85-530-14537

GEOLOGICAL, GEOPHYSICAL, TECHNICAL

### REPORT ON THE

### VG AND VG-2 MINERAL CLAIMS

**BANKS ISLAND AREA** 

SKEENA MINING DIVISION, B.C.

For

OWNER/OPERATOR ARARAT OIL & MINERALS INC. #1108 - 409 Granville Street Vancouver, B.C. V6C 1T2

Bу

TRM\_ENGINEERING LTD. #701 - 744 West Hastings Street Vancouver, B.C. V6C 1A5

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AND

PROSPECTOR: RON E HEGEL GEOLOGICAL BRANCH ASSESSMENT DRTR: PMOV DBOT 1985

VANCOUVER, B.C.

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### SUMMARY

- The VG and VG-2 claims are located on south central Banks Island, 53° 16'N -129° 57'W, N.T.S. 103H/5, approximately 118 km southeast of Prince Rupert.
- (2) The property consists of 36 units (VG 2S x 8W and VG-2 5N x 4W) staked under the Modified Grid System and recorded on May 30, 1984. The claims were not examined in the field by either writer during compilation of this report. However, earlier claims, now lapsed covering the same area and other existing claims nearby have been examined.
- (3) The VG Group area is of interest because it encompasses a structurally complex environment wherein favourable. "Yellow Giant" type (skarn deposits carrying high grade gold values) metasedimentary bands enclosed by granitic rocks appear severely folded as well as being disrupted by faulting.
- (4) Previous prospecting has resulting in several samples of mineralized float discovered. In the general vicinity of the VG Group (field checks will be necessary for exact location confirmation) a scheelite-bearing zone in skarn near a granite-limestone contact was found that assayed up to 0.59% WO<sub>3</sub>.
- (5) Two Airborne EM anomalies were recorded near the eastern contact of the main metasedimentary band on the VG Group. Ground EM and SP follow-up is proposed to test the significance of these anomalies.
- (6) A first phase of work is recommended to include prospecting, geological mapping, geochemistry and ground geophysics by a three man crew for an estimated cost of \$25,000.

### INTRODUCTION

This report has been written at the request of Mr. A. Tsumura, President of Ararat Oil & Minerals Inc. No examination of the VG and VG-2 claim posts or field work by TRM Engineering Ltd. staff has been carried out since the claims were located. Data collected by previous workers from the area covered by the VG Group was reviewed.

The objective of this report is:

- To present an overview of information available on the area and summarize a proper exploration strategy.
- (2) To make recommendations for the orderly examination of the claims.

The VG Group lies along the same geological horizon that hosts the Yellow Giant gold deposits to the northwest. The Yellow Giant deposits were discovered in the early 1960's by Falconbridge Nickel Mines Ltd. Close spaced diamond drilling and some underground work, to date, has indicated about 176,000 ounces of gold\* within the four best known deposits on the Yellow Giant Property.

The VG and VG-2 mineral claim area is of interest because it encompasses a structurally complex environment wherein favourable "Yellow Giant" type metasedimentary bands enclosed by granitic rocks appear severely folded as well as being disrupted by faulting. These structural features, believed necessary for the localization of gold on Banks Island, especially where intersections are involved, are reflected by vegetation changes evident through the study of air photographys, fortunate in this instance since most of the area is low lying and overburdened except for the enclosing granitic rocks.

\*Trader Resource Corp., Report to Shareholders, June 11, 1984.



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#### MINERAL CLAIMS

The mineral claims VG and VG-2; Figure 2, are in the Skeena Mining Division and are described as follows:

### ٧G

Name: VG, Record #4469(5)
Type: Modified Grid System/Tag #63510
Units: 2S and 8W - total of 16 units
Location Date: May 16, 1984 by P. Crook as agent for S. Young
Date Recorded: May 30, 1984
Work due on Property: \$1,600 on or before May 30, 1985
Bank 11 to the north

### <u>VG-2</u>

Name: VG-2 record #4470 (5)
Type: Modified Grid System/Tag #85561
Units: 5N and 4W - total 20 units
Location Date: May 14, 1984 by R. Cavanagh as agent for S. Young
Date Recorded: May 30, 1984
Work due on Property: \$2,000 on or before May 30, 1985
Adjoins: Kit 1 and 2 to the east
Bank 22 to the north

The VG and VG-2 claims have not been checked in the field by the writers of this report, although the ground they are shown to cover has been in the part. They are shown on preliminary government claim maps to be overlapping the previously recorded Kit #1, record number 4317(2) and Kit #2, record number 4318(2) by about one hundred meters. However, since neither the Kit or VG legal corner posts have been surveyed, the amount of overlap, if any, remains in doubt. Subsequent to the location of the VG Group other claims (Hecate 1 and 2 May 29 & 30th) were reportedly located in apparent contravention of the Mineral Act over the northern part of the VG and VG-2 claims.



The property occupies lapsed ground originally covered in whole or part by the Isle 9 ~ 15 claims located by Falconbridge Nickel Mines Ltd. during the 1960's.

### LOCATION, ACCESS AND TOPOGRAPHY

The VG Group is located on south central Banks Island about 118 km near due south of Prince Rupert, B.C., Figure 1. It is about 12 km southeast of the currently active Yellow Giant gold property. The nearest communities are Hartley Bay on Douglas Channel 60 km to the east and Trutch 32 km southeast.

Access is via helicopter direct from equi-distant Prince Rupert or Sandspit on the Queen Charlotte Islands, or via float plane from the same bases to Keecha Lake which is within 2 km walking distance.

The terrain involved is lightly but extensively wooded and some muskeg is present. Elevations range from 60 m to 460 meteres. The property, about 5 km from the west coast of 18 km wide Banks Island, has a typical north coast climate involving wet winters and is far enough inland that light snow would be expected for several weeks during the winter. However, such is too light to prevent year round work except for prospecting. The larger lakes seldom freeze-over completely and aircraft can still land on them year-round, but convenient bays may contain ice for a few weeks. Water supply is no problem.

Outcrop is limited to 10 - 15% although soil cover is seldom more than 3 - 5 m deep. Most of the numerous creek cuts and lake shores contain some bedrock, and cliffs on the samll hills are common, thus exposures required for generalized geological mapping appear adequate.

There are not established trails, save for claim-line blazes, nor established camp sites within the claim boundaries.

### HISTORY AND DEVELOPMENT

A portion of the property was first staked in the early 1960's by Falconbridge Nickel Mines Limited associates following the discovery of gold on the "Banker" (now Yellow Giant) claims near Hepler Lake to the northwest. The ground was located due to the realization that the rock units of interest continued southeasterly through and beyond the area under discussion. The early two-post claims involved the Isle 9 - 15 inclusive. Because of the extensive holdings and a limited budget, most effort was concentrated in the better exposed Hepler Lake (Yellow Giant) and easily accessible Keecha Lake zones. Limited prospecting was done during the claim staking and a few mineralized float specimens were found in the general vicinity of the VG-Group. Follow-through was thus limited and no reported soil or geophysical surveys were employed to help locate any larger mineralized bodies of such material under the extensive overburdened areas.

Soon after Falconbridge optioned the main Helpler area showings, during the continuing period of relatively low gold prices, to Hecate Gold Corp., claims held elsewhere on Banks Island began to lapse as assessment credit expired. Hecate (formerly Sproatt) limited its work to a secondary showing nearest the coast the assessment grouping at the time did not allow efficient application of credits to the more southerly Banker or Isle claims, including those in the Kooryet-Keecha area which thus lapsed earlier than the rest several years ago. Some of the Keecha-Kooryet area claims were restaked later by others but these have now lapsed. It is not known whether such staking included any of the ground now held by the VG group, nor is it known if any important field work contributions were made during this time, but the presence of such appears doubtful although assays of samples collected in the general area were reported to the writer.

### REGIONAL GEOLOGY

Regional geological features have been compiled by Roddick (1970) as Map 23-1970, Figure 3, as a result of field work conducted by the Geological Survey of Canada in 1963 along coastal exposures, and in 1964 by very wide spaced helicopter landings on interior sites.

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Banks Island lies along the western edge of a long, relatively narrow belt of plutonic and metamorphic rocks termed the "Coasat Plutonic Complex". This forms one of the major geological components of British Columbia, extending from Northern Washington through the Coast Mountains into southeast Alaska and Yukon Territory. General descriptions of the Complex have been given by Roddick and Hutchinson (1974) and Woodsworth and Roddick (1977). The Coast Plutonic Complex consists largely of intermediate and basic, discrete and coalescing granitoid plutons, bodies of gneiss - migmatite and pendants (septa) of metasediments and volcanics. It is an asymmetric array, having diorite and dioritic migmatites most plentiful on the west, flanking a central gneiss zone with granodiorite and quartz monzonite being more abundant on the east. Metamorphic intensity increases from greenschist facies in the western part of the belt to amphibolite (locally granulite) facies in the central and east-central parts. Woodsworth and Roddick (1977) suggest that most of the plutons in the coast mountains have been emplaced as diapiric solids, analogous to glacier flow and salt domes. Many contacts between plutons and pendants are faults or drag folds formed during information of the igneous bodies. Some faults have been healed by recrystallization. The clearest examples of movement of plutons in the solid masses are the several "tadpole" shaped intrusions that have gradational to intricate contacts along their "tails". When the rock was more solid, movement could only take place by recrystallization, and this could give rise to internal foliation within. Commonly the quartz diorite and granodioritic are rarely uniform over broad areas. Zones of migmatite and small, lensoid amphibolitic inclusions are ubiquitous but variable in abundance.

Roddick (1970) reports that contact reltionships everywhere indicate the more acid plutonic rock to be younger than any more basic plutonic rock in contact with it, but isotopic ages are related to the position of the plutons across the belt. Isotopic ages range from Early Cretaceous on the west to Late Cretaceous near the axis of the crystalline belt to Tertiary on the east side.

The central part of Banks Island is underlain by Unit 10b, Figure 3, a biotite hornblende quartz monzonite. Surrounding rocks are hornblende biotite quartz diorite (unit 8b). Basic, gneiss-diorite-migmatite complexes (unit 5b) flank the quartz diorite. This outward zoning from a felsic core to progressively more basic rocks supports a conclusion from detailed petrographic work that intrusive rocks on

Banks Island are interrelated and are part of the same zoned pluton. The field observations, discussed under "Local Geology", simply reflect the complexitites along the contacts between major phases.

Metasedimentary rocks are exposed over about 7% of Banks Island, mainly occupying long, narrow northwesterly trending belts. The longest continuous belt from Banks Lake to Keecha Lake is over 18 km in length. North of Waller Lake this Banks-Keecha belt splits into two arms, the probable result of large scale complex folding. It is this area of the Island together with the parallel sedimentary belt from Foul Bay (Waller Bay) to Bob Zone that attention has focused in the Yellow Giant Project.

The discovery of mineralization resulted from an aircraft assisted prospecting program designed to investigate north coast lineaments (McDougall 1972). Banks Island has an unusual density of faults, fractures and lineaments. The Island is bounded by deep seated, major faults that are assumed to have right-lateral displacement.

South of Keecha Lake the same metasedimentary band that hosts, or is near, the main "Banker" gold deposits is present. Limestone, favorable because it allows the formation of skarn, which is important, is known near the southern limits. The same granitic rock appears to flank the metasediments. The main crosscutting E-W structual features are also present, including the lineament occupied by Keecha Lake, but the frequency of other lineaments appears lower, perhaps masked in part by more hilly topography and more soil and extensive tree cover than at the Yellow Giant Property.

A thorough study of lineaments has apparently not been made in the VG mineral claims area (i.e. frequency, etc.) but it is obvious from airphoto observations that at least the main lineaments (east-west, northwest and northeast) do persist to this area. Fault offsets are not prominent but an anomalous bulge (fold?) is apparent which may have vein-forming conditions associated with it (i.e. tensional openings).

In the initial exploratory stage, prospecting zeroed in on locales where the more eastwest lineaments intersected the northwesterly ones which often contained the metasediments, particularly the calcareous bands where offsets were more readily recognizable on air photos. A large percentage of the gold occurrences now known on



Banks Island were discovered as a result, proof positive as far as the writers are concerned that these features represent, or are closely related to, areal controls of most immediate interest. Paralleling but nearby zones "sympathetic" to these main structural features now appear of equal or more importance as a locus of gold mineralization, however.

The source of the gold and other mineralization is not known. There are no volcanics on Banks Island (an interesting feature) and the writers favor as a mechanism the geochemically anomalous sedimentary bands being "leached" by hydrothermal agencies related to the granitic rocks with redeposition and concentration in structurally – and in part chemically – favorable environments.

### LOCAL GEOLOGY AND MINERALIZATION

Local geology of the VG and VG-2 claim, Figures 4 and 5, from Roddick (1970) illustrates the complex structural environment wherein metasedimentary septa are enclosed by granitic rocks. Since neither of the writers has visited the property since the VG Group was located, the following remarks are taken from a preliminary examination of available airphotos and prospecting notes from work done by Falconbridge Nickel Mines Ltd. in the 1960's.

Unit 2b, Figure 5, micaceous quartzite and marble are found in a narrow linear belt that appears to be off-set along a north-south trending fault. A number of east-west airphoto lineaments are apparent on airphoto BC 1918-32 as summarized on Figure 4. The metasedimentary rocks are severely folded as well as being disrupted by several stages of major faulting. Structural intersections are believed to be necessary for the localization of gold on Banks Island. A notable flexure in the trace of thick forest cover, the usual characteristic of underlying metasediments, occurs directly south of the VG claim.

Exploration of the structurally affected belt has been difficult and largely restricted to a search for float in the stream cutting the area. Geochemical work was not attempted during initial evaluation of the area although several samples of mineralized float were discovered.



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The only discovery made "in place" during rapid prospecting associated with Falconbridge claim staking (the only significant exploration attempt) was of a scheelite-bearing zone in skarn near a granite-limestone contact. Disseminated scheelit grains occur in a steep, several foot wide diopside-bearing skarn body exposed near the easteriy contact of the locally calcareous metasediments for about 17 feet. The diopside, unfortunately, fluoresces similar to scheelite and its higher than normal specific gravity helps concentrate it with scheelite in a gold pan, causing prospecting complications. No attempt was made to trace out or expand the zone beyond a 200 foot radius of the discovery within which, however, a considerable fluorescent diopside was noted.

Falconbridge notes refer to the Scheelit deposit and/or related WO<sub>3</sub> floats being present on the "following" 2 post claims.

- \*1) Isle 13-14 -- float 0.50% WO3
- 2) Isle 13-14 -- float 0.59% WO3
- 3) 300' north of initial post Isle 13 & 14 0.36% WO3 / 0.72% Zn, Tr Au, Tr Ag.

In addition

- 4) "#17 ck" (probably refers to Isle #17) creek -- .01 ounces Au, .4 ounces Ag
- 5) Float nearby -- .02 ounces Au, .7 ounces Ag 1.91% Cu, 1.90% Zn.

\*The above occurrences can probably be located by finding the old Isle 13 through 17, 2 post claims. Their approximate location plots on the VG claims as sketched, Figure 5, but the accuracy is not sufficient to state categorically that any of the above occurrences definitely occur on the VG claim as the unsurveyed Falconbridge claims were recorded before much of Banks Island was mapped and certainly before 1:50,000 scale mapes were available. The location of the tungsten showing was taken from Airphoto B.C. 1918-32 which had been enlarged for prospecting purposes to 1" = 1,000 feet. The showing is relatively close to the Dighem EM anomalies.

It is recommended that geochemical grids be established and sampled in the vicinity of the samples noted. Gold, arsenic, copper, zinc and molybdenum should be analyzed for.

### AIRBORNE GEOPHYSICS

As part of a larger program, two Dighem helicopter-supported airborne magnetic and electromagnetic reconnaissance lines were run over the central portion of ground now occupied by the VG mineral claim, (Smith 1984), as illustrated on Figure 5.

Two EM anomalies were recorded near the eastern contact of the main sedimentary band, the significance of which will have to await ground appraisal following more accurate plotting of the locations. The profiles for the flight lines should be studied to determine which of the anomalies exhibit magnetic and/or VLF response. The most likely source according to Smith's (1984) interpretation of the VG anomalies is type "B" - discrete bedrock conductor, using a vertical sheet (half plane) model for analysis. The Dighem EM anomalies on the VG claim occur near the intersection of strong airphoto lineaments. Tungsten mineralization hosted by skarn is located, according to airphoto plotting, near the airborne EM anomalies.

### CONCLUSIONS

The VG and VG-2 claims are in an attractive exploration target due to (1) the intersection of strong airphoto lineaments, (2) previously discovered scheelite-bearing float in the general area, (3) the southward continuation of favourable metasedimentary rocks adjacent to intrusives and the (4) presence of two Dighem airborne EM anomalies near the junction of 2 important fault systems.

There has been minimal prospecting or geological mapping done around the claims in the past.

#### RECOMMENDATIONS

- An exploration program to evaluate the precious metal potential of the VG and VG-2 claims is recommended. This program should be done in phases. Phase I is recommended to include the following elements:
  - (a) detailed prospecting and reconnaissance geological mapping, rock sampling included, with emphasis on the sediment-marble belt and intersections of lineaments.
  - (b) close-spaced stream sediment sampling on major drainages, especially the main north flowing creek in central VG claim.
  - (c) wide spaced soil sampling around the Dighem EM anomalies and along the metasedimentary-granitoid contacts.
  - (d) orientation surveys of SP and horizontal loop EM should cover the Dighem airborne EM anomalies.

Additional (Phase II) work should be carried out depending on favorable results of Phase I. A Phase II program will consist largely of detailed geological mapping, follow-up geochemistry and ground EM plus diamond drilling.

Respectfully submitted,

J.T. SHEARER, M.Sc., FGAC.

J.J. McDOUGALL, P. Eng.

July 15, 1984

### COST ESTIMATES

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## PHASE I PROGRAM

Personnel Preliminary Geological mapping and prospecting	
Geologist - 1 & \$265/day for 15 days	\$ 3,975.00
Sampler/Prospectors - 2 @ \$175/day for 9 days	3,150.00
Samples	
50 Silt Samples for Au & \$10 per assay	500.00
450 Soil Samples for Au ල \$10 per assay	4,500.00
50 Rock Samples for Au C \$10 per assay	500.00
Helicopter (4 hours) & \$500.00/hour	2,000.00
Ground Geophysics SP and horizontal Loop EM orientation equipment plus operators	1,800.00
Camp/Equipment Rentals	800.00
Board (\$35/man day) for 40 man days	1,400.00
Supplies	1,000.00
Air Fares, mobilization (from Vancouver)	1,375.00
Report Writing/Drafting, map supplies, reproduction	3,000.00
	\$24,000.00
Contingency - 4%	1,000.00
TOTAL PHASE I PROGRAM	\$25,000.00

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### STATEMENT OF QUALIFICATIONS

### I, James J. McDougall, Do Hereby Certify:

- That I am a consulting geologist with a business office at 7720 Sunnydene Road, Richmond, B.C. V6Y 1H1 and President of J.J. McDougall & Associates Ltd., and an associate engineer with TRM Engineering Ld.
- 2) That I am a graduate in geology of University of British Columbia (M.Sc. 1954).
- 3) That I am a Registered Professional Engineer (Geological) in good standing with the Association of Professional Engineers of the Province of British Columbia.
- 4) That I have practiced my profession as a geologist for the past thirty-three years.
- 5) The information, opinions and recommendations in the attached report are based on studies of the available literature of the area occupied by VG and VG-2 Mineral Claims and on ground observations both locally and regionally on several earlier occasions prior to the location of these claims.
- 6) I own no interest in the VG and VG-2 Mineral Claims nor do I expect to receive any such interest.

Dated at Vancouver, B.C., this 15th day of July, 1984.

James J. McDougall, P. Eng.

### STATEMENT OF QUALIFICATIONS

I, John T. Shearer of the City of Port Coquitlam, in the Province of British Columbia, do hereby certify:

That I am a practising Geologist and employed by TRM Engineering Ltd. with offices located at #701 - 744 West Hasting Street, Vancouver, British Columbia.

I further certify:

- That I am a graduate of the University of British Columnia and hold a B.Sc. degree in Honours Geology (1973) and the University of London, Imperial College (M.Sc. 1977).
- 2) That I have been engaged in the geological profession for the past 14 years.
- 3) This report is based on information obtained from a review of available literature. No field examination of the property was made during the preparation of this report.
- 4) That I am a Fellow of the Geological Association of Canada
- 5) That I own no interest in the VG and VG-2 mineral claims, nor in the shares or securities of Ararat Oil & Minerals Inc., nor do I expect to receive any such interest.

J.T. Shearer, F.G.A.C., M.Sc. Geologist

Vancouver, B.C. July 15, 1984

## APPENDIX "A"

REPORT BY RON E HEGEL

- 1



4,44km SCALE 1:111,000 PROPERTY LOCATION MAP FIGURE B

### INTRODUCTION

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This part of the whole report was writen by Ron Hegel for ARARAT OIL & MINERAL INC.

The objective of this report is :

(1) To present the reader with the exact location of the newly cut detailed grid.

(2) To give the reader an idea of the local geology.

(3) To reveal accurate topography of the grid area.

### LOCATION & ACCESS

The VG and VG-2 mineral claims are located on south central Banks Island,53'16' N.latitude,129'57' W.longitude N.T.S.103H/5 approx. 118 km.southwest of Prince Rupert.Access is vio helicopter direct from equi-distant Prince Rupert or Sandspit on the Queen Charlotte Island ,or vio float plane from the same bases to Keecha Lake which is within 2 km walking distance.

### HISTORY

The property was originally discovered and staked in the early 1960's by Falconbridge Nickel Mines Ltd. While the company did own the ground they have never reported any surveys of any kind which may have been done.Eventually the properties did lapse only to be restaked many years later.The present owner ARARAT OIL & MINERALS INC. did have part of the VG property flown over by a helicopter - supperted Dighem airborne electromagnetic instrument.This two line reconnaissance survey had indicated the presence of two Dighem airborne EM anomalies, near the junction of two important fault systems (figure 5).A follow up phase was then drawn up for a ground crew investigation.Which took place in May of 1985.A two man crew did establish a detailed grid over the airborne EM anomalies.As well as a geological map ,but due to extremely bad weather conditions, the crew was unable to complete the program .



### GEOCHEMICAL\_SURVEY\_&\_SAMPLE\_LIST

There were 29 rock grab samples taken over the entire grid, six of which had a rock geochem analysis done by NORANDA EXPLORATION COMPANY,LIMITED.They were run for Cu,Zn,Pb,Ag, Mo,As,and Au.

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Project No.	: 240	Sheet:	1	Date	rec'd:May	27
Material	:Rock	Geol.:LW		Date	compl:May	31
Remarks	∶Au 10g/Aq	Reg.MIBK/AA				

T.T. SAMPLE All values in PPM PPB

No.	No.	Cu	Zm	РЬ	Ag	Mo	As	Au
2	RR-85-V6-011	 60	80	2	். 8	12	8	10
3	18	210	28	2	0.4	1	4	10
4	· 19	230	28	2	0.6	í	2	10
5	20	230	56	5	0.6	1	2	10
ε	22	86	160	2	0.4	8	12	10
7	RR-85-V6-029	36	88	2	0.2	1	4	10



Using the list below to  $cor \vec{e}spond$  the sample numbers to the sample sites on the sample site map sheet (figure D) to give the exact sample location.

All samples begin with RR-85-VG-000:

<u>sample</u>	<u> </u>	_Rock type
-001	BL.0+00S,0+40E	Biotite, Hornblende, Quartz Diorite
-002	BL.1+00S,0+60E	Quartz,Feldspar Pegmatite (float)
-003	BL.0≠75S,2+00E	Quartz,Feldspar Pegmatite
-004	BL.1+00S,0+25W	Meta Sedi Hornfels
-005	BL.1+00S,0+25W	Diorite sill
-006	BL.1+00S,0+25W	Diorite sill

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\_GEOCHEMICAL\_SURVEY\_&\_SAMPLE\_LIST

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All samples begin with RR-85-VG-000:

<u>Sample #</u>	Grid location	Rock type
-007	BL.1+00S,0+25W	Hornfels (near contact)
-008	BL.1+00S,0+25W	Hornfels (white bands)
-009	BL.1+00S,0+25W	Hornfels (dark bands)
-010	BL.1+005,0+25W	Quartz Diorite(at south contact)
-011	BL.1+50S,2+10E	Hornfels (at south contact)
-012	BL.1+50S,2+10E	Quartz Diorite (at north contact)
-013	BL.1+755,3+00E	Quartz Diorite
-014	BL.2+00S,1+00E	Pyrite mineralization in Quartz Diorite
-015	BL.2+005,1+05E	n u u u
-016	BL.2+00S,1+15E	j) (i i 11 11 13
-017	BL.2+00S,1+25E	0 II II D D
-018	BL.2+00S,1+35E	р п <u>п</u> 9 р <sup>2</sup> с
-019	BL.2+00S,1+40E	р и о в
-020	BL.2+005,1+40E	Pyrite mineralization in Quartz Diorite
-021	BL.2+00S,1+40E	Diabase (intruding Quartz Diorite)
-022	BL.2+50S,0+75E	Hornfels(Light & Dark bands)
-023	BL.2+50S,0+75E	Pyrite mineralization in dark hornfels
-024	BL.2+50S,0+75E	Pyrite mineralization in dark hornfels
-025	BL.2+50S,0+25W	Hornfels (white bands)
-026	BL.3+50S,1+50W	Quartz Diorite
-027	BL.3+50S	Quartz Feldspar veining cutting Qu-Diorite
-028	BL.3+50S	Quartz Feldspar vein
-029	BL.2+50S,0+25W	Hornfels (dark bands)

### GEOLOGICAL\_SURVEY

A geology map was done on the VG grid by Ron Hegel a competent prospector.The outcrops reveal two quartz feldspar veins ,one at BL-0+755, 2+30E ,it's width is approx.20cm and it strikes mag.North with a vertical dip.The other vein is at BL-3+50S, due to weathering and over burden the veins strike and dip is not known.Two contacts were discovered,one at BL-1+00S, 0+25Wwhich consisted of dark and light colored banded hornfels. That was intruded by a .5 meter thick quartz diorite sill.The sill entered the hornfels parallel to their relict bedding at a strike of 25° and dip of 90° or vertical dip.Then the hornfels continue for 1 meter to where they contact a quartz diorite stock,that has the same strike and dip as the sill ( $25^{\circ}/90^{\circ}$ ). There is no mineralization present at either contact.

The only other actual contact is situated at BL-1+50S,2+10E. It also consists of banded hornfels contacted by a quartz diorite stock.It's strike & dip is 120°/70°NE. also no mineralization present.At BL-2+50S,0+25W we can assume a contact within the immediate vicinity because there are quartz diorite outcrops 15 meters to the west of station 0+25W and hornfels to the east of station 0+75E.At approximately 0+80E we can be safe to assume yet another contact because of the quartz diorite outcroppings present beyond this point.There is an abundance of pyrite mineralization present throughout the hornfels near the assumed contacts.

Over the entire grid there were only two different rock types found ,unit 8b -Quartz Diorite and unit 2b - Metasedimentary Hornfels.After having viewed the samples ,Mr.Gary White(a government geologist for the Smithers area)varified the unit names which were applied to the rock types.

The Geological Map is done at a scale of 1:1,500 or 1cm to 15m. (see figure E in pocket)

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### TOPOGRAPHIC\_SURVEY

While traversing the grid the author was able to accurately note the elevations at each station ,with the use of an altimeter. Each creek and water pond was also recorded for it's size and direction of flow as well as their ph values. With this information a topography map of ( scale 1:1,500 or lcm - 15m) the grid only has been compiled.(see figure F)

### PROSPECTING SURVEY

Prospecting was confined to the grid only, due to limited time and adverse weather conditions.Once the grid was established the lines were prospected starting with BL-0+00S,0+10E,refer to figure D rock grab sample sites and figure E geological map for size and shape of each outcrop.

BL-0+00S

(0+40E) Sample #RR-85-VG-001; Large Quartz Diorite outcrop 2-3 meters high with cliff faced edge ,total length of outcrop is 70-80 meters.

(1+20E) Small rounded Quartz Diorite outcrop on lake shore. BL-0+50S

(0+20E) A Quartz Diorite outcrop extending 30 meters long to station 0+40E.

(1+80E) Quartz Diorite outcrop 10 meters in diameter.

(2+20E) Large Quartz Diorite outcrop 10 meters wide by 50 meters long striking in a north-south direction.

BL - 0 + 75S

(0+10E) Small Quartz Diorite outcrop 2 meters exposed,also two different sets of Quartz jointing.Both sets are approximately 2cm wide ,one striking north-west and the other eastwest.

(2+00E) Sample # RR-85-VG-003; Quartz Feldspar vein with the Feldspar being the dominate.

(2+30E) Quartz Diorite outcrop with Quartz joints striking east-west but not cutting the 20cm wide Quartz Feldspar vein striking true north and dipping vertically. (2+40E) Small Quartz Diorite outcrop extending to 0+50E. A STREET

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(2+80E) Small Quartz Diorite outcrops to 3+00E. BL-1+00S (0+25W) At this station we have bedrock exposed for 6 meters. First of all there is 1.5 meters of Quartz Diorite stock to the south of the line. Then there is a contact with metasedi -Hornfels of light and dark coloured bands. This contact is parallel to the Hornfels foliation, which is striking at 25 and dipping at 90°. The Hornfels extend for 1 meter in a north-western direction to where they contact a .5 meter wide Quartz Diorite sill . Beyond the sill to the north-west the outcrop appears to be the dark and light coloured metasedimentary Hornfels. Samples were taken from this location, #RR-85-VG-004,006,007, 008 and 010. (0+60E) Large rounded Quartz Diorite float rocks. (1+50E) Quartz Diorite outcrop trending to BL-1+25S. (2+20E) Small Quartz Diorite outcrop 2 meter diameter. BL-1+25S (1+80E) Quartz Diorite outcrop approximately 2 meters high which this line follows to 1+60E then the outcrop trends towards BL-1+00S where it is mostly over lain by moss. BL-1+50S (0+60E) This line follows Quartz Diorite outcrop to 0+90E. (1+20E) Small Quartz Diorite 2 meters in diameter. (1+70E) Small Quartz Diorite (2+10E) 20 meter long outcrop of Quartz Diorite contacting metasedimentary Hornfels. The strike is 120'and the dip is 70°north-east. (2+40E) 10 meter diameter Quartz Diorite outcrop. (2+80E) Quartz Diorite outcrop 10 meters north of line approximately 15 meters long trending in a north-western direction. BL = 1 + 75S(1+10E) Quartz Diorite outcrop 10 meters long . (2+50E) Quartz Diorite outcrop 20 meters long. (3+00E) Sample #RR-85-VG-013 Quartz Diorite outcrop 10 meters in diameter.

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BL-2+00S

(1+00E) At this point the line drops verticlly over a 6 meter Quartz Diorite cliff. The line is parallel to the cliffs edge for 50 meters to 1+50E. There were eight grab samples taken along the cliffs face, some of which were oxidized as well as having Pyrite mineralization present. The sample numbers consist of RR-85-VG-014 to RR-85-VG-021.

(2+25E) Quartz Diorite outcrop 2 meters high by 10 meters in length.

(2+75E) Quartz Diorite outcrop 2 meters high by 40 meters in length ,it extends 10 meters beyond 3+00E. BL-2+50S

(2+00E) Quartz Diorite outcrop 2 meters high by 50 meters in length. The small cliffs edge trends towards BL-2+00S,1+00E. (1+00E) Quartz Diorite outcrops are exposed in many places along a north east flowing (2 m.wide)creek.

(0+75E) We have a change in geology at this station but there was no contact found, due to limited time. The last known Quartz Diorite outcrop is at 0+80E. Then at o+75E we have the begining of a metasedimentary Hornfels Unit. In this immediate area both the light colored and the dark colored bands house pyrite mineralization . The Hornfels foliated relict beds strike at 155 and dip at 90 (degree). Three samples of the Hornfels were taken, RR-85-VG-022,023,024. (0+25W) Here there is a 10 meter long Hornfels outcrop which is the same Hornfels unit as 0+75E. The foliation is the same (155 '/90') and we must also assume a contact in close proximity. The geology is a different type by 0+35W (Quartz Diorite) therefore it is within reason to believe in the contact theory. The sample numbers taken were RR-85-VG-025 and 029.

BL-3+00S

(2+75E) Small Quartz Diorite outcrop 2 meters wide, it extends to 2+90E.

BL-3+50S

(0+20E) There is an outcrop of Quartz Diorite from the baseline to 0+20E.

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(0+20E) There were two samples taken (RR-85-VG-027,028) one of Quartz Diorite and the other of a small Quartz vein intruding the plutonics. BL-4+00S

(3+00E) Quartz Diorite outcrop 10 meters in diameter.(1+10W) Quartz Diorite outcrop 2 meters exposed.(1+50W) Quartz Diorite outcrop 2 meters in length.

### GRID\_ESTABLISHMENT

The VG legal corner post is situated approximately 5.4km on a bearing of 228 (degree) true north from the mouth of Keecha creek(figure G).The base line 0+00S post is situated approximately 3.4km (air) on a bearing of 260.5 (degree) true north from VG legal corner post.

The grid is established near a small "H" shaped lake approximately in the centre of the VG block, south of line post 7 west. This grid was established as a preparatory survey which was to be followed up by a geochemical and geophysical survey to varify two airborne EM anomalies(figure 5). The method used for the surveying of the grid was compass and belt chain. The base line 0+00S post was positioned by the use of the distance and degrees herein perviously mentioned. Once the post had been cut, squared and marked (BL-0+00S with a water proof marked) it was firmly affixed to the ground by sledge. Then the compass was set at 140°SE and with a two man crew the lines were cut by power chain saw.All small vegetation such as willows, shrubs, ect.were cut and cleared from the grid lines.Picket posts were then placed and marked accordingly, at intervals of 25 meters on the base line and 10-25 meters on the cross lines. See figure H (GRID SURVEY MAP) for more accurate details of established grid.

The total length of the base line is 400 meters on a bearing of 140 (degrees) from base line post 0+00 south.The total length of each cross line is 450 meters,150 meters to the west and 300 meters to the east.Each line intersects the base line at 50 (degrees) NE. this giving them a right angle. There are thirteen cross lines totaling 5,550 meters

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in length.When combined with the base line length ,the distance cut equals 5,950 meters or approx. 6 kilometers.

### MINERAL CLAIMS

The mineral claims VG and VG-2; Figure 2, are in the Skeena Mining Division and are described as follows:

### VG

Name: VG,Record #4469(5) Type: Modified Grid System/Tag #63510 Units: 2S and 8W-total of 16 units Location Date: May 16,1984 by P.Crook as agent for S.Young Date Recorded: May 30,1984

### <u>VG-2</u>

Name: VG-2 Record #4470(5) Type: Modified Grid System/Tag #85561 Units: 5N and 4W - total 20 units Location Date: May 14,1984 by R.Cavanagh as agent for S.Young Date Recorded: May 30,1984

### CONCLUSION

Now that there is a detailed grid over lain the two Airborne EM anomalies, as well as an outcrop geological map. I feel the next phase should consist of soil & silt sampling ,followed by ground geophysics SP and horizontal loop EM. This work would clearify the potential of the EM anomalies. 

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FIELD PERSONNEL							
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Apr.30-May	01 2-trav	rel	TWO	\$100/D.ea.	\$	400.00	
May 02-14	12-FIE	LD	TWO	\$200/D.ea.	\$	4,800.00	
May 15+ 21 2-travel			TWO	\$100/D.ea.	\$	400.00	
May 16 -20	5-PERP	•	ONE	\$150/D.	\$	750.00	
FOOD AND ACCOMMODATION							
Apr. May 0: 30 <sup>+15-2</sup>		ERCIAL	TWO	\$ 80/D.ea.	\$	1,440.00	
May 02 - 14	12-FIE	LD	TWO	\$ 70/D.ea.	\$	1,680.00	
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May 02/85	Helicop	ter	\$ 451.00	1.3	\$	586.30	
May 14/85	Jetrang	er	\$ 451.00	1.4	\$	631.40	
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April 30 -	May 22	1978 FO	RD 4 by 4	\$ 20.00	\$	460.00	
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April 30 -	May 22 2	power	chain saws		\$10/D.ea.\$	460.00	
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REPORT PREPARATION							
GEOLOGICAL + GEOPHYSICAL report by TRM ENGINEERING LTD. \$ 5,000.00							
TOTAL COSTS SPENT ON VG AND VG-2 IN 1985 IS ========== \$17,804.00							

# TOTAL ASSESSMENT REPORT

<u>\$17,804.00</u>

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### AUTHOR'S QUALIFICATIONS

I Ron E Hegel from the City of Chase, in the Province of British Columbia, do hereby certify: That I am actively prospecting in the Province of British Columbia and have been for the past six years. I further certify: 1)That I have been studying geology through books for the past two years. 2) That I have studied mineralogy for three months under the guidance of south central district geologist Mr.Gordon P.E.White. (Nov, 83- Jan, 84) 3) That I have successfully completed a basic prospectors course in March, 1984 at The Ministry of Energy, Mines and Petroleum Resources, Kamloops, B.C. 4) That I have successfully completed The Ministry of Energy, Mines and Petroleum Resources, Mineral Exploration Course For Prospectors. (May 12, 1984)

5)That I did take part in the field examination and preparation of this report.

Vancouver, B.C. May 30, 1985 Certified Prospector Mr.Ron E Hegel





