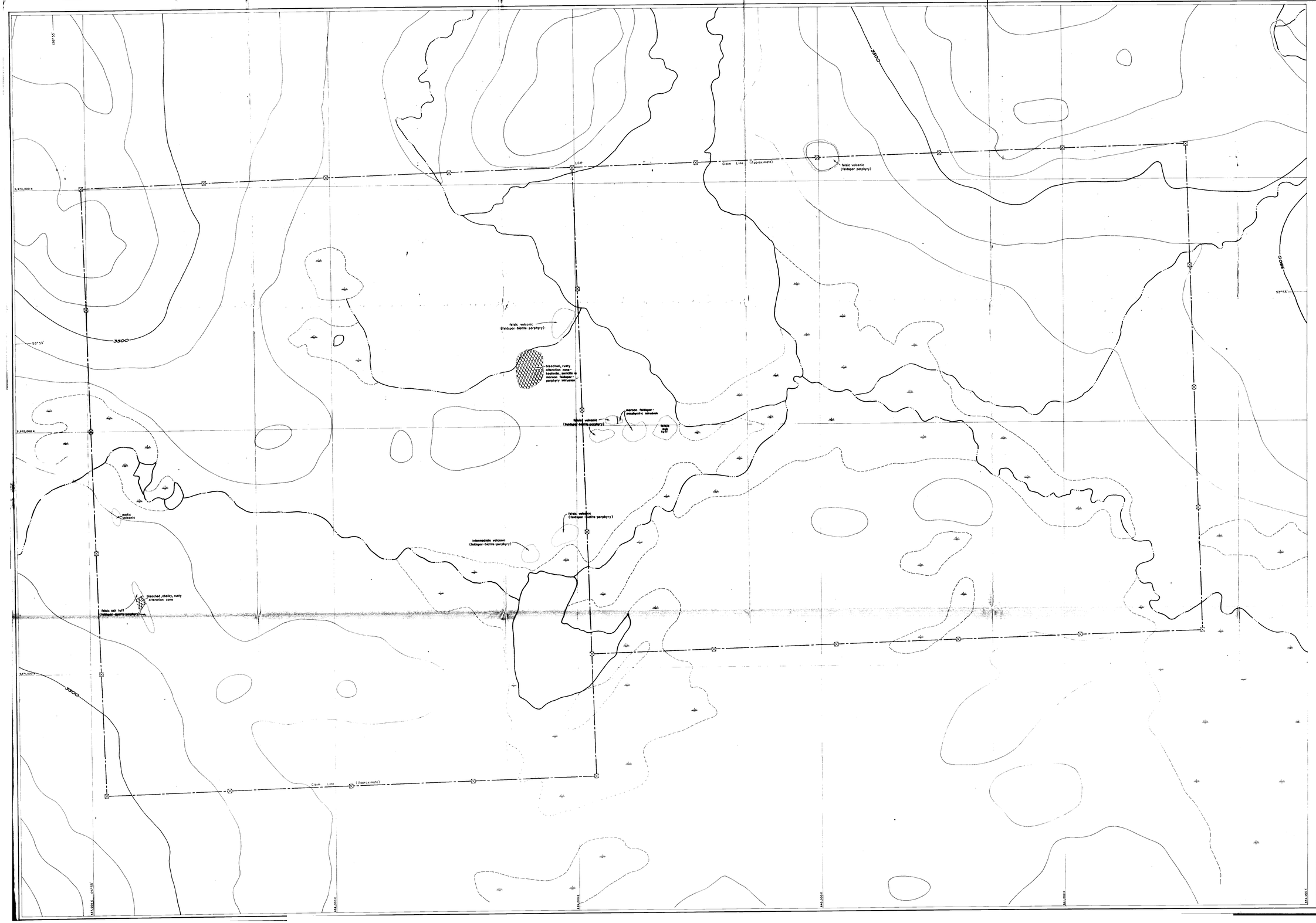
SAMPLE #	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
0+00	1	8	3	43	.1	6	5	405	1.65	3	2	ND	2	11	1	2	2	24	.10	.15	5	10	.16	95	.01	12	1.91	.01	.03	2
0+50N	1	14	5	40	.1	6	5	649	1.46	2	2	ND	2	32	1	2	2	31	.32	.05	5	11	.25	213	.01	10	1.56	.01	.04	2
0+100N	1	6	3	31	.1	5	2	103	.80	2	2	ND	2	22	1	2	2	19	.23	.02	4	8	.22	125	.01	9	1.07	.01	.03	2
0+150N	1	18	4	19	.4	8	5	722	1.08	2	2	ND	2	152	1	2	2	13	1.41	.06	22	7	.20	433	.01	16	1.39	.01	.02	2
0+200N	1	11	6	47	.1	5	3	354	.98	2	2	ND	2	39	1	2	2	19	.33	.05	10	9	.17	216	.01	9	1.21	.01	.04	2
0+250N	1	15	9	22	.2	8	4	312	.97	3	2	ND	2	123	1	2	2	18	1.00	.06	10	9	.23	356	.01	9	.82	.01	.05	2
0+300N	1	5	3	10	.1	2	1	156	.21	2	2	ND	2	74	1	2	2	4	.79	.05	2	3	.10	153	.01	20	.20	.01	.04	2
0+50S	1	13	4	23	.2	6	4	430	.40	2	2	ND	2	42	1	2	2	11	.45	.13	14	9	.09	191	.01	10	1.50	.01	.05	2
0+100S	1	10	3	7	.1	4	1	55	.23	2	2	ND	2	43	1	2	2	8	.51	.14	7	2	.07	118	.01	15	.50	.01	.06	2
0+150S	1	10	5	35	.1	5	4	323	2.60	7	2	ND	2	34	1	2	2	25	.08	.11	9	8	.17	240	.01	6	1.71	.03	.07	2
0+200S	1	11	4	27	.1	5	5	373	2.32	5	2	ND	2	36	1	2	2	26	.25	.09	14	8	.19	186	.01	5	1.59	.01	.05	2
0+250S	1	11	7	35	.1	7	4	361	1.33	4	2	ND	2	34	1	2	2	25	.37	.05	7	11	.25	167	.01	5	1.25	.01	.04	2
0+300S	1	9	5	29	.2	4	2	76	1.11	2	2	ND	2	23	1	2	2	22	.20	.02	5	7	.14	163	.01	18	1.11	.01	.04	2
0+350S	1	10	8	39	.1	7	4	278	1.27	4	2	ND	2	22	1	2	2	23	.23	.08	5	10	.19	135	.01	14	1.39	.01	.05	2
0+400S	1	25	6	23	.1	9	2	53	1.14	2	2	ND	2	71	1	2	2	17	.56	.08	17	16	.19	347	.01	6	2.72	.02	.03	2
0+425S	1	7	4	17	.1	4	2	64	1.63	3	2	ND	2	33	1	2	2	23	.23	.05	7	9	.20	184	.01	12	1.31	.01	.04	2
0+450S	1	12	6	45	.1	6	4	72	2.51	5	2	ND	3	40	1	2	2	27	.05	.14	12	10	.15	335	.02	13	2.45	.02	.05	2
0+500S	1	10	8	28	.2	4	2	55	1.46	2	2	ND	2	41	1	2	2	22	.08	.11	16	9	.15	385	.01	7	2.11	.01	.05	2
0+550S	1	6	5	20	.1	2	2	42	3.89	2	2	ND	3	110	1	2	2	22	.11	.19	13	4	.10	711	.01	4	1.96	.12	.18	2
0+600S	1	8	7	26	.1	1	2	8	3.54	3	2	ND	5	207	1	2	2	27	.32	.09	11	4	.14	380	.01	17	1.00	.34	.20	2
0+650S	1	11	11	72	.1	4	4	459	3.19	8	2	ND	2	27	1	2	2	36	.07	.32	8	9	.15	214	.02	6	2.12	.01	.08	2
0+700S	1	14	3	10	.2	4	2	68	.42	2	2	ND	2	110	1	2	2	6	.93	.09	13	3	.06	301	.01	14	.61	.02	.01	2
0+750S	1	14	6	107	.1	15	7	167	1.92	28	2	ND	2	9	1	2	2	27	.08	.12	5	15	.25	107	.02	14	3.29	.01	.04	2
0+800S	1	10	7	88	.1	11	7	187	2.37	29	2	ND	2	11	1	2	2	37	.11	.13	6	16	.28	109	.03	17	2.58	.01	.03	2
0+850S	1	13	5	110	.1	13	6	311	2.30	25	2	ND	2	31	1	2	2	37	.31	.16	7	14	.28	243	.01	11	2.54	.01	.04	2
0+900S	1	11	10	38	.1	6	4	124	2.85	20	2	ND	2	36	1	2	2	30	.13	.09	7	10	.21	244	.01	18	1.67	.02	.07	2
0+925S	1	12	10	56	.1	9	6	118	2.75	38	2	ND	2	13	1	2	2	39	.12	.07	4	9	.23	147	.01	14	1.84	.01	.05	2
300N+50W	1	5	5	53	.1	4	2	332	.76	2	2	ND	2	26	1	2	2	18	.27	.02	4	8	.19	110	.02	17	.77	.01	.03	2
300N+100W	1	4	6	75	.1	3	2	224	1.01	2	2	ND	2	6	1	2	2	20	.10	.19	4	9	.10	46	.02	17	1.43	.01	.04	2
300N+150W	1	7	7	87	.1	9	4	114	1.72	3	2	ND	2	8	1	2	2	31	.10	.22	4	17	.22	75	.02	12	2.14	.01	.03	2
300N+200W	1	7	5	79	.1	8	3	311	1.14	2	2	ND	2	15	1	2	2	24	.20	.04	5	13	.32	105	.03	10	1.22	.01	.03	2
300N+250W	1	7	8	39	.1	6	3	166	.90	3	2	ND	2	23	1	2	2	21	.23	.03	5	10	.23	114	.02	14	1.00	.01	.05	2
300N+300W	1	10	5	34	.1	7	3	237	1.20	2	2	ND	2	48	1	2	2	25	.49	.03	7	13	.32	219	.01	7	1.32	.01	.04	2
300N+350W	1	8	7	70	.1	6	4	215	1.61	4	2	ND	2	7	1	2	2	30	.08	.13	5	11	.16	75	.02	14	1.88	.01	.04	2
300N+370W	1	10	7	59	.2	10	5	325	1.68	4	2	ND	2	20	1	2	2	33	.21	.04	6	16	.43	117	.02	16	1.77	.01	.04	2
350N+370W	1	16	7	38	.2	9	4	633	1.20	3	2	ND	2	105	1	2	2	18	1.42	.09	15	11	.29	315	.01	7	1.59	.01	.05	2
370W+900S	1	8	10	53	.1	9	5	376	1.98	10	2	ND	2	10	1	2	2	33	.13	.14	4	13	.24	119	.01	15	1.96	.01	.04	2
370W+950S	1	10	8	97	.1	11	6	155	2.78	11	2	ND	2	8	1	2	2	47	.09	.14	4	20	.32	79	.02	11	2.85	.01	.04	2
370W+1000S	1	6	9	30	.1	4	2	92	.88	5	2	ND	2	19	1	2	2	24	.23	.03	4	8	.16	104	.01	7	1.00	.01	.04	2
STD A-1	1	31	45	192	.3	36	13	1015	2.83	8	2	ND	2	37	1	2	2	58	.67	.10	9	75	.79	269	.09	5	2.11	.02	.22	2
STD	17	151	40	76	2.2	548	12	509	2.33	13	2	ND	3	29	1	2	2	27	1.52	.08	5	52	.56	322	.03	30	.83	.04	.21	

SAMPLE #	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
370W+1050S	1	15	9	49	.1	10	6	424	1.74	15	2	ND	2	20	1	2	2	30	.28	.06	9	13	.37	132	.02	2	1.41	.01	.05	2
370W+1100S	1	5	8	43	.1	3	2	190	1.05	3	2	ND	2	9	1	2	2	22	.10	.07	5	7	.12	74	.01	2	1.14	.01	.03	2
370W+1150S	1	9	7	70	.2	8	4	184	2.03	16	2	ND	2	8	1	3	2	33	.10	.15	5	13	.25	87	.02	2	1.99	.01	.05	2
370W+1200S	1	5	9	53	.2	4	2	116	1.13	3	2	ND	2	22	1	2	2	20	.18	.07	6	6	.18	130	.02	2	1.31	.01	.04	2
370W+1250S	1	6	8	44	.2	4	2	135	.87	3	2	ND	2	14	1	2	2	16	.15	.04	9	7	.20	89	.01	2	1.06	.01	.04	2
370W+1300S	1	6	7	46	.1	6	3	142	1.15	2	2	ND	2	22	1	2	2	20	.22	.03	5	9	.33	118	.04	2	1.32	.01	.04	2
370W+1350S	1	6	9	59	.1	6	3	113	1.40	3	2	ND	2	18	1	2	2	23	.19	.09	5	11	.29	135	.03	2	2.14	.01	.04	2
370W+1400S	1	9	11	55	.1	8	5	522	1.62	9	2	ND	2	25	1	2	2	30	.28	.07	9	13	.34	150	.04	2	1.72	.01	.05	2
370W+1450S	1	12	13	59	.1	9	6	508	1.79	8	2	ND	3	21	1	2	2	31	.25	.08	10	12	.35	144	.03	2	1.69	.01	.06	2
370W+1500S	1	9	10	55	.1	9	4	243	1.42	4	2	ND	2	21	1	2	2	28	.31	.05	11	15	.38	129	.01	2	1.34	.02	.05	2
370W+1550S	1	16	14	114	.3	11	5	272	2.17	13	2	ND	3	12	1	2	2	33	.13	.18	6	16	.37	114	.02	2	2.51	.01	.05	2
370W+1600S	1	9	6	44	.2	6	3	132	1.01	2	2	ND	2	18	1	2	2	21	.22	.04	6	10	.27	117	.01	2	1.32	.01	.04	2
370W+1650S	1	3	7	30	.1	3	1	109	.41	2	2	ND	2	14	1	2	2	10	.20	.01	10	4	.13	90	.01	2	.70	.01	.03	2
370W+1700S	1	2	10	19	.1	2	1	35	.38	2	2	ND	2	7	1	2	2	10	.05	.03	8	4	.07	43	.01	2	.77	.01	.03	2
370W+1750S	1	21	18	87	.2	14	5	514	2.57	7	2	ND	2	27	1	2	2	46	.36	.07	11	24	.49	193	.01	2	2.69	.01	.07	2
370W+1800S	1	4	8	80	.1	4	2	115	.69	2	2	ND	2	8	1	2	2	18	.09	.04	6	8	.14	71	.01	2	.99	.01	.03	2
425S+50E	1	10	9	27	.1	8	4	115	2.20	5	2	ND	3	36	1	2	2	28	.18	.06	10	14	.26	269	.02	2	1.81	.01	.05	2
425S+100E	1	9	9	42	.1	5	3	153	2.18	5	2	ND	2	16	1	2	2	28	.12	.13	7	9	.15	141	.02	2	1.92	.01	.04	2
425S+150E	1	9	8	91	.1	8	5	409	2.20	5	2	ND	3	8	1	2	2	29	.09	.23	6	11	.21	94	.02	2	2.18	.01	.05	2
425S+200E	1	9	9	48	.1	6	4	346	1.15	3	2	ND	2	36	1	2	2	23	.38	.04	8	10	.25	176	.01	2	1.27	.01	.04	2
425S+250E	1	10	10	87	.2	6	3	356	1.10	2	2	ND	2	17	1	2	2	21	.20	.07	6	10	.20	148	.02	2	1.49	.01	.06	2
425S+300E	1	16	8	122	.1	4	4	476	2.37	4	2	ND	3	8	1	2	2	35	.09	.37	6	12	.19	126	.02	2	2.24	.01	.07	2
425S+350E	1	10	6	47	.1	10	5	169	1.80	8	2	ND	2	12	1	2	2	30	.13	.09	5	13	.30	195	.01	2	2.16	.01	.03	2
425S+400E	1	8	7	40	.3	4	3	156	.96	2	2	ND	2	34	1	2	2	20	.37	.05	9	9	.23	228	.01	2	1.43	.01	.03	2
425S+450E	1	6	8	25	.1	3	3	1009	.67	2	2	ND	2	30	1	2	2	14	.26	.03	8	7	.11	199	.01	2	.92	.01	.04	2
425S+500E	1	15	16	19	.1	9	5	103	2.71	3	8	ND	2	119	1	2	2	33	.87	.06	35	17	.28	486	.01	2	2.36	.02	.03	2
425S+50W	1	14	8	33	.1	8	4	78	2.38	8	2	ND	3	28	1	2	2	29	.13	.10	9	13	.23	241	.01	2	2.49	.01	.03	2
425S+100W	1	14	11	52	.2	9	4	117	2.66	4	2	ND	2	44	1	2	2	34	.25	.10	9	11	.25	332	.01	2	2.30	.01	.06	2
425S+150W	1	7	4	36	.1	6	3	227	.99	2	2	ND	2	22	1	2	2	18	.24	.04	5	8	.21	142	.01	2	1.39	.01	.04	2
425S+200W	1	7	5	38	.1	5	3	505	.95	4	2	ND	2	18	1	2	2	19	.29	.06	4	8	.17	95	.01	2	.98	.01	.06	2
425S+250W	1	13	7	51	.1	10	5	343	1.68	7	2	ND	2	15	1	2	2	30	.21	.09	7	14	.30	147	.02	2	1.84	.01	.04	2
425S+300W	1	9	7	88	.1	9	4	356	1.92	3	2	ND	2	17	1	2	2	31	.27	.13	5	12	.25	106	.02	2	1.70	.01	.06	2
425S+350W	1	15	6	84	.1	11	8	742	2.23	4	2	ND	2	12	1	2	2	43	.13	.17	9	14	.31	118	.03	2	2.77	.01	.05	2
425S+400W	1	16	6	67	.3	19	9	167	2.44	12	2	ND	2	14	1	2	2	42	.15	.09	6	19	.38	154	.02	2	2.77	.01	.04	2
425S+450W	1	14	6	50	.1	14	5	157	1.82	7	2	ND	2	17	1	2	2	34	.23	.05	7	18	.41	141	.02	2	2.11	.01	.04	2
425S+500W	1	9	6	40	.1	10	5	146	1.61	12	2	ND	2	11	1	2	2	30	.14	.06	4	13	.25	98	.02	2	1.62	.01	.04	2
425S+550W	1	6	6	41	.1	5	3	144	1.40	5	2	ND	2	6	1	2	2	26	.08	.08	4	8	.14	55	.01	2	1.45	.01	.03	2
425S+600W	1	10	6	47	.1	10	5	981	1.64	6	2	ND	2	13	1	2	2	31	.21	.06	5	14	.27	120	.02	2	1.68	.01	.04	2
425S+650W	1	6	8	47	.1	7	4	116	1.82	7	2	ND	2	9	1	2	2	34	.12	.14	4	13	.21	63	.02	3	1.65	.01	.03	2
STD A-1	1	31	43	186	.3	36	13	1032	2.84	7	2	ND	3	36	.2	2	2	59	.69	.10	10	77	.82	271	.09	5	2.19	.01	.22	2
STD	19	161	38	76	2.3	590	13	542	2.51	11	2	ND	4	29	1	3	2	29	1.68	.09	6	51	.61	339	.03	18	.90	.04	.22	2

SAMPLE #	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
425S+700W	1	41	8	77	.4	21	9	1444	2.76	17	2	ND	2	104	1	2	2	48	1.14	.09	63	17	.39	458	.01	2	3.83	.01	.03	2
425S+750W	1	11	8	95	.1	8	5	135	2.20	3	2	ND	2	8	1	2	2	35	.08	.18	5	10	.24	96	.02	3	2.50	.01	.02	2
425S+800W	1	5	5	30	.1	3	2	186	.67	2	2	ND	2	11	1	2	2	17	.14	.02	4	2	.13	78	.01	3	.85	.01	.03	2
425S+850W	1	6	5	35	.1	6	4	334	1.19	2	2	ND	2	25	1	2	2	29	.35	.03	5	6	.27	99	.01	2	1.21	.01	.02	2
425S+900W	1	6	5	31	.1	6	3	139	1.04	2	2	ND	2	24	1	2	2	24	.25	.02	4	4	.26	112	.01	3	.99	.01	.02	2
425S+950W	1	8	9	128	.1	7	6	380	2.03	5	2	ND	2	39	1	2	2	35	.38	.23	5	9	.28	191	.02	4	1.67	.01	.03	2
425S+1000W	1	10	7	68	.1	10	7	924	1.49	5	2	ND	2	38	1	2	2	28	.35	.07	5	8	.32	184	.02	2	1.16	.01	.03	2
425S+1050W	1	5	4	63	.1	2	2	705	.40	2	2	ND	2	24	1	2	2	12	.34	.05	3	1	.07	125	.01	2	.67	.01	.03	2
425S+1100W	1	10	8	89	.1	11	6	331	1.83	5	2	ND	2	16	1	2	2	34	.27	.08	5	9	.32	112	.02	4	1.97	.01	.04	2
425S+1150W	1	7	7	63	.1	7	4	326	1.52	2	2	ND	2	11	1	2	2	31	.14	.06	4	6	.21	93	.01	2	1.26	.01	.05	2
425S+1200W	1	3	4	11	.1	1	1	24	.32	2	2	ND	2	18	1	2	2	12	.17	.01	4	1	.04	36	.01	3	.40	.01	.01	2
425S+1250W	1	6	5	27	.1	4	2	65	.58	2	2	ND	2	17	1	2	2	16	.18	.01	6	3	.16	76	.02	2	.80	.01	.01	2
425S+1300W	1	4	5	27	.1	3	1	64	.52	2	2	ND	2	9	1	2	2	15	.12	.02	4	2	.13	64	.02	2	.69	.01	.01	2
425S+1350W	1	12	7	46	.1	10	4	362	1.54	3	2	ND	2	29	1	2	2	31	.34	.02	7	12	.40	188	.03	3	1.42	.01	.02	2
425S+1400W	1	8	7	60	.1	8	4	213	1.38	2	2	ND	2	18	1	2	2	30	.23	.04	6	9	.35	110	.02	2	1.52	.01	.01	2
425S+1450W	1	20	6	52	.1	13	8	717	1.72	7	2	ND	2	25	1	2	2	32	.56	.06	8	9	.43	111	.03	4	1.13	.02	.03	2
450W+800S	1	7	9	53	.1	7	3	189	1.83	5	2	ND	2	9	1	2	2	36	.12	.12	5	10	.22	67	.02	3	2.32	.01	.02	2
450W+850S	1	16	14	79	.1	9	9	779	1.95	5	2	ND	2	27	1	2	2	40	.23	.07	8	10	.32	172	.01	2	2.70	.01	.04	2
800S+500W	1	16	8	58	.1	12	5	149	1.67	4	2	ND	2	8	1	2	2	30	.09	.09	5	13	.32	86	.02	2	2.33	.01	.01	2
800S+550W	1	14	8	84	.1	12	5	193	1.56	2	2	ND	2	14	1	2	2	32	.13	.07	6	12	.29	145	.02	2	2.33	.01	.01	2
800S+600W	1	14	9	75	.1	8	4	203	1.57	6	2	ND	2	9	1	2	2	28	.09	.11	6	9	.27	75	.02	4	2.08	.01	.02	2
800S+650W	1	4	7	33	.1	5	2	95	.64	2	2	ND	2	17	1	2	2	16	.19	.02	7	5	.23	84	.01	2	.99	.01	.02	2
800S+700W	1	12	7	35	.1	7	4	213	1.41	101	2	ND	2	38	1	2	2	23	.39	.05	11	7	.30	164	.01	2	1.50	.01	.03	2
900S+50W	1	16	9	57	.1	12	8	155	2.54	37	2	ND	2	28	1	2	2	36	.28	.09	8	11	.28	306	.01	2	2.64	.02	.01	2
900S+100W	1	9	8	38	.1	5	3	61	1.51	21	2	ND	2	14	1	2	2	27	.12	.14	5	8	.15	113	.01	2	2.29	.01	.02	2
900S+150W	1	7	5	38	.1	5	2	131	.77	3	2	ND	2	16	1	2	2	19	.16	.02	7	5	.21	96	.02	2	1.33	.01	.01	2
900S+200W	1	11	8	88	.1	5	2	70	1.36	14	2	ND	2	13	1	2	2	27	.11	.11	5	7	.16	107	.01	4	1.74	.01	.04	2
900S+250W	1	10	7	47	.1	7	3	211	1.16	3	2	ND	2	36	1	2	2	25	.39	.05	5	8	.27	115	.02	7	1.11	.01	.02	2
900S+300W	1	22	8	74	.1	12	11	2198	2.37	13	2	ND	2	61	1	2	2	49	.59	.09	12	14	.40	254	.01	3	2.13	.01	.04	2
900S+350W	1	17	10	61	.1	17	8	203	2.29	17	2	ND	2	10	1	2	2	39	.12	.10	5	14	.42	164	.02	2	2.78	.01	.03	2
900S+400W	1	10	7	44	.1	8	4	102	1.75	12	2	ND	2	20	1	2	2	33	.18	.11	5	8	.24	133	.01	3	1.66	.01	.02	2
900S+450W(A)	1	9	8	72	.1	8	5	235	1.91	7	2	ND	2	9	1	2	2	32	.10	.14	5	8	.25	90	.01	3	1.95	.01	.02	2
900S+450(B)	1	6	10	58	.1	6	3	111	1.49	5	2	ND	2	15	1	2	2	28	.15	.09	6	6	.18	115	.01	2	1.54	.01	.03	2
900S+700W	1	55	13	136	.3	23	8	979	3.38	8	2	ND	2	59	1	2	2	50	.75	.12	25	27	.56	491	.01	2	5.18	.01	.08	2
900S+750W	1	9	5	45	.1	9	3	170	1.17	4	2	ND	2	17	1	2	2	27	.28	.05	7	10	.33	88	.04	2	1.25	.01	.01	2
900S+800W	1	17	10	78	.1	11	7	213	1.91	7	2	ND	2	18	1	2	2	34	.21	.07	23	12	.34	183	.01	2	2.53	.01	.02	2
900S+850W	1	16	12	58	.2	10	4	177	1.26	4	2	ND	2	39	1	2	2	29	.45	.03	11	13	.37	192	.02	2	1.76	.02	.02	2
900S+900W	1	2	4	8	.1	1	1	15	.09	2	2	ND	2	9	1	2	2	7	.09	.01	4	1	.03	74	.01	2	.47	.01	.01	2
900S+900W	1	2	5	8	.1	1	1	15	.09	2	2	ND	2	9	1	2	2	7	.08	.01	4	1	.03	74	.01	2	.47	.01	.01	2
900S+950W	1	3	6	25	.1	3	1	57	.41	2	2	ND	2	12	1	2	2	15	.15	.01	4	3	.15	60	.02	2	.67	.01	.01	2
STD A-1	1	32	45	197	.3	35	12	1041	2.80	10	2	ND	2	38	2	2	2	60	.65	.10	9	69	.82	282	.09	4	2.22	.02	.21	2
STD	18	169	40	93	2.6	580	12	549	2.45	13	2	ND	3	31	1	2	2	28	1.62	.08	6	44	.63	351	.03	19	.91	.04	.21	2

UNION CARBIDE PROJECT # 1078F SOLUTIONS FROM VANGEOCHEM FILE # 82-0592

SAMPLE #	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
900S+1000W	1	4	9	33	.1	2	1	53	.76	4	2	ND	2	11	1	2	2	23	.11	.03	4	8	.09	90	.01	8	.97	.01	.02	2
900S+1050E	1	15	14	87	.2	13	14	2343	2.90	10	2	ND	2	30	1	2	2	65	.44	.08	6	19	.45	203	.02	7	1.92	.02	.06	2
900S+1100W	1	7	9	44	.1	5	2	98	1.80	11	3	ND	2	9	1	2	2	35	.10	.14	3	13	.14	58	.01	12	2.11	.01	.02	2
900S+1150W	1	6	11	29	.1	4	2	258	.84	3	2	ND	2	20	1	2	2	20	.20	.05	5	6	.16	84	.02	12	.96	.02	.03	2
900S+1200W	1	8	9	42	.1	6	3	264	.95	4	2	ND	2	21	1	2	2	22	.23	.03	7	12	.27	112	.02	15	1.10	.02	.03	2
900S+1250W	1	11	19	75	.2	9	7	1616	1.92	6	2	ND	2	40	1	2	2	40	.37	.07	13	13	.30	240	.01	8	1.98	.02	.06	2
900S+1275W	1	4	7	44	.1	5	3	172	.84	5	2	ND	2	18	1	2	2	20	.20	.03	6	10	.28	79	.02	15	1.00	.01	.02	2
900S+1300W	1	13	9	30	.3	4	2	93	.80	4	2	ND	2	88	1	2	2	15	1.11	.05	23	7	.17	486	.01	14	1.07	.02	.03	2
900S+1325W	1	10	15	134	.1	8	8	1856	2.11	10	2	ND	2	19	1	2	2	37	.26	.16	4	13	.30	186	.02	14	1.42	.02	.05	2
900S+1350W	1	8	13	81	.1	6	3	159	2.09	12	2	ND	2	10	1	2	2	41	.13	.12	4	14	.23	91	.02	15	1.29	.01	.04	2
900S+1375W	1	12	14	123	.2	8	6	377	2.37	15	2	ND	2	12	1	2	2	45	.18	.13	4	15	.31	119	.01	9	1.58	.02	.05	2
900S+1400W	1	18	13	96	.4	15	7	999	2.48	9	2	ND	2	38	1	2	2	49	.51	.05	16	21	.50	250	.01	6	3.00	.02	.06	2
900S+1425W	1	12	17	80	.1	9	6	703	3.29	15	2	ND	2	12	1	2	2	62	.21	.23	5	20	.33	113	.02	10	1.93	.02	.08	2
900S+1450W	1	9	11	80	.1	9	4	212	2.44	12	2	ND	2	7	1	2	2	47	.08	.20	3	19	.26	79	.02	16	2.21	.01	.02	2
900S+1475W	1	7	8	40	.1	6	3	100	1.39	6	2	ND	2	17	1	2	2	30	.20	.05	5	11	.23	104	.02	15	1.36	.01	.03	2
900S+1500W	1	8	7	45	.1	9	4	216	1.33	5	2	ND	2	19	1	2	2	29	.25	.03	6	14	.38	101	.03	22	1.47	.02	.03	2
900S+1525W	1	7	10	36	.1	5	2	87	1.77	9	2	ND	2	9	1	2	2	37	.11	.05	4	11	.16	45	.02	16	1.24	.01	.03	2
900S+1550W	1	11	10	95	.1	11	5	181	2.36	16	2	ND	2	10	1	2	2	40	.10	.12	3	18	.31	85	.02	12	2.76	.01	.03	2
900S+1575W	1	6	7	30	.1	4	2	113	1.49	6	2	ND	2	13	1	2	2	36	.14	.07	3	9	.13	69	.02	11	1.03	.01	.02	2
900S+1600W	1	10	7	60	.1	9	4	276	1.65	7	2	ND	2	19	1	2	2	35	.29	.04	5	17	.48	102	.02	16	1.52	.02	.04	2
900S+1625W	1	5	8	27	.1	4	1	119	.98	5	2	ND	2	10	1	2	2	24	.14	.06	4	8	.10	58	.01	10	.85	.01	.03	2
900S+1650W	1	15	12	89	.1	11	5	255	2.15	14	2	ND	2	11	1	2	2	37	.17	.14	4	19	.32	93	.01	8	2.74	.01	.04	2
900S+1675W	1	6	13	31	.1	4	1	207	1.14	5	2	ND	2	11	1	2	2	23	.12	.08	7	9	.13	85	.01	11	1.14	.01	.03	2
900S+1700W	1	12	12	45	.1	7	3	160	1.44	9	2	ND	2	13	1	2	2	30	.16	.04	6	13	.28	113	.01	15	1.38	.01	.04	2
900S+1725W	1	11	10	55	.1	6	3	106	1.84	14	3	ND	2	8	1	2	2	40	.08	.04	4	13	.19	84	.01	11	1.88	.01	.02	2
900S+1750W	1	13	13	59	.1	7	3	116	1.58	9	2	ND	2	14	1	2	2	30	.15	.05	10	14	.26	118	.01	11	1.98	.02	.03	2
900S+1775W	1	3	9	16	.1	2	1	24	.56	4	2	ND	2	11	1	2	2	18	.09	.03	6	7	.05	68	.01	14	.79	.02	.02	2
900S+1800W	1	20	13	58	.1	9	4	225	1.91	9	2	ND	2	28	1	2	2	35	.35	.04	9	15	.33	188	.01	6	1.81	.02	.03	2
900S+1825W	1	15	9	48	.1	6	4	248	1.21	5	2	ND	2	51	1	2	2	27	.63	.05	16	11	.22	262	.01	8	1.50	.02	.04	2
900S+1850W	1	10	23	39	.3	5	4	390	1.07	9	2	ND	2	41	1	2	2	31	.52	.04	5	9	.22	159	.01	12	.96	.02	.04	2
900S+1875W	1	19	15	91	.3	14	14	2807	3.25	23	2	ND	2	52	1	2	2	66	.64	.06	13	25	.50	312	.01	14	2.64	.02	.05	2
900S+1900W	1	31	12	85	.3	16	7	982	2.44	12	2	ND	2	52	1	2	2	44	.72	.07	24	22	.50	308	.01	8	2.73	.02	.05	2
900S+1925W	2	25	14	66	.7	12	15	3899	4.14	27	2	ND	2	59	2	2	2	61	.86	.12	22	18	.35	443	.01	10	1.98	.02	.04	2
900S+1950W	1	26	10	85	.3	15	7	1480	2.34	12	2	ND	2	47	1	2	2	40	.69	.08	18	22	.48	285	.01	11	2.45	.02	.05	2
900S+1975W	1	20	11	56	.5	11	8	880	2.89	24	2	ND	2	59	1	2	2	35	.95	.10	19	17	.36	292	.01	15	1.87	.02	.04	2
STD A-1	1	32	45	188	.2	35	12	1044	2.81	9	2	ND	2	37	2	2	2	59	.69	.10	9	79	.81	282	.09	5	2.12	.02	.22	2
STD	17	144	34	75	2.3	556	12	527	2.36	14	5	ND	3	30	1	2	2	28	1.64	.08	5	55	.59	340	.03	29	.86	.05	.22	2



LEGEND - SYMBOLS

- CLAIM POST AND CLAIM LINE
- STREAMS
- SWAMPS
- 5500 CONTOUR INTERVAL 100 FEET

NOTE: CLAIM LINES ESTABLISHED USING TAPE AND COMPASS

AREA OF OUTCROP

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,688

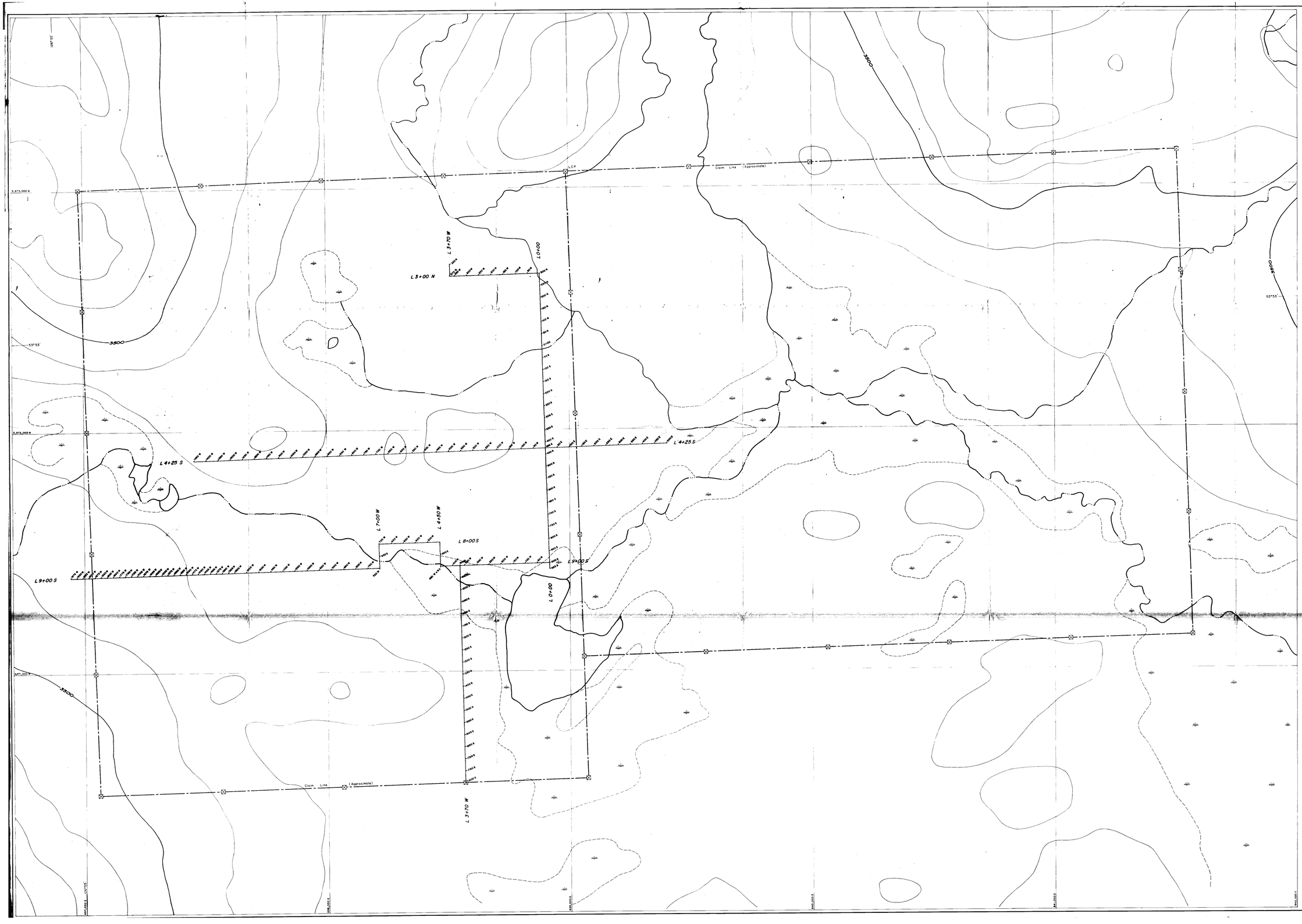
SCALE IN METRES

50 0 50 100 200 300 400 500

UNION CARBIDE — UNION CARBIDE EXPLORATION CORPORATION

SHELFORD HILLS PROJECT
BLACKFLY CLAIMS
GEOLOGY
NADINA RIVER, B.C.

COMPILED BY: N. Cawthorn		MAP NO. 2
DRAFTED BY: K. Gibson	DATE: July, 1982	SCALE: 1:5,000 m
DISPOSITION:		NTS: 93E15
PROJECT NO:	REPORT NO:	

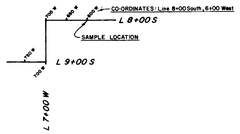


LEGEND - SYMBOLS

- CLAIM POST AND CLAIM LINE
- STREAMS
- SWAMPS
- 3500 CONTOUR INTERVAL 100 FEET

NOTE: CLAIM LINES ESTABLISHED USING TAPE AND COMPASS

ILLUSTRATION



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 10683

SCALE IN METRES

100 50 0 100 200 300 400 500

UNION CARBIDE EXPLORATION CORPORATION

SHELFORD HILLS PROJECT
BLACKFLY CLAIMS
SOIL SAMPLE LOCATION MAP
NADINA RIVER, B.C.

COMPILED BY: N. Cawthorn		MAP NO: 3
DRAFTED BY: K. Gibson	DATE: July, 1982	SCALE: 1:5,000 m
DISPOSITION:		N.T.S: 93E 15
PROJECT NO:	REPORT NO:	

Claim Line (Approximate)
LCP
3500
L 3+70 W
L 3+00 N
L 0+00
L 4+25 S
L 7+00 W
L 4+50 W
L 8+00 S
L 9+00 S
53°53'
LEGEND - SYMBOLS
CLAIM POST AND CLAIM LINE
STREAMS
SWAMPS
3500 CONTOUR INTERVAL 100 FEET
NOTE: CLAIM LINES ESTABLISHED USING TAPE AND COMPASS
ILLUSTRATION
Parts per million Ag - Silver
Parts per billion Hg - Mercury
Parts per billion Au - Gold
ND: NOT DETECTED
L 8+00 S
L 9+00 S
L 7+00 W
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,683
SCALE IN METRES
100 50 0 100 200 300 400 500
UNION CARBIDE
UNION CARBIDE EXPLORATION CORPORATION
SHELFORD HILLS PROJECT
BLACKFLY CLAIMS
GEOCHEMISTRY - Au, Hg & Ag
NADINA RIVER, B.C.
COMPILED BY: N. Cawthorn
MAP NO: 4
DRAFTED BY: K. Gibson
DATE: July, 1982
SCALE: 1:5,000 m
DISPOSITION:
NTS: 93 E 15
PROJECT NO:
REPORT NO:

L 3+70 W

L 3+00 N

L 0+00

L 4+25 S

L 4+50 W

L 7+00 W

L 8+00 S

L 9+00 S

3500

Claim Line (approximate)

LEGEND - SYMBOLS

- CLAIM POST AND CLAIM LINE
- STREAMS
- SWAMPS
- 3500 CONTOUR INTERVAL 100 FEET

NOTE: CLAIM LINES ESTABLISHED USING TAPE AND COMPASS

ILLUSTRATION

Parts per million Sr - Strontium
Parts per million Ba-Borium
L 8+00 S
Parts per million Zn-Zinc
L 9+00 S
Parts per million Pb- Lead
L 7+00 W

MINERAL INVESTIGATION
ASSESSMENT REPORT
10,683
NO.

SCALE IN METRES

100 50 0 100 200 300 400 500

UNION CARBIDE EXPLORATION CORPORATION

SHELFORD HILLS PROJECT
BLACKFLY CLAIMS
GEOCHEMISTRY - Pb, Zn, Sr & Ba
NADINA RIVER, B.C.

COMPILED BY N. Cowburn		MAP NO. 5
DRAFTED BY K. Gibson	DATE July, 1982	SCALE 1:5,000 m
DISPOSITION		N.T.S. 93 E 15
PROJECT NO.	REPORT NO.	