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# GEOPHYSICAL REPORT

FILE NO:

on the

#### WP 1-3 CLAIMS

# Hedley Area Similkameen Mining Division

## 92H-8E (49 degrees 19 minutes North Latitude) (120 degrees 11 minutes West Longitude)

for

## GRANT F. CROOKER Box 404 Keremeos, B.C. V0X 1N0 (Owner and Operator)

by

Grant F. Crooker, P.Geo. Consulting Geologist

# GEOLOGICAL BRANCH Japes 1994 ESSMENT REPORT

# TABLE OF CONTENTS

Page

		-
	SUMMARY AND RECOMMENDATIONS	1
1.0	INTRODUCTION	3
	1.1 General	3
	1.2 Location and Access	3
	1.3 Physiography	3
	1.4 Property and Claim Status	3
	1.5 Area and Property History	4
2.0	EXPLORATION PROCEDURE	5
3.0	GEOLOGY AND MINERALIZATION	6
	3.1 Regional Geology	. 6
	3.2 Claim Geology	8
	3.3 Mineralization	9
4.0	GEOPHYSICS	10
	4.1 Magnetometer Survey	10
	4.2 VLF-EM survey	10
5.0	CONCLUSIONS AND RECOMMENDATIONS	11
6.0	REFERENCES	12
7.0	CERTIFICATE OF OUALIFICATIONS	15

# APPENDICES

Appendix I	- Geophysical Equipment Specifications
Appendix II	- VLF-EM and Magnetic Data
Appendix III	- Cost Statement

# **ILLUSTRATIONS**

FIGURE		PAGE
1.	Compilation Map, Target Areas	follows page 1
2.	Location Map	follows page 2
3.	Claim Map	follows page 3
4.	Regional Geology, Hedley District	follows page 6
5.	Geological Interpretation	follows page 8
6.	Magnetometer Survey	follows page 10
7.	VLF-EM Profle, Dip Angle	follows page 10
<b>8</b> .	VLF-EM Profile, Field Strength	follows page 10

#### SUMMARY AND RECOMMENDATIONS

The WP Claims are located 8 kilometres southwest of Hedley B.C. in the Hedley Gold Camp of southern British Columbia. The property consists of three claims totalling 56 units.

Placer mining was first carried out in the Hedley area in the 1860's and 1870's with the first hardrock claims being staked in 1896 on Nickel Plate Mountain. The two major producers in the camp were the Nickel Plate and Hedley Mascot mines. Gold production in the Hedley Gold Camp up to 1986 totalled 51 million grams (1.6 million ounces). After a 30 year shutdown, mining commenced at the Nickel Plate mine in 1987 with a milling rate of 2700 tons per day. As of the date of this report, the mine is still in production.

Gold mineralization in the Hedley Camp occurs as both skarn and vein type and occurs within Nicola volcanic and sedimentary rocks. The gold mineralization is spatially related to the Hedley intrusions.

The WP claims are located in a favourable geological environment for gold mineralization. The claims are underlain by the Stemwinder Mountain and Whistle Creek formations of the Nicola Group. A stock of the Hedley intrusions outcrops in the southeastern portion of the claims.

During 1987 and 1988 exploration programs were carried out on the WP property. These programs consisted of establishing a grid over approximately 75% of the property and carrying out geological, geeochemical and geophysical surveys over the grid. A heavy metal stream sediment sampling program was also carried out on Whistle and Pettigrew Creeks. Several soil gold geochemical anomalies containing coincidental multi-element values of bismuth, silver, cobalt, copper, arsenic and lead were found on the claims. Combined with magnetic highs and electromagnetic conductor systems, these anomalies constitute attractive target areas warranting further exploration. The heavy metal stream sediment sampling yielded highly anomalous gold and silver values.

There is sufficient geological, geochemical and geophysical evidence to support the theory that the WP claims host Hedley-type gold deposits. A total of eight target areas (Figure 1) have been identified that require detailed exploration.

The 1994 program consisted of establishing a grid and carrying out magnetometer and VLF-EM surveys over a portion of the WP 1 claim which had not previously been explored. As no outcrop was located during the geophysical surveys, no geological information was obtained for the grid area.

No prominent magnetic or electromagnetic features were outlined by the geophysical survey.

The magnetics are very quiet with most values falling in the range between 56200 and 56300 nT. A number of weak to moderate VLF-EM conductors were outlined but the lack of outcrop makes interpretation of the causes of the conductors difficult. None of the electromagnetic conductors are associated with magnetic features indicating many of the conductors may not be caused by bedrock structures.



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Recommendations are as follows:

1) The grid and magnetometer and VLF-EM surveys should be extended over the remainder of the WP 1 claim.

2) The target priority areas outlined by previous surveys on the WP claims should be explored by a combination of fill-in geochemical soil sampling, geological mapping, I.P surveying, trenching and reverse circulation drilling.

Respectively-submitted, POVINCE CROOKER Grant Crooker, P. Geo., Consulting Geologist



#### **1.0 INTRODUCTION**

#### 1.1 GENERAL

Field work was carried out on the WP claims during the spring of 1994 by Grant Crooker, geologist. The grid was expanded into the western portion of the WP 1 claim and magnetometer and VLF-EM surveys carried out over the grid.

#### **1.2 LOCATION AND ACCESS**

The property (Figure 2) is located 8 kilometres southwest of Hedley in southern British Columbia. It lies between 49 degrees 17 minutes 30 seconds and 49 degrees 20 minutes north latitude and 120 degrees 9 minutes 30 seconds and 120 degrees 13 minutes west longitude (NTS 92H-8E).

Access to the property is via highway 3A, turning west onto the Sterling Creek logging road 8 kilometres west of Hedley. This logging road is an all weather 2 wheel drive road with the distance to the property being 8 kilometres. A number of 2 wheel drive and 4 wheel drive roads give good access to all but the extreme southeast corner of the property.

#### **1.3 PHYSIOGRAPHY**

The property is located along the eastern edge of the Cascade Mountains. Elevation varies from 850 to 1500 metres above sea level and topography varies from flat to steep. Outcrop is generally sparse with the exception of the steep slopes leading into Pettigrew Creek. Pettigrew and Whistle Creeks cut across the claims and a number of smaller tributaries drain into them. Pettiigrew Creek contains a substantial flow of water all year round.

Vegetation varies from open range land to a forest cover of pine, fir, spruce and aspen trees. Large areas of the property were selectively logged 20 or more years ago and clear cutting is being carried out over portions of the property at present.

#### **1.4 PROPERTY AND CLAIM STATUS**

The WP 1 to 3 claims (Figure 3) are owned and operated by Grant Crooker of Box 404, Keremeos, B.C.. The property consists of three claims covering 56 units in the Similkameen Mining Division.

Claim	Units	Mining Division	Tenure Number	Record Date	Expiry Date
WP 1	20	Similkameen	249174	12/12/86	12/12/95*
WP 2	20	Similkameen	249175	12/12/86	12/12/96*
WP 3	16	Similkameen	249176	12/12/86	12/12/96*

• Including the work credits from this report.



#### **1.5 AREA AND PROPERTY HISTORY**

Placer mining was first carried out in the Hedley area in the 1860's and 1870's. The interest in placer mining led to the discovery of gold on Nickel Plate Mountain in the 1890's, with the first claims being staked in 1896. Many showings were found within the Hedley Gold Camp, both on Nickel Plate Mountain and the surrounding area. The two major producers in the district were the Nickel Plate and Hedley Mascot Mines. Production from the district has been approximately 51 million grams (1.6 million ounces). Almost all of this production occurred in the period from 1905 to 1955.

In the 1970's exploration renewed in the Hedley district. Most of the activety concentrated on properties on Nickel Plate Mountain, however exploration was carried out on the south side of the Similkameen River.

The most important property in the camp is the Nickel Plate mine of Homestake Mining. The gold mineralization is skarn hosted and ore reserves in 1987 were in the order of 9,900,000 tons grading 0.088 ounces gold per ton. The property commenced production in August 1987 with a milling rate of 2,700 tons per day using open pit mining and conventional cyanide gold recovery methods.

A number of gold properties are located on the south side of the Similkameen River north and east of the WP property (Figure 3). Historically, the properties on the south side of the Similkameen River were related to quartz-carbonate vein systems and associated shear zones as opposed to skarn-related mineralization. Recent geological data by Ray (1986/87) have indicated that similiar gold environments exist on the south side.

Work on the WP claim area by previous operators during the period 1981 through 1983 consisted of an airborne magnetometer and VLF-EM survey and a reconnaisance type soil geochemical survey. The soil geochemical survey indicated a number of weak to moderate coincidental Ag-As-Cu-Zn anomalies. Gold values were spotty and in most cases low.

Work programs on the WP claims during 1986 and 1987 consisted of establishing approximately 115 kilometres of grid and carrying out geological, geochemical and geophysical surveys over the grid. A combination of these geological, geochemical and geophysical parameters indicated 8 target areas (Figure 1) which warrant further exploration.

#### 2.0 EXPLORATION PROCEDURE

The 1994 program consisted of establishing a grid over the western portion of the WP 1 claim and carrying out magnetometer and VLF-EM surveys.

#### **GRID PARAMETERS**

-baseline direction N-S along 800 west -survey lines perpendiculiar to baseline -survey line separation 100 metres -survey station spacing 25 metres -survey total - 16.9 - kilometres -declination 21 degrees

#### **GEOPHYSICAL SURVEY PARAMATERS**

#### TOTAL FIELD MAGNETIC SURVEY

-survey line spacing 100 metres -survey station spacing 25 metres -survey total - 16.9 - kilometres -instrument - Scintrex MP-2 magnetometer -measured total magnetic field in nanoteslas -instrument accuracy 1 nanotesla

Readings were taken along the baseline to obtain standard readings for all baseline stations. All loops ran off the baseline were then corrected to these standard values by the straight line method. The operator faced north for all readings. The total filed magnetic data was plotted on figure 6 at a scale of 1:5000 and the data listed in Appendix II.

#### **VLF-EM SURVEY**

-survey line spacing 100 metres
-survey station spacing 25 metres
-survey total - 15 - kilometres
-instrument - Phoenix VLF-2
-transmitting station - Seattle - 24.8 KHz.
-dip angle measured in degrees at each station
-+ north dip, - south dip
-maximum field strength measured in percent at each station

The dip angle and maximum field strength profiles were plotted on figures 7 and 8 respectively at a scale of 1:5000. The data is listed in Appendix II.

#### **3.0 GEOLOGY AND MINERALIZATION**

#### **3.1 REGIONAL GEOLOGY**

The Hedley Gold Camp is located within the Intermontane Belt of the Canadian Cordillera.

The oldest rocks in the area belong to the Apex Mountain Group (Figure 4) and occur in the southeastern part of the camp. The Apex Mountain Group consists of a deformed package of cherts, argillites, greenstones, tuffaceous siltstones and minor limestones believed to range in age from Upper Devonian to Middle to Late Triassic.

The remainder of the Hedley Gold Camp is underlain by Late Triassic Nicola Group volcanic and sedimentary rocks, and stocks, sills and dykes ranging in composition from granodiorite to gabbro.

Mapping by Ray and Dawson divides the Nicola Group into three distinct stratigraphic packages. The oldest, called the Peachland Creek formation, comprises massive, mafic quartz-bearing andesitic to basaltic ash tuff and minor chert-pebble conglomerate. This previously unrecognized basal unit is poorly exposed in the Hedley district, but has been identified in several localities. This formation is named after a major tuffaceous sequence which underlies the Hedley formation in the Penask Mountain area, 30 kilometres west of Peachland.

The Peachland Creek formation is stratigraphically overlain by a 100 to 700 metre thick sedimentary sequence in which a series of east-to-west facies changes are recognized. This sequence progressively thickens westward and the facies changes probably reflect deposition across the tectonically controlled margin of a northwesterly deepening Late Triassic marine basin.

The easternmost and most proximal facies, called the French Mine formation has a maximum thickness of 150 metres and comprises massive to bedded limestone interlayered with thinner units of calcareous siltstone, chert-pebble conglomerate, tuff, limestone-boulder conglomerate and limestone breccia. This formation hosts the auriferous skarn mineralization at the French and Goodhope mines.

Further west, rocks stratigrahically equivalent to the French Mine formation are represented by the Hedley formation which hosts the gold-bearing skarn at the Nickel Plate mine. The Hedley formation is 400 to 500 metres thick and characterized by thinly bedded, turbiditic calcareous siltstone and units of pure to gritty, massive to bedded limestone that reach 75 metres in thickness and several kilometres in strike length. The formation includes lesser amounts of argillite, conglomerate and bedded tuff: locally the lowermost portion includes minor chert-pebble conglomerate.

The westernmost, more distal facies is represented by the Stemwinder Mountain formation which is at least 700 metres thick and characterized by a sequence of black, organic-rich, thinly bedded calcareous argillite and turbiditic siltstone, minor amounts of siliceous fine-grained tuff and impure limestone beds. The Stemwinder formation hosts the gold occurrences at Banbury (vein) and Peggy (skarn).



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The sedimentary rocks of the French Mine, Hedley and Stemwinder formations pass stratigraphically upward into the Whistle Creek formation which is probably Late Triassic in age. The formation is 700 to 1200 metres thick and and distinguisable from the underlying rocks by a general lack of limestone and a predominance of andesitic volcaniclastic material. The Whistle Creek formation is host to the Canty (skarn) and Gold Hill (vein) gold occurrences.

The base of the Whistle Creek Formation is marked by the Copperfield conglomerate, a limestoneboulder conglomerate that forms the most distinctive and important stratigraphic marker horizon in the district. The conglomerate is well developed west of Hedley where it forms a northerly trending, steeply dipping unit that is traceable for over 15 kilometres along strike.

The Whistle Creek formation is overlain by volcaniclastic rocks that may belong to the Early Cretaceous Spences Bridge Group.

Three suites of plutonic rocks are recognized in the area. The oldest, the Hedley intrusions is probably Early Jurassic in age and is economically important. It forms major stocks up to 1.5 kilometres in diameter and swarms of thin sills and dykes up to 200 metres in thickness and over 1 kilometre in length. The sills and dykes are coarse-grained and massive diorites and quartz diorites with minor gabbro, while the stocks range from gabbro through granodiorite to quartz monzonite. This plutonic suite is genetically related to the skarn-hosted gold mineralization in the district including that at the Nickel Plate, Hedley Mascot, French and Goodhope mines, and gold occurrences at Banbury, Goldhill, Peggy and Canty.

The second plutonic suite is the Early Jurassic? Similkameen intrusions which comprises coarsegrained, massive, biotite hornblende granodiorite to quartz monzodiorite. It generally forms large bodies, for example, the Bromley batholith, and Cahill Creek pluton which separates the Nicola Group rocks from the highly deformed Apex Mountain complex.

The third and youngest intrusive suite includes two rock types that are possibly coeval and related to the formation of the dacitic volcaniclastic rocks within the Spences Bridge Group. One of these, the Verde Creek stock comprises a fine to medium grained, massive leucocratic microgranite that contains minor biotite. The other type is represented by fine-grained, leucocratic, felsic quartz porphyry.

#### 3.2 CLAIM GEOLOGY

The WP claims are mainly underlain by Nicola Group volcanic and sedimentary rocks (Figure 5). These include both the Whistle Creek and Stemwinder Mountain formations. Two suites of intrusive rocks have intruded the Nicola Group. These include a stock of the Hedley intrusions in the southeastern portion of the claims and the Cahill Creek pluton in the southern portion of the claims.

Six rock units were mapped on the property. The oldest unit (Unit 1) consists of rocks of the Stemwinder Mountain formation which is characterized by a sequence of black, organic rich, thinly bedded calcareous argillite and turbiditic siltstone, minor amounts of siliceous fine-grained tuff and dark impure limestone beds that seldom exceed 3 metres in thickness.

Unit 2 is the Copperfield conglomerate which generally marks the boundary of the Stemwinder Mountain and Whistle Creek formations. The unit varies from clast to matrix supported but is usually matrix supported, and is composed of well rounded to angular limestone clasts up to 1 metre in width. The largest exposure of this unit on the property is 25 metres wide and 75 metres long.

Unit 3 is made up of rocks of the Whistle Creek formation which is the predominate rock type on the claims. The lower portion of the unit is predominately sedimentary while higher in the unit it becomes more volcanic in nature.

The Whistle Creek formation can be further subdivided into units 3a (well indurated grey argillite and tuffaceous argillite), 3b (massive to bedded dark green andesite tuff), 3c (angular to subangular clasts of grey to black argillite within a fine-grained green tuff) and 3d (thinly bedded grey to blue limestone). Units 3a and 3b comprise the majority of outcrops on the property with only minor outcrops of units 3c and 3d.

The general strike of the units is north to northeasterly, with dips predominately steep to the west. The subunits are often narrow, interbedded and of mixed litholigies making mapping difficult.

Unit 4 is a medium to coarse grained hornblende diorite of the Hedley intrusions. This unit forms a stock in the southeastern portion of the property, with a few scattered dykes and sills occurring over the remainder of the property.

Unit 5 is composed of rocks of the Cahill Creek pluton which is generally a medium grained biotite homblende granodiorite. This unit intrudes the Nicola Group in the southern portion of the property.



#### **3.3 MINEALIZATION**

The gold occurrences and deposits within the Hedley area are spatially associated with dioritic bodies of the Hedley intrusions. The gold mineralization can be broadly divided into skarn (s) and vein (v) related types.

The skarn-type mineralization is the most widespread and economically important, and is characterized by the gold being intimately associated with variable quantities of sulphide bearing garnet-pyroxenecarbonate exoskarn alteration. The gold tends to be associated with sulphides, particularily arsenopyrite, pyrrhotite and chalcopyrite. Present in lesser amounts are pyrite, gersdorffite and calcium rich sphalerite with minor amounts of magnetite and cobalt minerals. Trace minerals include galena, native bismuth, electrum, tetrahedrite and molybdenite. This type of mineralization is found at the Nickel Plate, Hedley Mascot and most other properties in the area.

The skarn-type mineralization is generally stratabound and follows calcareous tuffs and limestones within the upper parts of the Hedley, French Mine and Stemwinder Mountain formations. Swarms of diorite sills and dykes or larger bodies of the Hedley intrusions have intruded the favourable beds and hornfelsed them. Both the intrusions and sediments were subsequently overprinted with the skarn alteration.

The vein-type mineralization is characterized by gold and sulphides hosted in higher level, fracturefilled quartz-carbonate vein systems. This type of mineralization is seen only at the Banbury and Gold Hill properties.

At the Banbury property two elongate stocks of the Hedley intrusions some 300 metres wide by 1.3 kilometres long intrude both the Hedley and Whistle Creek formations. A hornfelsed aureole surrounds the stocks and both are cut by northerly trending fracture zones which are filled by steep and shallow dipping quartz-carbonate vein systems.

Exploration on the WP claims has been directed towards both the skarn and vein type mineralization. Several mineralized outcrops containing pyrite and pyrrhotite with associated gold and silver values occur on the WP claims. Siliceous-argillite and carbonate zones of alteration are present and hornfels occur peripheral to the intrusives. In most cases, the mineralized zones are poorly exposed. The anomalous gold and silver samples, along with the inter-related anomalous elements of Bi, Co, Cu, As, Pb, Ni, Zn and Cr, are indicated on figure 5.

The highest gold value (270 ppb) comes from a pyritic cherty argillite (Stemwinder Mountain) peripheral to the Pettigrew stock. The sample is also anomalous in As, Ni and Co. The most significant cluster of gold values (165, 42, 38, 34 ppb) are associated with rusty silicified argillites (Stemwinder Mountain). These rocks are also anomalous in Cu, Ni, As, Pb and Zn.

A cluster of anomalous silver values (3.3, 2.6, 2.3 ppm) are associated with a coincidental pyritepyrrhotite zone within tuffs and argillites of the Stemwinder Mountain formation. Anomalous values of As, Cu, Zn, Pb, Ni, Bi, and Co are present but gold is near background.

#### **4.0 GEOPHYSICS**

#### **4.1 MAGNETOMETER SURVEY**

A total field magnetic survey was carried out on lines 0 to 9S (Figure 6). The magnetic response was weak with values ranging from 55920 to 56806 nT.

The majority of values on the grid ranged between 56200 and 56300 nT. A number of narrow, linear, north-south trending zones of magnetism slightly above and below these values occur within the grid area. These linear features strike north to northeasterly and may represent slightly more or less magnetic units within the Whistle Creek formation.

Two locations on the grid gave slightly higher magnetic values of 56610 (L9S + 975W) and 56806 (L8S + 1200W) nT. These two locations may represent areas with concentrations of magnetic minerals such as magnetite or pyrrhotite.

#### 4.2 VLF-EM SURVEY

A VLF-EM survey was carried out on lines 0 to 9S. The dip angle (Figure 7) and maximum field strength (Figure 8) were measured at each grid station.

A few stations gave field strength values slightly above background. These slightly higher than background values occur coincidentally with conductors on line 0 at 1975W and 2050W, on line 2S at 1200W, on line 6S at 1550W and on line 7s at 1275W.

A number of weak to moderate VLF-EM conductors were outlined by the survey. They are northerly trending and exhibit short to moderate wavelengths. None of the conductors appear to be associated with magnetic features. As there is no outcrop exposure, no causes are evident for the conductors. The longest conductor system is C, which has a strike length of 600 metres.







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#### 5.0 CONCLUSIONS AND RECOMMENDATIONS

No prominent magnetic or electromagnetic features were outlined by the geophysical survey.

The magnetics are very quiet with most values falling in the range between 56200 and 56300 nT. A number of weak to moderate VLF-EM conductors were outlined but the lack of outcrop makes interpretation of the causes of the conductors difficult. None of the electromagnetic conductors are associated with magnetic features indicating many of the conductors may not be caused by bedrock structures.

Recommendations are as follows:

1) The grid and magnetometer and VLF-EM surveys should be extended over the remainder of the WP 1 claim.

2) The target priority areas outlined by previous surveys on the WP claims should be explored by a combination of fill-in geochemical soil sampling, geological mapping, I.P surveying, trenching and reverse circulation drilling.

Respectively submitted, PREVINCE C. P. CROCKER Grant Crooker, P. Geo., Consultifig Speologist 11

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### 7.0 CERTIFICATE OF QUALIFICATIONS

I, Grant F. Crooker, of Upper Bench Road, Keremeos, in the Province of British Columbia, Hereby certify as follows:

- 1.0 That I graduated from the University of British Columbia in 1972 with a Bachelor of Science Degree in Geology.
- 2.0 That I have prospected and actively pursued geology prior to my graduation and have practised my profession since 1972.
- 3.0 That I am a Member of the Canadian Institute of Mining and Metallurgy.
- 4.0 That I am a Fellow of the Geological Association of Canada.
- 5.0 That I am a Professional Geoscientist registered with the Association of Professional Engineers and Geoscientists of the Province of British Columbia (No. 18,961).
- 6.0 That I am the Owner of the WP 1-3 mineral claims.

Dated this 15th day of June, 1994, at Keremeos, in the Province of British Columbia.



# APPENDIX I

# GEOPHYSICAL EQUIPMENT SPECIFICATIONS

# PHOENIX Geophysics Limited VLF-2

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PARAMETERS MEASURED	Orientation and magnitude of the major and minor axes of the ellipse of polarization.
FREQUENCY SELECTION, FRONT	Dual channel, front panel selectable, (F1 or F2) each with independent precision 10-turn dial gain control.
FREQUENCY SELECTION, INTERNAL	F1 and F2 can be selected by internal switches within the range 14.0 to 29.9 KHz in 100 Hz increments.
DETECTION AND FILTERING	Superheterodyne detection and digital filtering provide a much narrower bandwidth and thus greator rejection of interfering stations and 60 cycle noise than conventional receivers.
METER DISPLAY	2 ranges: 0 to 300 or 0 to 1000. Background is typically set at 100. Meter is also used as dip angle null indicator and battery test.
AUDIO	Crystal speaker. 2500 Hz used as null indicator.
CLINOMETER	plus or minus 90 degrees, 0.5 degree resolution. Normal locking, push button release.
BATTERY	One standard 9v transistor radio battery. Average life expectancy 1 to 3 months (battery drain is 3 mA).
TEMPERATURE RANGE	-40 degrees to =60 degrees.
DIMENSIONS	8 x 22 x 14 cm (3 x 9 x 6 inches)
WEIGHT	850 grams (1.9 pounds)
MANUFACTURER	Phoenix Geophysics Limited 200 Yorkland Boulevard Willodale, Ontario M2J 1R6

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# APPENDIX II

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# VLF-EM AND MAGNETIC DATA

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# Grant Crooker Data Listing

Line and Station	+ = northing/easting - = southing/westing
Grid: WP Claims	File Name: WPgeophy
Date: May, 1994	Mag and VLF Survey
Instrument Type:	Details
Scintrex MP-2	Corrected Total Field Magnetic Values
Phoenix VLF-2	Dip Angle and Horizontal Field Strength
Data Types: #1	Corrected Total Field Magnetic Values (n1

#2 I #3 H

Corrected Total Field Magnetic Values (nT) Dip Angle (degrees) Horizontal Field Strength (percent)

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N/S	E/W			
Line	Station	1	2	3
line 000				
0	-800	56210	8	225
0	-825	56094	12	200
0	-850	56168	10	180
0	-875	56150	6	180
0	-900	56156	4	190
0	-925	56252	4	190
0	-950	56269	1	190
0	-975	56233	0	210
0	-1000	56223	2	215
0	-1025	56214	4	210
0	-1050	56237	7	215
0	-1075	56261	6	210
0	-1100	56212	4	205
0	-1125	56291	5	190
0	-1150	56279	<sup>•</sup> 6	200
0	-1175	56288	5	200
0	-1200	56236	6	200
0	-1225	56231	9	200
0	-1250	56252	11	190
0	-1275	56252	10	190
0	-1300	56278	4	175
0	-1325	56292	3	170
0	-1350	56307	-1	· 170
· 0	-1375	56312	-1	170
0	-1400	56358	-4	180
0	-1425	56279	-4	180
0	-1450	56307	-2	· 180
0	-1475	56280	-2	180
0	-1500	56394	-2	180
0	-1525	56414	-2	185
0	-1550	56388	-1	185
0	-1575	56233	0	185
0	-1600	56347	1	185
0	-1625	56309	2	180
0	-1650	56292	-2	170

0	-1675	56282	-2	170
0	-1700	56283	-2	190
0	-1725	56324	1	190
. 0	-1750	56279	-4	215
0	-1775	56325	-4	260
0	-1800	56307	-2	250
0	-1825	56320	-4	260
- 0	-1850	56304	-2	285
0	-1875	56341	-1	290
0	-1900	56346	-2	280
0	-1925	56271	-2	300
0	-1950	56381	-6	310
0	-1975	56255	-2	360
0	-2000	56254	2	290
0	-2025	56201	2	300
0	-2050	56217	5	320
0	-2075	56274	8	300
0	-2100	56276	9	260
0	-2125	56315	5	250
0	-2150	56234	4	250
Ō	-2175	56301	2	240
0 0	-2200	56275	2	250
0	-2225	56243	3	230
0	-2250	56209	0	240
0.	-2275	56342	0	230
0	-2300	56264	-4	240
line -100				
-100	-800	56271	0	180
-100	-825	56251	6	210
-100	-850	56244	4	205
-100	-875	56244	4	205
-100	-900	56266	1	190
-100	-925	56290	2	180
-100	-950	56261	1	180
-100	-975	56298	0	200
-100	-1000	56266	1	200
-100	-1025	56226	0	180
-100	-1050	56187	4	210
-100	-1075	56240	1	210
-100	-1100	56247	2	210
-100	-1125	56275	4	· 190
-100	-1150	56324	· 5	210
-100	-1175	56261	6	210
-100	-1200	56274	3	200
-100	-1225	56268	2	205
-100	-1250	56292	Ō	195
-100	-1275	56122	-2	210
-100	-1300	56226	-1	210
-100	-1325	56286	-2	200
-100	-1350	56330	-2	210
100	1276	56224	-3	210

-100	-1400	56305	-6	220	
-100	-1425	56170	-3	215	
-100	-1450	56268	0	215	
-100	-1475	56295	-3	210	
-100	-1500	56320	-6	235	
-100	-1525	56171	-2	215	
-100	-1550	56164	-5	230	
-100	-1575	56243	-4	240	
-100	-1600	56209	-2	235	
-100	-1625	56280	-1	220	
-100	-1650	56292	3	215	
-100	-1675	56799	3	210	
-100	-1700	56367	5	215	
-100	-1725	56260	4	220	
-100	-1750	56361	2	190	
-100	-1775	56343	-1	205	
-100	-1800	56328	-2	215	
-100	-1825	56298	-2	220	
-100	-1850	56316	-3	220	
-100	-1875	56337	-3	210	
-100	-1900	56308	-2	220	
-100	-1925	56284		215	
-100	-1950	56274	-4	210	
-100	-1950	56308	-4	200	
-100	-1975	56331		210	
-100	-2000	56208	-0	210	
-100	-2023	56338	-1	220	
-100	-2030	56262	-0	230	
-100	-2073	56326	-2	240	
-100	-2100	56317	2	240 :	
-100	-2123	50517	2	240	
-100	-2150	50304	2	230	
-100	-2175	50128	-+ 0	200	
-100	-2200	56340	8	235	
-100	-2225	56340	8	230	
-100	-2250	56347	6	215	
-100	-2275	26328	4	210	
-100	-2300	56412	Z	230	
ine -200	000	67101	•	220	
-200	-800	56184	1	220	
-200	-825	56118	10	250	
-200	-850	56306	10	220	
-200	-8/5	26323	6	200	
-200	-900	56260	6	220	
-200	-925	56309	4	200	
-200	-950	56270	5	170	
-200	-975	56249	6	190	
-200	-1000	56241	7	240	
-200	-1025	56307	7	200	
-200	-1050	56298	6	210	
-200	-1075	56194	4	220	
-200	-1100	56195	4	250	
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-200	-1125	56185	4	215
-200	-1150	56224	8	200
-200	-1175	56145	4	260
-200	-1200	56161	10	280
-200	-1225	56291	13	190
-200	-1250	56337	12	190
-200	-1275	56352	12	200
-200	-1300	56341	10	210
-200	-1325	56284	10	210
-200	-1350	56249	7	210
-200	-1375	56286	8	210
-200	-1400	56287	6	210
-200	-1425	56320	ő	200
-200	-1450	56329	4	190
-200	-1475	56300	0	200
-200	-1500	56171	-7	200
-200	-1525	56206	-2	220
-200	-1525	56307	4	225
-200	-1575	56228	-+	220
-200	-1600	56265	1	230
-200	-1600	56205	4	255
-200	-1650	56250	4	220
-200	-1675	56259	1	220
-200	-1073	56204	-1	220
-200	-1700	56256	-1	230
-200	-1725	50230	0	240
-200	-1/30	56267	1	250
-200	-1773	56290	1	250
-200	-1800	56180	2	245
-200	-1020	50189	3	260
-200	-1850	56304	8	240
-200	-18/5	56352	8	220
-200	-1900	56381	1	215
-200	-1925	56421	6	210
-200	-1950	56297	2	220
-200	-1975	56412	2	220
-200	-2000	56367	3	220
-200	-2025	56364	0	220
-200	-2050	56388	0	220
-200	-2075	26426	. 2	240
-200	-2100	56372	2	225
-200	-2125	56342	3	230
-200	-2150	56404	4	235
-200	-2175	56274	4	235
-200	-2200	56295	· <b>4</b>	240
-200	-2225	56265	7	240
-200	-2250	56264	6	220
-200	-2275	56284	3	230
-200	-2300	56280	4	230
line -300			•	
-300	-800	56185	б	260
-300	-825	56231	6	310

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-300	-850	56231	6	280	
-300	-875	56181	9	300	
-300	) -900	56212	7	290	
-300	-925	56272	7	280	
-300	-950	56338	2	240	
-300	975	56318	1	260	
-300	-1000	56273	8	280	
-300	-1000	56241	10	270	
-300	-1025	56216	9	270	
-300	-1075	56251	6	270	
-500	-1073	56145	2	300	
-500		50145	2	210	
-304	-1125	20248	3 0	210	
-300	-1150	56224	0	510 216	
-300	J -11/5	56225	5	313	
-300	-1200	56224	0	320	
-300	•1225	56238	4	320	
-300	-1250	56217	7	300	
-300	-1275	56260	8	250	
-300	-1300	56287	6	270	
-300	-1325	56238	5	280	
-300	-1350	56251	4	300	
-300	-1375	56196	8	290	
-300	-1400	56199	5	280	
-300	-1425	56229	6	290	
-300	-1450	56278	5	280	
-300	-1475	56305	6	260	
-300	-1500	56288	6	270	
-300	-1525	56219	4	270	
-300	-1550	56256	8	265	
-300	-1575	56283	4	250	
-300	) -1600	56267	2	260	
-300	-1625	56384	-2	260	
-30(	) -1650	56287	-3	265	
_300	.1675	56313	-5	270	
-30	) <u>1700</u>	56204	_4	300	
-300	→ -1700 ) _1775	50204		200	
-300	-1720	JUI/I \$2100	1	70 ش ۵۵۸	
-300		20190	1	270 200	
-300	J -1775	56222	<u> </u>	290	
-300	J -1800	36233	2	290	
-300	-1825	56259	2	290	
-300	-1850	56303	8	290	
-300	-1875	56292	7	250	
-300	-1900	56340	3	260	
-300	-1925	56354	0	275	
-300	-1950	56287	2	300	
-300	-1975	56322	6	300	
-300	-2000	56261	10	300	
-300	-2025	56283	11	255	
-300	-2050	56341	10	260	
-300	-2075	56339	8	255	
-300	-2100	56321	8	250	

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	-300	-2125	56301	4	250				
	-300	-2150	56294	8	260				
•	-300	-2175	56321	8	255				
	-300	-2200	56291	4	250				
	-300	-2225	56386	3	250				
	-300	-2250	56252	0	260				
	-300	-2275	56227	-2	270				
	-300	-2300	56181	. 4	275				
	line -400								
	-400	-800	56293	8	270				
	-400	-825	56319	9	280				
	-400	-850	56283	10	260				
	-400	-875	56351	8	290				
	-400	-900	56366	13	240				-
	-400	-925	56221	10	290				
	-400	-950	56287	8	290				
	-400	-975	56320	4	290				•
	-400	-1000	56306	4	310				
	-400	-1025	56343	6	300				
	-400	-1050	56302	10	275				
	-400	-1075	56320	7	260				
	-400	-1100	56238	5	230				
	-400	-1125	56283	0	240		•		
	-400	-1150	56321	0	240				
	-400	-1175	56326	-3	250				
	-400	-1200	56288	-6	260				
	-400	-1225	56290	-3	285				
	-400	-1250	56262	0	270			,	
	-400	-1275	56315	4	280				
	-400	-1300	56226	4	290				
	-400	-1325	56255	6	280				
	-400	-1350	56268	8	230				
	-400	-1375	56217	4	270				
	-400	-1400	56189	2	270				
	-400	-1425	56205	4	260				
	-400	-1450	56217	4	200				
	-400	-1475	56277	5	280				
	-400	-1500	56249	4	280				
	-400	-1525	562.52	3	290				
	-400	-1550	56229	4	280				
	-400	-1575	56256	2	270				
	-400	-1600	56231	2	290				
	-400	-1625	56251	8	270	x			
	-400	-1650	56295	6	270	,			
	-400	-1675	56297	3	260				
	-400	<b>.</b> 1700	56308	4	270				
	-400	-1775	56795	- 	270				
	_400	_1750	56225	т А	270				
	_400	-1750 _1775	56277		210				
	-400	-1775 -1800	56270	۔ 1	200				
	-400	-1825	56327	-2	270				
				-					
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-400	-1850	56356	0	280
-400	-1875	56322	2	290
-400	-1900	56297	5	300
-400	-1925	56275	7	250
-400	-1950	56250	6	250
-400	-1975	56253	4	270
-400	-2000	56227	4	270
-400	-2025	56219	3	270
-400	-2050	56228	4	270
-400	-2075	56292	6	270
-400	-2100	56198	6	260
-400	-2125	56311	7	270
-400	-2150	56220	5	260
-400	-2175	56226	6	260
-400	-2200	56224	6	270
-400	-2225	56185	8	270
-400	-2250	56264	8	230
-400	-2275	56328	12	250
-400	-2300	56277	10	240
line -500	2000			
-500	-800	56255	16	260
-500	-825	56297	13	230
-500	-850	56297	9	220
-500	-875	56269	12	230
-500	-900	56293	12	230
-500	-925	56288	8	210
-500	-950	56341	9	240
-500	-975	56364	12	210
-500	-1000	56365	10	200
-500	-1025	56377	7	240
-500	-1050	56308	11	200
-500	-1075	56376	22	220
-500	-1100	56320	23	200
-500	-1125	56259	18	200
-500	-1150	56329	16	200
-500	-1175	56337	12	200
-500	-1200	56324	9	190
-500	-1225	56302	8	180
-500	-1250	56324	4	210
-500	-1275	56312	4	210
-500	-1300	56258	1	210
-500	-1325	56316	1	215
-500	-1350	56321	4	215
-500	-1375	56347	9	230
-500	-1400	56359	8	200
<b>_500</b>	.1475	56340	6	200
-500 -500	-1450	56777	š	180
-500	-1475	56291	7	200
_500 _500	_1500	56760	, 6	210
-500 - <b>4</b> 00	-1500	56275	6	210
-500	-1550	56277	ő	215
			-	- · ·

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-500	-1575	56288	5	200		
-500	-1600	56317	4	210		
-500	-1625	56333	2	220		
-500	-1650	56236	2	220		
-500	-1675	56235	6	220		
-500	-1700	56351	7	200		
-500	-1725	56268	. 8	180		
-500	-1750	56243	5	200		
-500	-1775	56268	4	200		
-500	-1800	56232	3	200		
-500	-1825	56288	2	210		
-500	-1850	56341	1	220		
-500	-1875	56282	9	220		
-500	-1900	56301	-1	210		
-500	-1925	56244	-2	210		
-500	-1950	56232	-2	220		,
-500	-1975	56244	-3	230		
-500	-2000	56273	-2	220		
-500	-2025	56311	0	240		
-500	-2050	56281	1	230		
-500	-2075	56260	0	210		
-500	-2100	56227	2	230		
-500	-2125	56230	4	220		
-500	-2150	56312	4	230		
-500	-2175	56227	5	230		
-500	-2200	56303	6	225		
-500	-2225	56298	6	240		
-500	-2250	56242	6	230		
-500	-2275	56252	6	210		
-500	-2300	56261	5	230		
line -600						
-600	-800	56368	6	250		
-600	-825	56217	6	260	• ·	
-600	-850	56212	6	245		
-600	-875	56237	5	250		
-600	-900	56206	7	190		
-600	-925	56238	7	260		
-600	-950	56182	10	255		
-600	-975	56212	11	255		
-600	-1000	56381	11	230		
-600	-1025	56304	11	220		
-600	-1050	56306	9	220		
-600	-1075	56242	6	220		
-600	-1100	56235	12	250		
-600	-1125	56347	14	245		
-600	-1150	56242	14	250	i -	
-600	-1175	56347	16	270		
-600	-1200	56316	19	240		
-600	_1775	56773	15	775		
-600	-1250	56204	14	220		
-600	-1275	56169	12	220		

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(00	1200	5(201	•	000	
-600	-1300	56201	8	200	
-600	-1325	56257	5	220	
-600	-1350	56291	6	230	
-600	-1375	56315	2	230	
-600	-1400	56292	5	220	
-600	-1425	56326	8	220	
-600	-1450	56254	9	220	
-600	-1475	56230	11	230	
-600	-1500	56186	6	200	
-600	-1525	56128	2	240	
-600	-1550	56190	9	280	
-600	-1575	56098	14	215	
-600	-1600	56183	13	210	
-600	-1625	56229	9	220	
-600	-1650	56237	8	220	
-600	-1675	56165	4	250	
-600	-1700	56232	8	240	
-600	-1725	56254	10	230	
-600	-1750	56257	11	250	
-600	-1775	56273	12	230	
-600	-1800	56273	10	230	
-600	-1825	56200	10	220	
-600	-1850	56193	7	220	
-600	-1875	56233	6	215	
-600	-1900	56201	4	220	
-600	-1925	56252	2	230	
-600	-1950	56245	2	235	
-600	-1975	56207	1	230	
-600	-2000	56226	0	240	
-600	-2025	56218	0	250	1
-600	-2050	56245	0	240	
-600	-2075	56239	-1	255	
-600	-2100	56215	-3	260	
-600	-2125	56170	0	270	
-600	-2150	56188	4	255	
-600	-2175	56234	5.	270	
-600	-2200	56225	6	260	
-600	-2225	56201	5	250	
-600	-2250	56235	6	260	
-600	-2275	56251	6	250	
-600	-2300	56195	4	250	
line -700			•		
-700	-800	56279	6	270	
-700	-825	56343	5	260	
-700	-850	56295	7	270	
-700	-875	56348	, 6	260	
-700	-900	56313	6	250	
-700	-975	56766	7	250	
-700	-950	56784	<b>x</b>	205	
<b>_70</b> 0	_075	56301	9	250	
-700	-1000	56782	0	230	
-700	-1000	20203	O	230	

and the second

	-700	-1025	56288	6	240		
	-700	-1050	56254	7	250		
	-700	-1075	56343	4	260		
	-700	-1100	56267	4	270		
	-700	-1125	56297	8	260		
	-700	-1150	56269	6	240		
	-700	-1175	56311	4	240		
	-700	-1200	56314	2	240		
	-700	-1225	56352	3	240		
	-700	-1250	56292	3	250		
	-700	-1275	56242	8	290		
	-700	-1300	56275	16	250		
	-700	-1325	56378	13	220		
	-700	-1325	56310	13	220		
	-700	-1350	56280	12	220		
	-700	-1375	56331	12	210		
	-700	-1400	56391	6	210		
	-/00	-1423	50204	7	220		
	-700	1475	50247	4	220		
	-700	-1+/5	56237	4	240		
	-700	-1500	56271	4	240		
	-/00	-1525	56210		230		
	-700	-1330	56204	4	230		
	-700	-1373	56197	+	210		
	-700	-1000	56106	. 2	223		
	-/00	-1025	50100	0	250		
	-/00	-1630	56121	1 ¢	230		
	-/00	-16/5	56151	5	233		
	-/00	-1700	56199	4	230		
	-700	-1725	56249	2	255		
	-700	-1750	56245	3	250		
	-/00	-1775	56233	6	200		
	-700	-1800	56211	10	233		
	-700	-1825	26347	10	230		
	-700	-1850	56277	10	230		
	-700	-18/5	56244	9	250		
ı	-700	-1900	56260	ſ	250		
	-/00	-1925	56277	0	220		
	-700	-1950	56260	0	220		
	-/00	-19/5	56257	4	220		
	-700	-2000	56231	5	213		
	·-/00	-2025	56220	1	220		
	-/00	-2050	56240	_1	210		
	-700	-2075	50240	-1	210		
	-700	-2100	56213	-4	210	<u>↓</u>	
	-700	-2125	56320	-3	250	•	
	-700	-2150	56193	-4	230	•	
	-700	-2175	56177	2	200		
	-700	-2200	56220	5	250		
	-700	-2225	56225	6	230		
	-700	-2250	56221	6	200		
	-700	-2275	56269	4	240		

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	<b>2</b> 00			•	025			
	-700	-2300	56168	5	235			
	line -800	1			<b>.</b>			
	-800	-800	56368	4	240			
	-800	-825	56287	2	270			
	-800	-850	56247	4	270			
	-800	-875	56243	4	270			
	-800	-900	56202	2	280			
	-800	-925	56194	3	280			•
	-800	-950	56393	2	280			
	-800	-975	56337	0.	270			
	-800	-1000	56216	0	270			
	-800	-1025	56275	4	285			
	-800	-1050	56401	15	260			
	-800	-1075	56313	11	230			
	-800	-1100	56221	8	220			
	-800	-1125	56226	6	220			
	-800	-1150	56184	8	210			
	-800	-1175	56267	6	220			
	-800	-1200	56806	2	230			
	-800	-1225	56309	2	260			
	-800	-1250	56275	10	260			
	<b>-800</b>	-1275	56270	4	225			
	-800	-1300	56292	2	250			
•	-800	-1325	56246	8	280			
	-800	-1350	56294	12	270			
	-800	-1375	56323	14	250			
	-800	-1400	56264	10	250			
	-800	-1425	56265	10	250			
	-800	-1450	56294	11	250	<b>.</b> .		
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	-800	-1600	56195	12	215			
	-800	-1625	56218	10	215			
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	-800	-1675	56236	3	220			
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	-800	-1725	56256	2	240			
	-800	-1750	56282	- 6	260			
	-800	-1775	56251	8	255			
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	-800	-1825	56310	8	250			
	-800	-1850	56378	6	240	* *		
	-800	-1875	56351	7	235		•	
	-800	-1900	56265	7	245			
	-800	-1925	56242	8	240	,		
	-800	-1950	56263	7	220			
	-800	-1975	56221	8	225			
	-800	-2000	56275	6	230			
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	-800	-2025	56265	6	230		
•	-800	-2050	56282	6	225		
	-800	-2075	56227	7	225		
	-800	-2100	56288	6	<b>220</b>		
	-800	-2125	<b>5</b> 6267	4	215		
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	-800	-2175	56209	0	220		
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	-800	-2250	56255	8	240		
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	-800	-2300	56193	5	215		
	line -900	·.					
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	-900	-850	56305	-1	310		
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	-900	-1150	56229	15	230		
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	-900	-1525	56196	3	315		
	-900	-1550	56214	9	300		
	-900	-1330	50214	0			
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	-900	-1000	JOL / 8	/	230		
	-900	-1020	50213	ð	230		
	-900	-103U	J0141	0	240		
	-900	-10/3	20130	4	240		
	-900	-1/00	56303	I 1	250		
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baseline -800				
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-800	-600	56206		
-800	-625	56202		
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	-000	-700	56227		
	-800	-725	56271		
	-800	-775	56374		
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	-000 900	-030	56300		,
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	-000 200	-930	56448		
	-000 000	-975	56172		
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	-800	-1250	56231		
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	-800	-1675	56227		
	-800	-1700	56046		
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	-800	-1750	56287		
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	-800	-1800	56100		
	-800	-1825	56141		
	-800	-1850	56068		
	-800	-1875	56281		
	-800	-1900	56284		
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# APPENDIX III

# COST STATEMENT

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# COST STATEMENT

# SALARIES

Grant Crooker, Geologist	
Mar 27-29, April 15, May 3, 7, 24, 25, 27, 29, 31	
June 1, 2, 5, 6, 14, 1994	
16 days @ \$ 400.00/day	\$ 6,400.00
MEALS AND ACCOMMODATION	
Grant Crooker - 12 days @ \$ 60.00/day	720.00
TRANSPORTATION	·
Vehicle Rental (Chev 3/4 ton 4 x 4)	
12 days @ \$ 60.00/day	720.00
Gasoline	180.00
EQUIPMENT RENTAL	
Magnetometer - Scintrex MP-2	
April 15, May 7, 25, 27, 31, June 1, 1994	
6 days @ \$ 25.00/day	150.00
VLF-EM - Phoenix VLF-2	
March 27-29, May 3, 24, 29, 1994	
6 days @ \$ 50.00/day	150.00
SUPPLIES	
Hipchain thread, flagging etc.	75.00
DRAFTING	200.00
PREPARATION OF REPORT	
Secretarial, reproduction, office overhead etc.	500.00
· · · · · · · · · · · · · · · · · · ·	Total \$ 9,095.00