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**GEOLOGICAL-GEOCHEMICAL-GEOPHYSICAL  
REPORT**

on the **GEOLOGICAL BRANCH**  
**GOLD POWER PROPERTY ASSESSMENT REPORT**  
**OMINECA MINING DIVISION**

<b>SUB-RECORDER RECEIVED</b>
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# 22,011

for

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20 August 1991

## SUMMARY

At the request of BGM Diversified Energy Inc, Reliance Geological Services carried out an exploration program consisting of geological mapping, soil sampling, and airborne magnetic-VLF surveys on the Gold Power property during July 1991.

The Gold Power property comprises five contiguous mineral claims totalling 100 units. The property is situated 60 kilometers southwest of Mackenzie, B.C. in the Omineca Mining District.

Recent attention in the area has focused on the Mt Milligan deposit, 14 kilometers to the northwest. Diamond drilling has outlined two large, bulk tonnage, copper-gold porphyry deposits hosted by potassium metasomatized and propylitic altered volcanic strata enclosing porphyritic monzonite stocks. Published reserves to date are 440 million tons grading 0.20% copper and 0.014 oz/t gold. Other advanced stage porphyry copper-gold prospects in the area include the Chuchi, Klaw, Col, Tas, Swan, Indata, Takla-Rainbow, Lorraine, Cat-Bet, Tam, and Mitzi properties.

Reconnaissance and geological mapping was conducted over 40% of the property. Outcrop was observed to be approximately 5% of the area explored.

Mapped outcrop includes a porphyritic greenstone, (metavolcanic skarn) belonging to the upper Triassic Takla Group, which is intruded by a gabbro of unknown age. Weak to strong propylitic and sericitic alteration is common within both units.

Mineralization consists of disseminated and fracture filled pyrite (up to 5%) and minor chalcopyrite. The highest copper result from a rock sample was 1131 ppm (0.1%).

A wide spaced soil test survey has outlined three significant copper anomalies. All are coincident with a large magnetic high.

The airborne magnetic survey has delineated two large east-west trending magnetic highs, which are flanked by a high contrast magnetic low. Magnetic highs often indicate the presence of intrusive rocks which are associated with porphyry deposits.

The geological setting and anomalous soil and magnetics indicate that the Gold Power property has potential to host a porphyry copper-gold deposit similar to the nearby Mt Milligan deposit.

A followup program consisting of linecutting, mapping, soil sampling, and induced polarization geophysics has been recommended in order to establish drill targets. Estimated cost is \$167,000.

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1.            INTRODUCTION

This report was prepared at the request of BGM Diversified Energy Inc to describe and evaluate the results of a geological-geochemical-geophysical program carried out by Reliance Geological Services Inc on the Gold Power Property in the Omineca Mining District in the Mt Milligan area of British Columbia.

The field work was undertaken for the purpose of an evaluation of the potential of the Gold Power Property to host economic porphyry copper-gold mineralization similar to the nearby Mt Milligan deposit.

Field work was carried out from July 2 to July 4, 1991 by Nigel Luckman, geological engineer, Roger Kidlark, geologist, and Brian Chore and Brian Doubt, geotechnicians, under the supervision of Peter Leriche, B.Sc., F.G.A.C.

This report is based on published and unpublished information and on the maps, reports and field notes of the crew named above.

2.0

LOCATION, ACCESS AND PHYSIOGRAPHY

The Gold Power Property is situated in the Omineca Mining Division of the Mt Milligan area of British Columbia, approximately 60 kilometers southwest of Mackenzie (Figures 1 and 2).

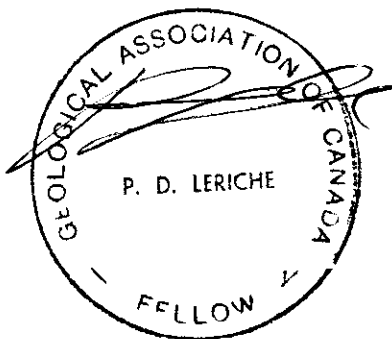
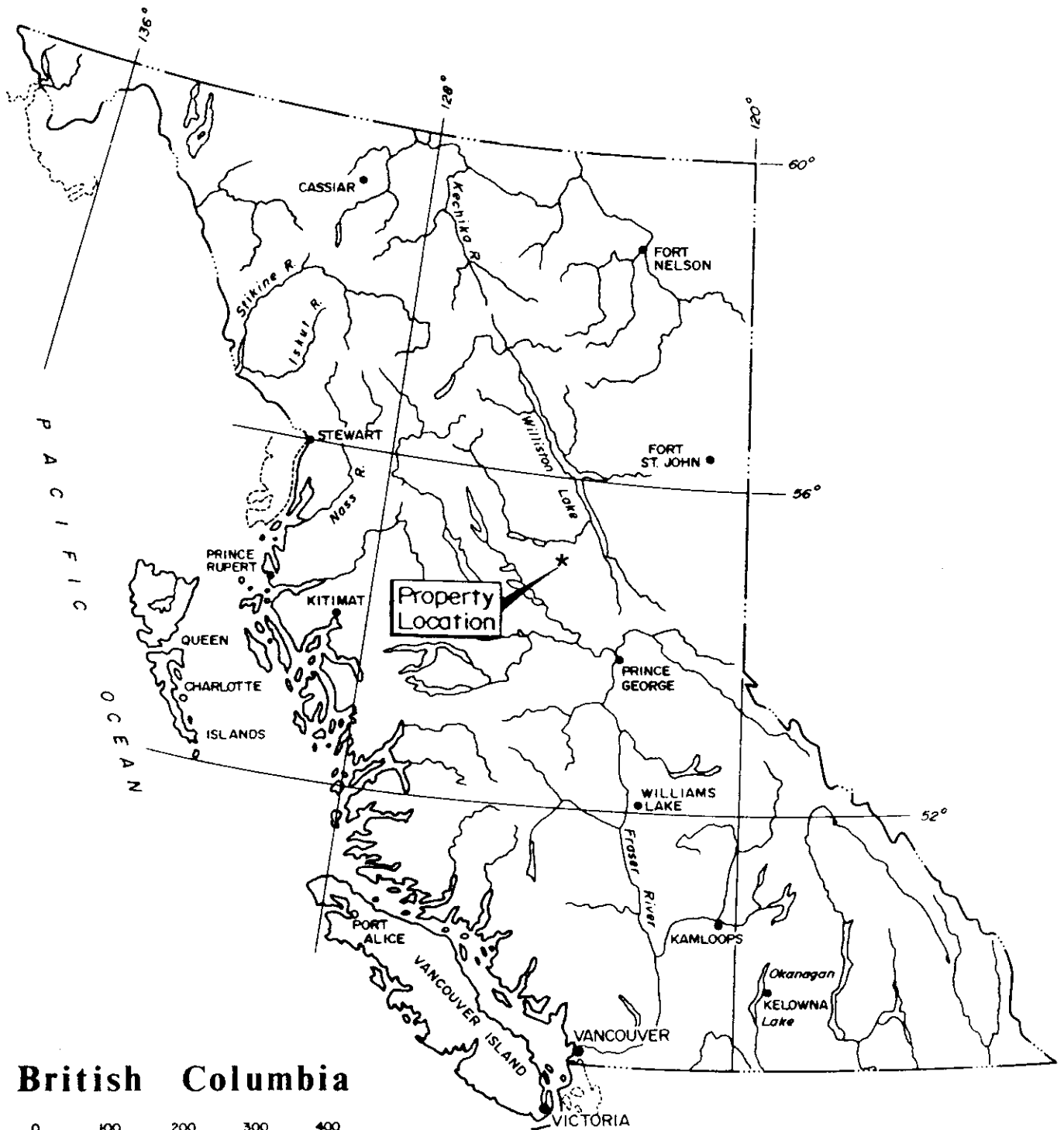
The claims are located on Map Sheet NTS 930/4, at latitude 55° 02' North, longitude 123° 55' West, and between UTM 405956 m and 405616 m North, and UTM 405616 m and 465616 m East.

Access to the property is from Mackenzie by helicopter, or via the Finlay Philip Forest Service Road to a logging cut north of the property. The northern portion of the property can be reached on foot from this logging cut.

The property is on gentle to moderate rolling terrain. The elevation ranges from 1000 m in the northern area of the property to 1250 m on the ridges to the south.

Vegetation consists of fir, pine, and spruce forests, with alder and willows growing in low swampy areas. Bogs and swamps occur in the lower areas of the property and around the lakes.

Recommended work season is late May to mid November, although geophysics could be performed year round.



BGM DIVERSIFIED ENERGY INC.		
GOLD POWER PROPERTY		
OMINECA M.D., B.C.		
<b>General Location Map</b>		
Scale noted above	N.T.S. 930/4W	Drawn by
Date July 1991	Geologist	Figure 1
<b>RELIANCE GEOLOGICAL SERVICES INC.</b>		

## 3.0

PROPERTY STATUS

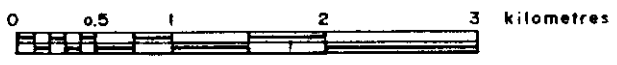
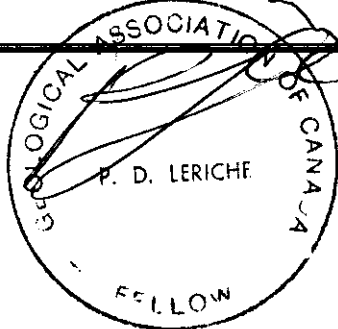
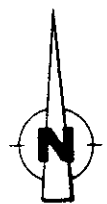
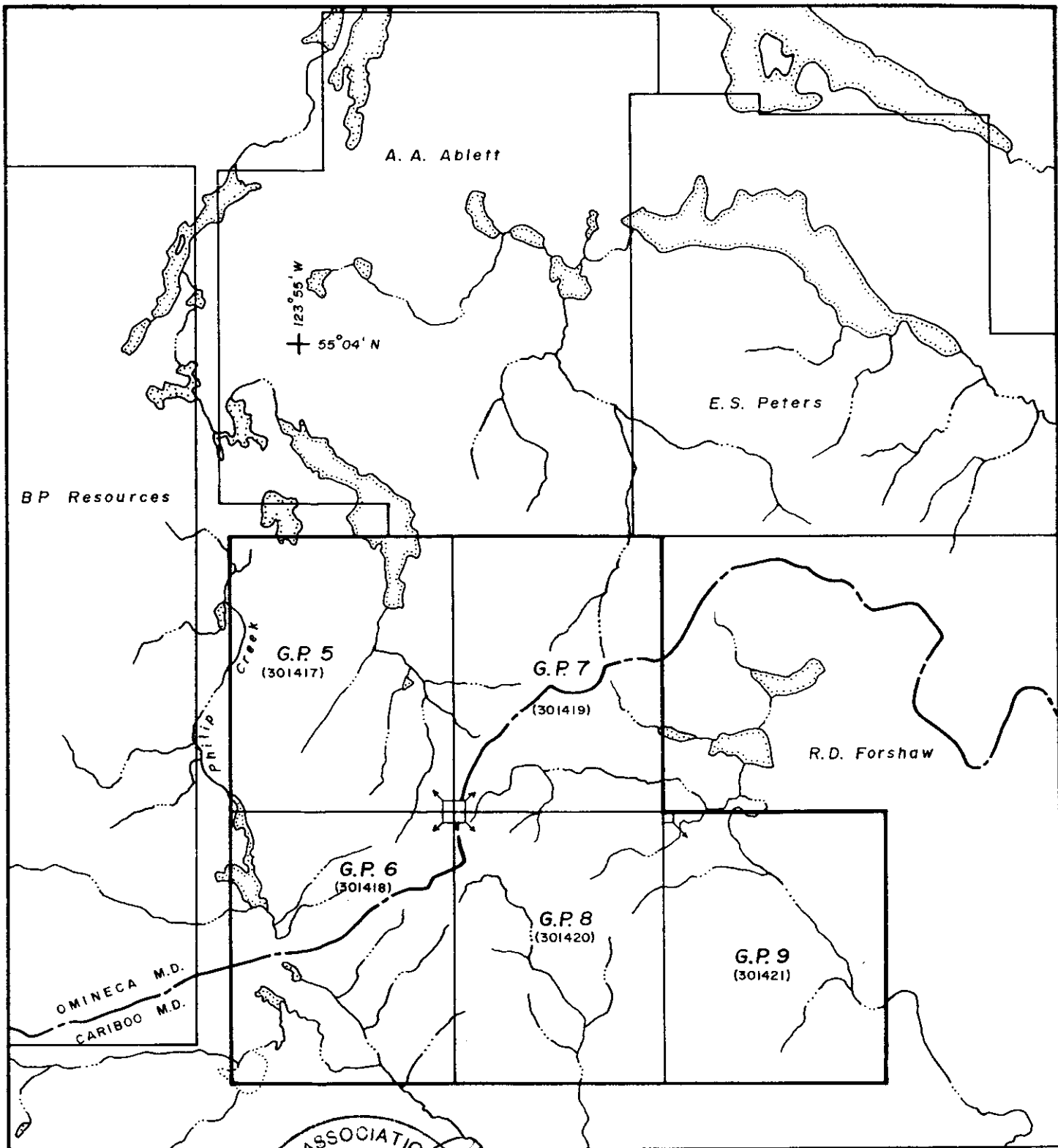
The property consists of 5 claims totalling 100 units (Figure 2) in the Omineca Mining Division. The claims are currently owned 100% by BGM Diversified Energy Inc.

Details of the claims are as follows:

<u>Claim</u>	<u>Record #</u>	<u>Units</u>	<u>Record Date</u>	<u>Expiry Date</u>
GP 5	301417	20	23 Jun 1991	23 Jun 1994
GP 6	301418	20	23 Jun 1991	23 Jun 1994
GP 7	301419	20	23 Jun 1991	23 Jun 1994
GP 8	301420	20	23 Jun 1991	23 Jun 1994
GP 9	301421	<u>20</u>	23 Jun 1991	23 Jun 1994
		100		

The total area covered by the claims is 2500 hectares, or 6178 acres, after correcting for overlap.

The writers are not aware of any particular environmental, political, or regulatory problems that would adversely affect mineral exploration and development on the Gold Power Property.



BGM DIVERSIFIED ENERGY INC.  
 GOLD POWER PROPERTY  
 OMINECA M.D., B.C.

# Claim Map

Scale 1 : 50,000	N.T.S. 93-0/4 W	Drawn by
Date July 1991	Geologist	Figure 2
RELiance GEOLOGICAL SERVICES INC.		

Recent attention in the area has focused on the Mt Milligan deposit (14 km to the northwest) first developed by Continental Gold Corp, and now taken over by Placer Dome Inc. Two large porphyry copper-gold deposits have been defined at Mt Milligan. A large-scale open pit mine is being developed, with proposed capital investment planned to exceed \$400 million.

Rebagliati (1990) summarizes the deposits as follows:

"The Mt. Milligan property lies within the regionally extensive Mesozoic Quesnel Belt. Many alkaline plutons intruding the largely alkaline volcanic strata of the Quesnel Belt host porphyry deposits. These deposits have recently been recognized as an important source of gold.

On the Mt. Milligan property, volcanic strata are intruded by several alkaline plutons. A 10 square kilometer, hydrothermally altered, metal-rich sulphide system, encompassing a cluster of small porphyritic monzonite plutons, hosts extensive disseminated and stockwork porphyry-type gold-copper mineralization.

Diamond drilling has outlined two large, bulk tonnage, gold-copper porphyry deposits (MBX and Southern Star) hosted by potassium metasomatized and propylitic altered alkaline volcanic strata enclosing porphyritic monzonite stocks."

Total reserves are calculated at 440 million tons grading 0.014 oz/ton gold plus 0.20% copper. Feasibility studies are considering a 60,000 ton/day facility, with budgeted recovery of 440,000 oz gold and 83 million lbs copper per year.

A belt approximately 120 km long and 60 km wide has been staked recently in the area known as the Omineca Porphyry Copper-Gold District. Exploration has been extensive, with even greater activity being planned for 1991.

In addition to Placer Dome's Mt Milligan project, advanced stage projects include: (distances from Gold Power property in brackets)

a) Chuchi Property (45 km north-west)

Digger Resources Inc/BP Resources:

Drilling in previous years intersected 328 ft and 100 ft grading 0.28% Cu and 0.009 oz/ton Au, 50 ft grading 0.34% Cu and 0.013 oz/ton Au, 623 ft grading 0.22% Cu and 120 ppb Au, and 576 ft grading 0.16% Cu and 120 ppb Au.

1991 drilling has concentrated on a major fault zone with results including 154 meters grading 0.22% Cu and .006 oz Au/t, and 54.6 meters grading 0.09% Cu and .06 oz Au/t gold. The current target is an area 1500 m x 1000 m which has been defined by IP, magnetic and soil surveys.

b) Klaw Property (52 km north-west)

Rio Algom/Westmin Resources:

An extensive diamond drill program was undertaken in 1990, and is continuing in 1991. No results have been announced to date.

c) Col Property (60 km north-west)

Kookaburra Gold Corp/Asarco:

Drilling in 1960 outlined 2 million tons grading 0.6% Cu. Limited re-sampling of old drill core has produced results up to 0.069 oz/ton Au. Geophysical (IP) and geochemical surveys in 1991 have increased the size of the Col target to 2800 m x 600 m. A 1500 meters drill program is planned for 1991.

d) Tas Property (24 km southwest)

Halleran Group:

Previous drilling intersected 11.2 ft. grading 1.64% Cu and 1.25 oz/ton Au.

- e) Swan Property (104 km to the northwest)  
Eastfield Resources Ltd/Candela Resources:  
Drilling in 1960 yielded results of 0.21% Cu over 620 ft. and 0.43% Cu over 150 ft. In 1991, a 1794 ft drill program has been completed, with no significant results.
- f) Indata Property (98 km to the north-west)  
Eastfield Resources Ltd:  
A 1988 drill hole intersected 20 ft. grading 0.92 oz/ton gold. No work has been announced for 1991.
- g) Takla-Rainbow Property (112 km to the northwest)  
Eastfield Resources Ltd/Cathedral Gold Corp:  
Drilling by Falconbridge in the 1970's outlined 320,000 tons grading 0.25 oz/ton Au. Four holes drilled in 1990 returned values averaging approximately 0.003 opt Au and 0.125% Cu over widths up to 550 ft. An IP program has been completed in 1991, and a drill program is planned.
- h) Lorraine Deposit (130 km to the northwest)  
Kenneco:  
Drilling in the 1970's outlined a deposit with 10 million tons grading 0.67% Cu and 0.006 oz/ton Au.
- i) Cat-Bet Property (140 km to the northwest)  
BP Resources/Lysander Gold Corp:  
1989 diamond drilling gave results up to 1.67% Cu, 0.02 oz/ton Au over 117 feet. The 1990 drill program (8500 ft) returned significant results including 0.12% Cu, 0.035 oz/ton Au over 321 feet, 0.53% Cu, 0.01 oz/ton Au over 243 ft, 0.48% Cu over 34 ft and .048 opt Au over 33 ft. Drilling in 1991 is testing a large sulphide system defined by 1990 IP surveys. Significant results include 137 ft grading 0.10% Cu and 72 ft grading 0.3% Cu. 1989 diamond drilling gave results up to 1.67% Cu, 0.02 oz/ton Au over 117 feet.



j) Tam Property (98 km to the northwest)

Varitech Resource Ltd/Major General Resources Ltd:

Drilling by UMEX Inc. in 1973-75 outlined a deposit of 7.7 million tons grading 0.55% Cu. Gold was not assayed.

In 1990, soil and rock geochemical surveys outlined two new areas of copper-gold and two new areas of copper mineralization. Results from select sampling include values up to 1.93 opt Au and 4.78% Cu.

k) Mitzi Property (36 km to the west)

Alban Explorations Ltd/Noranda Exploration/Placer Dome:

IP work is being done to further determine the extent of a 1 km x 3.2 km anomaly which is open in three directions and has been linked with a halo of disseminated mineralization surrounding a number of buried intrusive bodies. A 6000 ft drill program is planned for 1991.

5.           PROPERTY HISTORY

No previous work is known to have been done on the Gold Power property, apart from coverage by government aeromagnetic surveys. The G.S.C. Aeromagnetic Map 930/4 shows little variation in total magnetic field. Small highs are indicated in the northern part of the property.

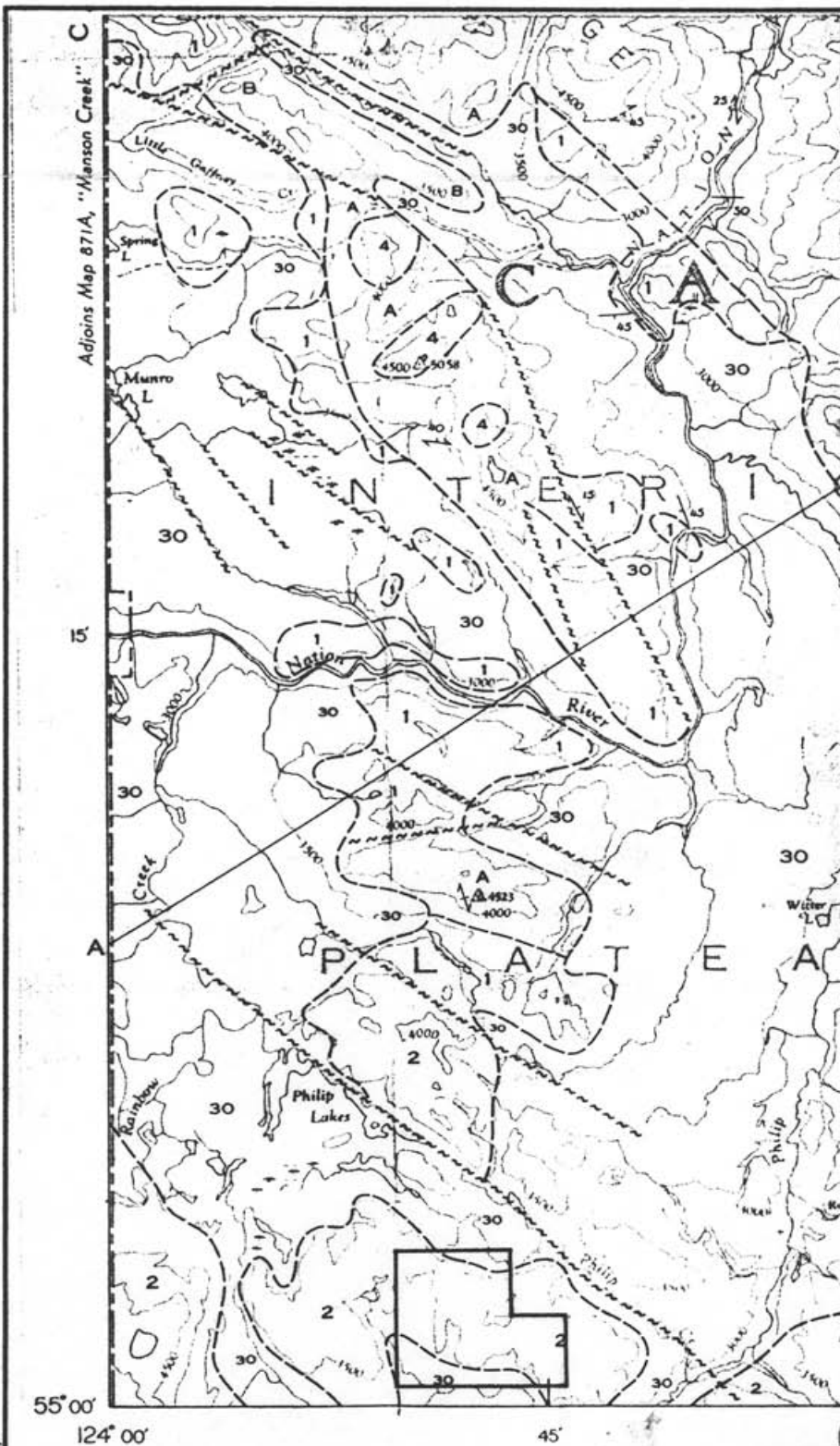
6.0           REGIONAL GEOLOGY

(After Rebagliati, 1990)

"The Mt Milligan property lies within the regionally extensive early Mesozoic Quesnel Belt. This belt extends northwesterly for 1200 km and includes equivalent rocks of the Upper Triassic-Lower Jurassic Takla, Nicola, and Stuhini Groups (Mortimer, 1986). To the west, deformed uplifted Permian Cache Creek Group rocks are separated from the Quesnel Belt by the Pinchi fault zone. To the east, the Manson fault zone separates this belt from the uplifted Proterozoic/early-Palaeozoic Wolverine Metamorphic Complex, and the Mississippian-Permian Slide Mountain and Cache Creek Groups (Garnet, 1978) (Figure 3).

In the Mt Milligan district, the Takla Group volcanics are dominated by subaqueous alkalic to subalkalic dark green tuffs and volcanic breccias of andesitic and basaltic composition interbedded with pyroxene porphyritic flow rocks of similar composition. Intercalated bedded tuffs and argillites are subordinate. Black argillites interfinger with volcanic rocks to the east and west of the central volcanic core.

Intruding the volcanic-sedimentary strata of the Quesnel Belt are alkaline syenite, monzonite, and diorite batholiths, stocks and dykes. Many of the stocks lie along linear trends which are interpreted to reflect the fault zones which controlled the location of volcanism and stock emplacement.



- LEGEND
- CENOZOIC**
- QUATERNARY PLEISTOCENE AND RECENT**
  - 30 Glacial till, gravel, sand, silt, clay
- PRECAMBRIAN AND PALAEOZOIC**
- CAMBRIAN AND EARLIER MISCHINKA GROUP (1-4)**
  - 6 Black slate, silty greywacke; minor quartzite, conglomerate
  - 5 Limestone, calcareous schist; minor slate, chlorite schist
  - 4 Chlorite and sericite schist, phyllite, schistose grit, and quartz-pebble conglomerate
- MESOZOIC**
- TRIASSIC AND JURASSIC TAKLA GROUP**
  - 2 Basic tuff, breccias, agglomerates, and flows
- PALAEOZOIC**
- CARBONIFEROUS MISSISSIPPIAN AND/OR PERMIAN SLIDE MOUNTAIN GROUP OR CACHE CREEK GROUP**
  - 1 Greenstone, argillite, limestone, slate, banded quartzite
- WOLVERINE COMPLEX (A, B)**
- A Quartz-mica schist, granitic gneiss, granite-pegmatite
  - B Amphibolite, gneodiorite

MAP 11-1961  
PINE PASS  
BRITISH COLUMBIA  
SHEET 93 0

Scale: One Inch to Four Miles =  $\frac{1}{253,440}$

55° 00'  
124° 00'      45'

- Geological boundary (approximate) .....
- Bedding (horizontal, inclined, vertical, overturned) .....
- Schistosity and gneissosity (inclined, vertical, dip unknown) .....
- Bedding, schistosity (estimated from aircraft) .....
- Thrust fault (assumed, teeth on upper plate) .....
- Tear-fault; lineament suggesting fault of unknown character (assumed) .....
- Anticline (defined, approximate) .....
- Syncline (defined, approximate) .....
- Anticline, syncline (overturned) .....

Geology by J. E. Muller, 1959, 1960. Part of Cretaceous geology compiled from published maps of the Geological Survey and B. C. Department of Mines and from unpublished information of D. F. Stott

Cartography by the Geological Survey of Canada, 1961

8A

**BGM DIVERSIFIED ENERGY INC.**  
**GOLD POWER PROPERTY**  
OMINECA M.D., B.C.

Regional Geology Map

Scale	N.T.S. 930/4W	Drawn by
Date July 1991	Geologist	Figure 3
<b>RELIANCE GEOLOGICAL SERVICES INC.</b>		

The alkalic stocks of the Quesnel Belt commonly host porphyry copper deposits which are increasingly being recognized as an important source of gold. It has also been recently recognized that related failed porphyry systems (those that did not form copper deposits) also have the potential to generate disseminated gold deposits (i.e. QR).

The volcanic strata on the Mt Milligan property are intruded by several alkalic plutons. Some of these plutons display many of the geological characteristics related to the formation of gold-rich porphyry copper deposits in the Quesnel Belt."

Many prospects are under active exploration within the above-described Quesnel Belt and the following auriferous porphyry copper deposits have been defined:

<u>Exploration Development Stage</u>	<u>Number of Deposits</u>	<u>Reserves/Mineral Copper - lbs (000,000's)</u>	<u>Inventory Gold - oz (000's)</u>
Mt. Polley (Imperial Metals)	2	875	2,000
Galore Creek (Hudson Bay et al)	8	3,000	1,750
Red Chris (Noranda)	2	550	450
QR (QPX)	4	-0-	200
Lorraine (Kenneco)	2	150	100
Mt Milligan (Placer Dome)	2	1,680	6,376
<u>In Production:</u>			
Copper Mountain (Cassiar)	5	1,600	910
Afton (Teck)	2	680	970

(Modified after Mustard 1989)

7.0        1991 WORK PROGRAM

7.1        Methods and Procedures

Soil sampling, geologic mapping, stream sediment and rock sampling, and airborne magnetic VLF geophysical surveys were carried out on the Gold Power property.

A survey grid was laid out. The baseline and cross-lines were surveyed using compass, hip chain and flagging. The north-south G.P. 5 & 7 claim line was used as a base line.

Cross-lines were established at 0N, 750N, 1000N and 1500N, using compass, hipchain and flagging. Stations on baselines and cross-lines were marked at 50 meter intervals with marked double flagging. Total line surveyed was 10.5 kilometers.

Geological mapping was performed over the property at a scale of 1:10,000 (Figure 4).

Twelve rock samples were collected and sent to International Plasma Laboratory Ltd of Vancouver (IPL) for gold fire assay and 30 element ICP analysis. See Appendix A for rock sample descriptions and Appendix B for analytical reports and techniques.

One stream sediment sample was collected and analysed for gold and 30 element ICP.

The grid was soil sampled at 50 meter station spacings. One hundred forty-seven samples were taken over 8 km of soil sample lines. All samples were taken with a grub hoe from the B horizon (approximate depth 45 cm), placed into marked Kraft paper bags and sent to IPL for analysis.

Airborne geophysical surveys (magnetic and VLF-EM) were conducted over the property by Aerodat Ltd. See Appendix C for survey specifications.

## 7.2 Property Geology (Figure 4)

The G.P. 5 & 7 claims have approximately 5% outcrop with the remainder being overburden, glacial drift and eskers.

Two rock types have been located;

a) **Porphyritic greenstone** consisting of:

(25 - 30%) pyroxene (likely augite) phenocrysts up to 6 mm in length, in a groundmass (70 - 75%) of plagioclase, biotite, pyroxene, and epidote. The groundmass is moderately (locally intensely) altered to epidote, chlorite, and sericite.

Sample GP-91-KR5 was examined in thin section by Vancouver Petrographics (Appendix D). The rock was identified as a greenstone metavolcanic/skarn consisting mainly of actinolite (62%), epidote (22%), biotite (4%), and plagioclase (10%). Porphyroblasts of actinolite are likely an alteration product of pyroxene (augite). The protolith was most likely a mafic flow or tuff.

b) **Gabbro**

medium green, medium grained, equigranular. Consists of plagioclase and pyroxene. Pale green plagioclase indicates weak to moderate alteration to sericite.

Mineralization consists mainly of disseminated pyrite up to 5%, but averaging 1%. Traces of chalcopyrite were noted in samples GP-91-KR1, KR3, NR3, and NR5.

### 7.3 Rock Geochemistry

Three samples returned significant values in copper:

GP-91-NR3: 1131 ppm Cu. Select sample from porphyritic greenstone. Disseminated fine grained pyrite and pyrite along a narrow stringer. Trace chalcopyrite.

GP-91-KR3: 525 ppm Cu. Chip sample across 1 meter from medium grained gabbro. Intense sericite-chlorite alteration. Disseminated and stringer pyrite, 2%. Trace chalcopyrite.

GP-91-KR5: 621 ppm Cu. Float boulder of porphyritic greenstone. Averaging 5% disseminated pyrite. Yielded highest gold result (25 ppb).

### 7.4 Soil Geochemistry (Figure 4)

Samples were collected on four widely spaced grid lines as part of an orientation survey to test the effectiveness of soil geochemistry on the G.P. 5 & 7 claims.

Several spot gold anomalies (above 20 ppb) were identified. The highest result was 50 ppb at station 7+50N, 10+00W.

80 ppm was chosen as the anomalous threshold value for copper. Fifty-one samples were anomalous.

Three anomalous clusters were identified:

- a) Line 10+00N, 2+00E to 6+50E (450 meters). Anomalous values range from 81 to 856 ppm.
- b) Line 10+00N, 13+50E to 20+00E (650 meters). Anomalous values range from 80 to 614 ppm, with another five samples defined as high background (between 60 and 80 ppm).
- c) Line 15+00N, 11+00 to 20+00E (900 meters). Values range from 80 to 216 ppm.

There is a possibility that the anomalies b) and c) are part of the same anomaly. Although the line spacing from b) to c) is 500 meters, the consistency of the anomalous clusters indicates a possible correlation. At present, the anomaly measures at least 600 meters x 800 meters and is open to the north, south, and east.

## 7.5 Geophysics

### 7.5.1 Magnetism (Figures 5 & 6)

Contoured maps of total magnetic field (Figure 5) and vertical magnetic gradient (Figure 6) were produced. Magnetic readings range from 57,950nT to 58,450nT for a total magnetic relief of 500nT.

Two distinct magnetic high areas are present;

- a) A sinuous lobate anomaly trending east-west through the central part of the G.P. 5 & 7 claims, measuring approximately 3000 meters x 400 meters. The magnetic gradient map has defined at least 7 lobes within the trend.



b) Five contiguous lobes trending east-west through the north central portion of the G.P.8 claim, measuring approximately 2500 meters x 500 meters.

An east-west trending magnetic low separates anomalies a) and b).

Moderate to high responses are common in the southern area of the property, and could represent deeply buried intrusive rocks. The transition from low to high magnetics is gradational and the anomalies are not well-defined on the magnetic gradient map.

Several northwest-southeast trending lineaments crossing the magnetic anomalies are evident (Figure 5) and could represent fault structures.

#### 7.5.2 VLF-EM (Figure 7)

The variances on the VLF-EM total field map correlate to the topography of the property, with lakes and streams showing low values, and topographic highs showing greater values.

The nearby Mt Milligan deposit is hosted by Takla volcanic rocks which are intruded by several small alkaline plutons. Magnetic surveys have been useful in delineating the alkaline plutons and areas of high magnetite alteration within the deposit. Soil geochemistry is spotty due to the thick glacial drift. Induced polarization surveys were the most effective tool in delineating the actual MBX and Southern Star deposits.

Initial work on the Gold Power property has been limited but has identified several similarities between the Gold Power claims and the Mt Milligan deposit area, including:

- 1) Plutonic rocks (gabbro on G.P.7) are intruding Takla volcanic rocks,
- 2) the volcanic rocks are propylitically and skarn altered,
- 3) two large lobate magnetic highs indicate the presence of buried intrusive rocks. The MBX deposit is associated with smaller magnetic features (lobes).

The three clusters of anomalous copper results in soils indicate that the soil is residual and that bedrock is close to surface. These soil highs are coincident with magnetic anomaly A.

Further soil and induced polarization surveys over the high magnetic areas should help to define drill targets by identifying sulphide systems.

9.0

CONCLUSIONS

Based on the following points:

- a) the property is located directly on the identified northwest trending Omineca porphyry copper-gold belt,
- b) initial work shows the geological setting is very similar to the nearby Mt Milligan deposit,
- c) airborne magnetic surveys and the test soil survey have outlined a large target area,

the Gold Power property has good potential to host a porphyry copper-gold deposit of economic significance.

10.0      RECOMMENDATIONS

Phase 2 - Followup Program:

- 1) Lay out and cut approximately 48 line kilometers of grid over the previously identified magnetic anomalies.
- 2) Collect approximately 900 soil samples from the grid at 50 meter spacings.
- 3) Geologically map along grid lines, and over unexplored parts of the property.
- 4) Carry out an induced polarization and resistivity survey (45 line km) over the grid.

Contingent upon favorable results, Phase 3 would consist of diamond drilling to test identified targets at depth.

11.0 BUDGET - GOLD POWER Project

Project preparation		\$	400
Mobilization & demobilization		\$	7,840
Field Crew:			
Project Geologist	\$ 325/day x 16 days	\$	5,200
Crew Chief	\$ 225/day x 30 days	\$	6,750
Geotechnicians (3)	\$ 210/day x 90 days	\$	<u>18,900</u>
		\$	26,170
Field Costs:			
Helicopter	6 hrs @ \$735	\$	4,410*
* will be charged at actual cost			
Communications	\$ 45/day x 30 days	\$	1,350
Expediting		\$	600
Food & accommodation	\$ 70/day x 136 days	\$	9,520
Freight		\$	250
Supplies	\$ 70/day x 30 days	\$	2,100
Vehicle (standby)	\$ 20/day x 30 days	\$	<u>600</u>
		\$	18,830
Assays & Analysis:			
900 soil samples @ \$14/sample		\$	12,600
40 rock samples @ \$17/sample		\$	680
Thin section analysis		\$	<u>800</u>
		\$	14,080
Geophysics:			
IP Survey (all-inclusive)	\$1500/line km x 45 km	\$	67,500
Report:			
Drafting and map preparation		\$	1,800
Report writing and editing		\$	3,000
Word processing, copying, binding		\$	<u>800</u>
		\$	5,600
Administration, incl Overhead and Profit		\$	<u>15,600</u>
Sub-total		\$	156,020
plus 7% G.S.T.		\$	<u>10,921</u>
Total		\$	<u>166,941</u>

## REFERENCES

- Fox, P.E.; Barr, D.A.; Northcotte, K.E.; and Preto, V.A., 1976:  
The Alkaline Suite Porphyry Deposits - A Summary, Porphyry  
Copper Deposits of the Canadian Cordillera: CIM, Special  
Volume 15, pp 359-367.
- Galloway, J.D., 1978:  
B.C.M.M. Annual Report 1931, pp 82-88.
- Garnet, J., 1978:  
Geology and Mineral Occurrences of the South Hogem Batholith.  
Bulletin 70, B.C.M.M.P.E.
- Lang, A.H., 1944:  
Geology of the Manson Creek mapsheet; GSC Map 876A.
- Leriche, P.D., 1990:  
Geological and Geochemical Report on the Takla 3,4 Property.  
Multinational Resources Inc. Internal Report.
- Mortimer, N., 1986:  
Late Triassic, Arc Related, Potassic Igneous Rocks in the  
North American Cordillera. Geology, Volume 14, pp 1035-  
1038.
- Mustard, D., 1989:  
Alkali Porphyry Au/Cu Deposits in British Columbia with  
Special Reference to the Cat Mountain Property. Memorandum,  
Lysander Gold Corp.
- Northern Miner, June 18, June 25, 1990.
- Rebagliati, C.M., 1990:  
Continental Gold Corp Summary Report, Mt Milligan Project.  
Internal Report.
- Rice, H.M.A., 1948:  
Smithers - Fort St James Geology; GSC Map 971A.
- The Province newspaper, November 13, 1990:  
Digger Resources Completes Drilling
- Vancouver Stockwatch:  
1990: Jun 6, 11, 19; July 4, 16, 20, 31; Aug 24; Oct 5,  
10, 16, 17, 23; Nov 1.  
1991: Jun 12; Jul 31; Aug 6, 7, 16.

**CERTIFICATE**

I, **NIGEL B. LUCKMAN**, of 11500 Granville Avenue, Richmond, B.C., do hereby state that:

1. I am a graduate of the University of British Columbia, Vancouver, British Columbia, with a Bachelor of Applied Science Degree in Geological Engineering, 1988.
2. I have actively pursued my career as a geological engineer for three years in British Columbia, the Yukon and California.
3. The information, opinions, and recommendations in this report are based on published and unpublished literature, and my research of and field experience in the general area of the claims. I visited the subject property from July 2 to July 4, 1991.
4. I have no interest, direct or indirect, in the subject claims or the securities of any company which has an interest in the subject claims.
5. I consent to the use of this report in a Prospectus or Statement of Material Facts for the purpose of private or public financing.

RELIANCE GEOLOGICAL SERVICES INC.

**Nigel B. Luckman, B.A.Sc.**

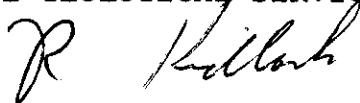
Dated at North Vancouver, B.C., this 10th day of August 1991.

CERTIFICATE

I, **ROGER G. KIDLARK**, of #303 - 9110 Halston Court, Burnaby, B.C. do hereby certify that:

1. I am a graduate of the University of Toronto with a Bachelor of Science Degree in Geology, 1974.
2. I am a Fellow in good standing with the Geological Association of Canada.
3. I have practised my profession as a geologist for sixteen years in the Yukon and Northwest Territories, British Columbia, Ontario, Nova Scotia, Montana, and Arizona.
4. The information, opinions, and recommendations in this report are based on fieldwork carried out in my presence or under my direction, and information derived from published and unpublished literature. I was present on the subject property from July 2 - July 4, 1991.
5. I am presently employed by Reliance Geological Services Inc and have no interest, direct or indirect, in the subject claims or the securities of BGM Diversified Energy Inc.
6. I consent to the use of this report in a Prospectus or Statement of Material Facts for the purpose of private or public financing.

RELIANCE GEOLOGICAL SERVICES INC.



**Roger G. Kidlark**, B.Sc., F.G.A.C.

Dated the 10th day of August 1991, at North Vancouver, B.C.



CERTIFICATE

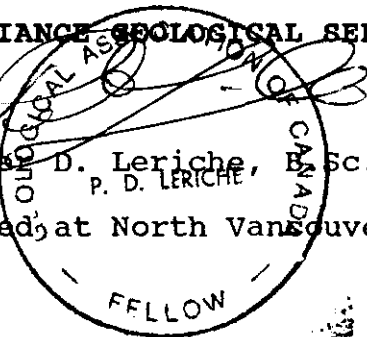
I, **PETER D. LERICHE**, of 3125 West 12th Avenue, Vancouver, B.C., V6K 2R6, do hereby state that:

1. I am a graduate of McMaster University, Hamilton, Ontario, with a Bachelor of Science Degree in Geology, 1980.
2. I am a Fellow in good standing with the Geological Association of Canada.
3. I have actively pursued my career as a geologist for eleven years in British Columbia, Ontario, the Yukon and Northwest Territories, Arizona, Nevada, Oregon and California.
4. The information, opinions, and recommendations in this report are based on fieldwork carried out under my direction, and on published and unpublished literature. I have not visited the subject property.
5. I have no interest, direct or indirect, in the subject claims or the securities of BGM Diversified Energy Inc.
6. I consent to the use of this report in a Prospectus or Statement of Material Facts for the purpose of private or public financing.

**RELIANCE GEOLOGICAL SERVICES INC.**

Peter D. Leriche, B.Sc., F.G.A.C.

Dated, at North Vancouver, B.C., this 20th day of August 1991.



# RELIANCE GEOLOGICAL SERVICES INC.

241 EAST 1ST STREET  
NORTH VANCOUVER, B.C.  
V7L 1B4

TEL: (604) 984-3663  
FAX: (604) 988-4653

## ITEMIZED COST STATEMENT GOLD POWER PROJECT

No. 718

Project preparation		\$	270	
Mobilization and demobilization (includes transportation and wages)		\$	2,120	
<u>Field Crew:</u>				
Project Geologist	\$ 325/day x 3 days	\$	975	
R. Kidlark: July 2,3,4, 1991				
Field Geologist	\$ 275/day x 3 days	\$	825	
N. Luckman: July 2,3,4, 1991				
Geotechnicians (2)	\$ 210/day x 6 days	\$	<u>1,260</u>	\$ 3,060
B. Chore, B. Doubt: July 2,3,4, 1991				
<u>Field Costs:</u>				
Communications	\$ 50/day x 3 days	\$	150	
Food & accommodation	\$ 70/day x 12 days	\$	840	
Supplies		\$	150	
Vehicles	\$ 60/day x 3 days	\$	<u>180</u>	\$ 1,320
<u>Assays &amp; Analysis</u>				
1 silt and 147 soil samples @ \$14/sample		\$	2,072	
12 rock samples @ \$17/sample		\$	<u>204</u>	\$ 2,276
<u>Sub-Contractors:</u>				
Airborne Magnetic/VLF-EM		\$	20,000	
<u>Report:</u>				
incl Drafting, Map preparation, Writing, Editnig, Word processing, Copying, Binding		\$	2,100	
Administration, incl overhead and profit		\$	<u>3,114</u>	
Sub-total		\$	34,260	
plus 7% G.S.T.		\$	<u>2,398</u>	
TOTAL		\$	36,658	

APPENDIX A

ROCK SAMPLE DESCRIPTIONS

## APPENDIX A

ROCK SAMPLE DESCRIPTIONS

## GOLD POWER PROPERTY

SAMPLE NO.	DESCRIPTION	WIDTH
GP91 KR01	Float boulder of light green colored porphyritic greenstone. Pyroxene phenocrysts up to 1.6 mm in length. Avg 1% fine grained disseminated pyrite. Trace of chalcopyrite.	
GP91 KR02	Chip sample from a porphyritic greenstone. Pyroxene phenocrysts up to 3.2 mm in length. Trce of fine grained disseminated pyrite. Intense sericite alteration of plagioclase.	6.0 m
GP91 KR03	Chip sample from a medium grained gabbro. Intense sericite-chlorite alteration. Avg 2% fine grained disseminated pyrite with a trace of fine grained chalcopyrite and malachite. Pyrite stringers noted.	1.0 m
GP91 KR04	Chip sample from a milky white to slightly rusty colored quartz vein. Quartz vein crosscuts a gabbro rock unit.	1.6 cm
GP91 KR05	Float boulder of porphyritic greenstone. Pyroxene phenocrysts up to 3.0 mm in length. Avg 5% fine grained disseminated pyrite.	

SAMPLE NO.	DESCRIPTION	WIDTH
GP91 NR1	Select sample from an angular float greenstone boulder 1 meter in width. Contains pyroxene phenocrysts up to 3 mm in length. Fine grained disseminated pyrite (1%) is present.	
GP91 NR2	Select sample from a outcrop of porphyritic greenstone. Pyroxene phenocrysts up to 3 mm in a very fine grained matrix. Fine grained disseminated pyrite (1%) is present.	
GP91 NR3	Select sample from an outcrop of greenstone containing pyroxene phenocrysts up to 3 mm in length. Disseminated fine grained pyrite and a 1 mm wide 3 cm long pyrite veinlet are visible in the sample, which averages 5% pyrite. Trace chalcopyrite.	
GP91 NR5	Select sample from an angular float greenstone boulder (2 meters wide) containing pyroxene phenocrysts up to 5 mm in diameter. Disseminated pyrite (5%) and minor chalcopyrite (<1%) are present.	
GP91 NR6	Select sample from a fine to medium grained gabbro float boulder (1.5 m wide). Pale green plagioclase indicates some alteration. Some disseminated pyrite is present (<1%)	
GP91 NR8	Select sample from a very fine grained greenstone from a 2 meter wide float boulder. Thin (1 mm wide) quartz stringers run through the sample. Very fine grained pyrite is present (<1%).	
GP91 NR9	Select sample from a fine grained gabbro float boulder (2 meters wide) Disseminated very fine grained pyrite is present (<1%). Pale green plagioclase indicates sericite alteration.	

APPENDIX B

ANALYTICAL REPORTS and TECHNIQUES

R E P O R T S U M M A R Y

Report:[ 9100242 R ]

A N A L Y T I C A L R E P O R T  
=====

Origin

Inception Date:[ Jul 08, 1991 ]

-----  
Client:[ 200 | Reliance Geological Services Ltd. ]  
Contact:[ | Nigel Luckman ]  
Project:[ 0 | 718 ]  
Amount/Type:[ 161 | Soil/Rock -Rock Reject Stored 3 Mon ]  
[ | -Soil Reject Discarded ]

Analytical Requisition

-----  
Geochemical:[ Au(Ash/DiBK/AAS 10g)/ICP(AqR)30 ]  
Assay:[ Au(FA/AAS 20g) ] ICP:[ 30 ]  
Comments:[ None ]

Delivery Information

Reporting Date:[ Jul 18, 1991 ]

-----  
Principal Destination (Hardcopy,Fascimile,Invoice)


Company:[ Reliance Geological Services Ltd. ]  
Address:[ 241 East 1st Street ]  
City/Province:[ North Vancouver, BC ]  
Country/Postal:[ V7L 1B4 ]  
Attention:[ Nigel Luckman ]  
Fascimile:[ (604)988-4653 ]

Secondary Destination (Hardcopy)

Company:[ ]  
Address:[ ]  
City/Province:[ ]  
Country/Postal:[ ]  
Attention:[ ]  
Fascimile:[ ]

5 data pages in this report.

Approved by: \_\_\_\_\_



B.C. Certified Assayers

iPL CODE: 910718-15:48:15

Sample Name	Type	Au ppb	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	W ppm
GP 91 0+00N 0+00W	Soil	--	<5	0.3	81	<2	183	21	<5	<3	4	<10	<2	1.2	33	46	<5
GP 91 0+00N 0+50W	Soil	--	<5	0.2	34	2	121	30	<5	<3	3	<10	<2	0.7	18	27	<5
GP 91 0+00N 1+00W	Soil	--	<5	<0.1	46	<2	94	24	5	<3	2	<10	<2	0.7	23	60	<5
GP 91 0+00N 1+50W	Soil	--	<5	<0.1	47	2	123	15	<5	<3	2	<10	<2	0.5	21	22	<5
GP 91 0+00N 2+00W	Soil	--	<5	0.2	52	3	90	<5	<5	<3	5	<10	<2	0.9	16	26	<5
GP 91 0+00N 2+50W	Soil	--	<5	<0.1	44	<2	67	23	<5	<3	3	<10	<2	0.6	13	26	<5
GP 91 0+00N 3+00W	Soil	--	20	<0.1	57	<2	63	20	<5	<3	2	<10	<2	0.4	18	34	<5
GP 91 0+00N 3+50W	Soil	--	5	<0.1	51	<2	79	16	6	<3	2	<10	<2	0.5	24	42	<5
GP 91 0+00N 4+00W	Soil	--	<5	<0.1	64	5	74	10	<5	<3	2	<10	<2	0.7	13	27	<5
GP 91 0+00N 4+50W	Soil	--	5	<0.1	52	<2	70	20	<5	<3	2	<10	<2	0.3	15	32	<5
GP 91 0+00N 5+00W	Soil	--	<5	<0.1	61	<2	101	16	<5	<3	2	<10	<2	0.6	15	33	<5
GP 91 0+00N 5+50W	Soil	--	5	<0.1	62	<2	84	17	6	<3	2	<10	<2	0.6	16	35	<5
GP 91 0+00N 6+00W	Soil	--	5	<0.1	59	2	88	14	<5	<3	2	<10	<2	0.7	16	34	<5
GP 91 0+00N 6+50W	Soil	--	5	<0.1	55	2	73	14	<5	<3	2	<10	<2	0.7	16	32	<5
GP 91 0+00N 7+00W	Soil	--	5	<0.1	44	<2	80	18	<5	<3	2	<10	<2	0.7	14	29	<5
GP 91 0+00N 7+50W	Soil	--	<5	<0.1	99	<2	105	25	<5	<3	2	<10	<2	0.5	22	63	<5
GP 91 0+00N 8+00W	Soil	--	<5	0.4	52	<2	79	23	<5	<3	3	<10	<2	0.5	14	34	<5
GP 91 0+00N 8+50W	Soil	--	5	<0.1	81	<2	98	28	5	<3	3	<10	<2	0.5	15	36	<5
GP 91 0+00N 9+00W	Soil	--	<5	<0.1	56	<2	137	27	<5	<3	2	<10	<2	0.4	22	47	<5
GP 91 0+00N 9+50W	Soil	--	<5	<0.1	60	<2	103	25	5	<3	3	<10	<2	0.3	20	37	<5
GP 91 0+00N 10+00W	Soil	--	5	0.3	79	3	129	18	<5	<3	3	<10	<2	1.4	18	37	<5
GP 91 0+00N 10+50W	Soil	--	5	<0.1	66	2	110	17	<5	<3	2	<10	<2	0.9	22	40	<5
GP 91 0+00N 11+00W	Soil	--	<5	<0.1	70	<2	128	25	<5	<3	4	<10	<2	0.6	24	39	<5
GP 91 0+00N 11+50W	Soil	--	<5	0.9	137	6	154	15	<5	<3	3	<10	<2	1.9	24	53	<5
GP 91 0+00N 12+00W	Soil	--	5	1.2	196	5	136	17	5	<3	3	<10	<2	3.6	30	57	<5
GP 91 0+00N 13+00W	Soil	--	<5	1.2	217	<2	107	19	<5	<3	3	<10	<2	2.1	24	50	<5
GP 91 0+00N 13+50W	Soil	--	5	<0.1	57	3	79	10	<5	<3	2	<10	<2	0.8	13	29	<5
GP 91 0+00N 14+00W	Soil	--	25	0.3	92	<2	106	29	5	<3	2	<10	<2	0.6	28	54	<5
GP 91 0+00N 14+50W	Soil	--	<5	<0.1	48	4	102	<5	<5	<3	1	<10	<2	0.5	7	14	<5
GP 91 0+00N 15+00W	Soil	--	5	0.9	109	<2	102	18	5	<3	2	<10	<2	0.5	20	57	<5
GP 91 0+00N 15+50W	Soil	--	<5	<0.1	47	<2	104	16	<5	<3	2	<10	<2	0.5	20	44	<5
GP 91 0+00N 16+00W	Soil	--	5	<0.1	28	2	64	14	<5	<3	2	<10	<2	0.5	13	23	<5
GP 91 0+00N 16+50W	Soil	--	5	<0.1	44	<2	70	11	<5	<3	2	<10	<2	0.5	22	39	<5
GP 91 0+00N 17+00W	Soil	--	<5	<0.1	53	<2	59	13	<5	<3	2	<10	<2	0.4	25	52	<5
GP 91 0+00N 17+50W	Soil	--	<5	<0.1	36	<2	109	17	<5	<3	1	<10	<2	0.2	12	27	<5
GP 91 0+00N 18+00W	Soil	--	<5	<0.1	34	<2	113	16	<5	<3	2	<10	<2	0.3	14	25	<5
GP 91 0+00N 18+50W	Soil	--	<5	<0.1	38	<2	112	15	<5	<3	3	<10	<2	0.1	14	27	<5
GP 91 7+50N 0+00W	Soil	--	<5	0.7	66	3	54	6	<5	<3	2	<10	<2	0.5	8	15	<5
GP 91 7+50N 0+50W	Soil	--	15	0.3	50	<2	58	20	<5	<3	3	<10	<2	0.5	18	24	<5

Minimum Detection	5	5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	5
Maximum Detection	10000	10000	100.0	20000	20000	20000	10000	1000	10000	1000	1000	10000	10000.0	10000	10000	1000
Method	FA/AAS	GeoSp	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

-- = Not Analysed ReC = ReCheck in progress ins = Insufficient Sample



2036 Columbia Street  
 Vancouver, B.C.  
 Canada V5Y 3E1  
 Phone (604) 879-7878  
 Fax (604) 879-7898



Sample Name	Ba ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
GP 91 0+00N 0+00W	117	90	118	4020	5	60	<1	4	0.08	2.25	0.79	4.81	1.10	0.11	0.02	0.12
GP 91 0+00N 0+50W	82	81	132	788	2	33	1	3	0.15	1.51	0.49	4.88	0.98	0.21	0.02	0.20
GP 91 0+00N 1+00W	99	167	126	856	2	32	1	3	0.13	2.06	0.47	4.80	1.65	0.13	0.02	0.17
GP 91 0+00N 1+50W	94	36	108	521	4	36	1	3	0.13	1.77	0.55	4.20	0.96	0.20	0.02	0.12
GP 91 0+00N 2+00W	216	25	40	4044	<2	276	1	1	0.01	0.64	3.14	2.26	0.31	0.04	0.02	0.21
GP 91 0+00N 2+50W	63	63	99	378	6	32	1	3	0.09	2.15	0.38	3.76	0.73	0.05	0.02	0.09
GP 91 0+00N 3+00W	55	81	108	386	5	45	1	4	0.12	2.81	0.52	4.10	1.14	0.05	0.02	0.11
GP 91 0+00N 3+50W	84	119	126	595	6	66	2	7	0.16	2.68	0.92	4.72	1.89	0.10	0.03	0.07
GP 91 0+00N 4+00W	113	61	100	486	9	43	1	3	0.11	2.11	0.38	3.59	0.78	0.07	0.02	0.08
GP 91 0+00N 4+50W	45	85	122	371	7	43	1	5	0.13	2.67	0.48	>5.00	1.16	0.05	0.02	0.07
GP 91 0+00N 5+00W	48	79	98	397	7	37	1	4	0.08	2.53	0.47	4.43	1.21	0.05	0.02	0.06
GP 91 0+00N 5+50W	54	88	107	429	5	32	1	4	0.10	2.57	0.37	4.45	1.43	0.05	0.02	0.07
GP 91 0+00N 6+00W	81	68	105	453	7	35	1	3	0.09	2.33	0.45	4.20	1.14	0.08	0.02	0.14
GP 91 0+00N 6+50W	50	75	103	371	5	32	1	4	0.11	2.31	0.39	4.39	1.14	0.06	0.02	0.10
GP 91 0+00N 7+00W	61	85	113	307	5	29	1	4	0.10	2.56	0.29	4.81	1.02	0.05	0.02	0.07
GP 91 0+00N 7+50W	54	111	129	601	7	29	1	6	0.14	2.53	0.29	>5.00	1.19	0.08	0.02	0.07
GP 91 0+00N 8+00W	102	99	110	354	5	33	1	4	0.09	2.25	0.33	4.58	1.17	0.06	0.02	0.21
GP 91 0+00N 8+50W	53	112	132	406	5	26	1	5	0.11	2.90	0.29	>5.00	1.10	0.06	0.02	0.13
GP 91 0+00N 9+00W	72	84	104	391	9	34	1	5	0.09	3.42	0.38	>5.00	0.81	0.06	0.02	0.09
GP 91 0+00N 9+50W	59	69	113	565	8	82	1	4	0.08	2.51	1.09	>5.00	1.02	0.07	0.02	0.12
GP 91 0+00N 10+00W	89	67	97	652	6	89	1	4	0.08	1.99	1.24	4.20	1.07	0.07	0.02	0.10
GP 91 0+00N 10+50W	51	86	101	691	6	62	1	4	0.08	2.34	1.03	4.25	1.52	0.12	0.02	0.14
GP 91 0+00N 11+00W	66	144	169	710	3	39	1	3	0.11	2.84	0.65	>5.00	1.52	0.19	0.02	0.18
GP 91 0+00N 11+50W	140	72	79	1950	14	58	2	6	0.05	2.48	1.00	4.25	0.94	0.07	0.02	0.16
GP 91 0+00N 12+00W	159	81	81	1729	10	102	1	4	0.04	2.22	2.05	4.00	0.88	0.07	0.02	0.17
GP 91 0+00N 13+00W	165	69	71	1898	15	135	2	4	0.03	2.53	2.72	3.62	0.65	0.07	0.02	0.27
GP 91 0+00N 13+50W	76	91	95	314	5	71	1	2	0.11	1.55	1.14	3.66	0.77	0.10	0.02	0.07
GP 91 0+00N 14+00W	76	159	141	523	5	45	1	4	0.13	3.13	0.55	>5.00	1.70	0.33	0.02	0.13
GP 91 0+00N 14+50W	102	25	17	440	2	140	1	1	0.01	0.67	3.33	0.72	0.25	0.07	0.02	0.16
GP 91 0+00N 15+00W	79	159	76	611	9	61	1	3	0.04	2.62	1.05	3.35	1.32	0.17	0.02	0.17
GP 91 0+00N 15+50W	62	133	84	390	5	42	1	2	0.11	1.85	0.66	4.13	1.17	0.18	0.02	0.06
GP 91 0+00N 16+00W	74	68	92	253	4	35	1	3	0.13	1.53	0.39	3.43	0.70	0.07	0.02	0.15
GP 91 0+00N 16+50W	51	135	101	636	3	43	1	3	0.19	1.84	0.56	3.90	1.29	0.22	0.02	0.03
GP 91 0+00N 17+00W	74	157	94	606	4	43	1	3	0.17	2.13	0.64	3.75	1.53	0.33	0.02	0.07
GP 91 0+00N 17+50W	65	57	96	287	7	17	4	5	0.10	4.89	0.18	4.40	0.70	0.04	0.02	0.24
GP 91 0+00N 18+00W	70	58	150	504	5	21	4	4	0.14	3.27	0.27	>5.00	0.82	0.05	0.02	0.29
GP 91 0+00N 18+50W	58	68	133	317	4	20	3	4	0.10	4.13	0.28	>5.00	0.76	0.04	0.02	0.49
GP 91 7+50N 0+00W	79	43	77	262	5	34	1	2	0.10	1.39	0.40	2.80	0.51	0.09	0.02	0.17
GP 91 7+50N 0+50W	89	56	146	277	6	28	1	4	0.16	2.44	0.26	>5.00	0.89	0.07	0.02	0.10

Minimum Detection	2	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	10000	10000	10000	10000	10000	1.00	5.00	10.00	5.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

-- = Not Analysed ReC = ReCheck in progress ins = Insufficient Sample

Sample Name	Type	Au ppb	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	W ppm
GP 91 7+50N 1+00W	Soil	--	<5	<0.1	65	<2	80	18	<5	<3	2	<10	<2	0.6	20	29	<5
GP 91 7+50N 1+50W	Soil	--	<5	<0.1	20	2	75	11	<5	<3	2	<10	<2	0.3	14	19	<5
GP 91 7+50N 1+75W	Soil	--	<5	<0.1	33	<2	76	14	<5	<3	2	<10	<2	0.6	17	23	<5
GP 91 7+50N 2+50W	Soil	--	<5	<0.1	35	2	74	14	<5	<3	2	<10	<2	0.7	14	22	<5
GP 91 7+50N 3+00W	Soil	--	5	<0.1	70	<2	81	22	5	<3	2	<10	<2	0.3	22	32	<5
GP 91 7+50N 3+50W	Soil	--	<5	<0.1	42	<2	91	17	<5	<3	2	<10	<2	0.3	20	25	<5
GP 91 7+50N 4+50W	Soil	--	15	<0.1	36	<2	58	17	<5	<3	2	<10	<2	0.5	14	18	<5
GP 91 7+50N 5+00W	Soil	--	<5	<0.1	34	3	48	14	<5	<3	3	<10	<2	0.5	14	16	<5
GP 91 7+50N 5+50W	Soil	--	25	<0.1	51	5	52	12	<5	<3	3	<10	<2	0.3	17	24	<5
GP 91 7+50N 6+00W	Soil	--	<5	<0.1	23	2	57	16	<5	<3	2	<10	<2	0.4	10	18	<5
GP 91 7+50N 6+50W	Soil	--	5	<0.1	59	<2	53	15	<5	<3	2	<10	<2	0.3	14	27	<5
GP 91 7+50N 7+50W	Soil	--	10	<0.1	33	4	39	13	<5	<3	2	<10	<2	0.2	9	21	<5
GP 91 7+50N 8+00W	Soil	--	<5	<0.1	53	4	58	16	<5	<3	2	<10	<2	0.3	17	34	<5
GP 91 7+50N 8+50W	Soil	--	5	<0.1	47	3	55	12	<5	<3	2	<10	<2	0.2	16	27	<5
GP 91 7+50N 9+00W	Soil	--	<5	<0.1	26	4	43	12	<5	<3	1	<10	<2	0.2	11	20	<5
GP 91 7+50N 9+50W	Soil	--	<5	<0.1	30	4	54	16	<5	<3	1	<10	<2	0.3	14	25	<5
GP 91 7+50N 10+00W	Soil	--	50	<0.1	32	<2	54	18	<5	<3	2	<10	<2	0.4	14	27	<5
GP 91 7+50N 11+50W	Soil	--	15	<0.1	38	5	55	11	<5	<3	1	<10	<2	0.3	18	28	<5
GP 91 7+50N 12+00W	Soil	--	<5	<0.1	37	2	55	12	<5	<3	2	<10	<2	0.3	13	28	<5
GP 91 7+50N 12+50W	Soil	--	<5	<0.1	22	2	59	15	<5	<3	1	<10	<2	0.3	12	21	<5
GP 91 7+50N 13+50W	Soil	--	<5	<0.1	48	<2	50	15	<5	<3	2	<10	<2	0.4	19	37	<5
GP 91 7+50N 14+00W	Soil	--	<5	<0.1	19	3	56	11	<5	<3	1	<10	<2	0.2	11	20	<5
GP 91 7+50N 14+50W	Soil	--	<5	<0.1	23	7	159	10	<5	<3	2	<10	<2	0.7	13	24	<5
GP 91 7+50N 15+00W	Soil	--	<5	<0.1	42	<2	91	62	5	<3	2	<10	<2	0.3	22	44	<5
GP 91 7+50N 15+50W	Soil	--	<5	<0.1	75	<2	50	28	5	3	2	<10	<2	0.4	23	71	<5
GP 91 7+50N 16+00W	Soil	--	10	<0.1	57	2	42	17	<5	<3	1	<10	<2	0.3	17	41	<5
GP 91 7+50N 16+50W	Soil	--	<5	<0.1	63	<2	79	23	<5	<3	3	<10	<2	0.6	31	59	<5
GP 91 7+50N 17+00W	Soil	--	<5	0.3	81	<2	72	18	<5	<3	2	<10	<2	0.2	18	49	<5
GP 91 7+50N 17+50W	Soil	--	<5	0.4	89	<2	75	18	<5	<3	3	<10	<2	0.4	23	51	<5
GP 91 7+50N 18+00W	Soil	--	<5	<0.1	67	<2	60	17	5	<3	3	<10	<2	0.2	17	40	<5
GP 91 10+00N 0+00E	Soil	--	5	<0.1	33	<2	85	12	<5	<3	2	<10	<2	0.5	14	24	<5
GP 91 10+00N 0+50E	Soil	--	<5	<0.1	42	<2	60	12	<5	<3	3	<10	<2	0.6	13	19	<5
GP 91 10+00N 1+50E	Soil	--	20	<0.1	32	<2	85	8	<5	<3	3	<10	<2	0.7	12	15	<5
GP 91 10+00N 2+00E	Soil	--	<5	<0.1	104	<2	124	16	7	<3	9	<10	<2	0.6	27	56	<5
GP 91 10+00N 2+50E	Soil	--	<5	<0.1	95	<2	106	16	<5	<3	10	<10	<2	0.7	24	44	<5
GP 91 10+00N 3+20E	Soil	--	5	0.5	319	4	99	17	<5	<3	18	<10	<2	0.8	23	39	<5
GP 91 10+00N 3+50E	Soil	--	5	0.3	238	2	83	14	<5	<3	17	<10	<2	0.5	21	38	<5
GP 91 10+00N 4+50E	Soil	--	10	<0.1	158	<2	64	15	<5	<3	12	<10	<2	0.5	12	24	<5
GP 91 10+00N 5+00E	Soil	--	15	1.1	856	4	77	14	<5	<3	9	<10	<2	0.8	26	44	<5

Minimum Detection 5 5 0.1 1 2 1 5 5 3 1 10 2 0.1 1 1 5  
 Maximum Detection 10000 10000 100.0 20000 20000 20000 10000 1000 10000 1000 1000 10000 10000.0 10000 10000 10000  
 Method FA/AAS GeoSp ICP ICP ICP ICP ICP ICP ICP ICP ICP ICP ICP ICP ICP ICP  
 -- = Not Analysed ReC = ReCheck in progress ins = Insufficient Sample



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Sample Name	Ba ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
GP 91 7+50N 1+00W	64	62	121	423	5	27	1	4	0.09	2.39	0.39	4.90	1.25	0.09	0.02	0.26
GP 91 7+50N 1+50W	83	56	149	432	4	24	2	3	0.18	1.85	0.26	>5.00	0.78	0.09	0.02	0.21
GP 91 7+50N 1+75W	99	76	126	332	3	32	2	3	0.24	2.19	0.42	4.90	1.33	0.14	0.02	0.07
GP 91 7+50N 2+50W	123	57	134	299	4	37	1	3	0.14	1.98	0.45	4.72	1.03	0.08	0.02	0.17
GP 91 7+50N 3+00W	74	91	133	390	4	31	1	4	0.12	2.47	0.45	>5.00	1.29	0.09	0.02	0.17
GP 91 7+50N 3+50W	59	65	131	432	4	33	1	4	0.11	1.92	0.46	>5.00	0.91	0.04	0.02	0.24
GP 91 7+50N 4+50W	54	58	124	352	4	30	1	3	0.12	1.76	0.33	4.60	0.62	0.05	0.02	0.20
GP 91 7+50N 5+00W	103	43	139	259	5	34	2	3	0.18	1.81	0.34	4.40	0.87	0.15	0.02	0.16
GP 91 7+50N 5+50W	55	55	83	511	7	37	1	3	0.09	1.74	0.42	3.18	0.86	0.06	0.02	0.08
GP 91 7+50N 6+00W	77	48	94	274	5	26	1	3	0.09	1.72	0.32	3.45	0.66	0.04	0.02	0.15
GP 91 7+50N 6+50W	46	64	82	358	7	34	1	3	0.10	2.05	0.42	3.51	0.93	0.05	0.02	0.08
GP 91 7+50N 7+50W	61	53	85	198	5	36	1	3	0.09	1.71	0.44	3.03	0.68	0.03	0.02	0.07
GP 91 7+50N 8+00W	86	76	91	437	7	44	1	4	0.08	2.13	0.57	3.35	1.07	0.06	0.02	0.10
GP 91 7+50N 8+50W	66	66	78	685	8	43	1	4	0.08	1.56	0.63	2.83	0.86	0.06	0.02	0.14
GP 91 7+50N 9+00W	50	52	85	227	5	34	1	3	0.11	1.65	0.41	3.01	0.66	0.04	0.02	0.11
GP 91 7+50N 9+50W	67	59	91	244	5	30	3	4	0.11	2.07	0.33	3.27	0.71	0.04	0.02	0.13
GP 91 7+50N 10+00W	73	70	96	232	5	37	1	4	0.14	2.08	0.44	3.71	0.90	0.04	0.02	0.07
GP 91 7+50N 11+50W	91	56	98	567	7	50	2	4	0.12	1.47	0.68	3.16	0.93	0.07	0.03	0.13
GP 91 7+50N 12+00W	70	56	95	300	7	36	2	4	0.12	2.20	0.41	3.40	0.86	0.06	0.02	0.06
GP 91 7+50N 12+50W	97	52	102	244	6	36	2	4	0.12	1.99	0.45	3.75	0.67	0.05	0.02	0.20
GP 91 7+50N 13+50W	60	71	103	453	6	44	1	4	0.13	1.95	0.53	3.78	0.92	0.07	0.02	0.06
GP 91 7+50N 14+00W	55	54	87	232	5	38	1	3	0.13	1.31	0.40	3.11	0.52	0.06	0.02	0.12
GP 91 7+50N 14+50W	103	47	72	368	6	34	1	2	0.07	1.66	0.35	3.35	0.64	0.09	0.02	0.18
GP 91 7+50N 15+00W	71	113	128	419	4	37	1	4	0.15	2.48	0.46	>5.00	1.29	0.07	0.02	0.22
GP 91 7+50N 15+50W	47	165	127	446	4	42	1	5	0.19	2.78	0.53	4.86	1.73	0.08	0.02	0.07
GP 91 7+50N 16+00W	46	75	92	360	7	49	2	4	0.13	1.84	0.73	3.43	0.95	0.05	0.02	0.07
GP 91 7+50N 16+50W	54	131	116	1063	4	44	1	5	0.09	2.07	0.71	4.98	1.27	0.09	0.02	0.10
GP 91 7+50N 17+00W	41	101	119	395	5	26	1	3	0.09	2.23	0.31	>5.00	0.88	0.08	0.02	0.24
GP 91 7+50N 17+50W	73	112	138	539	4	26	1	4	0.10	2.16	0.34	>5.00	1.10	0.09	0.02	0.27
GP 91 7+50N 18+00W	40	158	130	365	5	16	1	3	0.11	2.19	0.17	>5.00	0.81	0.07	0.02	0.27
GP 91 10+00N 0+00E	67	55	108	315	6	33	1	4	0.08	1.97	0.35	4.30	0.83	0.06	0.02	0.14
GP 91 10+00N 0+50E	86	43	96	332	7	30	1	3	0.09	1.67	0.34	3.92	0.84	0.06	0.02	0.06
GP 91 10+00N 1+50E	131	29	73	781	8	35	<1	2	0.05	1.53	0.40	3.80	0.66	0.17	0.02	0.07
GP 91 10+00N 2+00E	66	175	128	839	8	57	1	7	0.12	2.51	0.62	>5.00	1.84	0.07	0.02	0.06
GP 91 10+00N 2+50E	75	86	117	822	9	53	1	6	0.12	2.42	0.62	4.60	1.60	0.09	0.02	0.06
GP 91 10+00N 3+20E	106	88	100	699	25	74	1	7	0.07	2.52	0.96	4.27	1.39	0.11	0.02	0.15
GP 91 10+00N 3+50E	99	86	101	1041	16	77	1	6	0.08	2.32	1.00	4.15	1.35	0.09	0.02	0.12
GP 91 10+00N 4+50E	67	48	86	302	13	58	1	3	0.09	1.79	0.69	3.99	0.98	0.05	0.02	0.04
GP 91 10+00N 5+00E	121	79	87	970	74	53	1	11	0.07	2.70	0.66	4.34	1.21	0.11	0.02	0.09

Minimum Detection	2	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	10000	10000	10000	10000	10000	1.00	5.00	10.00	5.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

-- = Not Analysed ReC = ReCheck in progress ins = Insufficient Sample

Sample Name	Type	Au ppb	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	W ppm
GP 91 10+00N 5+50E	Soil	--	10	<0.1	88	<2	73	12	<5	<3	9	<10	<2	0.6	12	23	<5
GP 91 10+00N 6+00E	Soil	--	<5	0.5	283	<2	97	14	<5	<3	10	<10	<2	0.7	29	39	<5
GP 91 10+00N 6+50E	Soil	--	<5	<0.1	81	<2	71	14	<5	<3	3	<10	<2	0.4	16	27	<5
GP 91 10+00N 7+00E	Soil	--	<5	0.3	66	<2	75	18	<5	<3	4	<10	<2	0.6	18	38	<5
GP 91 10+00N 7+50E	Soil	--	<5	<0.1	14	6	37	8	<5	<3	2	<10	<2	0.2	7	12	<5
GP 91 10+00N 8+00E	Soil	--	<5	<0.1	60	2	68	14	<5	<3	4	<10	<2	0.4	12	23	<5
GP 91 10+00N 8+50E	Soil	--	<5	<0.1	47	2	92	16	<5	<3	2	<10	<2	0.5	19	35	<5
GP 91 10+00N 9+00E	Soil	--	<5	<0.1	80	<2	74	13	<5	<3	4	<10	<2	0.1	17	27	<5
GP 91 10+00N 9+50E	Soil	--	<5	<0.1	35	<2	104	9	<5	<3	2	<10	<2	0.2	21	15	<5
GP 91 10+00N 10+00E	Soil	--	<5	<0.1	47	7	80	17	<5	<3	4	<10	<2	0.6	12	30	<5
GP 91 10+00N 10+50E	Soil	--	<5	<0.1	42	3	71	11	<5	<3	2	<10	<2	0.6	11	19	<5
GP 91 10+00N 11+00E	Soil	--	<5	<0.1	73	2	72	13	<5	<3	2	<10	<2	0.4	20	31	<5
GP 91 10+00N 11+50E	Soil	--	<5	<0.1	95	<2	62	15	<5	<3	3	<10	<2	0.4	24	29	<5
GP 91 10+00N 12+00E	Soil	--	<5	<0.1	75	<2	56	15	<5	<3	4	<10	<2	0.4	19	25	<5
GP 91 10+00N 13+00E	Soil	--	<5	<0.1	49	<2	65	12	<5	<3	2	<10	<2	0.7	13	21	<5
GP 91 10+00N 13+50E	Soil	--	10	0.2	614	<2	81	21	<5	<3	2	<10	<2	0.2	28	27	<5
GP 91 10+00N 14+00E	Soil	--	10	<0.1	226	<2	71	15	<5	<3	2	<10	<2	0.1	24	28	<5
GP 91 10+00N 14+50E	Soil	--	<5	<0.1	110	<2	81	16	<5	<3	3	<10	<2	0.5	20	21	<5
GP 91 10+00N 15+20E	Soil	--	5	<0.1	95	<2	64	28	<5	<3	3	<10	<2	0.4	17	22	<5
GP 91 10+00N 15+50E	Soil	--	5	<0.1	60	<2	86	15	<5	<3	2	<10	<2	0.4	16	24	<5
GP 91 10+00N 15+90E	Soil	--	<5	<0.1	30	3	98	12	<5	<3	2	<10	<2	0.6	15	17	<5
GP 91 10+00N 16+50E	Soil	--	5	0.4	116	<2	90	20	5	<3	5	<10	<2	0.4	28	29	<5
GP 91 10+00N 16+80E	Soil	--	<5	<0.1	89	<2	145	17	<5	4	3	<10	<2	0.4	53	40	<5
GP 91 10+00N 17+50E	Soil	--	<5	<0.1	80	4	81	14	<5	<3	2	<10	<2	0.4	24	45	<5
GP 91 10+00N 18+00E	Soil	--	<5	<0.1	64	3	77	14	<5	<3	2	<10	<2	0.4	19	33	<5
GP 91 10+00N 18+50E	Soil	--	5	<0.1	69	2	63	13	<5	<3	2	<10	<2	0.4	18	30	<5
GP 91 10+00N 19+00E	Soil	--	<5	<0.1	61	4	80	11	<5	<3	2	<10	<2	0.5	19	32	<5
GP 91 10+00N 19+50E	Soil	--	5	<0.1	63	3	53	13	<5	<3	2	<10	<2	0.3	17	28	<5
GP 91 10+00N 20+00E	Soil	--	5	0.2	120	<2	104	59	<5	<3	3	<10	<2	0.3	31	49	<5
GP 91 15+00N 0+00E	Soil	--	<5	<0.1	54	<2	78	12	<5	<3	1	<10	<2	0.5	15	25	<5
GP 91 15+00N 0+50E	Soil	--	<5	<0.1	67	<2	73	13	<5	<3	2	<10	<2	0.6	14	30	<5
GP 91 15+00N 1+00E	Soil	--	<5	0.3	92	<2	110	26	<5	<3	3	<10	<2	0.3	25	35	<5
GP 91 15+00N 1+50E	Soil	--	<5	<0.1	72	<2	94	15	<5	<3	3	<10	<2	0.6	20	39	<5
GP 91 15+00N 2+00E	Soil	--	5	0.9	139	4	87	11	<5	<3	4	<10	<2	0.8	17	34	<5
GP 91 15+00N 2+50E	Soil	--	<5	1.8	408	<2	128	22	<5	<3	3	<10	<2	1.1	39	79	<5
GP 91 15+00N 3+00E	Soil	--	<5	<0.1	43	<2	120	14	<5	<3	2	<10	<2	0.4	22	29	<5
GP 91 15+00N 3+50E	Soil	--	<5	<0.1	44	3	84	12	<5	<3	2	<10	<2	0.4	16	31	<5
GP 91 15+00N 4+00E	Soil	--	5	<0.1	39	<2	81	16	<5	<3	2	<10	<2	0.5	16	28	<5
GP 91 15+00N 4+50E	Soil	--	<5	<0.1	26	2	63	14	<5	<3	1	<10	<2	0.4	14	26	<5

Minimum Detection	5	5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	5
Maximum Detection	10000	10000	100.0	20000	20000	20000	10000	1000	10000	1000	1000	10000	10000.0	10000	10000	1000
Method	FA/AAS	GeoSp	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
-- = Not Analysed	ReC = ReCheck in progress	ins = Insufficient Sample														



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Sample Name	Ba ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
GP 91 10+00N 5+50E	35	50	96	434	10	25	1	2	0.07	2.02	0.27	4.69	0.90	0.07	0.02	0.10
GP 91 10+00N 6+00E	76	75	116	970	16	63	1	5	0.10	2.82	0.85	5.00	1.39	0.09	0.02	0.12
GP 91 10+00N 6+50E	66	53	109	395	5	29	1	4	0.08	2.14	0.40	4.39	1.02	0.06	0.02	0.23
GP 91 10+00N 7+00E	72	88	114	412	6	32	2	5	0.11	2.66	0.40	4.95	1.44	0.06	0.02	0.17
GP 91 10+00N 7+50E	57	53	78	130	7	24	1	2	0.10	1.04	0.23	2.31	0.34	0.04	0.02	0.06
GP 91 10+00N 8+00E	67	56	106	262	7	23	2	4	0.10	2.32	0.24	4.02	0.74	0.05	0.02	0.16
GP 91 10+00N 8+50E	97	60	110	386	8	34	1	4	0.12	2.52	0.38	4.61	1.22	0.10	0.02	0.12
GP 91 10+00N 9+00E	69	42	131	366	6	27	1	5	0.10	2.73	0.28	>5.00	1.12	0.09	0.02	0.12
GP 91 10+00N 9+50E	108	19	168	662	5	39	1	5	0.20	2.82	0.49	>5.00	1.87	0.34	0.02	0.23
GP 91 10+00N 10+00E	111	48	117	302	6	38	2	4	0.12	1.85	0.37	4.65	0.66	0.07	0.02	0.06
GP 91 10+00N 10+50E	65	42	93	334	7	29	1	3	0.09	1.80	0.29	3.66	0.71	0.07	0.02	0.09
GP 91 10+00N 11+00E	86	49	103	639	8	53	1	4	0.07	2.13	0.65	4.03	1.12	0.08	0.02	0.09
GP 91 10+00N 11+50E	80	51	111	644	9	66	1	5	0.08	2.66	0.76	4.64	1.39	0.08	0.02	0.10
GP 91 10+00N 12+00E	68	46	116	415	6	73	1	4	0.07	2.56	0.80	4.56	1.27	0.05	0.02	0.07
GP 91 10+00N 13+00E	67	46	143	351	6	29	1	2	0.08	2.30	0.35	4.70	1.05	0.17	0.02	0.23
GP 91 10+00N 13+50E	72	30	122	580	10	67	1	5	0.11	3.36	0.88	>5.00	1.62	0.19	0.02	0.13
GP 91 10+00N 14+00E	42	45	153	600	6	57	1	6	0.11	2.52	0.67	>5.00	1.65	0.10	0.02	0.10
GP 91 10+00N 14+50E	166	32	149	629	6	67	1	3	0.16	2.58	0.78	>5.00	1.55	0.43	0.02	0.16
GP 91 10+00N 15+20E	93	39	112	455	7	41	1	4	0.14	2.40	0.45	4.73	1.41	0.23	0.02	0.09
GP 91 10+00N 15+50E	84	45	100	372	6	28	1	4	0.10	2.40	0.35	4.38	1.24	0.15	0.02	0.15
GP 91 10+00N 15+90E	134	33	107	352	5	34	1	3	0.15	2.08	0.36	4.41	1.21	0.24	0.02	0.14
GP 91 10+00N 16+50E	62	96	106	979	7	52	1	4	0.11	3.08	0.76	>5.00	1.58	0.15	0.02	0.11
GP 91 10+00N 16+80E	95	101	129	1519	5	63	1	6	0.14	2.94	1.00	>5.00	2.31	0.14	0.02	0.07
GP 91 10+00N 17+50E	91	77	114	815	8	48	1	7	0.12	2.58	0.66	4.66	1.68	0.13	0.02	0.06
GP 91 10+00N 18+00E	78	60	103	461	8	43	1	5	0.12	2.20	0.55	4.08	1.23	0.08	0.02	0.09
GP 91 10+00N 18+50E	72	51	101	604	9	45	1	5	0.12	2.11	0.59	3.88	1.26	0.15	0.02	0.14
GP 91 10+00N 19+00E	93	55	93	819	8	37	1	4	0.09	2.11	0.47	3.89	1.11	0.09	0.02	0.10
GP 91 10+00N 19+50E	53	49	98	446	7	38	1	4	0.11	1.97	0.49	3.78	1.20	0.10	0.02	0.09
GP 91 10+00N 20+00E	132	77	117	650	11	75	1	7	0.10	3.27	0.86	>5.00	1.42	0.18	0.02	0.10
GP 91 15+00N 0+00E	84	47	90	457	8	41	1	3	0.08	1.71	0.53	3.36	0.86	0.06	0.02	0.10
GP 91 15+00N 0+50E	92	57	98	476	8	39	1	3	0.07	2.09	0.51	3.73	0.99	0.08	0.02	0.09
GP 91 15+00N 1+00E	52	91	110	949	8	44	1	3	0.07	2.74	0.60	>5.00	1.25	0.08	0.02	0.14
GP 91 15+00N 1+50E	79	91	118	649	7	53	1	5	0.11	2.29	0.74	4.68	1.46	0.08	0.02	0.07
GP 91 15+00N 2+00E	139	55	87	1006	8	112	1	4	0.05	1.72	2.08	3.55	0.74	0.10	0.02	0.11
GP 91 15+00N 2+50E	231	104	153	2046	26	78	1	11	0.08	3.94	1.12	>5.00	1.45	0.23	0.02	0.10
GP 91 15+00N 3+00E	99	74	110	613	7	44	1	5	0.16	2.43	0.59	4.44	1.55	0.20	0.02	0.19
GP 91 15+00N 3+50E	82	73	98	391	7	40	1	4	0.11	2.22	0.47	3.88	1.25	0.08	0.02	0.12
GP 91 15+00N 4+00E	62	72	111	317	5	31	2	5	0.10	2.45	0.37	4.53	1.05	0.07	0.02	0.24
GP 91 15+00N 4+50E	67	81	113	260	5	29	2	4	0.11	2.11	0.29	4.36	0.97	0.07	0.02	0.15

Minimum Detection	2	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	10000	10000	10000	10000	10000	1.00	5.00	10.00	5.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

-- = Not Analysed ReC = ReCheck in progress ins = Insufficient Sample

Sample Name	Type	Au ppb	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	W ppm
GP 91 15+00N 5+00E	Soil	--	<5	<0.1	38	<2	130	16	<5	<3	1	<10	<2	0.5	19	36	<5
GP 91 15+00N 5+50E	Soil	--	<5	<0.1	50	<2	79	19	<5	<3	2	<10	<2	0.6	18	41	<5
GP 91 15+00N 6+00E	Soil	--	<5	<0.1	54	<2	92	21	<5	<3	2	<10	<2	0.3	16	34	<5
GP 91 15+00N 6+50E	Soil	--	<5	0.2	107	<2	99	29	6	<3	5	<10	<2	0.3	22	34	<5
GP 91 15+00N 7+00E	Soil	--	<5	<0.1	30	5	90	31	6	<3	4	<10	<2	0.5	11	24	<5
GP 91 15+00N 7+50E	Soil	--	<5	<0.1	27	<2	78	16	<5	<3	5	<10	<2	0.5	10	20	<5
GP 91 15+00N 8+00E	Soil	--	10	<0.1	46	3	87	21	<5	<3	5	<10	<2	0.4	14	27	<5
GP 91 15+00N 8+50E	Soil	--	20	0.7	115	4	66	16	<5	<3	6	<10	<2	0.7	11	19	<5
GP 91 15+00N 9+00E	Soil	--	15	<0.1	56	4	86	14	<5	<3	4	<10	<2	0.8	12	15	<5
GP 91 15+00N 9+50E	Soil	--	<5	<0.1	63	4	77	14	<5	<3	5	<10	<2	0.5	15	24	<5
GP 91 15+00N 10+00E	Soil	--	<5	0.6	24	5	58	12	<5	<3	2	<10	<2	0.5	10	17	<5
GP 91 15+00N 10+50E	Soil	--	<5	<0.1	41	2	77	12	<5	<3	3	<10	<2	0.5	14	19	<5
GP 91 15+00N 11+00E	Soil	--	5	0.8	216	<2	94	21	<5	<3	3	<10	<2	0.6	23	36	<5
GP 91 15+00N 11+50E	Soil	--	<5	0.2	108	<2	124	19	<5	<3	4	<10	<2	0.5	22	36	<5
GP 91 15+00N 12+00E	Soil	--	5	0.9	202	2	133	23	5	<3	4	<10	<2	1.0	19	41	<5
GP 91 15+00N 12+50E	Soil	--	<5	0.9	205	4	87	10	<5	<3	3	<10	<2	0.9	15	25	<5
GP 91 15+00N 13+00E	Soil	--	<5	<0.1	115	2	77	18	<5	<3	2	<10	<2	0.7	21	31	<5
GP 91 15+00N 13+50E	Soil	--	<5	0.8	192	<2	120	24	<5	<3	3	<10	<2	0.5	33	18	<5
GP 91 15+00N 14+00E	Soil	--	<5	0.2	66	3	66	16	<5	<3	2	<10	<2	0.6	15	28	<5
GP 91 15+00N 14+50E	Soil	--	10	1.0	224	3	63	13	<5	<3	3	<10	<2	0.6	16	22	<5
GP 91 15+00N 15+00E	Soil	--	5	0.3	105	<2	78	29	<5	<3	3	<10	<2	0.3	23	26	<5
GP 91 15+00N 15+50E	Soil	--	<5	0.2	100	<2	65	20	<5	<3	4	<10	<2	0.5	17	20	<5
GP 91 15+00N 16+00E	Soil	--	10	<0.1	80	4	112	20	<5	<3	3	<10	<2	0.2	29	26	<5
GP 91 15+00N 16+50E	Soil	--	<5	<0.1	117	2	80	16	<5	<3	3	<10	<2	0.9	18	30	<5
GP 91 15+00N 17+00E	Soil	--	10	<0.1	75	2	106	15	<5	<3	2	<10	<2	0.4	18	32	<5
GP 91 15+00N 17+50E	Soil	--	5	0.4	171	<2	86	17	<5	<3	4	<10	<2	0.2	33	29	<5
GP 91 15+00N 18+00E	Soil	--	15	0.5	167	<2	113	20	<5	<3	2	<10	<2	0.8	28	38	<5
GP 91 15+00N 18+50E	Soil	--	<5	<0.1	73	<2	75	19	<5	<3	4	<10	<2	0.1	22	32	<5
GP 91 15+00N 19+00E	Soil	--	<5	0.4	117	<2	84	18	5	<3	3	<10	<2	0.4	26	40	<5
GP 91 15+00N 19+50E	Soil	--	5	0.2	77	3	61	28	<5	<3	3	<10	<2	0.5	17	28	<5
GP 91 15+00N 20+00E	Soil	--	15	0.1	89	6	87	64	<5	<3	3	<10	<2	0.2	20	42	<5
GP 91 KR01	Rock	<5	--	<0.1	60	8	69	9	5	<3	1	<10	<2	0.2	27	49	<5
GP 91 KR02	Rock	<5	--	<0.1	74	4	18	22	5	<3	2	<10	<2	0.1	19	25	<5
GP 91 KR03	Rock	5	--	0.5	525	<2	62	13	<5	<3	2	<10	<2	0.4	23	9	<5
GP 91 KR04	Rock	<5	--	<0.1	10	4	10	<5	5	<3	1	<10	<2	0.1	3	6	<5
GP 91 KR05	Rock	25	--	0.3	621	<2	37	13	5	<3	1	<10	<2	0.2	53	39	<5
GP 91 NL10	Silt	--	<5	<0.1	80	3	93	13	<5	<3	2	<10	<2	0.7	25	52	<5
GP 91 NR01	Rock	<5	--	0.2	137	<2	38	9	<5	<3	2	<10	<2	<0.1	26	22	<5
GP 91 NR02	Rock	15	--	0.2	296	<2	67	8	5	<3	1	<10	<2	0.2	29	30	<5

Minimum Detection	5	5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	5
Maximum Detection	10000	10000	100.0	20000	20000	20000	10000	1000	10000	1000	1000	10000	10000.0	10000	10000	1000
Method	FA/AAS	GeoSp	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

-- = Not Analysed ReC = ReCheck in progress ins = Insufficient Sample



2036 Columbia Street  
 Vancouver, B.C.  
 Canada V5Y 3E1  
 Phone (604) 879-7878  
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Sample Name	Ba ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
GP 91 15+00N 5+00E	81	83	108	369	7	30	2	5	0.11	2.75	0.35	4.83	1.20	0.08	0.02	0.21
GP 91 15+00N 5+50E	59	107	116	456	6	35	2	6	0.13	2.55	0.42	4.54	1.47	0.09	0.02	0.19
GP 91 15+00N 6+00E	71	70	127	395	6	36	1	5	0.11	2.57	0.49	>5.00	1.23	0.07	0.02	0.25
GP 91 15+00N 6+50E	63	64	134	485	10	33	1	5	0.14	3.20	0.42	>5.00	1.58	0.14	0.02	0.14
GP 91 15+00N 7+00E	69	64	120	256	7	26	1	3	0.08	1.77	0.23	>5.00	0.65	0.08	0.02	0.23
GP 91 15+00N 7+50E	84	59	110	272	6	32	2	3	0.09	1.86	0.36	4.30	0.78	0.06	0.02	0.34
GP 91 15+00N 8+00E	115	62	97	530	6	24	1	3	0.13	1.79	0.30	3.69	1.08	0.14	0.02	0.11
GP 91 15+00N 8+50E	62	36	89	287	9	33	1	2	0.06	1.62	0.40	4.04	0.52	0.07	0.02	0.07
GP 91 15+00N 9+00E	87	41	98	413	5	32	1	2	0.10	1.22	0.29	3.64	0.48	0.08	0.02	0.07
GP 91 15+00N 9+50E	161	56	118	295	5	46	1	2	0.16	1.83	0.44	4.26	1.09	0.18	0.02	0.10
GP 91 15+00N 10+00E	84	52	124	283	6	28	1	3	0.10	1.73	0.26	4.11	0.64	0.06	0.02	0.31
GP 91 15+00N 10+50E	79	42	122	599	6	33	1	4	0.12	1.68	0.33	4.24	0.86	0.07	0.02	0.14
GP 91 15+00N 11+00E	65	63	156	824	12	36	1	6	0.09	2.65	0.39	>5.00	1.19	0.08	0.02	0.15
GP 91 15+00N 11+50E	70	65	156	794	9	39	1	6	0.12	2.95	0.43	>5.00	1.43	0.12	0.02	0.09
GP 91 15+00N 12+00E	101	61	106	768	18	37	1	6	0.06	2.77	0.41	4.87	0.84	0.08	0.02	0.10
GP 91 15+00N 12+50E	88	42	103	651	11	67	1	5	0.08	1.53	0.71	3.91	0.78	0.07	0.02	0.09
GP 91 15+00N 13+00E	92	51	124	789	8	78	1	5	0.11	2.11	0.87	4.56	1.28	0.14	0.02	0.11
GP 91 15+00N 13+50E	173	23	148	1433	10	137	1	6	0.15	3.15	1.57	>5.00	2.00	0.57	0.02	0.26
GP 91 15+00N 14+00E	91	48	100	425	6	41	1	3	0.10	1.97	0.47	4.18	1.04	0.10	0.02	0.09
GP 91 15+00N 14+50E	129	35	100	688	20	57	1	3	0.07	2.12	0.59	3.70	0.93	0.07	0.02	0.09
GP 91 15+00N 15+00E	63	48	139	666	8	40	1	4	0.15	2.86	0.38	>5.00	1.65	0.20	0.02	0.08
GP 91 15+00N 15+50E	58	41	132	424	6	55	1	3	0.17	3.04	0.63	>5.00	1.39	0.25	0.02	0.09
GP 91 15+00N 16+00E	102	45	124	861	8	71	1	5	0.12	2.65	0.86	>5.00	1.80	0.19	0.02	0.09
GP 91 15+10N 16+50E	103	47	101	621	7	83	1	4	0.09	2.12	0.99	4.66	1.31	0.13	0.02	0.09
GP 91 15+00N 17+00E	85	53	97	506	8	57	1	5	0.10	2.16	0.73	4.28	1.35	0.10	0.02	0.12
GP 91 15+00N 17+50E	102	50	149	871	13	45	2	8	0.15	3.73	0.52	>5.00	1.89	0.34	0.02	0.11
GP 91 15+00N 18+00E	100	56	94	1570	13	54	1	6	0.07	2.88	0.52	4.56	1.06	0.10	0.02	0.12
GP 91 15+00N 18+50E	35	69	135	645	6	39	1	6	0.19	2.87	0.34	>5.00	1.80	0.10	0.02	0.05
GP 91 15+00N 19+00E	82	87	149	929	12	51	1	6	0.12	2.96	0.52	>5.00	1.68	0.16	0.02	0.09
GP 91 15+00N 19+50E	43	49	110	380	6	31	1	4	0.10	2.44	0.35	4.88	1.19	0.10	0.02	0.11
GP 91 15+00N 20+00E	53	80	126	567	9	35	1	6	0.11	3.19	0.44	>5.00	1.73	0.11	0.02	0.12
GP 91 KR01	45	65	112	660	4	74	12	4	0.29	2.14	1.12	4.18	2.31	0.09	0.06	0.13
GP 91 KR02	100	81	70	331	2	60	2	4	0.22	1.55	1.07	2.49	1.24	0.38	0.06	0.12
GP 91 KR03	320	10	102	887	4	123	1	4	0.23	2.73	1.03	4.08	2.13	1.90	0.05	0.21
GP 91 KR04	29	212	18	252	<2	9	<1	1	0.02	0.42	0.06	1.07	0.30	0.18	0.03	0.02
GP 91 KR05	61	80	101	477	<2	104	3	6	0.27	2.13	1.35	3.82	2.11	0.40	0.03	0.09
GP 91 NL10	117	83	104	1269	6	55	1	6	0.13	2.21	0.91	4.25	1.70	0.09	0.03	0.12
GP 91 NR01	153	29	163	697	2	142	2	8	0.25	2.48	1.99	>5.00	2.45	0.24	0.03	0.17
GP 91 NR02	97	136	142	691	2	156	2	6	0.25	2.26	2.23	4.45	2.16	0.57	0.03	0.17

Minimum Detection	2	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	10000	10000	10000	10000	10000	1.00	5.00	10.00	5.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

-- = Not Analysed ReC = ReCheck in progress ins = Insufficient Sample

Sample Name	Type	Au ppb	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	W ppm
GP 91 NR03	Rock	20	--	0.8	1131	<2	39	10	<5	<3	4	<10	<2	0.7	34	28	<5
GP 91 NR05	Rock	5	--	0.1	228	2	32	13	<5	<3	2	<10	<2	0.2	44	28	<5
GP 91 NR06	Rock	15	--	0.2	340	<2	68	11	<5	<3	2	<10	<2	0.2	33	12	<5
GP 91 NR08	Rock	5	--	0.2	197	<2	69	5	<5	<3	2	<10	<2	<0.1	22	25	<5
GP 91 NR09	Rock	5	--	0.4	121	<2	76	24	<5	<3	2	<10	<2	0.4	36	29	<5

Minimum Detection	5	5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	5
Maximum Detection	10000	10000	100.0	20000	20000	20000	10000	1000	10000	1000	1000	10000	10000.0	10000	10000	1000
Method	FA/AAS	GeoSp	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
-- = Not Analysed	ReC = ReCheck in progress	ins = Insufficient Sample														

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 Fax (604) 879-7898





Sample Name	Ba ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
GP 91 NR03	71	184	312	654	6	193	2	4	0.13	1.25	2.89	>5.00	1.33	0.24	0.04	0.32
GP 91 NR05	48	52	113	467	2	116	2	4	0.29	2.21	1.37	3.97	2.16	0.40	0.05	0.14
GP 91 NR06	818	22	161	847	5	218	1	5	0.24	3.11	1.45	4.61	2.83	1.71	0.05	0.25
GP 91 NR08	92	38	235	932	6	143	3	11	0.07	2.46	3.58	>5.00	2.54	0.10	0.06	0.18
GP 91 NR09	213	42	92	661	<2	58	3	4	0.21	2.31	1.21	3.94	1.97	0.61	0.04	0.12

Minimum Detection	2	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	10000	10000	10000	10000	10000	1.00	5.00	10.00	5.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

-- = Not Analysed ReC = ReCheck in progress ins = Insufficient Sample

## Method of Gold analysis by Fire Assay / AAS

---

- (a) 20.0 to 30.0 grams of sample is mixed with a combination of fluxes in a fusion pot. The sample is then fused at high temperature to form a lead "button".
- (b) The precious metals are extracted by cupellation. Any Silver is dissolved by nitric acid and decanted. The gold bead is then dissolved in boiling concentrated aqua regia solution heated by a hot water bath.
- (c) The gold in solution is determined with an Atomic Absorption Spectrometer. The gold value, in parts per billion, is calculated by comparison with a set of known gold standards.

### QUALITY CONTROL

Every fusion of 24 pots contains 22 samples, one internal standard or blank, and a random reweigh of one of the samples. Samples with anomalous gold values greater than 500 ppb are automatically checked by Fire Assay/AA methods. Samples with gold values greater than 10000 ppb are automatically checked by Fire Assay/Gravimetric methods.

## Method of ICP Multi-element Analyses

---

- (a) 0.50 grams of sample is digested with diluted aqua regia solution by heating in a hot water bath for 90 minutes, then cooled, bulked up to a fixed volume with demineralized water, and thoroughly mixed.
- (b) The specific elements are determined using an Inductively Coupled Argon Plasma spectrophotometer. All elements are corrected for inter-element interference. All data are subsequently stored onto computer diskette.
- \* Aqua regia leaching is partial for Al, Ba, Ca, Cr, Fe, K, Mg, Mn, Na, P, Sn, Sr and W.

### QUALITY CONTROL

The machine is calibrated using six known standards and a blank. Another blank, which was digested with the samples, and a standard are tested before any samples to confirm the calibration. A maximum of 20 samples are analysed, and then a standard, also digested with the samples, is run. A known standard with characteristics best matching the samples is chosen and tested. Another 20 samples are analysed, with the last one being a random reweigh of one of the samples. The standard used at the beginning is rerun. This procedure is repeated for all of the samples.

APPENDIX C

GEOPHYSICAL SURVEY SPECIFICATIONS

**REPORT ON A  
COMBINED HELICOPTER-BORNE  
MAGNETIC AND VLF SURVEY  
FORT ST. JAMES  
BRITISH COLUMBIA**

**FOR**

**BGM DIVERSIFIED ENERGY INC.**

**BY**

**AERODAT LIMITED  
3883 NASHUA DRIVE  
MISSISSAUGA, ONTARIO  
L4V 1R3  
PHONE: 416 - 671-2446**

**August 19, 1991**

**J9151**

**Ron Steiner**

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<b>APPENDIX II</b>	<b>- General Interpretative Considerations</b>	

## LIST OF MAPS

Basic Maps: (As described under Appendix B of the Contract)

1. **TOPOGRAPHIC BASE MAP;** As required by BGM.
2. **FLIGHT LINE MAP;** Showing all flight lines and fiducials with the base map.
3. **TOTAL FIELD MAGNETIC CONTOURS;** Showing magnetic values corrected of all diurnal variation with flight lines, fiducials, and base map.
4. **VERTICAL MAGNETIC GRADIENT CONTOURS;** Showing magnetic gradient values calculated from the total field magnetics with flight lines, fiducials and base map.
5. **VLF-EM TOTAL FIELD CONTOURS;** Showing VLF total field response from the line transmitter with flight lines, fiducials, and base map.

**REPORT ON A  
COMBINED HELICOPTER-BORNE  
MAGNETIC AND VLF SURVEY  
FORT ST. JAMES  
BRITISH COLUMBIA**

**1. INTRODUCTION**

This report describes an airborne geophysical survey carried out on behalf of BGM Diversified Energy Inc. Equipment operated during the survey included a high sensitivity cesium vapour magnetometer, a two frequency VLF-EM system, a video tracking camera, radar altimeter, and an electronic positioning system. Magnetic and altimeter data were recorded both in digital and analog forms. Positioning data was stored in digital form, encoded on VHS format video tape and recorded at regular intervals in local UTM coordinates, as well as being marked on the flight path mosaic by the operator while in flight.

The survey area is located approximately 100 kilometres north of Fort. St. James, British Columbia. Data from three (3) flights were used to compile the survey results. The flight lines were oriented at an angle of 90 degrees, with a nominal line spacing of 100 metres (according to Appendix "A" of the Contract). Geophysical information is provided in the form of maps at 1:10,000. Coverage and data quality were considered to be well within the specifications described in the service contract.

The purpose of the survey was to record airborne geophysical data over ground that is of interest to BGM Diversified Energy Inc.

The survey encompasses approximately 250 line kilometres of the recorded data that were compiled in a map form at a scale of 1:10,000. The maps are presented as part of this report according to specifications laid out by BGM Diversified Energy Inc.

**2. SURVEY AREA LOCATION**

The survey area is depicted on the following index map.

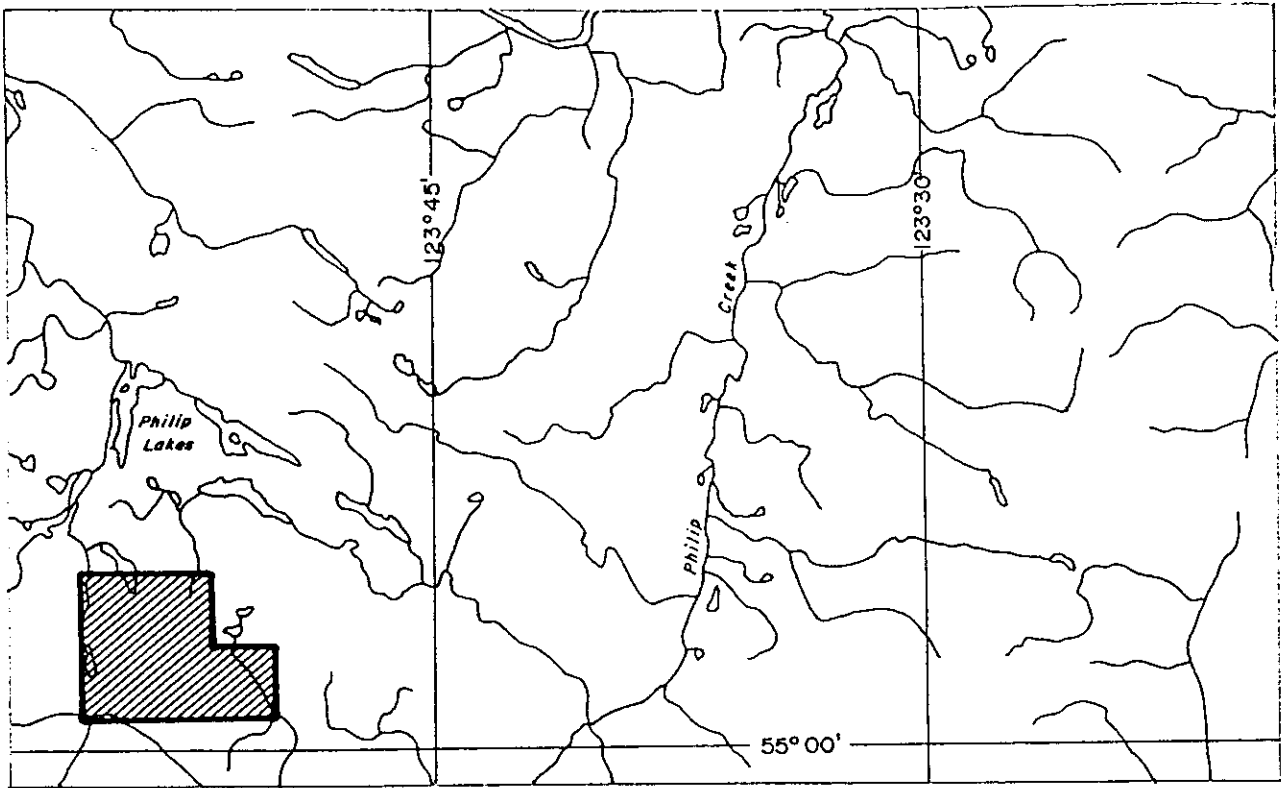
The area is centered at approximate geographic latitude 55 degrees 3 minutes North, longitude 123 degrees 53 minutes West.

**3. AIRCRAFT AND EQUIPMENT**

**3.1 Aircraft**

A Lama helicopter, (C-GXYM), piloted by Eddy Yong, owned and operated by Peace





**LOCATION MAP**

**HELICOPTERBORNE MAGNETIC AND VLF SURVEY  
FORT ST. JAMES  
BRITISH COLUMBIA**

**on behalf of  
BGM DIVERSIFIED ENERGY INC.**

**BY**

**AERODAT LIMITED  
J9151**

Helicopters Limited, was used for the survey. Pierre Moisan of Aerodat acted as navigator and equipment operator. Installation of the geophysical and ancillary equipment was carried out by Aerodat. The survey aircraft was flown at a mean terrain clearance of 60 metres.

### 3.2 VLF-EM System

The VLF-EM System was a Herz Totem 2A. This instrument measures the total field and quadrature component of the selected frequency. The sensor was towed in a bird 30 metres below the helicopter.

### 3.3 Magnetometer System

The magnetometer employed was a Scintrex Model VIW 2321 H8 cesium, optically pumped magnetometer sensor. The sensitivity of this instrument was 0.1 nanoTeslas. The sensor was towed in a bird 30 metres below the helicopter.

### 3.4 Ancillary Systems

#### Base Station Magnetometer

An IFG-2 proton precession magnetometer was operated at the base of operations to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to facilitate later correlation.

#### Altimeter System

A King KRA-10 radar altimeter was used to record terrain clearance. The output from the instrument is a linear function of altitude for maximum accuracy.

#### Tracking Camera

A Panasonic colour video flight path recording system was used to record flight path on standard VHS format video tapes. The system was operated in continuous mode and the flight number, real time and manual fiducials were registered on the picture frame for cross-reference to the analog and digital data.

#### Analog Recorder

A RMS dot matrix recorder was used to display the data during the survey. In addition to manual and time fiducials, the following data was recorded:

Channel	Input	Scale
VLT	VLF-EM Total Field, Line	25 %/cm
VLQ	VLF-EM Quadrature, Line	25 %/cm
VOT	VLF-EM Total Field, Ortho	25 %/cm
COQ	VLF-EM Quadrature, Ortho	25 %/cm
RALT	Radar Altimeter	100 ft./cm
MAGF	Magnetometer, fine	25 nT/cm
MAGC	Magnetometer, coarse	250 nT/cm

### Digital Recorder

A DGR-33:16 data system recorded the survey on magnetic tape. Information recorded was as follows:

<u>Equipment</u>	<u>Recording Interval</u>
VLF-EM	0.20 seconds
Magnetometer	0.20 seconds
Altimeter	0.20 seconds
Nav System	0.20 seconds

### Radar Positioning System

A Mini-Ranger MRS-III radar navigation system was used for both navigation and flight path recovery. Transponders cited at fixed locations were interrogated several times per second and the ranges from these points to the helicopter were measured to a high degree of accuracy. A navigational computer triangulated the position of the helicopter and provided the pilot with navigation information. The range/range data was recorded on magnetic tape for subsequent flight path determination.

## 4. DATA PRESENTATION

### 4.1 Base Map

A topographic base map at a scale of 1:10,000 was requested by BGM Diversified Energy Inc.

#### **4.2 Flight Path Map**

The flight path was derived from the Mini-Ranger radar positioning system. The distance from the helicopter to two established reference locations was measured several times per second and the position of the helicopter was calculated by triangulation. It is estimated that the flight path is generally accurate to about 10 metres with respect to the topographic detail on the base map.

The flight lines have the time and the navigator's manual fiducials for cross reference to both analog and digital data.

#### **4.3 Total Field Magnetics**

The magnetic data from the high sensitivity cesium magnetometer provided virtually a continuous magnetic reading when recording at 0.2 second intervals. The system is also noise free for all practical purposes.

A sensitivity of 0.1 nanoTesla (nT) allows for the mapping of very small inflections in the magnetic field, resulting in a contour map that is equal to or exceeds ground data in quality and accuracy.

The aeromagnetic data was corrected for diurnal variations by adjustment with the digitally recorded base station magnetic values. No correction for regional variation was applied. The corrected data was interpolated onto a regular grid at a 25 metre true scale interval using an Akima spline technique. This grid provided the basis for threading the presented contours at a 2 nT interval.

The contoured aeromagnetic data has been presented on a Cronaflex copy of the base map with flight lines.

#### **4.4 Vertical Magnetic Gradient**

The vertical magnetic gradient was calculated from the total field magnetic data. Contoured at a 0.2 nT/m interval, the data was presented on a cronaflex copy of the base map with flight lines.

#### **4.5 VLF-EM**

The VLF data was interpolated onto a regular grid at a 25 metre true scale interval using an Akima spline technique. This grid provided the basis for threading the contours at a 2% interval.

The VLF-EM signal from the line transmitting station was compiled as contours in map form on cronaflex copies of the base map with flight lines.

The VLF stations used for the survey area were NLK, Seattle, Washington, U.S.A., broadcasting at 24.8 kHz, NAA, Cutler, Maine, U.S.A., broadcasting at 24.0 kHz, NSS, Annapolis, Md., U.S.A., broadcasting at 21.4 kHz and NPM, Lualualei, Hawaii, broadcasting at 23.4 kHz. NLK was used as the line transmitting station for all flights. NSS and NPM were used for flight 1 and NAA was used for flights 2-3 as the orthogonal station.

Respectfully submitted,



Ron Steiner for  
**AERODAT LIMITED**  
August 19, 1991

J9151

## APPENDIX I

### PERSONNEL

#### FIELD

Flown	July 1991
Pilots	Eddy Yong
Operators	Pierre Moisan

#### OFFICE

Processing	Ron Steiner George McDonald
Report	Ron Steiner

## APPENDIX II

### GENERAL INTERPRETIVE CONSIDERATIONS

#### Magnetics

A digital base station magnetometer was used to detect fluctuations in the magnetic field during flight times. The airborne magnetic data was levelled by removing these diurnal changes. The Total Field Magnetic map shows the levelled magnetic contours, uncorrected for regional variation.

The Calculated Vertical Gradient map shows contours of the magnetic gradient as calculated from the total field magnetic data. The zero contour shows changes in the magnetic lithologies and will coincide closely with geologic contacts assuming a steeply dipping interface. Thus this data may be used as a pseudo-geologic map.

#### VLF Electromagnetics

The VLF-EM method employs the radiation from powerful military radio transmitters as the primary signals. The magnetic field associated with the primary field is elliptically polarized in the vicinity of electrical conductors. The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component of the polarization ellipse.

The relatively high frequency of VLF (15-25) kHz provides high response factors for bodies of low conductance. Relatively "disconnected" sulphide ores have been found to produce

measurable VLF signals. For the same reason, poor conductors such as sheared contacts, breccia zones, narrow faults, alteration zones and porous flow tops normally produce VLF anomalies. The method can therefore be used effectively for geological mapping. The only relative disadvantage of the method lies in its sensitivity to conductive overburden. In conductive ground to depth of exploration is severely limited.

The effect of strike direction is important in the sense of the relation of the conductor axis relative to the energizing electromagnetic field. A conductor aligned along a radius drawn from a transmitting station will be in a maximum coupled orientation and thereby produce a stronger response than a similar conductor at a different strike angle. Theoretically, it would be possible for a conductor, oriented tangentially to the transmitter to produce no signal. The most obvious effect of the strike angle consideration is that conductors favourably oriented with respect to the transmitter location and also near perpendicular to the flight direction are most clearly rendered and usually dominate the map presentation.

The total field response is an indicator of the existence and position of a conductivity anomaly. The response will be a maximum over the conductor, without any special filtering, and strongly favour the upper edge of the conductor even in the case of a relatively shallow dip.

The vertical quadrature component over steeply dipping sheet-like conductor will be a cross-over type response with the cross-over closely associated with the upper edge of the conductor.



The response is a cross-over type due to the fact that it is the vertical rather than total field quadrature component that is measured. The response shape is due largely to geometrical rather than conductivity considerations and the distance between the maximum and minimum on either side of the cross-over is related to target depth. For a given target geometry, the larger this distance the greater the depth.

The amplitude of the quadrature response, as opposed to shape is function of target conductance and depth as well as the conductivity of the overburden and host rock. As the primary field travels down to the conductor through conductive material it is both attenuated and phase shifted in a negative sense. The secondary field produced by this altered field at the target also has an associated phase shift. This phase shift is positive and is larger for relatively poor conductors. This secondary field is attenuated and phase shifted in a negative sense during return travel to the surface. The net effect of these 3 phase shifts determine the phase of the secondary field sensed at the receiver.

A relatively poor conductor in resistive ground will yield a net positive phase shift. A relatively good conductor in more conductive ground will yield a net negative phase shift. A combination is possible whereby the net phase shift is zero and the response is purely in-phase with no quadrature component.

A net positive phase shift combined with the geometrical cross-over shape will lead to a positive quadrature response on the side of approach and a negative on the side of departure. A net negative phase shift would produce the reverse. A further sign reversal occurs with a 180 degree change in instrument orientation as occurs on reciprocal line headings. During digital processing of the quadrature data for map presentation this is corrected for by normalizing the sign to one of the flight line headings.

APPENDIX D

THIN SECTION REPORT



# Vancouver Petrographics Ltd.

JAMES VINNELL, Manager  
JOHN G. PAYNE, Ph.D. Geologist  
CRAIG LEITCH, Ph.D. Geologist  
JEFF HARRIS, Ph.D. Geologist  
KEN E. NORTHCOTE, Ph.D. Geologist

P.O. BOX 39  
8080 GLOVER ROAD,  
FORT LANGLEY, B.C.  
VOX 1J0  
PHONE (604) 888-1323  
FAX. (604) 888-3642

Report for: Nigel Luckman,  
Reliance Geological Services Inc.,  
241 E. 1st Street,  
North Vancouver, B.C.  
V7L 1B4

Job 208

July 30th, 1991

## SAMPLES:

One rock sample, designated GP-91-KR05-HS, for thin sectioning and petrographic examination.

## DESCRIPTION:

### GREENSTONE METAVOLCANIC/SKARN

#### Estimated mode

Actinolite	62
Epidote	22
Biotite	4
Plagioclase	10
Sphene)	1
Leucoxene)	1
Opaques	1

This rock is composed predominantly of calc-silicates, as a varigranular aggregate of granoblastic aspect.

It consists of an intergrowth of aggregated, fine-grained epidote (grain size 10 -30 microns), and subhedral grains of actinolite (grain size 30 - 100 microns).

Subhedral grains of biotite, similar in size to the actinolite and showing a distinctive colourless to dark olive-green pleochroism,

are of sporadic occurrence, as are pockets of fine-grained plagioclase, interstitial to the epidote/actinolite. Sphene, leucoxene and opaques are minor disseminated accessories.

These minerals, in randomly oriented intergrowth, form a matrix within which are developed more or less abundant, porphyroblastic grains of actinolite, 0.5 - 6.0mm in size. These range from skeletal clusters of smaller acicular grains, through subhedral individuals sieved with epidote inclusions, to prominent, homogenous, twinned euhedra.

There are also a few associated patches of more coarsely crystallized epidote (grain size 0.1 - 0.2mm).

This rock has the mineralogy of a greenstone (metabasite), but the totally non-oriented fabric, the paucity of plagioclase, and the amphibole species (colourless to pale green actinolite rather than hornblende), suggest that it may be of skarnic rather than regional metamorphic affinities.

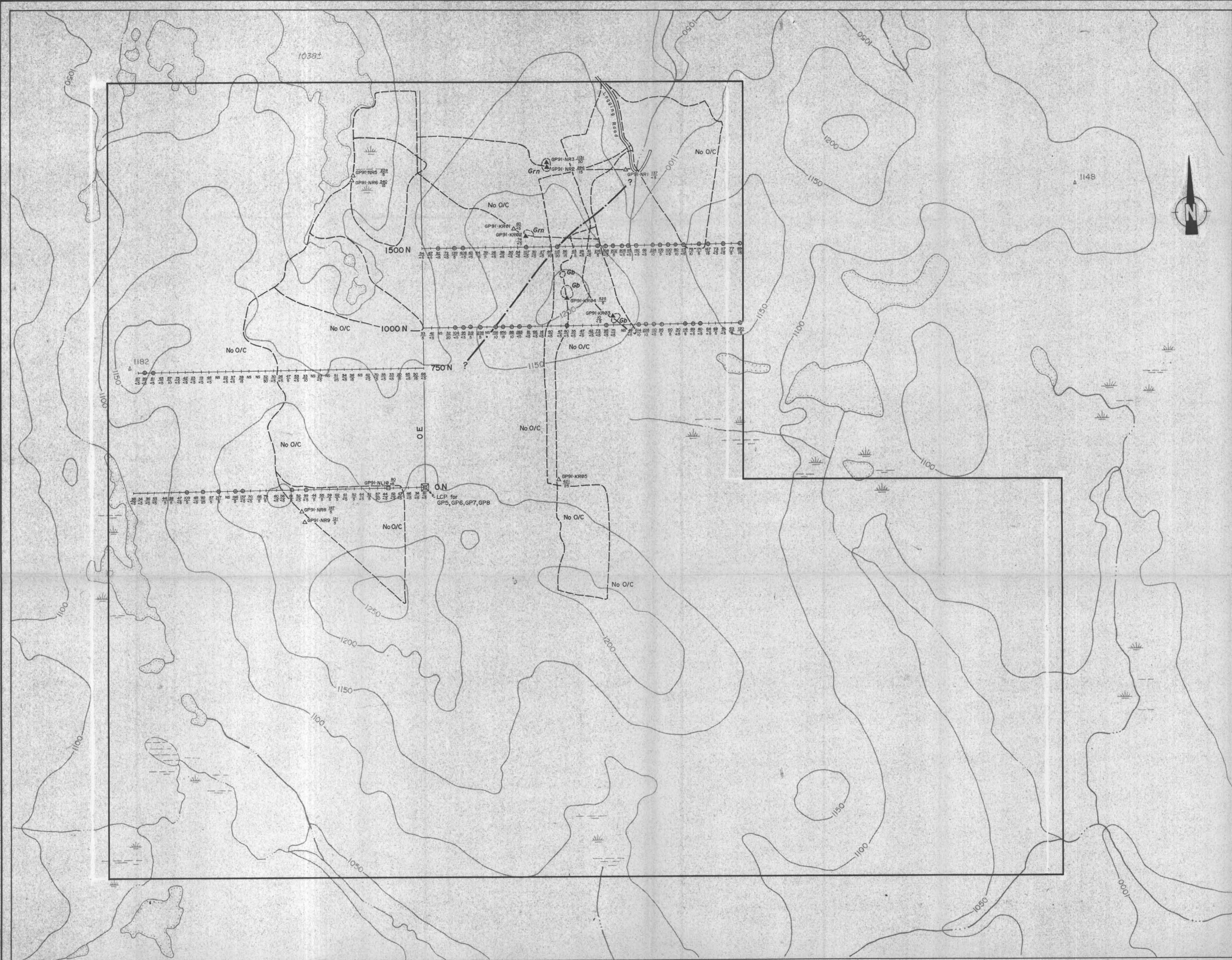
The texture, though resembling that of an igneous porphyry, appears to be of recrystallized/porphyroblastic origin. However, the coarse actinolite individuals and clumps could represent modified mafic phenocrysts. The protolith was most likely a mafic flow or tuff.

A handwritten signature in cursive script, appearing to read 'J.F. Harris'.

J.F. Harris Ph.D.

(929-5867)





- L E G E N D**
- denotes a value of  $\geq 80$  ppm Cu
  - Soil Sample Line (sample spacing  $\approx 50$  metres)  
Cu (ppm)  
Au (ppb)
  - Outcrop Sample Cu (ppm)  
Au (ppb)
  - Float Sample Cu (ppm)  
Au (ppb)
  - Stream Sediment Sample Cu (ppm)  
Au (ppb)
  - Gabbro
  - Porphyritic Greenstone
  - Inferred Geologic Contact
  - No Outcrop
  - Traverse Line
  - Topographic Contour Interval - 50 metres
  - Lake
  - Creek
  - Swamp

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**22,011**

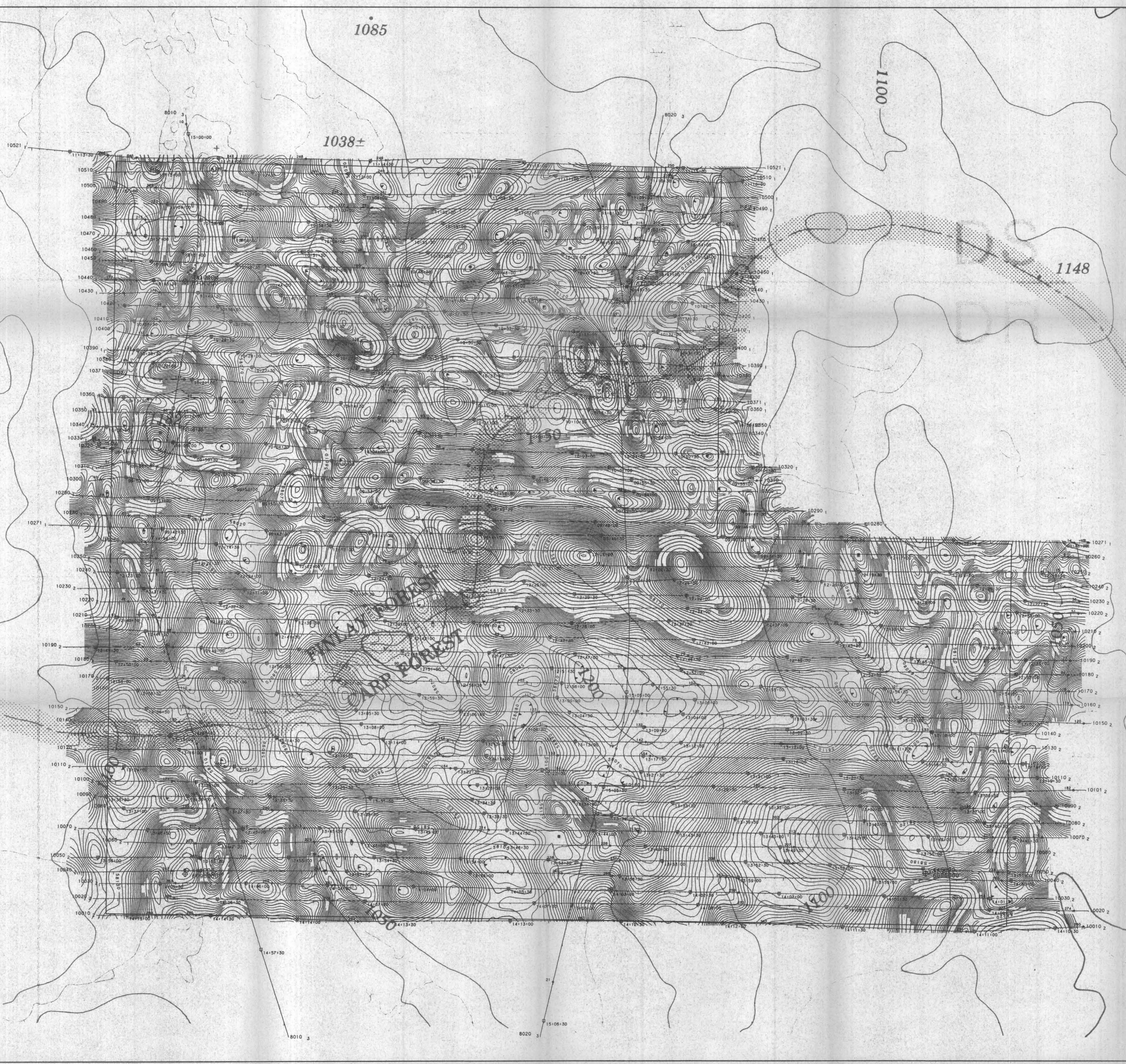


**BGM DIVERSIFIED ENERGY INC.  
GOLD POWER PROPERTY  
OMINECA M.D., B.C.**

**Geology & Geochemistry**

Scale 1 : 10,000	N.T.S. 93-O / 4 W	Drawn by
Date August 1991	Geologist	Figure 4
RELIANCE GEOLOGICAL SERVICES INC.		





↑  
N

Flight Path

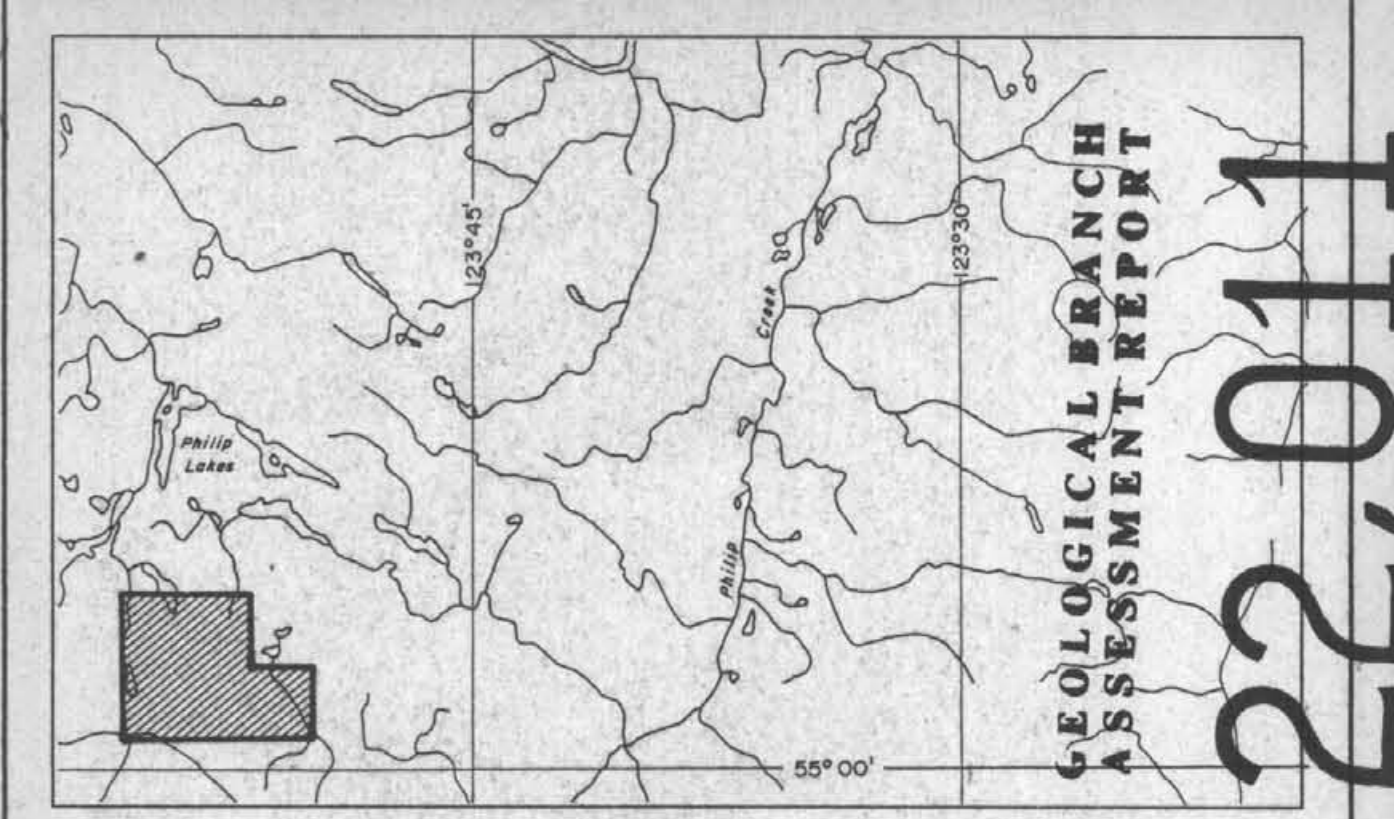
Navigation and recovery using a Motorola Mini-Ranger (MRS 111) navigation system.  
Average terrain clearance 60m  
Average line spacing 100m

Magnetics

Total Field Magnetic Intensity Contours in nT.  
Cesium high sensitivity magnetometer.  
Sensor elevation 45m

Map contours are multiples of those listed below

- 2 nT
- 10 nT
- 50 nT
- 250 nT
- 1000 nT



**BGM DIVERSIFIED ENERGY INC.**

**TOTAL FIELD MAGNETIC CONTOURS**

**GOLD POWER CLAIMS**  
BRITISH COLUMBIA

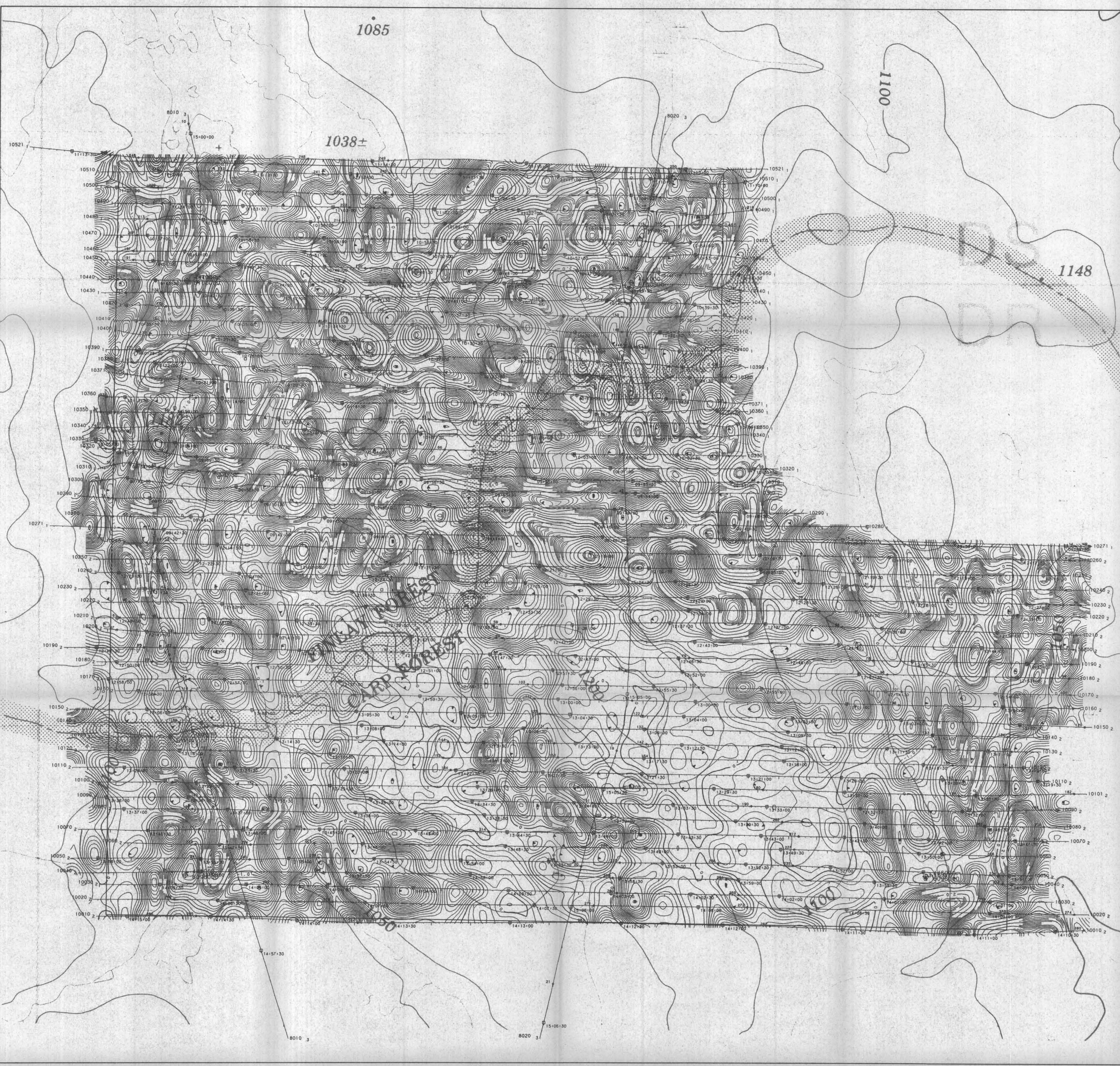
SCALE 1:10,000

0 330 660 1320 2640 Feet  
0 100 200 500 1000 Metres

	DATE: JULY 1991
	NTS No: 93 0/4W
	MAP No: 5

J9151 - 1





**Flight Path**

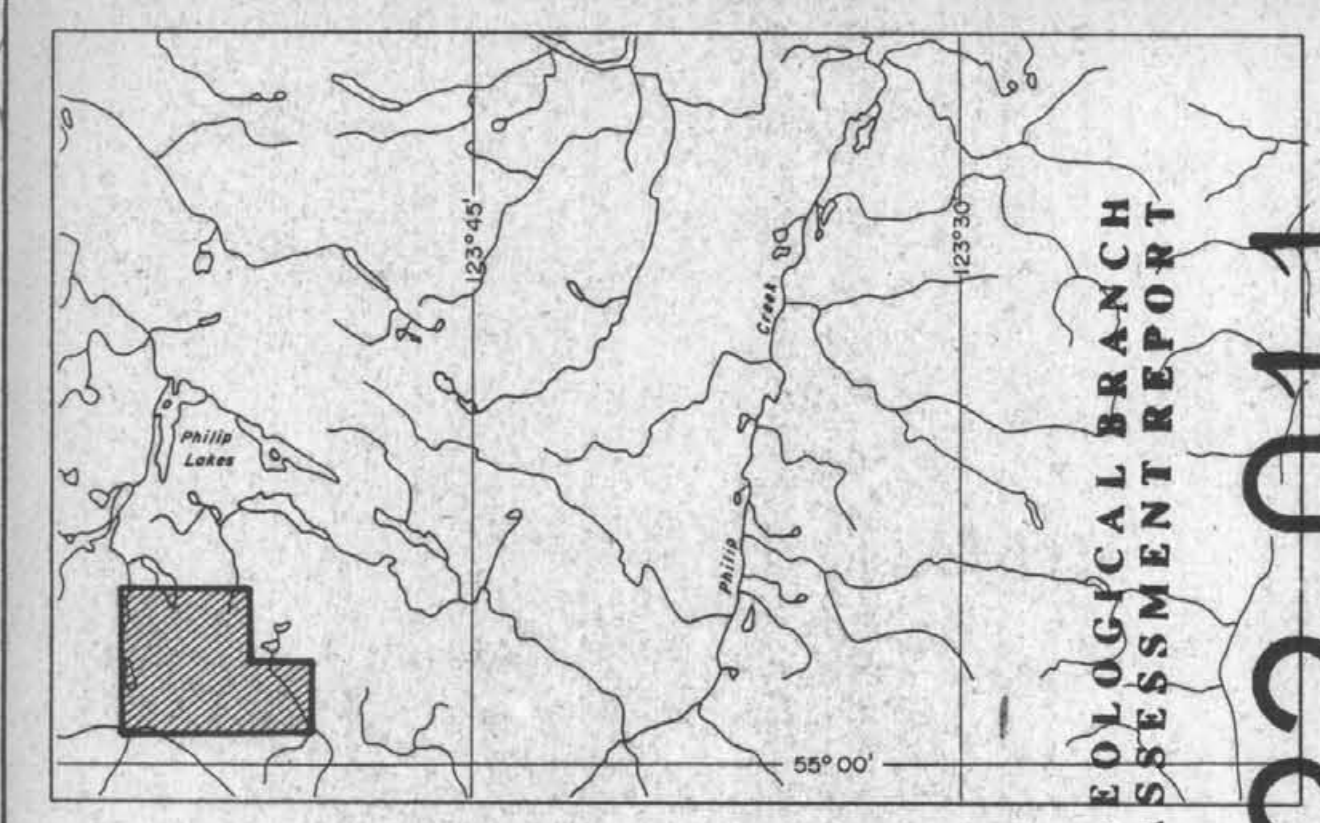
Navigation and recovery using a Motorola Mini-Ranger (MRS 111) navigation system.  
Average terrain clearance 60m  
Average line spacing 100m

**Vertical Gradient**

Vertical Magnetic Gradient calculated from the total field magnetic intensity in nT/m.  
Cesium high sensitivity magnetometer.  
Sensor elevation 45m

Map contours are multiples of those listed below

- 0.2 nT
- 1.00 nT
- 5.00 nT
- 10.00 nT
- 50.00 nT



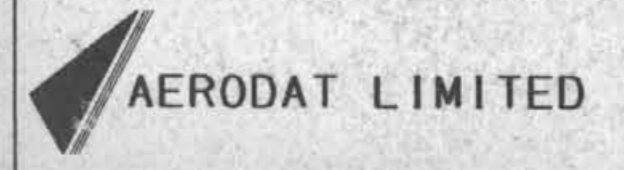
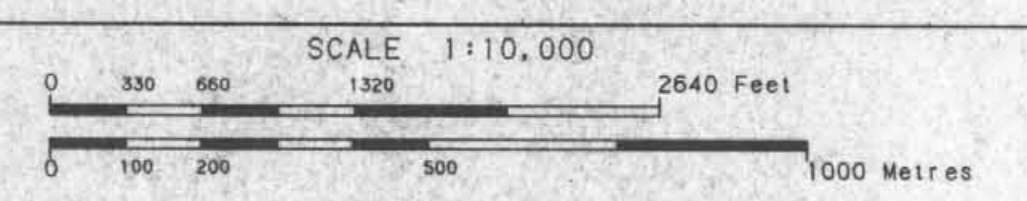
GEOLOGICAL BRANCH ASSESSMENT REPORT

22,011

BGM DIVERSIFIED ENERGY INC.

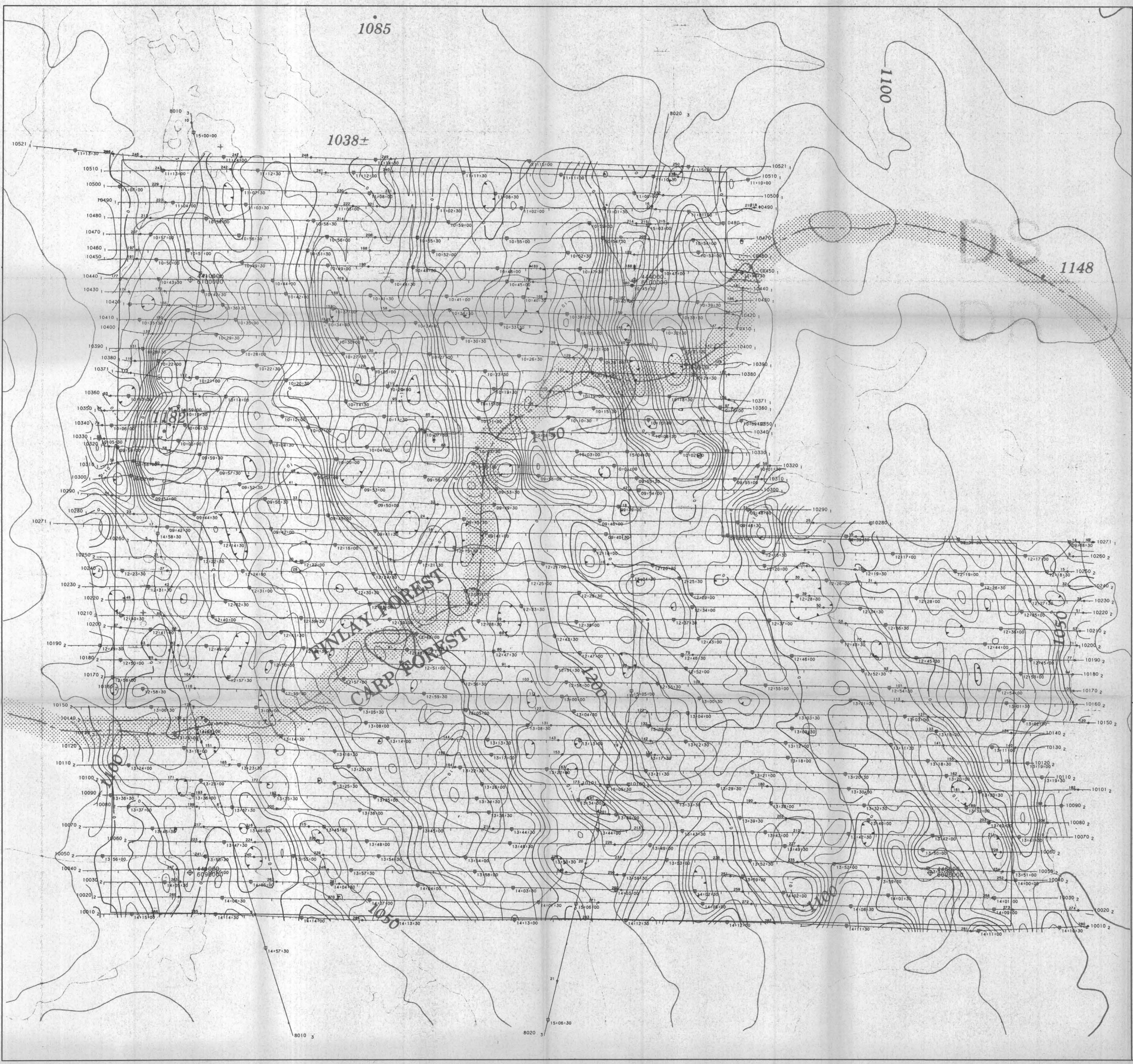
CALCULATED VERTICAL MAGNETIC GRADIENT

GOLD POWER CLAIMS  
BRITISH COLUMBIA



DATE: JULY 1991  
NTS No: 93 0/4W  
MAP No: 6 J9151 - 1





**Flight Path**

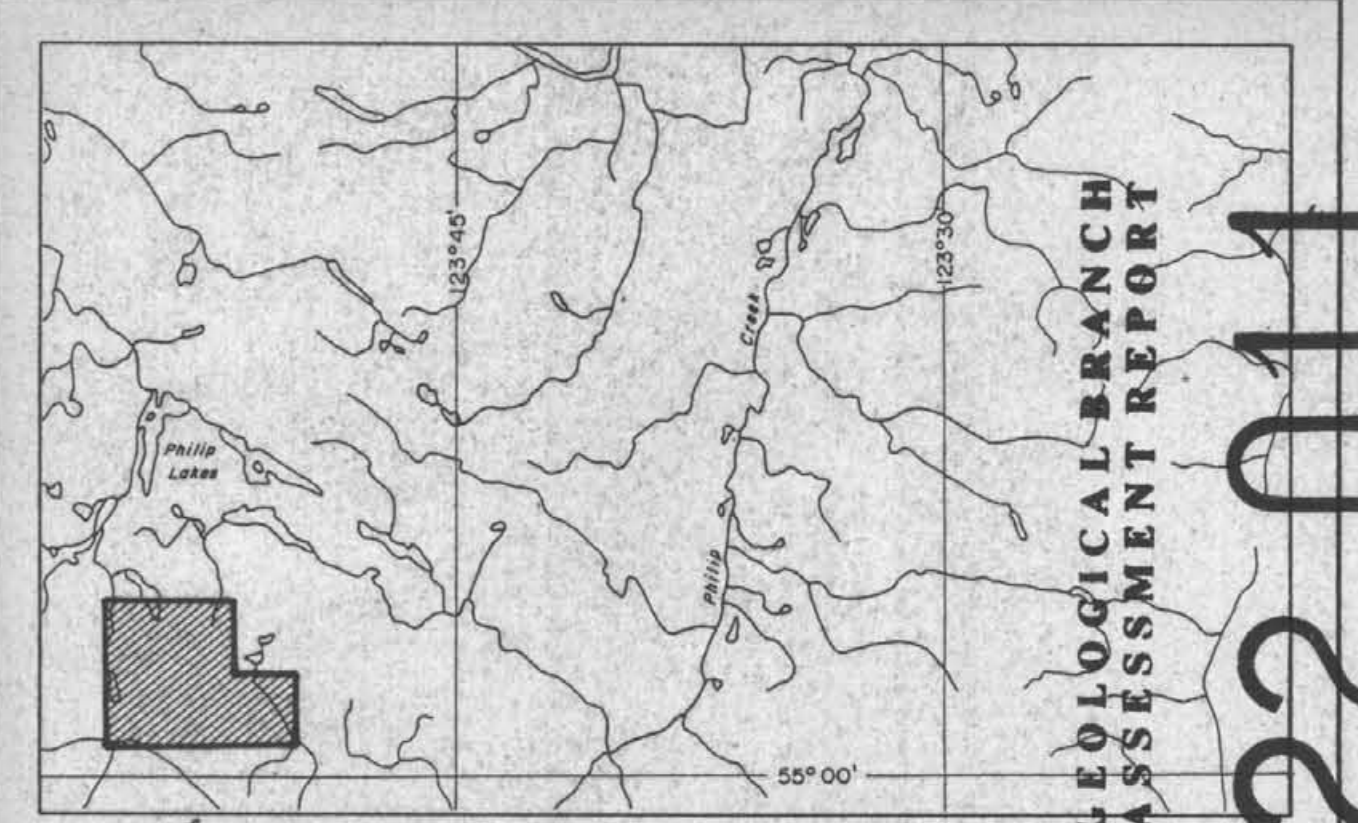
Navigation and recovery using a Motorola Mini-Ranger (MRS III) navigation system.  
 Average terrain clearance 60m  
 Average line spacing 100m

**VLF-EM**

VLF-EM Total Field Intensity in percent.  
 Station: NLK  
 Jim Creek, Washington  
 24.8 kHz  
 Sensor elevation 45m

Map contours are multiples of those listed below

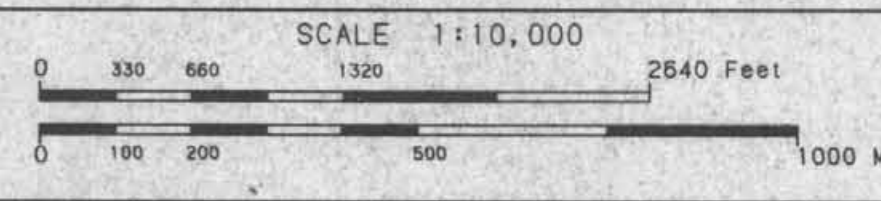
- 10 z
- 50 z
- 250 z



**BGM DIVERSIFIED ENERGY INC.**

**VLF-EM TOTAL FIELD CONTOURS ( LINE CHANNEL )**

**GOLD POWER CLAIMS**  
 BRITISH COLUMBIA



**AERODAT LIMITED**

DATE: JULY 1991  
 NTS No: 93 0/4W  
 MAP No: 7 J9151 - 1