REPORT

on the

HOP MINERAL CLAIMS

Dease Lake - Thibert Creek Area
Liard Mining Division, B.C.

Latitude 58 degrees 50 minutes N.
Longitude 130 degrees 30 minutes W.

on behalf of

BIG I DEVELOPMENTS LTD.

by

James W. McLeod, B.Sc.

Vancouver, British Columbia
December 20, 1989 (Revised June 23, 1990)

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APPENDICES

FIGURES

SUMMARY

During 1986 the writer was asked to examine an area on the south-facing slope of Vowel Mountain to the north of Thibert Creek approximately 50 kilometers (30 miles) to the northwest of the Village of Dease Lake, British Columbia. The examination was requested because several reconnaissance silt samples taken from the area during 1972 were found to be anomalous in gold.

A helicopter was taken from Dease Lake to the property and a cursory examination was made of the area lying between the forks of Rose Creek near its' headwater. Outcrop is not abundant in the area but, several bedrock occurrences were examined which included a very fine grained green tuff which was highly fractured and welded by quartz and a very fine grained black (graphitic?) schist with quartz welded fractures cutting across the foliation of the rock. An area to the east of the east-arm of Rose Creek revealed widespread angular quartz boulder "trains" and the creek exhibits numerous zones of abundant angular quartz. One quartz sample taken by the writer near the upper junction of Rose Creek assayed 0.04 oz/T. gold.

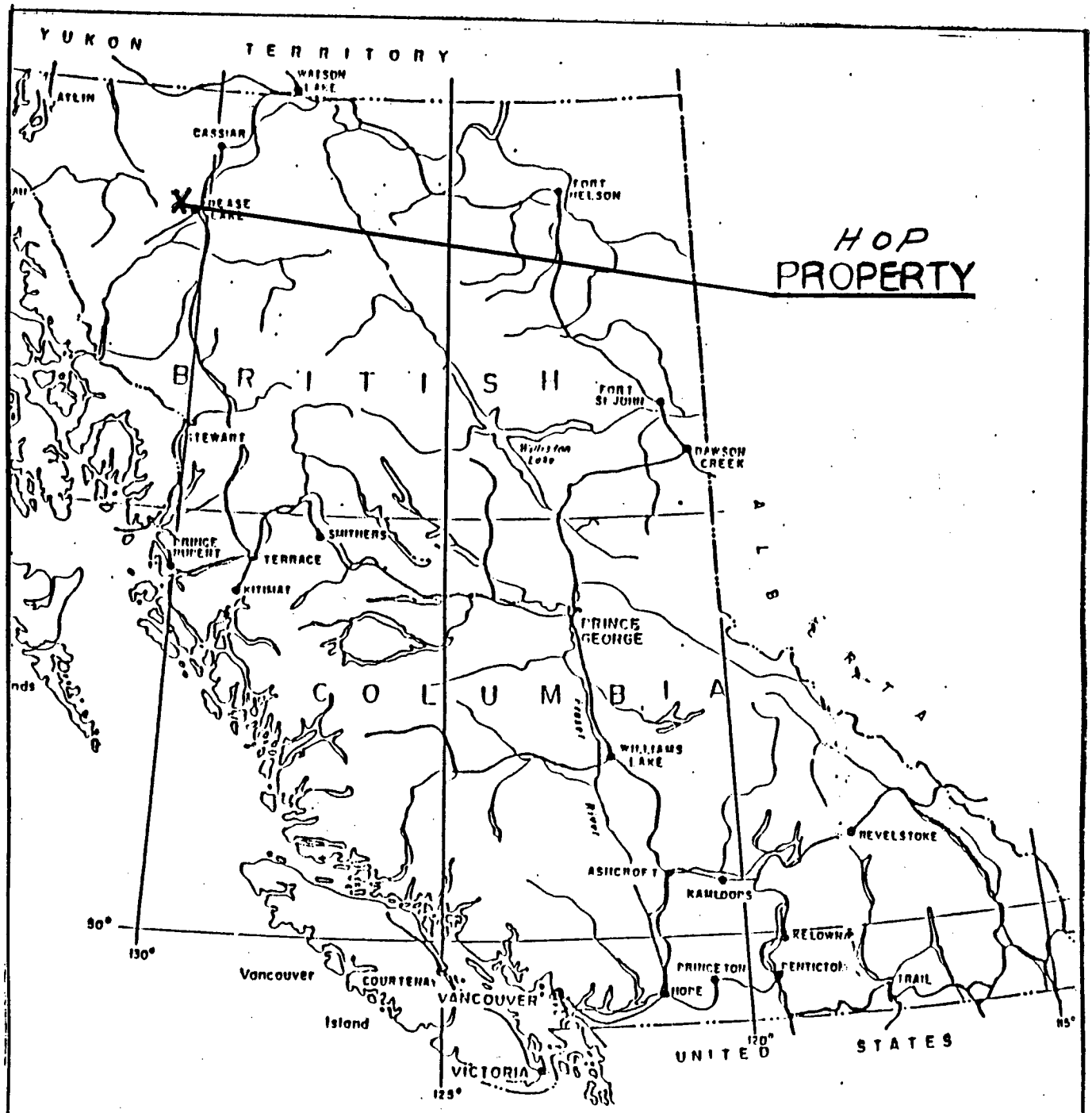
The writer returned to the area in September of 1986 with the staking crew and performed some reconnaissance geological mapping and rock and soil sampling at which time a number of anomalous gold zones were revealed. On the basis of the examination and the sample results a fieldwork program was outlined.

The recommended program was started in 1988 and many encouraging results were encountered including favourable geology, structure, rock alteration, ground geophysical and geochemical responses. An anomalous pattern was evolving which the writer felt required further more detailed work.

During September and October, 1989 the writer undertook a fieldwork program which included a reconnaissance traverse from the junction of Vowel-Spring Creeks and Thibert Creek across the northern part of the property and diagonally through it toward the southeast, prospecting, linecutting, hand trenching, geological mapping and sampling. Bedrock gold values in the trenches ranged from 0.002 oz/t. (50 ppb) to 0.341 oz/t. (10,590 ppb) and occurred in a highly silicified zone containing in places numerous quartz veins of varying widths.

To date in excess of $60,000.00 has been spent on exploration work on the property.

A two phase exploration program is recommended, the first phase of which is expected to take approximately one month to complete at an estimated cost of $88,750.00.



HOP MINERAL CLAIM GROUP

LOCATION PLAN
LIARD MINING DIVISION

0 200 400 KILOMETERS

Figure:	NTS	Drawn by:	Date:
1	104J	J.W.M.	Oct/82

INTRODUCTION

During the period September 18 through October 19, 1989 the writer supervised an exploration program on the Hop mineral claims. The fieldwork performed was of a detailed nature mainly in areas which had previously undergone reconnaissance surveys and had rendered geochemical and/or geophysical anomalies. The work included linecutting, rock trenching, geological rock exposure mapping, rock sampling and prospecting. Also, a reconnaissance traverse was made from the Porter Landing-Thibert Creek road along Vowel Creek and the Spring Creek (Porcupine Lake) road to the property (see Figure 4). A photogeophysical survey was completed on the general claim area by J.C. Explorations Ltd. of Vancouver, B.C. which the writer used as a field guide during the reconnaissance work, as well as, for establishing the location of the large grid and is included as Appendix III in this report.

The work program was in part helicopter supported from the Village of Dease Lake, British Columbia.

A tent camp (Main Camp) was established near the headwaters of Rose Creek.

This report is being prepared at the request of the Board of Directors of Big I Developments Ltd. of Vancouver, B.C.

LOCATION AND ACCESS

The Hop mineral claims are located 50 kilometers northwest of the Village of Dease Lake, B.C. on the northside of Thibert Creek and on the south-facing slope of Vowel Mountain. The claims occur at approximately 58 degrees 50 minutes N. latitude and 130 degrees 30 minutes W. longitude and may be located on NTS map reference 104 J 15E and 16W.

Access to the property can be gained by helicopter from Dease Lake, B.C., but a 4x4 road from the north-end of Dease Lake (Porter Landing) travels westerly on the southside of Thibert Creek and presently comes within 1.5 kilometres of the property near the summit of the Spring Creek (Porcupine Lake) road. The writer feels that road access can be extended to the property along the 1989 traverse route with a modest expenditure (see Figure 4).

PROPERTY AND OWNERSHIP

The Hop claim group consists of six adjoining 4x4 claim blocks for a total of 96 contiguous units which are listed as follows:

Claim Name	Number of Units	Record Number	Anniversary Date
Hop 54	16	3683	October 20
Hop 55	16	3684	October 20
Hop 56	16	3685	October 20
Hop 57	16	3686	October 20
Hop 58	16	3687	October 20
Hop 59	16	3688	October 20
TOTAL	96 units		

The Hop mineral claim group is owned by Mr. Douglas Hopper of 828 West Hastings Street, Vancouver, British Columbia and is held under an Option to Purchase Agreement by Big I Developments Ltd. of #124 - 2960 E. 29th Avenue, Vancouver, British Columbia, V5R 5Z5.

TOPOGRAPHICAL AND PHYSICAL ENVIRONMENT

The Hop mineral claims are situated on the northside of Thibert Creek on the south-facing slope of Vowel Mountain. The claim area ranges in elevation from 1036 metres (3400') to 1585 metres (5200') mean sea level in rounded mountainous terrain. The property lies in the Sub-Alpine Forest biotic zone and timberline occurs at approximately 1400 metres (4700'). Below timberline spruce, pine, aspen and mountain alder predominate while above timberline dwarf juniper occurs in some areas and a waist-high deciduous shrub (willow?) is extensive over large areas.

Fluvioglacial debris does not appear to be extensive or widespread over much of the lower elevations of the property with the possible exception of the fill in the Thibert Creek valley and to a more confined extent along most of the Spring-Vowel Creek valleys and possibly between the headwaters of Rose Creek and Fry Pan Creek.

The area experiences warm northern summers and cold winters and receives low to moderate precipitation of between 40 - 125 cm. (15 - 50 inches). A moderate amount of the precipitation occurs as snow.

The surface mineral exploration season generally extends for 7 months plus, from April to November in part because of the south-facing location of most of the claim group.

HISTORY

To the best of the writers knowledge, the particular area covered by the Hop mineral claims had not been staked prior to 1986, therefore no history of previous mineral exploration work is available with the exception of sparse stream sediment (silt) sampling data for gold and cursory follow-up prospecting performed in 1972 by a private exploration syndicate.

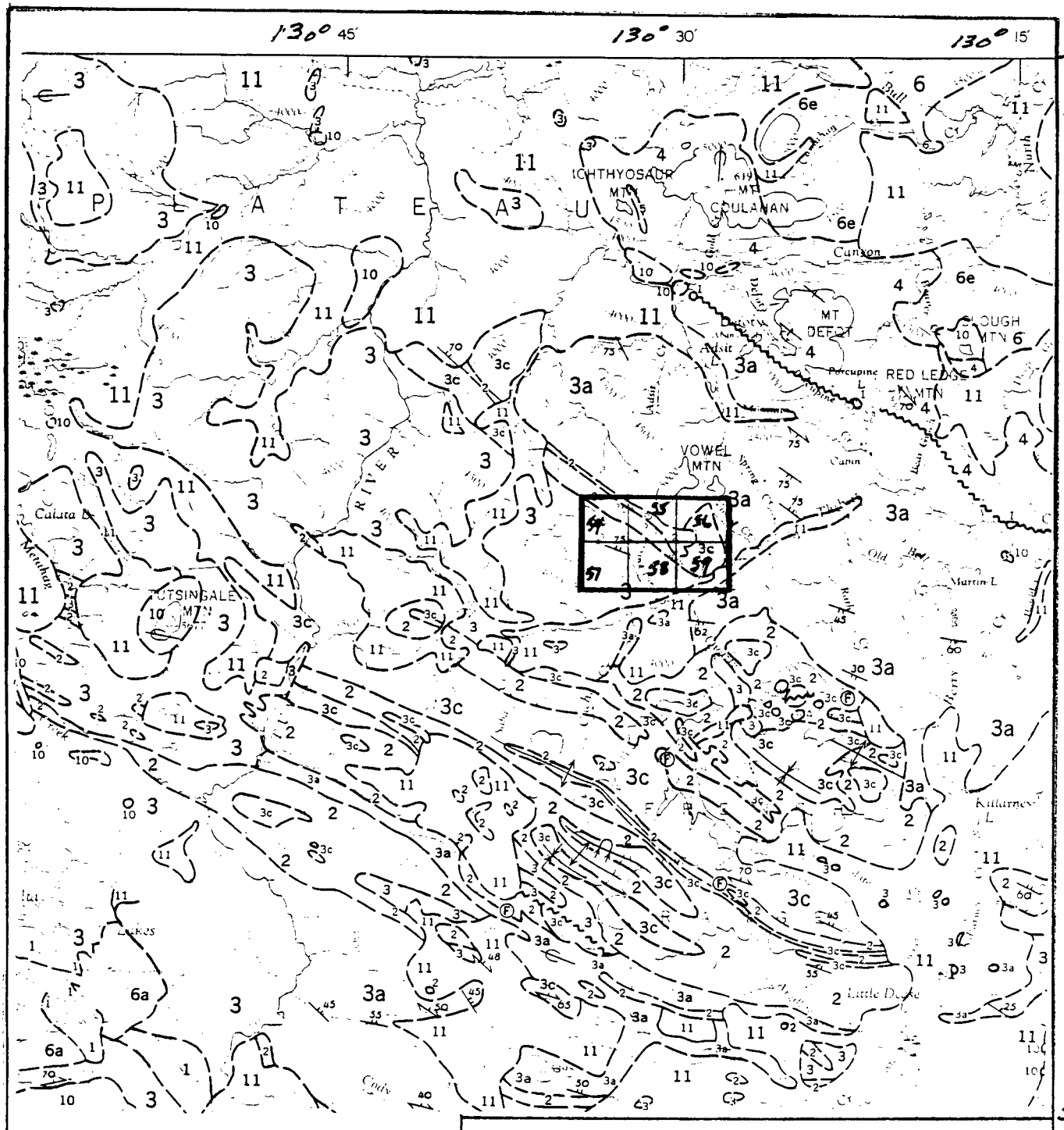
On the other hand the placer exploration and production history of the Thibert Creek area is long and colourful. It was the initial placer gold and platinum discovery of what was then known as the Cassiar District. Placer gold was first discovered in 1873 on Thibert Creek which flows easterly into the north-end of Dease Lake. Official production during the period 1874 through 1895 was $1,279,000. From its' discovery to the present day, intermittant placer mining activity has taken place on Thibert Creek and other creeks in the general area with the production of an undetermined amount of placer gold and platinum group elements (PGE) comprised mainly of platinum and osmium (4:1).

During 1986 as the Hop mineral claims were being staked, the writer conducted a reconnaissance geological mapping and geochemical soil, silt and rock sampling program. During 1988 further exploration work including grid controlled rock exposure mapping and sampling, geochemical silt and soil sampling, VLF-EM and magnetometer surveys were carried out. At this time J.C. Explorations Ltd. of Vancouver, B.C. began a photogeophysical study of the general claim area which was completed during 1989. This study was used by the writer as a field guide for underlying structure which aided in laying-out the grid and in the interpretation of the field data collected. With the exception of the photogeophysical report these results were filed as assessment work in 1987 and 1988.

To date (1986-89) in excess of $60,000.00 has been spent on fieldwork on the Hop mineral claim group.

REGIONAL GEOLOGY

The geology of the general area has been described by Members of the Geological Survey of Canada on Dease Lake Map 21-1962. The map covers the area defined by NTS sheet 104 J and describes the work performed during "Operation Stikine", 1956 and from work undertaken during the period 1956-61.



HOP MINERAL CLAIM GROUP

GEOLOGY & CLAIM MAP
LIARD MINING DIVISION

0 5 10 KILOMETERS

Figure:	NTS	Drawn by	Date:
2	104J	J.W.M.	12/87

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J. W. McLEOD
FELLOW

LEGEND

CENOZOIC

QUATERNARY
PLEISTOCENE AND RECENT

11 — Fluviatile gravel, sand, and silt; glacial outwash; till and alpine moraine

TERTIARY AND QUATERNARY
LATE TERTIARY AND PLEISTOCENE

10 — Basalt, olivine basalt; minor trachyte and rhyolite; in part younger than 11

TERTIARY
PALEOCENE AND (?) LATER

9 — Lacustrine sandstone, siltstone, conglomerate, and tuff; contains coalified wood and thin coal seams

MESOZOIC

JURASSIC
LOWER JURASSIC

8 — Granite-boulder conglomerate, chert-pebble conglomerate, greywacke, quartzose sandstone, siltstone and shale; 8a, metamorphosed equivalents of 8 and including abundant sills and dykes of quartz-feldspar porphyry

7 — Well bedded greywacke, graded siltstone and silty sandstone, slate; minor volcanic sandstone and pebbly mudstone; 7a, metamorphosed equivalents of 7 and including abundant sills and dykes of quartz-feldspar porphyry

TRIASSIC AND LATER

6 — Undifferentiated granitic rocks, mainly granodiorite; 6a, granite and granodiorite; 6b, quartz monzonite; 6c, diorite and monzonite; 6d, syenite; 6e, diorite and gabbro

TRIASSIC
UPPER TRIASSIC

5 — Limestone; minor sandstone, argillite, and chert

4 — Andesite, basalt, tuff, breccia, volcanic sandstone and conglomerate; minor greywacke, argillite, and shale; many small stocks, dykes, and sills of porphyritic andesite and basalt; 4a, andesite and basalt porphyry

TRIASSIC AND EARLIER
PRE UPPER TRIASSIC

3 — Undivided, fine-grained clastic sediments and intercalated volcanic rocks, largely altered to greenstone and phyllite; chert, jasper, greywacke, and limestone; 3a, chert, slate, argillite, greywacke, greenstone, and limestone; mainly pre-Permian but probably includes younger rocks; 3b, mainly greenstone; age uncertain; 3c, greenstone, jasper, slate, chert, greywacke, fine-grained clastic rocks, conglomerate; mainly post-Permian, in part older than 2

PALAEOZOIC

PERMIAN

2 — Chiefly limestone and dolomitic limestone; minor chert, argillite, and sandy limestone; may locally include limestone older than 2

PERMIAN (?)

1 — Peridotite, serpentinite, and small irregular bodies of meta-diorite and meta-gabbro; age uncertain, may be pre-Permian or Triassic

METAMORPHIC ROCKS

A — Diorite-gneiss, amphibolite, migmatite

B — Biotite-muscovite-quartz gneiss and schist; minor crystalline limestone, greenstone, and quartzite; probably Devono-Mississippian and (?) Pennsylvanian

The general area about the Hop claim group is underlain by a northwest-southeast trending elongate belt of Permian to pre-Upper Triassic age rocks. The older Permian rocks are mainly as limestones and limey sediments while the younger pre-Upper Triassic rocks occur mainly as intercalated volcano-sediments which are comprised of mainly greenstone and phyllite, jasper, chert, greywacke, slate, limestone, fine grained clastic rocks and conglomerate.

The older limey sediments which occur as elongate NW-SE zones in the apparently younger intercalated volcano-sediments appear to have attained this style from isoclinal folding toward the southwest. Many of the folds observed are overturned and along the extreme northeast corner of the map area southwesterly trending thrust faulting is recorded. The thrusting has brought Upper Triassic andesitic-basaltic volcanics and minor sediments against the older rocks.

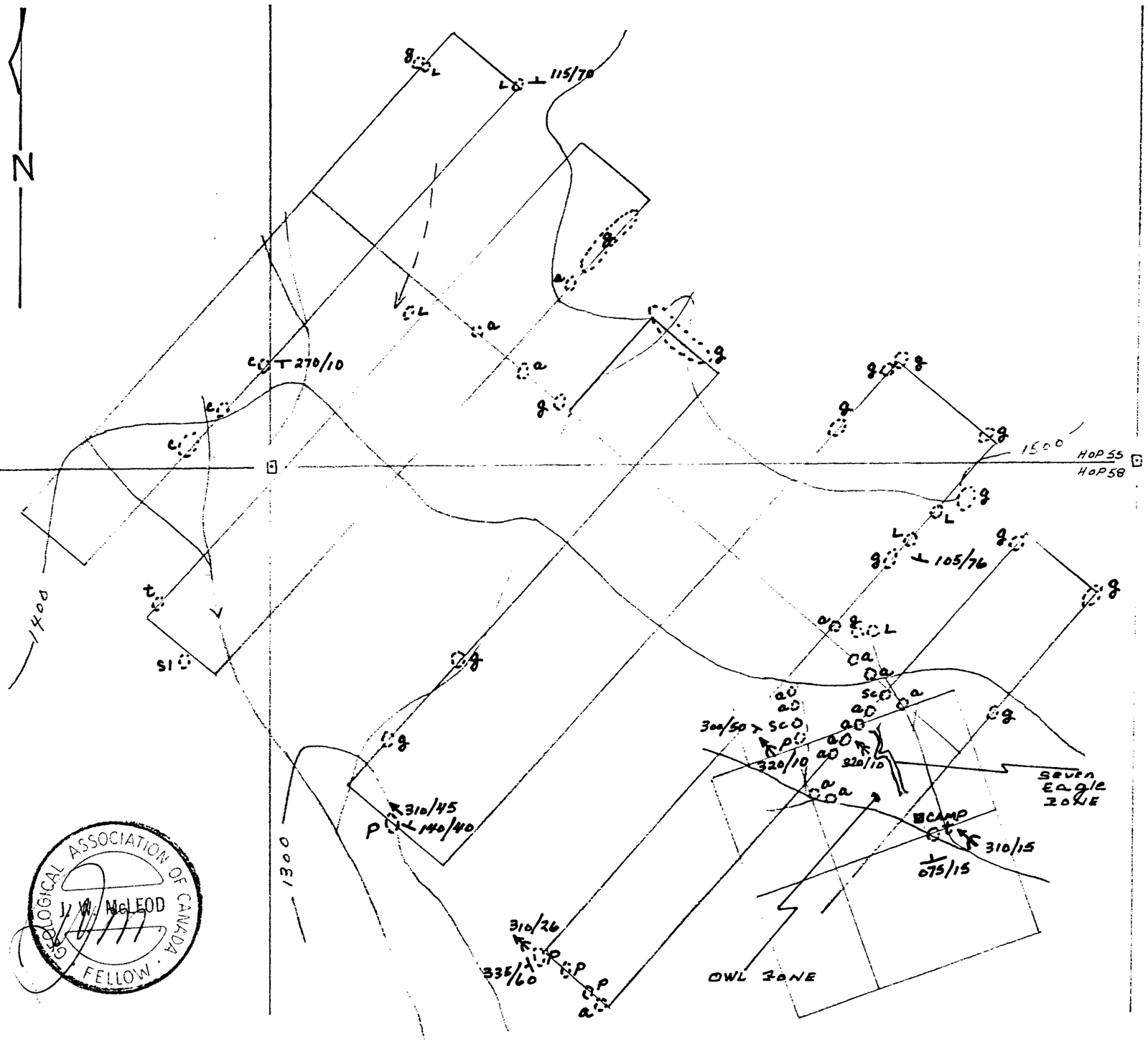
LOCAL GEOLOGY

The Hop claim group is underlain by intercalated? sediments and volcanics. The volcanic rocks observed were generally fine grained greenish crystalline andesite? to layered or banded, fine grained, crystal, lithic andesitic? tuff. The sedimentary rocks observed were as fine to coarse grained grey coloured limestone; grey to brown coloured, aphanitic chert with a stong conchoidal fracture; grey to black coloured mudstone (argillaceous); grey to buff coloured phyllite and a very fine grained, black coloured (carbonaceous) shale and/or schist. The rocks observed appear to have undergone a mild degree of metamorphism but structural preparation and alteration in places appears quite intense ie. silicification.

The rocks are thought to have been deposited in a pelagic marine environment and some of the andesitic volcanics may exhibit a "pillow" structure indicating sub-marine volcanic deposition.

Considerable folding and fracturing is observed throughout the area covered by the exploration efforts to date. Evidence of northeast-southwest folding with a northwesterly trending and shallow plunging fold axis is observed in a number of places and what has been thought of as intercalations of volcanics within the sedimentary section may in some instances be post-depositional fault contacts. Also, the fold axis appears to undulate to some degree ie. the dip of the fold axis steepens in places. The writer feels that the tuffaceous volcanics are possibly intercalations within the section while the andesites may have been deposited later.

Alteration minerals observed on the property in order of increasing abundance were mainly as secondary pinkish-orange coloured potassic feldspar, epidote, chlorite, calcite and quartz. The secondary feldspar-epidote-chlorite alteration is



LEGEND

Sediments or meta-equivalent:

- a – argillaceous, silicified n'x.
- p – v.f.gr. phyllitic n'x.
- c – chert.
- Sl. – slate.
- Sc. – schist (graphitic).
- L – limestone (x'talline).

Volcanics:

- g – F.gr. (gr'n) greenstone.
- t – V.f.gr. qtz andesitic tuff.
- ⊥ – Bedding S/D.
- ← – Foliation Strike/plunge
- ↞ – Antiform Strike/plunge
- – – Drainage
- -⊡- – Claim Post

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HOP MINERAL CLAIMS
DEASE LAKE AREA, B.C.

LOCAL GEOLOGY MAP

December 1989 Figure: 3

0 300 600
METERS

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FELLOW

mainly evident in the andesites as is the calcite which is found mainly near the contacts. The calcite is found to occur as a white coloured secondary film or coating on steep cliff-faces of highly fractured andesitic rock or as fracture fillings and veinlets in coarser crystalline form in the andesites often accompanying quartz. Silicification is pervasive and widespread in certain fine grained meta-sediments and often accompanys a bright brownish-black biotite (schiller) which occur as distinct segregations (original clayey zones in the sediments?) this often imparts a crude schistosity to the rock. The overall silicified zones are probably at least in a large part due to regional dynamothermal metamorphism while the crosscutting quartz-welded fracture zones which host the base-precious metal values are thought to originate from a later hydrothermal event.

The sulphide mineralization observed by the writer were very localized occurrences of pyrite and in a number of locations as pyrite and chalcopyrite. In places a moderate amount of manganese staining was found to be present. The gold values encountered seem to occur with quartz veining or within silicified zones. The writer originally thought there was a marked absence of sulphides with the gold values, but upon completion of the present rock trenching and sampling program there appears to be some relationship between the highest gold values and the sulphides, chalcopyrite and/or pyrite (see Appendix II - Rock Descriptions and Figure 5 - Trench Plan).

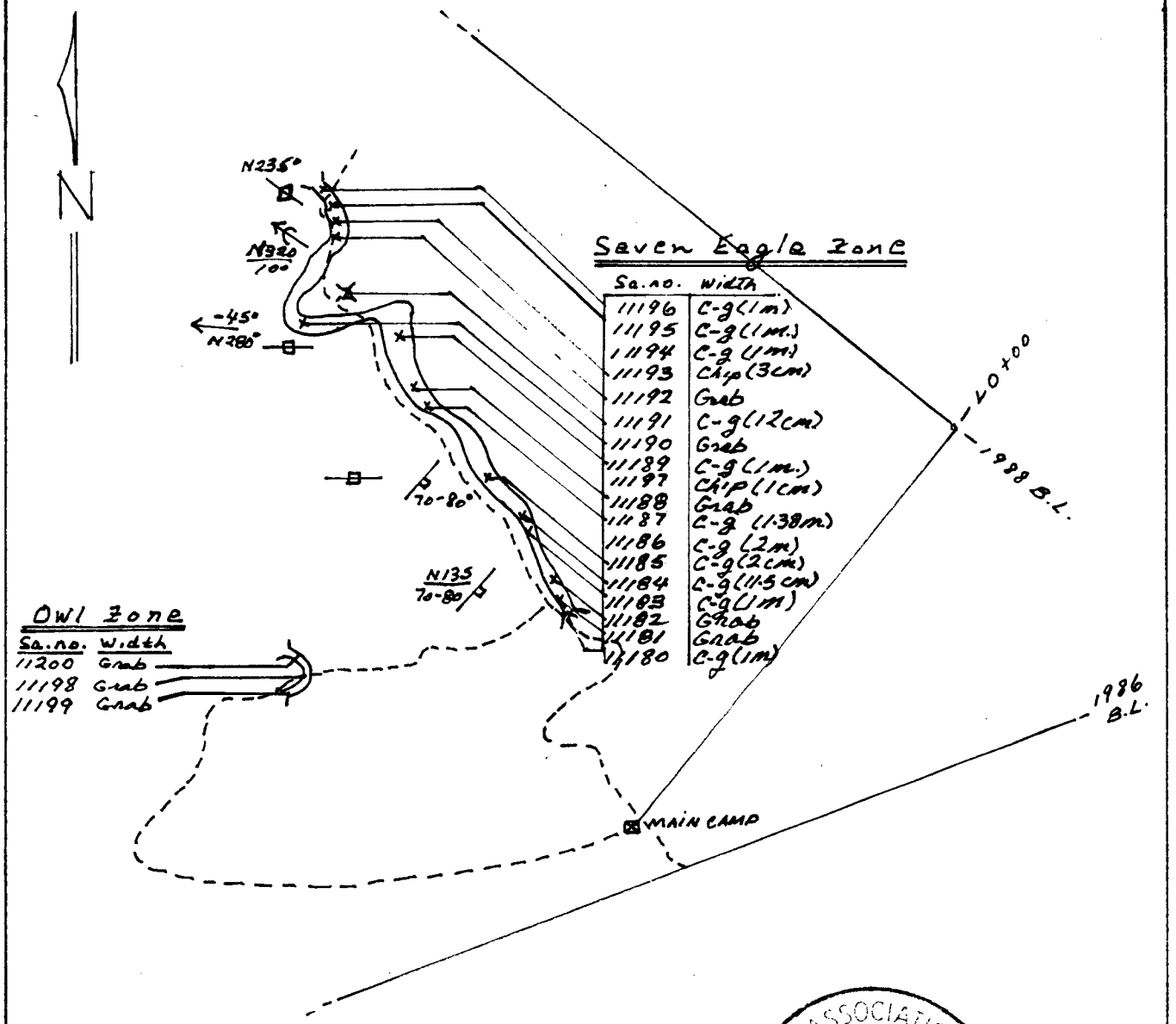
PRESENT WORK PROGRAM

The present work program involved reconnaissance geological mapping and prospecting northwesterly along Vowel Creek and then in a westerly direction sub-parallel to the north boundary of the claim group. The traverse then proceeded to the Main campsite on Rose Creek and then continued in a southeasterly direction on the eastside of Rose Creek to the southeast corner of the property and returning to the road.

The writer returned to the property by helicopter from Dease Lake, B.C. in October, 1989 and undertook a rock trenching program on the Seven Eagle Zone north of the Main Camp and the Owl Zone to the northwest of the Main Camp (see Figure 4).

The Seven Eagle Zone and Owl Zone were located in relation to the Main campsite on Rose Creek and to the anomalous sample locations on the 1986 and 1988 sample grids. A good trail was cut-out from the Main Camp to the two zones and the various anomalous sample sites to facilitate the movement of equipment and supplies. This involved cutting-out approximately 725 metres of trail.

At the Seven Eagle Zone, a series of 27 - 4 foot holes were drilled using a Pionjar gasoline drill for a total of 108 feet (33 metres) of rock drilling. The series of off-set holes were



*Note: See Assays & ICP Page 20421

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J. W. McLEOD
FELLOW

LEGEND

- X — Sample Location
- ---- — cut Trail
- — Trench
- B.L. — Baseline (year)
- C-g — Chip-grab sa. (Width)
- — strike / dip of vein
- ← — Foliation
- — S/D of Shear
- ←C— Anticlinorium

BIG I DEVELOPMENTS LTD.

HOP MINERAL CLAIMS

Dease Lake Area, Liard. M.D.

TRENCH PLAN

0 50 100 metres

Figure:	NTS	Drawn by	Date:
5	104J	J.W.M.	12/89

blasted over a length of approximately 276 feet (84 metres). At the Owl Zone, a total of 3 - 4 foot blast holes were drilled providing approximately 10 feet of trench. The trenches were mapped and large (approximately 10 lb. or 4.5 kg.) grab-chip samples were taken. This type of sampling was performed as the program was designed to verify the occurrence of bedrock precious metal values in areas which had exhibited a good geological setting with anomalous geochemistry and/or geophysical results.

Note: On the Sample Record Sheets - APPENDIX II are descriptions of samples taken both during the present program and previous programs and some of these descriptions may have been contained in previously filed reports. The handwritten analyses values included on these sheets are for the writers' use and are not meant to be viewed as certified results although they are valid values.

The 21 rock trench samples were placed in large poly-bags and sent to the General Testing Laboratories in Vancouver, B.C. where they were fire assayed for gold and a number of which were analysed by ICP (induction coupled plasma) for multi-elements (see Appendix I - File No. 0103-1141). Also 335 soil samples which were taken from "B" horizen where possible and 79 rock samples were fire assayed with an atomic absorption spectroscopy finish for gold (these results are plotted on Figure 6). These analyses was performed by the VanGeochem Lab Limited of Vancouver, B.C. (see Appendix I - File No.s 890577-890579 GA, inclusive).

In both laboratories the -80 mesh fraction was analysed by firing the material and then using an aqua regia digestion with subsequent analyses by atomic absorption spectroscopy (AAS). The samples that were run by ICP utilized the -80 mesh fraction and perchloric acid digestion.

CONCLUSIONS

The work program performed by the writer on the Hop claim group during 1989 revealed a number of features which are listed as follows:

1) A persistant antiformal trend is indicated within the mildly metamorphosed intercalated sedimentary-volcanic package that transects the Hop claims in a NW-SE direction. A number of observations of this structure were made in the northeast quadrant of the Hop 58 mineral claim. The anticlinal structure was observed in and about the Seven Eagle Zone in several places and one observation made in the southwest corner of the 1988 grid area was as a northeasterly trending "up-step" feature in strongly silicified phyllite which indicates it as the southwestern-limb of the northwesterly plunging antiform. The fold hinge where observed is seen to vary in dip from 10-42 degrees in the directional range of N270 - N320 degrees.

2) Pervasive silicification has taken place in what is thought to be originally an argillaceous mudstone and/or phyllite. In places within this zone subsequent quartz veining has taken place. The zone of quartz veining is found to range in frequency and width.

3) The previous soil sampling surveys revealed anomalous gold values in a number of locations which may or may not have had coincident anomalous base metal or geophysical results. The Seven Eagle and Owl zones are just two of these areas whose underlying bedrock has been checked to date. The cause of the Owl zone anomaly could not be explained by the bedrock sample results from this latest work program, but the Seven Eagle Zone has rendered in place precious metal results which are seen to range from 50 - 10590 parts per billion (ppb) gold.

4) The reconnaissance and grid controlled surveys performed to date on the Hop property have rendered a large number of anomalous areas which require further detailed investigations particularly since the just completed rock trenching program confirmed the presence of highly anomalous gold values in place.

5) Encouraging results obtained to date indicate the need for less expensive access to the property which can be attained by completing the proposed road (see Figure 4).

RECOMMENDATIONS

The writer recommends the following two phase exploration program for the Hop claim group.

Initiation of Phase II is conditional on the results obtained from the Phase I program.

Phase I

Geological mapping and prospecting of the entire claim group. Extension of the 1988 grid with completion of the geochemical and geophysical surveys. Follow-up surveys and/or trenching of the known anomalous areas. Completion of road access to the property. Further detailed trenching and preliminary drilling at the Seven Eagle Zone.

Phase II

Extensive drilling of anomalous areas of interest.

COST ESTIMATE

Phase I

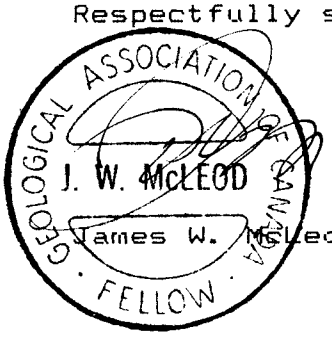
Geological mapping and supervision for 1 month	$ 7,500
A prospector for 1 month	4,500
Line installer for 1 month	4,500
Geochemical soil and silt sampling surveys including close-spaced grids	7,000
Geochemical sample preparation and analyses of approximately 1,400 samples	15,000
Magnetometer survey including interpretation	5,000
VLF-EM surveys including interpretation	5,000
Hand trenching including explosives, etc.	10,000
Bulldozer for road construction and trenching 150 hours @ $120/hour	18,000
Transportation including mobilization and de-mobilization of the camp	6,500
Camp and board for 150 mandays @ $35/day	5,250
Equipment and supplies	2,000
Reports, maps, licenses and fees	2,000
Insurance, Workers compensation, etc.	2,500
Contingency	4,000
Sub-Total(carried forward)	$ 88,750

Phase II

Geological mapping, sampling and supervision for 1 month	$ 7,500
850 metres diamond core drilling @ $80/metre, all inclusive	68,000
Transportation	5,000

Camp and board	5,000
Sample preparation, boxing core and core storage facility	1,000
Sample analyses - 500 samples @ $10 ea.	5,000
Contingency	5,000
Sub-total	$ 96,500
TOTAL	$185,250

Respectfully submitted,



James W. McLeod, Geologist

STATEMENT OF COSTS

Transportation:		
	Helicopter	$ 1100.26
	Truck rental	800.00
	Mileage @ $0.30/km.	2200.00
	Fuel and repairs	736.68
Wages: Geologist an assistant		10,000.00
Photogeophysical interpretation		1,000.00
Room		550.90
Food		720.95
Analyses		3,441.50
Licenses, fees, etc.		550.00
Telephone		78.50
Report		1500.00
Equipment rental, Pionjar, etc.		750.00
Equipment and supplies		1371.21
	TOTAL	$24,800.00

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B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1986-7 (1986): Occurrence and Distribution of Platinum-Group Elements in British Columbia, compiled by V.J. Rublee.

CERTIFICATE

I, JAMES W. McLEOD, of the Village of Ladner, Province of British Columbia, hereby certify as follows:

1) I am a Consulting Geologist with an office at 5303 River Road, Delta, B.C., V4K 1S8.

2) I am a Fellow of the Geological Association of Canada.

3) I graduated with a degree of Bachelor of Science, Major Geology, from the University of British Columbia in 1969.

4) I have practised my profession since 1969.

5) I do have an interest in the Hop mineral claim group which I received for financing previous fieldwork.

6) The above report is based on personal field experience gained on the property during 1986 - 1989, as well as, from government reports and from personal communications with other parties familiar with the general area.

DATED at Ladner, Province of Britsh Columbia, this 23rd day of JUNE 1990.

GEOLOGICAL ASSOCIATION OF CANADA
J. W. McLEOD
FELLOW

James W. McLeod, B.Sc.

APPENDIX I

* Assay and induction coupled plasma (ICP) results.

APPENDIX I
CERTIFICATE OF ASSAY

Date: November 20, 1989

File: 0103-1141

SGS SUPERVISION SERVICES INC.
General Testing Laboratories Division
1001 East Pender Street,
Vancouver, B.C., Canada. V6A 1W2
Telephone: (604) 254-1647
Telex: 04-507514

TO: MR. JIM McLEOD
5303 River Road
Delta, B.C.
V4K 1S8

We hereby certify that the following are the results of assays on: Ore

MARKED	GOLD oz/st	~~SILVER~~						
11180	0.003							
11181	0.002							
11182	0.002							
11183	0.003							
11184	0.038							
11185	0.002							
11186	0.002							
11187	0.341							
11188	0.002							
11189	0.003							
11190	0.002							
11191	0.002							
11192	0.002							
11193	0.002							
11194	0.002							
11195	0.002							
11196	0.003							
11197	0.002							
11198	0.002							
11199	0.002							
11200	0.002							

NOTE. REJECTS RETAINED ONE MONTH. PULPS RETAINED THREE MONTHS. ON REQUEST PULPS AND REJECTS WILL BE STORE FOR A MAXIMUM OF ONE YEAR.

L. Wong
PROVINCIAL ASSAYER

CERTIFICATE OF ANALYSIS

SGS SUPERVISION SERVICES INC.
General Testing Laboratories Division
1001 East Pender Street,
Vancouver, B.C., Canada. V6A 1W2
Telephone: (604) 254-1647
Telex: 04-507514

TO: MR. JIM McLEOD
5303 River Road
Delta, B.C.
V4K 1S8

Date: November 20, 1989
No.:
File: 0103-1141

ICP ANALYSIS

Description : Ore samples

Element	:	11180	11185	11196	11197
AG	(ppm)	0.10	0.10	0.20	0.20
AL	(ppm)	727.47	1229.02	825.57	1101.04
AS	(ppm)	[illegible]	1.69	1.15	1.46
BA	(ppm)		180.33	178.33	189.62
CA	(ppm)	380.26	522.10	163.76	250.95
CD	(ppm)	0.16	0.20	0.16	0.23
CO	(ppm)	4.60	4.68	4.62	4.62
CR	(ppm)	67.78	[illegible]	89.80	82.87
CU	(ppm)	15.32	6.75	5.09	[illegible]
FE	(ppm)	3157.50	4500.79	3469.07	4041.72
MG	(ppm)	439.44	706.42	469.27	639.69
MN	(ppm)	42.50	54.64	43.18	37.39
MO	(ppm)	0.29	0.58	0.40	0.39
NI	(ppm)	4.87	[illegible]	5.51	6.40
P	(ppm)	214.88	343.07	114.87	171.24
PB	(ppm0	4.23	4.77	3.37	3.79
SB	(ppm)	0.82	0.97	1.30	1.62
SR	(ppm)	3.89	6.20	2.45	3.06
TI	(ppm)	7.06	5.29	5.45	6.94
V	(ppm)	2.24	5.12	2.56	3.30
ZN	(ppm)	7.76	9.27	7.51	12.02

L. Wong, Provicial Assayer
SIGNATURE AND TITLE

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BATHURST, N.B.
MISSISSAUGA, ONT.
RENO, NEVADA, U.S.A.

GEOCHEMICAL ANALYTICAL REPORT

CLIENT:	BIG "I" DEVELOPMENT LTD.	DATE:	SEPT. 14 1989
ADDRESS:	5303 RIVER RD.		
:	DELTA BC	**REPORT#:**	**890577 GA**
:	V4K 1S8	JOB#:	890577
PROJECT#:	HOP	INVOICE#:	890577 NA
SAMPLES ARRIVED:	SEPT. 08 1989	TOTAL SAMPLES:	20
REPORT COMPLETED:	SEPT. 14 1989	SAMPLE TYPE:	20 ROCK CHIP
ANALYSED FOR:	Au (FA/AAS)	REJECTS:	SAVED

SAMPLES FROM: MR. JIM McLEOD
COPY SENT TO: BIG "I" DEVELOPMENT LTD.

PREPARED FOR: MR. JIM McLEOD

ANALYSED BY: VGC Staff

SIGNED: _____

GENERAL REMARK: None

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REPORT NUMBER: 890577 GA JOB NUMBER: 890577 BIG "I" DEVELOPMENT LTD. PAGE 1 OF 1

SAMPLE #	Au ppb
6751	nd
6753	nd
6754	nd
6756	nd
6757	nd
6758	nd
6759	nd
6764	nd
6765	nd
6767	nd
6768	nd
6769	nd
6772	nd
6773	nd
6774	nd
11069	nd
11071	nd
11072	nd
11074	nd
FALLS	nd

DETECTION LIMIT 5
nd = none detected -- = not analysed is = insufficient sample

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GEOCHEMICAL ANALYTICAL REPORT

CLIENT: BIG " I " DEVELOPMENT LTD.
ADDRESS: 5303 RIVER RD.
: DELTA BC
: V4K 1S8

DATE: SEPT. 15 1989
REPORT#: 890578 GA
JOB#: 890578

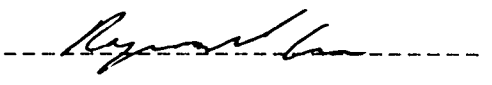
PROJECT#: HOP
SAMPLES ARRIVED: SEPT. 08 1989
REPORT COMPLETED: SEPT. 15 1989
ANALYSED FOR: Au (FA/AAS)

INVOICE#: 890578 NA
TOTAL SAMPLES: 59
SAMPLE TYPE: 59 ROCK PULP
REJECTS: SAVED

SAMPLES FROM: MR. JIM McLEOD
COPY SENT TO: BIG " I " DEVELOPMENT LTD.

PREPARED FOR: MR. JIM McLEOD

ANALYSED BY: VGC Staff

SIGNED: 

GENERAL REMARK: None

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REPORT NUMBER: 890578 GA JOB NUMBER: 890578 BIG "I" DEVELOPMENT LTD.

SAMPLE #	Au ppb
6751	10
6752	nd
6753	nd
6754	nd
6755	nd
6756	nd
6757	nd
6758	nd
6759	20
6760	nd
6761	nd
6762	nd
6763	30
6764	nd
6765	nd
6766	nd
6767	nd
6768	nd
6769	nd
6770	nd
6771	50
6772	nd
6773	nd
6774	nd
6775	20
11066	nd
11067	nd
11068	nd
11069	nd
11070	nd
11071	nd
11072	nd
11073	50
11074	nd
FALL	nd
L0 1+12W	nd
L2N 0+50W	nd
L2N 1+50W	40
L2N 2+00W	nd
DETECTION LIMIT	5

nd = none detected -- = not analysed is = insufficient sample

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REPORT NUMBER: 890578 GA JOB NUMBER: 890578 BIG "I" DEVELOPMENT LTD.

SAMPLE #	Au ppb
L4N 2+20E	nd
L4N 2+35E	nd
L4N 2+95E	nd
L4N 3+00E	nd
L4N 3+85W	nd
L4N 3+95W	nd
L7N 4+00E	nd
L7N 5+00E	nd
L7N 6+00E	nd
L10N 6+12W	50
L10W 2+95N	nd
L10W 8+71N (A)	nd
L10W 8+71N (B)	nd
L1+40N 0+25E	nd
L3+75N 4+50E	nd
RC 7	nd
RC 9	nd
RC 9+50 (W)	nd
RC 9+50 (E)	nd
RC 10	nd

DETECTION LIMIT 5
nd = none detected -- = not analysed is = insufficient sample

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GEOCHEMICAL ANALYTICAL REPORT

CLIENT: BIG " I " DEVELOPMENT LTD.
ADDRESS: 5303 RIVER RD.
: DELTA BC
: V4K 1S8

DATE: SEPT. 20 1989
REPORT#: 890579 GA
JOB#: 890579

PROJECT#: HOP
SAMPLES ARRIVED: SEPT. 08 1989
REPORT COMPLETED: SEPT. 20 1989
ANALYSED FOR: Au (FA/AAS)

INVOICE#: 890579 NA
TOTAL SAMPLES: 335
SAMPLE TYPE: 335 SOIL PULP
REJECTS: DISCARDED

SAMPLES FROM: MR. JIM McLEOD
COPY SENT TO: BIG " I " DEVELOPMENT LTD.

PREPARED FOR: MR. JIM McLEOD

ANALYSED BY: VGC Staff

SIGNED: _____

GENERAL REMARK: None

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REPORT NUMBER: 890579 GA JOB NUMBER: 890579 BIG "I" DEVELOPMENT LTD.

SAMPLE #		Au ppb
L0	2+50E	nd
L0	3+00E	nd
L0	3+50E	nd
L0	4+50E	nd
L0	5+00E	nd
L0	0+50W	nd
L0	1+00W	nd
L0	1+50W	nd
L0	2+00W	nd
L0	2+50W	nd
L0	3+00W	nd
L0	3+50W	nd
L0	4+00W	nd
L0	4+50W	nd
L0	5+00W	nd
L2N	BL	nd
L2N	2+50E	nd
L2N	3+00E	nd
L2N	3+50E	nd
L2N	4+50E	nd
L2N	5+00E	nd
L2N	1+00W	nd
L2N	2+50W	nd
L2N	3+00W	nd
L2N	3+50W	nd
L2N	4+00W	nd
L2N	4+50W	nd
L2N	5+00W	nd
L2N	5+50W	nd
L2N	6+00W	nd
L2N	6+50W	nd
L2N	7+00W	nd
L2N	7+50W	nd
L2N	8+00W	nd
L2N	8+50W	nd
L2N	9+00W	nd
L2N	9+50W	nd
L2N	9+62W	nd
L2N	10+00W (IBL)	nd
DETECTION LIMIT		5

nd = none detected -- = not analysed is = insufficient sample

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SAMPLE #	Au ppb
L3E 10+50N	nd
L3E 11+00N	nd
L3E 11+50N	nd
L4N 0+50E	nd
L4N 1+00E	nd
L4N 1+50E	nd
L4N 2+00E	nd
L4N 2+50E	nd
L4N 3+00E	nd
L4N 3+50E	nd
L4N 4+00E	nd
L4N 4+50E	nd
L4N 5+00E	nd
L4N 5+50E	nd
L4N 6+00E	nd
L4N 0+50W	nd
L4N 1+00W	nd
L4N 1+50W	nd
L4N 2+00W	nd
L4N 2+50W	nd
L4N 3+00W	nd
L4N 3+50W	nd
L4N 3+95W	nd
L4N 4+00W	nd
L4N 4+50W	nd
L4N 5+00W	nd
L4N 5+50W	nd
L4N 6+00W	nd
L4N 6+50W	nd
L4N 7+00W	nd
L4N 7+50W	nd
L4N 8+00W	142
L4N 8+50W	nd
L4N 9+00W	nd
L4N 9+50W	nd
L4N 10+00W	80
L4+25N 10+15W	60
L5E 0+50N	nd
L5E 1+00N	40
DETECTION LIMIT	5

nd = none detected -- = not analysed is = insufficient sample

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SAMPLE #	Au ppb
L5E 1+50N	nd
L5E 14+50N	nd
L5E 15+00N	nd
L5E 15+50N	nd
L5E 18+50N	nd
L5E 19+00N	nd
L5E 19+50N	nd
L7N 0+50E	nd
L7N 1+00E	nd
L7N 1+50E	nd
L7N 2+00E	110
L7N 2+50E	nd
L7N 3+00E	110
L7N 3+50E	nd
L7N 4+00E	nd
L7N 0+50W	nd
L7N 1+00W	nd
L7N 1+50W	nd
L7N 2+00W	nd
L7N 2+50W	120
L7N 3+00W	nd
L7N 3+50W	50
L7N 4+00W	nd
L7N 4+50W	nd
L7N 5+00W	nd
L7N 5+50W	nd
L7N 6+00W	nd
L7N 6+50W	nd
L7N 7+00W	nd
L7N 7+50W	nd
L7N 8+00W	nd
L7N 8+50W	nd
L7N 9+00W	nd
L7N 9+50W	nd
L7N 10+00W	nd
L10N 0+50E	nd
L10N 1+00E	nd
L10N 1+50E	nd
L10N 2+00E	nd
DETECTION LIMIT	5

nd = none detected -- = not analysed is = insufficient sample

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SAMPLE #	Au ppb
L10N 2+50E	nd
L10N 3+00E	nd
L10N 1+50W	nd
L10N 2+00W	nd
L10N 2+50W	nd
L10N 3+00W	30
L10N 3+50W	nd
L10N 4+00W	nd
L10N 4+50W	nd
L10N 5+00W	nd
L10N 5+50W	60
L10N 6+00W	nd
L10N 6+50W	nd
L10N 7+00W (SOIL)	nd
L10N 7+00W (SILT)	nd
L10N 7+50W	nd
L10N 8+00W	nd
L10N 8+50W	nd
L10N 9+00W	nd
L10N 9+50W	nd
L10N 9+50W (A)	nd
L10N 10+00W	nd
L10W 2+50N	nd
L10W 3+00N	nd
L10W 3+50N	nd
L10W 7+50N	nd
L10W 8+00N	nd
L10W 8+50N	nd
L10W 9+00N	nd
L10W 14+50N	nd
L10W 14+70N	nd
L10W 15+00N	nd
L10W 15+50N	nd
L10W 18+50N	nd
L10W 19+00N	nd
L10W 19+50N	nd
L12N 0+50E	nd
L12N 1+00E	nd
L12N 1+50E	nd

DETECTION LIMIT 5

nd = none detected -- = not analysed is = insufficient sample

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SAMPLE #	Au ppb
L12N 2+00E	nd
L12N 2+50E	nd
L12N 3+00E	nd
L14N 0+50E	nd
L14N 1+00E	nd
L14N 1+50E	nd
L14N 2+00E	nd
L14N 2+50E	nd
L14N 3+00E	nd
L14N 3+50E	nd
L14N 4+50E	nd
L14N 5+00E	nd
L14N 0+50W	nd
L14N 1+00W	nd
L14N 1+50W	nd
L14N 2+00W	nd
L14N 2+50W	nd
L14N 3+00W	nd
L14N 3+50W	nd
L14N 4+00W	nd
L14N 4+50W	nd
L14N 5+00W	nd
L14N 5+50W	nd
L14N 6+00W	nd
L14N 6+50W	nd
L14N 7+00W	nd
L14N 7+50W	nd
L14N 8+00W	nd
L14N 8+50W	nd
L14N 9+00W	nd
L14N 9+50W	nd
L14N 10+00W	nd
L16N 0+50E	nd
L16N 1+00E	nd
L16N 1+50E	nd
L16N 2+00E	nd
L16N 2+50E	nd
L16N 3+00E	nd
L16N 3+50E	nd
DETECTION LIMIT	5

nd = none detected -- = not analysed is = insufficient sample

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SAMPLE #	Au ppb
L16N 4+00E	nd
L16N 4+50E	nd
L16N 5+00E	nd
L16N 0+50W	nd
L16N 1+00W	nd
L16N 1+50W	nd
L16N 2+00W	nd
L16N 2+50W	nd
L16N 3+00W	nd
L16N 3+50W	nd
L16N 4+00W	nd
L16N 4+50W	nd
L16N 5+00W	nd
L16N 5+50W	nd
L16N 6+00W	nd
L16N 6+50W	nd
L16N 7+00W	nd
L16N 7+50W	nd
L16N 8+00W (SOIL)	nd
L16N 8+00W (SILT)	nd
L16N 8+50W	nd
L16N 9+00W	nd
L16N 9+50W	nd
L16N 10+00W	nd
L18N 0+50E	nd
L18N 1+50E	nd
L18N 2+50E	nd
L18N 3+00E	nd
L18N 3+50E	nd
L18N 4+00E	nd
L18N 4+50E	nd
L18N 5+00E	nd
L18N 0+50W	nd
L18N 1+00W	nd
L18N 1+50W	nd
L18N 2+00W	nd
L18N 2+50W	nd
L18N 3+00W	nd
L18N 3+50W	nd
DETECTION LIMIT	5

nd = none detected -- = not analysed is = insufficient sample

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SAMPLE #	Au ppb
L18N 4+00W	nd
L18N 4+50W	nd
L18N 5+00W	nd
L18N 5+50W	nd
L18N 6+00W	nd
L18N 6+50W	nd
L18N 7+00W	nd
L18N 7+50W	nd
L18N 8+00W	nd
L18N 8+50W	nd
L18N 9+00W	nd
L18N 9+50W	nd
L18N 10+00W	nd
L20N 0+50E	nd
L20N 1+00E	nd
L20N 1+50E	nd
L20N 2+00E	nd
L20N 2+50E	nd
L20N 3+00E	nd
L20N 3+50E	nd
L20N 4+00E	nd
L20N 4+50E	nd
L20N 5+00E	nd
L20N 0+50W	nd
L20N 1+00W	nd
L20N 1+50W	nd
L20N 2+00W	nd
L20N 2+50W	nd
L20N 3+00W	nd
L20N 3+50W	nd
L20N 4+00W	nd
L20N 4+50W	nd
L20N 5+00W	nd
L20N 5+50W	nd
L20N 6+00W	nd
L20N 6+50W	nd
L20N 7+00W	nd
L20N 7+50W	nd
L20N 8+00W	nd
DETECTION LIMIT	5

nd = none detected -- = not analysed is = insufficient sample

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REPORT NUMBER: 890579 GA JOB NUMBER: 890579 BIG " I " DEVELOPMENT LTD.

SAMPLE #	Au ppb
L20N 8+50W	nd
L20N 9+00W	nd
L20N 9+50W	nd
L20N 10+00W	nd
BL 0+50	nd
BL 1+00	nd
BL 1+50	nd
BL 2+50	nd
BL 3+00	nd
BL 3+50	nd
BL 4+00	nd
BL 4+50	nd
BL 5+00	nd
BL 5+50	nd
BL 6+00	nd
BL 6+50	nd
BL 7+00	nd
BL 7+50	nd
BL 8+00	nd
BL 8+50	nd
BL 9+00	nd
BL 9+50	nd
BL 10+00	nd
BL 10+50	nd
BL 11+00	nd
BL 12+00	nd
BL 12+50	nd
BL 13+00	nd
BL 13+50	nd
BL 14+00	nd
BL 14+50	nd
BL 15+50	nd
BL 16+00	nd
BL 16+50	nd
BL 17+00	nd
BL 17+50	nd
BL 18+00	nd
BL 18+50	nd
BL 19+50	nd

DETECTION LIMIT 5
nd = none detected -- = not analysed is = insufficient sample

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REPORT NUMBER: 890579 GA JOB NUMBER: 890579 BIG "I" DEVELOPMENT LTD.

SAMPLE #		Au ppb
BL	20+00	nd
CW	1	nd
CW	0+00S	nd
CW	0+50S	nd
CW	1+00S	nd
CW	1+50S	nd
CW	2+00S	nd
CW	2+50S	nd
CW	3+00S	nd
CW	3+50S	nd
CW	4+00S	nd
RC	2	nd
RC	3	nd
RC	4	nd
RC	5	nd
RC	6	nd
RC	8	nd
RC	9	nd
RC	10	nd
RC	11	nd
RC	12	nd
RC	13	nd
RC	14	nd

DETECTION LIMIT 5
nd = none detected -- = not analysed is = insufficient sample

APPENDIX II

* Note: Handwritten analyses are from this and previous reports and are only included for comparative purposes.

SAMPLE RECORD SHEET

SAMPLER: J. McLEOD

MAP SHEET: 104 J
PROPERTY: HOP

PROJECT: 88-2
AREA: DEASE LAKE, B.C.
COMPANY: BIG I DEVELOPMENTS
DATE: DEC. '88 - JAN. '89
No. of Sa.: 21

Sample No.	DESCRIPTION	TYPE of Sa.	WIDTH	Notebook Ref.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
6751	BL-1+72N. BLK. argillite ± qtz	Rx	Grab	I back	4	2	4	.1	1
6752	BL-2+60-90N. Silic. v.f.gr. l.gy. sed.	"	"	"	18	5	9	.1	2
6753	BL-12+34N. F.gr. greenstone	"	"	"	106*	6	73*	.1	1
6754	BL-13+50N Silic gy-blk arg. ± qtz	"	"	II back	9	2	12	.1	1
6755	BL-14+75-15+00N Silic arg.	"	"	"	14	2	26	.1	2
6756		"	"	III	30	8	39	.1	1
6757	L18N-3+75W. Bd. v.f.gr. chert ± q.v.	"	"	III back	25	3	30	.1	1
6758	L20N-3+67E V.f.gr. andesite ± q.v.	"	"	IV "	85	2	26	.1	1
6759	L20N-3+67E. V.f.gr. grn-red and.	"	"	III "	39	9	71	.1	1
6760	L18N-5+00E Dry f.red slate?	"	"	II back	15	3	92	.2	2
L16N 8+00W	Int. c/ E-W arms Fryppan ck.	Silt	"	VI	54	15	*173	.1	3*
6761	L16N-9+60W. Grn f.gr. and. tuff.	Rx	"	VII back	17	12	71	.1	1
L10W 14+70N	50m. S. of Int ± Fryppan ck.	Silt	"	VI "	34	3	*100	.1	1
6762	L10+20W-14+70N BLK. argillite	Rx	"	VI "	85	15*	97	.1	4*
6763	L14N-2+50 to 4+50E and.-grn int	Rx	"	VII back	67	7	76	.2	1
6764	L14N-7+20E Grey argill. ± q.v.	Rx	"	VII "	22	6	23	.1	1
6765	L12N-3+00E Rd-grn and-tuff	"	"	VIII "	55	7	61	.1	1
6766	L8E-10+25N Andesite (lime alt.)	"	"	"	113*	9	81	.2	1
6767	L0-1+22E "	"	"	"	110*	10*	66	.1	1
6768	L0-4+50E "	"	"	IX back	43	8	62	.3*	3*
6769	L0-4+79E "	"	"	"	12	6	23	.1	1

APPENDIX II

SAMPLE RECORD SHEET

SAMPLER: J. McLEOD

MAP SHEET: 104 J

PROPERTY: HOP

PROJECT: 88-2

AREA: DEASE LAKE - B.C.

COMPANY: B.D

DATE: DEC. 188 - JAN. 189

No. of Sa.: 21

Sample No.	DESCRIPTION	TYPE of Sa.	WIDTH	Notebook Ref.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
6770	L 2N - 4+50E. Andesite	R.k	Grab	X back	47	12 *	91	.2	1
6771	L 2N - 0+10W Blk. graph. schist	"	"	"	16	18 *	29	.1	3 *
6772	L 2N - 0+85W. a silic arg. "	"	"	"	8	4	14	.1	1
6773	L 2N - 1+00W "	"	"	"	5	2	6	.1	1
6774	L 1+75N - 3+00W "	"	"	XI	4	2	8	.1	1
6775	L 10W - 2+40N " a phyllite	"	"	XI back	26	13 *	52	.1	2
11066	L 4N - 10+15W Sil. phyllite	"	"	"	13	2	12	.1	1
11067	L 4+25N - 10+15W "	"	"	XII back	11	2	7	.1	2
11068	L 4+25N - 10+35W " ē q.v.	"	"	"	12	19 *	29	.1	1
11069	L 4N - 0+35E "	"	"	XIII back	20	10 *	41	.1	1
L 4N 2+95W	Grey phyllite	"	"	XII back	17	32 *	42	.1	2
L 4N 2+85W	Qtz boulder	R.k	Float	"	9	13 *	10	.1	1
L 4N 2+20E	And. tuff ⊓ grad.	"	Grab	XIII back	45	16 *	63	.1	1
L 4N 2+35E	"	"	"	"	20	9	31	.1	1
L 4N 2+95E	Jasper-hematite ē grades Bd 106° Strike	"	"	XIV	17	16 *	14	.1	1
L 4N 3+00E	" "	"	"	"	14	67 *	41	.7 *	1
11070	F. gr. grn andesite ⊓ grad.	"	"	XIV back	28	4	131 *	.2	1
L 4N 4+00E	" " " "	"	"	"	49	44 *	81	.1	2
L 4N 5+00E	" " " "	"	"	XIII	9	31 *	52	.1	1
L 4N 6+00E	" " " "	"	"	"	36	37 *	112 *	.1	1
L 3+75N 4+50E	" " " ē jasper	"	"	XIV	63	13	52	.2	1

SAMPLE RECORD SHEET

SAMPLER: J. McLEOD

MAP SHEET: 104 J

PROPERTY: HOP

PROJECT: 88-2

AREA: DEASE LAKE, B.C.

COMPANY: BID

DATE: DEC./88 - JAN./89

No. of Sa.: 19

Sample No.	DESCRIPTION	TYPE of Sa.	WIDTH	Notebook Ref.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
L10W 8+71N "A"	Light grey, f. gr. phyllite Bd? N140/46	R-x	Grab	XV back	48	18*	50	.1	10*
L10W 8+71N "B"	F. gr. dk. grey argillite	"	"	"	17	10*	17	.1	1
11071	F. gr. grn andesite argill'tg.	"	"	XVI back	14	10*	50	.1	1
L10N 6+12W	Foliated f. gr. x'stal tuff/and.?	"	"	"	28	167*	104*	.4*	1
L2N 2+00W	Siliceous schist	"	"	X back	21	4	29	.1	1
L2N 1+50W	" "	"	"	"	4	10*	22	.1	1
L2N 0+50W	" "	"	"	"	8	20*	9	.3*	2
11072	Q'tz in felt hinge of argillite } 1CW	"	"	XVII back	19	2	35	.1	1
11073	f. gr. grn andesite Esed N105/75N	"	"	XIX	52	11*	102*	.1	1
11074	f. gr. white-grey x'stal limest	"	"	"	6	2	17	.1	2
11075	Qtz f'l? 3½m. east of Camp.	Q'tz 1'x	"	"	6	3	11	.1	1
Falls	Andesitic tuff & q'tz.	R-x	"	XIX	3	2	10	.1	2
L10W 2+25N	Greyish'tic schist or phyllite	"	"	XI back	20	15*	66	.1	1
RC1	R'x from East arm Rock Ck. E	R'x Sch't	"	XVIII	7	7	7	.1	1
RC7	" qtz	"	"	"	5	3	5	.1	1
RC9	"	"	"	"	11	15*	10	.2	1
RC9+50W	"	"	"	"	41	13*	29	.1	1
RC9+50E	"	"	"	"	6	5	2	.1	10*
RC10	"	"	"	"	12	9	22	.1	1

SAMPLE RECORD SHEET

SAMPLER: J. McLeod

MAP SHEET: 104J

PROPERTY: HOP

PROJECT: 89-3

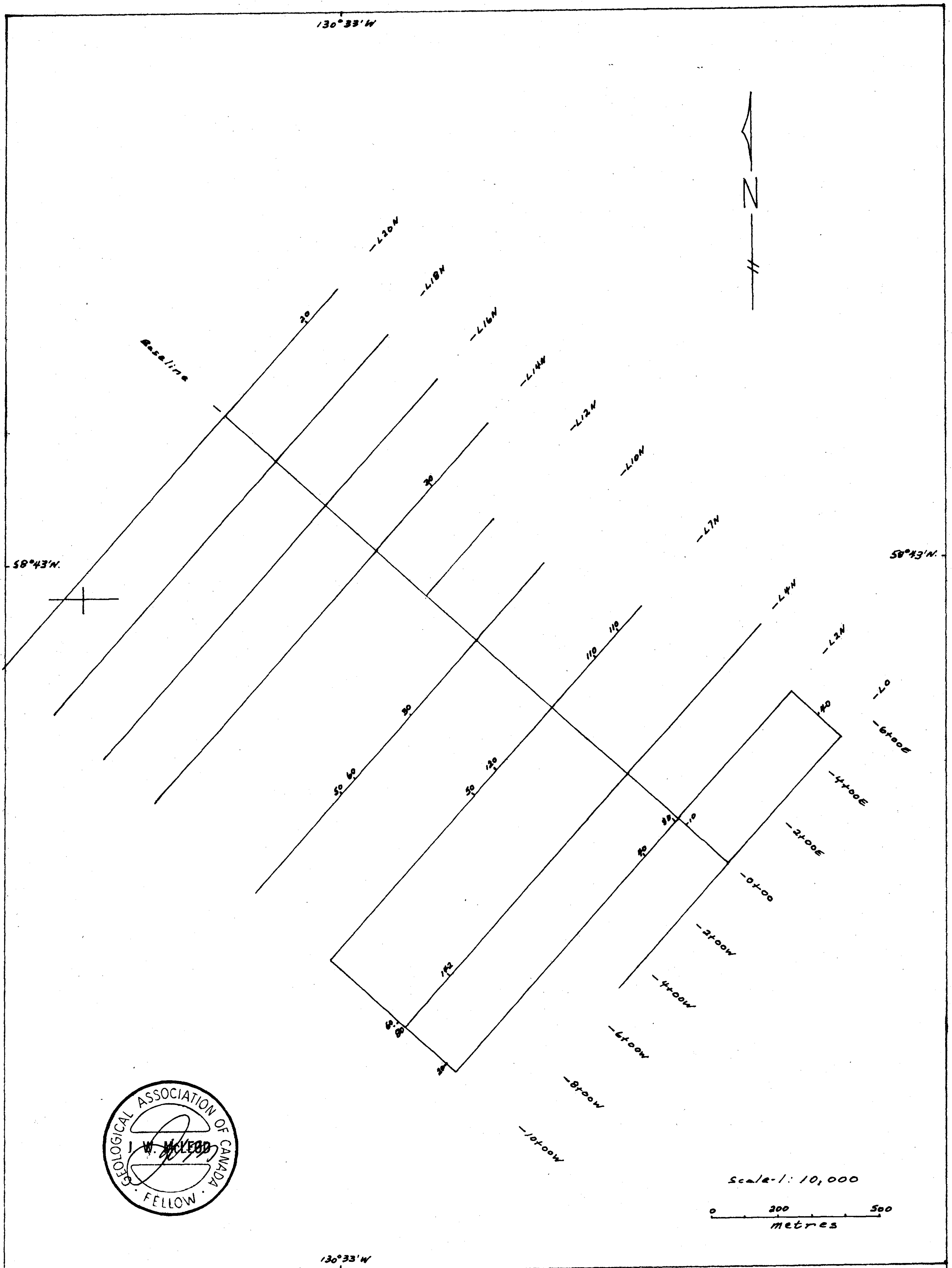
AREA: Dease Lake, B.C.

COMPANY: Big I Developments Ltd.

DATE: December, 1989

No. of Sa.: 21

Sample No.	DESCRIPTION	TYPE of Sa.	WIDTH	Notebook Ref.	Cu(m)	Pb(m)	Zn(m)	Ag(m)	Au(g)
11180	Seven Eagle Z. Tr.#1 aphanitic (xxx)	R.x	C-g. 1 metre	(IIb) III	15.3	4.2	7.8	8.10	100
11181	" Tr.2 " minor py.	"	Grab	"	—	—	—	—	50
11182	" Tr. 3 " No py.	"	"	"	—	—	—	—	50
11183	" Tr.4 " minor py.	"	chip-grab 1m.	"	—	—	—	—	100
11184	" Tr.5 " " "	"	C-g 11.5m	"	—	—	—	—	1188
11185	" Tr.6 " No py. flat q.v.	"	C-g 28m.	"	6.8	4.8	9.3	0.10	50
11186	" Tr.7 " Minor py. dark q.v	"	C-g 2m.	(IIb) & (IIIb)	—	—	—	—	50
11187	" Tr.7 " H.W. q.v. minor py	"	C-g 1.38m	"	—	—	—	—	10590
11188	" Tr.8 " Rubbly. no py.	"	Grab	"	—	—	—	—	50
11189	" Tr.9 " Multi-q.v. stockw.	"	C-g 1m.	"	—	—	—	—	100
11190	" Tr.10 " lean q.v. + no. sulph.	"	Grab	"	—	—	—	—	50
11191	" Tr.11 " q.v. - no sulph.	"	12cm	"	—	—	—	—	50
11192	" Tr.12 " " " "	"	Grab	"	—	—	—	—	50
11193	" Tr.13. Multi-dark qv.	"	Chip 3cm.	"	—	—	—	—	50
11194	" Tr.14 Hanging qv. Kinked	"	C-g 1m.	"	—	—	—	—	50
11195	" Tr.14 0.5-4cm qv. Footwall.	"	C-g 1m	(IIb) & III	—	—	—	—	50
11196	" Tr.15 " No. sulph.	"	C-g. 1m	"	5.1	3.4	7.5	0.20	100
11197	" Tr.9. 1cm q.v.'s malach. et.	"	Chip 1cm.	IIb	102.9	3.8	17.0	0.20	50
11198	Owl. 2me Tr.16 grey phyll. 80-330-285	"	Grab	IIb	—	—	—	—	50
11199	" Tr.17 "Ripples no q.v.	"	Grab	"	—	—	—	—	50
11200	" Tr.18 " No q.v. No sulph.	"	Grab	"	—	—	—	—	50



Legend

10 — Gold valeies in parts per billion (ppb), See Appendix I - Page 20-31, inclusive For tabulated results.

54|55 / 57|58 HOP - Claim No. and Location.

*Note - Assays page 28 - 36

Figure: 6
Gold Geochemistry (in ppb's)
Hop 54-59 Mineral Claims
Dease Lake Area
Liard Mining Division, B.C.
NTS - 104 15E/16W.
Bia I Developments Ltd.

06/90 J.W.M.

APPENDIX III

PHOTOGEOPHYSICAL REPORT

by

JC Explorations Ltd.

September 24, 1989
Vancouver, B.C.

Photogeophysical Report

on the

Hop Mineral Claim Group

Vowel Mountain-Dease Lake Area

Laird Mining Division, B.C.

for

Big I Developments Ltd.

by

JC Explorations Ltd.

September 24, 1989
Vancouver, B.C.

Table of Contents

Figures

JC EXPLORATIONS LTD.

September 24, 1989

To: Mr. James W. McLeod, Geo.,
#304 - 626 West Pender St.,
Vancouver, B.C. V6B1V9

Dear Sir:

I have completed an aerial- photographic interpretation of B.C. Airphoto BC 5632/057 which cover the area of the Hop 54-89 Mineral Claims. The Claim Group consists of six contiguous claims comprising ninety-six claim units, situated at Thibert Creek near the juncture of Rose Creek and approximately 55 km northwest of the Town of Dease Lake. The claims are located in the Liard Mining District in Northwestern British Columbia.

The Claim Group is underlain by sediments,mafic volcanics and limestones of late Paleozoic age. The assemblage of rocks trend northwest. A synclinal axis indicating isoclinal folding has been mapped approximately 3 km southeast of the Hop Claim Group with dips steeply to the NE and SW.

RESULTS OF PHOTO STUDY

1. A lineal feature trending NW - SE through the claim area may be an axial fault centered along a strike line south of Rose Creek.

2. An east-west trending fault zone forms the valley wall north of Thibert Creek. This zone consists of a number of parallel fault stuctures along which shear faulting as well as normal faults would appear to have taken place.

3. The aeromagnetic data was extracted from High Resolution Aeromagnetic Total Field Geophysical Map Series flown for the Federal and British Columbia Governments. The maps used were Map 9222G, 104 J/16 and Map 9233G, 104 J/15.

4. The data was extracted by overlaying a magnetic grid oriented to the Earth's Magnetic Field and then reading an array of magnetic points around each dipole represented by the grid intersections. The data is then programmed in a computer to determine the relative vector distortion anomalies as indicative of the magnetic changes in the Earth's ambient magnetic field due to structural and geological changes in the underlying rock columns at each dipole.

5. The filtered data shows the combined responses of the Isomagnetic Total Field Magnetic Contours in terms of lateral and vertical deviation at each dipole. Figure 5 shows the filtered result (HI-LEVEL AEROMAGNETIC FILTER).

6. The Vector Distortion Anomaly indicates the probable axial fault zone and fold axis as interpreted in the aerial photographs. This is the NW trend of low distortion flanked on either side by anomalies of high vector distortion, indicating the greater changes of lateral magnetic susceptibilies expected across contacts of various rock ensembles.

.....page 2

7. The Thibert Creek East-West Fault Zone is supported by the breaks in the contact anomalies which trend northwesterly.

CONCLUSION

The work is recconaissance work designed to extract major geological and geophysical features from the available data prior to field exploration. In a photogeophysical study the trends of major structural and geological features are correlative and are pertinent to possible mineralization.

A ground grid orientation parallel to Rose Creek and centered at the headwaters, with offset lines projecting northeast and southwest should give the best possible results for mapping ground surveys.

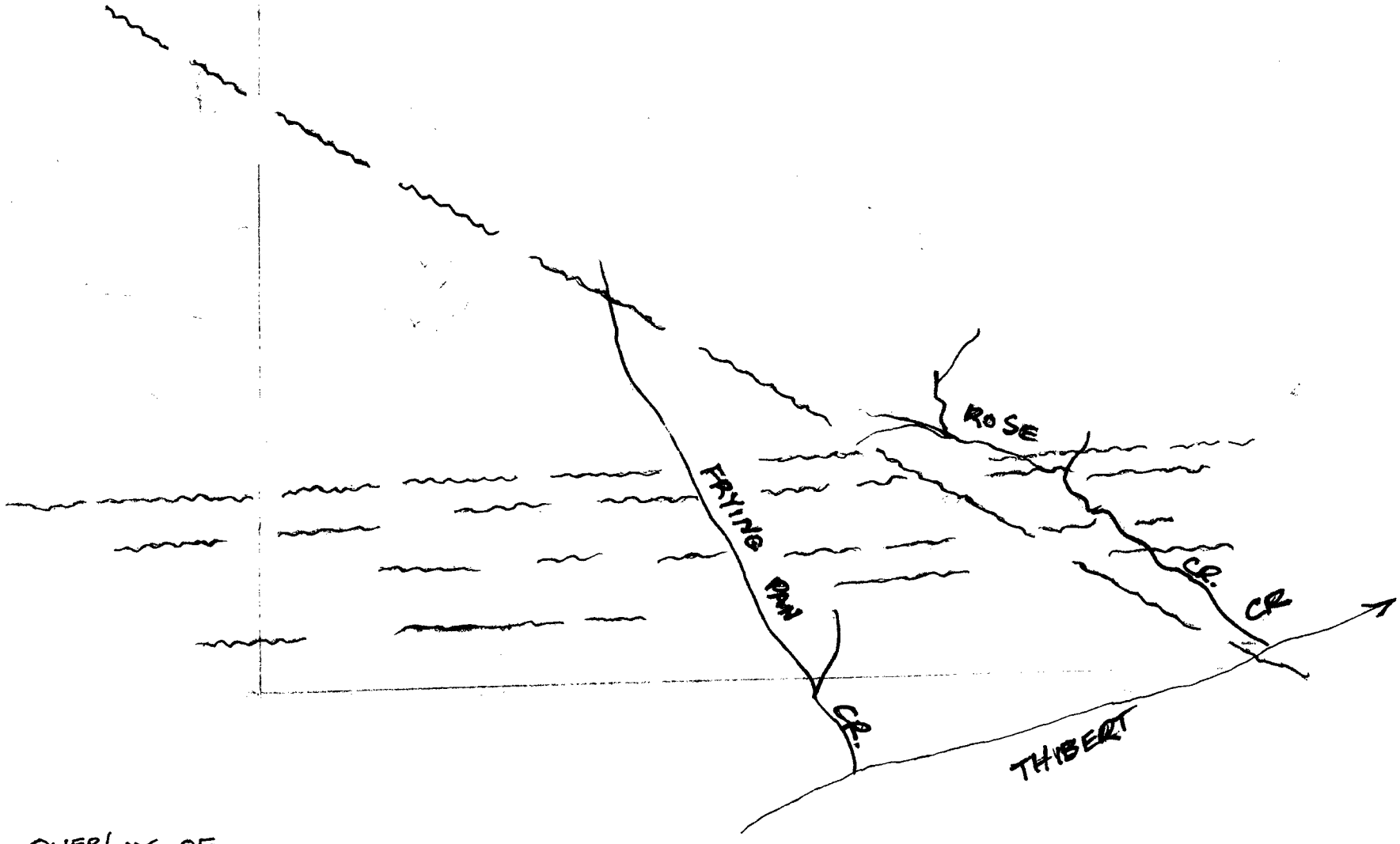
Respectfully submitted,

D.A.Chapman

D.A.Chapman, President
JC Explorations Ltd.

BC 5623/57

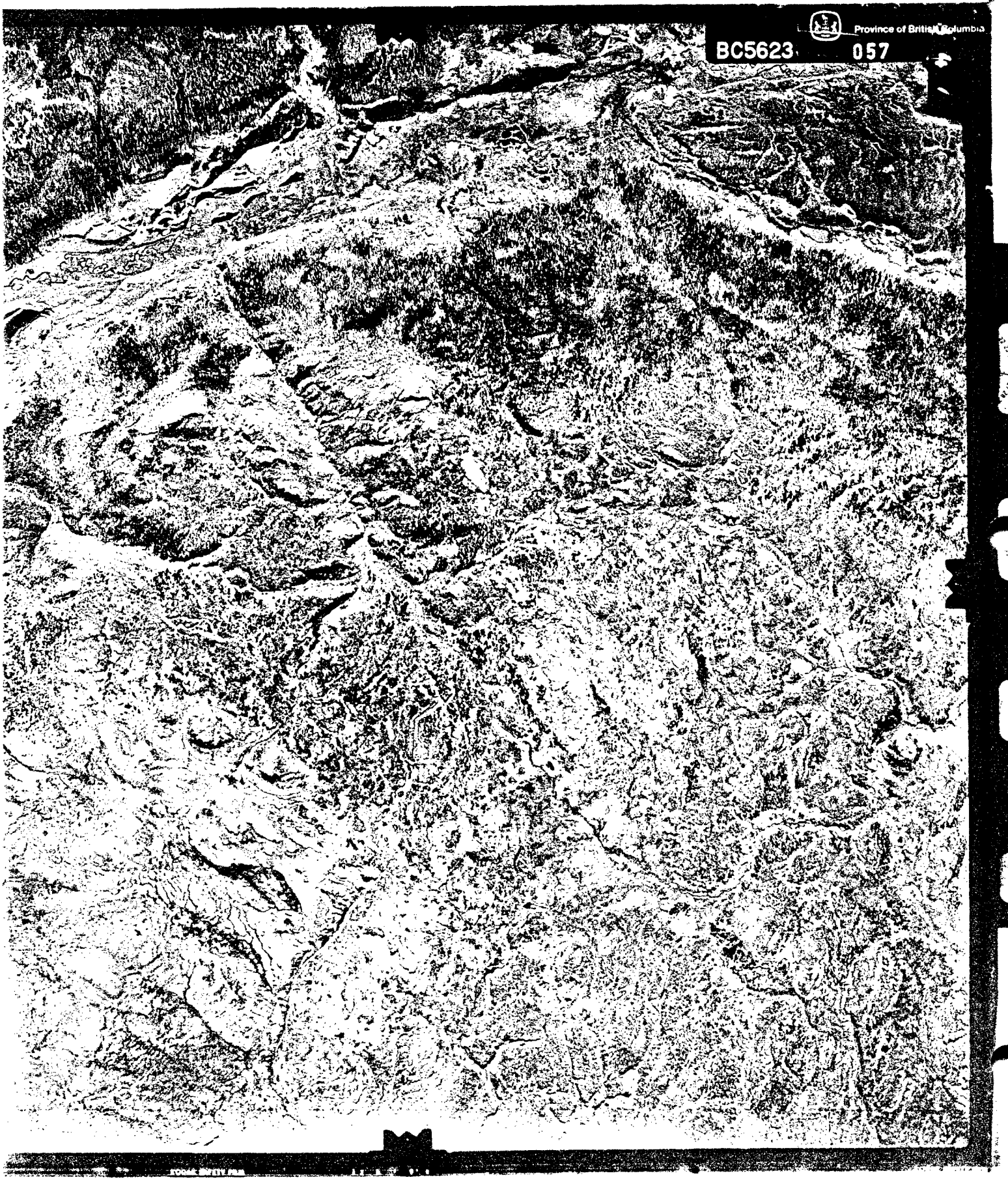
HOP 54-59
CLAIM GROUP



OVERLAY OF
AIRPHOTO BC 5623/57
TO ACCOMPANY
PHOTOGEOPHYSICAL
STUDY BY
J.C. EXPLORATIONS LTD.

INTERPRETED
FAULT STRUCTURES
BY D.A.CHAPMAN

W


Province of British Columbia
BC5623
057

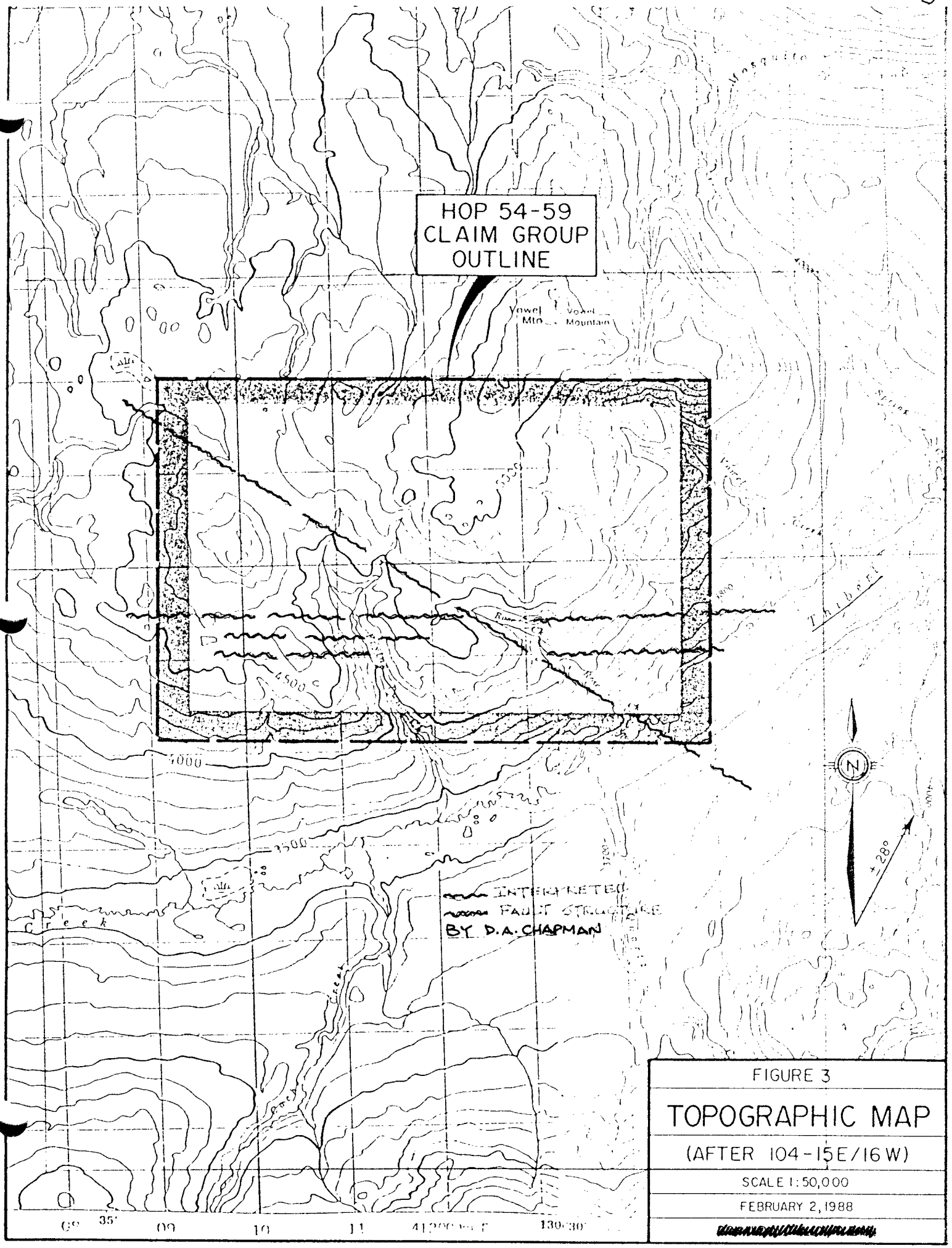


FIGURE 3

TOPOGRAPHIC MAP

(AFTER 104-15E/16W)

SCALE 1:50,000

FEBRUARY 2, 1988

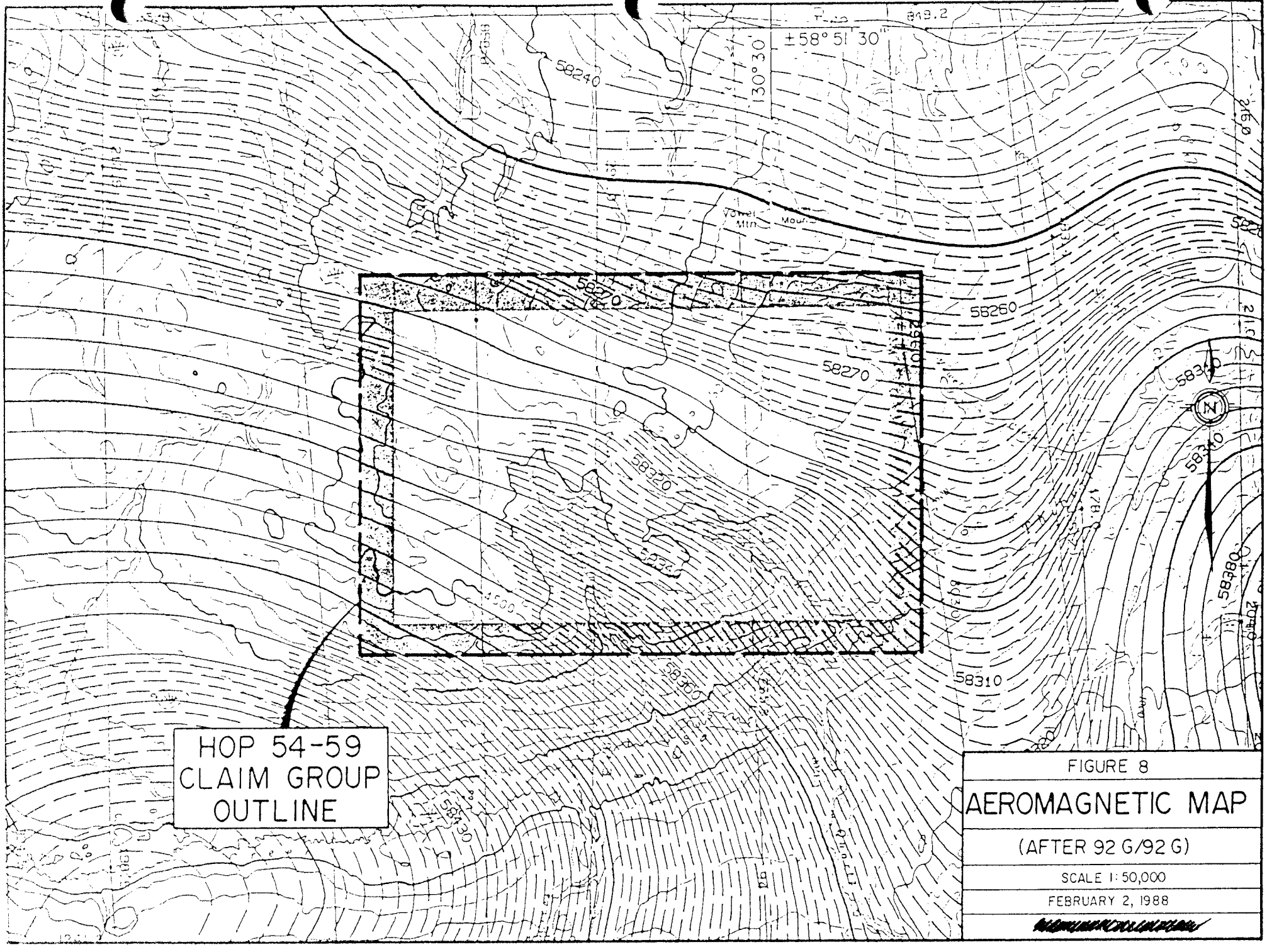


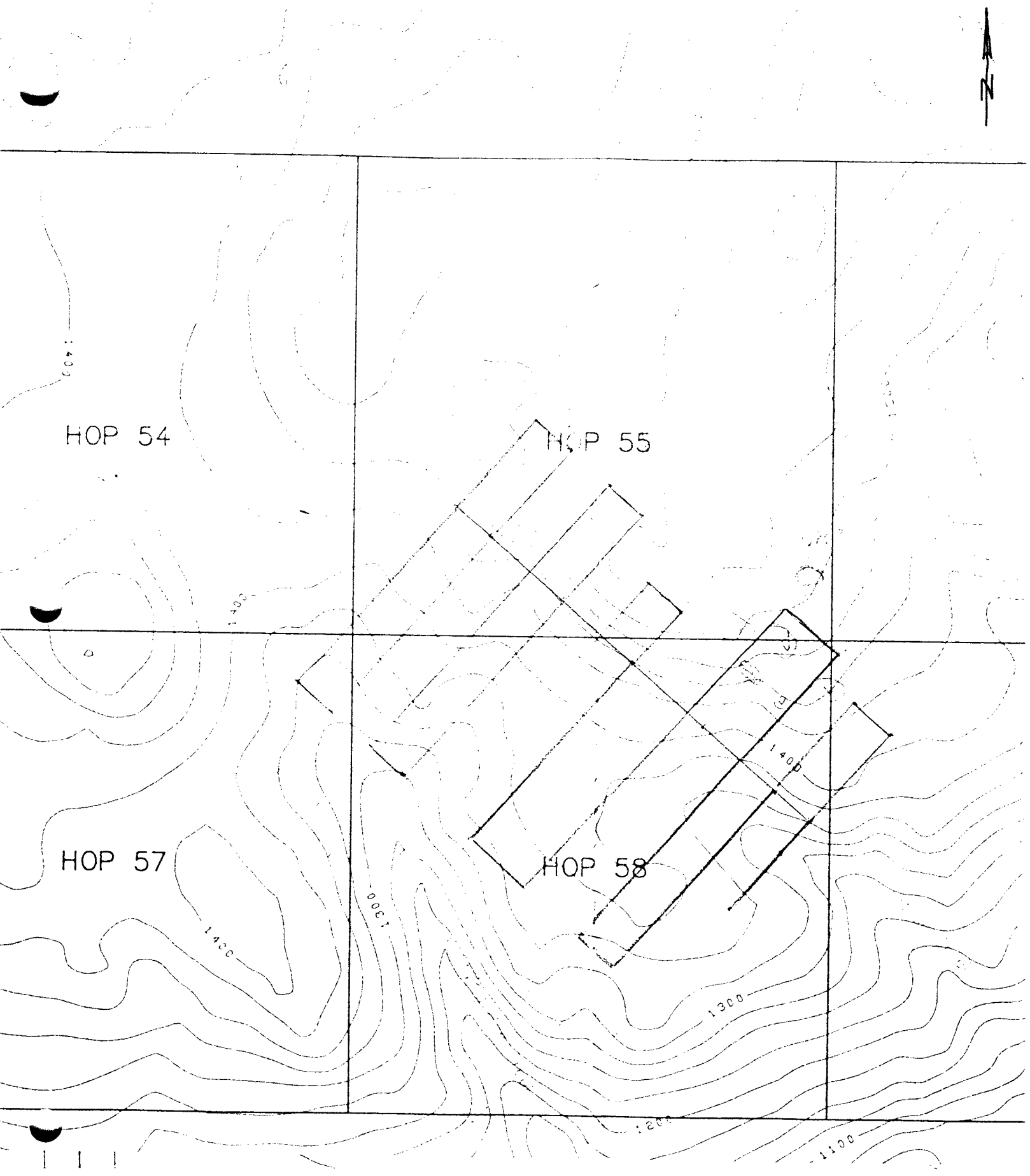
FIGURE 8

AEROMAGNETIC MAP

(AFTER 92 G/92 G)

SCALE 1: 50,000

FEBRUARY 2, 1988



RECOMMENDED EXPLORATION GRID

JE Explorations Ltd.

PHOTOGEOPHYSICAL

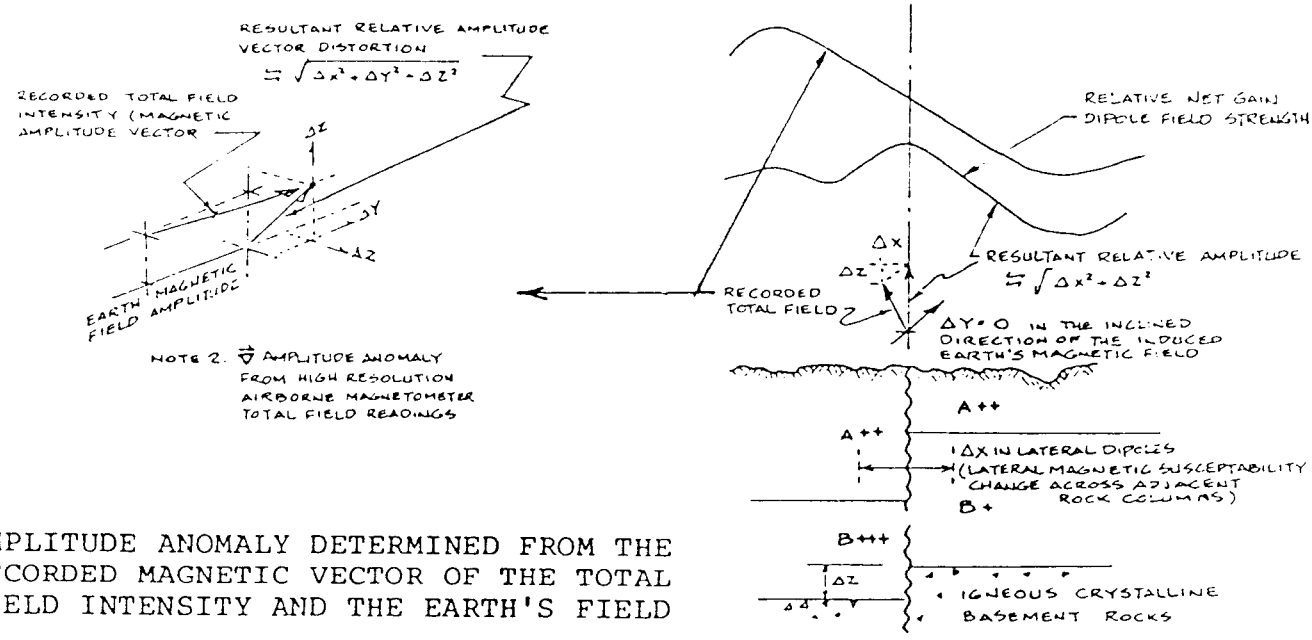
STUDY

ADDENDUM

THEORY AND NOTES FOR A
FILTER TECHNIQUE FROM
EXISTING AEROMAGNETIC
TOTAL FIELD INTENSITY
MAPS AND/OR SURVEY DATA

CORRELATION
OF
SIMILAR PARAMETERS
WITH
PHOTO TECTONIC SURVEYS

The Magnetic Data used for the Filtered Derivatives of the Recorded Total Field Intensity or Magnetic Vectors of the Earth's Ambient Magnetic Field are taken from B.C. Government Aeromagnetic Maps.



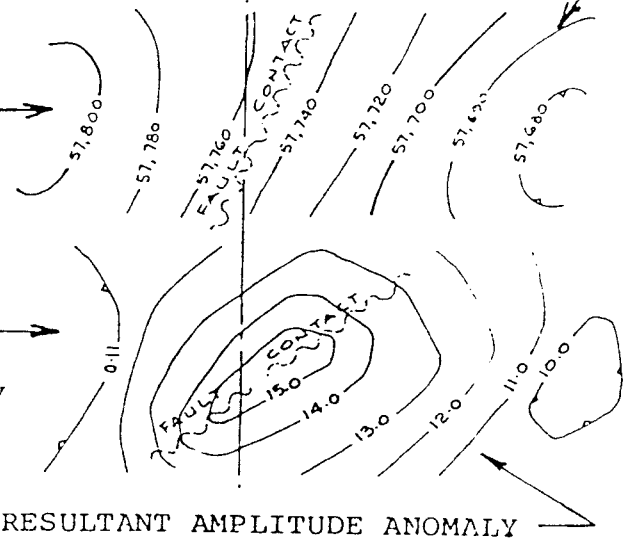
AMPLITUDE ANOMALY DETERMINED FROM THE RECORDED MAGNETIC VECTOR OF THE TOTAL FIELD INTENSITY AND THE EARTH'S FIELD

Magnetic Field Distortion by a change of Lateral Susceptability due to △ Z

TOTAL FIELD ISOGRADIENT

Field Signal of the Total Field Isogradient as Mapped by Airborne Magnetometer →

Resultant Vector Filter of Total Field Isogradient to determine Relative Vector Distortion of Amplitude Anomaly →



RESULTANT AMPLITUDE ANOMALY

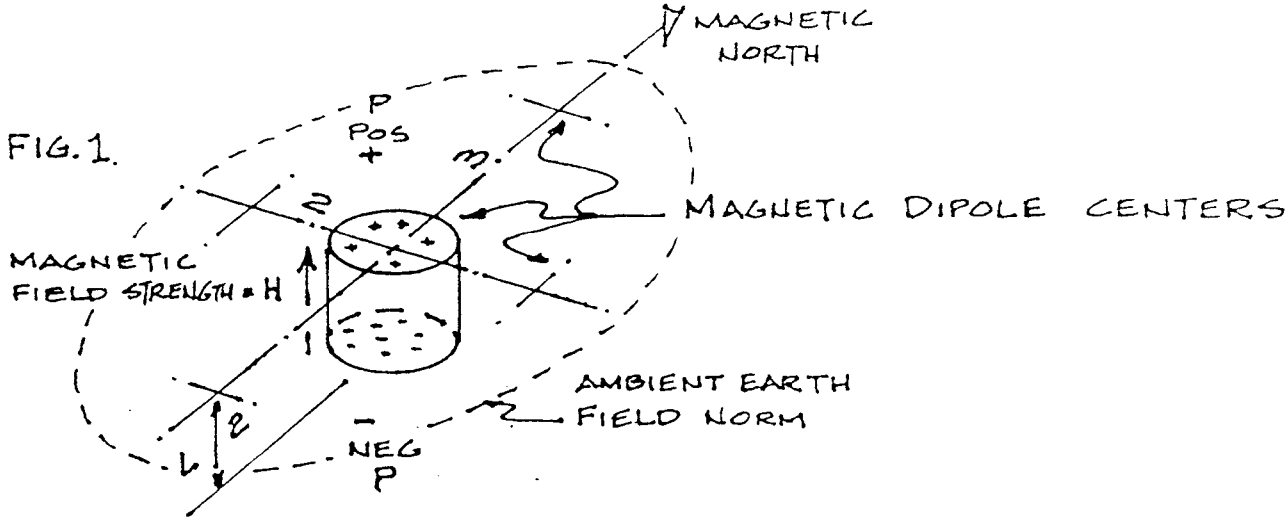
For Text of Explanatory Notes See Pages A-4 to A-8

JF Explorations Ltd.

ADDENDUM (cont.) A - 4

NOTES ON MAGNETIC THEORIES

FIG. 1.



Any cylindrical rock column normal to the earth magnetic field will have a magnetic pole induced on its surface. This induced magnetization is a polarization in the direction of the applied field and its strength is proportional to the strength of the inducing field.

A dipole consists of two poles of equal strength P and of opposite sign separated by the distance L. The magnetic moment of the dipole is the product of the pole strength (P) and the vertical distance (L) thus M = P x L.

The intensity of magnetization (I) is to be considered as the induced pole strength per cylindrical rock column along the earth surface normal to the earth inducing magnetic field. Thus I is the magnetic moment (P x L) per unit volume and in the case of a homogenous external field (H) will vary with the angle to the normal of the dipole axiis and the external field so that the induced pole strength per unit area of the dipole is I = KH cos Ø, where (K) is the susceptibility constant for the rock column. For a field normal to the earth's surface I = KH.

The magnetic poles induced in a cylindrical rock column by the external field (H) will produce its own field (H^1) related to the polarization or intensity of magnetization (I) so that $H^1 = 4\pi I$ and the total magnetic induction (B) of the surface dipole is the sum of the extermal and internal field shown.

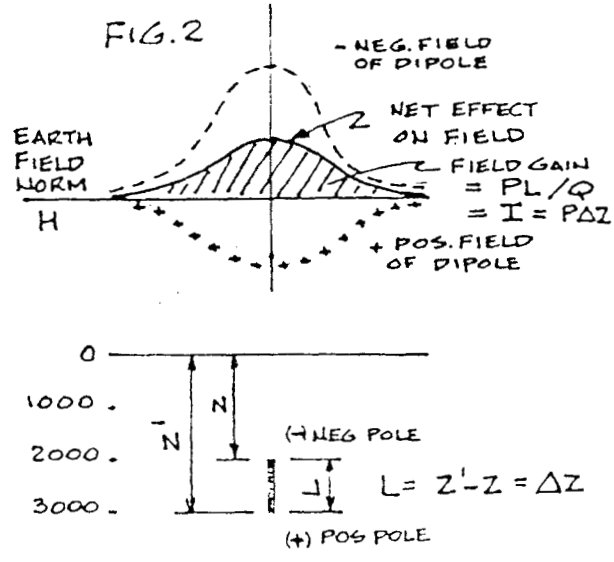
By the relation: $B = H + H' = H + 4\pi I$ and since
$I = KH$, then $B = H + 4\pi KH$ which reduces
by factor to $B = (1 + 4\pi K) H$

and the proportionally constant B/H is the measure of the permeability of the underlying rock column designated by the symbol $\mu = B/H$ and can be written $\mu = 1 + 4\pi K$ and this is the measure of the modification of the force of attraction or repulsion of two magnetic poles (dipole) in a magnetic medium of moderate or weak intensity such as the earth's crustal surface and the ambient earth magnetic field.

In the northern hemisphere, the north seeking positive (+) pole of a dipole will be deeper then its negative (-) pole. Since the pole closest to the surface is negative the dipole reinforces the earth's field and the field of the dipole will be defined positive.

The gain on the mean dipole field is positive when the distance (Z^1) to the positive pole is greater than the distance (Z). The field gain is negative when the distance (Z^1) is less than Z, i.e. the net gain per unit volume (IQ) is equal to $PL = P \Delta Z$.

FIG. 2



On the premise that magnetic anomalies must originate from within crystalline igneous rocks as the effect of demagnetization; i.e. the product of the permeability and the normal component of the total field intensity are continuous at the boundary. Thus the total field intensity in the vicinity of magnetized rocks is $H - H_o + \Delta H$ plus any disturbance due to other nearby magnetic bodies. The total field magnetometer measures H which is the magnetic induction $(B) = \mu H_o$ and $\mu = 1 + 4\pi K$ where K is the magnetic susceptibility and 4π is the demagnetization factor which will vary according to the shape of the dipole model.

The most significant magnetic effect on the total field magnetometer is the anomaly induced by the ambient earth field and the magnetic susceptibility of the underlying rock column; the earth field in a balanced magnetic survey is deemed a constant and ground noise due to susceptibility a variable of the geology.

If we assume that the magnetic material is vertically polarized the shape of the interface between uniformly but diferently magnetized media can be generalized by a downward continuation of the magnetic field. By estimating the mean dipole field and the net gain from the total field intensity recorded, and letting the difference (ΔZ) be the magnetic anomaly produced by changes in depth of the buried magnetic interface or equivalent stratum for magnetic fields, the magnetic anomaly that will be produced at Z = O is equivalent to the dipole net gain per unit volume (I x Q).

From Figure 2, let V = earth's vertical field component, I = intensity of magnetization (polarization) or magnetic poles induced on a cross-sectional area (A) of a thick homogenous magnet of length (L) and volume (Q) of the surface normal to the ambient earth field. Designating the total strength of all the poles of a given sign as (P) and since (I) is the magnetic moment per unit volume then:

$$I = \frac{PL}{Q} = \frac{PL}{LA} = \frac{P}{A} \quad \text{or } I \times Q = P \times L$$

Also $P = IA = KVA$ and $I \times Q = KVA \times L$

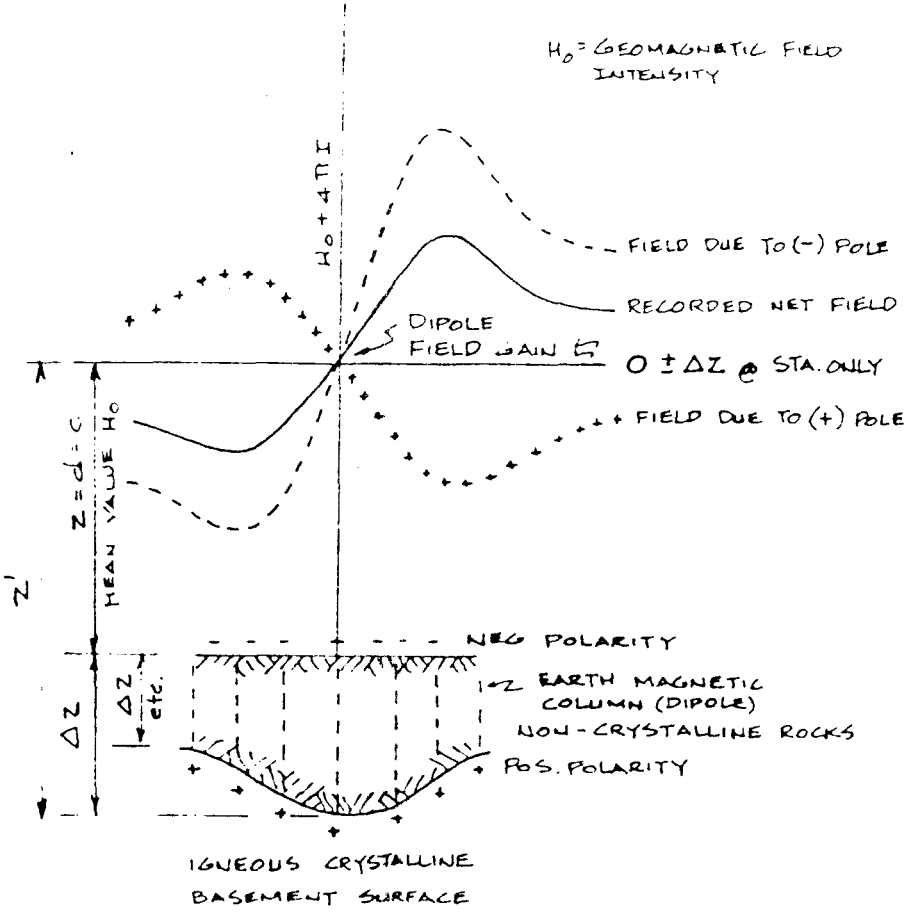
Since $Q = LA$ the magnetic moment (I) or

Polarization $= \frac{KVA \times L}{L \times A} = KV$ where

The proportionality constant K is the susceptibility of the magnetic material and for an external field normal to the surface (H_n)

$$K = I/H_n \text{ or}$$
$$I = KH_n = KV$$

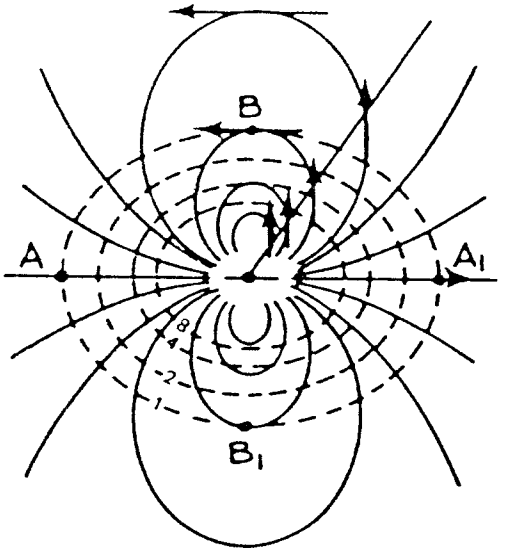
When the external field perpendicular $\updownarrow$ to or normal to the earth's surface is in the direction of the earth's magnetic field, any field gain in the underlying dipole is directly proportional to a difference $Z_1 - Z$.



FIELD GAIN EFFECT ON MAGNETIC INDUCTION

RELATION OF FIELD STRENGTH (LINES OF FLUX) TO TOTAL FIELD ISOMAGNETIC LINES OF EQUAL INTENSITY

FIG. 2



LINES OF FLUX (——)
AND
LINES OF EQUAL INTENSITY (— —)
FOR A DIPOLE

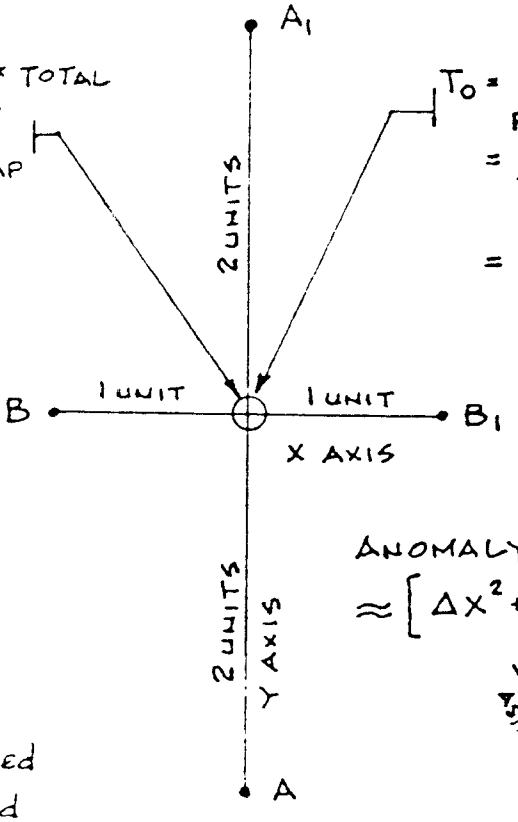
GRID EXTRACTION METHOD FOR DETERMINING ANOMALY AMPLITUDE

F_S = FIELD STRENGTH = TOTAL FIELD INTENSITY RECORDED ON MAP

T_o = MEAN DIPOLE FIELD STRENGTH

$$= \frac{A + A_1 + B + B_1}{4}$$

$= H_o \pm$ TO EARTH'S SURFACE



$$\frac{\Delta X}{dx} = \frac{B - B_1}{2}$$

$$\frac{\Delta Y}{dy} = \frac{A - A_1}{4}$$

$$\frac{\Delta Z}{dz} = \frac{F_S - T_o}{2}$$

where 2 is assumed Z axis of spheriod

$V = 4\pi xyz$

ANOMALY AMPLITUDE = $\vec{\nabla} T$

$$\approx \left[\Delta X^2 + \Delta Y^2 + \Delta Z^2\right]^{1/2}$$

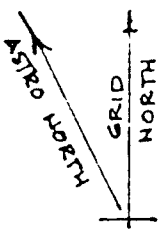


FIG. 3

MEAN DEPTH TO TOP OF VIOLA LIMESTONE FORMATION
APPROXIMATELY 3200 FEET BELOW CRUSTAL SURFACE
DEPTH TO TOP OF BASEMENT COMPLEX + or - 5000 FT.

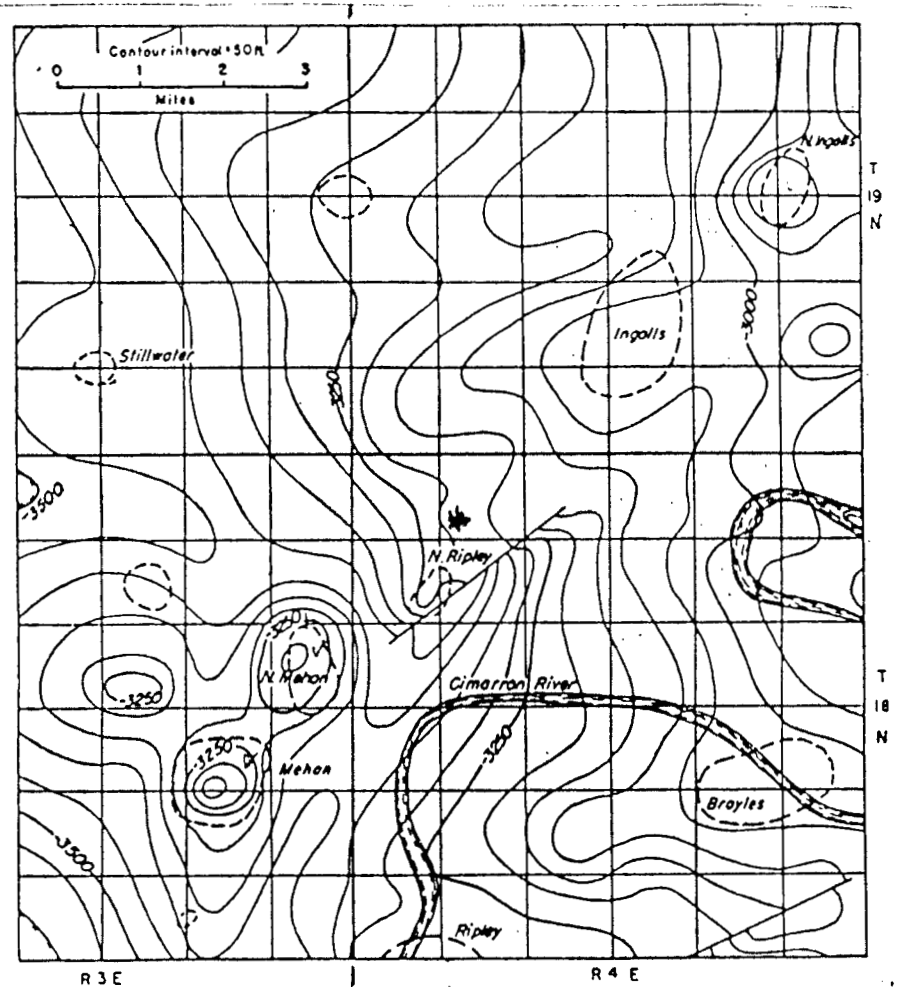


Fig. 16-10b. Structural contours on top of Viola limestone in same portion of Payne County, Okla. (Frost Geophysical Corp.)

1a. SUBSURFACE STRUCTURE MAP

FLIGHT ELEVATION 2000 FEET ABOVE SEA LEVEL

CONTOUR INTERVAL MAGNETIC ISOGRAD = 5 GAMMA

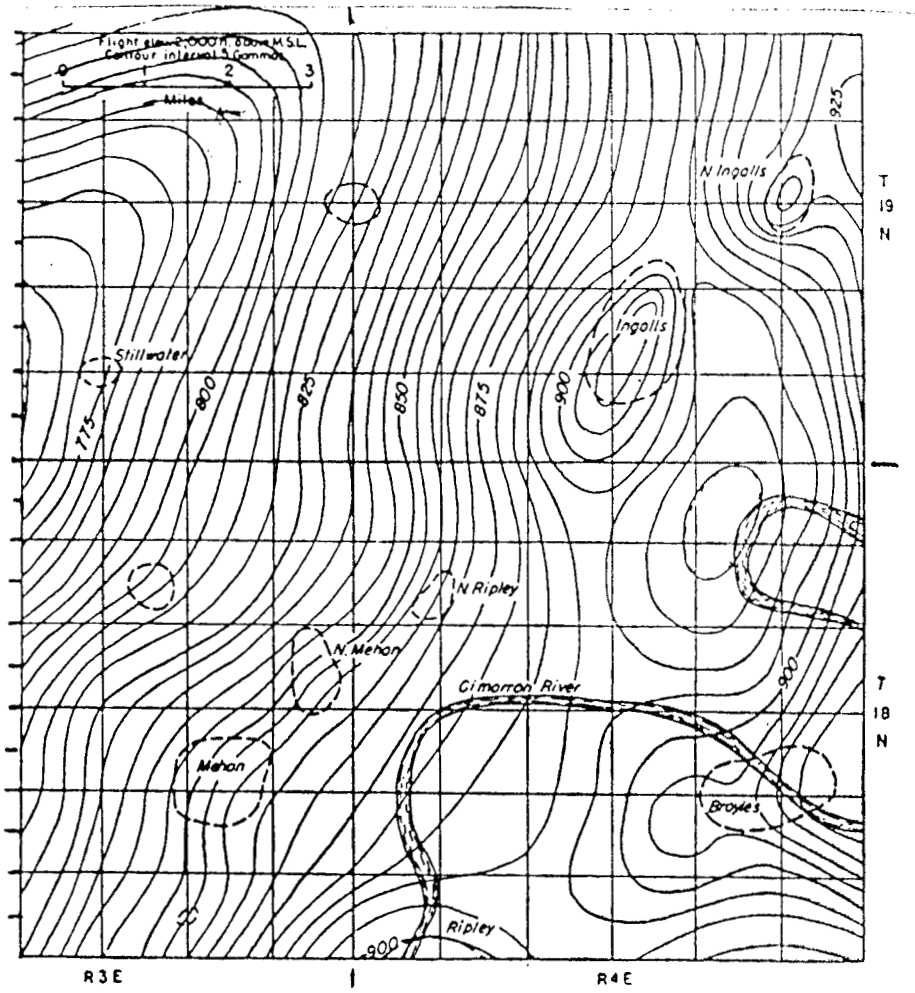


Fig. 16-10a. Aeromagnetic map of total intensity over portion of Payne County, Okla. (Frost Geophysical Corp.)

1b. AEROMAGNETIC MAP
TOTAL FIELD INTENSITY ISOGRAD

Existing Oil Fields (typical)

FIGURE 1 - EXAMPLE OF APPLIED USE OF AEROMAGNETIC SURVEY FOR OIL EXPLORATION

JE Explorations Ltd.

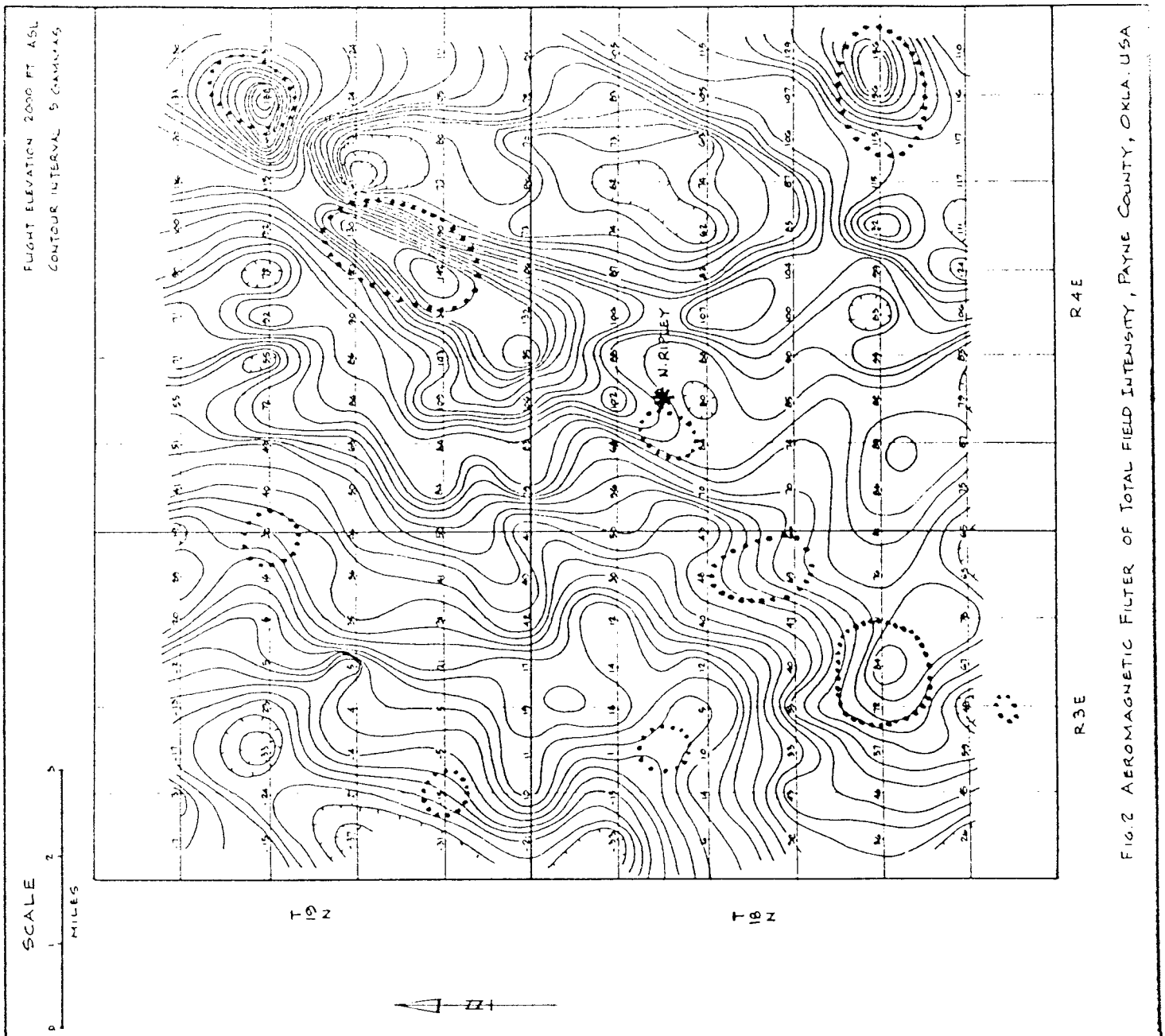


FIG. 2 AEROMAGNETIC FILTER OF TOTAL FIELD INTENSITY, PAYNE COUNTY, OKLA. USA

LEGEND

EXISTING OIL FIELD

NOTES

1. MAGNETIC PARAMETERS ARE CLOSELY RELATED TO STRUCTURE SEE FIG. 1a - SUBSURFACE CONTOUR -3250 FOR CORRELATION.

ENHANCED (COMPUTED) HIGH RESOLUTION AEROMAGNETIC TOTAL FIELD ISOGRAD.

SCALE	REVISIONS	BY	DATE
DATE MAR 85	ALL DATA EXTRACTED AND COPIED		
DR. M. / CHD.	FROM INFORMATION IN THE BOOK		
AP. YD.	GEOPHYSICAL PROSPECTING (1960)		

TITLE JE EXPLORATIONS INC. NO FIGURE 2

JC Explorations Ltd.

CERTIFICATION

1. I Douglas A. Chapman, certify that I have practised the art of photogeological interpretation for mineral exploration for more than 5 years.

2. I received a Technical Diploma in 1949 from the Vancouver Technical School.

3. From 1950 to 1955 I was engaged in mapping and surveys using both ground and airborne methods; first, with the Canadian Government and, secondly, with Photographic Surveys (Western) Ltd. in Vancouver.

4. From 1955 to 1959 I was engaged by Blanchet and Associates Ltd. in Calgary, Alberta, where I practised interpretation and compilation of fracture patterns for structural studies; studies related to oil exploration.

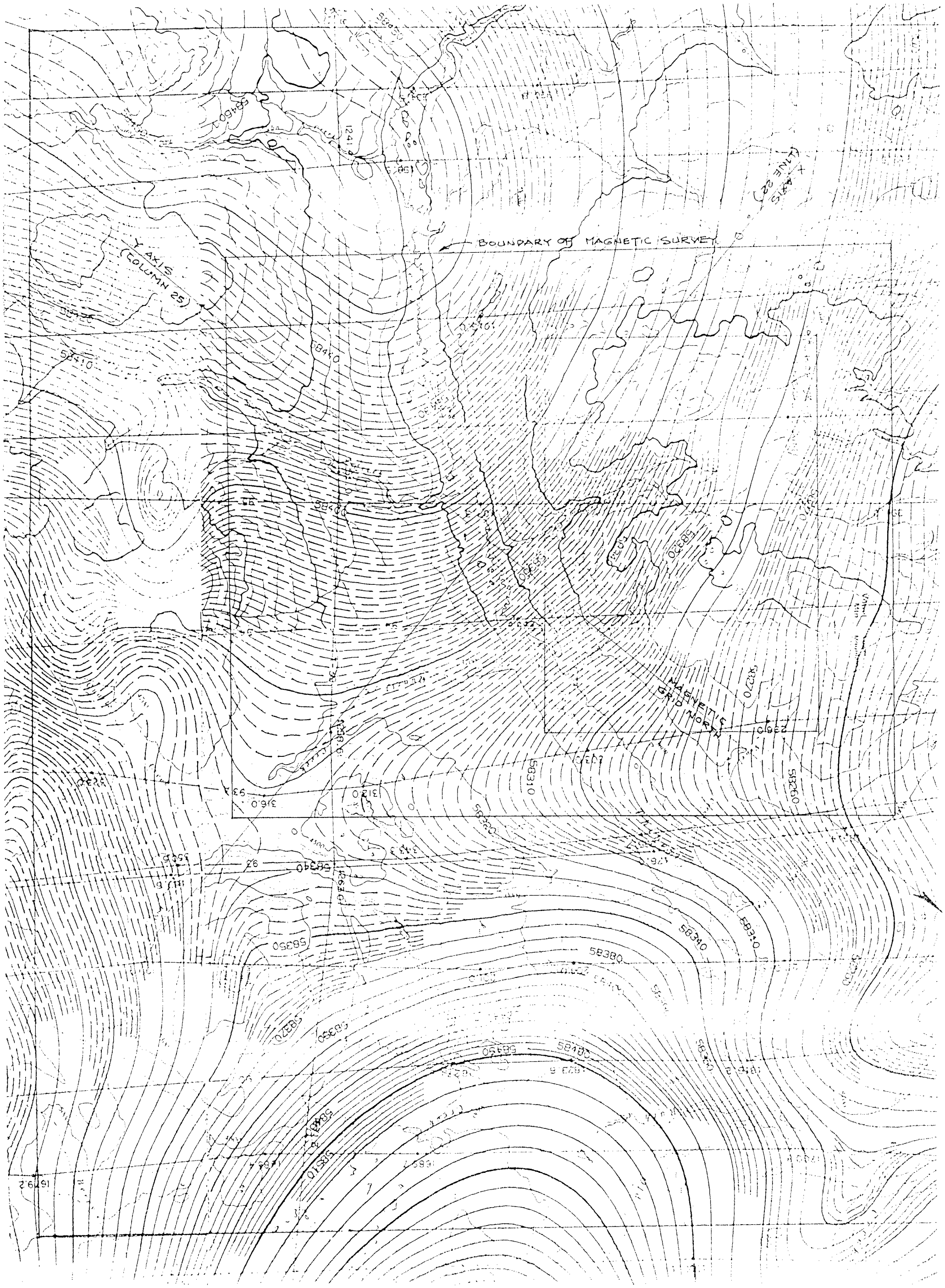
5. From 1961 to 1964 I was engaged by Chapman, Wood and Griswold Ltd. and assisted Mr. Blanchet in the formation of their air photo department as well as carrying out studies relating to tectonics and their association to mineral deposits.

6. In 1965 I formed D.A. Chapman & Associates Ltd. to provide air photo interpretation for mining exploration and, primarily, exploration reports to assist consulting engineers in planning field programmes.

7. In 1978 I formed J.C. Explorations to provide similar services as D.A. Chapman & Associates Ltd.

Signed this 24th day of Sept, A.D. 1989

D.A. Chapman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409000 E

415000 E

6522000 N

6522000 N

HOP 54

HOP 55

HOP 56

HOP 57

HOP 58

HOP 59

40–60°

CONTACT

CONTACT

Legend

— Interpreted contact with Dip.

∿∿∿∿ — Apparent fault.

LOW or HIGH — Magnetic Vector distortion anomaly.

⊕ — 1986-88 reconnaissance gold values ≥ 30ppb's.

0 250 500 750 1000

metres

To Accompany Rep't by JL EXPLOR LTD.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19473

BIG I DEVELOPMENTS LTD.

HOP 54–59 MINERAL CLAIM GROUP

THIBERT CREEK, PORTER LANDING – DEASE LAKE AREA
LAIRD MINING DIVISION

HI-LEVEL AEROMAGNETIC FILTER

GEOCHEMISTRY

VECTOR DISTORTION ANOMALY–INTERPRETED FOR FIELD RECCE.

SCALE:	DATE:	N.T.S.	DRAWN BY:	FIGURE:
1:10,000	Sept.'88	104–15E/16W	GEO–COMP	5

Geo–Comp Drawing File: CAL\GEO 12-29-88

409000 mE
6524000 mN
419000 mE
6524000 mN
To Porcupine Lake
HOP 54
HOP 55
HOP 56
HOP 57
HOP 58
HOP 59
1989 Grid
1994 Grid
Seven Eagle Zone
Owl Zone
Camp
To Porter Landing
6514000 mN
409000 mE
419000 mE
6514000 mN

0 500 1000 1500 2000
metres

Legend
- grid-(year) with baseline.
- Road
- 1989 reconnaissance traverse.
- Proposed road.

BIG I DEVELOPMENTS LTD.

HOP 54-59 MINERAL CLAIM GROUP
THIBERT CREEK, PORTER LANDING - DEASE LAKE AREA
LAIRD MINING DIVISION

General Location Map

SCALE:	DATE:	N.T.S.	DRAWN BY:	FIGURE:
1:20,000	DEC./89	104J15E/16W	J.W.M.	4

19473