FAIRBANK
ENGINEERING LTD

Ste 1201–675 W. Hastings St.
Vancouver, B.C.
Canada V6B 1N2
(604) 688-1553

LOG NO: 1220

Consulting
Geologists
and
Engineers

GEOLOGY, GEOCHEMICAL AND GEOPHYSICAL ASSESSMENT REPORT ON THE WANDA SHEILA PROPERTY JET CLAIM GROUP GRAHAM ISLAND, QUEEN CHARLOTTE ISLANDS, BRITISH COLUMBIA

Latitude 53° 34' North
Longitude 132° 17' West
NTS 103 F/9W

For

City Resources (Canada) Ltd.
Ste. 2000 - 666 Burrard St.
Vancouver, B.C. V6C 2X8

and

Noramex Minerals Inc.
Ste. 1201 - 675 W. Hastings St.
Vancouver, B.C. V6B 1N2

Prepared by:

Michael Hepp, P.Geol.
Fairbank Engineering Ltd.
Vancouver, B.C.

October 15, 1988

(Work Dates: May 19 to September 15, 1988)

TABLE OF CONTENTS

LIST OF FIGURES **Page**

LIST OF APPENDICES

following text

1. INTRODUCTION

Noramex Minerals Inc. holds a 100 percent interest in the Wanda, Sheila, Wonder and Jet claims.

The Jet Claim Group, totalling 68 units, was staked in October, 1986 in the Mamin River valley of Graham Island of northwestern British Columbia (Figure 1) to cover the projected northwestern extension of the Sandspit Fault splay which controls the mineralization of the Cinola gold deposit. The Cinola deposit of City Resources (Canada) Limited, which contains mineable ore reserves of 24.8 million tonnes grading 2.2 grams gold per tonne, is located five kilometers southeast of the claim block.

This report summarizes results obtained from work performed during the period May 19 to September 15, 1988. The work was performed by one to eight man crews at a total cost of $121,058.63. The greatest portion of the work was done on 27 kilometers of grid on the Wanda and Sheila claims with limited reconnaissance magnetic and geologic survey work on the Wonder and Jet claims.

Field work on the property implemented by Fairbank Engineering Ltd. included:

1) Grid Cutting - 27 kilometers
2) Soil Sampling - 536 samples Au, As
3) Geologic Mapping and Rock Sampling - 1:5,000 - 4 samples
4) Grid VLF-EM and Magnetometer Survey - 27 kilometers
5) IP and Resistivity Survey - 9.8 kilometers
6) Reconnaissance Magnetometer Survey - 13.5 kilometers

2. LOCATION, ACCESS AND PHYSIOGRAPHY

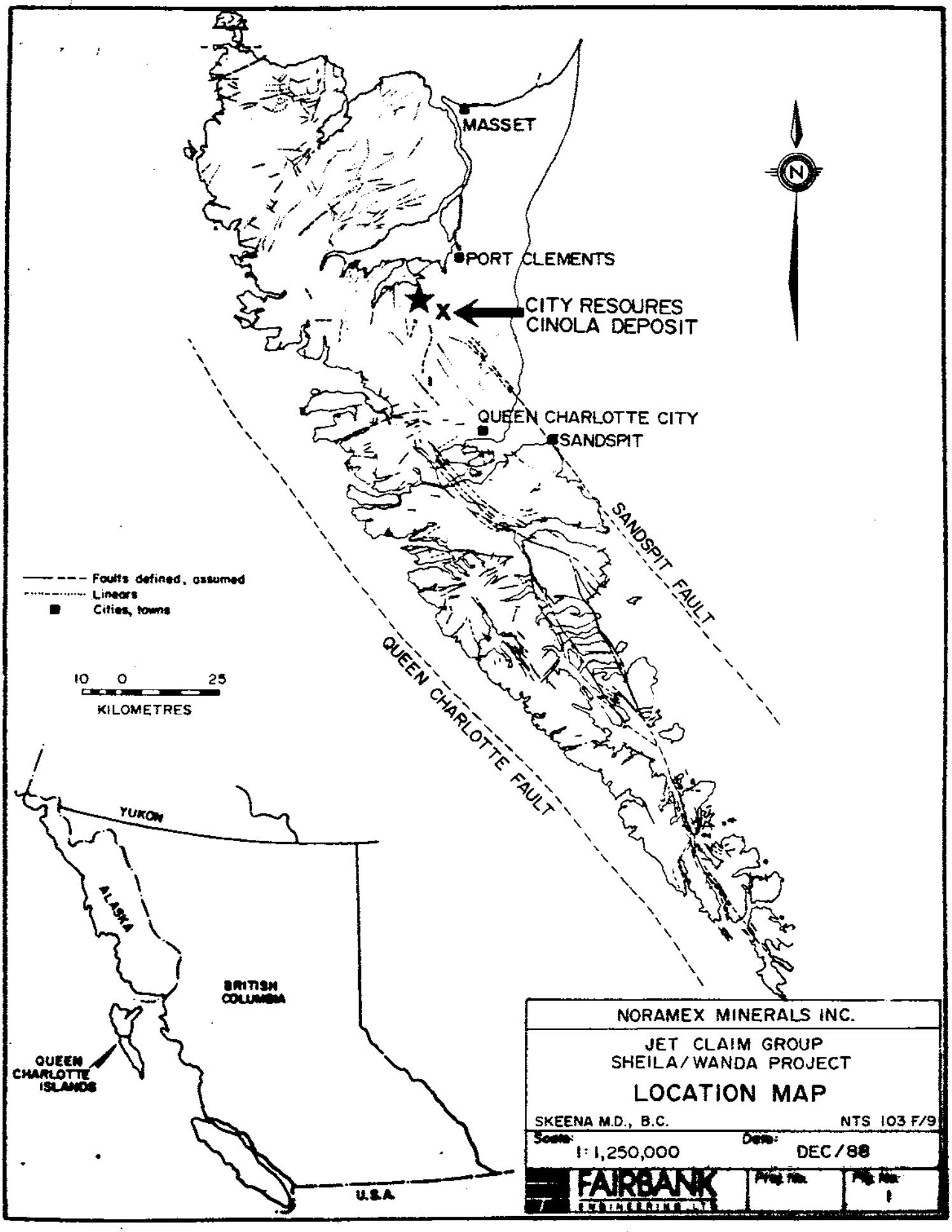
The Wanda-Sheila property is located fifteen kilometers southwest of Port Clements on central Graham Island in the Queen Charlotte archipelago (Figure 1). It lies within the Skeena Mining Division at 53° 34' North latitude and 132° 17' West longitude.

The claim area is well served by MacMillan Bloedel's Queen Charlotte and Rennie Main logging roads 20 kilometers from Port Clements. Limited supplies and accommodations are available in Port Clements with most supplies necessary for an exploration program available in Queen Charlotte City or Masset approximately one hour drive via public highway from Port Clements.

Additional supplies and accommodations plus daily jet service to Vancouver are available in Sandspit on Moresby Island, one hour ferry ride and drive from Queen Charlotte City. Water is available on site, but electricity will require diesel generation on site.

Branch roads provide good access to large portions of the claim block. These roads are generally in very good condition with closures only on older portions. MacMillan Bloedel should be contacted in Juskatla or Queen Charlotte City for permission to use the active haul roads and for information on local traffic conditions.

The local climate is often rainy with 124 cm of total precipitation per year including about 40 cm of snow in the winter. Rainfall is highest in November, but measurable precipitation occurs on one-third of the days in the drier months of July and August. Average temperatures are rarely below freezing. High temperatures above 20° C are uncommon.



NORAMEX MINERALS INC.

JET CLAIM GROUP
SHEILA/WANDA PROJECT

LOCATION MAP

SKEENA M.D., B.C. NTS 103 F/9

Scale: 1:1,250,000 Date: DEC/88

FAIRBANK ENGINEERING LTD. Proj. No. Fig. No. 1

The area comprising the claim group is of generally low to moderate topographic relief with elevations ranging from 60 - 460 meters ASL (100 to 1500 feet). Cliffs occur locally on the southwest portion of the Jet claim. The Mamin River traverses the eastern portion of the Wonder and Jet claims and drains to east-northeast. The area is part of the coastal western hemlock biogeoclimatic zone. Tree cover ranges from recent slash to virgin timber, with the majority of the ground covered by dense 15-20 year old second growth of alder, cedar, hemlock and spruce. Outcrops are sparse and limited to local cliffs, roadcuts and road construction pits.

3. CLAIMS AND OWNERSHIP

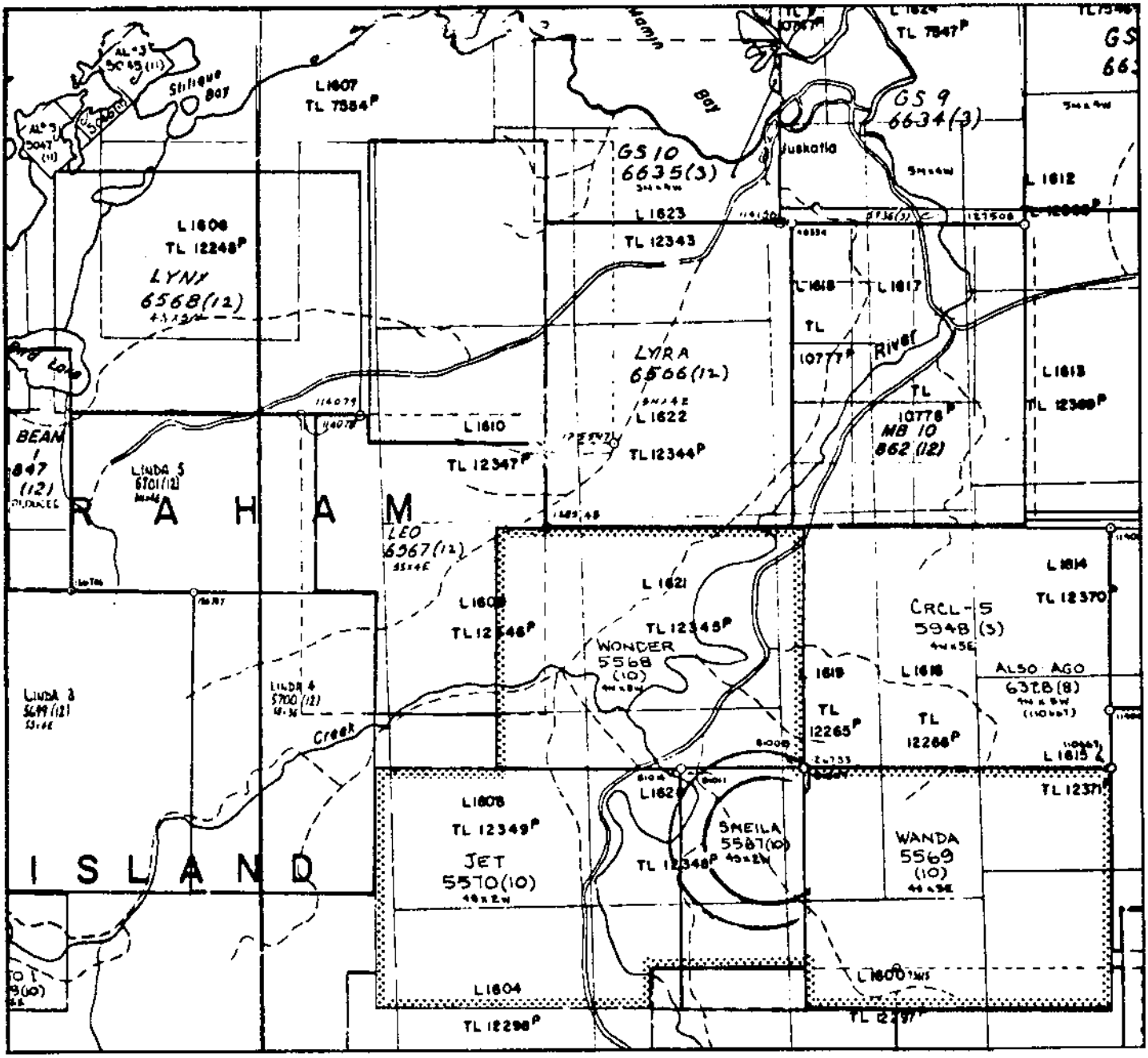
Records of the British Columbia Ministry of Energy, Mines and Petroleum indicate that the following claims (Figure 2) are registered to B.D. Fairbank for the benefit of Noramex Minerals Inc. which company holds an unregistered bill of sale.

TABLE 1 CLAIM DATA

Claim	Record No.	No of Units	Record Date	Expiry Date
Sheila	5567	8	Oct 1/86	Oct 1/91
Wanda	5569	20	Oct 1/86	Oct 1/91
Wonder	5568	20	Oct 1/86	Oct 1/91
Jet	5570	20	Oct 1/86	Oct 1/91

The Sheila claim partially overlaps a prior claim, resulting in the loss of approximately 2 units from its southern boundary.

The work described in this report was primarily funded by City Resources under an option agreement with Noramex.



0 1 2 3 4

KILOMETRES

N

NORAMEX MINERALS INC.

JET CLAIM GROUP
SHEILA / WANDA PROJECT

CLAIM MAP

SKEENA M.D., B.C. NTS 103 F/9 W

Scale: 1:50,000 Date: DEC/88

FAIRBANK ENGINEERING LTD | Proj. No. | Fig. No. 2

4. PREVIOUS WORK

The Cinola gold deposit of City Resources (Canada) Limited, situated five kilometers southeast of the Jet property, has been explored intensively by several companies since the early 1970's, leading to a favorable feasibility study in December 1987. This study recommends construction of a 6,600 tpd mine and mill capable of producing an average of 126,000 ounces of gold annually over a 12-year mine life (City Resources, 1987).

The Wanda-Sheila property has been staked repeatedly due to its proximity to the Cinola gold deposit but only limited assessment work has been filed for the ground currently covered by the claims. An extensive airborne EM and magnetometer survey was flown over the area in 1981 by Columbia Geophysical Services Ltd. (Rolston and Timmins, 1981). This survey discovered a magnetic anomaly on the Lark 6 (Jet) claim, and another on the Lark 5 (Sheila) claim. Robinson (1987) conducted reconnaissance soil geochemistry over the Sheila, Wanda, Jet and Wonder Claims. The highest gold value (165 ppb Au) was found on the Wanda claim.

5. REGIONAL GEOLOGY

The geology of the Queen Charlotte Islands is described in British Columbia Department of Mines and Petroleum Resources Bulletin No. 54, Geology of the Queen Charlotte Islands, British Columbia by A. Sutherland Brown (1968). More detailed work is included in Cameron and Tipper (1985) and Haggart (1986) with an update of current work by the Geological Survey of Canada in Frontier Geoscience Program, Queen Charlotte Islands, British Columbia in GSC paper 88-1E.

The Queen Charlotte Islands occur on the western edge of the allochthonous Wrangellia terrane. Lithologic units present can be correlated to others within Wrangellia terrane on Vancouver Island and the lower mainland of British Columbia.

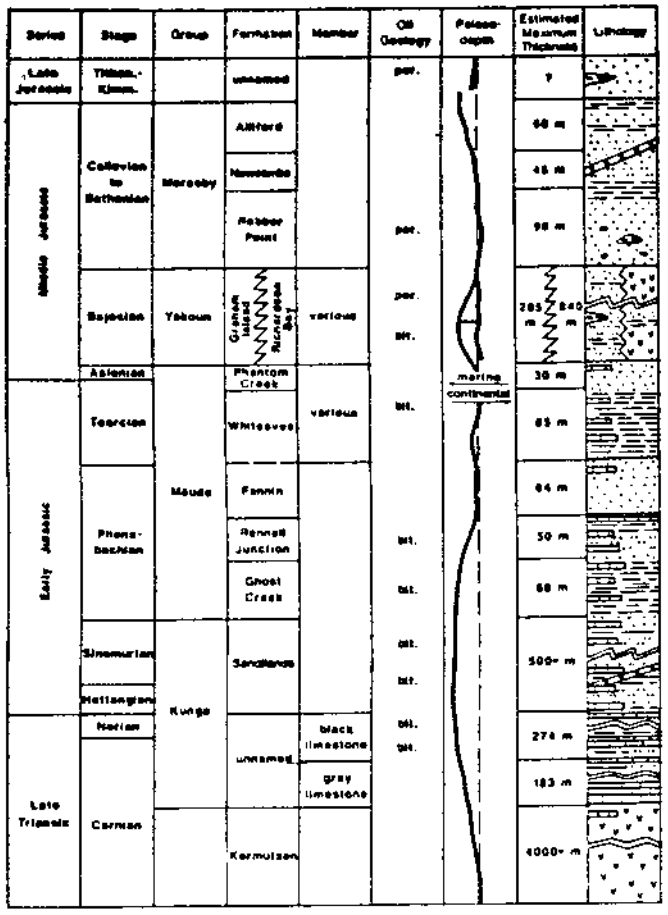
5.1 Lithologic Units

The following summarizes the lithologic units (Figure 3) found in the Queen Charlotte Islands simplified from Sutherland Brown (1968) and the more recent works.

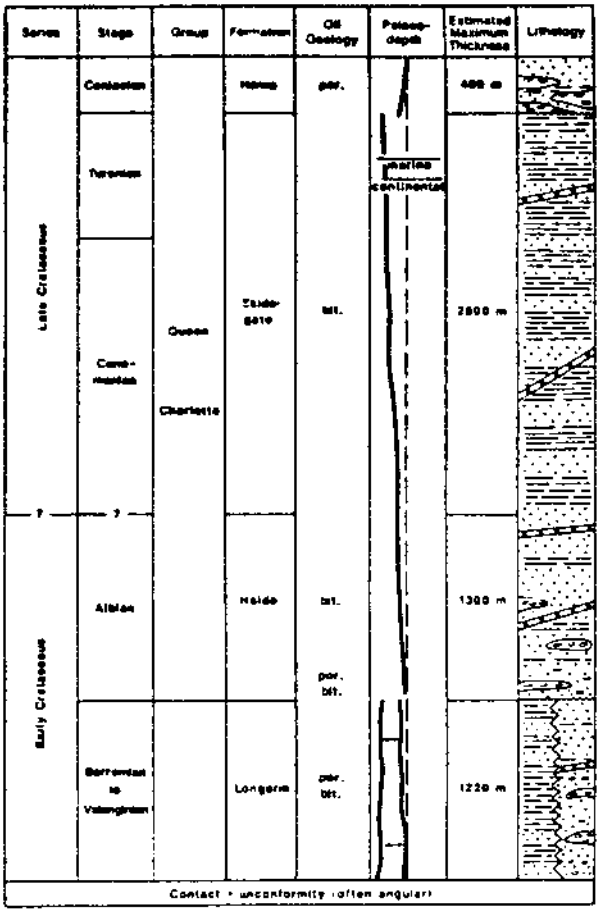
Oceanic derived basaltic rocks from the Upper Triassic Karmutsen Formation are the oldest units that have been found on the Queen Charlotte Islands. Locally petroliferous, Upper Triassic through early Jurassic carbonate, sandstone and shale from the Kunga and Maude Groups were deposited on a broad shelf underlain by the Karmutsen volcanics.

Calc-alkalic volcanics and volcanoclastics of the Middle Jurassic age Yakoun Group represent the next major volcanic event. Syntectic quartz dioritic plutons occur as equivalents and successors to the Yakoun volcanics.

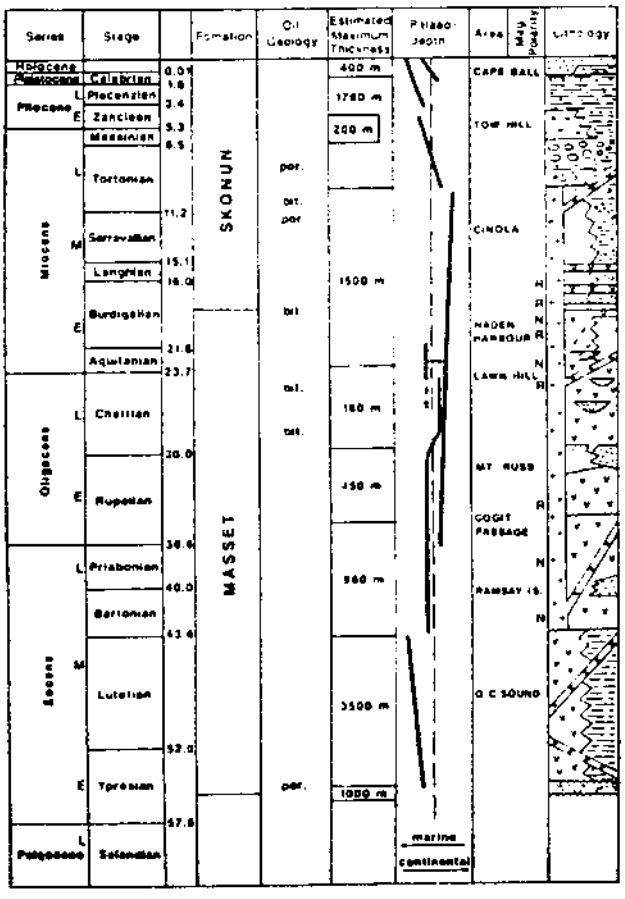
Clastic sediment sequences are dominant from mid-Jurassic on. The Moresby Group of middle Jurassic age occurs as a transgressive conglomerate, sandstone and shale sequence above the Yakoun Group. An unnamed clastic sediment unit of upper Jurassic age is also found locally. Distribution of both of the units is limited as a result of erosion and uplift of the syntectonic plutons.



Composite Triassic and Jurassic stratigraphy of the Queen Charlotte Islands (modified after Cameron and Tipper, 1985).



Composite Cretaceous stratigraphy of the Queen Charlotte Islands.



Composite Cenozoic stratigraphy of the Queen Charlotte Islands.

LEGEND

- Conglomerate
- Sandstone, pebbly
- Sandstone calcareous
- Shale, mudstone calcareous
- Siltstone
- Rhyolites (Tertiary only)
- Basalts & undifferentiated volcanics
- Limestone — lenticular, massive
- dike
- not to scale
- por. observed porosity
- bit. observed bitumen

From Cameron & Hamilton, 1988

NORAMEX MINERALS INC.

JET CLAIM GROUP
SHEILA/WANDA PROJECT

COMPOSITE STRATIGRAPHY

SKEENA M.D., B.C. NTS 103 F/9

Scale: N/A Date: DEC/88

FAIRBANK ENGINEERING LTD | Proj. No. | Fig. No. 3

The Lower Cretaceous Longarm Formation was formed as widespread (now less common) shallow water sandstone and conglomerate to deeper water shales. A mid-Cretaceous block faulting tectonic event allowed for erosion down as far as the Karmutsen prior to deposition of clastic sediments of the overlying Queen Charlotte Group. Erosion of Yakoun volcanics and sediments formed from Yakoun volcanics was the primary source of the later clastic sediments.

The mid- to Upper Cretaceous Queen Charlotte Group is composed of Haida Formation basal sandstone and shale which give way upward to deeper water Skidegate Formation shale and fine grained sandstone which are in turn overlain by shallow water (?) Honna Formation sandstone and conglomerate. Deposition of the Honna Formation was followed by a late Cretaceous to early Tertiary compressive tectonic episode. Basaltic rocks of both pre-and post Queen Charlotte Group age have been encountered in deep oil wells. Poorly recognized volcanic events of both late Cretaceous and early Tertiary age occur also.

The mid-Tertiary Masset Formation is composed of generally mafic flows with local felsic pyroclastics and volcanoclastic sediments. Post-tectonic plutons of dioritic to quartz monzonitic composition occur intrusive into rocks of young as the Masset Formation. Its possible, however, that some of the post-tectonic plutons are as old as late Cretaceous age.

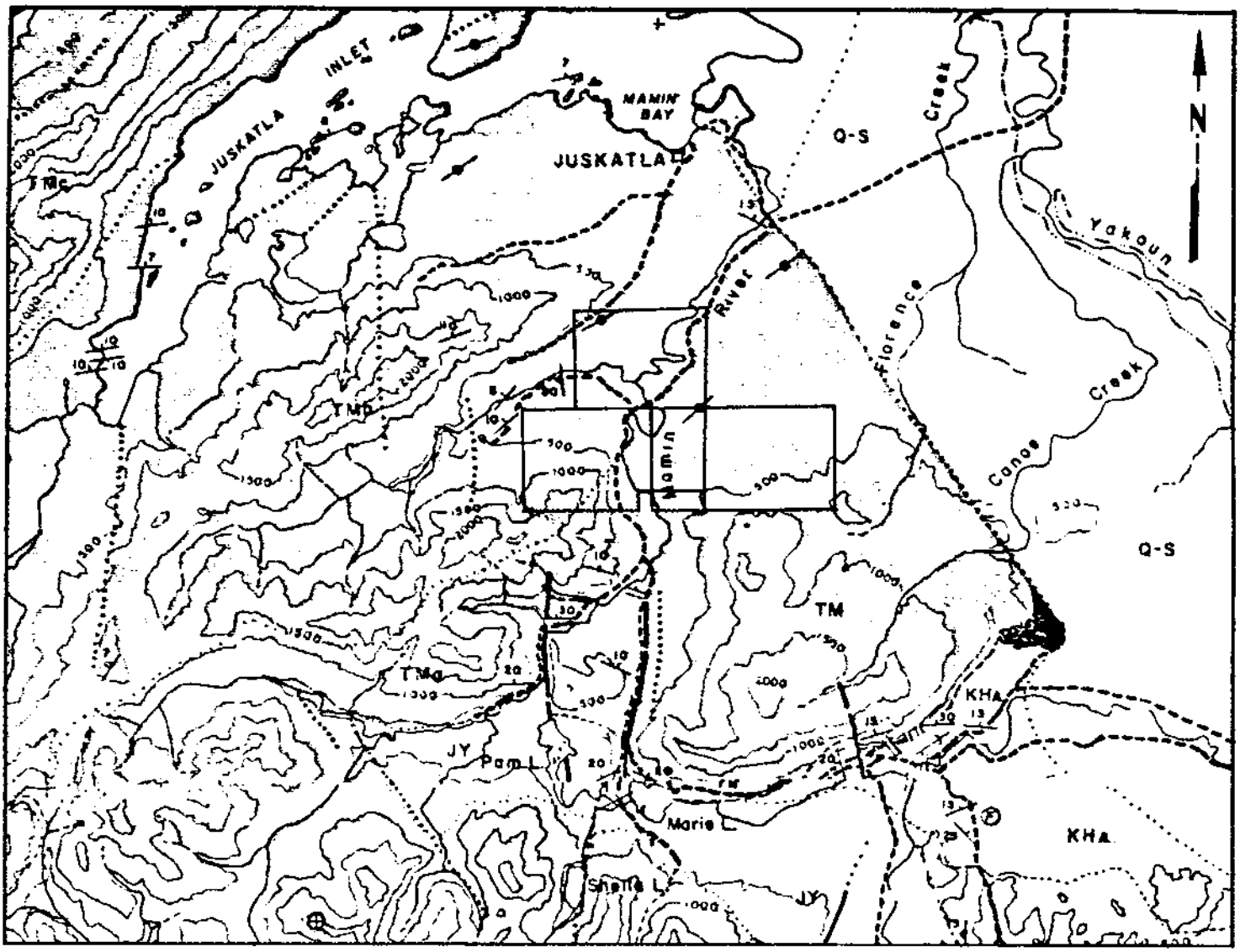
The Miocene and Pliocene age Skonun Formation occurs as a poorly lithified, locally carbonaceous sandstone and is time equivalent in part to the Masset Formation. Unconsolidated Quarternary glacial, interglacial and post glacial sediments complete the lithologic units found in the Queen Charlotte Islands.

5.2 Regional Structure

Tectonic events in the Queen Charlotte Islands occurred as dextral drag and rebound in response to interaction of the northward moving Wrangellia terrane with other terranes and the main North American Plate. Structural episodes recognized include mid-Jurassic, (post-Maude), early Tertiary (post-Honna) and late-Tertiary (Skonun) folding and mid-Cretaceous (pre-Haida) faulting.

The oldest structural trend is northeast-southwest and can be seen in the orientation of Juskatla Inlet. Major present day structure is dominated by the northwest-southeast trending Sandspit Fault and the Rennell Sound "fold belt" (Figure 4). The Sandspit Fault trace trends 145° from southeast of Sandspit across the center of Graham Island, and dips steeply northeast. It separates hills and mountains of the Skidegate Plateau on the southwest from the swampy, flat Queen Charlotte Lowlands on the northeast. Poorly consolidated Skonun sediments underlie much of the lowlands while Masset Formation volcanics and older units occur in the highlands. Most recent movement on the Sandspit fault has been down to northeast although some dextral strike slip movement has also occurred.

The Rennell Sound "fold belt" consists of a series of chevron folds and crushed zones in Kunga and Maude strata trending 120° through Skidegate Narrows between Graham and Moresby Islands. This fold belt is likely the result of early dextral movement on structure parallel to the present Sandspit and Queen Charlotte Faults. Younger faults and lineaments trending 000° to 030° are common as normal faults with east side down movement (Hickson, Pers. Comm.).



LEGEND

0 1 2 3 4 5
KILOMETRES

QUATERNARY

QS Quaternary overlying Skonun Fm

TERTIARY

PALEOCENE-EOCENE

TM MASSET FORMATION: subaerial basalt flows and breccias, rhyolite ash flows, lesser dacite

TM - Undivided Masset Formation

Divided Tartu Facies

TMc -- Basalt Member
TMb - Rhyolite member
TMa - Mixed member

CRETACEOUS

QUEEN CHARLOTTE GROUP

KHo HONNA FORMATION: conglomerate with granitic cobbles, arkosis grits, minor shale

KHa HAIDA FORMATION: green glauconite and grey sandstone, grey silty shale and siltstone, buff calcareous siltstone

VANCOUVER GROUP

JURASSIC

JY YAKOUN FORMATION: porphyritic andesite agglomerate and flows, calcareous scoraceous lapilli tuff, volcanic sandstone and conglomerate, minor tuffaceous shale, coal

——— Geological Contact
——— Fault
..... Lineaments
Bedding
Primary foliation, plutonic rocks

From A. Sutherland Brown, 1958-63

NORAMEX MINERALS INC.

JET CLAIM GROUP
SHEILA/WANDA PROJECT

REGIONAL GEOLOGY

SKEENA M.D., B.C. 103 F/9

Scale: 1:125,000 Date: DEC/88

FAIRBANK ENGINEERING LTD | Proj. No. | Fig. No. 4

5.3 Regional Mineralization

The largest gold deposit in the region is the Cinola Deposit of City Resources located 16 km south-southeast of Port Clements. Open pit ore reserves are 27.3 million tons of 0.062 ounces per ton gold, using a 0.032 cutoff (City Resources, News Release, December 4, (1987). Structure and lithology are important ore controls. The Sandspit Fault is adjacent to the deposit on the east side. A secondary splay structure known as the Specogna Fault was a major control or channel for the movement of mineralizing fluids. The Specogna Fault runs immediately west of the deposit dipping 45-50° E and possibly trends through the Sheila, Wanda and Wonder claims.

Mineralization occurs in quartz veins, siliceous breccia and replacement zones within silicified conglomerate of the Skonun Formation. Haida Formations shales form the footwall of the Specogna Fault and may have been a secondary control on the localization of mineralization by creating an impermeable boundary on the west side of the deposit. The gold is very fine grained and occurs in association with widespread disseminated sulphides. Champigny and Sinclair (1980) report a 14 Ma age for the Cinola mineralization.

Other gold showings in similar structural environments include the Miller creek property north of Skidegate, the Snow prospect south of Sandspit and possibly the Southeaster Deposit also north of Skidegate (Figure 3).

6. PROPERTY GEOLOGY

The geology of the Wanda-Sheila property is not known in detail because of till cover and thick bush. Exposures are limited to road construction pits, road cuts and rare natural outcrops. Geologic mapping was done on the property and adjacent areas at a scale of 1:5000 (Figures 5, 6, and 7).

6.1 Lithologic Units

The only lithologic units positively identified on the property consist of Masset Formation volcanics of Oligocene to Miocene age and unconsolidated glacial and post-glacial sediments of Pleistocene to Recent age. Radiometric ages reported by Hickson, (1988) range from 29 to 17 Ma for the main Masset volcanic sequence.

The following rock descriptions are made from hand specimen samples identifications of outcrops. Further mapping with the use of thin sections and drill core would likely result in refinements of these descriptions and delineation of similar appearing units.

The Masset Formation on the property has been divided into five units: lower basalt, dacite porphyry, welded rhyolitic tuff, upper andesite and a local rhyolite dike. Local monolithic volcanoclastic sediments were included with their sources rock type for simplicity.

Porphyritic basalt (Mb) is the oldest unit cropping out most commonly on the Sheila claim to the west. It is composed medium greenish brown vesicular porphyritic basalt with up to five percent subhedral plagioclase phenocrysts less than 4mm in length in a fine grained felty matrix. Flow units range up to 5 meters thick. Amygdules composed

of commonly filled with chalcedony and calcite up to 1 cm in size are locally abundant, especially in reddish scorious flow tops and bottoms. Local breccia or boulder conglomerate facies are found along the Queen Charlotte Main Line road. Narrow (less than 1 meter) dikes (Mdb) of fine grained basalt occur cutting dacite prophyry on the western Jet claim. These may be feeders for later Masset or even younger basalt flows.

Dacite porphyry (Md) is the most abundant unit found in the area of the Wanda claims. It is composed of a dark grey to black very fine grained to glassy matrix with five to ten percent 5mm composite subhedral plagioclase phenocrysts. Flow textures and lapilli fragments can occasionally be seen. Possible flow base breccias with subrounded boulders up 1 meter in diameter are locally common. A possible dacite vent was mapped by Hickson (pers. comm., 1988) on Southeastern portion of the Wanda Claims

Light tan to yellow brown weathered flow banded welded tuff (Mwt) of rhyolitic to dacitic composition is found along Blackwater Creek in the western portion of the Wonder Claim. It oxidizes to 3 cm and is dark grey in colour when fresh. From zero to 20 per cent plagioclase phenocrysts less than 4mm in length are found. It is characterized by persistent 1 to 3cm flow banding. Local glassy units also occur. It is possible that this unit is a glassy welded facies of the dacite prophyry.

Tan weathered rhyolite dike(?) rubble (Mrd) with up to two percent plagioclase phenocrysts less than 3mm in length occurs along a 10 meter area on Road 8C in the southern portion the Sheila claim. Similar rhyolitic rocks are common west of the Mamin River.

Andesite (Ma) is the youngest volcanic unit found in the project area. It is medium greenish gray in colour, fine grained with rare less than 2mm plagioclase phenocrysts. It forms rubbly exposures in the northeastern portion of the Wanda claim and the northwestern portion of the Wonder claim. It also occurs as rare dykes trending northwest-southeast cutting the dacite porphyry. The dykes intruded "peacefully" along existing joint sets with less than 10cm wide weakly hornfelsed contacts.

Pleistocene age brown sandy till with occasional boulders generally less than 10 cm in diameter occurs up to 2 meters in thickness over most of the project area. This unit is not shown on the geology maps because of its ubiquitous nature. Three poorly consolidated sedimentary units of probable Pleistocene age have been found in the project area. A poorly lithified medium gray (tan when weathered) thin bedded silt (Qs) with minor pebbles occurs in a narrow belt trending 020° from the southeastern corner of the Wanda claim. Drilling in 1987 in the pass at the northern end of this exposure intersected 78 meters (vertical thickness) of glacial sediments (Tolbert, 1987). A medium brown unconsolidated silty sand was found in ditch cuts along Branch 4 road just north of the Sheila-Wanda property and with a yellow unconsolidated sand on the Blackwater Creek - Mamin River bridge connector road.

6.2 Structure

Bedding and igneous flow structure on the property is dominated by a west-northwest to east-southeast strike with average dip less than 10 degrees (55° maximum) to the northeast. Consistent fracturing and jointing is rare because of the massive nature of exposures in the project area. Local shearing on the 000° to 030° direction plus dikes on joints on 140° (Sandspit Fault) are most common.

Thick glacial sediments drilled in the pass on Branch 8 west of Florence Creek occur along the 000°-030° trend. This trend can be seen in the orientation of Mamin River, Florence Creek and smaller valleys.

A 1982 diamond drill hole on Branch 4, 500 meters northeast of the northeast corner of the Wanda claim, intersected 30.5 meters of overburden overlying 37 meters of Masset basalt which in turn overlay 23 meters of possibly Honna Formation sandstone and conglomerate (Sanders and Hart, 1983). The difference in lithologies between this hole and exposures on the Wanda-Sheila claims plus regional magnetic survey data (G.S.C. 1987) and topographic relief are a strong indication that the main Sandspit Fault occurs just northeast of the Wanda claim. Regional magnetic data indicates a structure subparallel to the Sandspit Fault (the Specogna Fault?) crosses from northwest to south near the southern boundary of Wanda claim.

7. GEOCHEMISTRY

7.1 Rock Geochemistry

Four rock samples were taken during the 1988 field program. Two samples (WS-88 1 & 2) were from oxidized and weak clay altered (weathered?) zones on basalt from near the south center of the Wanda Claim. The other two samples Jet 88-1 & 2 were from pyritic breccia zones in basalt from the western Jet claim.

Sample preparation and analysis was at Min-En Labs in North Vancouver. Analysis was for gold and arsenic on all samples with additional Ag, Cu, Pb, Zn, Sb and Hb on the two Jet samples. All element values were low (6 ppb high Au) excepting an 1015 ppm lead on one of the Jet samples. Sample locations are shown on Figures 5 and 6 with sample

summaries (descriptions), analytical reports and analysis techniques in Appendices A, B and C.

7.2 Soil Geochemistry

Twenty-seven kilometers of cut grid were completed on the Wanda and Sheila claims with a 3400 meter baseline, 400 meter spaced cross lines plus three additional 200 meter spaced fill in lines A total of 536 soil samples were taken at 50 meter spacing over the gird.

Soil samples were obtained using a soil auger with sample depth from 5 to 100 cm. B-Horizon samples were taken where ever possible, but the organic A-horizon is locally thick and was occasionally impenetrable. Overburden is generally thin sandy till with an average thickness of less than one meter.

All samples were placed in high wet strength kraft sample envelopes, air dried and sent to Min-En Labs for analysis of gold and arsenic. Arsenic was run as a pathfinder element because of its known association with gold mineralization at the Cinola deposit. Sample locations and results are shown on Figure 8 with analytical reports and analysis techniques in Appendices B and C.

Analysis results were generally low with high values of 35 ppb gold (two samples) and 73 ppm arsenic. The two 35 ppb gold samples occur in a swampy area on the north end of the Sheila claim and may represent outwash material in this area. The high arsenic value is an isolated (next highest As value is 15 ppm) value from just below an active haul road. This value could represent transported material from

the road although there is some topographic expression of a 020° structure through this site.

8. GEOPHYSICS

Magnetic and VLF-EM surveys were performed over the entire 27 kilometer of grid in order to located potential mineralized structures and prioritize areas for the IP and resistivity survey which was run over approximately one-third of the grid. A reconnaissance magnetic survey was performed at 100 meter spacing along roads on the Wonder and Jet claims.

8.1 Grid Magnetic Survey

A magnetic survey using a Geometrics Model G-816 proton magnetometer was performed at 25 meter spacing over the grid on the Sheila and Wanda claims between June 8 and July 28. A total of twenty-seven kilometers of survey were completed.

8.1.2 Base Level and Corrections

The Magnetic values obtained from the survey varied form 51,193 to 59,975 gammas. A base value of 55,000 gammas was chosen to give primarily positive values for presentation on Figure 10. The standard looping method was used to correct for diurnal variations. Diurnal variations were linearly corrected to a base reading taken a few hours previously.

8.1.3 Magnetics Interpretation

The total field magnetic survey map (Figure 10 indicates a strong (-3807, i.e. 51,193 gammas) magnetic low trending 070° from near the south center of the Sheila claim to the east-northeast for a distance of at least 1700

meters. This low likely represents an altered structural zone with good potential for gold mineralization. The soil geochemistry map (Figure 8) did not show anomalous values, but this may be the result of masking by thin glacial cover in the area.

8.2 Reconnaissance Magnetic Survey

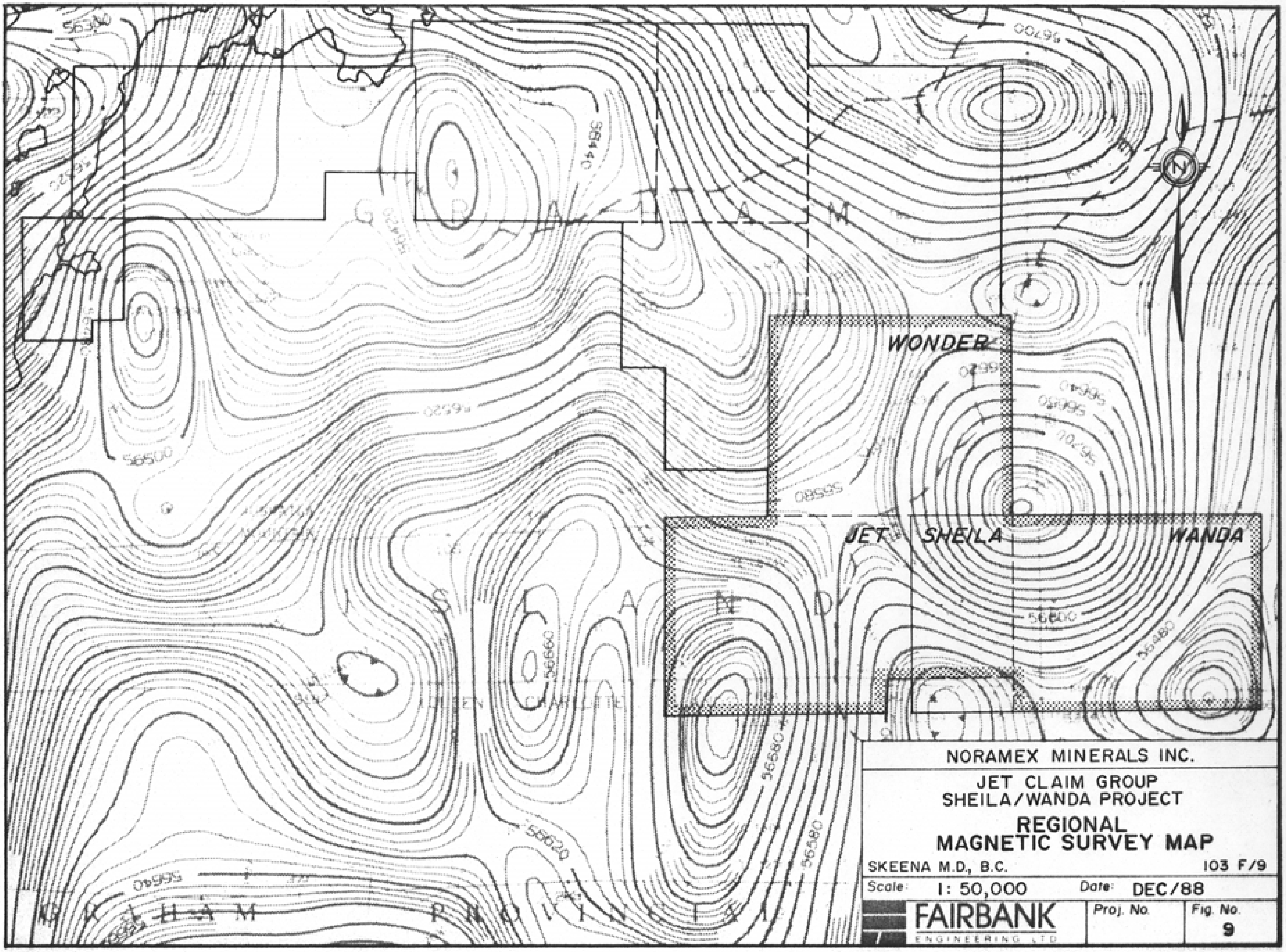
A magnetic survey using a Geometric Model G-816 proton magnetometer was performed along roads in the Bird Lake - Mamin River area between July 16 and July 23, 1988. This reconnaissance scale property survey was designed to locate anomalous areas for detailed grid surveys. A total of 39 kilometers was surveyed of which 13.5 kilometers was located on the Jet and Wonder claims.

8.2.1 Base Level and Corrections

The magnetic values obtained on the Jet Claim block portion of the survey varied from 53,746 to 57,508 gammas. A base level of 50,000 gammas was chosen to give four digit positive values for presentation of Figures 6 and 7. The standard looping methods was used to correct for diurnal variations. Diurnal variations were linearly correct to local base reading taken a few hours previously.

8.2.2 Magnetics Interpretation

A 1987 G.S.C. 1:50,000 scale airborne magnetic survey map (Figure 9) shows a 160 gamma (56740 gamma) high located near the Sheila-Wonder-Wanda claims common corner. The 1988 ground survey reported here shows much greater variation (3762 gammas) related to both local and property scale figures. Interpretation of the survey results between roads is limited by lack of bedrock exposure in the Mamin River Valley and survey line spacing. Higher values are


WONDER
JET
SHEILA
WANDA
56500
56520
56620
56660
56680
56580
56800
56480
NORAMEX MINERALS INC.
JET CLAIM GROUP
SHEILA/WANDA PROJECT
REGIONAL
MAGNETIC SURVEY MAP
SKEENA M.D., B.C.
103 F/9
Scale: 1: 50,000
Date: DEC/88
FAIRBANK
ENGINEERING LTD
Proj. No.
Fig. No.
9

interpreted as being related to mafic units or thinner bedrock cover with lower values possibly related to hydrothermal alteration.

8.3 VLF - Electromagnetic Survey

8.3.1 Survey

A VLF-EM survey using a Geonics EM-16 was performed over the entire grid at 25 meter stations between June 29 and July 19, 1988 in an attempt to locate anomalies for the following IP and resistivity survey. Annapolis, Maryland VLF transmitter station which has an operating frequency of 21.4 KHz was utilized for the crosslines because the signal is closest to perpendicular to the suspected strike of structures on the property. This geometry allows the maximum induction of the transmitted signal.

8.3.2 Interpretation

Figure 11 shows percentage magnitude of in phase and out of phase components of the primary vertical field for the Annapolis, Maryland station portion of the survey. The results show numerous weak anomalies, but it is impossible to distinguish bedrock conductors from geologic noise associated with conductive overburden and bedrock contrasts.

8.4 I.P. and Resistivity Survey

8.4.1 Survey

An I.P.-Resistivity survey was performed on the Wanda-Sheila grid between July 28 and August 11, 1988 under the direction of Pacific Geophysical Limited.

A Phoenix Model IPV-1 receiver unit was used to record the measurements, together with a Phoenix Model IPT-1 transmitter unit powered by a 1 kw motor-generator. IP effects were recorded as Percent Frequency Effect (PFE) at operating frequencies of 4.0 Hz and 0.25 Hz, with apparent resistivity values normalized in ohm-meters. A dipole-dipole array was employed exclusively using an inter-electrode distance of 50 meters for 9.5 kilometers of the grid. A total of 325 meters of the baseline was also completed using 25 meter electrode intervals.

8.4.2 IP and Resistivity Results and Interpretation

A summary of results of the I.P. and resistivity survey by Pacific Geophysical personnel is included as Appendix E. Two adjacent zones of strongly anomalous Percent Frequency Effect (PFE) were located on lines 14+00E to 16+00E trending east-northwest from the baseline. The northernmost of these zones is coincident with the previously discussed magnetic low. Drilling to test these zones is recommended in the Pacific Geophysical report.

9. CONCLUSIONS AND RECOMMENDATIONS

Two precious metals exploration targets have been located on the Wanda-Sheila Property.

The first target area is the area of coincident magnetic low and resistivity anomalies located near the southwest corner of the Sheila Claim. These coincident anomalies are interpreted to be caused by sulfide mineralization with good precious metal potential. Diamond drilling to evaluate them is recommended.

The second target area is an area of magnetic lows found during the reconnaissance magnetic survey in the

northern half of the Wonder claim. It is recommended that approximately 13 kilometers of grid be cut and a more detailed magnetic survey be performed to determine the strength, continuity and direction of the reconnaissance anomalies. Test probes should be made to determine depth of overburden for an accurate soil sampling survey. If the overburden is thin, then a conventional soil geochemistry should be done over any magnetic anomalies found. This work would be followed with an IP and resistivity survey to delineate and define drill targets.

10. REFERENCES

Awmack, H.J., 1988: Geological Report on the STO 1 - 4 Claims; Queen Charlotte Islands, Skeena Mining Division, B.C. Private Report for Desert Gold Resources Inc.

Cameron, B.E.B. and Hamilton, T.S., 1988: Contributions to the stratigraphy and tectonics of the Queen Charlotte Base, British Columbia; in Current Research, Part E, Geological Survey of Canada, Paper 88-1E, p 221-227.

Cameron, B.E.B. and Tipper, H.W., 1985: Jurassic stratigraphy of the Queen Charlotte Islands, British Columbia; Geological Survey of Canada, Bulletin 365, 49 p.

Cartwright, P.A. and Lockhart, G.D., 1988: Induced Polarization and Resistivity Survey; Sheila/Wanda Property, Skeena M.D., B.C., Private Report for Fairbank Engineering Ltd.

Champigny, N. and Sinclair, A.J., 1982: Cinola Gold Deposit, Queen Charlotte Islands, British Columbia: A Canadian Carlin-Type Deposit; Geology of Canadian Gold Deposits; CIM Special Volume 24.

City Resources (Canada) Limited, 1987: New Release No. 1, dated December 4, 1987.

Englund, R.J., 1981: Assessment Report on a Magnetometer Survey on the Hook and Kenny Claims; BCDMPR AR 9822.

Geological Survey of Canada, 1987: Map 9470-G Aeromagnetic Map of 103F/9 Mapsheet.

Haggart, J.W., 1986: Stratigraphic investigations of the Cretaceous Queen Charlotte Group, Queen Charlotte Islands, British Columbia; Geological Survey of Canada, Paper 86-20, 24p.

Hickson, C.J., 1988: Structure and stratigraphy of the Masset Formation, Queen Charlotte Islands, British Columbia; in Current Research, Part E, Geological Survey of Canada, Paper 99-1E, p. 269-274.

Roberts, A.F. 1981: Report on the VLF-EM Survey, South Florence Claim; BCDMPR AR 8817.

Robinson, R.J., 1986: Soil Geochemical Survey of the JET Claim Group; BCDMPR AR. 16514.

Rolston, T. and Timmins, W.G., 1981: Mamin River Airborne Project, BCDMPR AR 9843.

Sanders, K.G. and Hart, R.C. 1983: Report on the Bulk Sampling Adit on the Cinola Property, 1980-1982; BCDMPR AR 11,167.

Sutherland Brown, A., 1968: Geology of the Queen Charlotte Islands; British Columbia Ministry of Energy, Mines and Petroleum Resources, Bulletin No. 54.

Thompson, R.I., 1988: Late Triassic through Cretaceous geological evolution, Queen Charlotte Islands, British Columbia; in Current Research, Part E, Geological Survey of Canada, Paper 88-E, p. 217-219

Tolbert, R.S., 1987: Exploration and Geotechnical Diamond Drilling on the Expot Mineral Claim; BCDMPR AR.

APPENDIX A

SAMPLE SUMMARY

AREA: Jet Claim Group, Q.C.I., B.C. CLIENT: _____

COLLECTOR: M.A. Hepp PROJECT: _____

DATE: July, 1988 MAP: _____

SAMPLE SUMMARY

SAMPLE NUMBER	LOCATION	REMARKS	TYPE	LAB. ANALYSIS Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppb
WS-88-1	S. Center Wanda Claim	Red-Yel Clay Alt Basalt 3m	R	6	-	-	-	-	4	-	-
88-2	" " " "	Red-Yel Weat. Basalt 50cm	↓	2	-	-	-	-	1	-	-
Jet-88-1	Southwest Jet Claim	Vol Bx 2-3% Pyrite 10cm	R	3	1.1	19	22	47	2	1	80
88-2	" " "	Vol Bx 5% Pyrite 10cm	↓	2	1.9	173	1015	59	1	3	150

APPENDIX B

ANALYTICAL REPORTS

ENVIRONMENTAL LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601087 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Analytical Report

Project File Copy

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B.FAIRBANK

File: 8-892
Date: JULY 16/88
Type: SOIL GEOCHEM

Date Samples Received : JULY 8/88
Samples Submitted by : B.FAIRBANK

Report on: .....275 SOILS, 2 ROCKS..... Geochem Samples
.....
..... Assay Samples
.....

Copies sent to:
1. FAIRBANK ENGINEERING, VANCOUVER, B.C.
2.
3.

Samples: Sieved to mesh ...-80(SOIL) .. Ground to mesh .....-150(ROCK)..

Prepared samples stored:....X..... discarded:..... ....
rejects stored:..... discarded:.....X.....

Methods of analysis:

AS-VAPOR GENERATION A.A.
AU-WET GEOCHEM
AU-FIRE GEOCHEM

Remarks

MINERAL
• ENVIRONMENTS
LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of GEOCHEM

Company: FAIRBANK ENGINEERING
Project: S/W
Attention:

File: 8-829/P1
Date: JULY 12/88
Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-FIRE PPB
WS88-1	4	6
WS88-2	1	2

Certified by _____

MIN-EN LABORATORIES LTD.

MINERAL
• ENVIRONMENTS
LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9696

Certificate of GEOCHEM

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B. FAIRBANKS

File: 8-892/P1
Date: JULY 15/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
2101	1	5
2102	6	5
2103	2	5
2104	2	10
2105	5	5
2106	4	5
2107	3	10
2108	5	5
2109	7	10
2110	3	5
2111	4	5
2112	7	5
2113	5	5
2114	4	5
2115	2	5
2116	2	5
2117	1	5
2118	4	5
2119	4	5
2120	3	10
2121	7	5
2122	2	10
2123	7	5
2124	4	5
2125	1	15
2126	7	5
2127	5	10
2128	2	5
2129	3	5
2130	2	10

Certified by _____

MIN-EN LABORATORIES LTD.

MINERAL
• ENVIRONMENTS
LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
706 WEST 16TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601087 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9998

Certificate of Geochem

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B.FAIRBANK

File: 8-892/P2
Date: JULY 16/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AG PPM	AU-WET PPB
2131	3	5
2132	2	5
2133	2	5
2134	6	35
2135	4	5
2136	4	5
2137	3	5
2138	2	5
2139	5	10
2140	3	5
2141	3	5
2142	5	5
2143	4	5
2144	3	5
2145	3	5
2146	2	10
2147	3	5
2148	4	5
2149	3	5
2150	2	5
2151	12	10
2152	9	5
2153	4	5
2154	4	5
2155	5	5
2156	7	5
2157	9	10
2158	5	10
2159	3	5
2160	2	5

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Geochem

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B. FAIRBANK

File: 8-892/P3
Date: JULY 15/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
2161	5	5
2162	3	5
2163	4	5
2164	7	5
2165	5	5
2166	5	5
2168	7	5
2169	8	5
2170	7	5
2171	5	10
2172	5	5
2173	5	5
2174	4	5
2175	7	10
2176	6	5
2177	7	5
2178	7	5
2179	8	10
2180	7	5
2181	7	5
2182	6	5
2183	5	5
2184	6	5
2185	6	10
2186	6	5
2187	11	35
2188	13	10
2189	11	15
2190	9	5
2191	3	10

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9998

Certificate of Geochem

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B. FAIRBANKS

File: 8-892/P4
Date: JULY 15/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
2192	7	5
2193	5	10
2194	7	15
2195	6	5
2196	3	5
2197	3	5
2198	5	5
2199	4	5
2200	9	5
2201	1	10
2202	1	10
2203	2	5
2204	1	5
2205	2	5
2206	5	5
2207	6	5
2208	4	10
2209	8	5
2210	5	5
2211	7	10
2212	5	10
2213	4	5
2214	5	5
2215	5	5
2216	4	5
2217	6	5
2218	4	5
2219	4	5
2220	3	5
2221	4	5

Certified by _____

MIN-EN LABORATORIES LTD.

MIN
• EN
LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601087 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Geochem

Company:FAIRBANK ENGINEERING
Project:S/W
Attention:B.FAIRBANK

File:8-892/P5
Date:JULY 15/88
Type:SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
2222	4	5
2223	1	10
2224	1	5
2225	4	5
2226	1	5
2227	3	5
2228	2	5
2229	3	5
2230	2	5
2231	2	5
2232	1	10
2233	1	5
2234	1	5
2235	1	20
2236	1	10
2237	4	5
2238	1	5
2239	1	10
2240	1	10
2241	1	5
2242	1	5
2243	2	5
2244	2	5
2245	2	10
2246	2	15
2247	2	10
2248	2	5
2249	2	5
2250	2	5
2251	2	5

Certified by

MIN-EN LABORATORIES LTD.

MIN
•EN
LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Geochem

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B.FAIRBANK

File: 8-892/P6
Date: JULY 15/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
2252	3	5
2253	1	5
2254	2	5
2255	3	5
2256	4	5
2257	3	10
2258	4	10
2259	3	5
2260	2	5
2261	3	5
2262	3	5
2263	2	5
2264	3	5
2265	1	5
2266	2	5
2267	3	10
2268	3	5
2269	3	5
2270	2	5
2271	2	5
2272	2	10
2273	4	5
2274	3	5
2275	2	5
2276	1	5
2277	2	5
2278	2	5
2279	1	5
2280	3	5
2281	2	5

Certified by

MIN-EN LABORATORIES LTD.

MIN
•EN
LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9998

Certificate of Geochem

Company:FAIRBANK ENGINEERING
Project:S/W
Attention:B.FAIRBANK

File:8-892/P7
Date:JULY 15/88
Type:SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU PPB
2282	3	5
2283	4	5
2284	4	5
2285	1	5
2286	2	5
2287	4	10
2288	3	5
2289	1	5
2290	3	5
2291	4	5
2292	4	10
2293	3	5
2294	4	5
2295	3	5
2296	3	5
2297	6	5
2298	5	10
2299	1	5
2300	1	5
2301	5	5
2302	6	5
2303	2	10
2304	6	5
2305	7	5
2306	9	5
2307	5	5
2308	9	10
2309	8	5
2310	7	5
2311	7	5

Certified by

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Geochem

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B.FAIRBANK

File: 8-892/PB
Date: JULY 16/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU PPB
2312	6	5
2313	4	10
2314	4	5
2315	7	10
2316	9	5
2317	4	5
2318	4	5
2319	2	5
2320	3	5
2321	3	5
2322	4	10
2323	3	5
2325	5	5
2326	2	5
2327	2	5
2328	4	5
2329	4	5
2330	4	10
2332	4	5
2333	5	5
2334	3	5
2335	3	5
2336	3	5
2338	2	5
2339	3	10
2340	6	5
2341	5	5
2342	4	5
2343	4	5
2344	2	5

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 887
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9896

Certificate of Geochem

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B. FAIRBANK

File: 8-892/P9
Date: JULY 16/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU--WET PPB
2345	7	5
2346	5	5
2347	3	10
2348	3	5
2349	7	5
2350	2	5
2351	4	5
2401	2	10
2402	2	5
2403	4	5
2404	2	5
2405	2	5
2406	3	5
2407	4	5
2409	4	5
2410	4	5
2411	3	5
2412	3	5
2413	2	5
2414	4	10
2415	1	5
2416	2	5
2417	2	5
2418	1	5
2419	1	5
2420	2	5
2421	1	5
2422	2	5
2423	1	5
2424	1	5

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Geochem

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B. FAIRBANK

File: 8-892/P10
Date: JULY 16/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
2426	3	10
2427	3	5
2428	3	5
2429	2	5
2430	2	5

Certified by _____

MIN-EN LABORATORIES LTD.

MINERAL ENVIRONMENTS LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 887
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

BFC

Analytical Report

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B.FAIRBANK #160-88

File: 8-1004
Date: AUG 4/88
Type: SOIL GEOCHEM

Date Samples Received : JULY 17/88
Samples Submitted by : B.FAIRBANK

Report on .....261 SOILS..... Geochem Samples
..... Assay Samples
.....

Copies sent to:
1. FAIRBANK ENGINEERING, VANCOUVER, B.C.
2.
3.

Samples: Sieved to mesh .....-80..... Ground to mesh .. ..

Prepared samples stored:.....X..... discarded:.....
rejects stored:..... discarded:.....X.....

Methods of analysis:

AU WET GEOCHEM
AS VAPOR GENERATION A.A.

Remarks

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of GEOCHEM

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B FAIRBANK

File: 8-1004/P1
Date: AUG 1/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
L3000E0000N2438	5	5
L3000E0050N2439	4	5
L3000E0100N2440	6	5
L3000E0150N2441	4	5
L3000E0200N2442	6	10
L3000E0250N2443	3	5
L3000E0300N2444	7	5
L3000E0350N2445	4	10
L3000E0400N2446	4	5
L3000E0450N2437	5	5
L3000E0500N2436	6	5
L3000E0550N2435	6	5
L3000E0600N2434	5	5
L3000E0650N2433	5	5
L3000E0700N2432	4	5
L3000E0750N2431	6	10
L3000E0800N2400	4	5
L3000E0850N2399	3	5
L3000E0900N2398	7	5
L3000E0950N2397	4	5
L3000E1000N2396	6	10
L3000E1050N2395	5	5
L3000E1100N2394	7	5
L3000E1150N2393	6	5
L3000E1200N2392	7	10
L3000E1250N2391	5	10
L3000E1300N2390	5	10
L3000E1350N2389	6	5
L3000E1400N2388	4	5
L3000E1450N2387	9	5

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX. VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Geochem

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B FAIRBANK

File: 8-1004/P2
Date: AUG 1/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	WET-AU PPB
L3000E1500N2386	7	5
L3000E1550N2385	6	5
L3000E1600N2384	3	5
L3000E1650N2383	4	10
L3000E1700N2382	4	5
L3000E1750N2381	5	5
L1200E050N2624	4	5
L1200E100N2625	6	5
L1200E150N2626	5	5
L1200E200N2627	5	5
L1200E250N2628	5	5
L1200E300N2629	7	5
L1200E350N2630	6	5
L1200E400N2631	4	5
L1200E450N2632	5	5
L1200E500N2633	7	5
L1200E550N2634	8	10
L1200E600N2635	7	5
L1200E650N2636	5	10
L1200E700N2637	2	5
L1200E750N2638	6	5
L1200E800N2639	6	10
L1200E850N2640	8	5
L1200E900N2641	4	5
L1200E950N2642	7	5
L1201E000N2643	6	5
L1200E050S2623	5	10
L1200E100S2622	6	5
L1600E050N2607	5	5
L1600E100N2606	5	5

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9998

Certificate of Geochem

Company: FAIRBANK ENG
Project: S/W
Attention: B FAIRBANK

File: 8-1004/P3
Date: JULY 25/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
L1600E150N2605	8	10
L1600E200N2604	6	5
L1600E250N2603	4	5
L1600E300N2602	9	5
L1600E350N2600	7	5
L1600E400N2599	5	10
L1600E450N2598	7	5
L1600E500N2597	4	10
L1600E550N2596	3	5
L1600E600N2595	7	5
L1600E650N2594	4	10
L1600E700N2593	3	5
L1600E750N2592	2	5
L1600E800N2591	5	5
L1600E850N2590	3	10
L1600E900N2589	4	15
L1600E950N2588	3	10
L1601E000N2587	4	5
L1601E050N2586	2	5
L1601E100N2585	6	5
L1601E150N2584	7	5
L1601E200N2583	3	5
L1601E250N2582	3	5
L1601E300N2581	4	5
L1601E350N2580	5	5
L1601E400N2579	5	10
L1601E450N2578	4	5
L1601E500N2577	5	5
L1601E550N2576	5	5
L1601E600N2575	4	10

Certified by _____

MIN-EN LABORATORIES LTD.

MINERAL
• ENVIRONMENTS
LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Geochem

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B FAIRBANK

File: 8-1004/P4
Date: AUG. 3/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
L1600E650N2574	7	5
L1600E700N2573	6	5
L1600E750N2572	11	10
L2000E050N2571	6	5
L2000E100N2570	6	5
L2000E150N2569	5	10
L2000E200N2568	5	5
L2000E250N2567	6	5
L2000E300N2566	5	5
L2000E350N2565	5	5
L2000E400N2564	3	10
L2000E450N2563	2	5
L2000E500N2562	8	5
L2000E550N2561	4	10
L2000E600N2560	5	10
L2000E650N2559	3	5
L2000E700N2558	4	5
L2000E750N2557	5	5
L2000E800N2556	5	10
L2000E850N2555	4	5
L2000E900N2554	6	5
L2000E950N2553	3	5
L2000E1000N2552	11	5
L2000E1050N2551	8	5
L0000N000E2530	13	5
L0000N050E2529	8	10
L0000N100E2528	6	10
L0000N150E2527	7	5
L0000N250E2526	9	5
L0000N300E2525	6	10

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of GEOCHEM

Company:FAIRBANK ENG.
Project:S/W
Attention:B.FAIRBANKS

File:8-1004/PS
Date:AUG 4/88
Type:SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PB
L0000N350E2524	7	5
L0000N400E2523	6	5
L0000N450E2522	6	10
L0000N500E2521	7	10
L0000N550E2520	2	5
L0000N600E2519	3	5
L0000N650E2518	4	15
L0000N700E2517	6	10
L0000N750E2516	6	5
L0000N800E2515	5	5
L0000N850E2514	3	5
L0000N900E2513	3	5
L0000N950E2512	3	5
L0000N1050E2511	4	5
L0000N1100E2510	3	10
L0000N1150E2509	3	5
L0000N1200E2508	7	5
L0000N1250E2507	5	5
L0000N1300E2506	5	5
L0000N1350E2505	7	10
L0000N1450E2504	8	5
L0000N1500E2503	3	15
L0000N1550E2502	4	10
L0000N1600E2501	4	10
L0000N1650E2500	4	5
L0000N1700E2499	3	15
L0000N1750E2498	4	20
L0000N1850E2497	4	10
L0000N1900E2496	3	15
L0000N1950E2495	5	5

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601087 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9998

Certificate of GEOCHEM

Company: FAIRBANK ENG.
Project: S/W
Attention: B. FAIRBANKS

File: 8-1004/P6
Date: AUG 4/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted:

Sample Number	AS PPM	AU-WET PB
L0000N2000E2494	2	5
L0000N2050E2493	1	5
L0000N2100E2492	2	10
L0000N2150E2491	2	10
L0000N2250E2490	2	20
L0000N2300E2489	2	15
L0000N2350E2488	2	15
L0000N2400E2487	73	10
L0000N2450E2486	6	20
L0000N2500E2485	7	5
L0000N2550E2484	15	5
L0000N2650E2483	3	10
L0000N2700E2482	9	10
L0000N2750E2481	7	5
L0000N2800E2480	5	5
L0000N2850E2479	8	10
L0000N2900E2478	6	5
L0000N2950E2477	5	10
L0000N3050E2476	10	5
L0000N3100E2475	5	5
L0000N3150E2474	6	5
L0000N3200E2473	5	5
L0000N3250E2472	6	5
L0000N3300E2471	6	5
L0000N3350E2470	7	5
L2600E1800N2362	5	10
L2600E1850N2361	5	5
L2600E1900N2360	5	5
L2600E1950N2359	8	5
L2600E2000N2358	8	5

Certified by _____

MIN-EN LABORATORIES LTD.

MINERAL
• ENVIRONMENTS
LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 887
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Geochem

Company: FAIRBANK ENG.
Project: S/W
Attention: B.FAIRBANKS

File: 8-1004/P7
Date: AUG 4/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PB
L2600E2050N2357	2	5
L2600E2100N2356	6	10
L2600E2150N2355	3	5
L2600E2200N2354	4	5
L2600E2250N2353	1	10
L2600E2300N2352	4	5
L3400E000E2469	5	5
L3400E050E2468	7	5
L3400E100E2467	5	5
L3400E150E2466	8	10
L3400E200E2465	4	5
L3400E250E2464	5	15
L3400E300E2463	5	10
L3400E350E2462	5	5
L3400E400E2461	7	10
L3400E450E2460	4	5
L3400E500E2459	6	5
L3400E550E2458	5	25
L3400E600E2457	6	15
L3400E650E2456	12	30
L3400E700E2455	6	5
L3400E750E2454	6	5
L3400E800E2453	5	10
L3400E850E2452	2	5
L3400E900E2451	5	5
L3400E950E2450	4	5
L3400E1000E449	4	5
L3400E1050E448	6	5
L3400E1100N447	6	5
L2200E050S2628	3	5

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of Geochem

Company: FAIRBANK ENG.
Project: S/W
Attention: B.FAIRBANKS

File: 8-1004/PB
Date: JULY 25/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PB
L2200E100S2619	5	5
L2200E150S2380	7	5
L2200E200S2379	4	5
L2200E250S2378	6	5
L2200E300S2377	6	10
L2200E350S2376	5	5
L2200E000N2617	4	5
L2200E050N2616	4	10
L2200E100N2615	3	10
L2200E1600W2375	4	5
L2200E1650W2374	5	5
L2200E1700W2373	4	5
L2200E1750W2372	5	5
L2200E1800W2371	6	5
L2200E1850W2370	5	5
L2200E1900W2369	5	10
L2200E1950W2368	5	5
L2200E2000W2367	5	5
L2200E2050W2366	5	5
L2200E2100W2365	5	10
L2200E2150W2364	5	5
L2200E2200W2363	6	5
L1600E0400S2621	5	15
L1600E0450S2620	4	5
L2000E1100N2550	6	10
L2000E1100N2549	5	10
L2000E1100N2548	6	5
L2000E1100N2547	5	5
L2000E1100N2546	4	10
L2000E1100N2545	5	5

Certified by _____

MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 887
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of GEOCHEM

Company: FAIRBANK ENGINEERING
Project: S/W
Attention: B FAIRBANK

File: 8-1004/P9
Date: AUG. 3/88
Type: SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-WET PPB
L2000E 1400N 2544	6	5
L2000E 1450N 2543	7	5
L2000E 1500N 2542	5	5
L2000E 1550N 2541	7	10
L2000E 1600N 2540	6	5
L2000E 1650N 2539	5	5
L2000E 1700N 2538	7	5
L2000E 1750N 2537	6	5
L2000E 1800N 2536	8	5
L2000E 1950N 2535	5	5
L2000E 1900N 2534	6	10
L2000E 1950N 2533	6	15
L2000E 2000N 2532	7	5
L2000E 2050N 2531	7	5
L1600E 50S 2608	6	5
L1600E 100S 2609	4	10
L1600E 150S 2610	5	10
L1600E 200S 2611	3	5
L1600E 250S 2612	5	5
L1600E 300S 2613	4	5
L1600E 350S 2614	5	10

Certified by _____

MIN-EN LABORATORIES LTD.

APPENDIX C

ANALYSIS TECHNIQUES

PHONE 980-5814

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

GOLD GEOCHEMICAL ANALYSIS BY MIN-EN LABORATORIES LTD.

Geochemical samples for Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 5.0 or 10.0 grams are pretreated with HNO_3 and $HClO_4$ mixture.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 0.005 ppm (5ppb).

PHONE: (604) 980-5814 or 988-4524

TELEX: 04-352828

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK

PROCEDURE FOR ARSENIC:

Samples are processed by Min-En Laboratories Ltd., at 705 West 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer.

1.0 gram of the samples are digested for 6 hours with HN03 and HC104 mixture.

After cooling samples are diluted to standard volume. A suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Gutzit method using Ag CS_2N $(C_2H_5)_2$ as a reagent. The detection limit obtained is 1. ppm.

NE: (604) 980-5814 or 988-4524 TELEX: 04-352828

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

Analytical Procedure Report for Assessment Work

31 Element ICP

Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Sr, Th, U, V, Zn, Ga, Sn, W, Cr

Samples are processed by Min-En Laboratories Ltd., at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer or ring mill pulverizer.

1.0 gram of the sample is digested for 4 hours with an aqua regia $HClO_4$ mixture.

After cooling samples are diluted to standard volume. The solutions are analysed by computer operated Jarrall Ash 9000 ICAP or Jobin Yvon 70 Type II Inductively Coupled Plasma Spectrometers. Reports are formatted and printed using a dot-matrix printer.

APPENDIX D

GEOPHYSICAL EQUIPMENT

geoMetrics

Instrument Division

PORTABLE PROTON MAGNETOMETER
MODEL G-816

Data Sheet
August 1974

- ★ 1 gamma sensitivity and repeatability
- ★ Very small size and weight: less than 12 lbs complete with batteries and sensor
- ★ Over 10,000 readings per set of alkaline "D" cell (flashlight) batteries
- ★ Provision to attach sensor to carrying harness for use without staff
- ★ Pushbutton operation—numeric display directly in gammas
- ★ Total field measurements—independent of orientation—no calibration—no leveling

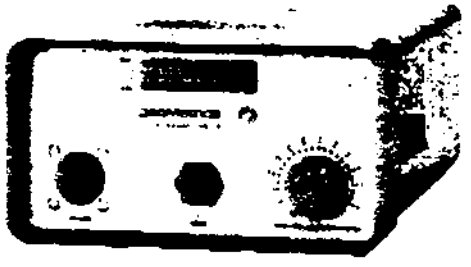
The Model G-816 is a complete portable magnetometer for all man-carry field applications. As an accurate yet simple to operate instrument, it features an outstanding combination of one gamma sensitivity and repeatability, compact size and weight, operation on standard universally available flashlight batteries, ruggedized packaging and very low price.

The G-816 magnetometer allows precise mapping of very small or large amplitude anomalies for ground geophysical surveys, or for detail follow-up to aeromagnetic reconnaissance surveys. It is a rugged, lightweight, and versatile instrument, equally well suited for field studies in geophysics, research programs or other magnetic mapping application where low cost, dependable operation and accurate measurements are required.

For marine, airborne or ground recording systems consider GeoMetrics Models G-801, G-803, and G-826.

"Hands-free" Back Pack Sensor

Based upon the principle of nuclear precession (proton) the G-816 offers absolute drift-free measurements of the total field directly in gammas. (The proton precession method is the officially recognized standard for measurement of the earth's magnetic field.) Operation is worldwide with one gamma sensitivity and repeatability maintained throughout the range. There is no temperature drift, no set-up or leveling required, and no adjustment for orientation, field polarity, or arbitrary reference levels. Operation is very simple with no prior training required. Only 6 seconds are required to obtain a measurement which is always correct to one gamma, regardless of operator experience. Only the Proton Magnetometer offers such repeatability—an important consideration even for 10 gamma survey resolution.



Complete Field Portable System

The model G-816 comes complete, ready for portable field operation, and consists of:

1. Electronics console with internally mounted and easily replaced "D" cell battery pack.
2. Proton sensor and signal cable for attachment to carrying harness or staff
3. Adjustable carrying harness.
4. 8 foot collapsible aluminum staff.
5. Instruction manual, complete set of spare batteries, applications manual, and rugged field suitcase.

Price and lease rates on the G-816 magnetometer are available upon request.

SPECIFICATIONS

Sensitivity: ±1 gamma throughout range

Range: 20,000 to 90,000 gammas (worldwide)

Tuning: Multi-position switch with signal amplitude indicator light on display

Gradient Tolerance: Exceeds 300 gammas/ft (increased gradient tolerance to 800 gammas/ft upon request)

Sampling Rate: Manual push-button, one reading each 6 seconds

Output: 5 digit numeric display with readout directly in gammas

Power Requirements: Twelve self-contained 1.5 volt "D" cell, universally available flashlight-type batteries. Charge state or replacement signified by flashing indicator light on display.

Battery Type	Number of Readings
Alkaline	over 10,000
Premium Carbon Zinc	over 4,000
Standard Flashlight	over 1,500

NOTE: Battery life decreases with low temperature operation.

Temperature Range: Console and sensor: -40° to +85°C

Battery Pack: 0° to +50°C (limited use to -15°C; lower temperature battery belt operation—optional)

Accuracy (Total Field): ±1 gamma through 0° to +50°C temperature range

Sensor: High signal, noise cancelling, interchangeably mounted on separate staff or attached to carrying harness

Size:
Console: 3.5 x 7 x 10.5 inches (9 x 18 x 27 cm)
Sensor: 4.5 x 6 inches (11 x 15 cm)
Staff: 1 inch diameter x 8 ft lenght (3 cm x 2.44 m)

Weight:

	Lbs.	Kgs.
Console (w/batteries):	5.5	2.4
Sensor & signal cable:	4	1.8
Aluminum staff:	2	0.9
Total:	11.5	5.1

All magnetometers and parts are covered by a one year warranty beginning with the date of receipt but not to exceed fifteen months from the shipping date.

geoMetrics 395 JAVA DRIVE SUNNYVALE, CA. 94086 U.S.A. (408) 734-4616 CABLE: "GEOMETRICS" SUNNYVALE TELEX NO: 367-436

GEOMETRICS INTERNATIONAL CORP 80 ALFRED ST., MILSON'S POINT SYDNEY NSW 2061 PHONE: 929-8843

Exploranium 628 LIMESTONE CRESCENT, DOWNSVIEW (TORONTO), ONTARIO, CANADA TELEPHONE: (416) 661-1969 TELEX NO: 06-22684

WORLD-WIDE AGENTS: EUROPE • SCANDINAVIA • AUSTRALIA • UNITED KINGDOM • JAPAN • SO. AFRICA • SO. AMERICA

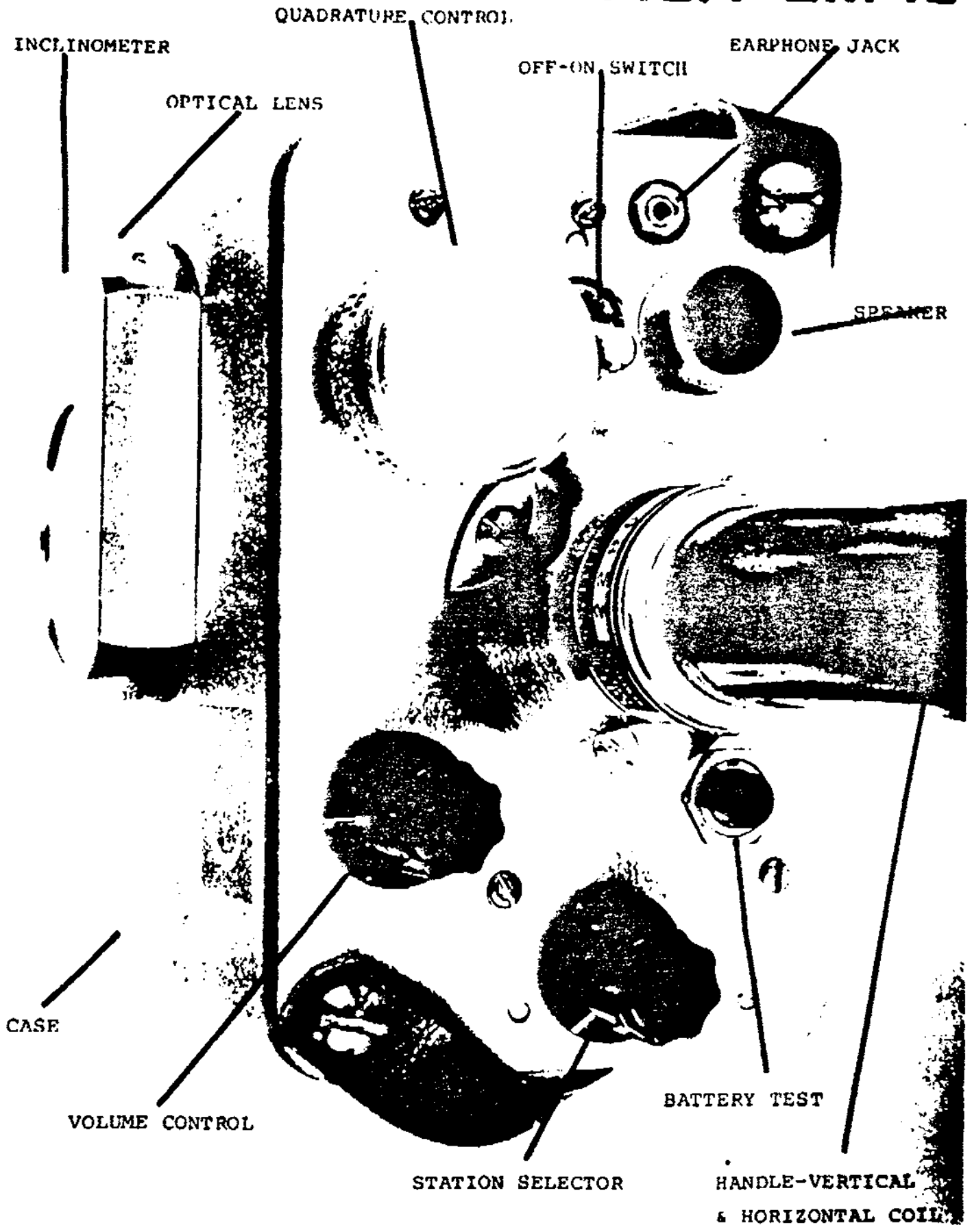
EM16 SPECIFICATIONS

MEASURED QUANTITY	Inphase and quad-phase components of vertical magnetic field as a percentage of horizontal primary field. (i.e. tangent of the tilt angle and ellipticity).
SENSITIVITY	Inphase: ±150% Quad-phase: ± 40%
RESOLUTION	±1%
OUTPUT	Nulling by audio tone. Inphase indication from mechanical inclinometer and quadphase from a graduated dial.
OPERATING FREQUENCY	15-25 kHz (15-30 kHz optional) VLF Radio Band. Station selection done by means of plug-in units.
OPERATOR CONTROLS	ON/OFF switch, battery test push button, station selector switch, audio volume control, quadrature dial, inclinometer.
POWER SUPPLY	6 disposable 'AA' cells.
DIMENSIONS	53 x 21.5 x 28 cm
WEIGHT	Instrument: 1.8 kg Shipping: 8.35 kg

CAUTION:

EM16 inclinometer may be damaged by exposure to temperatures below -30°c. Warranty does not cover inclinometers damaged by such exposure.

FIG. 1 EM 16


QUADRATURE CONTROL
INCLINOMETER
EARPHONE JACK
OFF-ON SWITCH
OPTICAL LENS
SPEAKER
CASE
VOLUME CONTROL
BATTERY TEST
STATION SELECTOR
HANDLE-VERTICAL
& HORIZONTAL COIL

PRINCIPLES OF OPERATION

The VLF-transmitting stations operating for communications with submarines have a vertical antenna. The Antenna current is thus vertical, creating a concentric horizontal magnetic field around them. When these magnetic fields meet conductive bodies in the ground, there will be secondary fields radiating from these bodies. (See Figures 3 & 4). This equipment measures the vertical components of these secondary fields.

The EM16 is simply a sensitive receiver covering the frequency band of the VLF-transmitting stations with means of measuring the vertical field components.

The receiver has two inputs, with two receiving coils built into the instrument. One coil has normally vertical axis and the other is horizontal.

The signal from one of the coils (vertical axis) is first minimized by tilting the instrument. The tilt-angle is calibrated in percentage. The remaining signal in this coil is finally balanced out by a measured percentage of a signal from the other coil, after being shifted by 90°. This coil is normally parallel to the primary field,(See instrument Block Diagram - Figure 2).

Thus, if the secondary signals are small compared to the primary horizontal field, the mechanical tilt-angle is an accurate measure of the vertical real-component, and the compensation signal from the horizontal coil is a measure of the quadrature vertical signal.

Some of the properties of the VLF radio wave in the ground are outlined by Figures 4 thru 9.

ACCOMPANYING NOTES FOR FIGURES 2 - 9

FIGURE 2 is the block diagram of the EM16. The diagram is self-explanatory. Both the coils (reference and signal coil) are housed in the lower part of the handle. The directions of the axis of the coils are as follows: The reference coil axis is basically horizontal and is kept more or less parallel to the primary field during measurement. The signal coil is at right angles to the reference coil and its axis is, of course, vertical.

The signal amplifier has the two inputs, one connected to the signal coil and one to the reference channel. By tilting the coils, the operator minimizes the signal from the signal (vertical axis) coil. Any remaining signal is reduced to zero by the quadrature control in the reference channel. The signal amplifier has zero output

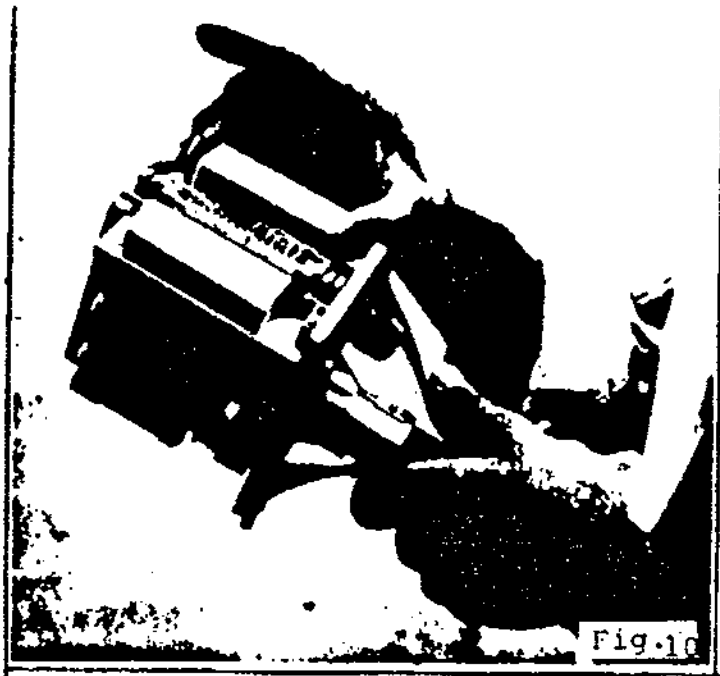


Fig.10

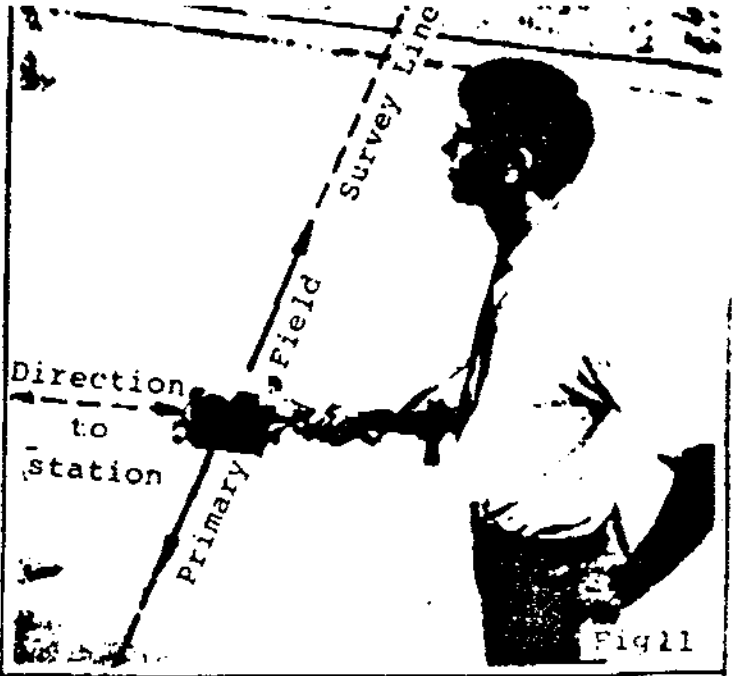


Fig11

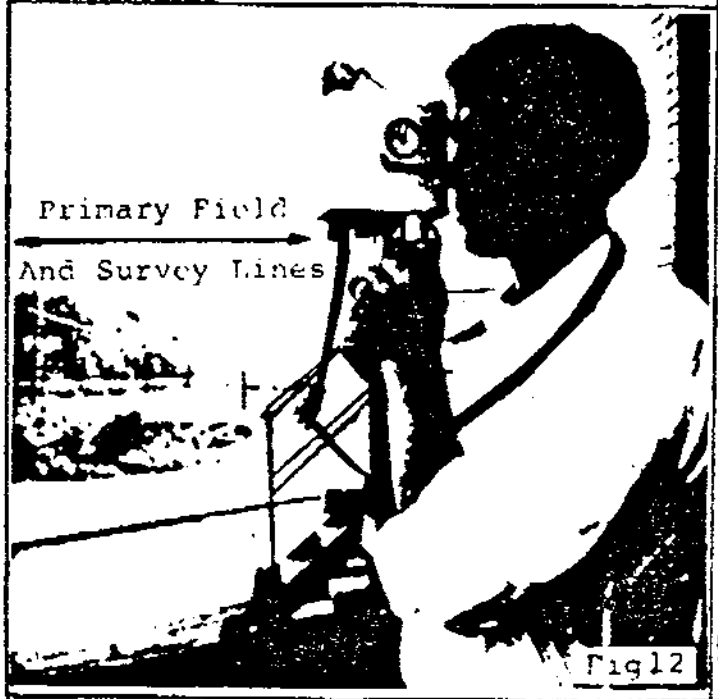


Fig12

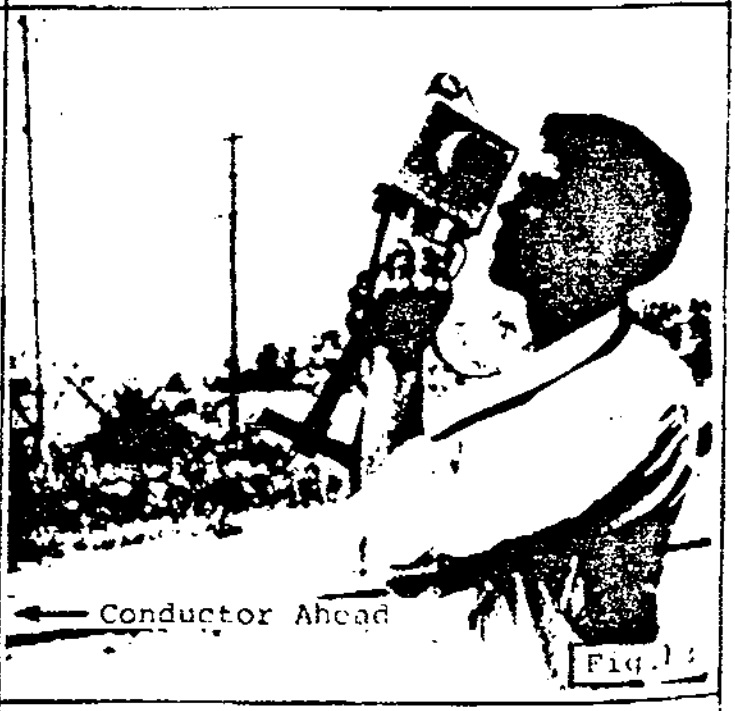
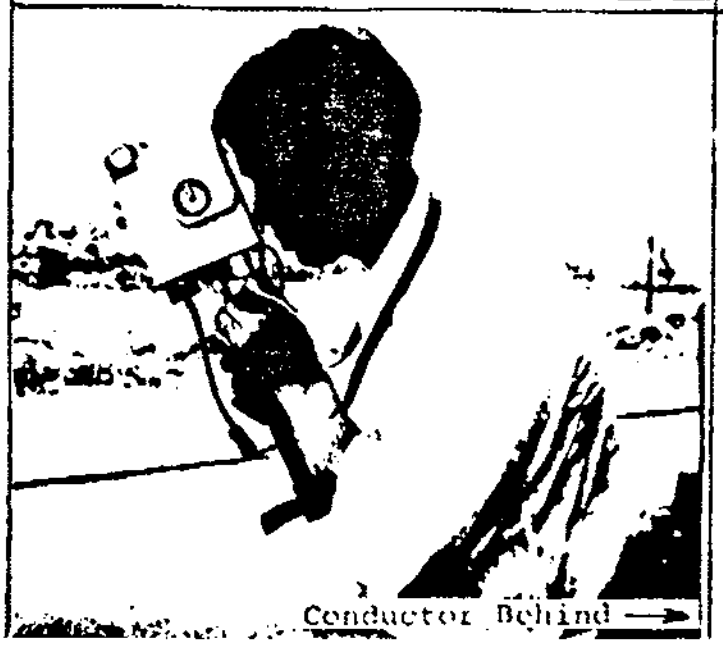
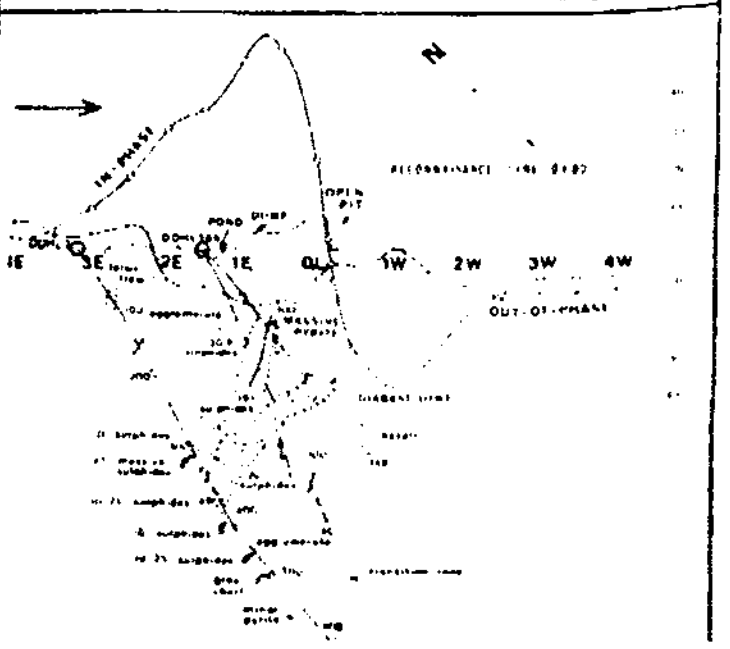


Fig.1





FIELD PROCEDURE

Orientation & Taking a Reading

The direction of the survey lines should be selected approximately along the lines of the primary magnetic field, at right angles to the direction to the station being used. Before starting the survey, the instrument can be used to orient oneself in that respect. By turning the instrument sideways, the signal is minimum when the instrument is pointing towards the station, thus indicating that the magnetic field is at right angles to the receiving coil inside the handle.(Fig.11).

To take a reading, first orient the reference coil (in the lower end of the handle) along the magnetic lines.(Fig.12) Swing the instrument back and forth for minimum sound intensity in the speaker. Use the volume control to set the sound level for comfortable listening. Then use your left hand to adjust the quadrature component dial on the front left corner of the instrument to further minimize the sound. After finding the minimum signal strength on both adjustments, read the inclinometer by looking into the small lens. Also, mark down the quadrature reading.

While travelling to the next location you can, if you wish, keep the instrument in operating position. If fast changes in the readings occur, you might take extra stations to pinpoint accurately the details of anomaly.

The dials inside the inclinometer are calibrated in positive and negative percentages. If the instrument is facing 180° from the original direction of travel, the polarities of the readings will be reversed. Therefore, in the same area take the readings always facing in the same direction even when travelling in opposite way along the lines.

The lower end of the handle, will as a rule, point towards the conductor. (Figs.13 & 14) The instrument is so calibrated that when approaching the conductor, the angles are positive in the in-phase component. Turn always in the same direction for readings and mark all this on your notes, maps, etc.

THE INCLINOMETER DIALS

The right-hand scale is the in-phase percentage(ie.Hs/Hp as a percentage). This percentage is in fact the tangent of the dip angle. To compute the dip angle simply take the arctangent of the percentage reading divided by 100. See the conversion graph on the following page.

↳ divide % by 100 before taking arc tan

The left-hand scale is the secant of the slope of the ground surface. You can use it to "calculate" your distance to the next station along the slope of the terrain.

(1) Open both eyes.

(2) Aim the hairline along the slope to the next station to about your eye level height above ground.

(3) Read on the left scale directly the distance necessary to measure along the slope to advance 100 (ft) horizontally.

We feel that this will make your reconnaissance work easier. The outside scale on the inclinometer is calibrated in degrees just in case you have use for it.

PLOTTING THE RESULTS

For easy interpretation of the results, it is good practice to plot the actual curves directly on the survey line map using suitable scales for the percentage readings. (Fig.15) The horizontal scale should be the same as your other maps on the area for convenience.

A more convenient form of this data is easily achieved by transforming the zero-crossings into peaks by means of a simple numerical filtering technique. This technique is described by D.C. Fraser in his paper "Contouring of VLF-EM Data", Geophysics, Vol. 34, No. 6. (December 1969)pp958-967. A reprint of this paper is included in this manual for the convenience of the user.

This simple data manipulation procedure which can be implemented in the field produces VLF-EM data which can be contoured and as such provides a significant advantage in the evaluation of this data.

APPENDIX E

IP AND RESISTIVITY SURVEY

PACIFIC Geophysical Limited

224-744 WEST HASTINGS STREET, VANCOUVER, B.C. V6C 1A5 TELEPHONE (604) 669-1070

TO: Brian Fairbank, Fairbank Engineering Ltd.

FROM: Paul A. Cartwright and Grant D. Lockhart

RE: Induced Polarization and Resistivity Survey; Sheila/Wanda Property, Skeena M.D., B.C.

i) Summary of Results

An Induced Polarization (IP) and resistivity survey has been carried out on the Sheila/Wanda property, Skeena M.D., B.C. by Pacific Geophysical Ltd., on behalf of Fairbank Engineering Ltd.

A Phoenix Model IPV-1 IP and resistivity receiver unit was used to record the measurements, together with a Phoenix Model IPT-1 IP and resistivity transmitter unit powered by a 1 kw motor-generator. IP effects were recorded as Percent Frequency Effect (PFE) at operating frequencies of 4.0 Hz and 0.25 Hz, while apparent resistivity values were normalized in ohm-meters. Dipole-dipole array was employed exclusively using an inter-electrode distance of 50 meters. A portion of the baseline was also completed using 25 meter electrode intervals.

The IP and resistivity results are shown in the pseudo - section format and are marked as Dwg. Nos. IP 5895-1 to 8. The interpreted IP results are illustrated on Dwg. No. IPP-3016 and Dwg No. RP-3016 1:5,000 scale plan maps of the Sheila/Wanda IP and resistivity grid, which show the N=1 PFE readings and N=1 resistivity values respectively. The

definite, probable, and possible IP anomalies are indicated by bars, in the manner shown on the plan map legends, as well as on the pseudosection plots. These bars represent the surface projection of the anomalous zones as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

Two adjacent zones of anomalous IP effects are interpreted to be present in the data, and are marked on Dwg. No. IPP-3016 and on Dwg. No. RP-3016.

Both zones appear to strike northeasterly across the central part of the geophysical grid. These trends are best outlined by the IP response occurring on Line 14+00 E between Station 150S and Station 0N and by the two anomalies located on Line 16+00E between Stations 0N and 150N and between Stations 250N and 400N.

Slightly higher-than-background resistivity values are only sporadically coincident with the zones of elevated IP effects. Increases in resistivity may be indicative of an increase in silicification.

It is also noted that magnetometer data, provided by Fairbank Engineering Ltd., shows a distinct magnetic low that is almost exactly coincident with the northern IP zone.

An attempt to obtain 25 meter detail data over the southern

end of the zones, along the Branch 8 roadway, was not successful due to the presence of logging cables that were incorporated into the road fill or stretched between Lines 12+00E and 16+00E. Twenty-five meter data was then obtained in the vicinity of Station 15+00E along the baseline (Line 0+00). Anomalous IP effects and slightly higher-than-background resistivities, consistent with the anomalies recorded on Line 14+00E and Line 16+00E, were encountered. The depth to the top of IP source is indicated to be less than 25 meters subsurface.

Four other very weakly polarizable anomalies were also interpreted to be present on the geophysical grid. The IP anomaly occurring in the vicinity of Station 225N on Line 12+00E coincides with a slight increase in the resistivity. The IP anomalies located near the south end of Line 12+00E and near the south end of Line 14+00E may possibly mark an extension of the main zones.

ii) Recommendations

Two zones of definitely anomalous IP effects are outlined by the data recorded on the Sheila/Wanda geophysical grid. As these features probably mark the presence of metallic sulfide mineralization, which could be associated with gold mineralization, drilling is recommended to test the sources of the IP responses.

Consideration should be given to the drilling of at least three short angled holes. Two drill holes directed at the northern zone, collared so as to intersect points 35 m below Station 75S on Line 14+00E and Station 325N on Line 16+00E, are recommended. In order to test the southern zone, one drill hole collared so as to pass through a point 35 m below Station 1565E on Baseline 0+00, is recommended.

PACIFIC GEOPHYSICAL LTD.

Grant D. Lockhart, B.Sc.

Paul A. Cartwright, P. Geoph.

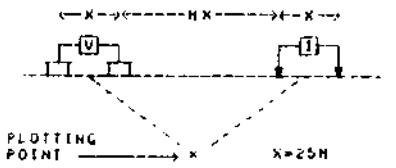
31 August 1988

RBANK ENGINEERING LTD.

SHEILA-WANDA PROPERTY

SKEENA M.D. / B.C.

LINE NO -0+00



FREQUENCY (HERTZ)
4 0.0 25

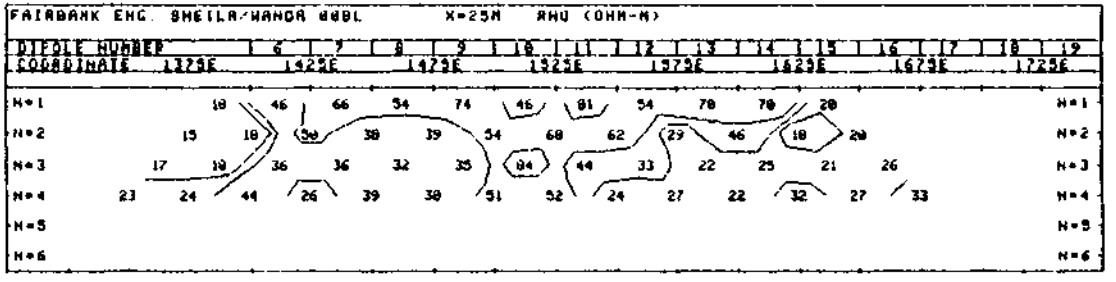
NOTE- CONTOURS
AT LOGARITHMIC
INTERVALS 1.-1.5
-2.-3.-5.-7.5.-10
PLUS EACH 0.25
FROM 0.5 TO 2.0

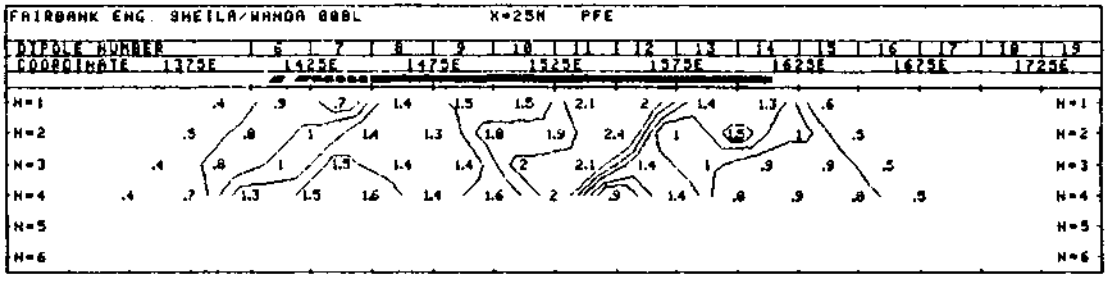
DWG NO -E.P.-5695-J

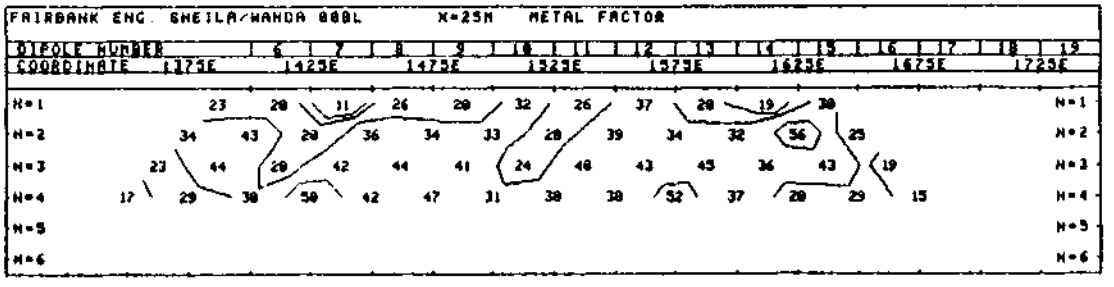
DATE SURVEYED AUGUST 1988
APPROVED
DATE Aug 31/88

PACIFIC GEOPHYSICAL LTD.

INDUCED POLARIZATION AND RESISTIVITY SURVEY





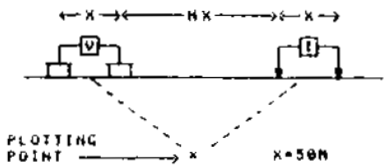


IRBANK ENGINEERING LTD.

SHEILA-WANDA PROPERTY

SKEENA M D .B C

LINE NO -6+35E



FREQUENCY (HERTZ)
4 8.8 25

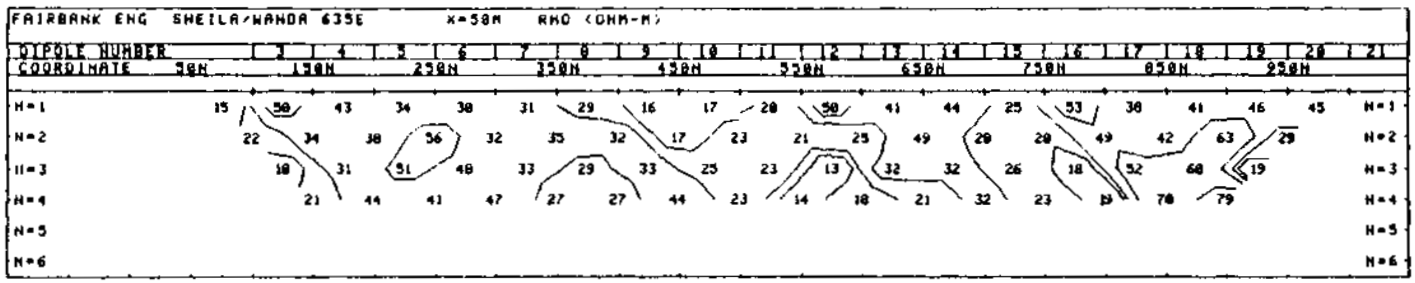
NOTE- CONTOURS AT LOGARITHMIC INTERVALS 1,-1.5 -2,-3,-5,-7.5,-10 PLUS EACH @ 25 FROM @ 5 TO 2 @

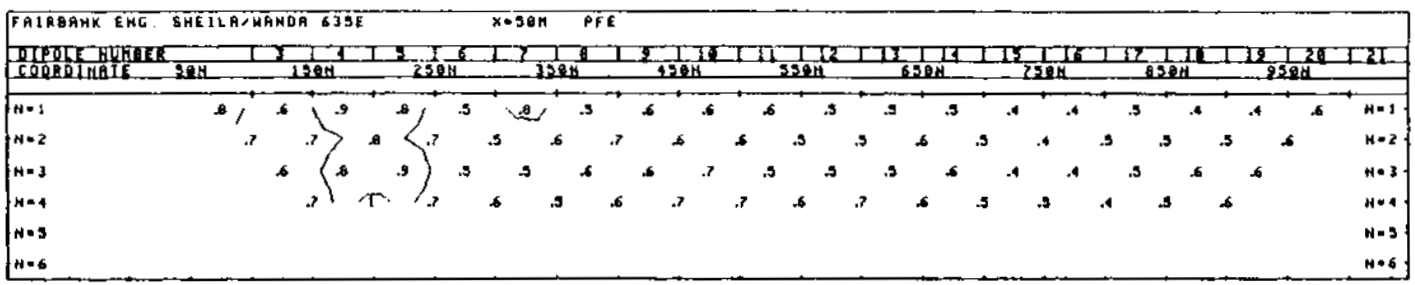
DWG NO -1 P -5895-2

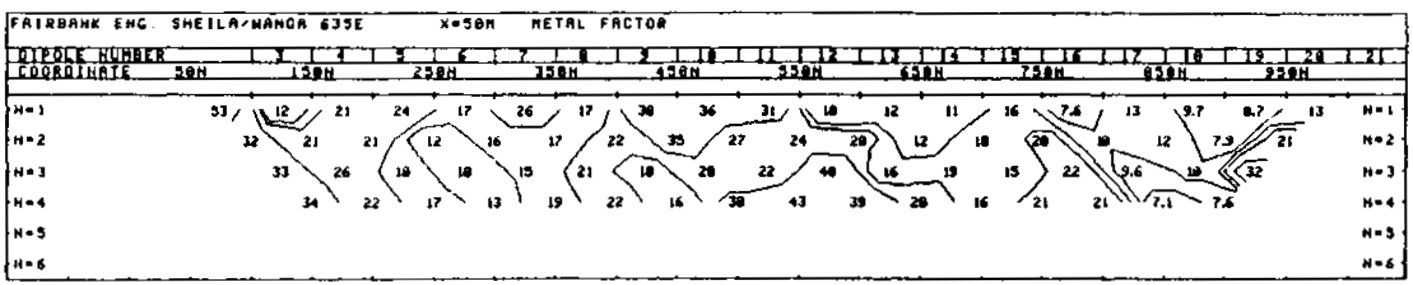
DATE SURVEYED AUGUST 1988
APPROVED
DATE Aug 31/88

PACIFIC GEOPHYSICAL LTD.

INDUCED POLARIZATION AND RESISTIVITY SURVEY





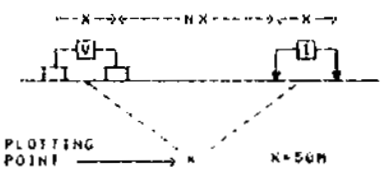


FAIRBANK ENGINEERING LTD.

SHEILA/WANDA PROPERTY

SAEENA M O ,B C

LINE NO -12+00E



FREQUENCY (HERTZ)
4 0.0 25

NOTE- CONTOURS AT LOGARITHMIC INTERVALS. 1.-1.5 -2.-3.-5.-7.5.-10 PLUS EACH 0.25 FROM 0.5 TO 2.0

DWG NO -1 P -5095-3

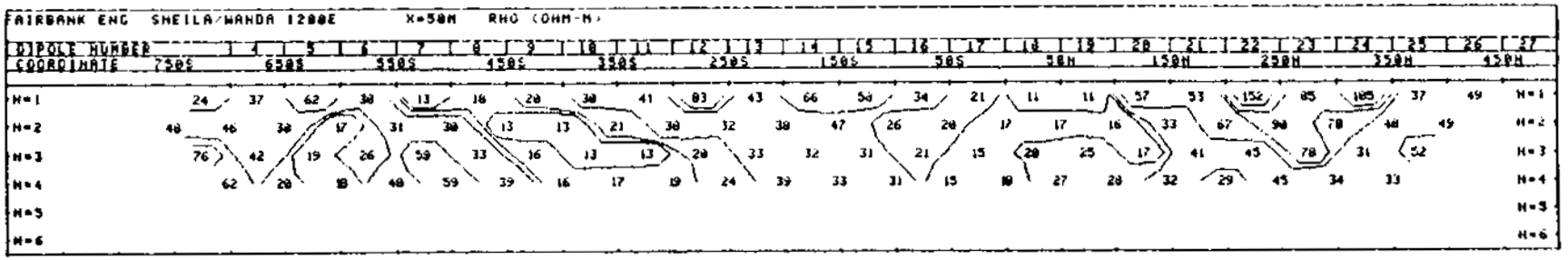
DATE SURVEYED AUGUST 1988

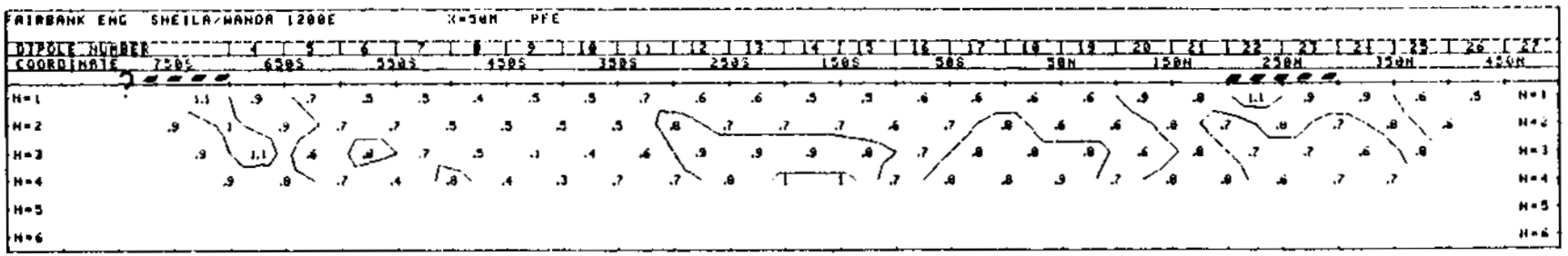
APPROVED

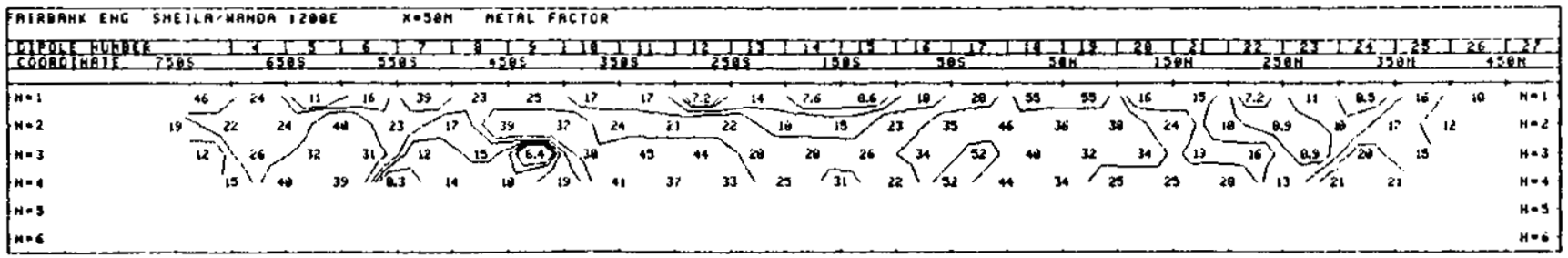
DATE Aug 31/88

PACIFIC GEOPHYSICAL LTD.

INDUCED POLARIZATION AND RESISTIVITY SURVEY





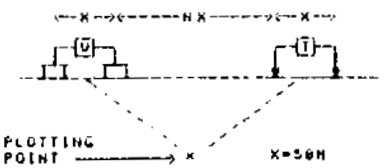


IRBANK ENGINEERING LTD.

SHEILA/WANDA PROPERTY

SKEENA M D /B C

LINE NO -14+00E



FREQUENCY (HERTZ)
4 0.0 25

NOTE- CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5 -2.-3.-5.-7.5.-10 PLUS EACH 0.25 FROM 0.5 TO 2.0

DWG NO -1 F -5895-4

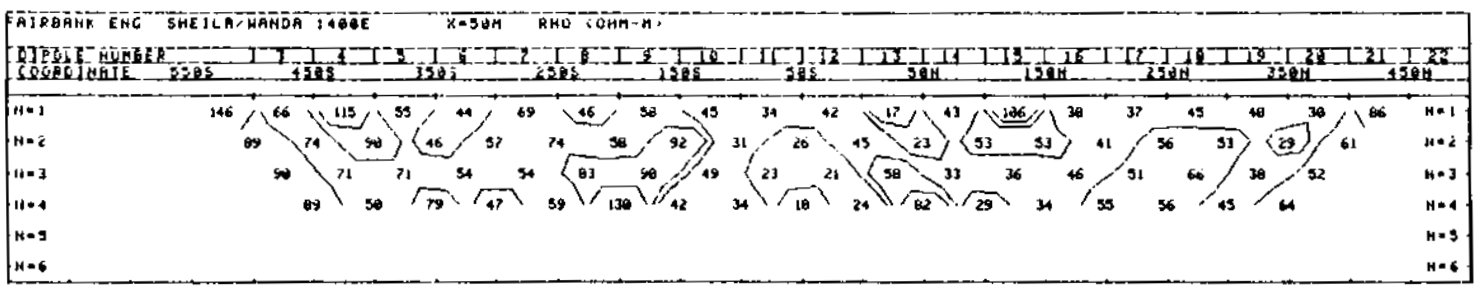
DATE SURVEYED AUGUST 1988

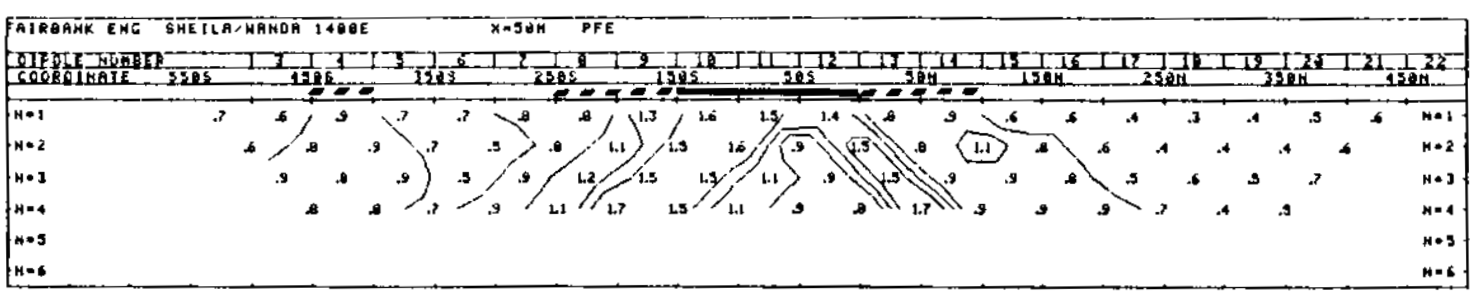
APPROVED

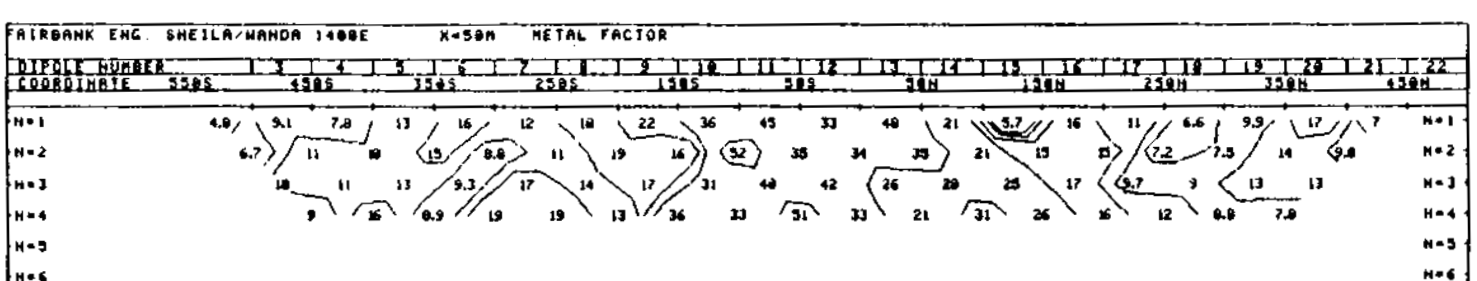
DATE Aug 31/88

PACIFIC GEOPHYSICAL LTD.

INDUCED POLARIZATION AND RESISTIVITY SURVEY





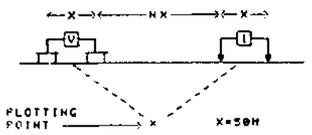


FAIRBANK ENGINEERING LTD.

SHEILA/WANDA PROPERTY

SKEENA M.D., B.C.

LINE NO -16+00E



FREQUENCY (HERTZ)
4.0,0.25

NOTE- CONTOURS AT LOGARITHMIC INTERVALS 1,-1.5 -2,-3,-5,-7.5,-10 PLUS EACH 0.25 FROM 0.5 TO 2.0

DWG NO.-1 P -5895-5

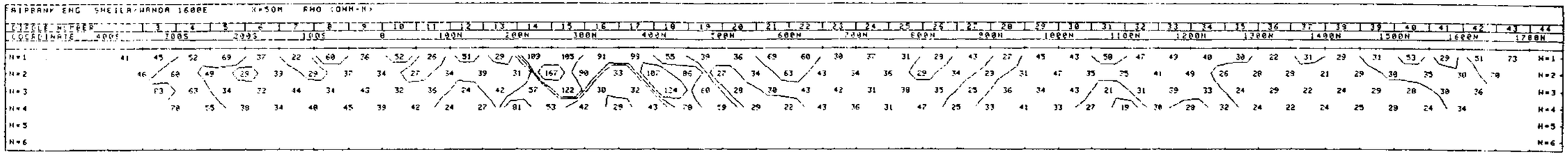
DATE SURVEYED AUGUST 1988

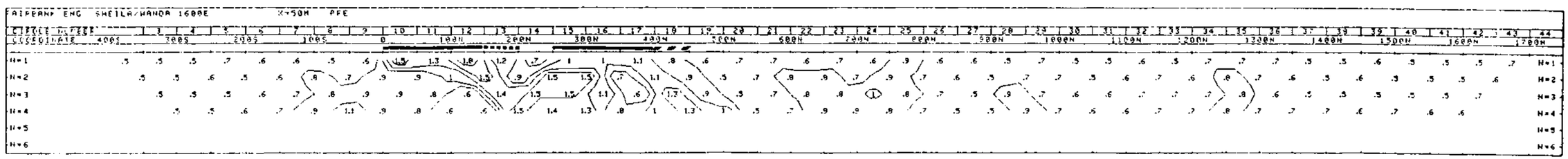
APPROVED

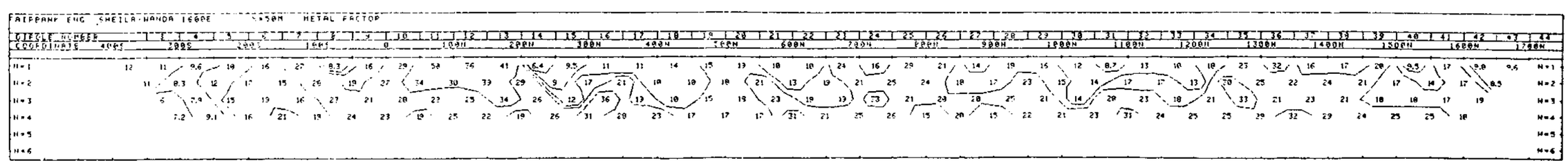
DATE Aug 31/88

PACIFIC GEOPHYSICAL LTD.

INDUCED POLARIZATION AND RESISTIVITY SURVEY





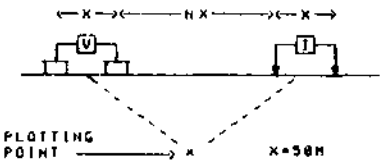


IRBANK ENGINEERING LTD.

SHEILA/WANDA PROPERTY

SKEENA M D ,B C

LINE NO -20+00E



FREQUENCY (HERTZ)
4 0.0 25

NOTE- CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5 -2.-3.-5.-7 5.-10 PLUS EACH 0.25 FROM 0.5 TO 2.0

DWG NO -1 P -5895-6

DATE SURVEYED AUGUST 1988

APPROVED

DATE Aug 31/88

PACIFIC GEOPHYSICAL LTD.

INDUCED POLARIZATION AND RESISTIVITY SURVEY

AIRBANK ENG SHILA/WANDA 2000E X=50M RHO (OHM-M)

POLE NUMBER 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

COORDINATE 550N 650N 750N 850N 950N 1050N 1150N 1250N 1350N 1450N 1550N 1650N 1750N 1850N 1950N

N=1 41 37 28 47 44 48 58 27 28 28 29 31 34 16 26 18 31 23 27 75 25 18 12 8.7 29 28 39 38 47

N=2 36 47 38 31 54 46 33 24 35 33 25 32 23 24 23 28 24 15 51 43 64 24 15 18 16 26 36 39

N=3 49 34 13 32 65 33 29 32 43 31 28 22 30 19 33 24 18 27 30 28 18 28 17 18 19 24 31

N=4 35 28 15 36 44 28 32 38 41 35 28 28 23 27 29 18 33 16 15 24 19 30 17 13 19 21

N=5

N=6

AIRBANK ENG. SHILA/WANDA 2000E X=50M PFE

POLE NUMBER 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

COORDINATE 550N 650N 750N 850N 950N 1050N 1150N 1250N 1350N 1450N 1550N 1650N 1750N 1850N 1950N

N=1 .8 .7 .9 .9 .6 .9 .7 .5 .7 .6 .7 .8 .9 .9 .8 .6 .6 .5 .5 .5 .6 .5 .4 .6 .5 .5 .5 .5 .3

N=2 .8 .8 .8 .7 .6 .9 .6 .7 .7 .7 .8 .7 .7 1 .7 .8 .7 .6 .8 .8 .6 .4 .7 .7 .6 .8 .7 .9

N=3 .8 .9 .7 .6 .9 1 .9 .7 .8 .8 .8 .9 1.1 .8 .7 .8 .8 .7 .8 .7 .5 .7 .8 .6 .6 .9 1

N=4 .8 .6 .6 .7 .9 .9 .9 1.1 .8 .8 .9 .8 .8 .8 .9 .9 .5 .6 .8 .9 .7 .7 .9 1

N=5

N=6

AIRBANK ENG SHILA/WANDA 2000E X=50M METAL FACTOR

POLE NUMBER 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

COORDINATE 550N 650N 750N 850N 950N 1050N 1150N 1250N 1350N 1450N 1550N 1650N 1750N 1850N 1950N

N=1 19 19 32 19 14 23 14 18 25 21 24 26 27 55 30 33 19 22 18 12 24 28 34 69 25 18 13 13 6.4

N=2 22 17 45 23 11 19 18 29 28 21 33 22 31 41 31 28 29 39 16 18 42 17 48 69 38 31 28 23

N=3 16 26 53 19 14 31 31 22 18 26 28 42 36 42 21 34 44 26 26 35 28 25 47 59 32 37 32

N=4 29 29 48 17 16 32 28 24 27 23 48 33 39 38 27 49 38 56 33 25 42 38 42 55 46 48

N=5

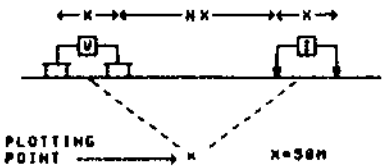
N=6

RBANK ENGINEERING LTD.

SHEILA/WANDA PROPERTY

SKEENA H D /B C

LINE NO -22+00E



FREQUENCY (HERTZ)
4 0/0 25

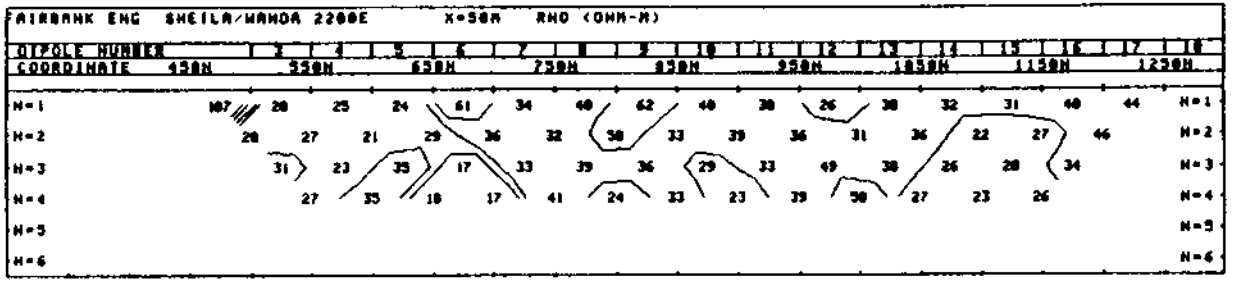
NOTE- CONTOURS AT LOGARITHMIC INTERVALS. 1,-1.5 -2,-3,-5,-7.5,-10 PLUS EACH 0.25 FROM 0.5 TO 2.0

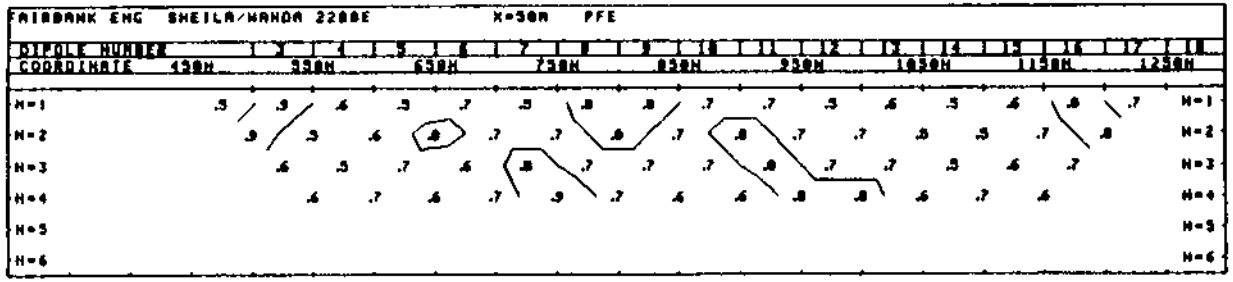
DWG NO -1 P -3095-7

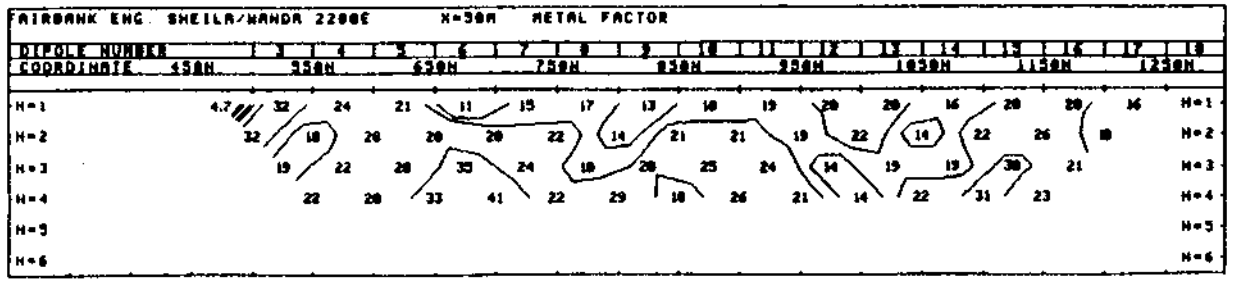
DATE SURVEYED AUGUST 1990
APPROVED
DATE Aug 31/90

PACIFIC GEOPHYSICAL LTD.

INDUCED POLARIZATION AND RESISTIVITY SURVEY





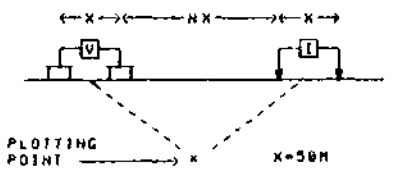


IRBANK ENGINEERING LTD.

SHEILA/WANDA PROPERTY

SKEENA M D./B C

LINE NO -26+00E



FREQUENCY (HERTZ)
4 0/0 25

NOTE- CONTOURS
AT LOGARITHMIC
INTERVALS 1,-1.5
-2,-3,-5,-7.5,-10
PLUS EACH 0.25
FROM 0.5 TO 2.0

DWG NO -I P -5695-0

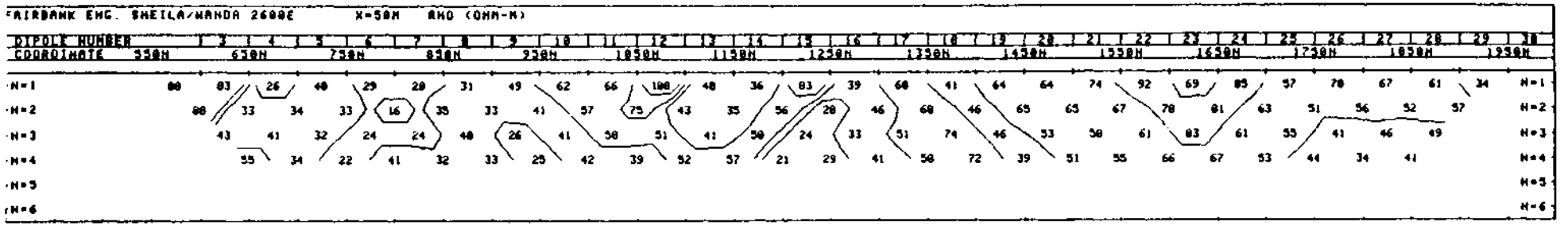
DATE SURVEYED AUGUST 1988

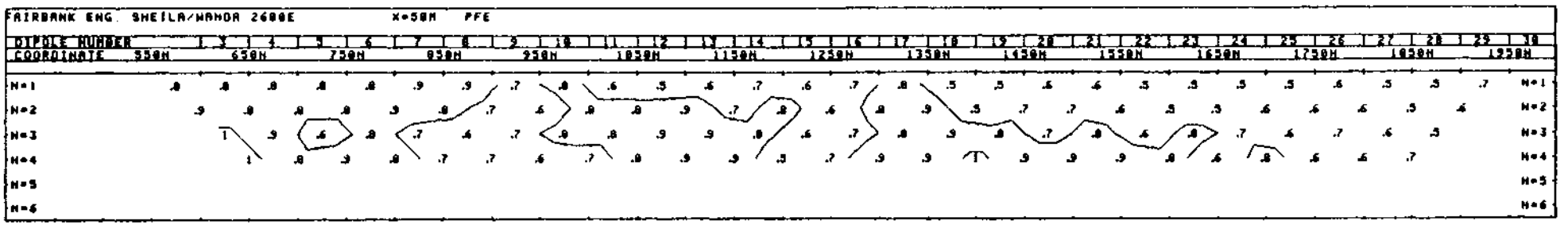
APPROVED

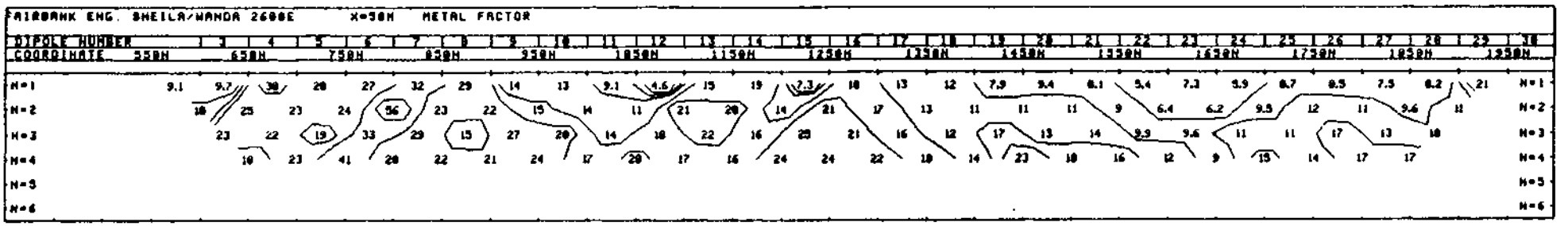
DATE Aug 31/88

PACIFIC GEOPHYSICAL LTD.

INDUCED POLARIZATION AND RESISTIVITY SURVEY







APPENDIX F

STATEMENTS OF QUALIFICATIONS

CERTIFICATE OF AUTHOR

I, Michael A. Hepp, of the City of Delta, Province of British Columbia, do hereby certify that:

1. I am a practicing Geologist, residing at 9505 - 117th Street, Delta, B.C. V4C 6C2

2. I hold B.A. (1968) and M.Sc (1972) degrees in Geology from Western Washington University, Bellingham, Washington, U.S.A.

3. I am a Certified Professional Geologist (No. 589) under the State of Idaho Board of Registration for Professional Geologists.

4. I am a Fellow of the Geological Association of Canada and a member of the Society of Economic Geologists.

5. I have practiced my profession as a Geologist continuously since 1972.

6. That I performed and supervised the work described in this report.

Michael A. Hepp, M.Sc., F.G.A.C.

November 10, 1988

Certificate

I, Paul A. Cartwright, of the City of Vancouver, Province of British Columbia, do hereby certify:

1. I am geophysicist residing at 4238 W. 11th Avenue, Vancouver, B.C.

2. I am a graduate of the University of British Columbia, with a B.Sc. Degree (1970).

3. I am a member of the Society of Exploration Geophysicists, The European Association of Exploration Geophysicists and the Canadian Society of Exploration Geophysicists.

4. I have been practising my profession for 18 years.

5. I am a Professional Geophysicist licensed in the Province of Alberta.

6. I have no direct or indirect interest, nor do I expect to receive any interest, directly or indirectly, in the property or securities of Fairbank Engineering Ltd., or any affiliates.

7. Permission is granted to use in whole or in part for assessment and qualification requirements but not for advertising purposes.

DATED AT VANCOUVER, BRITISH COLUMBIA this 3rd day of October 1988.

Paul A. Cartwright

Paul A. Cartwright, P.Geoph.

Certificate

I, Grant D. Lockhart, of the City of Vancouver, Province of British Columbia, do hereby certify:

1. I am a geophysicist residing at 2049 Macdonald Street, Vancouver, B.C.

2. I am a graduate of the University of British Columbia, with a B.Sc. Degree (1987).

3. I am a member of the Society of Exploration Geophysicists.

4. I have been practising my profession for 1 year.

5. I have no direct or indirect interest, nor do I expect to receive any interest, directly or indirectly, in the property or securities of Fairbank Engineering Ltd., or any affiliates.

6. Permission is granted to use in whole or in part for assessment and qualification requirements but not for advertising purposes.

DATED AT VANCOUVER, BRITISH COLUMBIA this 3rd day of October 1988.

Grant D. Lockhart

Grant D. Lockhart, B.Sc.

APPENDIX G

ITEMIZED COST STATEMENT

APPENDIX G

ITEMIZED COST STATEMENT

Labour

M. Hepp 29.6 days @ 346/day	$10,241.60
B. Fairbank 41 hours @ $60/hour	2,460.00
J. Davis 26.7 days @ $275/day	7,342.50
A. Pratt 41.5 days @ 240/day	9,960.00
S. Courte 45.5 days @ 232/day	10,556.00
D. Hutchinson 19 days @ 190/day	3,610.00
R. Reichelt 40.5 days @ 190/day	7,695.00
G. Hoekstra 60.1 days @ 178/day	10,697.80
T. Holgate 34.2 days @ 178/day	6,087.60
M. Lich 15 days @ 168/day	2,520.00
	$71,170.50

Disbursements

Pacific Geophysical I.P./Resistivity Survey	10,517.84
Consummable Field Supplies	2,216.95
Equipment Rental (Mag, VLF, Chainsaws)	2,376.30
Min-En Laboratories Inc.	5,437.13
Freight/Communication	795.39
Transportation - vehicle	6,760.00
- air fares	5,040.63
Meals and Lodging - Marloch Resources Ltd.	
Camp	12,358.50
Travel	773.64
Engineering, supervising, drafting and reporting	3,611.75
	$49,888.13
	$121,058.63


CITY RESOURCES (CANADA) LIMITED
NORAMEX MINERALS INC.
DATE: AUG/88
REVISED:
SHEILA/WANDA PROPERTY
SKEENA M.D., B.C.
PROPERTY GEOLOGY
PROJECT No.
SURVEY BY: MAH
NTS: 103 F/9
DRAWN BY: BEM
SCALE 1:5000
FIGURE No. 5
FAIRBANK ENGINEERING LTD.
GEOLOGICAL BRANCH
ASSESSMENT REPORT
18,155
SHEILA
WANDA
Mamin River
Queen Charlotte Mainline
Boucher Creek
Florence Creek
Branch 4
Branch 6
Branch 8
10+00 N
5+00 N
0+00 N
5+00 S
8+00 S
23+00 N
20+00 N
15+00 N
0+25 E
2+00 E
6+35 E
10+00 E
12+00 E
14+00 E
16+00 E
18+00 E
20+00 E
22+00 E
26+00 E
30+00 E
34+00 E
WS-88-2
WS-88-1
LEGEND
Logging Roads:
Main Haul Road
Secondary Haul Road
Skid Road
Creek
Shoreline
Swamp
Gravel Pit
Rock Outcrop
Mapped Outcrop
Float; Possible Float
Joint
Dip of Flow Structure
Geologic Contact (Inferred)
Fault Zone
Lithologies
Qs Laminated Silt
Qt Sandy Till
Ubiquitous, not shown on map
— Unconformity —
Mrd Rhyolite Dyke
Ma Porphyritic Andesite
Md Dacite Porphyry
Flow Breccia facies
Lapilli Tuff facies
Mb Basalt
Breccia or Conglomerate facies
GLACIAL SEDIMENTS Pleistocene Age
MASSET FORMATION Oligocene or Miocene Age
100 FOOT CONTOUR INTERVAL
100 0 100 200 300
METRES
Base from MacMillan Bloedel Limited, 1981; map no's 103 F. 059.3.2/4.1/1.4/2.3
City Resources (Canada) Limited Drillholes, 1987

LEGEND

- Found Claim Post
- Logging Roads:
  - Main Haul Road
  - Secondary Haul Road
  - Skid Road
- Bridge
- Creek
- Shoreline
- Swamp
- Gravel Pit
- Slide
- Mapped Outcrop
- Joint
- Dip of Flow Structure
- Strike of Bedding
- Geologic Contact
- Fault Zone
- Dyke
- Glassy Zone
- Rock Sample

LITHOLOGIES

GLACIAL SEDIMENTS Pleistocene Age

- Qs — Laminated Silt or Sand
- Qt — Sandy Till — Ubiquitous, not shown on map

— UNCONFORMITY —

MASSET FORMATION Oligocene or Miocene Age

- Ma — Porphyritic Andesite
- Mrd — Rhyolite Dyke
- Mwt — Welded Tuff
- Md — Dacite Porphyry
  - Flow Breccia facies
  - Lapilli Tuff facies
- Mb — Basalt
  - Breccia or Conglomerate facies

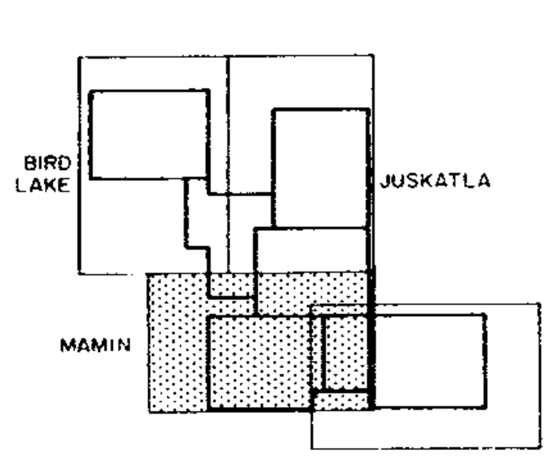
5894 / 4870 — Magnetometer Survey Station
- Value in Gammas
- Base Level 50,000 Gammas

Base from MacMillan Bloedel Limited map 103F.059 3 2; 1:5000

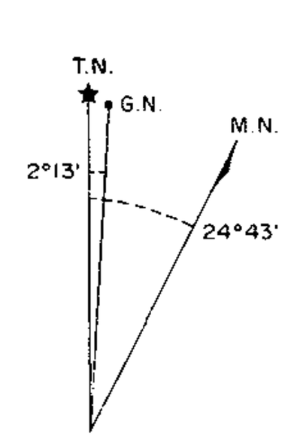
GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,155

0 50 100 200 300 400
METRES



MAP SHEET



NORAMEX MINERALS INC.			
DATE DEC/88	MAMIN MAP SHEET SKEENA M.D., B.C.		
REVISED:	MAGNETOMETER SURVEY, ROCK SAMPLE & GEOLOGY MAP		
PROJECT No	SURVEY BY	NTS	103 F/9
	DRAWN BY BEM	SCALE	1:5000
FIGURE No 6	FAIRBANK ENGINEERING LTD.		

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,155

MAMIN BAY

JUSKATLA

LEO

LYRA

WONDER

LEO 4E, ON

MAMIN

090/20N Mwt Md Mnox 000/90

140/10NE Ma 090/65S

140/70NE Mb 045/85SW Mb

000/65W Mb 040/40NW Mwt 015/65E Mwt

LEGEND

- Found Claimpost
- Paved Highway
- Logging Roads:
  - Main Haul Road
  - Secondary Haul Road
  - Skid Road
- Bridge
- Creek
- Shoreline
- Swamp
- Gravel Pit
- Slide
- Soil Geochemistry Sample Grid
  - Gold (Au) ppb
  - Arsenic (As) ppm
- Ag/Au
- Heavy Mineral Stream Sediment Sample
- Rock Sample
- Mapped Outcrop
- Joint
- Dip of Flow Structure
- Strike of Bedding
- Geologic Contact
- Fault Zone
- Dyke
- Glassy Zone
- MnOx Manganese Oxide
- DPy Disseminated Pyrite
- Qv Quartz Vein

LITHOLOGIES

GLACIAL SEDIMENTS Pleistocene Age

- Qs Laminated Silt or Sand
- Qt Sandy Till Ubiquitous, not shown on map

— UNCONFORMITY —

MASSET FORMATION Oligocene or Miocene Age

- Ma Porphyritic Andesite
- Mrd Rhyolite Dyke
- Mwt Welded Tuff
- Md Dacite Porphyry
  - Flow Breccia facies
  - Lapilli Tuff facies
- Mb Basalt
  - Breccia or Conglomerate facies

- 6250 / 3746 Road Magnetometer Survey Station – Value in Gammas – Base Level 50,000 Gammas

T.N. G.N. M.N. 2°13' 24°43'

BIRD LAKE JUSKATLA MAMIN SHEILA/WANDA

MAP SHEET

CONTOUR INTERVALS:

100 FT. - Upper portion of map (from EM&R 1:50,000 topo)

10m - Lower portion of map (MacMillan Bloedel 1:5000)

0 50 100 200 300 400 METRES

Base from MacMillan Bloedel Limited, 1982 (maps 103F.059.3.4 and 3)

NORAMEX MINERALS INC.		
DATE DEC/88	JUSKATLA MAP SHEET SKEENA M.D., B.C.	
REVISED		
	MAGNETOMETER SURVEY and GEOLOGY MAP	
PROJECT No	SURVEY BY	NTS 103 F/9
	DRAWN BY BEM	SCALE 1:5000
FIGURE No 7	FAIRBANK ENGINEERING LTD.	

CITY RESOURCES (CANADA) LIMITED
NORAMEX MINERALS INC

DATE: AUG/88	SHEILA/WANDA PROPERTY
REVISED:	SKEENA M.D., B.C.
	ARSENIC (ppm) & GOLD (ppb)
	SOIL GEOCHEMISTRY
PROJECT No.	SURVEY BY: NTS: 103 F/9
	DRAWN BY: BEM SCALE 1:5 000
FIGURE No: 8	FAIRBANK ENGINEERING LTD.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,155

SHEILA WANDA

Boucher Creek

Queen Charlotte Mainline

Mamin River

Florence Creek

10+00 N 2+00 E 6+35 E 10+00 E 12+00 E 14+00 E 16+00 E 18+00 E 20+00 E 22+00 E 26+00 E 30+00 E 34+00 E

5+00 N 0+00 N 0+25 E 5+00 S 8+00 S 23+00 N 20+00 N 15+00 N 10+00 N 5+00 N 0+00 N

N

LEGEND

Logging Roads:
- Main Haul Road
- Secondary Haul Road
- Skid Road

Creek

Shoreline

Swamp

Gravel Pit

Rock Outcrop

Soil Geochemistry Grid Line:

Arsenic (ppm) 2 / 73 / 10 Gold (ppb)

Au ≥ 15 ppb

As ≥ 20 ppm

City Resources (Canada) Limited Drillholes, 1987

100 0 100 200 300
METRES

Base from MacMillan Bloedel Limited, 1981; map no's 103 F. 059.3.2/4.1/1.4/2.3

635E

1200E

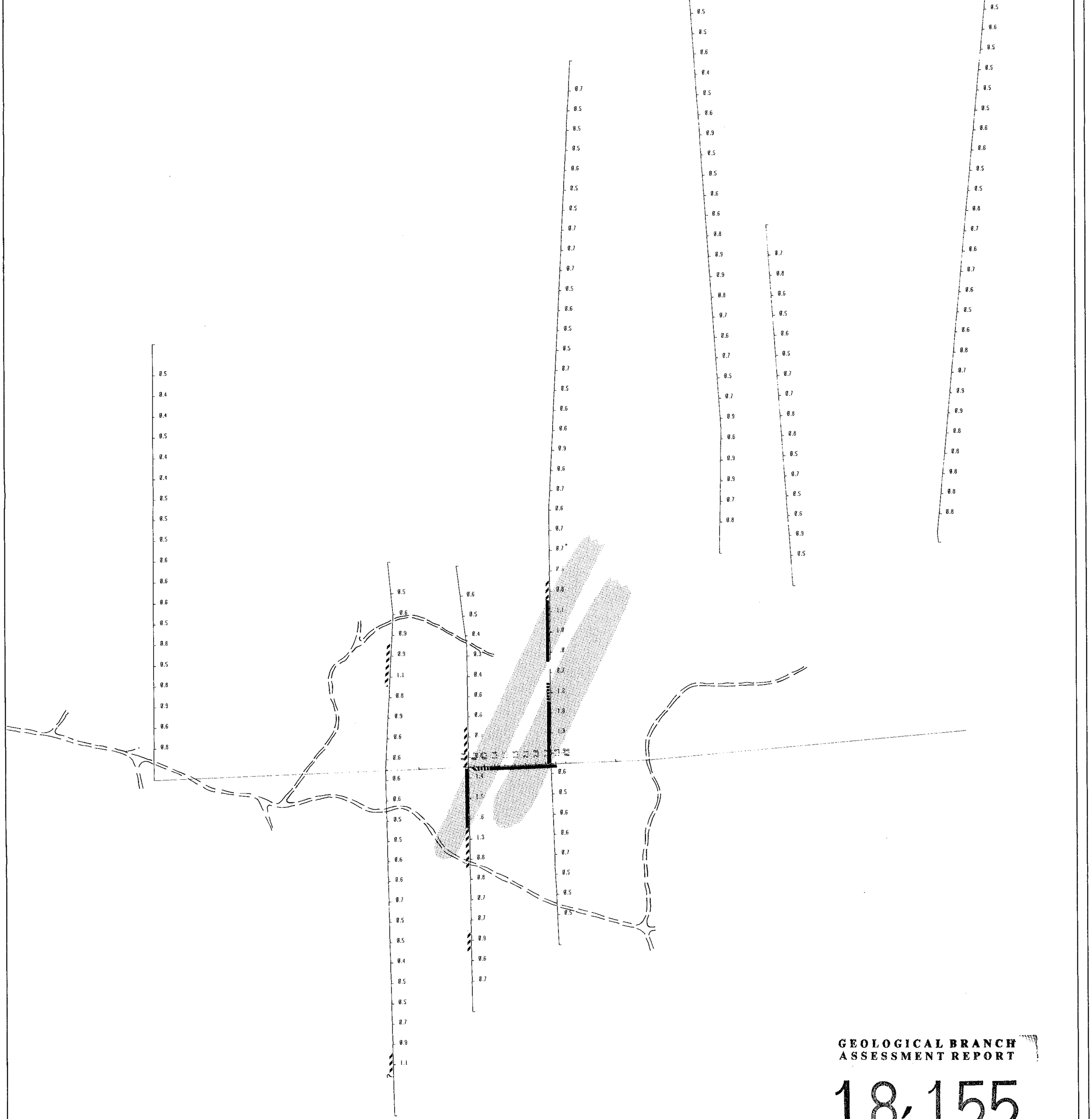
1400E

1600E

2000E

2200E

2600E



GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,155

To Accompany Report By : P.A.CARTWRIGHT, P.Geoph.
: G.D.LOCKHART, B.Sc.

IP ANOMALY CLASS. : Definite
: Probable
: Possible

ELECTRODE ARRAY : Dipole-Dipole x=50m & 25m on BL

OUTLINE OF ANOMALOUS IP ZONE

100m 50m 0m 100m 200m

FAIRBANK ENGINEERING LTD.

INDUCED POLARIZATION SURVEY

N=1 PFE

SHEILA/WANDA PROPERTY, SKEENA M.D.,B.C.

BASELINE AZIMUTH : 125 Deg.

SCALE = 1: 5000 DATE : 8/12/88

SURVEY BY : GDL NTS : 103 F/9

FILE: MSHE Dwg.No.: IPP-3016

Pacific Geophysical Ltd.

CITY RESOURCES (CANADA) LIMITED
NORAMEX MINERALS INC.

DATE: AUG/88	SHEILA/WANDA PROPERTY
REVISED:	SKEENA M.D., B.C.
	MAGNETIC SURVEY (TOTAL FIELD)
PROJECT No.	SURVEY BY: NTS: 103 F/9
	DRAWN BY: BEM SCALE 1:5 000
FIGURE No: 10	FAIRBANK ENGINEERING LTD.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,155

SHEILA WANDA

Boucher Creek

Queen Charlotte Mainline

Mamin River

Florence Creek

10+00 N 2+00 E 6+35 E 10+00 E 12+00 E 14+00 E 15+00 E 18+00 E 20+00 E 22+00 E 26+00 E 30+00 E 34+00 E 36+00

5+00 N 0+00 N 0+25 E 5+00 S 8+00 S 10+00 15+00 20+00 25+00 30+00 23+00 N 20+00 N 15+00 N 10+00 N 5+00 N 0+00 N

2000 1000

LEGEND

Logging Roads:
- Main Haul Road
- Secondary Haul Road
- Skid Road

Creek

Shoreline

Swamp

Gravel Pit

Rock Outcrop

City Resources (Canada) Limited Drillholes, 1987

Datum = 55,000 gammas

True Total Value = 55,000 gammas + plotted value

Contour Interval: 1000 gammas

100 0 100 200 300
METRES

Base from MacMillan Bloedel Limited, 1981; map no's 103 F. 059.3.2/4.1/14/2.3

CITY RESOURCES (CANADA) LIMITED
NORAMEX MINERALS INC.

DATE: AUG/88
REVISED:

SHEILA/WANDA PROPERTY
SKEENA M.D., B.C.

V.L.F.
ELECTROMAGNETIC
SURVEY

PROJECT No.
SURVEY BY:
NTS: 103 F/9
DRAWN BY: BEM
SCALE 1:5 000
FIGURE No. 11

FAIRBANK ENGINEERING LTD.

SHEILA WANDA

Boucher Creek
Queen Charlotte Mainline
Mamin River
Florence Creek
Queen Charlotte Mainline
Mamin River

10+00 N
5+00 N
0+00 N
5+00 S
8+00 S
20+00 N
15+00 N
10+00 N
5+00 N
0+00 N

2+00 E
6+35 E
10+00 E
12+00 E
14+00 E
16+00 E
18+00 E
20+00 E
22+00 E
26+00 E
30+00 E
34+00 E
0+25 E
23+00 N

STREAM
LARGE STREAM
STEEP HILL
DEPRESSION
LAKE
STREAM ROAD
ROAD

LEGEND

Logging Roads:
- Main Haul Road
- Secondary Haul Road
- Skid Road

Creek
Shoreline
Swamp
Gravel Pit
Rock Outcrop

0 -20 -40
-VE
% Magnitude

In Phase
Out of Phase

Station Used: Annapolis

City Resources (Canada) Limited Drillholes, 1987

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,155

100 0 100 200 300
METRES

Base from MacMillan Bloedel Limited, 1981; map no's 103 F. 059.3.2/4.1/1.4/2.3