TROUT LAKE DISTRICT
REVELSTOKE MINING DIVISION
Location:
Longitude: $117^{\circ} 30^{\circ}$ west
Latitude: $50^{\circ} 43^{\prime}$ north
ATS: $82 K 11$ W/12E
Ownership: Halley Resources Ltd.
Newfields Minerals Ltd.

Operator: Wally Resources Ltd.

Date Submitted: July 10, 1989 Amended: October 7, 1989

Author: C. A. vo Einsiedel, BSC. Latitude: $50^{\circ} 43^{\prime}$ north ATS: 82K11W/12E
LOG W: $2226 \quad$ RD. 1$]$
ACTIOR: Rate rececued
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FILE NO:


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## INTRODUCTORY NOTE

The Fissure Claim Group covers an area equivalent to roughly 7 square kilometers located in the central part of a relatively unexplored silver mining area termed the Trout Lake Mining District. The claim area is located approximately 50 kilometers southeast of Revelstoke in southeastern British Columbia.

The claims are of interest because they cover a densely forested valley which separates two of the best known prospects within the Trout Lake area. Soil geochemical surveys (Westmin Resources Ltd., 1982) identified several targets which exhibit elevated silver and base metal values roughly 1 kilometer north of the most important of the known discoveries (termed the "True Fissure" prospect). During 1986 Halley Resources Ltd. carried out fill-in geochemical surveys and overburden trenching.

Results of these surveys were inconclusive. Fill-in surveys confirmed Westmins results however trenching of several broad, anomalous zones showed unusually heavy overburden conditions. These conditions precluded identification of the source of these anomalies and the exploration program was suspended. Technical data relating to these surveys is described in a report by the author dated May 12, 1988.

Between May 15, 1988 and February 28, 1989 Halley Resources Ltd. and Newfields Minerals Ltd. carried out an extensive program of access road construction, geophysical surveys, overburden drill testing and diamond driling designed to identily the source of the geochemical anomalies. This report describes results of these surveys and includes a compiation of previous soil geochemical data.

## SECTION 1 - dESCRIPTION OF 1988 EXPLORATION PROGRAM

### 1.0 Program Summary

To provide access to the claim area approximately 4 kilometers of skid trails were upgraded allowing 4 wheel drive access to a ridge located immediately south of the claim boundary. The original geochemical survey grid employed by Westmin covered an area 1.1 kilometers long and 1.5 kilometers wide. This grid was re-established and a total of 27 line kilometers of profile lines were flagged and stationed as a basis for geophysical survey control. Detailed (1,2,500 scale/ 10 meter contour interval) physiographic plans were prepared as a base for locating position of access roads, drill sites and sample locations.

On the basis of "highest silver and base metal values" in soils an area in the central part of the grid was selected for detailed overburden drilling (Note: soil geochemistry plots are included as figure no.s 2.1, 2.2, 2.3 and 2.4). Three 700 meter long skid trails spaced roughly 75 meters apart were constructed across the anomalous area. A Hydra Core 28 Drill was then utilized to penetrate and recover overburden samples at the bedrock interface. A total of 179 test holes were drilled from 39 sites spaced at roughly 50 meter intervals. Sample locations are shown in figure no.2.5. Overburden sample assay results are included as Appendix 1 and 2.

Geophysical surveys were carried out using a Scintrex Model IGS2 Integrated VLF-EM and Magnetometer. VLFEM data is plotted as in Phase Contour Plans in figure no.s 2.6 and 2.7. Magnetometer data is plotted as Total Field Contour Plans in figure no.2.8.

Preliminary geophysical data showed several conductive zones which were interpreted as shear or fault zones. To evaluate these zones 13 holes were drilled for a total of 983.7 meters. Drill hole locations are shown in figure no.2.9. Drill core logs are included as Appendix 3.

Geological data based on grid mapping is shown in figure no.2.9.

### 1.1 Location and Description of Mineral Claims

The Fissure claim group consists of 3 located claims comprising 36 modified grid units located on Mineral Title Reference Map No.s 82 K 12 W and 82 K 11 E . The claims are centered at $50^{\circ} 43^{\prime}$ north latitude and $117^{\circ}$ west longitude. Figure no.2.0 is a reproduction of the applicable Mineral Tittl Reference Maps.

Titte is recorded as follows:

| Claim Name |  | Record \# | Registered Owner | Expiry Date |
| :---: | :---: | :---: | :---: | :---: |
| Fissure 1 | 2094 |  | Halley Resources Lid. | July 10, 1994 |
| Fissure 2 | 2095 |  | Halley Resources Lid. | July 10, 1994 |
| Fissure 3 | 2096 |  | Halley Resources Ltd. | July 10, 1993 |

Access to the project area is by paved or well maintained gravel roads from either Revelstoke, Nakusp or Kaslo. Access to the property is via a skid trail extension of the steep mine road which leads to the True Fissure mine workings from the main road to Ferguson.

The claim area covers a steep sided, "U" shaped glacial valley with elevations ranging from 1,300 to 2,100 meters a.s.I. Topography in the area of the survey grid (shown as shaded area) is moderately steep with alpine conditions in the southerm part and dense coniferous forest to the north.


## Geological Setting

The project area (termed the Trout Lake Mining District) forms the northern terminus of an arcuate belt of folded, Paleozoic aged rocks known as the Kootenay Arc. This feature extends from northern Idaho to Revelstoke and hosts many of the well known silver - lead - zinc (gold) mining camps of the western Cordillera.

According to Read, 1976 extensive exploration during the late 1800's and early 1900 's identified over 200 polymetallic, vein type occurrences however few of these have been explored by modern exploration methods. The Fissure claims are located in the central part of the Trout Lake District as defined by Read, 1976.

In summary the subject claims cover part of an antiform or fold structure termed the Silver Cup Anticline. This structure is a northwest striking feature which transects Mountain Goat Creek Valley in the vicinity of the property. Rocks within the Silver Cup fold comprise argillites, siliceous argillites, quartzites, phyllites and chlorite schists belonging to the Cambrian to Devonian aged Lardeau Group (Broadview, Ajax-Sharon Creek and Jowett Formations). Precious metal mineralization along this structure consists of fault controlled, vein-type occurrences which vary in metal content from predominantly gold bearing to silver and base metal rich types. Some prospects consist of massive sulphide bands containing abundant sphalerite, galena and pyrite in addition to gold and silver while others consist of barren looking, white quartz containing variable gold and only minor silver and base metal values.

Stratigraphy in the vicinity of the subject claims consists of steeply folded meta-sediments belonging to the Broadview Formation. Figure 2.9 illustrates the various field relationships and includes a lithologic description of the the various sub-units within this formation. Principal rock types include graphitic argillites and phyllites, metagrit or greywacke and various pyroclastic metavolcanic units.

Recent exploration by various operators has established the basic characteristics commonly associated with these occurrences.

1) Mineralization occurs where cross fracturing (typically having a north northeast to north northwest orientation) intersects quartz filled, sub-conformable to conformable bedding plane faults.
2) Mineralization occurred in several episodes and is almost always associated with the development of siderite and ankerite. Alteration is minor in most rock types however propylitic and carbonate alteration minerals are developed where phyllitic or chloritic rocks are mineralized.
3) Sulphide minerals tend to occur at or near vein contacts or along graphitic partings within the veins. Gold may occur either with sulphides or "free" within quartz veins.

It is concluded that bedding plane faults and areas of cross fracturing located in close proximity to the Silver Cup Anticline represent favourable exploration targets.

Near the turn of the century prospectors identified numerous high grade, polymetallic vein occurrences in the area south and northwest of the Fissure claim area. These prospects include the True Fissure, Great Northern, Broadview and Beatrice all of which have been developed on two or more adit levels and show lenses of massive sulfide mineralization ranging from 0.5 to 2.5 meters in width. Silver grades are reported to be up to 100 ozton at some prospects however production statistics for various nearby prospects suggest a realistic average in the 0.1 ozfton gold; 12 oz/ton silver; $9 \%$ zinc and 6\% lead range.

In 1972 HB\&O Engineering compiled drill information from a series of shallow holes drilled in the True Fissure mine area and published a reserve estimate of 84,000 tons grading 9.5 oz/ton silver; $6 \%$ lead and $9 \%$ zinc. All prospects are open down dip and warrant systematic drilling.

On the basis of these results Westmin carried out a reconaissance scale soil geochemical survey immediately north of the True Fissure mine area and identified several anomalous areas. The strongest anomaly occurs in the central part of the grid area and is roughly 100 meters wide. Elevated silver and base metal values extend downslope some 400 meters below the topographic "top" of the zone. Soil geochemical results from this area range from 1.0-6.4 ppm silver; 250-1300 ppm zinc and 310 to $1,400 \mathrm{ppm}$ zinc however lead values are very subdued (generally less than 100 ppm ).

During 1986 Halley carried out fill-in geochemical sampling and overburden trenching to identify the source of these anomalies. Trenching showed that overburden is over 5 meters thick in large parts of the claim area and the program was suspended.

Numerous other junior resource companies are presently examining other parts of the Trout Lake / Lardeau District however a description of this work is beyond the scope of this report. For additional information the reader is referred to publications by Granges Exploration Ltd., Brynnoldson Mines Ltd., Winslow Gold Mines Ltd., Royal Crystal Resources Ltd., Halley Resources Ltd., Camfrey Resources Ltd., Jazzman Resources Inc., Mikado Resources Ltd., Windflower Mines Ltd., and K-2 Resources Ltd.

### 1.3 Overburden Drilling Program

To identify the source of the Westmin geochemical anomalies it was recommended that the area of "highest geochemical values" be systematically drilled and samples recovered from the overburden / bedrock interface.

To provide drill access three 700 meter long skid roads spaced at roughly 75 meter intervals were constructed across the selected target area. Overburden drill sites are indicated as filled circles in figure no.2.5. Overburden drill hole sample assays are included as Appendix 1 and 2.

The drilling method involved dry coring from surface to the bedrock interface using either a casing shoe or a serrated section of BW size casing. At each site a skid mounted Hydra Core Model 28 hydraulic drill was used to penetrate and recover overburden samples. Atter penetration, samples (approximately 2 kilograms each) were recovered by pressing the collected material out of each five foot ( 1.6 meter) casing section drilled. Where overburden thicknesses exceeded 10 feet ( 3.2 meters) each hole was subdivided into several five foot ( 1.6 meter) sections designated: either as " $A$ " which represents material immediately above and including the bedrock overburden interface, " $B$ " which represents material collected between ten and fifteen feet ( 3.2 to 4.8 meters) above the bedrock interface or as "C" which represents material collected more than fifteen feet (4.6 meters) above bedrock.

Sample numbers are designated as follows: 8801-01A, 8801-01B, 8802-01A, 8803-01A, 8803-01B, 8803-02A, 880302B, $8803-02 \mathrm{C}$ etc. The first four numbers indicate year and site number. The following two numbers represent the hole or penetration number at each site and the final coding is a letter which represents the approximate thichness of each sample section as described above.

The overburden material encountered was extremely variable ranging from very fine, red brown soils to heavily oxidized, angular talus consisting of graphitic schists and quartz fragments. All samples were assayed by Vangeochem of Vancouver by conventional ICP multi-element analyses. A description is included on the front page of assays in Appendix 1.

Results are considered encouraging. Data shows a cluster of high to extremely high values within a $150 \times 300$ meter area parallel to but offset slightly west of the surface soil geochemical anomaly.

Within this area 13 sites returned values of over 1 oz/ton silver from samples at the overburden / bedrock interface. High sample assays ranged from 1.23 to 6.14 ozton silver; 0.08 to $0.66 \%$ copper; and 0.05 to $0.58 \%$ zinc. Lead values remained very subdued with only 2 values over 300 ppm .

Ground magnetic and electromagnetic surveys were carried out on the Fissure grid using a Scintrex IGS-2 Integrated Magnetometer and V.L.F. Electromagnetometer.

The magnetometer measures the earth's total magnetic field strength to an accuracy of 0.1 gammas. The Scintrex instrument includes a base recorder which records diurnal variation at 10 second intervals and applies appropriate corrections to data sets prior to preparation of contour plans or profiles.

The V.L.F. electromagnetometer acts as a receiver and utilizes primary electomagnetic fields generated by the United States Navy V.L.F. marine communications systems. These transmitters induce electric currents in conductive bodies thousands of miles away. Induced current produce secondary magnetic fields which can be detected at surface through deviations of the normal V.L.F field. The Scintrex instrument measures the dip angle of the secondary field induced in a conductor.

For maximum coupling, a transmitter station located in the same direction as the geological strike and/or the strike of possible conductors is selected since the direction of the horizontal electromagnetic field is perpendicular to the direction of the transmitting station. In this case, the transmitter at Seattle, Washington ( 24.8 kHz transmission frequency) was utilized.

Data for the Fissure Grid (also termed Alpha Grid) was interpreted by R.F. Scheldrake, Geophysical Consultant and is presented as Total Field magnetics and VLF-EM In Phase contour maps. These maps illustrate inferred fault zones, conductive and resistive rocks and the apparent geological contacts. VLF-EM data for Seattle is included as figure no. 2.6. VLF-EM data for the Annapolis station is included as figure no.2.7 and total field magnetic data is included as figure no.2.8.

The Fissure Grid was surveyed to identify shear and/or fault zones which may be the source of elevated silver and base metal values in soils in the central part of the survey area. Contoured VLF-EM data shows a northwest striking sequence of alternating conductive and nonconductive rocks. In the central part of the grid data suggests the presence of several northeast and northwest trending conductors. These conductors are interpreted as graphitic fault zones which may localize massive sulfide mineralization.

Magnetic data suggests the presence of north northwest striking geological formations and defines a weak magnetic high roughly co-incident with the easternmost of the north northeast conductors.

### 1.5 Drill Core Logs

Refer to Appendix 3 for drill core logs

| Hole Number | Depth (meters) |
| :---: | :---: |
| DDH 88-01 | 84.4 meters |
| DDH 88-02A | 42.4 |
| DDH 88-02B | 54.9 |
| DDH 88-03 | 69.2 |
| DDH 88.04 | 88.4 |
| DDH 88-05 | 93.6 |
| DDH 88-06A | 73.2 |
| DDH 88-06B | 82.3 |
| DDH 88-07A | 83.2 |
| DDH 88-07B | 63.1 |
| DDH 88-08A | 96.6 |
| DDH 88-08B | 61.0 |
| DDH 89-01 | 91.4 |

Total Meterage: 983.7 meters

## Core Storage

1. $\quad D D H$ No. 88-01, 88-02A, 88-02B, 88-03, 88-04, 88-07, 88-07B are located at a helicopter landing site adjacent to an A frame style camp at the southern end of the claim area.
2. $D D H$ No. $88-05,88-06 A, 88-06 B, 88-08 A, 88-08 B$ are located at Ram Explorations warehouse at Trout Lake.

### 1.6 Geologic Interpretation

The property straddles the Silver Cup Anticline which is a large tectonic structure that extends several tens of kilometers northwest and southeast of the claims. This structure defines the boundaries and shape of the Central Mineral Belt within this segment of the Kootenay Arc. The fabric of macroscopic structures within these larger structures plays an important role in the distribution of mineralized zones within the Belt. The bedding plane faults (which are often associated with mineralized zones) strike in a northwestward direction and define slip planes along which much of the fold deformation took place. The cross faults, similarly associated with mineralization, were developed in response to changing stress regimes within the larger structures.

The principal faults identified in the area are shear zones developed within and conforming to bedding and/or foliation usually at the contact between ductile carbonaceous or graphitic argillite and competent quartzite or siliceous argillite. The faults strike northwesterly and dip steeply to the east.

The shear zones, generally comprised of parallel or anastomosing graphitic slips can be defined over widths from several centimeters to several meters within the same unit. It was noticed that deformation that results in shearing in one locality can be entirely accomplished by flow and slip folding with no development of shear in another. This characteristic of bedding plane shear zones on the property may be an important control to mineralization especially where argillite and phyllitic rocks are the hosts to mineralization. Ground preparation, particularly silicification, may be an important if not critical process in the development of suitable sites for mineralization.

Secondary fracturing and faulting related to movement on shear faults has produced joint shears extending at acute angles from the plane of the principal shear. These shears are dilational in character and often are the sites of stockwork quartz veining. Where the country rock near the shear is sufficently brittle, brecciation deformation with subsequent quartz veinlet infilling has taken place. Both joint shears and brecciation have been observed in most of the occurrences examined.

A very consistent pattern of jointing and fracturing striking north-northeast and north-northwest directions is common to mineralized zones in the Belt. These fractures, referred to in geological literature on the area as cross fractures or crosscutting fissures, are an important feature in mineralized zones and have been noted at the Nettie L and True Fissure Mines as well as others. Both brecciation and shearing appear to be most intense where bedding plane shears intersect principal cross faults. The more intensely deformed zones may have provided both the conduits and the sites for mineral deposition.

Tight, isoclinal mesoscopic folds are common in all schistose members. Axial planes parallel the foliation and where development of foliation results in pronounced slaty cleavage, fold patterns may be all but obscured. Lenses of quartz, chloritic quartz and quartz-carbonate are most abundant in fold crests or axes and are indicative of such.

The stratigraphy of the project area is generalized in the legend attached to figure no. 2. The stratigraphic sequence youngs in a southwestward direction and represents about a 1 kilometer thickness.

A total of 13 holes were drilled to test various conductive zones identified by geophysical survey data. Most of the holes intersected a med. grey to black phyllite which shows a continuous gradation from a fissile, graphitic argillite to a blocky, Metagreywacke with accassional pyroclastic metagreywacke units. Drill hole locations are shown in figure no.2.9. Drill core logs are included as Appendix 3.

Several quartz filled breccia zones were intersected however none showed visible sulfide mineralization. Quartz intervals range from 10 cm to over 2 meters in width (DDH 89-01) and exhibit siderite either along contacts or as discreet sub-hedral clusters within the quartz. Graphitic partings (typical sites for localization of mineralization with productive veins) are common and it is concluded that these structures represent favourable targets.

This type of breccia zone and the associated stockwork type quartz stringers are typical of the local fault systems which localize sulfide mineralization and it is recommended that additional drilling be completed. The most promising site appears to be the area tested by DDH 89-01 as this hole intersected the widest observed thickness of quartz.

It should be noted that many areas drilled encountered recovery problems as a result of the extensive weathering of the fissile, phyllitic units. Future drilling should be completed using NQ rather than $B Q$ size equipment as this would allow better penetration and recovery from problem areas.

## Core Assays

1. At time of writing no assays have been made of drill core. Detailed sampling of all quartz bearing sections will be completed during the 1989/90 exploration season.

## CERTIFICATE

1, Carl A. von Enisiedet of the City of Vancouver. in the Province of British Columbia, certity that:

1. I am a consulting geologist with offices located at 210-470 Granville Street, Vancouver, B.C.

21 am a graduate of Carleton University in Ontario in Geological Sciences with a degree of BSC.
3. I have been employed in the field of mineral exploration since 1980
4. This report is based on: results of several personal examinations of the subject property; results of geochemical and geophysical surveys; overburden and drill core testing; and, results of extensive research regarding local mineral deposits.

5 I have no interest, either directly or indirectly, in the propenties or securities of Halley Resources Lid.
6. I consent to the use of this report in a Prospectus, Statement of Material Facts or Qualifying Report for submittal to the Superintendent of Brokers or the Vancouver Stock Exchange.

Dated this 10th day of October, 1989 at Vancouver: British Columbia.


Carl A. von Einsiedel. BSc
Consulting Geologist

## REFERENCES

B.C. Minister of Mines Annual Reports, 1898 p.1059, 1900 p.981, 1923 p.234, 1924 p.209, 1925 p.264, 1926 p.A274, 1927 p.295, 1930 p. 266,447.

GSC Memoir No. 161 p. 55
Read, P.B., (1976): Geology - Lardeau West Half.
GSC Map 45, 432, 464
Westmin Resources, (1983): Summary Report of 1982 Fieldwork, Mohawk and Related Properties. Westmin Resources, Corporate Files

Private Report - Questor Surveys Ltd.,(June 1988): Report on Combined Helicopter-Borne Magnetic and Electromagnetic Survey Trout Lake, B.C.

## MOUNTAIN GOAT CREEK EXPLORATION PROGRAM (period May 15, 1988 to February 28, 1989)

Expense category ..... Cost
Mobilization Fees ..... \$ 7,500
Travel Expenses ..... 6272
Engineering Fees

- 52 days geological ..... 15,925
-geophysical consulting ..... 5,000
Geological / Field Technicians
(grid layout, road construction, linecutting, geophysical technician, expediting, sample preparation) -371 man days ..... 88,672
Mountain Goat Creek Camp Construction -construction supplies ..... 19,200
-labour ..... 8,250
Crew Accommodation / Camp maintenance ..... 40,275
Equipment Rentals
-4x4 trucks ..... 13,969
-snowmobiles ..... 12,510
-field supplies ..... 1,500
-geochemical, geological supplies ..... 750
-geophysical equipment ..... 4,490
Geochemical assays
-179 ICP determinations ..... 1,790
-20 core sample assays ..... 400
Overburden / Surface driling program
-mobilization charges ..... 5,000
-overburden drilling (39 sites/ 179 overburden samples for assay) ..... 77,200
-core drilling ( 892.1 meters) ..... 77,067
-core drilling 1988/89 (91.4 meters) ..... 19,226
Tracked Equipment Support
(Mountain Goat Creek access road construction, equipment transfer, drill site construction, moves -D6D Bulldozer (1,206 hours) ..... 140,560
Helicopter Charter Fees
-33.75 hours @ \$515 ..... 17,379
Fuel and Machine Oils
-fuel storage tank rental ( $8,400 \mathrm{gal}$. capacity) ..... 2,500
-drilling equipment, tracked equipment and helicopter fuel) ..... 29,070
Technical Report Preparation*
-geological fees ..... 2,500
-dratting, technical drawings ..... 1,700
-reproductions, secretarial ..... 800
TOTAL EXPENDITURE: ..... $\$ 599,505$(includes technical report preparation)


# VANGEDCHEM LABLIMITED <br> 1988 Triutoh Street, Yancouver, B.C. YSL $1 \times 5$ <br> Ph: ( 604 )251-5656 fax: (604)254-5717 <br> ICAP GEQロHEMIEAL ANALYSIS 

A. 5 grat sample is digested vith 5 al of $3: 1: 2 \mathrm{HCl}$ to $\mathrm{KNO}_{3}$ to $\mathrm{H}_{2} \mathrm{O}$ at $95^{\circ} \mathrm{C}$ for 90 ainutes and is diluted to 10 al with vater

This leach is partial for $\mathrm{Al}, \mathrm{Ba}, \mathrm{Ca}, \mathrm{Cr}, \mathrm{Fe}_{\mathrm{l}} \mathrm{K}, \mathrm{Mg}, \mathrm{Mn}, \mathrm{Ma}, \mathrm{P}, \mathrm{Pd}, \mathrm{Pf}, \mathrm{Sn}, \mathrm{Sr}$ and H .




ANOMALOUS RESULTS:
FURTHER ANALYSES
BY ALTERNATE
METHODS SUGGESTED

| SAMPLE I | Au |  |
| :---: | :---: | :---: |
|  | ppb |  |
| 085001-01A | 20 |  |
| 085001-02A | 10 |  |
| OB5002-01A | 20 |  |
| OB5002-03A | 10 |  |
| 085003-01A | 15 |  |
| 085003-02A | 5 |  |
| 085003-03A1 | 5 |  |
| 085003-03A2 | 5 |  |
| 085003-04A | 10 |  |
| 085003-05A | 10 |  |
| 085003-06A | 10 |  |
| 085003-07A | nd |  |
| 085004-01A | 10 |  |
| OBS005-01A | 5 |  |
| OBSO05-02A | 15 |  |
| OBS005-03A | nd |  |
| 08S005-04A | 15 |  |
| 085005-05A | 10 |  |
| OBS005-06A | 10 |  |
| OBS007-01A | 5 |  |
| 08S007-02A | 10 |  |
| OBS007-03A | 5 |  |
| OBSO08-01A | 15 |  |
| 0FSeubuia | 10 |  |
| OBS008-03A | 20 |  |
| 085008-04A | 10 |  |
| OBSO08-05A | 10 |  |
| OBS008-06A | 5 |  |
| 085008-07A | 15 |  |
| 085009-01A | 5 |  |
| OBS009-02h | 20 |  |
| 085009-03A | 10 |  |
| 085009-04A | 10 |  |
| OBS009-05A | 15 |  |
| OBS009-06A | 15 |  |
| 085009-07A | 10 |  |
| OBS009-08A | 10 |  |
| 085009-09A | 5 |  |
| OBSOO9-10A | 5 |  |
| detection limit | 5 |  |
| nd $=$ none detected | not amalysed | is = insufficient sample |

MAIN OFFICE
1988 TRIUMPH ST VANCOUVER. B.C. V5L 1 K5

- (604) 251.5656
- FAX (604) 254.5717

BRANCH OFFICES
REPORT NUMBER: 890103 GA JOB NUMBER: 890103 RAM EXPLORATION PAGE 2 DF 5

| SAMPLE | AU |
| :--- | ---: |
|  | POb |
| OBS009-11A | 5 |
| OBS009-12A | 5 |
| OBS009-13A | 10 |
| OBS009-14A | 10 |
| OBS009-16A | 15 |
|  |  |
| OBS009-17A | nd |
| OBSO10-01A | 5 |
| OBSO10-02A | nd |
| OBSO10-03A | 10 |
| OBSO11-01A | 10 |


| OBS012-01A | 15 |
| :---: | :---: |
| 085012-02A | 5 |
| 085013-01A | 15 |
| OB5014-01A | 15 |
| 085014-02A | 20 |
| 085014-03A | 45 |
| 08S014-04A | 40 |
| 08S016-01A | 20 |
| 08S016-02A | 15 |
| 0BS016-03A | 30 |
| 085017-01A | 15 |
| 085017-02A | 5 |
| 08S018-01A | 15 |
| OBS018-02A | 20 |
| OBS018-03A | nd |

OB5019-01A1 10
0BSO19-01A2 25
0BS019-01A1 20
OBSO19-02A2 10
OBS020-01A 30

085020-02A 15
085021-01A 30
0BS021-02A 15
085025-01A 10
OBS025-02A 20

085025-03A 10
OBSO26-01A 15

0BS026-02A 20
$085027-01 A \quad 20$

DETECTION LIMIT 5
no = none detected -- = not analysed is = insufficient sample

| REPORT NUMGER: 8901036 A | JOE NUMBER: 890103 | ram exploration | PAgE | 3 OF | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SAMPLE | Au |  |  |  |  |
|  | ppb |  |  |  |  |
| 085028-01A | 20 |  |  |  |  |
| 085028-02A | 25 |  |  |  |  |
| 085028-03A | 20 |  |  |  |  |
| OBS028-04A | 10 |  |  |  |  |
| OBS028-05A | 20 |  |  |  |  |
| 085028-06A | 25 |  |  |  |  |
| 08S028-07A | 25 |  |  |  |  |
| 085028-08A | 5 |  |  |  |  |
| 085028-09A | 20 |  |  |  |  |
| 085029-01A | 15 |  |  |  |  |
| 085029-02A | 30 |  |  |  |  |
| 0ES030-01A | 20 |  |  |  |  |
| OBS030-02A | 20 |  |  |  |  |
| O85031-01a | 20 |  |  |  |  |
| OES031-02A | 15 |  |  |  |  |
| 085032-01A | 15 |  |  |  |  |
| 085032-02A | 30 |  |  |  |  |
| 085033-01A | 30 |  |  |  |  |
| 08S033-02A | 25 |  |  |  |  |
| 0B5033-03A | 30 |  |  |  |  |
| 085033-04A | 55 |  |  |  |  |
| 085033-05A | 35 |  |  |  |  |
| 08S033-06A | 20 |  |  |  |  |
| 085033-07A | 30 |  |  |  |  |
| 085033-08A | 15 |  |  |  |  |
| 085033-09A | 20 |  |  |  |  |
| 085034-0iA | 25 |  |  |  |  |
| 0BS034-02A | 25 |  |  |  |  |
| OBS034-03A | 30 |  |  |  |  |
| 085034-04A | 30 |  |  |  |  |
| OBSO34-05A | 25 |  |  |  |  |
| 085034-06A | 35 |  |  |  |  |
| OBS034-07A | 30 |  |  |  |  |
| 085034-08A | 30 |  |  |  |  |
| 085034-09A | 30 |  |  |  |  |
| OBS035-01A | 25 |  |  |  |  |
| 085035-02A | 30 |  |  |  |  |
| 085035-03A | 20 |  |  |  |  |
| 085035-044 | 25 |  |  |  |  |
| detection limit <br> nd $=$ none detected | 5 <br> not analysed | ufficient sapple |  |  |  |

# $1 / \mathrm{G}$ VANGEOCHEM LAB LIMITED 

MAIN OFFICE

- (604) $251-5656$
- FAX (604) 254.5717

| SAMPLE | $A u$ |  |
| :---: | :---: | :---: |
|  | ppb |  |
| OBS035-05A | 40 |  |
| OBS035-06A | 25 |  |
| 085035-07A | 15 |  |
| OBS035-08A | 20 |  |
| OBS035-09A | 15 |  |
| 085036-01A | 10 |  |
| 085036-02A | 25 |  |
| 0BS036-03A | 25 |  |
| 085036-04A | 20 |  |
| 0BS036-05A | 45 |  |
| 085036-06A | 35 |  |
| 085036-07A | 10 |  |
| 085036-08A | 25 |  |
| 0B5036-09A | 5 |  |
| 08S037-01A | 25 |  |
| 085037-02A | 30 |  |
| 0BS037-03A | 25 |  |
| 0BS037-04A | 30 |  |
| 08S037-05A | 20 |  |
| 085037-06A | 20 |  |
| OBS037-07A | 30 |  |
| 0BS037-08A | 35 |  |
| OBS037-10A | 25 |  |
| OBS038-01A | 15 |  |
| OBS038-02A | 30 |  |
| OBS038-03A | 30 |  |
| 085038-04A | 55 |  |
| OB5038-05A | 30 |  |
| OBS038-06A | 20 |  |
| 0B5038-07A | 40 |  |
| 085038-08A | 30 |  |
| OBS038-09A | 40 |  |
| OBS038-10A | 35 |  |
| 085039-01A | 20 |  |
| 085039-02A | 25 |  |
| 085039-03A | 20 |  |
| 08S039-04A | 15 |  |
| 085039-05A | 30 |  |
| 085033-08A | 25 |  |
| DETECTION LIMIT | 5 |  |
| nd = none detected | not analysed | is = insufficient sample |


| $\mathrm{V}^{\wedge} \mathrm{S} \text { VANGEOCHEM LAB LIMITED }$ |  | MAIN OFFICE 1988 TRIUMPH ST VANCOUVER, B.C. V5L 1 K5 (604) 251.5656 <br> - FAX (604) 254.5717 | BRANCH OFFICES PASADENA, NFLD. BATHURST. N.B. mISSISSAUGA. ONT. RENO. NEVADA, U.SA |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| REPORT NUMBER: 890103 6A | ISB NUMBER: 890103 | ram exploration | PAGE 5 | 5 OF | 5 |
| SAMPLE | Au |  |  |  |  |
| ppb |  |  |  |  |  |
| 08S039-07A | 15 |  |  |  |  |
| URKNOUN | 15 |  |  |  |  |
| OBSO15-04 ${ }^{\text {a }}$ | 40 |  |  |  |  |

detection limit
5
nd $=$ none detected $\quad-=$ not analysed is $=$ insufficient sapple

IEAF GEOEHEMIIAL ANALYSIS






| PEORT ： 890108 AA | FAM EPA． |  |  |  |  | Prol：fissem |  |  |  | Ja： e In：88／08／21 |  |  | Date Gutsemel28 |  |  | Att：CARL |  |  | $p$ | Pb | Pd | Pi | S0 | Pape |  |  | 401 | 5 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0 | A1 | As | Av | Bd | 8 | is | a | 0 | Er | iu | fe | ＊ | Mc | nn | no | Ha | Nr |  |  |  |  |  | $5{ }_{5}$ | $5 r$ |  | U | ＊ | in |
|  | 24.4 |  | ppı | ppo | Don | DDA | \％ | oon | 20 | DOM | Dos | $\%$ | ： | $\%$ | act | opa | 2 | pos | 2 | pon | DP\％ | ppa | D08 | 001 | Dob |  | pa | ppa | p，${ }^{2}$ |
| Desies－05： | 850.0 | 1.06 | 11 | 3 | 30 | （3） | 0.01 | 27.2 | 161 | 50 | 2511 | 4．4： | 0.16 | 0.32 | 368 | 18 | 0.04 | 199 | 0.03 | 42 | 3 | （5 | ＜2 | 64 | 4 |  | 4 | 234 | 1723 |
| －6S025－06A | 350.0 | 1.42 | 3 | ＜3 | 29 | 5 | 0.01 | 55.2 | 75 | 107 | 1280 | 4.50 | 0.17 | 0.58 | 266 | 9 | 0.03 | 275 | 0.02 | 39 | ＜3 | ＜ 5 | ＜2 | 30 | 2 |  | 4 | 54 | 998 |
| $085035-07 \mathrm{~A}$ | 1.2 | i．34 | 7 | 3 | 34 | 3 | 0．0： | $\therefore$ | ； | 47 | 94 | 3.95 | 0.15 | 0.44 | 196 | 2 | 0.02 | 31 | 0.03 | 46 | 3 | ＜ 5 | 2 | Q | 5 |  | \％ | 1 | 124 |
| 08S0：5－68i | A． | ：． 53 | 12 | ¢ 3 | 24 | 4 | 0．0： | A． | 27 | 121 | 185 | 5.09 | 0.19 | 0.73 | 273 | 6 | 0.02 | 98 | 0.02 | 48 | （3 | ＜ 5 |  | 6 | 4 |  | ¢ | 136 | 233 |
| 08595－1994 | B． | $\therefore .10$ | 13 | 4 | 31 | ¢ 3 | 0．0： | 4.9 | 35 | 94 | 406 | 3.49 | 1.13 | 0.37 | 227 | － | 0.02 | 58 | 0.02 | 40 | 3 | ＜ 5 | $\theta$ | ：2 | 5 |  | 9 | 433 | 320 |
| $358036-614$ | （i） | $\because "$ | 11 | 13 | 31 | 3 | 0．0． | 1.3 | 38 | 121 | 59 | 5.54 | 0.21 | 0.13 | 2179 | 5 | 0.03 | 141 | 0.02 | 59 | ${ }^{3}$ | ＜ 5 | $\because$ | $\because$ | 5 |  | ＜ 5 | 3 | 39 |
| Q4S $1036-02 \mathrm{~A}$ | ¢ | ！0！ | 17 | 3 | 42 | 3 | 0.07 | ：．i | 24 | $4!$ | 75 | 4.71 | 0.15 | 0．5\％ | 1025 | 2 | 0.02 | 68 | 0.05 | 58 | ＜3 | 45 | ？ | ＜ | 13 |  | 4 | 3 | 148 |
|  | ：． 2 | $0.5!$ | 2 | 3 | 38 | 2 | 0.09 | 19．7 | ， | 40 | 106 | 3.03 | 0.12 | （0．0） | 153 | ？ | （1．02 | 39 | 0.05 | 41 | 3 | 5 | ＜ | ＜ | 7 |  | －5 | $\because$ | 9 |
| Soct－1） 4 | 8.8 | $\therefore$ ： | It | 8 | 35 | 3 | 0．93： | $4 .:$ | $1:$ | 33 | 110 | 3.34 | 0.12 | 0.01 | 156 | 2 | 0.02 | 29 | 0.06 | 5： | （3） | ＜ 5 | $\therefore$ |  | ¢ |  | 5 | \％ | ： |
| Sabe－j5h | 25.7 | ． 5 | 36 | 3 | 42 | 3 | （1）$)^{\text {a }}$ | 13.2 | $\because$ | 50 | 301 | 4.61 | 0.97 | 0.05 | 171 | 5 | 0.03 | 68 | 0.09 | 71 | 3 | S | ＜ | 8 | 7 |  | ¢ | 149 | 237 |
| 96543－492 | $\because$ | 9．98 | 12 | 3 | 63 | 13 | 0．0） | $\therefore 5$ | 86 | 42 | 52 | 7.28 | 0.30 | 0.19 | 785： | ： | 0.04 | 257 | 0.03 | 48 | 13 | ＜ 5 | 2 | ＜ | ？ |  | \％ 5 | \％ | 37 |
| jescibe－074 | 0.2 | 2.104 | 12 | ＜3 | 43 | 5 | 0.04 | 1.6 | 2 | 63 | 79 | 4.75 | 0.18 | 8.46 | 1148 | 4 | 0.02 | 98 | 0.04 | 60 | \％ | ¢ | a | $\because$ | 11 |  | （S | 2 | 5 |
|  | 4.3 | 1．66 | 16 | 3 | 36 | 3 | 6．0： | 0.5 | 8 | 39 | 14 | 3.95 | 0.15 | 0.00 | 231 | ： | 0.02 | 29 | 0.06 | 74 | 3 | ¢5 | 亿 | 2 | ， |  | －s | 3 | O |
| 259066－09a | 150.0 | 0.48 | 29 | 亿 | 37 | 13 | 0.01 | 33.7 | ： 5 | 40 | 275 | 2.86 | 0.10 | 0．01 | 176 | 4 | 0.02 | 43 | 0.02 | 50 | ＜3 | ＜5 | 2 | ：？ | 5 |  | （5） | 42 | 169 |
| iesore－a ${ }^{\text {a }}$ | 5.2 | i．ii | 8 | 3 | 43 | 3 | 0.01 | 3.4 | 39 | 47 | 84 | 5.08 | 0.19 | 0． 29 | 2107 | 3 | 0.03 | 74 | 0.04 | 46 | 亿 3 | ＜ | 2 | 12 | 6 |  | ＜ | 3 | 137 |
| 04567－02\％ | $\therefore \mathrm{S}$ | 4.8 | 87 | 3 | 41 | ${ }^{3}$ | 0.61 | $\therefore 1$ | 17 | 41 | 82 | 4.37 | 0.16 | 0.30 | 601 | 2 | 0.02 | 43 | 0.05 | 53 | ＜3 | 15 | $\langle 2$ | 9 | 9 |  | 15 | 13 | $\cdots$ |
| 085037－13\％ | 2. | 0.97 | 17 | 0 | 37 | 13 | 0.12 | 1． 5 | 18 | 42 | 85 | 3.95 | 0.16 | 0.60 | 376 | 2 | 0.02 | 45 | 0.05 | 5 | ＜3 | ＜ 5 | ？ | \％ | 14 |  | ¢ | 13 | 13： |
| 135037－144 | $\because$ | 9.77 | $\underline{18}$ | Q | 35 | 3 | 0.07 | 4.5 | 17 | 45 | 59 | 4.02 | 0.18 | 0．51 | 382 | 3 | 0.02 | 64 | 0.04 | 50 | ＜3 | （5 | \％ | ． | 12 |  | is | $\therefore 3$ | ： 2 |
| 0est $37-0.54$ | 55 | ： 6 | 18 | 3 | 37 | 3 | 0.01 | 3.1 | 11 | 34 | 66 | 4.27 | 0． 16 | 0.32 | 337 | 2 | 0.02 | 37 | 0.04 | 59 | 4 | ＜ 5 | ＜ | ＜2 | 6 |  | 5 | 13 | i． |
| 955037－064 | 750．10 | 0.48 | 24 | （3 | 29 | $t$ | 0.08 | 11.1 | 369 | 67 | 5653 | 4.93 | 0.19 | 0.05 | 654 | 44 | 0.07 | 395 | 0.14 | 99 | 3 | ＜ | $\because$ | 126 | 9 |  | －5 | 491 | 3902 |
| 29637－672 | $\therefore \dot{8}$ | ： 14 | $\vdots$ | 3 | 54 | 15 | C， | 05 | 9 | 31 | 111 | 8.09 | i1． 32 | 18．21 | 0093 | 3 | 0.103 | 109 | 0.05 | sis | 3 | ＜ 5 | 5 | ＇ | 6 |  | 5 |  | $25:$ |
| Sticion－in | $\therefore$ ¢ | 4.81 | ：8 | 3 | 37 | $\bigcirc$ | 0．cs | $\therefore$ ： | $\therefore$ | 54 | 134 | 4.32 | 0.17 | 10，4i | 465 | 4 | 0.02 | 71 | 0.05 | 57 | 3 | ＜ 5 | ？ | 2 | 8 |  | ． 5 | $\because$ | ：／4 |
| c9563－10 | －．1 | 0.8 | 2 | 13 | 39 | 13 | 6．1： | $\cdots$ | 22 | 35 | 127 | 4.21 | 0.17 | 0.47 | 469 |  | 0.02 | 50 | 0.05 | 52 | ＜3 | ＜ 5 | 2 | 2 | 15 |  | 4 | 3 | 186 |
| 745138－014 | 350.0 | 0.55 | 12 | 3 | 44 | ¢ | 0.01 | 26.8 | 45 | 53 | 389 | 4.51 | 0.17 | 0.02 | 1302 | 6 | 0.02 | 75 | 0.03 | 43 | 33 | ＜ 5 | ＜2 | 11 | 6 |  | ＜ 5 | 348 | 274 |
| 085138－022 | 3.7 | $\therefore 58$ | 19 | ＜3 | 42 | \％ | 0．0： | 2.5 | 14 | 92 | 66 | 3.55 | 0.13 | 0.02 | 360 | 5 | 0.02 | 23 | 0.02 | 48 | 13 | ＜ 5 | ＜2 | 2 | 6 |  | is | 13 | 91 |
| 085038－033 | at | 0.56 | －5 | ＜3 | 26 | 3 | 0.61 | 0.6 | i2 | 123 | 66 | 4.40 | 0.16 | 0，0： | 233 | 6 | 0.02 | 66 | 0.04 | 55 | 3 | ＜ 5 | ¢ | ＜2 | 5 |  | ¢5 | 3 | 3 SO |
| 085038－044 | 0.5 | $0.5 \%$ | 14 | 3 | 30 | 13 | 0．0： | 8.6 | ia | 4 | 46 | 4.41 | 0.16 | 0.03 | 33 | 2 | 0.02 | 28 | 0.03 | 6 | 3 | 15 | 12 | 2 | 5 |  | ¢ 5 | 3 | ！ |
| 065038－05A | $0!$ | 0.57 | 20 | ＜3 | 31 | 3 | 0.01 | 0.5 | 5 | 75 | 46 | 3.88 | 0.14 | 9．0\％ | 280 | 4 | （1．0） | 52 | 0.02 | 56 | 2 | ＜ 5 | $?$ | ＜ | 5 |  | 45 | Q | 8 |
| 08S038－06 4 | 14.5 | 0.59 | 28 | 13 | 30 | 3 | 0．0： | 0.3 | ： | $4 i$ | 62 | 4.25 | 0.16 | 0.62 | 286 | 2 | 0.02 | 3 c | 0.03 | 68 | ${ }_{3}$ | $\checkmark$ | a | Q | 5 |  | is | \％ | 1\％ |
| 085038－07A | 0.9 | 4.87 | 19 | 3 | 46 | 0 | 0.01 | 45 | 11 | 64 | 5 ： | 4.25 | 0.15 | 0.04 | 338 | 3 | 0.02 | 46 | 0.03 | $6 ?$ | 13 | 5 | 2 | Q | 7 |  | 5 | 3 | \％ |
| 38503e－188 | $\because \mathrm{i}$ | 4.5 | ： 5 | 3 | 35 | 13 | 0．0： | at | 18 | 30 | 56 | 4.80 | 0.19 | 80.0 | ：18： | i | 0.02 | 56 | 0.04 | 5 S | 3 | ＜5 | ＜2 | $\therefore$ | ？ |  | 15 | ¢ | $\because$ |
| 085038－094 | $\therefore$ | 45 | 18 | 2 | 2 | 3 | （i）： | ${ }^{6}$ | 4 | 169 | 48 | 3.41 | 0.12 | 0.08 | ： | 4 | 0.02 | 65 | 0.03 | 50 | 亿 | （5 | ． | ＜ | 5 |  | ${ }_{5}$ | 3 | $\varepsilon$ |
| 195038－104 | $\cdots$ | 17 | $\square^{-}$ | ＇3 | 3. | － | －． 0 ： | 4， | 8 | $\varepsilon$ | 41 | 4.60 | 0.17 | 8，0： | 232 | 4 | （6．0． | 56 | 0.03 | 53 | 13 | is | ？ | ？ | ？ |  | S | ？ | $8 r^{2}$ |
| 085034－314 | A．i． | i． 76 | $2 ?$ | 3 | 35 | 2 | （1．0） | 5.5 | 30 | 25 | 348 | 4.46 | 0.16 | （0．0． | ：96 | $t$ | 0.02 | 60 | 0.04 | 5\％ | Q | 45 | $\theta$ | ？ | 6 |  | 4 | 357 | 358 |
| cesing－19 | 150.0 | $\because 4$ | 13 | ： | 25 | 3 | 0.0 | 109： | E： | 94 | 2553 | 3.48 | 0.13 | 0.05 | 307 | 18 | 0.05 | 203 | 0.02 | ？ | $\because$ | 4 | $\because$ | 68 | 4 |  | s | 169 | 1685 |
| 555034－03\％ | 8.5 | $\because$ | ：5 | 3 | 39 | ； | （1，${ }^{\text {a }}$ | 5.1 | S | 50 | 146 | 3.94 | 0.14 | 4，\％ | \％－ | 2 | 0.02 | 33 | 0.03 | 4 | 3 | ： 5 | 亿 | － |  |  | （5 | 3 | 178 |
| 985034－64 | 11.5 | 0.6 | ！ | 3 | 36 | \＆ | C．0．1 | 7.5 | $2!$ | 5 | 220 | 3.42 | 0.12 | 0，0\％ | 144 | 5 | 0.02 | 68 | 0.03 | 49 | 3 | ＜ | ： | 2 | 7 |  | \％ | 168 | 239 |
| 065933－05a | 18.6 | 6． 5 | ： | 3 | 3 | 3 | （0．0） | 11.4 | 6 | 38 | 741 | 3.31 | 0.14 | 6，（i） | $\therefore$ | 8 | 0.03 | 134 | 0.03 | 49 | （3） | ＜ 5 | $\because$ | z | 6 |  | ＜ | 112 | ${ }^{\text {＇} 802}$ |
| deobefota | 30.7 | 4．6t | － | 13 | $\because$ | 7 | 0．0： | 20.5 | 61 | 53 | 773 | 6.93 | 0.28 | 0.10 | St | 12 | 0.03 | 163 | 0.03 | 40 | 3 | ¢5 | 16 | 12 | 5 |  | （5 | $4 \pi$ | 792 |
| manam dietection | 6， | 4.9 | 3 | 3 | 1 | 三 | 0.11 | （4．） |  | 1 | 1 | 0.01 | 0.01 | 8． 6 ： | 1 | 1 | 0．0： | ： | 0.01 | $?$ | 3 | 5 | ？ | 2 | 1 |  | § | ： | 1 |
| ＊diaur leieio． | c，er | $\therefore \square$ | Mem | ！0 | 1600 | ：08 | t0．0． | ：4， | 2 ma | 1000 | 2000 | 10.00 | 10．00 | 16.4 | 300 | 1000 | 10.00 | 20000 | 16.00 | 2006 | 100 | 100 | W | 000 | 10000 |  | \％ | 1 mb | mas |

REPORT A: 806:03 Ph
रAA EXPL.
Froj: fissupe
Date in: 88/08/21 Date out:89/02/26
Att: AREL
pope 50i 5
Samole suabet
DRSG139-67A
Unk tokn
0e50:5-044

| ${ }_{\text {Ag }}$ | Ai | As | Au | Ba | 8 | Ca | is | $\mathrm{co}_{0}$ | Cr | i | is | * | 9 | $\mathrm{mm}^{\text {m }}$ | Ho | Na | Ni | F | Pb | Po | 3 | 50 | 5 n | 5 r | : | * | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| dos | $\%$ | ppa | pon | ppa | pot | 2. | not | pon | ppe | ppa | \% | \% | $\%$ | doa | ppa | 2 | ppe | 2 | ppt | pog | ppa | pot | pos | pon | 008 | 008 | don |
| 4.8 | 0.73 | 7 | <3 | 28 | (3) | 0.0) | 3.9 | 10 | 35 | 165 | 6.27 | 0.23 | 0.12 | 138 | 4 | 0.02 | 28 | 0.64 | 37 | 3 | 5 | B | 12 | 5 | 5 | 3 | 36 |
| 0.1 | 0.62 | 18 | ${ }^{3}$ | 27 | 3 | 0.01 | 0.3 | 5 | 39 | 41 | 3.04 | 0.11 | 0.08 | 96 | 4 | 0.01 | 27 | 0.03 | 37 | <3 | 4 | <2 | <2 | s | S | 3 | $6:$ |
| 350.0 | 0.88 | 18 | 3 | 60 | 17 | 0.01 | 34.4 | 142 | 26 | 213 | 8.39 | (0.33 | 0.04 | 5835 | 5 | 0.03 | 185 | 0.02 | 54 | <3 | < | 24 | 2 | $\varepsilon$ | $\bigcirc$ | 309 | 503 |
| 0.) 1 | 0.01 | 3 | 3 | 1 | 3 | 0.01 | 0.1 | 1 | 1 | 1 | 0.01 | 0.01 | 0.01 | 1 | 1 | 0.0. | 1 | 0.01 | : | 2 | 5 | - | 2 |  | 三 | : |  |
| 50.0 | 10.00 | 2000 | 100 | 1000 | 1000 | 10.06 | 900.0 | 20000 | 1000 | 20000 | 10.06 | 10.00 | 10.00 | 20000 | 1000 | 10.0.0 | 20900 | 10.00 | 20000 | 00 | 100 | 2000 | 1000 | :0000 | ? | 1000 | \%otut |

Mini auk Detection
Maxisus Deterinom


APPENDIX 2 - Overburden Sample Assay Results (high siver value confirmation)

MAIN OFFICE

SAMPLE \# Ag
$\mathrm{cos} / \mathrm{st}$

| $0 B S 005-04 A$ | 1.16 |
| :--- | ---: |
| $0 B S 005-06 A$ | 2.53 |
| $0 B 5008-01 A$ | 1.27 |
| OBS00F-05A | .46 |
| $0 B S 009-12 A$ | .42 |

OBS014-04A

1. 21

OB5020-01A
. 69
0B5035-05A
0BSOS5-06A
2.07

OBSOJ6-0รA

085037-0EA
4.85

0B5038-01A

1. 67

OBS039-02A
6. 14

08503ヲ-06A
1.24

0ESO15-04A
1.93
.01
1 ppa = 0.0001! ppa = parts per aillion < = less than

## APPENDIX NO.3 - DRILL CORE LOGS

DDH 88-01
Location: see figure 2.9
Azimuth: $070^{\circ}$
Dip: $45^{\circ}$
Length: 84.4 meters

| Interval(m) | Description |
| :---: | :---: |
| 0-2.4 | casing |
|  | -vuggy, angular white quartz fragments with abundant limonitic stain |
| 2.4-7.9 | Phyllite, dark grey to black, very fissile; foliation to core axis @ 60-70 ; extensive limonitic stain on foliation and fracture surfaces (weathered, oxidized) |
|  | -narrow zones of brecciation occur at: 3.4-3.7; 6.7-7.0; 7.6-8.1; brecciated sections contain limonite stained white quartz, wall rock fragments flaky graphite (graphite slicks) is developed and foliation is distorted |
| 7.9-16.2 | Pyroclastic metavolcanic/metagreywacke, grey with with $0.1-0.2 \mathrm{~cm}$. chloritized fragments (volcanic glass?); indistinct foliation, blocky fracture; occassional sub-concordant chlorite stringers (1 to 5 cm . wide) |
| 16.2-19.2 | Metagreywacke, increasing graphitic appearance from preceding; brecciation and distorted foliation at 18.6m. |
| 19.2-20.7 | Breccia Zone; flaky graphite and chloritization along slip planes at $20^{\circ}$ to core axis; white quartz with limonitic stain in along fracture surfaces; no visible sulfides due to weathering |
| 20.7-30.6 | Phyllite, dark grey to black, fissile; contains minor amounts of fine, disseminated pyrite; gradational unit to Metagreywacke |
| 30.6-33.2 | Phylite, dark grey to black, weakly foliated (possible Metagreywacke); contains approx. 25-35\% subhedral pale coloured silicate phenocrysts/fragments?; fragments may be fresh version of chloritized grains observed from 7.9-16.2 meters; foliation to core axis angle changes to $20^{\circ}$ |
| 33.2-46.0 | Phylite, dark grey to black; foliation to core axis angle at $70^{\circ}$; note brecciation and quartz mineralization at: <br> $34.4-5 \mathrm{~cm}$ wide subconcordant quartz lens with limonite along fracture surfaces <br> $39.6-10 \mathrm{~cm}$ wide breccia zone perpendicular to core axis; note: flaky graphite and quartz stringers along shear surfaces <br> 43.0-5 cm wide subconcordant quartz lens <br> 44.2-45.4 - deformation zone: note distorted foliation; deformation occurs at gradational contact to Metagreywacke |
|  | -quartz mineralization associated with minor subhedral siderite (along wallrock contacts or as clusters within the quartz; abundant limonitic staining |
| 46.0-46.3 | Gradational contact from Phyllite to Metagreywacke; foliation to core axis at $45^{\circ}$ |
| 46.3-47.2 | Metagreywacke, dark grey, weakly foliated; gradational contact to Phyllite |
| 47.2-49.1 | Phyllite; brecciated, common quartz-siderite stringers at $20 / 60^{\circ}$ to core axis |
| 49.1-59.1 | Phyllite, dark grey, moderately fissile; concordant pyrite rich lenses ( 0.5 to 2.5 cm . wide) at 51.2, 52.0 meters; lens at 52.0 shows intensely distorted foliation ie: 10 to $70^{\circ}$ to core axis; brecciation and limonite stained quartz at: $57.5-10 \mathrm{~cm}$. wide concordant quartz lens; with cjhlorite, pyrite alteration along wall rock contact $60.0-15 \mathrm{~cm}$. wide condordant quartz lens; contains minor euhedral siderite clusters |
| 59.1-84.4 | Phyllite; dark grey to black; foliation to core axis at $50^{\circ}$; Box no.s $9,10,11$ overturned during transport; core log approximate only |

DDH 88-02A
Location: see figure 2.9
Azimuth: $120^{\circ}$
Dip: $60^{\circ}$
Length: 42.4 meters

| Interval | Description |
| :--- | :--- |
| 0.0-11.3 | casing |
| 11.3-16.6 | Phyllite, dark grey to black; weathered, abundant limonite on foliation/fracture surfaces; fissile |
| 16.6-16.9 | Phyllite, dark grey to black, very fissile, extensive weathering; foliation to core axis at $70^{\circ}$ |
| 16.9-17.3 | Breccia Zone; white, limonite stained quartz containing approx $20 \%$ angular, wall rock fragments at upper contact; <br> distorted foliation, graphite slicks at lower contact |
| 17.3-18.0 | Phyllite, black, graphitic; approx 3-5\% pyrite as subconcordant lenses and disseminated grains; very fine grained phyllite |
| 18.0-18.9 | Breccia zone / deformed zone: Phyllite, dark grey to black; foliation distorted; silicification along foliation planes, sub- <br> common concordant quartz stringers up to 5 cm. |
| 18ide |  |

DDH 88-02B
Location: see figure 2.9
Azimuth: $120^{\circ}$
Dip: $45^{\circ}$
Length: 54.9 meters

| Interval | Description |
| :--- | :--- |
| 0.0-10.9 | casing |
| 10.9-14.6 | Phyllite, dark grey to black, weathered, fissile, limonitic stain on foliation surfaces |
| 14.6-15.7 | gradational contact to Metagreywacke; units interbedded; greywacke at base of interval; brecciated zones occur at: |
| 15.7-16.0 | Phyllite, dark grey to black, weathered, fissile, limonitic stain on foliation surfaces |
| 16.0-16.1 | shear at $30^{\circ}$ to core axis; graphite slicks |
| 16.1-16.6 | brecciated zone, distorted foliation; approx. 0.6 meters lost core; white, limonite stained quartz zone containing approx. <br> $10 \%$ vugs; secondary crystal growth in vugs; approx 20\% angular wall rock fragments in quartz near top of interval |
| 16.6-17.0 | Phyllite, dark grey to black, fissile; foliation distorted; selective silicification along foliation planes; some horizons almost <br> completely replaced byb quartz, abundant concordant quartz stringers (0.5 to 1.0 cm. <br> at 20 and $70^{\circ}$ to core axis ; fracturing healed with quartz |
|  | Phyllite; less diformed than preceding interval but shows some silicification |
| 17.0-20.7 | Phyllite, dark grey to black, very fissile, weathered |

DDH 88-02B cont'd
Location: see figure 2.9
Azimuth: $120^{\circ}$
Dip: $45^{\circ}$
Length: 54.9 meters

| Interval(meters) | Description |
| :--- | :--- |
| 27.3-27.5 | concordant quartz lens, nil limonite, barren looking |

## DDH 88-03

Location: see figure 2.9
Azimuth: $130^{\circ}$
Dip: $45^{\circ}$
Length: 69.2 meters

| Interval | Description |
| :---: | :---: |
| $0-5.8$ | casing |
| 5.8-6.4 | Phyllite / Metagreywacke contact; weathered, abundant limonitic stain on foliation surfaces |
| 6.4-9.5 | Metagreywacke / Pyroclastic Metavolcanic?; grey coloured; foliation to core axis at $20^{\circ}$; brecciation and disrupted foliation at 7.5, 9.1; foliation disrupted at base of interval |
| 9.5-11.6 | Phyllite, dark grey to black; fissile, weathered-limonitic stain on fracture surfaces |
| 11.6-12.7 | lost core |
| 12.7-27.3 | Phyllite, dark grey to black, fissile; foliation to core axis at $20^{\circ}$; brecciated zones as follows: 25.8-26.0-10 cm wide quartz stringer at $75^{\circ}$ to core axis -note: pitting along foliation planes - pyrite weathered out? 27.3 - subconcordant quartz stringer, limonitic stain on fracture surfaces |
| 27.5-39.0 | Phyllite, dark grey to black, weathered, fissile, rare sub-concordant quartz stringers |
| 39.0-45.1 | Phylite, fractured, poor core recovery throughout zone, abundant limonite on foliation surfaces; breccia zone, deformed foliation and 10 cm . wide quartz lens at 44.8 meters |
| 45.1-47.2 | gradational contact to med. grey Metagreywacke/ Pyroclastic Metagreywacke; interbedded Phyllite and Metagreywacke beds |
| 47.2-49.1 | gradational contact to dark grey to black Phyllite |
| 49.1-69.2 | PhylliteMetagreywacke, indistinct foliation, not fissile, foliation defined by allignment of $0.1-0.3 \mathrm{~cm}$ sized, cream coloured fragments?; |
| 69.2 | end of hole |

## DDH 88-04

Location: see figure 2.9
Azimuth: $175^{\circ}$
Dip: $45^{\circ}$
Length: 88.4 meters

| Interval | Description |
| :---: | :---: |
| 0.0-8.8 | casing |
| 8.8-22.9 | Phyllite, dark grey to black; moderately fissile; foliation to core axis at $30^{\circ}$; weathered, brecciation and white quartz developed at: <br> 14.9-15.6 - silicification along distorted foliation planes, graphite slicks in places at right angles to core axis <br> 16.2-16.4-15 cm wide white quartz, sub-concordant, limonitic stain on fracture surfaces, minor siderite <br> 18.0-18.2 - brecciated Phyllite, approx. 30\% of section consists of white quartz, foliation distorted ie. 20 to $80^{\circ}$ to core axis |
| 22.9-32.0 | Phyllite, dark grey to black, fissile, increasing graphite content from preceding unit |
| 32.0-36.6 | Phyllite, dark grey to black, fissile, foliation to core axis at $30^{\circ}$; brecciation as follows: <br> 24.1-2 cm wide pyrite rich lens marks distorted foliation <br> 25.3-25.7-10 cm wide quartz zone, white, limonitic stain on fracture surfaces |
| 36.6-88.4 | Phyllite, dark grey to black, fissile, weathered; occassional narrow quartz lenses and zones of distorted foliation with silicification |
| 88.4 | end of hole |

DDH 88-05
Location: see figure 2.9
Azimuth: $120^{\circ}$
Dip: $45^{\circ}$
Length: 93.6 meters

| Interval | Description |
| :--- | :--- |
| $0.0-6.2$ | casing |
| $6.2-93.6$ | Phyllite, dark grey to black, fissile; interbedded with med. grey Metagreywacke; foliation to core axis @ 20 <br> sub concordant quartz lenses; ; occassional |
| 93.6 | end of hole (Note: preliminificant breccia zone or quartz intercept only) |

## DDH 88-06A

Location: see figure 2.9
Azimuth: $170^{\circ}$
Dip: $45^{\circ}$
Length: 73.2 meters
Interval Description
0.0-7.1 casing
7.1-73.2 Phyllite, dark grey to black, fissile; interbedded with med. grey Metagreywacke; foliation to core axis @ 20-30 ${ }^{\circ}$; occassional sub concordant quartz lenses; no significant breccia zone or quartz intercept
73.2 end of hole (Note: preliminary log only)

DDH 88-06B
Location: see figure 2.9
Azimuth: $170^{\circ}$
Dip: $60^{\circ}$
Length: 82.3 meters

| Interval | Description |
| :--- | :--- |
| $0.0-7.8$ | casing |
| $7.8-82.3$ | Phyllite, dark grey to black, fissile; interbedded with med. grey Metagreywacke; foliation to core <br> axis @ 20-30 <br> intercept |
|  | end of hole (Note: preliminary log only) |


| DDH 88-07A |  |
| :---: | :---: |
| Location: see figure 2.9 |  |
| Azimuth: $160^{\circ}$ |  |
| Dip: $60{ }^{\circ}$ |  |
| Length: 83.2 meters |  |
| Interval | Description |
| 0.0-10.1 | casing |
| 10.1-15.9 | Metagreywa <br> perpendicula 12.4, 13.7 <br> -quartz cont <br> -gradational |
| 15.9-34.1 | Phyllite; dark white quartz |
| 34.1-36.3 | interbeded |
| 36.3-38.4 | Metagreywa |
| 38.4-40.8 | interbedded |
| 40.8-41.4 | Metagreywa |
| 41.4-47.9 | interbedded <br> Metagreywa |
| 47.9-57.0 | interbedded meters; tran |
| 57.0-64.3 | interbeded subconcorda |
| 64.3 | contact to d |
| 64.3-83.2 | Phyllite, dark |
| 83.2 | end of hole |


| DDH 88-07B |  |
| :---: | :---: |
| Location: see figure 2.9 |  |
| Azimuth: $160^{\circ}$ |  |
| Dip: $45^{\circ}$ |  |
| Length: 63.1 meters |  |
| Interval | Description |
| 0.0-9.4 | casing |
| 9.4-13.1 | Metagreywa fragments? |
| 13.1-18.3 | interbedded at 50 to 70 |
| 18.3-20.7 | Metagreywa |
| 20.7-25.3 | interbedded |
| 25.3-25.8 | Phyllite, dist |
| 25.8-31.4 | Metagreywa foliation; 10 |
| 31.4-31.7 | gradational |
| 31.7-39.4 | interbedded occur at 38 |
| 39.4-40.8 | interbedded |
| 40.8-48.2 | interbedded $43.7,45.6 \text {, }$ |
| 48.2-50.1 | Metagreywa |
| 50.1-51.5 | interbedded core axis |
| 51.5-60.1 | interbedded |
| 60.1-63.1 | interbedded |
| 63.1 | end of hole |
| DDH 88-08A |  |
| Location: see figure 2.9 |  |
| Azimuth: $175^{\circ}$ |  |
| Dip: $60^{\circ}$ |  |
| Length: 96.6 meters |  |
| Interval | Description |
| 0.0-2.7 | casing |
| 2.7-20.4 | med. grey |
| 20.4-96.6 | interbedded |
| 96.6 | end of hole |

DDH 88-08B
Location: see figure 2.9
Azimuth: $175^{\circ}$
Dip: $45^{\circ}$
Length: 61.0 meters

| Interval | Description |
| :--- | :--- |
| 0.0-2.2 | casing |
| 2.2-61.0 | interbedded dark grey to black Phyllite and med. grey Metagreywacke; no significant breccia zone or quartz interval <br> intersected; poor core recovery (less than 25\%) |
| 61.0 | end of hole (Note: preliminary log only) |

DDH 89-01
Location: see figure 2.9
Azimuth: $250^{\circ}$
Dip: $45^{\circ}$
Length: 91.4 meters

| Interval | Description |
| :---: | :---: |
| 0.0-9.8 | casing |
| 9.8-12.9 | section very weathered, poor core recovery (less than 20\%); section predominantly Metagreywacke; occassional quartz fragments |
| 12.9-21.9 | section very weathered, poor core recovery; med. grey Metagreywacke; very deformed foliation ie: $10^{1670}$ to core axis; occassional crosscutting and subconcordant quartz stringers ( $1.0-3.0 \mathrm{~cm}$ wide) |
| 21.9-26.7 | poor core recovery; med. grey to dark grey (increasing graphite content) Phyllite (fransitional from Metagreywacke); approx. $10 \%$ crosscutting quartz stringers containing minor amount of cream coloured weathered out clays?, siderite; irregular contact to quartz lens at base of interval |
| 26.7-27.2 | white quartz; minor limonitic stain; contains 2-3\% vugs which show secondary quartz crystal growth; rare graphite partings perpendicular to core axis |
| 27.2-29.9 | very poor core recovery; mixed quartz and Phyllite to Metagreywacke fragments; where observed foliation shows extensive deformation (crenulated) |
| 29.9-30.2 | Metagreywacke, med. grey to dark grey; quartz stringers and limonitic stain sub parallel core axis; base of section shows flaky graphite in contact with white quartz |
| 30.2-32.6 | white Quartz; contains 2-5\% vugs; some limonitic stain on fracture surfaces; clay weathering products along graphite slicks (graphite slicks abundant at top of section) <br> 30.0-30.7 - brecciated Metagreywacke in quartz; sub angular wall rock fragments; |
| 32.6-34.1 | very poor core recovery (less than 20\%); fractured, med. grey Metagreywacke |
| 34.1-91.4 | very poor core recovery (less than 20\%), fractured, med. grey Metagreywacke; occassional Phyllite interbeds; no significant breeccia zone or quartz intercept (Note: preliminary log only) |
| 91.4 | end of hole |







