

2002-2003 Exploration Program

At the Happy - Feliz Property

Happy 1-8 (YC19282-89)

Feliz 1-4 (YC19290-93)

Feliz 5-10, 25-29 (YC19655-65)

NTS 115 I-6

Lat. 62°20'N, Long. 137°15'W

Whitehorse Mining District

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Y1A 5P7

January 2003

Period of Work:

June/Dec. 2002, Jan. 2003

02 - 084

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Summary

An exploration program consisting of prospecting, geochemical soil sampling, line cutting and flagline grid preparation, total field magnetic surveys and VLF-EM surveys was conducted on the Happy-Feliz property in the Whitehorse Mining District of the Yukon Territory in the 2002-2003 field season. The program was funded by Bill Harris with the assistance of the Yukon Mining Incentives Program. The purpose of the 2002-2003 exploration program at the Happy-Feliz property was to follow up previous work, some of which was funded by a YMIP grant, which discovered Au-Ag geochemical anomalies and some isolated high Au-Ag-As values in float and bedrock samples.

A total of 22.0 line kilometers were surveyed on a 45 km prepared grid taking both magnetometer and VLF-EM readings (three separate VLF stations). A total of 55 soil samples were collected at 25 to 50 metres spacings along four traverse lines. Rock exposure, already limited in the region, was further obscured by snow cover, however 10 rock samples were collected from outcrops, trenches and road-cuts on the Happy-Feliz grid.

Introduction

A. Introduction

This report describes the results of the 2002-2003 exploration program at the Happy-Feliz Property in the Freegold Mountain area of the Yukon Territory. The program was partially funded by the Yukon Mining Incentives program (YMIP). Prospecting, line cutting and flagline grid construction, geochemical sampling and total magnetic field and VLF-EM surveys were carried out.

The geophysical surveys were performed to locate the extent and border contact areas of a breccia body which appears to trend in a roughly east-west direction through a portion of the Happy-Feliz property. On the adjacent Golden Revenue Property of ATAC Resources, these contact zones are reported to host medium to large orebodies containing economic grades of Au-Ag.

The writer owns the property and has prepared this report for assessment filing purposes and to fulfill reporting requirements under the YMIP program.

B. Location and Access

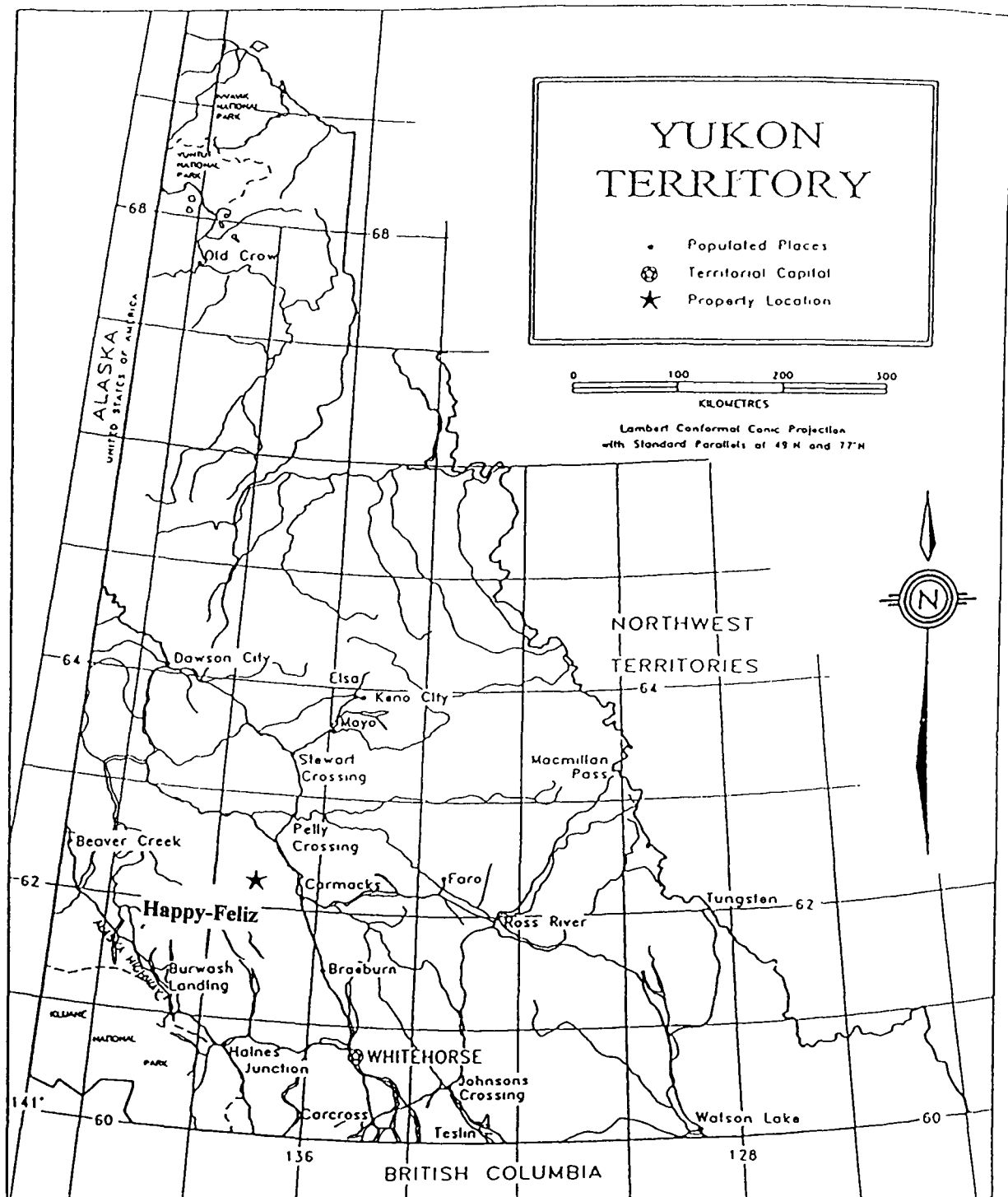
The property is located in the Dawson Range near Freegold Mountain, approximately 65 km northwest of Carmacks on NTS Map Sheet 115 I-6 at latitude 62°18'N and longitude 137°06'W in the Whitehorse Mining District of the Yukon Territory (Figure 1).

The claims are accessible via the Klondike Highway to Carmacks, then approximately 75 km along the Freegold Road, a government maintained gravel road. The property is located along the north side of the Freegold Road, where it parallels Big Creek, and is accessible via 4 x 4 roads (Happy Creek and Boliden Creek) from that point.

C. Physiography

The property is located within the Dawson Range of the Yukon Plateau. The Mt Freegold summit has an elevation of 1,453 metres (4,766 feet). The claims are located at elevations between 2200 to 4000 feet.

Vegetation includes timbered valleys dominated by conifers with some birch and cottonwood to an approximate elevation of 1,066 metres (3,500 feet). Alpine grass and moss with some sparse tree cover is found on hilltops and ridges. Alder, poplar and thick moss cover is confined to flat areas of slow drainage. Permafrost is usually found at depths > 10 metres on north facing slopes.



Bill Harris		
LOCATION MAP		
Happy-Feliz Property		
Scale 1:6,000,000		Date Jan 2003
NTS 115 I/06		Figure 1

D. Property/Claim Summary

The Happy Property consists of the following quartz claims

Claim Name	Grant Number	Expiry Date	Claim Owner
Happy 1-6	YC19282-87	June 19, 2003	Bill Harris
Happy 7-8	YC19288-89	June 19, 2005	Bill Harris
Feliz 1-4	YC 19290-93	June 19, 2004	Bill Harris
Feliz 5-10	YC19655-60	Oct 8, 2003	Bill Harris
Feliz 25-29	YC19661-65	Oct 8, 2003	Bill Harris

Figure 2 shows the location of these claims

E. History

Prospector P F Guder first discovered gold bearing rock on the west side of Freegold Mountain in 1930. He located the Augusta claim over an auriferous magnetite showing and proceeded to dig hand pits and shafts along the structure. On hearing of the find, prospectors rushed into the region, staking over 100 claims in the autumn and winter of 1930-31.

The Laforma quartz vein was discovered on the southeast side of Freegold Mountain and was developed by the N A Timmins Corporation from 1934-1935. In 1935 the Yukon Consolidated Gold Corporation acquired the Laforma property and continued the underground development.

Seymour, Cabin and Caribou Creeks were first prospected for placer gold in 1931 by Guder and associates. They sunk numerous shafts along the narrow steep sided valleys. On finding boulders of quartz containing visible gold at the bottom of a small gulch (Rabbit Gulch) they began trenching the side hill. The bedrock source was located on Caribou Creek and staked in 1937 by W Teare. A gravity fed stamp mill was constructed to process hand picked ore from an open cut and adit. In 1938 twelve tons of high grade quartz was milled, producing 88 ounces of gold.

The property was originally staked by P F Guder as the Happy claims in 1954, and were restaked as the Happy claims again by Guder in 1964 and 1976. The claims were hand trenched in 1978-79 by Yukon Revenue Mines Limited, and then transferred to Guder Mining Exploration Limited with subsequent trenching in 1982 and 1986. The property was tied on to the east in 1974 by Shakwak Exploration Company Limited who carried out mapping and geochemical sampling. The Big Creek Joint Venture (Big Creek Resources Limited and Rexford Minerals Limited) tied on the Angus Claims to the north in 1987.

The claims were restaked as the Happy in 1993 by Harris and Associates Exploration. During the 1993 field season a small program of prospecting, soil sampling and rock sampling was undertaken on the Happy property under a YMIP grant. Several pits were also blasted along Happy Creek in areas of quartz-carbonate veining in felsite porphyry.

**MIDNIGHT MINES
HAPPY/FELIZ PROPERTY
CLAIM LOCATION MAP
FIGURE 2
NTS 115 I/6
Scale: 1:20000**

Aurora Geoscience Ltd

Figure 2

Several spot highs in gold (to >6667 ppb gold) and a weak arsenic-gold anomaly were detected. One rock sample from one of the blast pits ran 2673 ppb gold with anomalous silver and arsenic. During a 1986 property visit, Noranda Exploration sampled an outcrop approximately 100 metres west of the blast pit location and upslope of it which ran 1200 ppb gold.

Since 1993, the claims have lapsed and been restaked as the Happy 1-8, and Feliz 1-10, and Feliz 25-29 are presently located over former "ACK" claims that had been part of the Stoddart Property, held by Archer, Cathro & Associates (1981) Limited.

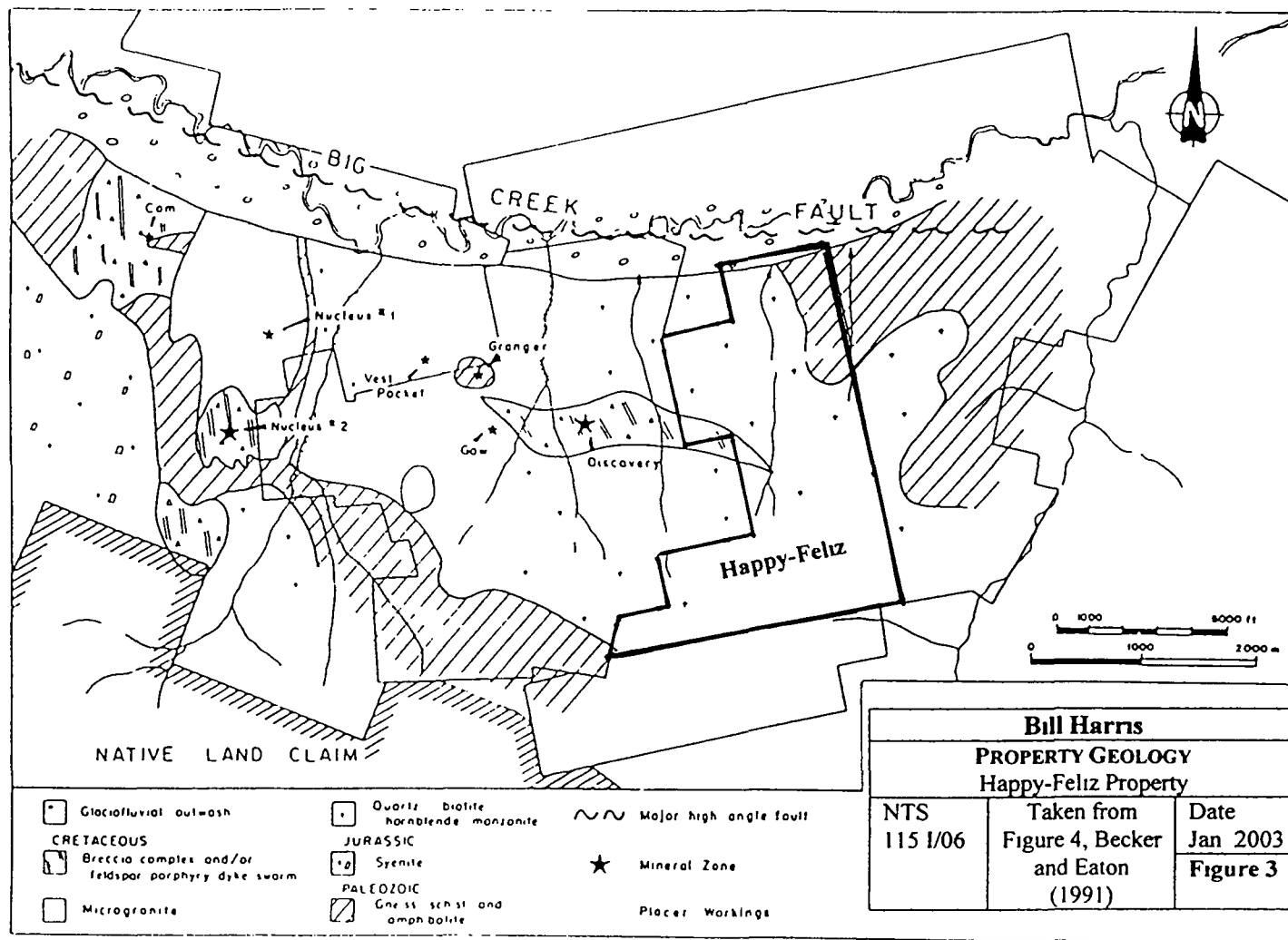
Geology

A. Regional Geology

The Happy-Feliz property is located immediately south of the Big Creek Fault, a northwest trending regional structure believed to be a major structural control for mineralization in the area. Bedrock is predominantly Mesozoic-aged plutonic rock. Basement rock consists of Paleozoic gneiss and schist of the Yukon-Tanana Terrane. There are two distinct foliated igneous masses of Triassic to Jurassic age termed the Klotassin Suite (granodioritic) and Big Creek Suite (syenitic). Early Cretaceous-aged intrusions include the Mt. Nansen Suite (andesitic with felsic components) and the co-magmatic Dawson Batholith (Coffee Creek Granite and Casino Granodiorite). The Late Cretaceous Carmacks Volcanic Suite is comprised of dikes and flows that often form resistant caps along ridge tops and valley slopes. A high level felsic intrusive identified during government mapping (Carlson, 1987) pre-dates the Carmacks Volcanic event and is seen cutting Nansen aged volcanics. This intrusion has been termed the Bow Creek Granite and is characterized by its fine grain size and characteristic salmon pink to buff colour. A small body of this pluton can be seen outcropping at Guder Junction. There are numerous quartz and quartz feldspar porphyry dikes mapped within the area that can be correlated to either the Nansen episode or the later Bow Creek Granite. Mineralization is often associated with these dikes.

B. Property Geology and Mineralization

The claims are underlain by Mesozoic plutonic rocks of the Yukon Crystalline Terrain intruded and overlain by Cretaceous and Eocene igneous rocks of the Mount Nansen Group (Davidson, 1994). The geology on the Happy-Feliz Property is similar to the geology found on adjacent properties. The breccia pipe unit that hosts the Discovery, Guder, Klaus and Gow zones on the Revenue Property, trends into the upper reaches of Happy Creek and onto the Happy-Feliz Property. Becker and Eaton (1991) described the property geology on the Revenue-Nucleus Property, located directly west of the Happy-Feliz Property of present day. Figure 3 has been modified from Becker and Eaton to show the present location of the Happy-Feliz Property.



The following excerpt is from Becker and Eaton (1991)

The basement metamorphic assemblage consists of Paleozoic or older metasedimentary and metaplutonic rocks including quartz-feldspar-mica schist, quartz-feldspar-chlorite gneiss, quartz-feldspar gneiss, amphibolite, quartzite and rare limestone lenses. All rocks have distinct foliation, weather recessively and show alteration of mica, feldspars and mafic minerals to clay and chlorite within the supergene zone and adjacent to intrusive bodies. On the property, metamorphic rocks occur as large roof pendants and smaller xenoliths.

Big Creek Syenite is Jurassic in age and forms a large batholith in the southwestern part of the Nucleus claim block. It is resistant to weathering, coarse grained and often porphyritic, and is comprised primarily of orthoclase and hornblende. No syenite xenoliths have been seen in the younger igneous complex, suggesting that the two units may be in fault contact.

The oldest rocks of the Cretaceous igneous complex belong to the Coffee Creek Granite and Casino Granodiorite. These units are both medium to coarse-grained, equigranular, and non-foliated. The Coffee Creek Granite is restricted to the northern edge of the property and is a mixture of orthoclase, plagioclase and quartz with rare mafic minerals. The Casino Granodiorite occurs throughout the property and is more variable in composition. In the western part, it is true granodiorite but, in the eastern part, it is actually monzonite ranging between two end members: one containing greater than 10% quartz with less than 5% biotite, and, the other little or no quartz and up to 15% biotite.

The youngest rocks are hypabyssal porphyritic intrusions that occur as dykes and plugs throughout the property. They are variable in composition ranging from quartz-feldspar porphyry through feldspar porphyry to feldspar-biotite-hornblende porphyry. In the main areas of interest on the Nucleus property (Nucleus #1 and #2 zones), the porphyry forms a sheeted dyke complex and consists of 5 to 15% feldspar and quartz phenocrysts in a tan, nearly aphanitic, locally flow banded matrix. Argillic alteration of feldspar is common. The dykes cut all other units and are often too narrow to show on property-scale maps.

An enigmatic breccia body, some 2000 m long and up to 450 m wide, is developed in the east-central part of the Revenue claim group. It consists of rounded to subangular, pebble- to cobble-sized fragments in a crushed matrix of similar material. Most fragments are comprised of feldspar porphyry but other units, notably monzonite, are also present. Some mappers have categorized the breccia as a tuff, based on possible graded bedding, however, field relationships suggest it is more likely a subvolcanic breccia pipe. Copper-gold mineralization occurs within the breccia body and along its margins.

Copper and gold anomalies extend across the Revenue Creek property, trending in the same orientation as the breccia pipe body seen on the generalized geology map. The stronger mineralization on the adjacent property seems to be related to the northern boundary of the breccia unit and the location of the higher grade assays on the Happy Property are also found on what would seem to be this northern boundary.

Total magnetic and VLF-EM conducted by Amerok Geophysics Ltd on the adjacent Revenue Creek property for YKR International Resources Ltd located structures or rock units which hosted gold mineralization (Davis, 1998)

During 2001 Atac Resources Ltd drilled six holes into the adjacent Golden Revenue Property (comprised of claims covering Boliden, Revenue, Mechanic and No Name Creek drainages) testing for gold beneath the oxide cap in fresh rock. These holes showed that the distribution of gold appears to be primarily controlled by proximity to a series of en echelon, moderately east dipping quartz-feldspar porphyry dykes. The best gold grades and highest concentrations of sulphide minerals are found in hangingwall rocks adjacent to the dykes, in breccia zones developed along their apices and locally within the dykes. Preliminary statistical analysis on this drilling suggests that bismuth is the only metal that is well correlated to gold. However, prior work by YKR International Resources indicates that tungsten is also well correlated to gold.

Under a previous YMIP grant (1993), a small program of prospecting, soil sampling and rock sampling was undertaken on the Happy property. Several pits were also blasted along Happy Creek in areas where quartz-carbonate veining was found within felsite porphyry. Several spot highs in gold (to >6667 ppb gold) and a weak arsenic-gold anomaly were detected. One rock sample from one of the blast pits ran 2673 ppb gold with anomalous silver and arsenic. During a 1986 property visit, Noranda Exploration obtained 1200 ppb gold in a sample from outcrop located approximately 100 metres west and upslope of the blast pit location.

Two creeks, cutting through the Happy-Feliz property (Happy and Boliden creeks) host producing placer operations. While neither creek has been as productive as Revenue Creek (>27,000 oz gold), they have been in continuous production for several years. Both creeks have been found to carry high bismuth, tungsten and black sands, similar to Revenue and Mechanic Creeks to the west.

Guder originally found gold-bearing quartz float while placer mining and staked the Happy claims while searching for the source. A showing containing galena and sphalerite was reportedly found by Yukon Revenue Mines Limited.

2002 Work Program

Geophysics

A. Personnel and Equipment

The total field magnetic and VLF-EM surveys were conducted during two field trips to the property. The first crew consisted of Mike Powers of Aurora Geosciences working with and supervising Bill Harris and Tom Morgan as geophysical technicians. This program was conducted between December 20-24, 2002. The second crew consisted of Farrell Anderson of Aurora Geosciences and Tom Morgan as geophysical technicians, supervised by Bill Harris. The two crews used the following equipment:

Crew 1

Instruments:	1 Scintrex Omnipuls Proton Magnetometer 1 Scintrex Omni IV Gradiometer 1 GEM-GSM-19 Proton Magnetometer
Data Processing	Laptop Computer and Colour Printer
Other	1 ¾ Ton Chev 4 x 4 1 3500 Chev 1 Ton 4 x 4 1 F250 Ford ¾ Ton 4 x 4 1 Polaris Diesel 4 X 4 ATV 1 Honda 4Trax 4 x 4 ATV 1 ATV Trailer Genset

Crew 2

Instruments	1 Scintrex Omnipuls Proton Magnetometer/VLF-EM 1 Scintrex Omni IV Gradiometer/Proton Magnetometer 2 GEM GSM-19 Magnetometers
Data Processing	Laptop Computer and Colour Printer
Other	1 ¾ Ton Chev 4 x 4 1 F250 Ford ¾ Ton 4 x 4 1 Polaris Diesel 4 X 4 ATV 1 Honda 4Trax 4 x 4 ATV Genset 2 Arctic Cat snowmobile and toboggan 1 snowmobile trailer

B. Grid and Survey Procedure

The survey was conducted over a portion of a prepared grid on the Happy-Feliz Property, from its extreme western edge in the Boliden Creek valley to the right limit side of Happy Creek valley. A 1.5 km baseline (5000m N) was cut on a bearing of 80° with axe, machete and chainsaw and stations were marked every 25 metres with pickets. A total of 45 line kilometers of flaglines were cut in with axe and machete perpendicular to the

baseline and flagged every 25 metres, such flagged stations identified with felt marker L 4000 m E x 5000 m N is located in a placer cut in Bolden Creek and L5500 E x 5000 N is located on a road accessing Happy Creek from the Revenue Creek Trail, along the right limit ridge of Happy Creek valley. Geophysical readings were taken at 12.5 metre intervals along 50 metre spaced lines. Three VLF-EM signals were measured at 12.5 metre intervals along 100 metre spaced lines. The VLF signals used are

- Lualualei, Hawaii, USA at 23.4 KHz,
- Jim Creek, Washington USA at 24.8 KHz, and
- Cutler Maine, USA at 24.0 KHz

C. Geophysical Data Presentation and Format

A hard copy of the data can be found in Appendix A. Also appended to this report are contoured maps of the total magnetic field and VLF-EM profiles. These maps are overlaying a map of the survey grid (Figures 4 and 5 in pocket). A floppy disc containing a copy of the geophysical survey data can also be found in the pocket in the back of the report.

D. Geochemical Survey

In the original plan of the exploration program it was intended for the geophysics to be completed early in the field season and followed up with geochemical sampling of the prepared grid. This would have enabled a geologist to visit the property at a later date and map the geology, noting outcrops, trench locations and sample locations, etc. on the grid. However, the detailed geochemical soil survey, proposed for the property to identify Au-Ag soil anomalies coincident with geophysical anomalies, was impossible to carry out because the geophysical equipment was not in working order earlier in the field season and was then not available until late December, at which time the ground was too frozen to permit sampling.

Instead, a line of soil samples were taken along a road-cut accessing Happy Creek along its right limit ridge. Another line was taken along a bulldozer trench along the left limit of Happy Creek valley, above and upstream of the placer workings in the creek. The line along the road cut was approximately 500 metres long (20 samples @ 50 m spacings) and the bulldozer trench line was approximately 900 metres long (35 samples @ 50 metre spacings). These were the only areas where it was possible to sample below the ash layer, ubiquitous to the region, in early winter. A map showing the location of the soil samples is located in the pocket in the back of the report (Figure 6) and their analyses can be found in Appendix C.

E. Prospecting

During the program, prospectors mapped, sampled and positioned, with hand-held GPS, road cuts, active placer mining cuts, old cat pits and old hand pits and trenches. Traverses along ridge crests and creek watercourses were attempted to try and find bedrock exposures. Outcrop was located and investigated mainly along south and west facing slopes and ridge crests. Some of the outcrops were sampled and analyses and sample descriptions can be found in Appendix C. See Figure 6 in the pocket at the back of the report for rock sample locations.

F. Geophysical Survey Results

The geophysical survey data is included in Appendix I. The magnetic field data is in the following format:

Line	Station	nad27E	nad 27N	Mag (nT)
------	---------	--------	---------	----------

where Mag is corrected to the base station readings and leveled between operators/instruments and different days operation. On January 22, the base station stopped operating prior to commencing the survey so field readings for this day were corrected manually by estimation. This affected all of the lines 4550E, 4650E and 4750E. The VLF-EM data is in the following format.

Line	Station	InPhase	Quadrature	Total Field	Direction
------	---------	---------	------------	-------------	-----------

where the in-phase and quadrature components in percent and Direction is the apparent station azimuth in degrees

The following plots at 1:5000 are appended to this report in the back pockets.

Figure 4	Shaded Relief Total Magnetic Field
Figure 5A	VLF-EM stacked profiles – Seattle
Figure 5B	VLF-EM Fraser filter in-phase – Cutler
Figure 5C	VLF-EM stacked profiles – Hawaii

The general trend of the total magnetic field consists of an east-west trending, broad high on the northern part of the grid, grading to a low on the southern part of the grid. A strong north-south trending linear magnetic high occurs on line 4650E and another weakly on line 4850E on the southern part of the grid. This part of the grid has a striped pattern, which is suspicious due to problems with the base station while surveying in this area. Through this, however, a weak northwest-southeast-trending pattern is observable in the southern and central parts of the grid, and may represent dykes in the area.

The VLF-EM data was interpreted by examining the stacked profiles to identify responses, which appeared to arise from bedrock conductors. The data for Seattle was generally good, however, the data for Cutler and Hawaii was noisy and required some cleaning-up. On the Hawaii plot all data for line 4800E was omitted because it was too noisy. No anomalous responses were observed from any of the three frequencies.

Conclusions and Recommendations

The 2002-2003 exploration program on the Happy-Feliz property consisted of prospecting, linecutting, flagline grid construction, geochemical sampling and total field magnetic and VLF-EM surveying. The original plan of the exploration program was intended for the geophysics to be completed early in the field season and followed up with geochemical sampling of the prepared grid. This would have enabled a geologist to visit the property at a later date and map the geology, noting outcrops, trench locations and sample locations, etc. on the grid. However, the detailed geochemical soil survey, proposed for the property to identify Au-Ag soil anomalies coincident with geophysical anomalies, was impossible to carry out because the geophysical equipment was not in working order earlier in the field season and was then not available until late December, at which time the ground was too frozen to permit soil sampling.

Linecutting and flagline grid preparation was begun in early June 2002 in conjunction with prospecting traverses. Prospectors were successful in locating a new showing on the ridge crest between Boliden and Happy Creeks. A total of 6 rock samples were collected in a possible "breccia" zone. Two of the samples (206356 and 206357) returned strongly anomalous gold results (242 and 683 ppb Au). The sample with the 683 ppb Au value also returned elevated bismuth of 109 ppm. One of the additional samples on the ridge (206353) returned 34 ppb Au, and 54 ppm Bi. Sample 206354, located south of 206356 was described as being representative of a chilled margin. Drilling conducted by Atac Resources Ltd. on the adjacent Golden Revenue Property indicated a possibility of bismuth being correlated with gold.

The soil samples collected further east of the rock samples returned results less than 2 ppm gold. Unfortunately these samples were not fire assayed, and as such, their detection limit was 200 ppb gold. These samples were collected adjacent to an area which had produced several anomalous values including a value of >6667 ppb gold in a soil sample taken in 1993, as well as an area where rock samples had produced 1200 ppb gold, and 2673 ppb gold with anomalous silver and arsenic.

The magnetic field survey detected a gradient from high in the northern part of the grid to low in the southern part of the grid. In the central and southern part of the grid weak northwest-southeast trending linears are observed. The VLF-EM survey did not identify any anomalous conductors.

Induced polarization (IP) surveys have been successfully used in the region to identify mineralized bodies consisting of disseminated sulphide mineralization. It is recommended a program of IP be conducted over the Happy-Feliz grid. Once these results are completed, and interpreted with the magnetic field survey, a sampling program of soils and rocks, and geological mapping should be undertaken over the property. Detailed sampling should follow up on the anomalous areas as determined from the IP, magnetometer and previous successful soil geochemical surveys and bedrock sampling.

Certificate

I, BILL GLEN HARRIS, of the City of Whitehorse, in the Yukon Territory, HEREBY CERTIFY

- 1 That I am a prospector and that I am familiar with the property area.
- 2 That I have been engaged in mineral exploration and development on a full time basis for 20 years in the Yukon and British Columbia
- 3 That I am the president of Midnight Mines Ltd , and the owner of the Happy-Feliz Property

SIGNED at Whitehorse, Yukon this 31st day of January, 2003



Bill G Harris

References

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- Eaton, W D., 1985. Geological and Geochemical Report on the Stoddart Property for Archer, Cathro & Associates (1981) Limited (Assessment Report #091823)
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- Main, C A., and Duke, J L , 1988 Report on Trenching Program and Geophysical Survey, Revenue Property, Revenue Creek, Yukon Territory, Big Creek Joint Venture (Assessment Report #092131)
- McFaull, J , 1997 Compilation Report on the Revenue Creek Property for Yukon Revenue Mines Limited (Assessment Report #093742)

Appendix A

Geophysical Survey Data

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4100	4500	383438	6912842	57102 41
4100	4512 5	383435 5	6912854	57067 91
4100	4525	383433	6912866	57057 31
4100	4537 5	383430 5	6912878	57079 91
4100	4550	383428	6912890	57078 71
4100	4562 5	383425 5	6912902	57081 11
4100	4575	383423	6912914	57072 71
4100	4587 5	383420 5	6912926	57078 51
4100	4600	383418	6912938	57090 91
4100	4612 5	383415 5	6912950	57089 81
4100	4625	383413	6912962	57087 01
4100	4637 5	383410 5	6912974	57106 11
4100	4650	383408	6912986	57125 21
4100	4662 5	383405 5	6912998	57098 21
4100	4675	383403	6913010	57091 11
4100	4687 5	383400 5	6913022	57090 51
4100	4700	383398	6913034	57093 51
4100	4712 5	383395 5	6913046	57099 41
4100	4725	383393	6913058	57096 41
4100	4737 5	383390 5	6913070	57089 01
4100	4750	383388	6913082	57085 81
4100	4762 5	383385 5	6913094	57107 11
4100	4775	383383	6913106	57111 71
4100	4787 5	383380 5	6913118	57109 21
4100	4800	383378	6913130	57103 21
4100	4812 5	383375 5	6913142	57098 01
4100	4825	383373	6913154	57099 11
4100	4837 5	383370 5	6913166	57109 51
4100	4850	383368	6913178	57099 41
4100	4862 5	383365 5	6913190	57105 21
4100	4875	383363	6913202	57109 21
4100	4887 5	383360 5	6913214	57108 51
4100	4900	383358	6913226	57104 01
4100	4912 5	383355 5	6913238	57115 81
4100	4925	383353	6913250	57115 81
4100	4937 5	383350 5	6913262	57118 41
4100	4950	383348	6913274	57116 11
4100	4962 5	383345 5	6913286	57114 31
4100	4975	383343	6913298	57119 81
4100	4987 5	383340 5	6913310	57113 41
4100	5000	383338	6913322	57124 61
4100	5012 5	383335 5	6913334	57146 31
4100	5025	383333	6913346	57152 01

Line	Station	nad27 E	nad27 N	Mag (nT)
4100	5037 5	383330 5	6913358	57143 71
4100	5050	383328	6913370	57153 51
4100	5062 5	383325 5	6913382	57149 81
4100	5075	383323	6913394	57165 51
4100	5087 5	383320 5	6913406	57138 31
4100	5100	383318	6913418	57151 31
4100	5112 5	383315 5	6913430	57145 11
4100	5125	383313	6913442	57163 71
4100	5137 5	383310 5	6913454	57165 81
4100	5150	383308	6913466	57149 01
4100	5162 5	383305 5	6913478	57164 31
4100	5175	383303	6913490	57154 71
4100	5187 5	383300 5	6913502	57168 51
4100	5200	383298	6913514	57164 71
4100	5212 5	383295 5	6913526	57194 51
4100	5225	383293	6913538	57179 61
4100	5237 5	383290 5	6913550	57169 21
4100	5250	383288	6913562	57186 01
4100	5262 5	383285 5	6913574	57186 61
4100	5275	383283	6913586	57183 61
4100	5287 5	383280 5	6913598	57184 01
4100	5300	383278	6913610	57195 21
4100	5312 5	383275 5	6913622	57179 31
4100	5325	383273	6913634	57199 71
4100	5337 5	383270 5	6913646	57186 81
4100	5350	383268	6913658	57179 41
4100	5362 5	383265 5	6913670	57219 71
4100	5375	383263	6913682	57233 11
4100	5387 5	383260 5	6913694	57187 01
4100	5400	383258	6913706	57237 11
4100	5412 5	383255 5	6913718	57191 71
4100	5425	383253	6913730	57204 11
4100	5437 5	383250 5	6913742	57167 31
4100	5450	383248	6913754	57172 11
4100	5462 5	383245 5	6913766	57220 51
4100	5475	383243	6913778	57215 11
4100	5487 5	383240 5	6913790	57215 51
4100	5500	383238	6913802	57222 81
4100	5512 5	383235 5	6913814	57154 61
4100	5525	383233	6913826	57159 21
4100	5537 5	383230 5	6913838	57142 51
4100	5550	383228	6913850	57153 11
4100	5562 5	383225 5	6913862	57170 41

Line	Station	nad27 E	nad27 N	Mag (nT)
4100	5575	383223	6913874	57174 71
4100	5587 5	383220 5	6913886	57192 01
4100	5600	383218	6913898	57177 61
4100	5612 5	383215 5	6913910	57135 01
4100	5625	383213	6913922	57131 51
4100	5637 5	383210 5	6913934	57149 21
4100	5650	383208	6913946	57154 31
4100	5662 5	383205 5	6913958	57156 51
4100	5675	383203	6913970	57147 51
4100	5687 5	383200 5	6913982	57159 11
4100	5700	383198	6913994	57163 01
4100	5712 5	383195 5	6914006	57182 81
4100	5725	383193	6914018	57117 61
4100	5737 5	383190 5	6914030	57122 21
4100	5750	383188	6914042	57119 11
4150	4500	383532 1	6912778 2	57061 6
4150	4512 5	383530	6912790 4	57043 6
4150	4525	383527 8	6912802 7	57051 3
4150	4537 5	383525 7	6912814 9	57069
4150	4550	383523 5	6912827 2	57072 2
4150	4562 5	383521 4	6912839 5	57083 8
4150	4575	383519 2	6912851 7	57089 8
4150	4587 5	383517 1	6912864	57106 7
4150	4600	383514 9	6912876 2	57084 2
4150	4612 5	383512 8	6912888 5	57080 5
4150	4625	383510 6	6912900 8	57080 6
4150	4637 5	383508 5	6912913	57101 3
4150	4650	383506 3	6912925 3	57109 6
4150	4662 5	383504 2	6912937 5	57096 3
4150	4675	383502	6912949 8	57105 9
4150	4687 5	383499 9	6912962	57095 9
4150	4700	383497 7	6912974 3	57093 4
4150	4712 5	383495 6	6912986 6	57105 3
4150	4725	383493 4	6912998 8	57153 7
4150	4737 5	383491 2	6913011 1	57139 9
4150	4750	383489 1	6913023 3	57118 1
4150	4762 5	383486 9	6913035 6	57173 6
4150	4775	383484 8	6913047 9	57142 5
4150	4787 5	383482 6	6913060 1	57147 7
4150	4800	383480 5	6913072 4	57189 7
4150	4812 5	383478 3	6913084 6	57191
4150	4825	383476 2	6913096 9	57183 1
4150	4837 5	383474	6913109 1	57159 9

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4150	4850	383471 9	6913121 4	57155 5
4150	4862 5	383469 7	6913133 7	57150
4150	4875	383467 6	6913145 9	57136 9
4150	4887 5	383465 4	6913158 2	57137 5
4150	4900	383463 3	6913170 4	57137 2
4150	4912 5	383461 1	6913182 7	57146
4150	4925	383459	6913195	57133 5
4150	4937 5	383456 8	6913207 2	57126 8
4150	4950	383454 7	6913219 5	57132
4150	4962 5	383452 5	6913231 7	57131 4
4150	4975	383450 4	6913244	57127 5
4150	4987 5	383448 2	6913256 2	57134 6
4150	5000	383446 1	6913268 5	57129 2
4150	5012 5	383443 9	6913280 8	57138 6
4150	5025	383441 8	6913293	57130 5
4150	5037 5	383439 6	6913305 3	57138 3
4150	5050	383437 5	6913317 5	57129 5
4150	5062 5	383435 3	6913329 8	57130 3
4150	5075	383433 2	6913342 1	57132 5
4150	5087 5	383431	6913354 3	57134 8
4150	5100	383428 9	6913366 6	57137 2
4150	5112 5	383426 7	6913378 8	57142 5
4150	5125	383424 6	6913391 1	57139 4
4150	5137 5	383422 4	6913403 3	57141 7
4150	5150	383420 3	6913415 6	57144 7
4150	5162 5	383418 1	6913427 9	57149 2
4150	5175	383416	6913440 1	57146
4150	5187 5	383413 8	6913452 4	57148 3
4150	5200	383411 7	6913464 6	57144 2
4150	5212 5	383409 5	6913476 9	57149 2
4150	5225	383407 4	6913489 2	57153 2
4150	5237 5	383405 2	6913501 4	57150 6
4150	5250	383403	6913513 7	57152 4
4150	5262 5	383400 9	6913525 9	57156 6
4150	5275	383398 7	6913538 2	57159 8
4150	5287 5	383396 6	6913550 4	57165
4150	5300	383394 4	6913562 7	57162 9
4150	5312 5	383392 3	6913575	57161
4150	5325	383390 1	6913587 2	57176 4
4150	5337 5	383388	6913599 5	57170 3
4150	5350	383385 8	6913611 7	57185 2
4150	5362 5	383383 7	6913624	57188 7
4150	5375	383381 5	6913636 3	57189

Line	Station	nad27 E	nad27 N	Mag (nT)
4150	5387 5	383379 4	6913648 5	57193 6
4150	5400	383377 2	6913660 8	57200
4150	5412 5	383375 1	6913673	57196
4150	5425	383372 9	6913685 3	57206 5
4150	5437 5	383370 8	6913697 5	57233 1
4150	5450	383368 6	6913709 8	57190 7
4150	5462 5	383366 5	6913722 1	57184 2
4150	5475	383364 3	6913734 3	57176 8
4150	5487 5	383362 2	6913746 6	57182 6
4150	5500	383360	6913758 8	57171
4150	5512 5	383357 9	6913771 1	57185 2
4150	5525	383355 7	6913783 4	57210
4150	5537 5	383353 6	6913795 6	57222 7
4150	5550	383351 4	6913807 9	57225 9
4150	5562 5	383349 3	6913820 1	57175 2
4150	5575	383347 1	6913832 4	57198 1
4150	5587 5	383345	6913844 6	57231 6
4150	5600	383342 8	6913856 9	57168 6
4150	5612 5	383340 7	6913869 2	57229 4
4150	5625	383338 5	6913881 4	57147 6
4150	5637 5	383336 4	6913893 7	57124 6
4150	5650	383334 2	6913905 9	57110
4150	5662 5	383332 1	6913918 2	57134
4150	5675	383329 9	6913930 5	57149 8
4150	5687 5	383327 8	6913942 7	57180 2
4150	5700	383325 6	6913955	57145 2
4150	5712 5	383323 5	6913967 2	57155 5
4150	5725	383321 3	6913979 5	57073 5
4150	5737 5	383319 2	6913991 7	57089 8
4150	5750	383317	6914004	57121
4200	4500	383578	6912848	57099 21
4200	4512 5	383575 3	6912860 1	57086 01
4200	4525	383572 7	6912872 3	57092 61
4200	4537 5	383570	6912884 4	57087 71
4200	4550	383567 4	6912896 5	57074 51
4200	4562 5	383564 8	6912908 6	57092 21
4200	4575	383562 1	6912920 8	57085 21
4200	4587 5	383559 5	6912932 9	57103 31
4200	4600	383556 8	6912945	57094 81
4200	4612 5	383554 2	6912957 1	57107 21
4200	4625	383551 5	6912969 3	57122 21
4200	4637 5	383548 8	6912981 4	57112 01
4200	4650	383546 2	6912993 5	57106 91

Line	Station	nad27 E	nad27 N	Mag (nT)
4200	4662 5	383543 5	6913005 6	57107 31
4200	4675	383540 9	6913017 8	57100 21
4200	4687 5	383538 3	6913029 9	57106 91
4200	4700	383535 6	6913042	57113 01
4200	4712 5	383533	6913054 1	57112 31
4200	4725	383530 3	6913066 3	57123 21
4200	4737 5	383527 7	6913078 4	57164 51
4200	4750	383525	6913090 5	57182 61
4200	4762 5	383522 3	6913102 6	57194 21
4200	4775	383519 7	6913114 8	57227 91
4200	4787 5	383517	6913126 9	57239 41
4200	4800	383514 4	6913139	57232 11
4200	4812 5	383511 8	6913151 1	57233 41
4200	4825	383509 1	6913163 3	57211 81
4200	4837 5	383506 5	6913175 4	57189 21
4200	4850	383503 8	6913187 5	57168 31
4200	4862 5	383501 2	6913199 6	57156 51
4200	4875	383498 5	6913211 8	57157 91
4200	4887 5	383495 8	6913223 9	57155 91
4200	4900	383493 2	6913236	57170 81
4200	4912 5	383490 5	6913248 1	57168 61
4200	4925	383487 9	6913260 3	57146 41
4200	4937 5	383485 3	6913272 4	57164 01
4200	4950	383482 6	6913284 5	57156 61
4200	4962 5	383480	6913296 6	57142 11
4200	4975	383477 3	6913308 8	57144 31
4200	4987 5	383474 7	6913320 9	57132 61
4200	5000	383472	6913333	57153 71
4200	5012 5	383470 2	6913344 3	57139 5
4200	5025	383468 5	6913355 6	57149 3
4200	5037 5	383466 7	6913366 9	57142 1
4200	5050	383464 9	6913378 2	57147 5
4200	5062 5	383463 2	6913389 5	57144 3
4200	5075	383461 4	6913400 8	57144 9
4200	5087 5	383459 6	6913412 1	57153 5
4200	5100	383457 9	6913423 4	57150 9
4200	5112 5	383456 1	6913434 7	57139 7
4200	5125	383454 3	6913446	57143 5
4200	5137 5	383452 6	6913457 3	57147 2
4200	5150	383450 8	6913468 6	57149 9
4200	5162 5	383449	6913479 9	57149 8
4200	5175	383447 3	6913491 2	57147 7
4200	5187 5	383445 5	6913502 5	57153

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4200	5200	383443 7	6913513 8	57151 1
4200	5212 5	383442	6913525 1	57157 1
4200	5225	383440 2	6913536 4	57156 3
4200	5237 5	383438 4	6913547 7	57154 8
4200	5250	383436 7	6913559	57156 6
4200	5262 5	383434 9	6913570 3	57160 4
4200	5275	383433 1	6913581 6	57163 61
4200	5287 5	383431 4	6913592 9	57160 01
4200	5300	383429 6	6913604 2	57155 81
4200	5312 5	383427 8	6913615 5	57157 81
4200	5325	383426 1	6913626 8	57159 21
4200	5337 5	383424 3	6913638 1	57158 71
4200	5350	383422 5	6913649 4	57165 01
4200	5362 5	383420 8	6913660 7	57165 61
4200	5375	383419	6913672	57186 51
4200	5387 5	383417 2	6913683 3	57177 91
4200	5400	383415 5	6913694 6	57186 31
4200	5412 5	383413 7	6913705 9	57180 51
4200	5425	383411 9	6913717 2	57184 91
4200	5437 5	383410 2	6913728 5	57204 11
4200	5450	383408 4	6913739 8	57214 11
4200	5462 5	383406 6	6913751 1	57198 31
4200	5475	383404 9	6913762 4	57193 81
4200	5487 5	383403 1	6913773 7	57194 61
4200	5500	383401 3	6913785	57191 51
4200	5512 5	383399 6	6913796 3	57202 81
4200	5525	383397 8	6913807 6	57190 61
4200	5537 5	383396	6913818 9	57198 91
4200	5550	383394 3	6913830 2	57173 41
4200	5562 5	383392 5	6913841 5	57180 61
4200	5575	383390 7	6913852 8	57178 91
4200	5587 5	383389	6913864 1	57229 81
4200	5600	383387 2	6913875 4	57166 51
4200	5612 5	383385 4	6913886 7	57135 71
4200	5625	383383 7	6913898	57108 11
4200	5637 5	383381 9	6913909 3	57123 41
4200	5650	383380 1	6913920 6	57134 31
4200	5662 5	383378 4	6913931 9	57147 41
4200	5675	383376 6	6913943 2	57155 91
4200	5687 5	383374 8	6913954 5	57089 41
4200	5700	383373 1	6913965 8	57092 71
4200	5712 5	383371 3	6913977 1	57076 11
4200	5725	383369 5	6913988 4	57082 81

Line	Station	nad27 E	nad27 N	Mag (nT)
4200	5737 5	383367 8	6913999 7	57082 31
4200	5750	383366	6914011	57110 31
4250	4500	383606	6912848	57072 9
4250	4512 5	383604	6912859 8	57073 3
4250	4525	383602 1	6912871 6	57098 9
4250	4537 5	383600 1	6912883 3	57128 9
4250	4550	383598 2	6912895 1	57098 6
4250	4562 5	383596 2	6912906 9	57095 3
4250	4575	383594 2	6912918 7	57095 6
4250	4587 5	383592 3	6912930 5	57089 6
4250	4600	383590 3	6912942 2	57089 5
4250	4612 5	383588 4	6912954	57095 5
4250	4625	383586 4	6912965 8	57094 3
4250	4637 5	383584 4	6912977 6	57094
4250	4650	383582 5	6912989 4	57104 5
4250	4662 5	383580 5	6913001 1	57102 8
4250	4675	383578 6	6913012 9	57100
4250	4687 5	383576 6	6913024 7	57102 4
4250	4700	383574 6	6913036 5	57106 5
4250	4712 5	383572 7	6913048 3	57116 4
4250	4725	383570 7	6913060	57127 9
4250	4737 5	383568 8	6913071 8	57129 8
4250	4750	383566 8	6913083 6	57126 9
4250	4762 5	383564 8	6913095 4	57116 9
4250	4775	383562 9	6913107 2	57130 3
4250	4787 5	383560 9	6913118 9	57142 7
4250	4800	383559	6913130 7	57146 1
4250	4812 5	383557	6913142 5	57148 3
4250	4825	383555	6913154 3	57162 4
4250	4837 5	383553 1	6913166 1	57156 1
4250	4850	383551 1	6913177 8	57155 6
4250	4862 5	383549 2	6913189 6	57153 2
4250	4875	383547 2	6913201 4	57151 9
4250	4887 5	383545 2	6913213 2	57155 6
4250	4900	383543 3	6913225	57153 9
4250	4912 5	383541 3	6913236 7	57154 9
4250	4925	383539 4	6913248 5	57148
4250	4937 5	383537 4	6913260 3	57140 8
4250	4950	383535 4	6913272 1	57143 1
4250	4962 5	383533 5	6913283 9	57136 1
4250	4975	383531 5	6913295 6	57143 6
4250	4987 5	383529 6	6913307 4	57140 3
4250	5000	383527 6	6913319 2	57144 3

Line	Station	nad27 E	nad27 N	Mag (nT)
4250	5012 5	383525 6	6913331	57138 2
4250	5025	383523 7	6913342 8	57138 7
4250	5037 5	383521 7	6913354 5	57140 7
4250	5050	383519 8	6913366 3	57132 4
4250	5062 5	383517 8	6913378 1	57145 6
4250	5075	383515 8	6913389 9	57138 3
4250	5087 5	383513 9	6913401 7	57141 2
4250	5100	383511 9	6913413 4	57140 9
4250	5112 5	383510	6913425 2	57143 5
4250	5125	383508	6913437	57147 8
4250	5137 5	383506	6913448 8	57139 8
4250	5150	383504 1	6913460 6	57140 6
4250	5162 5	383502 1	6913472 3	57148 9
4250	5175	383500 2	6913484 1	57148 7
4250	5187 5	383498 2	6913495 9	57150 8
4250	5200	383496 2	6913507 7	57150 8
4250	5212 5	383494 3	6913519 5	57155 9
4250	5225	383492 3	6913531 2	57152 3
4250	5237 5	383490 4	6913543	57152 5
4250	5250	383488 4	6913554 8	57155 5
4250	5262 5	383486 4	6913566 6	57153 9
4250	5275	383484 5	6913578 4	57151 8
4250	5287 5	383482 5	6913590 1	57158 6
4250	5300	383480 6	6913601 9	57157 5
4250	5312 5	383478 6	6913613 7	57159 1
4250	5325	383476 6	6913625 5	57156 1
4250	5337 5	383474 7	6913637 3	57163 4
4250	5350	383472 7	6913649	57170 7
4250	5362 5	383470 8	6913660 8	57171 5
4250	5375	383468 8	6913672 6	57178 8
4250	5387 5	383466 8	6913684 4	57176 7
4250	5400	383464 9	6913696 2	57186 9
4250	5412 5	383462 9	6913707 9	57192 4
4250	5425	383461	6913719 7	57197 8
4250	5437 5	383459	6913731 5	57205 5
4250	5450	383457	6913743 3	57197 9
4250	5462 5	383455 1	6913755 1	57189 1
4250	5475	383453 1	6913766 8	57186 7
4250	5487 5	383451 2	6913778 6	57168 5
4250	5500	383449 2	6913790 4	57166 3
4250	5512 5	383447 2	6913802 2	57179 6
4250	5525	383445 3	6913814	57166 2
4250	5537 5	383443 3	6913825 7	57166 3

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4250	5550	383441 4	6913837 5	57158
4250	5562 5	383439 4	6913849 3	57141 4
4250	5575	383437 4	6913861 1	57138 5
4250	5587 5	383435 5	6913872 9	57135 8
4250	5600	383433 5	6913884 6	57110 5
4250	5612 5	383431 6	6913896 4	57111 4
4250	5625	383429 6	6913908 2	57110 3
4250	5637 5	383427 6	6913920	57118 3
4250	5650	383425 7	6913931 8	57117 7
4250	5662 5	383423 7	6913943 5	57115 6
4250	5675	383421 8	6913955 3	57107 8
4250	5687 5	383419 8	6913967 1	57103 8
4250	5700	383417 8	6913978 9	57104 4
4250	5712 5	383415 9	6913990 7	57098 8
4250	5725	383413 9	6914002 4	57116 2
4250	5737 5	383412	6914014 2	57128 5
4250	5750	383410	6914026	57128 4
4300	5000	383572	6913351	57150 6
4300	5012 5	383570 3	6913362 3	57139 5
4300	5025	383568 6	6913373 7	57149 3
4300	5037 5	383566 9	6913385	57142 1
4300	5050	383565 2	6913396 3	57147 5
4300	5062 5	383563 5	6913407 7	57144 3
4300	5075	383561 8	6913419	57144 9
4300	5087 5	383560 1	6913430 3	57153 5
4300	5100	383558 4	6913441 7	57150 9
4300	5112 5	383556 7	6913453	57139 7
4300	5125	383555	6913464 3	57143 5
4300	5137 5	383553 3	6913475 7	57147 2
4300	5150	383551 6	6913487	57149 9
4300	5162 5	383549 9	6913498 3	57149 8
4300	5175	383548 2	6913509 7	57147 7
4300	5187 5	383546 5	6913521	57153
4300	5200	383544 8	6913532 3	57151 1
4300	5212 5	383543 1	6913543 7	57157 1
4300	5225	383541 4	6913555	57156 3
4300	5237 5	383539 7	6913566 3	57154 8
4300	5250	383538	6913577 7	57156 6
4300	5262 5	383536 3	6913589	57160 4
4300	5275	383534 6	6913600 3	57162 2
4300	5287 5	383532 9	6913611 7	57163 4
4300	5300	383531 2	6913623	57162 2
4300	5312 5	383529 5	6913634 3	57166 2

Line	Station	nad27 E	nad27 N	Mag (nT)
4300	5325	383527 8	6913645 7	57167 2
4300	5337 5	383526 1	6913657	57168 2
4300	5350	383524 4	6913668 3	57172
4300	5362 5	383522 7	6913679 7	57166 7
4300	5375	383521	6913691	57170 7
4300	5387 5	383519 3	6913702 3	57177 3
4300	5400	383517 6	6913713 7	57171 3
4300	5412 5	383515 9	6913725	57179 9
4300	5425	383514 2	6913736 3	57201
4300	5437 5	383512 5	6913747 7	57180 9
4300	5450	383510 8	6913759	57231 4
4300	5462 5	383509 1	6913770 3	57242 9
4300	5475	383507 4	6913781 7	57214 6
4300	5487 5	383505 7	6913793	57164 6
4300	5500	383504	6913804 3	57182 2
4300	5512 5	383502 3	6913815 7	57167
4300	5525	383500 6	6913827	57162 4
4300	5537 5	383498 9	6913838 3	57162 9
4300	5550	383497 2	6913849 7	57161 5
4300	5562 5	383495 5	6913861	57163 8
4300	5575	383493 8	6913872 3	57167 6
4300	5587 5	383492 1	6913883 7	57174 4
4300	5600	383490 4	6913895	57167 5
4300	5612 5	383488 7	6913906 3	57133 1
4300	5625	383487	6913917 7	57138 4
4300	5637 5	383485 3	6913929	57138 5
4300	5650	383483 6	6913940 3	57128 7
4300	5662 5	383481 9	6913951 7	57135 8
4300	5675	383480 2	6913963	57150 1
4300	5687 5	383478 5	6913974 3	57108 2
4300	5700	383476 8	6913985 7	57112
4300	5712 5	383475 1	6913997	57141 9
4300	5725	383473 4	6914008 3	57121 8
4300	5737 5	383471 7	6914019 7	57132 5
4300	5750	383470	6914031	57133 4
4350	4250	383765	6912587	57040
4350	4262 5	383763 3	6912597 7	57042 1
4350	4275	383761 2	6912610	57052 1
4350	4287 5	383759	6912622 3	57048
4350	4300	383756 8	6912634 6	57058 4
4350	4312 5	383754 7	6912646 9	57051 7
4350	4325	383752 5	6912659 2	57056 7
4350	4337 5	383750 3	6912671 5	57065 3

Line	Station	nad27 E	nad27 N	Mag (nT)
4350	4350	383748 2	6912683 8	57071 3
4350	4362 5	383746	6912696 1	57068 3
4350	4375	383743 8	6912708 4	57068 6
4350	4387 5	383741 6	6912720 8	57069 4
4350	4400	383739 5	6912733 1	57073 7
4350	4412 5	383737 3	6912745 4	57085 8
4350	4425	383735 1	6912757 7	57077
4350	4437 5	383733	6912770	57086 6
4350	4450	383730 8	6912782 3	57079 6
4350	4462 5	383728 6	6912794 6	57080 3
4350	4475	383726 4	6912806 9	57088 8
4350	4487 5	383724 3	6912819 2	57088 5
4350	4500	383722 1	6912831 5	57092
4350	4512 5	383719 9	6912843 9	57094 3
4350	4525	383717 8	6912856 2	57096 7
4350	4537 5	383715 6	6912868 5	57097 6
4350	4550	383713 4	6912880 8	57096
4350	4562 5	383711 2	6912893 1	57096 2
4350	4575	383709 1	6912905 4	57090
4350	4587 5	383706 9	6912917 7	57093 2
4350	4600	383704 7	6912930	57101 3
4350	4612 5	383702 6	6912942 3	57096 9
4350	4625	383700 4	6912954 6	57101 1
4350	4637 5	383698 2	6912967	57096 5
4350	4650	383696 1	6912979 3	57102 9
4350	4662 5	383693 9	6912991 6	57107 9
4350	4675	383691 7	6913003 9	57110 2
4350	4687 5	383689 5	6913016 2	57112 1
4350	4700	383687 4	6913028 5	57114 6
4350	4712 5	383685 2	6913040 8	57118 9
4350	4725	383683	6913053 1	57120 4
4350	4737 5	383680 9	6913065 4	57135 3
4350	4750	383678 7	6913077 8	57133
4350	4762 5	383676 5	6913090 1	57127 4
4350	4775	383674 3	6913102 4	57137 5
4350	4787 5	383672 2	6913114 7	57138 5
4350	4800	383670	6913127	57136 7
4350	4812 5	383667 8	6913139 3	57144 1
4350	4825	383665 7	6913151 6	57148 5
4350	4837 5	383663 5	6913163 9	57146 2
4350	4850	383661 3	6913176 2	57150 4
4350	4862 5	383659 2	6913188 5	57157 3
4350	4875	383657	6913200 9	57154 9

Appendix A

Happy-Feliz Grid Corrected TFM

Line	Station	nad27 E	nad27 N	Mag (nT)
4350	4887 5	383654 8	6913213 2	57161 2
4350	4900	383652 6	6913225 5	57143 8
4350	4912 5	383650 5	6913237 8	57143 8
4350	4925	383648 3	6913250 1	57134 6
4350	4937 5	383646 1	6913262 4	57135 8
4350	4950	383644	6913274 7	57146 4
4350	4962 5	383641 8	6913287	57139 5
4350	4975	383639 6	6913299 3	57143 2
4350	4987 5	383637 4	6913311 6	57141 7
4350	5000	383635 3	6913324	57139 9
4350	5012 5	383633 1	6913336 3	57135 5
4350	5025	383630 9	6913348 6	57138 5
4350	5037 5	383628 8	6913360 9	57138 3
4350	5050	383626 6	6913373 2	57140 6
4350	5062 5	383624 4	6913385 5	57139 5
4350	5075	383622 3	6913397 8	57141 2
4350	5087 5	383620 1	6913410 1	57137 9
4350	5100	383617 9	6913422 4	57144 3
4350	5112 5	383615 7	6913434 7	57134
4350	5125	383613 6	6913447 1	57139 4
4350	5137 5	383611 4	6913459 4	57142 1
4350	5150	383609 2	6913471 7	57141 3
4350	5162 5	383607 1	6913484	57145 5
4350	5175	383604 9	6913496 3	57147 5
4350	5187 5	383602 7	6913508 6	57150 8
4350	5200	383600 5	6913520 9	57147 9
4350	5212 5	383598 4	6913533 2	57146 4
4350	5225	383596 2	6913545 5	57150 6
4350	5237 5	383594	6913557 8	57159 4
4350	5250	383591 9	6913570 2	57161 5
4350	5262 5	383589 7	6913582 5	57164 4
4350	5275	383587 5	6913594 8	57156 7
4350	5287 5	383585 4	6913607 1	57158 2
4350	5300	383583 2	6913619 4	57161 3
4350	5312 5	383581	6913631 7	57169 6
4350	5325	383578 8	6913644	57169 8
4350	5337 5	383576 7	6913656 3	57176
4350	5350	383574 5	6913668 6	57184 5
4350	5362 5	383572 3	6913680 9	57193 6
4350	5375	383570 2	6913693 3	57170 5
4350	5387 5	383568	6913705 6	57168
4350	5400	383565 8	6913717 9	57167 1
4350	5412 5	383563 6	6913730 2	57195 8

Line	Station	nad27 E	nad27 N	Mag (nT)
4350	5425	383561 5	6913742 5	57156 7
4350	5437 5	383559 3	6913754 8	57163 4
4350	5450	383557 1	6913767 1	57190 7
4350	5462 5	383555	6913779 4	57150 9
4350	5475	383552 8	6913791 7	57185 6
4350	5487 5	383550 6	6913804	57159 2
4350	5500	383548 5	6913816 4	57141 5
4350	5512 5	383546 3	6913828 7	57142 1
4350	5525	383544 1	6913841	57156 1
4350	5537 5	383541 9	6913853 3	57218 1
4350	5550	383539 8	6913865 6	57224 7
4350	5562 5	383537 6	6913877 9	57183 8
4350	5575	383535 4	6913890 2	57155 3
4350	5587 5	383533 3	6913902 5	57145 1
4350	5600	383531 1	6913914 8	57128 9
4350	5612 5	383528 9	6913927 1	57130 1
4350	5625	383526 7	6913939 5	57141 1
4350	5637 5	383524 6	6913951 8	57131 7
4350	5650	383522 4	6913964 1	57134 2
4350	5662 5	383520 2	6913976 4	57129 7
4350	5675	383518 1	6913988 7	57133 8
4350	5687 5	383515 9	6914001	57129 5
4350	5700	383513 7	6914013 3	57129 1
4350	5712 5	383511 6	6914025 6	57152 2
4350	5725	383509 4	6914037 9	57141 8
4350	5737 5	383507 2	6914050 2	57144 5
4350	5750	383505	6914062 6	57135
4400	4250	383801	6912631	57061 9
4400	4262 5	383799	6912642 6	57072 6
4400	4275	383797 1	6912654 3	57078 5
4400	4287 5	383795 2	6912665 9	57078 8
4400	4300	383793 2	6912677 5	57080 9
4400	4312 5	383791 3	6912689 1	57078 8
4400	4325	383789 3	6912700 8	57081 5
4400	4337 5	383787 3	6912712 4	57083 1
4400	4350	383785 4	6912724	57091 2
4400	4362 5	383783 5	6912735 6	57099 3
4400	4375	383781 5	6912747 3	57101 8
4400	4387 5	383779 5	6912758 9	57100 8
4400	4400	383777 6	6912770 5	57097 8
4400	4412 5	383775 7	6912782 1	57087 2
4400	4425	383773 7	6912793 8	57089
4400	4437 5	383771 8	6912805 4	57098 3

Line	Station	nad27 E	nad27 N	Mag (nT)
4400	4450	383769 8	6912817	57098 5
4400	4462 5	383767 8	6912828 6	57100 2
4400	4475	383765 9	6912840 3	57097 5
4400	4487 5	383764	6912851 9	57103 2
4400	4500	383762	6912863 5	57104 4
4400	4512 5	383760	6912875 1	57111 5
4400	4525	383758 1	6912886 8	57102 7
4400	4537 5	383756 2	6912898 4	57094 5
4400	4550	383754 2	6912910	57093 6
4400	4562 5	383752 3	6912921 6	57093 9
4400	4575	383750 3	6912933 3	57100 8
4400	4587 5	383748 3	6912944 9	57116 4
4400	4600	383746 4	6912956 5	57104 9
4400	4612 5	383744 5	6912968 1	57107 1
4400	4625	383742 5	6912979 8	57123 4
4400	4637 5	383740 5	6912991 4	57119 1
4400	4650	383738 6	6913003	57120 3
4400	4662 5	383736 7	6913014 6	57121
4400	4675	383734 7	6913026 3	57117
4400	4687 5	383732 8	6913037 9	57122 3
4400	4700	383730 8	6913049 5	57134
4400	4712 5	383728 8	6913061 1	57143 7
4400	4725	383726 9	6913072 8	57142 6
4400	4737 5	383725	6913084 4	57163 9
4400	4750	383723	6913096	57190
4400	4762 5	383721	6913107 6	57155 1
4400	4775	383719 1	6913119 3	57145
4400	4787 5	383717 2	6913130 9	57139 8
4400	4800	383715 2	6913142 5	57138 4
4400	4812 5	383713 3	6913154 1	57143 8
4400	4825	383711 3	6913165 8	57145 5
4400	4837 5	383709 3	6913177 4	57136 2
4400	4850	383707 4	6913189	57142 9
4400	4862 5	383705 5	6913200 6	57145
4400	4875	383703 5	6913212 3	57147 9
4400	4887 5	383701 5	6913223 9	57147 2
4400	4900	383699 6	6913235 5	57143 7
4400	4912 5	383697 7	6913247 1	57148 3
4400	4925	383695 7	6913258 8	57144 1
4400	4937 5	383693 8	6913270 4	57142 4
4400	4950	383691 8	6913282	57145 1
4400	4962 5	383689 8	6913293 6	57143 1
4400	4975	383687 9	6913305 3	57147 8

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4400	4987 5	383686	6913316 9	57143 3
4400	5000	383684	6913328 5	57145 1
4400	5012 5	383682	6913340 1	57144 5
4400	5025	383680 1	6913351 8	57144 8
4400	5037 5	383678 2	6913363 4	57145
4400	5050	383676 2	6913375	57147 1
4400	5062 5	383674 3	6913386 6	57145 5
4400	5075	383672 3	6913398 3	57144 9
4400	5087 5	383670 3	6913409 9	57148 8
4400	5100	383668 4	6913421 5	57150
4400	5112 5	383666 5	6913433 1	57146 9
4400	5125	383664 5	6913444 8	57150 8
4400	5137 5	383662 5	6913456 4	57154 2
4400	5150	383660 6	6913468	57149 6
4400	5162 5	383658 7	6913479 6	57150 1
4400	5175	383656 7	6913491 3	57152 8
4400	5187 5	383654 8	6913502 9	57155 3
4400	5200	383652 8	6913514 5	57159 7
4400	5212 5	383650 8	6913526 1	57160 9
4400	5225	383648 9	6913537 8	57161
4400	5237 5	383647	6913549 4	57159 9
4400	5250	383645	6913561	57161 8
4400	5262 5	383643	6913572 6	57158 5
4400	5275	383641 1	6913584 3	57161 9
4400	5287 5	383639 2	6913595 9	57163 5
4400	5300	383637 2	6913607 5	57170 6
4400	5312 5	383635 3	6913619 1	57176 6
4400	5325	383633 3	6913630 8	57170 7
4400	5337 5	383631 3	6913642 4	57167 6
4400	5350	383629 4	6913654	57179 3
4400	5362 5	383627 5	6913665 6	57203 3
4400	5375	383625 5	6913677 3	57155 5
4400	5387 5	383623 5	6913688 9	57173 3
4400	5400	383621 6	6913700 5	57192 1
4400	5412 5	383619 7	6913712 1	57207 5
4400	5425	383617 7	6913723 8	57210 4
4400	5437 5	383615 8	6913735 4	57211 5
4400	5450	383613 8	6913747	57151 1
4400	5462 5	383611 8	6913758 6	57175 3
4400	5475	383609 9	6913770 3	57178 7
4400	5487 5	383608	6913781 9	57168 2
4400	5500	383606	6913793 5	57153 7
4400	5512 5	383604	6913805 1	57138 4

Line	Station	nad27 E	nad27 N	Mag (nT)
4400	5525	383602 1	6913816 8	57135 2
4400	5537 5	383600 2	6913828 4	57130 7
4400	5550	383598 2	6913840	57134 8
4400	5562 5	383596 3	6913851 6	57152 8
4400	5575	383594 3	6913863 3	57146 3
4400	5587 5	383592 3	6913874 9	57146 2
4400	5600	383590 4	6913886 5	57137 1
4400	5612 5	383588 5	6913898 1	57145 4
4400	5625	383586 5	6913909 8	57145 5
4400	5637 5	383584 5	6913921 4	57140 5
4400	5650	383582 6	6913933	57140
4400	5662 5	383580 7	6913944 6	57127 3
4400	5675	383578 7	6913956 3	57118 2
4400	5687 5	383576 8	6913967 9	57129 7
4400	5700	383574 8	6913979 5	57129 1
4400	5712 5	383572 8	6913991 1	57136 5
4400	5725	383570 9	6914002 8	57144 5
4400	5737 5	383569	6914014 4	57142
4400	5750	383567	6914026	57125 5
4450	4250	383827	6912631	57069 1
4450	4262 5	383825 2	6912643 3	57077 3
4450	4275	383823 4	6912655 7	57087 7
4450	4287 5	383821 5	6912668	57087 7
4450	4300	383819 7	6912680 4	57090 2
4450	4312 5	383817 9	6912692 8	57083 2
4450	4325	383816 1	6912705 1	57094 7
4450	4337 5	383814 3	6912717 5	57115 2
4450	4350	383812 5	6912729 8	57130
4450	4362 5	383810 7	6912742 2	57129 6
4450	4375	383808 8	6912754 5	57131 2
4450	4387 5	383807	6912766 8	57121 3
4450	4400	383805 2	6912779 2	57115 8
4450	4412 5	383803 4	6912791 5	57104 1
4450	4425	383801 6	6912803 9	57106 3
4450	4437 5	383799 8	6912816 3	57095 3
4450	4450	383797 9	6912828 6	57089 4
4450	4462 5	383796 1	6912841	57096 1
4450	4475	383794 3	6912853 3	57086 8
4450	4487 5	383792 5	6912865 7	57091 6
4450	4500	383790 7	6912878	57090 8
4450	4512 5	383788 8	6912890 3	57088 1
4450	4525	383787	6912902 7	57094 1
4450	4537 5	383785 2	6912915	57094 7

Line	Station	nad27 E	nad27 N	Mag (nT)
4450	4550	383783 4	6912927 4	57097 9
4450	4562 5	383781 6	6912939 8	57097 5
4450	4575	383779 8	6912952 1	57098 8
4450	4587 5	383778	6912964 5	57102 4
4450	4600	383776 1	6912976 8	57110 5
4450	4612 5	383774 3	6912989 2	57107
4450	4625	383772 5	6913001 5	57120
4450	4637 5	383770 7	6913013 8	57115 5
4450	4650	383768 9	6913026 2	57119 4
4450	4662 5	383767	6913038 5	57124 1
4450	4675	383765 2	6913050 9	57129 1
4450	4687 5	383763 4	6913063 3	57142 6
4450	4700	383761 6	6913075 6	57162 2
4450	4712 5	383759 8	6913088	57135
4450	4725	383758	6913100 3	57143 3
4450	4737 5	383756 2	6913112 7	57143 6
4450	4750	383754 3	6913125	57150 5
4450	4762 5	383752 5	6913137 3	57147 6
4450	4775	383750 7	6913149 7	57161 3
4450	4787 5	383748 9	6913162	57160 8
4450	4800	383747 1	6913174 4	57154 9
4450	4812 5	383745 3	6913186 8	57155 6
4450	4825	383743 4	6913199 1	57161 9
4450	4837 5	383741 6	6913211 5	57151 2
4450	4850	383739 8	6913223 8	57162 6
4450	4862 5	383738	6913236 2	57161 7
4450	4875	383736 2	6913248 5	57165 2
4450	4887 5	383734 3	6913260 8	57164 7
4450	4900	383732 5	6913273 2	57161 7
4450	4912 5	383730 7	6913285 5	57160 6
4450	4925	383728 9	6913297 9	57165 4
4450	4937 5	383727 1	6913310 3	57163 9
4450	4950	383725 3	6913322 6	57154 4
4450	4962 5	383723 5	6913335	57148 1
4450	4975	383721 6	6913347 3	57147 1
4450	4987 5	383719 8	6913359 7	57152 9
4450	5000	383718	6913372	57154 9
4450	5012 5	383716 4	6913383 3	57149 3
4450	5025	383714 8	6913394 5	57153 3
4450	5037 5	383713 3	6913405 8	57149 7
4450	5050	383711 7	6913417	57153
4450	5062 5	383710 1	6913428 3	57155 9
4450	5075	383708 5	6913439 5	57158

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4450	5087 5	383706 9	6913450 8	57157 4
4450	5100	383705 3	6913462	57155 5
4450	5112 5	383703 8	6913473 3	57159 8
4450	5125	383702 2	6913484 5	57155 2
4450	5137 5	383700 6	6913495 8	57158 6
4450	5150	383699	6913507	57155 4
4450	5162 5	383697 4	6913518 3	57158 7
4450	5175	383695 8	6913529 5	57160 3
4450	5187 5	383694 3	6913540 8	57156 1
4450	5200	383692 7	6913552	57159
4450	5212 5	383691 1	6913563 3	57161 2
4450	5225	383689 5	6913574 5	57163 3
4450	5237 5	383687 9	6913585 8	57164 8
4450	5250	383686 3	6913597	57166 5
4450	5262 5	383684 8	6913608 3	57173 3
4450	5275	383683 2	6913619 5	57178 5
4450	5287 5	383681 6	6913630 8	57174 4
4450	5300	383680	6913642	57168
4450	5312 5	383678 4	6913653 3	57161 4
4450	5325	383676 8	6913664 5	57163 1
4450	5337 5	383675 3	6913675 8	57161 1
4450	5350	383673 7	6913687	57160 8
4450	5362 5	383672 1	6913698 3	57163 7
4450	5375	383670 5	6913709 5	57195 4
4450	5387 5	383668 9	6913720 8	57190 9
4450	5400	383667 3	6913732	57224 8
4450	5412 5	383665 8	6913743 3	57190 4
4450	5425	383664 2	6913754 5	57193 8
4450	5437 5	383662 6	6913765 8	57170 9
4450	5450	383661	6913777	57204 9
4450	5462 5	383659 4	6913788 3	57185 2
4450	5475	383657 8	6913799 5	57215 1
4450	5487 5	383656 3	6913810 8	57198 5
4450	5500	383654 7	6913822	57179 3
4450	5512 5	383653 1	6913833 3	57147 4
4450	5525	383651 5	6913844 5	57139
4450	5537 5	383649 9	6913855 8	57124 9
4450	5550	383648 3	6913867	57124 1
4450	5562 5	383646 8	6913878 3	57134 3
4450	5575	383645 2	6913889 5	57143 1
4450	5587 5	383643 6	6913900 8	57159 7
4450	5600	383642	6913912	57137 9
4450	5612 5	383640 4	6913923 3	57137 1

Line	Station	nad27 E	nad27 N	Mag (nT)
4450	5625	383638 8	6913934 5	57135 6
4450	5637 5	383637 3	6913945 8	57134 4
4450	5650	383635 7	6913957	57138 6
4450	5662 5	383634 1	6913968 3	57162 7
4450	5675	383632 5	6913979 5	57148 5
4450	5687 5	383630 9	6913990 8	57140 3
4450	5700	383629 3	6914002	57137 7
4450	5712 5	383627 8	6914013 3	57135 7
4450	5725	383626 2	6914024 5	57123 5
4450	5737 5	383624 6	6914035 8	57117 7
4450	5750	383623	6914047	57112 9
4500	3750	384020	6912150	56958 5
4500	3762 5	384017 6	6912162	56979 2
4500	3775	384015 3	6912174	56971 7
4500	3787 5	384012 9	6912186	56938 9
4500	3800	384010 5	6912198	56960 6
4500	3812 5	384008 2	6912210	56979 2
4500	3825	384005 8	6912222	56969 5
4500	3837 5	384003 4	6912234	56964 6
4500	3850	384001	6912246	56975 4
4500	3862 5	383998 7	6912258	56997 3
4500	3875	383996 3	6912270	57008
4500	3887 5	383993 9	6912282	57012 6
4500	3900	383991 6	6912294	57002 8
4500	3912 5	383989 2	6912306	57008
4500	3925	383986 8	6912318	57000 1
4500	3937 5	383984 5	6912330	57004 6
4500	3950	383982 1	6912342	57014
4500	3962 5	383979 7	6912354	57021 6
4500	3975	383977 3	6912366	57029 5
4500	3987 5	383975	6912378	57027 1
4500	4000	383972 6	6912390	57022 5
4500	4012 5	383970 2	6912402	57012
4500	4025	383967 9	6912414	57025 8
4500	4037 5	383965 5	6912426	57030 3
4500	4050	383963 1	6912438	57039
4500	4062 5	383960 8	6912450	57052
4500	4075	383958 4	6912462	57040 3
4500	4087 5	383956	6912474	57052 9
4500	4100	383953 6	6912486	57034 7
4500	4112 5	383951 3	6912498	57045
4500	4125	383948 9	6912510	57068 9
4500	4137 5	383946 5	6912522	57071 3

Line	Station	nad27 E	nad27 N	Mag (nT)
4500	4150	383944 2	6912534	57073 5
4500	4162 5	383941 8	6912546	57056 3
4500	4175	383939 4	6912558	57051 2
4500	4187 5	383937	6912570	57055
4500	4200	383934 7	6912582	57054 5
4500	4212 5	383932 3	6912594	57059 8
4500	4225	383929 9	6912606	57078 1
4500	4237 5	383927 6	6912618	57075 5
4500	4250	383925 2	6912630	57066 4
4500	4262 5	383922 8	6912642	57075 6
4500	4275	383920 5	6912654	57074 7
4500	4287 5	383918 1	6912666	57074 1
4500	4300	383915 7	6912678	57067 3
4500	4312 5	383913 3	6912690	57077 7
4500	4325	383911	6912702	57072 2
4500	4337 5	383908 6	6912714	57067 6
4500	4350	383906 2	6912726	57068
4500	4362 5	383903 9	6912738	57069 7
4500	4375	383901 5	6912750	57078 9
4500	4387 5	383899 1	6912762	57075 3
4500	4400	383896 8	6912774	57085 7
4500	4412 5	383894 4	6912786	57079 7
4500	4425	383892	6912798	57081 1
4500	4437 5	383889 7	6912810	57085 8
4500	4450	383887 3	6912822	57085 5
4500	4462 5	383884 9	6912834	57082 2
4500	4475	383882 5	6912846	57085 6
4500	4487 5	383880 2	6912858	57087 9
4500	4500	383877 8	6912870	57083 8
4500	4512 5	383875 4	6912882	57086 4
4500	4525	383873 1	6912894	57093 3
4500	4537 5	383870 7	6912906	57092 5
4500	4550	383868 3	6912918	57089 1
4500	4562 5	383866	6912930	57113 5
4500	4575	383863 6	6912942	57109 2
4500	4587 5	383861 2	6912954	57107 8
4500	4600	383858 8	6912966	57104 7
4500	4612 5	383856 5	6912978	57119 2
4500	4625	383854 1	6912990	57126 9
4500	4637 5	383851 7	6913002	57111 9
4500	4650	383849 4	6913014	57119 3
4500	4662 5	383847	6913026	57146 5
4500	4675	383844 6	6913038	57145 1

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4500	4687 5	383842 3	6913050	57141 6
4500	4700	383839 9	6913062	57141 8
4500	4712 5	383837 5	6913074	57141 6
4500	4725	383835 1	6913086	57141 4
4500	4737 5	383832 8	6913098	57138 9
4500	4750	383830 4	6913110	57144 8
4500	4762 5	383828	6913122	57151 1
4500	4775	383825 7	6913134	57166 6
4500	4787 5	383823 3	6913146	57156 9
4500	4800	383820 9	6913158	57162
4500	4812 5	383818 5	6913170	57166 2
4500	4825	383816 2	6913182	57173 8
4500	4837 5	383813 8	6913194	57169 2
4500	4850	383811 4	6913206	57174 3
4500	4862 5	383809 1	6913218	57200 7
4500	4875	383806 7	6913230	57201 3
4500	4887 5	383804 3	6913242	57224 8
4500	4900	383802	6913254	57217 2
4500	4912 5	383799 6	6913266	57213 7
4500	4925	383797 2	6913278	57203 6
4500	4937 5	383794 8	6913290	57185
4500	4950	383792 5	6913302	57171 9
4500	4962 5	383790 1	6913314	57168 6
4500	4975	383787 7	6913326	57166 4
4500	4987 5	383785 4	6913338	57155 1
4500	5000	383783	6913350	57153 5
4550	3750	384052 1	6912133 2	57008 2
4550	3762 5	384050	6912145 5	57017 1
4550	3775	384047 8	6912157 8	57004 8
4550	3787 5	384045 6	6912170 1	56991 7
4550	3800	384043 5	6912182 5	56995 8
4550	3812 5	384041 3	6912194 8	56990 5
4550	3825	384039 2	6912207 1	56999 5
4550	3837 5	384037	6912219 5	56995 9
4550	3850	384034 8	6912231 8	56978 2
4550	3862 5	384032 7	6912244 1	56985 2
4550	3875	384030 5	6912256 4	56983 3
4550	3887 5	384028 3	6912268 8	56977 1
4550	3900	384026 2	6912281 1	56977 2
4550	3912 5	384024	6912293 4	56990 5
4550	3925	384021 9	6912305 8	57019 1
4550	3937 5	384019 7	6912318 1	57024 4
4550	3950	384017 5	6912330 4	57026 8

Line	Station	nad27 E	nad27 N	Mag (nT)
4550	3962 5	384015 4	6912342 7	57012 2
4550	3975	384013 2	6912355 1	57021 2
4550	3987 5	384011 1	6912367 4	57020 6
4550	4000	384008 9	6912379 7	57023 2
4550	4012 5	384006 7	6912392 1	57023 4
4550	4025	384004 6	6912404 4	57010 4
4550	4037 5	384002 4	6912416 7	57020 1
4550	4050	384000 3	6912429	57027 9
4550	4062 5	383998 1	6912441 4	57044 7
4550	4075	383995 9	6912453 7	57043 2
4550	4087 5	383993 8	6912466	57043 3
4550	4100	383991 6	6912478 4	57038 1
4550	4112 5	383989 4	6912490 7	57049 1
4550	4125	383987 3	6912503	57058 4
4550	4137 5	383985 1	6912515 3	57065 6
4550	4150	383983	6912527 7	57056 5
4550	4162 5	383980 8	6912540	57063
4550	4175	383978 6	6912552 3	57069 6
4550	4187 5	383976 5	6912564 7	57063 6
4550	4200	383974 3	6912577	57062 5
4550	4212 5	383972 2	6912589 3	57058 2
4550	4225	383970	6912601 6	57065 1
4550	4237 5	383967 8	6912614	57073 9
4550	4250	383965 7	6912626 3	57082 5
4550	4262 5	383963 5	6912638 6	57096 6
4550	4275	383961 3	6912651	57095 6
4550	4287 5	383959 2	6912663 3	57106
4550	4300	383957	6912675 6	57098 5
4550	4312 5	383954 9	6912687 9	57095 5
4550	4325	383952 7	6912700 3	57073 3
4550	4337 5	383950 5	6912712 6	57071 1
4550	4350	383948 4	6912724 9	57079 8
4550	4362 5	383946 2	6912737 3	57066 7
4550	4375	383944 1	6912749 6	57068 9
4550	4387 5	383941 9	6912761 9	57072 6
4550	4400	383939 7	6912774 2	57066 2
4550	4412 5	383937 6	6912786 6	57070
4550	4425	383935 4	6912798 9	57077 1
4550	4437 5	383933 3	6912811 2	57078 3
4550	4450	383931 1	6912823 6	57080 4
4550	4462 5	383928 9	6912835 9	57084 6
4550	4475	383926 8	6912848 2	57092 9
4550	4487 5	383924 6	6912860 5	57082

Line	Station	nad27 E	nad27 N	Mag (nT)
4550	4500	383922 4	6912872 9	57092 9
4550	4512 5	383920 3	6912885 2	57093 7
4550	4525	383918 1	6912897 5	57099 9
4550	4537 5	383916	6912909 8	57099 3
4550	4550	383913 8	6912922 2	57091 5
4550	4562 5	383911 6	6912934 5	57094 3
4550	4575	383909 5	6912946 8	57097 4
4550	4587 5	383907 3	6912959 2	57096 3
4550	4600	383905 2	6912971 5	57107 6
4550	4612 5	383903	6912983 8	57114 2
4550	4625	383900 8	6912996 1	57119 2
4550	4637 5	383898 7	6913008 5	57120 3
4550	4650	383896 5	6913020 8	57121 9
4550	4662 5	383894 4	6913033 1	57136 7
4550	4675	383892 2	6913045 5	57137
4550	4687 5	383890	6913057 8	57138 6
4550	4700	383887 9	6913070 1	57138 7
4550	4712 5	383885 7	6913082 4	57149 2
4550	4725	383883 5	6913094 8	57152 5
4550	4737 5	383881 4	6913107 1	57155 6
4550	4750	383879 2	6913119 4	57162 8
4550	4762 5	383877 1	6913131 8	57150 2
4550	4775	383874 9	6913144 1	57159 9
4550	4787 5	383872 7	6913156 4	57157 9
4550	4800	383870 6	6913168 7	57156 9
4550	4812 5	383868 4	6913181 1	57161 6
4550	4825	383866 3	6913193 4	57160 1
4550	4837 5	383864 1	6913205 7	57180 9
4550	4850	383861 9	6913218 1	57182 6
4550	4862 5	383859 8	6913230 4	57154 7
4550	4875	383857 6	6913242 7	57180 8
4550	4887 5	383855 5	6913255	57197 9
4550	4900	383853 3	6913267 4	57185 6
4550	4912 5	383851 1	6913279 7	57219
4550	4925	383849	6913292	57175
4550	4937 5	383846 8	6913304 4	57172 4
4550	4950	383844 6	6913316 7	57177 3
4550	4962 5	383842 5	6913329	57247
4550	4975	383840 3	6913341 3	57182 9
4550	4987 5	383838 2	6913353 7	57128
4550	5000	383836	6913366	57131 8
4550	5012 5	383833 6	6913377 7	57147 4
4550	5025	383831 2	6913389 4	57151

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4550	5037 5	383828 8	6913401	57149 6
4550	5050	383826 3	6913412 7	57154 3
4550	5062 5	383823 9	6913424 4	57160 4
4550	5075	383821 5	6913436 1	57158 3
4550	5087 5	383819 1	6913447 8	57156 3
4550	5100	383816 7	6913459 5	57155 4
4550	5112 5	383814 3	6913471 2	57160 7
4550	5125	383811 8	6913482 8	57165 2
4550	5137 5	383809 4	6913494 5	57173 1
4550	5150	383807	6913506 2	57183 7
4550	5162 5	383804 6	6913517 9	57213 6
4550	5175	383802 2	6913529 6	57214
4550	5187 5	383799 8	6913541 3	57202
4550	5200	383797 3	6913552 9	57196 9
4550	5212 5	383794 9	6913564 6	57217 2
4550	5225	383792 5	6913576 3	57238 9
4550	5237 5	383790 1	6913588	57207 9
4550	5250	383787 7	6913599 7	57200 3
4550	5262 5	383785 3	6913611 3	57162
4550	5275	383782 8	6913623	57157 3
4550	5287 5	383780 4	6913634 7	57190 4
4550	5300	383778	6913646 4	57219 1
4550	5312 5	383775 6	6913658 1	57221 7
4550	5325	383773 2	6913669 8	57195 3
4550	5337 5	383770 8	6913681 5	57236 5
4550	5350	383768 3	6913693 1	57180 3
4550	5362 5	383765 9	6913704 8	57193 2
4550	5375	383763 5	6913716 5	57206 6
4550	5387 5	383761 1	6913728 2	57170 2
4550	5400	383758 7	6913739 9	57185 4
4550	5412 5	383756 3	6913751 5	57154 6
4550	5425	383753 8	6913763 2	57156 4
4550	5437 5	383751 4	6913774 9	57144 3
4550	5450	383749	6913786 6	57134 6
4550	5462 5	383746 6	6913798 3	57130
4550	5475	383744 2	6913810	57160 2
4550	5487 5	383741 8	6913821 7	57182 6
4550	5500	383739 3	6913833 3	57159 7
4550	5512 5	383736 9	6913845	57161 4
4550	5525	383734 5	6913856 7	57173 5
4550	5537 5	383732 1	6913868 4	57114 6
4550	5550	383729 7	6913880 1	57127 2
4550	5562 5	383727 3	6913891 8	57131 7

Line	Station	nad27 E	nad27 N	Mag (nT)
4550	5575	383724 8	6913903 4	57138 6
4550	5587 5	383722 4	6913915 1	57132 9
4550	5600	383720	6913926 8	57131 2
4550	5612 5	383717 6	6913938 5	57133 8
4550	5625	383715 2	6913950 2	57137 9
4550	5637 5	383712 8	6913961 8	57141 6
4550	5650	383710 3	6913973 5	57134 5
4550	5662 5	383707 9	6913985 2	57113 2
4550	5675	383705 5	6913996 9	57111 8
4550	5687 5	383703 1	6914008 6	57114 4
4550	5700	383700 7	6914020 3	57113 9
4550	5712 5	383698 3	6914032	57112 5
4550	5725	383695 8	6914043 6	57117 2
4550	5737 5	383693 4	6914055 3	57124 2
4550	5750	383691	6914067	57123 1
4600	3750	384112	6912163	57048 6
4600	3762 5	384109 7	6912175 1	57040 7
4600	3775	384107 5	6912187 2	57045 8
4600	3787 5	384105 2	6912199 3	57059 4
4600	3800	384102 9	6912211 4	57041
4600	3812 5	384100 7	6912223 5	57036 5
4600	3825	384098 4	6912235 7	57052 1
4600	3837 5	384096 1	6912247 8	57006 1
4600	3850	384093 8	6912259 9	56989 5
4600	3862 5	384091 6	6912272	57003
4600	3875	384089 3	6912284 1	56981 8
4600	3887 5	384087	6912296 2	57019
4600	3900	384084 8	6912308 3	57001
4600	3912 5	384082 5	6912320 4	56984 7
4600	3925	384080 2	6912332 5	57006 5
4600	3937 5	384078	6912344 7	57015 8
4600	3950	384075 7	6912356 8	56988 5
4600	3962 5	384073 4	6912368 9	56979 5
4600	3975	384071 1	6912381	56991 9
4600	3987 5	384068 9	6912393 1	56998 7
4600	4000	384066 6	6912405 2	57002 9
4600	4012 5	384064 3	6912417 3	57013 9
4600	4025	384062 1	6912429 4	57016 6
4600	4037 5	384059 8	6912441 5	57019 1
4600	4050	384057 5	6912453 6	57032 2
4600	4062 5	384055 3	6912465 8	57047
4600	4075	384053	6912477 9	57026 4
4600	4087 5	384050 7	6912490	57024 5

Line	Station	nad27 E	nad27 N	Mag (nT)
4600	4100	384048 4	6912502 1	57028 2
4600	4112 5	384046 2	6912514 2	57027 7
4600	4125	384043 9	6912526 3	57034 9
4600	4137 5	384041 6	6912538 4	57035 5
4600	4150	384039 4	6912550 5	57040 9
4600	4162 5	384037 1	6912562 6	57056
4600	4175	384034 8	6912574 7	57050 5
4600	4187 5	384032 5	6912586 8	57055 3
4600	4200	384030 3	6912599	57053 4
4600	4212 5	384028	6912611 1	57054 8
4600	4225	384025 7	6912623 2	57051 3
4600	4237 5	384023 5	6912635 3	57052 7
4600	4250	384021 2	6912647 4	57055 6
4600	4262 5	384018 9	6912659 5	57055
4600	4275	384016 7	6912671 6	57037 2
4600	4287 5	384014 4	6912683 7	57039 7
4600	4300	384012 1	6912695 8	57056
4600	4312 5	384009 8	6912708	57071 6
4600	4325	384007 6	6912720 1	57078 8
4600	4337 5	384005 3	6912732 2	57100 8
4600	4350	384003	6912744 3	57100 6
4600	4362 5	384000 8	6912756 4	57093 2
4600	4375	383998 5	6912768 5	57079 1
4600	4387 5	383996 2	6912780 6	57071 8
4600	4400	383994	6912792 7	57074 3
4600	4412 5	383991 7	6912804 8	57086 3
4600	4425	383989 4	6912816 9	57090 8
4600	4437 5	383987 2	6912829	57089 4
4600	4450	383984 9	6912841 2	57090 1
4600	4462 5	383982 6	6912853 3	57105 1
4600	4475	383980 3	6912865 4	57107 6
4600	4487 5	383978 1	6912877 5	57103 4
4600	4500	383975 8	6912889 6	57097 9
4600	4512 5	383973 5	6912901 7	57109 2
4600	4525	383971 3	6912913 8	57100 7
4600	4537 5	383969	6912925 9	57103 9
4600	4550	383966 7	6912938	57090 1
4600	4562 5	383964 5	6912950 2	57088 7
4600	4575	383962 2	6912962 3	57084 1
4600	4587 5	383959 9	6912974 4	57101 6
4600	4600	383957 6	6912986 5	57118 1
4600	4612 5	383955 4	6912998 6	57126
4600	4625	383953 1	6913010 7	57116 3

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4600	4637 5	383950 8	6913022 8	57132 6
4600	4650	383948 6	6913034 9	57113 6
4600	4662 5	383946 3	6913047	57121 9
4600	4675	383944	6913059 1	57113
4600	4687 5	383941 8	6913071 3	57130 4
4600	4700	383939 5	6913083 4	57136 1
4600	4712 5	383937 2	6913095 5	57153 2
4600	4725	383934 9	6913107 6	57158 2
4600	4737 5	383932 7	6913119 7	57146 9
4600	4750	383930 4	6913131 8	57147 3
4600	4762 5	383928 1	6913143 9	57146 4
4600	4775	383925 9	6913156	57148 9
4600	4787 5	383923 6	6913168 1	57136 4
4600	4800	383921 3	6913180 2	57155 1
4600	4812 5	383919	6913192 3	57168 3
4600	4825	383916 8	6913204 5	57160 4
4600	4837 5	383914 5	6913216 6	57133 2
4600	4850	383912 2	6913228 7	57136 9
4600	4862 5	383910	6913240 8	57129 9
4600	4875	383907 7	6913252 9	57136 7
4600	4887 5	383905 4	6913265	57134 4
4600	4900	383903 2	6913277 1	57135 6
4600	4912 5	383900 9	6913289 2	57118
4600	4925	383898 6	6913301 3	57126 6
4600	4937 5	383896 3	6913313 5	57123 5
4600	4950	383894 1	6913325 6	57127 2
4600	4962 5	383891 8	6913337 7	57125 6
4600	4975	383889 5	6913349 8	57126 1
4600	4987 5	383887 3	6913361 9	57125 9
4600	5000	383885	6913374	57136 8
4650	3750	384137	6912162	57097
4650	3762 5	384135	6912174 2	57104
4650	3775	384133	6912186 4	57076 7
4650	3787 5	384131	6912198 5	57073 7
4650	3800	384129	6912210 7	57093 5
4650	3812 5	384127	6912222 9	57088 8
4650	3825	384124 9	6912235 1	57068
4650	3837 5	384122 9	6912247 3	57075 3
4650	3850	384120 9	6912259 4	57076 7
4650	3862 5	384118 9	6912271 6	57066 5
4650	3875	384116 9	6912283 8	57037 1
4650	3887 5	384114 9	6912296	57006 7
4650	3900	384112 9	6912308 2	57010 6

Line	Station	nad27 E	nad27 N	Mag (nT)
4650	3912 5	384110 9	6912320 3	57024 3
4650	3925	384108 9	6912332 5	57051 9
4650	3937 5	384106 8	6912344 7	57080 2
4650	3950	384104 8	6912356 9	57067 3
4650	3962 5	384102 8	6912369 1	57047 5
4650	3975	384100 8	6912381 2	57046 5
4650	3987 5	384098 8	6912393 4	57051
4650	4000	384096 8	6912405 6	57073 7
4650	4012 5	384094 8	6912417 8	57078 1
4650	4025	384092 8	6912430	57106 4
4650	4037 5	384090 8	6912442 1	57126 5
4650	4050	384088 8	6912454 3	57115 3
4650	4062 5	384086 8	6912466 5	57137 3
4650	4075	384084 7	6912478 7	57127
4650	4087 5	384082 7	6912490 9	57129 7
4650	4100	384080 7	6912503	57142 2
4650	4112 5	384078 7	6912515 2	57162 5
4650	4125	384076 7	6912527 4	57137 3
4650	4137 5	384074 7	6912539 6	57128 6
4650	4150	384072 7	6912551 8	57125 3
4650	4162 5	384070 7	6912563 9	57130 2
4650	4175	384068 7	6912576 1	57128 2
4650	4187 5	384066 7	6912588 3	57148 8
4650	4200	384064 6	6912600 5	57149 6
4650	4212 5	384062 6	6912612 7	57139 4
4650	4225	384060 6	6912624 8	57130 6
4650	4237 5	384058 6	6912637	57130 6
4650	4250	384056 6	6912649 2	57137 3
4650	4262 5	384054 6	6912661 4	57143 5
4650	4275	384052 6	6912673 6	57153 2
4650	4287 5	384050 6	6912685 7	57170
4650	4300	384048 6	6912697 9	57177 6
4650	4312 5	384046 5	6912710 1	57165
4650	4325	384044 5	6912722 3	57172 8
4650	4337 5	384042 5	6912734 5	57170 5
4650	4350	384040 5	6912746 6	57158 5
4650	4362 5	384038 5	6912758 8	57150 3
4650	4375	384036 5	6912771	57153 7
4650	4387 5	384034 5	6912783 2	57152 6
4650	4400	384032 5	6912795 4	57163 4
4650	4412 5	384030 5	6912807 5	57150 3
4650	4425	384028 5	6912819 7	57146 7
4650	4437 5	384026 5	6912831 9	57134 6

Line	Station	nad27 E	nad27 N	Mag (nT)
4650	4450	384024 4	6912844 1	57129 1
4650	4462 5	384022 4	6912856 3	57123 4
4650	4475	384020 4	6912868 4	57133
4650	4487 5	384018 4	6912880 6	57135 1
4650	4500	384016 4	6912892 8	57126 6
4650	4512 5	384014 4	6912905	57127 9
4650	4525	384012 4	6912917 2	57118 4
4650	4537 5	384010 4	6912929 3	57121 2
4650	4550	384008 4	6912941 5	57104 4
4650	4562 5	384006 3	6912953 7	57109 5
4650	4575	384004 3	6912965 9	57085 1
4650	4587 5	384002 3	6912978 1	57085 1
4650	4600	384000 3	6912990 2	57085 7
4650	4612 5	383998 3	6913002 4	57090
4650	4625	383996 3	6913014 6	57095 3
4650	4637 5	383994 3	6913026 8	57103 5
4650	4650	383992 3	6913039	57111 3
4650	4662 5	383990 3	6913051 1	57104 9
4650	4675	383988 3	6913063 3	57116 6
4650	4687 5	383986 3	6913075 5	57120 4
4650	4700	383984 2	6913087 7	57127 8
4650	4712 5	383982 2	6913099 9	57136 9
4650	4725	383980 2	6913112	57133 9
4650	4737 5	383978 2	6913124 2	57127 9
4650	4750	383976 2	6913136 4	57124 7
4650	4762 5	383974 2	6913148 6	57151 4
4650	4775	383972 2	6913160 8	57136 8
4650	4787 5	383970 2	6913172 9	57136 1
4650	4800	383968 2	6913185 1	57148 8
4650	4812 5	383966 2	6913197 3	57148 8
4650	4825	383964 1	6913209 5	57118 6
4650	4837 5	383962 1	6913221 7	57096 4
4650	4850	383960 1	6913233 8	57102 9
4650	4862 5	383958 1	6913246	57102 7
4650	4875	383956 1	6913258 2	57108
4650	4887 5	383954 1	6913270 4	57110 3
4650	4900	383952 1	6913282 6	57114 2
4650	4912 5	383950 1	6913294 7	57118 3
4650	4925	383948 1	6913306 9	57118
4650	4937 5	383946	6913319 1	57124 2
4650	4950	383944	6913331 3	57119 5
4650	4962 5	383942	6913343 5	57117 5
4650	4975	383940	6913355 6	57121 7

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4650	4987 5	383938	6913367 8	57131
4650	5000	383936	6913380	57103 5
4700	3750	384191	6912184	57003 9
4700	3762 5	384189 2	6912196 2	57040 3
4700	3775	384187 4	6912208 4	57050 5
4700	3787 5	384185 5	6912220 6	57041 1
4700	3800	384183 7	6912232 8	57036 8
4700	3812 5	384181 9	6912245	57032 8
4700	3825	384180 1	6912257 1	57034 6
4700	3837 5	384178 3	6912269 3	57033 1
4700	3850	384176 4	6912281 5	57048 7
4700	3862 5	384174 6	6912293 7	57052 7
4700	3875	384172 8	6912305 9	57060
4700	3887 5	384171	6912318 1	57067
4700	3900	384169 2	6912330 3	57070 7
4700	3912 5	384167 3	6912342 5	57073 8
4700	3925	384165 5	6912354 7	57100 6
4700	3937 5	384163 7	6912366 8	57106 3
4700	3950	384161 9	6912379	57071 9
4700	3962 5	384160 1	6912391 2	57061
4700	3975	384158 2	6912403 4	57028 9
4700	3987 5	384156 4	6912415 6	57031 3
4700	4000	384154 6	6912427 8	57024 5
4700	4012 5	384152 8	6912440	57035 7
4700	4025	384151	6912452 2	57031 9
4700	4037 5	384149 1	6912464 4	57029 1
4700	4050	384147 3	6912476 6	57004 7
4700	4062 5	384145 5	6912488 8	57006
4700	4075	384143 7	6912500 9	57005 7
4700	4087 5	384141 9	6912513 1	57018 4
4700	4100	384140	6912525 3	57030 5
4700	4112 5	384138 2	6912537 5	57029 1
4700	4125	384136 4	6912549 7	57033 5
4700	4137 5	384134 6	6912561 9	57026 6
4700	4150	384132 8	6912574 1	57051
4700	4162 5	384130 9	6912586 3	57059 6
4700	4175	384129 1	6912598 5	57062 9
4700	4187 5	384127 3	6912610 7	57078 2
4700	4200	384125 5	6912622 8	57081 1
4700	4212 5	384123 7	6912635	57082 9
4700	4225	384121 8	6912647 2	57089 6
4700	4237 5	384120	6912659 4	57118 5
4700	4250	384118 2	6912671 6	57127 6

Line	Station	nad27 E	nad27 N	Mag (nT)
4700	4262 5	384116 4	6912683 8	57123 4
4700	4275	384114 6	6912696	57058 2
4700	4287 5	384112 7	6912708 2	57090 9
4700	4300	384110 9	6912720 4	57072 8
4700	4312 5	384109 1	6912732 5	57067 1
4700	4325	384107 3	6912744 7	57071 8
4700	4337 5	384105 5	6912756 9	57077 6
4700	4350	384103 6	6912769 1	57100 3
4700	4362 5	384101 8	6912781 3	57105 1
4700	4375	384100	6912793 5	57081 8
4700	4387 5	384098 2	6912805 7	57097 1
4700	4400	384096 4	6912817 9	57101 3
4700	4412 5	384094 5	6912830 1	57086 5
4700	4425	384092 7	6912842 3	57097 6
4700	4437 5	384090 9	6912854 5	57110 1
4700	4450	384089 1	6912866 6	57109 4
4700	4462 5	384087 3	6912878 8	57118
4700	4475	384085 4	6912891	57122 9
4700	4487 5	384083 6	6912903 2	57103 6
4700	4500	384081 8	6912915 4	57105 5
4700	4512 5	384080	6912927 6	57111 1
4700	4525	384078 2	6912939 8	57086
4700	4537 5	384076 3	6912952	57096 5
4700	4550	384074 5	6912964 2	57103 5
4700	4562 5	384072 7	6912976 3	57088 9
4700	4575	384070 9	6912988 5	57096 6
4700	4587 5	384069 1	6913000 7	57099 6
4700	4600	384067 2	6913012 9	57107 1
4700	4612 5	384065 4	6913025 1	57110 3
4700	4625	384063 6	6913037 3	57116
4700	4637 5	384061 8	6913049 5	57141 5
4700	4650	384060	6913061 7	57128 9
4700	4662 5	384058 1	6913073 9	57138 6
4700	4675	384056 3	6913086 1	57146 6
4700	4687 5	384054 5	6913098 3	57164 1
4700	4700	384052 7	6913110 4	57173
4700	4712 5	384050 9	6913122 6	57176 8
4700	4725	384049	6913134 8	57246 2
4700	4737 5	384047 2	6913147	57171 9
4700	4750	384045 4	6913159 2	57108 6
4700	4762 5	384043 6	6913171 4	57092 8
4700	4775	384041 8	6913183 6	57103 3
4700	4787 5	384039 9	6913195 8	57114 6

Line	Station	nad27 E	nad27 N	Mag (nT)
4700	4800	384038 1	6913208	57119 2
4700	4812 5	384036 3	6913220 2	57121 6
4700	4825	384034 5	6913232 3	57128 6
4700	4837 5	384032 7	6913244 5	57128 3
4700	4850	384030 8	6913256 7	57125 9
4700	4862 5	384029	6913268 9	57128 6
4700	4875	384027 2	6913281 1	57122 8
4700	4887 5	384025 4	6913293 3	57123 8
4700	4900	384023 6	6913305 5	57127 1
4700	4912 5	384021 7	6913317 7	57138 1
4700	4925	384019 9	6913329 9	57134 8
4700	4937 5	384018 1	6913342	57126 3
4700	4950	384016 3	6913354 2	57106 9
4700	4962 5	384014 5	6913366 4	57128
4700	4975	384012 6	6913378 6	57124
4700	4987 5	384010 8	6913390 8	57122 3
4700	5000	384009	6913403	57126 8
4750	3750	384247	6912163	57028 6
4750	3762 5	384244 1	6912174 7	57031 9
4750	3775	384241 9	6912187	56994 2
4750	3787 5	384239 8	6912199 3	56987 7
4750	3800	384237 6	6912211 6	57001 6
4750	3812 5	384235 4	6912224	57022 2
4750	3825	384233 2	6912236 3	57010 3
4750	3837 5	384231 1	6912248 6	56993 2
4750	3850	384228 9	6912260 9	56968 3
4750	3862 5	384226 7	6912273 2	56960 6
4750	3875	384224 6	6912285 5	57033
4750	3887 5	384222 4	6912297 8	56979 6
4750	3900	384220 2	6912310 1	56982
4750	3912 5	384218	6912322 4	56972 6
4750	3925	384215 9	6912334 7	56956 1
4750	3937 5	384213 7	6912347 1	56971 4
4750	3950	384211 5	6912359 4	56961 1
4750	3962 5	384209 4	6912371 7	56953 1
4750	3975	384207 2	6912384	56950 6
4750	3987 5	384205	6912396 3	56958 8
4750	4000	384202 9	6912408 6	56953 2
4750	4012 5	384200 7	6912420 9	56980 4
4750	4025	384198 5	6912433 2	57007 5
4750	4037 5	384196 3	6912445 5	57014 3
4750	4050	384194 2	6912457 8	56958
4750	4062 5	384192	6912470 2	56940 4

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4750	4075	384189 8	6912482 5	56964 4
4750	4087 5	384187 7	6912494 8	57029 6
4750	4100	384185 5	6912507 1	57039 8
4750	4112 5	384183 3	6912519 4	57020 6
4750	4125	384181 1	6912531 7	56999 9
4750	4137 5	384179	6912544	57025 5
4750	4150	384176 8	6912556 3	57048 8
4750	4162 5	384174 6	6912568 6	57072 5
4750	4175	384172 5	6912580 9	56961 9
4750	4187 5	384170 3	6912593 3	56969 3
4750	4200	384168 1	6912605 6	57012
4750	4212 5	384165 9	6912617 9	56988 5
4750	4225	384163 8	6912630 2	56930 2
4750	4237 5	384161 6	6912642 5	56943 4
4750	4250	384159 4	6912654 8	56887 9
4750	4262 5	384157 3	6912667 1	56897 3
4750	4275	384155 1	6912679 4	56910 8
4750	4287 5	384152 9	6912691 7	56905 7
4750	4300	384150 8	6912704	56894 4
4750	4312 5	384148 6	6912716 4	56929 1
4750	4325	384146 4	6912728 7	56962 5
4750	4337 5	384144 2	6912741	56983 6
4750	4350	384142 1	6912753 3	57035 8
4750	4362 5	384139 9	6912765 6	57035 5
4750	4375	384137 7	6912777 9	57049 8
4750	4387 5	384135 6	6912790 2	57055 5
4750	4400	384133 4	6912802 5	57051 6
4750	4412 5	384131 2	6912814 8	57062 6
4750	4425	384129	6912827 1	57065 5
4750	4437 5	384126 9	6912839 5	57037 7
4750	4450	384124 7	6912851 8	57066 9
4750	4462 5	384122 5	6912864 1	57069 1
4750	4475	384120 4	6912876 4	57076 8
4750	4487 5	384118 2	6912888 7	57074 6
4750	4500	384116	6912901	57085 1
4750	4512 5	384113 9	6912913 3	57090 6
4750	4525	384111 7	6912925 6	57108 1
4750	4537 5	384109 5	6912937 9	57100 9
4750	4550	384107 3	6912950 2	57103 5
4750	4562 5	384105 2	6912962 6	57107 5
4750	4575	384103	6912974 9	57109 5
4750	4587 5	384100 8	6912987 2	57112 8
4750	4600	384098 7	6912999 5	57109 4

Line	Station	nad27 E	nad27 N	Mag (nT)
4750	4612 5	384096 5	6913011 8	57113 2
4750	4625	384094 3	6913024 1	57120 9
4750	4637 5	384092 1	6913036 4	57126 3
4750	4650	384090	6913048 7	57113
4750	4662 5	384087 8	6913061	57113 3
4750	4675	384085 6	6913073 3	57121
4750	4687 5	384083 5	6913085 7	57123 6
4750	4700	384081 3	6913098	57137 6
4750	4712 5	384079 1	6913110 3	57152 7
4750	4725	384077	6913122 6	57154 7
4750	4737 5	384074 8	6913134 9	57155 8
4750	4750	384072 6	6913147 2	57137 9
4750	4762 5	384070 4	6913159 5	57142 3
4750	4775	384068 3	6913171 8	57143 7
4750	4787 5	384066 1	6913184 1	57145 5
4750	4800	384063 9	6913196 5	57140 3
4750	4812 5	384061 8	6913208 8	57146 1
4750	4825	384059 6	6913221 1	57146 7
4750	4837 5	384057 4	6913233 4	57153 4
4750	4850	384055 2	6913245 7	57204 6
4750	4862 5	384053 1	6913258	57161 7
4750	4875	384050 9	6913270 3	57158 7
4750	4887 5	384048 7	6913282 6	57153 6
4750	4900	384046 6	6913294 9	57157 1
4750	4912 5	384044 4	6913307 2	57134 6
4750	4925	384042 2	6913319 6	57127 9
4750	4937 5	384040 1	6913331 9	57136 4
4750	4950	384037 9	6913344 2	57145 4
4750	4962 5	384035 7	6913356 5	57146 2
4750	4975	384033 5	6913368 8	57145 4
4750	4987 5	384031 4	6913381 1	57122 6
4750	5000	384029 2	6913393 4	57118 4
4800	3750	384302	6912191	57005 85
4800	3762 5	384299 9	6912203 1	57009 75
4800	3775	384297 7	6912215 2	57010 85
4800	3787 5	384295 6	6912227 3	56996 85
4800	3800	384293 5	6912239 4	57023 15
4800	3812 5	384291 3	6912251 5	57034 15
4800	3825	384289 2	6912263 5	57011 05
4800	3837 5	384287 1	6912275 6	57005 65
4800	3850	384285	6912287 7	57000 65
4800	3862 5	384282 8	6912299 8	57015 75
4800	3875	384280 7	6912311 9	56993 15

Line	Station	nad27 E	nad27 N	Mag (nT)
4800	3887 5	384278 6	6912324	56998 35
4800	3900	384276 4	6912336 1	56998 05
4800	3912 5	384274 3	6912348 2	57012 45
4800	3925	384272 2	6912360 3	57006 45
4800	3937 5	384270	6912372 3	57015 55
4800	3950	384267 9	6912384 4	57000 75
4800	3962 5	384265 8	6912396 5	56995 85
4800	3975	384263 7	6912408 6	57007 75
4800	3987 5	384261 5	6912420 7	57015 45
4800	4000	384259 4	6912432 8	57010 85
4800	4012 5	384257 3	6912444 9	57020 45
4800	4025	384255 1	6912457	57075 55
4800	4037 5	384253	6912469 1	57127 15
4800	4050	384250 9	6912481 2	57113 65
4800	4062 5	384248 8	6912493 3	57048 55
4800	4075	384246 6	6912505 3	57060 45
4800	4087 5	384244 5	6912517 4	57059 95
4800	4100	384242 4	6912529 5	57048 55
4800	4112 5	384240 2	6912541 6	57069 55
4800	4125	384238 1	6912553 7	57065 95
4800	4137 5	384236	6912565 8	57058 05
4800	4150	384233 8	6912577 9	57130 75
4800	4162 5	384231 7	6912590	57067 55
4800	4175	384229 6	6912602 1	57040 35
4800	4187 5	384227 5	6912614 2	57021 65
4800	4200	384225 3	6912626 2	57035 45
4800	4212 5	384223 2	6912638 3	57034 95
4800	4225	384221 1	6912650 4	57016 15
4800	4237 5	384218 9	6912662 5	56961 45
4800	4250	384216 8	6912674 6	57002 95
4800	4262 5	384214 7	6912686 7	57026 95
4800	4275	384212 5	6912698 8	57051 35
4800	4287 5	384210 4	6912710 9	57058 65
4800	4300	384208 3	6912723	57045 55
4800	4312 5	384206 2	6912735	57060 65
4800	4325	384204	6912747 1	57073 35
4800	4337 5	384201 9	6912759 2	57063 25
4800	4350	384199 8	6912771 3	57083 45
4800	4362 5	384197 6	6912783 4	57099 45
4800	4375	384195 5	6912795 5	57085 25
4800	4387 5	384193 4	6912807 6	57090 25
4800	4400	384191 2	6912819 7	57086 85
4800	4412 5	384189 1	6912831 8	57089 05

Appendix A **Happy-Feliz Grid Corrected TFM**

Line	Station	nad27 E	nad27 N	Mag (nT)
4800	4425	384187	6912843 9	57094 55
4800	4437 5	384184 8	6912856	57090 65
4800	4450	384182 7	6912868	57083 15
4800	4462 5	384180 6	6912880 1	57100 35
4800	4475	384178 5	6912892 2	57084 75
4800	4487 5	384176 3	6912904 3	57091 85
4800	4500	384174 2	6912916 4	57116 65
4800	4512 5	384172 1	6912928 5	57085 35
4800	4525	384169 9	6912940 6	57094 25
4800	4537 5	384167 8	6912952 7	57093 35
4800	4550	384165 7	6912964 8	57114 25
4800	4562 5	384163 5	6912976 8	57089 45
4800	4575	384161 4	6912988 9	57089 25
4800	4587 5	384159 3	6913001	57103 35
4800	4600	384157 2	6913013 1	57094 85
4800	4612 5	384155	6913025 2	57099 25
4800	4625	384152 9	6913037 3	57098 15
4800	4637 5	384150 8	6913049 4	57099 85
4800	4650	384148 6	6913061 5	57099 25
4800	4662 5	384146 5	6913073 6	57099 55
4800	4675	384144 4	6913085 7	57096 75
4800	4687 5	384142 3	6913097 8	57115 95
4800	4700	384140 1	6913109 8	57123 25
4800	4712 5	384138	6913121 9	57155 45
4800	4725	384135 9	6913134	57154 65
4800	4737 5	384133 7	6913146 1	57146 15
4800	4750	384131 6	6913158 2	57115 55
4800	4762 5	384129 5	6913170 3	57120 45
4800	4775	384127 3	6913182 4	57114 45
4800	4787 5	384125 2	6913194 5	57112 75
4800	4800	384123 1	6913206 6	57110 95
4800	4812 5	384121	6913218 7	57116 15
4800	4825	384118 8	6913230 7	57118 65
4800	4837 5	384116 7	6913242 8	57110 15
4800	4850	384114 6	6913254 9	57112 85
4800	4862 5	384112 4	6913267	57119 65
4800	4875	384110 3	6913279 1	57124 45
4800	4887 5	384108 2	6913291 2	57116 75
4800	4900	384106	6913303 3	57113 95
4800	4912 5	384103 9	6913315 4	57104 15
4800	4925	384101 8	6913327 5	57103 95
4800	4937 5	384099 7	6913339 5	57124 95
4800	4950	384097 5	6913351 6	57163 75

Line	Station	nad27 E	nad27 N	Mag (nT)
4800	4962 5	384095 4	6913363 7	57159 05
4800	4975	384093 3	6913375 8	57146 55
4800	4987 5	384091 1	6913387 9	57208 45
4800	5000	384089	6913400	57186 55
4850	3750	384344 7	6912179 8	57167
4850	3762 5	384342 6	6912192 1	57155 8
4850	3775	384340 4	6912204 4	57173
4850	3787 5	384338 2	6912216 7	57121 3
4850	3800	384336 1	6912229	57156 9
4850	3812 5	384333 9	6912241 3	57128 7
4850	3825	384331 7	6912253 6	57075 3
4850	3837 5	384329 5	6912265 9	57009 3
4850	3850	384327 4	6912278 2	57043 3
4850	3862 5	384325 2	6912290 6	57015 4
4850	3875	384323	6912302 9	57009 4
4850	3887 5	384320 9	6912315 2	57056 2
4850	3900	384318 7	6912327 5	57065 5
4850	3912 5	384316 5	6912339 8	57071 4
4850	3925	384314 4	6912352 1	57078 4
4850	3937 5	384312 2	6912364 4	57106 8
4850	3950	384310	6912376 7	57156 2
4850	3962 5	384307 8	6912389	57133 7
4850	3975	384305 7	6912401 3	57101 5
4850	3987 5	384303 5	6912413 7	57063 2
4850	4000	384301 3	6912426	57095
4850	4012 5	384299 2	6912438 3	57097 8
4850	4025	384297	6912450 6	57098 6
4850	4037 5	384294 8	6912462 9	57092 4
4850	4050	384292 6	6912475 2	57087 6
4850	4062 5	384290 5	6912487 5	57117 3
4850	4075	384288 3	6912499 8	57083 6
4850	4087 5	384286 1	6912512 1	57060
4850	4100	384284	6912524 4	57069 9
4850	4112 5	384281 8	6912536 8	57084 9
4850	4125	384279 6	6912549 1	57076 6
4850	4137 5	384277 5	6912561 4	57127 7
4850	4150	384275 3	6912573 7	57081 2
4850	4162 5	384273 1	6912586	57079 2
4850	4175	384270 9	6912598 3	57057 6
4850	4187 5	384268 8	6912610 6	57064 5
4850	4200	384266 6	6912622 9	57068 4
4850	4212 5	384264 4	6912635 2	57055 1
4850	4225	384262 3	6912647 6	57051

Line	Station	nad27 E	nad27 N	Mag (nT)
4850	4237 5	384260 1	6912659 9	57054 7
4850	4250	384257 9	6912672 2	57049 7
4850	4262 5	384255 7	6912684 5	57047 1
4850	4275	384253 6	6912696 8	57043 6
4850	4287 5	384251 4	6912709 1	57046 5
4850	4300	384249 2	6912721 4	57046 2
4850	4312 5	384247 1	6912733 7	57049 6
4850	4325	384244 9	6912746	57050 1
4850	4337 5	384242 7	6912758 3	57057 1
4850	4350	384240 6	6912770 7	57057 2
4850	4362 5	384238 4	6912783	57059
4850	4375	384236 2	6912795 3	57053 2
4850	4387 5	384234	6912807 6	57048 7
4850	4400	384231 9	6912819 9	57040 4
4850	4412 5	384229 7	6912832 2	57041
4850	4425	384227 5	6912844 5	57030 7
4850	4437 5	384225 4	6912856 8	57027 8
4850	4450	384223 2	6912869 1	57027 1
4850	4462 5	384221	6912881 4	57047 1
4850	4475	384218 8	6912893 8	57068 8
4850	4487 5	384216 7	6912906 1	57082 5
4850	4500	384214 5	6912918 4	57085 2
4850	4512 5	384212 3	6912930 7	57087 9
4850	4525	384210 2	6912943	57077 8
4850	4537 5	384208	6912955 3	57097 4
4850	4550	384205 8	6912967 6	57130 1
4850	4562 5	384203 7	6912979 9	57120 5
4850	4575	384201 5	6912992 2	57098 6
4850	4587 5	384199 3	6913004 5	57114 9
4850	4600	384197 1	6913016 9	57079 6
4850	4612 5	384195	6913029 2	57100 5
4850	4625	384192 8	6913041 5	57091 6
4850	4637 5	384190 6	6913053 8	57095 2
4850	4650	384188 5	6913066 1	57120
4850	4662 5	384186 3	6913078 4	57119 7
4850	4675	384184 1	6913090 7	57115 2
4850	4687 5	384181 9	6913103	57113 9
4850	4700	384179 8	6913115 3	57123 6
4850	4712 5	384177 6	6913127 6	57121
4850	4725	384175 4	6913140	57117 1
4850	4737 5	384173 3	6913152 3	57112 1
4850	4750	384171 1	6913164 6	57098 3
4850	4762 5	384168 9	6913176 9	57094 7

Appendix A
Happy-Feliz Grid Corrected TFM

Line	Station	nad27 E	nad27 N	Mag (nT)
4850	4775	384166 8	6913189 2	57090 7
4850	4787 5	384164 6	6913201 5	57092 1
4850	4800	384162 4	6913213 8	57099 6
4850	4812 5	384160 2	6913226 1	57102 1
4850	4825	384158 1	6913238 4	57106 5
4850	4837 5	384155 9	6913250 7	57114
4850	4850	384153 7	6913263 1	57121 4
4850	4862 5	384151 6	6913275 4	57119 7
4850	4875	384149 4	6913287 7	57123 8
4850	4887 5	384147 2	6913300	57143 5
4850	4900	384145	6913312 3	57137 1
4850	4912 5	384142 9	6913324 6	57113 3
4850	4925	384140 7	6913336 9	57118 1
4850	4937 5	384138 5	6913349 2	57093
4850	4950	384136 4	6913361 5	57085 2
4850	4962 5	384134 2	6913373 8	57086 9
4850	4975	384132	6913386 2	57101 3
4850	4987 5	384129 9	6913398 5	57115 8
4850	5000	384127 7	6913410 8	57125 1
4900	3750	384409	6912220	57087 65
4900	3762 5	384406 8	6912231 9	57084 65
4900	3775	384404 6	6912243 8	57087 05
4900	3787 5	384402 4	6912255 7	57083 75
4900	3800	384400 2	6912267 6	57072 45
4900	3812 5	384398	6912279 5	57033 65
4900	3825	384395 8	6912291 5	57024 25
4900	3837 5	384393 6	6912303 4	57008 85
4900	3850	384391 4	6912315 3	57009 75
4900	3862 5	384389 2	6912327 2	57018 15
4900	3875	384387	6912339 1	57021 55
4900	3887 5	384384 8	6912351	57038 65
4900	3900	384382 6	6912362 9	57045 65
4900	3912 5	384380 4	6912374 8	57073 05
4900	3925	384378 2	6912386 7	57081 55
4900	3937 5	384376	6912398 7	57052 55
4900	3950	384373 8	6912410 6	57069 25
4900	3962 5	384371 6	6912422 5	57060 35
4900	3975	384369 4	6912434 4	57052 55
4900	3987 5	384367 2	6912446 3	57048 85
4900	4000	384365	6912458 2	57057 75
4900	4012 5	384362 8	6912470 1	57066 45
4900	4025	384360 6	6912482	57061 15
4900	4037 5	384358 4	6912493 9	57064 95

Line	Station	nad27 E	nad27 N	Mag (nT)
4900	4050	384356 2	6912505 8	57056 65
4900	4062 5	384354	6912517 8	57065 25
4900	4075	384351 8	6912529 7	57059 75
4900	4087 5	384349 6	6912541 6	57070 55
4900	4100	384347 4	6912553 5	57075 55
4900	4112 5	384345 2	6912565 4	57078 05
4900	4125	384343	6912577 3	57055 25
4900	4137 5	384340 8	6912589 2	57085 05
4900	4150	384338 6	6912601 1	57093 65
4900	4162 5	384336 4	6912613	57054 95
4900	4175	384334 2	6912624 9	57053 95
4900	4187 5	384332	6912636 8	57075 65
4900	4200	384329 8	6912648 8	57052 65
4900	4212 5	384327 6	6912660 7	57064 35
4900	4225	384325 4	6912672 6	57056 95
4900	4237 5	384323 2	6912684 5	57073 55
4900	4250	384321	6912696 4	57054 75
4900	4262 5	384318 8	6912708 3	57062 55
4900	4275	384316 6	6912720 2	57067 65
4900	4287 5	384314 4	6912732 1	57055 65
4900	4300	384312 2	6912744	57067 05
4900	4312 5	384310	6912756	57099 95
4900	4325	384307 8	6912767 9	57095 45
4900	4337 5	384305 6	6912779 8	57106 05
4900	4350	384303 4	6912791 7	57079 65
4900	4362 5	384301 2	6912803 6	57089 05
4900	4375	384299	6912815 5	57084 95
4900	4387 5	384296 8	6912827 4	57091 45
4900	4400	384294 6	6912839 3	57056 65
4900	4412 5	384292 4	6912851 2	57064 35
4900	4425	384290 2	6912863 1	57077 85
4900	4437 5	384288	6912875	57071 65
4900	4450	384285 8	6912887	57096 95
4900	4462 5	384283 6	6912898 9	57077 35
4900	4475	384281 4	6912910 8	57079 45
4900	4487 5	384279 2	6912922 7	57136 85
4900	4500	384277	6912934 6	57123 65
4900	4512 5	384274 8	6912946 5	57140 15
4900	4525	384272 6	6912958 4	57119 85
4900	4537 5	384270 4	6912970 3	57119 35
4900	4550	384268 2	6912982 2	57107 85
4900	4562 5	384266	6912994 2	57109 85
4900	4575	384263 8	6913006 1	57121 55

Line	Station	nad27 E	nad27 N	Mag (nT)
4900	4587 5	384261 6	6913018	57106 35
4900	4600	384259 4	6913029 9	57092 45
4900	4612 5	384257 2	6913041 8	57123 85
4900	4625	384255	6913053 7	57119 85
4900	4637 5	384252 8	6913065 6	57096 25
4900	4650	384250 6	6913077 5	57077 15
4900	4662 5	384248 4	6913089 4	57066 75
4900	4675	384246 2	6913101 3	57075 75
4900	4687 5	384244	6913113 3	57097 95
4900	4700	384241 8	6913125 2	57116 25
4900	4712 5	384239 6	6913137 1	57094 15
4900	4725	384237 4	6913149	57086 05
4900	4737 5	384235 2	6913160 9	57087 05
4900	4750	384233	6913172 8	57076 25
4900	4762 5	384230 8	6913184 7	57066 15
4900	4775	384228 6	6913196 6	57059 25
4900	4787 5	384226 4	6913208 5	57076 75
4900	4800	384224 2	6913220 4	57075 95
4900	4812 5	384222	6913232 3	57086 45
4900	4825	384219 8	6913244 3	57096 85
4900	4837 5	384217 6	6913256 2	57096 55
4900	4850	384215 4	6913268 1	57085 05
4900	4862 5	384213 2	6913280	57085 45
4900	4875	384211	6913291 9	57082 15
4900	4887 5	384208 8	6913303 8	57085 85
4900	4900	384206 6	6913315 7	57086 55
4900	4912 5	384204 4	6913327 6	57093 35
4900	4925	384202 2	6913339 5	57099 75
4900	4937 5	384200	6913351 5	57105 45
4900	4950	384197 8	6913363 4	57104 85
4900	4962 5	384195 6	6913375 3	57115 95
4900	4975	384193 4	6913387 2	57111 85
4900	4987 5	384191 2	6913399 1	57135 75
4900	5000	384189	6913411	57133 15

Appendix A

Happy-Feliz VLF-EM Seattle

Line	Station	InPhase	Quadrature	Total Field	Direction
4100	4500	11.5	-3.9	16.2	6.6
4100	4512.5	13	3.6	16.1	7.4
4100	4525	13.3	-3.9	16.2	7.5
4100	4537.5	12.9	-4	16.1	7.3
4100	4550	12.9	-3.8	16.3	7.4
4100	4562.5	13.5	-2.9	16.3	7.7
4100	4575	13.1	-3.2	16.3	7.4
4100	4587.5	14	-3.4	16.1	8
4100	4600	14.7	3	16.1	8.3
4100	4612.5	15.4	1.7	16.1	8.8
4100	4625	16.9	-0.6	16	9.6
4100	4637.5	17.8	0	16.1	13.7
4100	4650	19.7	2.8	16.2	11.1
4100	4662.5	18.8	2.4	16.4	10.7
4100	4675	18	1.8	16.5	10.2
4100	4687.5	16.5	2.6	16.7	9.3
4100	4700	16	1.7	16.6	9.1
4100	4712.5	14.8	0.6	16.2	8.4
4100	4725	14.6	0.4	15.8	8.3
4100	4737.5	14.4	1.6	15.6	8.2
4100	4750	15	2.8	15.2	8.5
4100	4762.5	16.2	3.4	14.9	9.2
4100	4775	17.9	5	14.8	10.2
4100	4787.5	19.7	6.6	14.6	11.2
4100	4800	21.3	8	14.8	12.1
4100	4812.5	45.7	-25.7	1.1	25.8
4100	4825	19.8	8.1	15.2	11.3
4100	4837.5	19.7	8.5	14.7	11.2
4100	4850	18.6	9.1	14.8	10.6
4100	4862.5	18.4	9.7	14.5	10.5
4100	4875	18.5	10.4	14.4	10.6
4100	4887.5	18.4	11.6	14.4	10.5
4100	4900	18.8	12	14.3	10.8
4100	4912.5	19.3	12.9	14.2	11.1
4100	4925	19.2	12	14	11
4100	4937.5	19.9	13.2	13.9	11.4
4100	4950	20.2	13.5	14	11.6
4100	4962.5	20.5	14.5	14.1	11.8
4100	4975	21.4	15.5	14	12.3
4100	4987.5	21.1	15.2	14.1	12.2
4100	5000	19.6	13.6	14	11.3
4100	5012.5	17.4	17	15.8	10.1
4100	5025	16.8	17.1	15.7	9.8

Line	Station	InPhase	Quadrature	Total Field	Direction
4100	5037.5	18	16.3	16.1	10.5
4100	5050	16.4	18.3	15.8	9.6
4100	5062.5	17.3	19.4	16.1	10.1
4100	5075	17.1	18.4	16.2	10
4100	5087.5	18.5	17	16.8	10.8
4100	5100	16.8	19.1	17	9.9
4100	5112.5	18	17.7	16.9	10.5
4100	5125	17.7	17.5	17.1	10.3
4100	5137.5	17.7	16.6	17.3	10.3
4100	5150	17.5	16	17.1	10.1
4100	5162.5	17.8	15.8	17.2	10.3
4100	5175	19.2	16	17.6	11.1
4100	5187.5	18.8	15.4	18.2	10.9
4100	5200	18.7	15.4	18.4	10.8
4100	5212.5	19.1	13.1	18.9	11
4100	5225	18.5	13.9	18.7	10.6
4100	5237.5	18.8	13.7	19	10.8
4100	5250	18.7	12.8	19.3	10.7
4100	5262.5	17.6	12.4	19.2	10.1
4100	5275	18	11.6	19.2	10.3
4100	5287.5	17.1	11.9	18.8	9.8
4100	5300	17.7	11.6	18.8	10.2
4100	5312.5	16.9	10.7	18.6	9.7
4100	5325	16.4	10.1	18.3	9.4
4100	5337.5	16.5	9.6	18.5	9.4
4100	5350	17.4	10.8	18.4	10
4100	5362.5	17.6	12.5	18.4	10.1
4100	5375	18.1	13.1	18.7	10.4
4100	5387.5	17.6	13.9	19.1	10.2
4100	5400	17.7	12.7	19.6	10.2
4100	5412.5	17.6	11.2	19.9	10.1
4100	5425	16.9	12.6	19.6	9.7
4100	5437.5	17	12	20.4	9.8
4100	5450	15.7	13.1	20.5	9
4100	5462.5	14.1	12.2	21.1	8.1
4100	5475	12.6	10.2	21.5	7.2
4100	5487.5	10.7	10.5	22.3	6.2
4100	5500	8.2	9.9	22.9	4.7
4100	5512.5	5.7	7.7	23.4	3.3
4100	5525	3.2	5.8	23.5	1.8
4100	5537.5	-0.8	4.4	23.1	0.4
4100	5550	1.4	3.8	23.4	0.8
4100	5562.5	3.1	3.7	22.9	1.8

Appendix A

Happy-Feliz VLF-EM Seattle

Line	Station	InPhase	Quadrature	Total Field	Direction
4100	5575	-5.2	3.2	22.8	-2.9
4100	5587.5	-5.2	2.6	22.6	-2.9
4100	5600	-5.2	2.8	22.6	-3
4100	5612.5	-4.6	3.5	22.6	-2.6
4100	5625	5.7	2.9	22.9	-3.3
4100	5637.5	8.3	0.8	23.3	-4.7
4100	5650	9.8	1.6	22.8	5.6
4100	5662.5	10.7	2.5	22.4	6.1
4100	5675	11	-3.1	21.9	-6.2
4100	5687.5	-9.7	2.7	21.6	5.5
4100	5700	-8.4	-2.5	21.5	-4.8
4100	5712.5	-8	-2.8	21.8	-4.5
4100	5725	-6.5	-1.8	21.6	-3.7
4100	5737.5	-5.1	-0.2	21.7	-2.9
4100	5750	-3.1	1.5	22	-1.7
4200	4500	14.7	4.3	19.2	8.4
4200	4512.5	13.5	3.4	19.6	7.7
4200	4525	11.7	1.6	20	6.7
4200	4537.5	10.3	0.2	19.4	5.9
4200	4550	11.2	1.4	19	6.3
4200	4562.5	12.2	1.7	18.8	6.9
4200	4575	12.4	2.4	18.8	7
4200	4587.5	12.2	2.9	18.6	6.9
4200	4600	11.8	3.2	18.3	6.7
4200	4612.5	11.2	3.2	18.4	6.4
4200	4625	11	3.1	18.3	6.2
4200	4637.5	10.6	3.5	18.5	6
4200	4650	11	3.8	18.2	6.3
4200	4662.5	11.8	4.6	18	6.7
4200	4675	13	5.4	18.1	7.4
4200	4687.5	13.9	5.7	18.3	7.9
4200	4700	13.6	6	18.2	7.7
4200	4712.5	13.8	5.6	18.1	7.8
4200	4725	13.1	4.7	17.8	7.5
4200	4737.5	14.9	6.1	17.3	8.5
4200	4750	17.5	7.8	17	9.9
4200	4762.5	19.3	9.2	16.9	11
4200	4775	20.9	10.4	16.9	11.9
4200	4787.5	22.2	10.8	17	12.6
4200	4800	22.2	11.4	17.2	12.6
4200	4812.5	23.5	12	17.4	13.4
4200	4825	23	12.2	17.4	13.1
4200	4837.5	22.9	12.8	17.9	13.1

Line	Station	InPhase	Quadrature	Total Field	Direction
4200	4850	22.1	12	18.4	12.6
4200	4862.5	19.5	10.3	18.6	11.1
4200	4875	18.9	10.4	19	10.8
4200	4887.5	18.4	10.3	19.1	10.5
4200	4900	15.8	9.4	19.2	9
4200	4912.5	14.1	8.8	19.1	8.1
4200	4925	13.4	9	18.7	7.7
4200	4937.5	14.3	9.7	18.7	8.2
4200	4950	13.4	9.9	18.7	7.7
4200	4962.5	12.6	10.8	18.7	7.3
4200	4975	12.4	10.8	18.8	7.1
4200	4987.5	11.2	10.4	19	6.4
4200	5000	11.3	5.3	19.63	65.5
4200	5025	11.2	6.9	19.44	73.9
4200	5050	11.6	7.2	19.35	73.6
4200	5075	11.4	6.6	19.25	74.1
4200	5100	10.8	5.9	19.23	74.4
4200	5125	10.8	5.7	19.22	69.6
4200	5150	11.6	5.2	19.17	63.1
4200	5175	11.4	4.6	19.35	71
4200	5200	11.3	3.5	19.42	59.2
4200	5225	11.8	3	19.32	64.6
4200	5250	11.4	3.4	19.69	67.3
4200	5275	12.1	2.7	19.48	52.9
4200	5287.5	13.4	2.5	35.2	7.6
4200	5300	12.4	2.8	19.92	54
4200	5312.5	12.2	2.8	35.9	7
4200	5325	12.7	2.1	36.1	7.2
4200	5337.5	12.6	2.2	36.1	7.2
4200	5350	13.1	2.3	36.2	7.5
4200	5362.5	13.4	2.9	36.6	7.6
4200	5375	13.6	3.3	36.9	7.7
4200	5387.5	12.6	3.7	37.8	7.2
4200	5400	11.7	3.1	38.9	6.7
4200	5412.5	10.7	3	39.1	6.1
4200	5425	6.4	0.8	39.3	3.6
4200	5437.5	4	-0.2	38.8	2.3
4200	5450	0.4	2.2	38.4	0.2
4200	5462.5	-2.5	3.5	38.2	1.4
4200	5475	-7.7	-6.4	37.1	4.4
4200	5487.5	-9.7	-6.9	34.3	5.6
4200	5500	9.6	-6	32.7	5.5
4200	5512.5	-8.1	-5.5	31.3	-4.6

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Happy-Feliz VLF-EM Seattle

Line	Station	InPhase	Quadrature	Total Field	Direction
4200	5525	8.8	-4.9	29.5	-5
4200	5537.5	-8.7	-4.4	28.8	-4.9
4200	5550	-9.3	5	28.3	-5.3
4200	5562.5	9.9	-5	28.3	-5.7
4200	5575	-9.1	-4.2	28.1	-5.2
4200	5587.5	-8.2	-3.5	27.9	-4.7
4200	5600	-7.1	2.4	27.7	-4
4200	5612.5	-6.1	1.4	27.7	-3.5
4200	5625	5.8	-0.6	28.3	-3.3
4200	5637.5	9.5	-4.1	28.8	-5.4
4200	5650	-10.5	-5.1	28	-6
4200	5662.5	-11.1	-5.7	27.4	-6.3
4200	5675	10.6	-5.1	26.8	-6.1
4200	5687.5	-9.6	-4	26.6	5.5
4200	5700	-11	-4.5	26.8	-6.3
4200	5712.5	12.2	-4.7	26.5	-6.9
4200	5725	14.4	5.5	26.9	8.2
4200	5737.5	-16.8	6.8	26.9	9.5
4200	5750	19.9	-8.2	25.4	11.3
4200	50125	11.4	5.9	19.43	69.2
4200	50375	11.8	7.3	19.34	67.7
4200	50625	11.3	6.7	19.27	69.7
4200	50875	11.4	6.5	19.14	65.2
4200	51125	10.5	6	19.27	76.9
4200	51375	11.5	5	19.12	58.4
4200	51625	11.4	5.2	19.25	63.4
4200	51875	10.9	4.3	19.49	65.8
4200	52125	11	3.7	19.53	63.9
4200	52375	11.4	3.1	19.59	68.7
4200	52625	11.6	3.4	19.72	62.2
4200	52875	11.8	2.5	19.78	58.1
4300	5000	2.6	5.6	21.32	59.6
4300	5012.5	3	5.4	21.31	62
4300	5025	2.8	5.6	21.08	56.5
4300	5037.5	2.5	5.3	21.39	63.5
4300	5050	2	5.4	21.3	56.2
4300	5062.5	1.4	4.1	21.27	36.1
4300	5075	0.1	3.5	21.41	42
4300	5087.5	0.3	2.9	21.4	56.9
4300	5100	0.3	2.9	21.43	57.8
4300	5112.5	0.3	2.7	21.47	54.2
4300	5125	0.3	2	21.67	56.9
4300	5137.5	0	1.1	21.54	62.8

Line	Station	InPhase	Quadrature	Total Field	Direction
4300	5150	0.3	1.1	21.8	69.1
4300	5162.5	0.3	0.4	22.02	75.5
4300	5175	0.3	0.5	22.07	70
4300	5187.5	0.6	0	22.3	79.4
4300	5200	1	0.2	22.29	83
4300	5212.5	0.9	0	22.67	79.3
4300	5225	0.3	0	22.75	73.6
4300	5237.5	0.6	0.2	22.88	73.2
4300	5250	0.8	1.5	22.81	62.1
4300	5262.5	1.7	-2.2	22.9	60.8
4300	5275	-2.7	-2.9	22.6	63.8
4300	5287.5	-3.2	-2.8	22.35	53.5
4300	5300	2.2	-2.3	22.29	63.8
4300	5312.5	-1.7	-1.4	22.53	66.8
4300	5325	-0.7	-0.7	22.65	69.9
4300	5337.5	0.5	0.3	22.9	85.7
4300	5350	0.3	0	23.15	82.1
4300	5362.5	0.3	0.7	23.37	76.4
4300	5375	0	0.8	23.48	77.2
4300	5387.5	1.3	0.5	23.79	65.1
4300	5400	2.6	0.5	23.81	78.7
4300	5412.5	3.6	0.5	23.89	69
4300	5425	5.7	2.1	23.91	75.2
4300	5437.5	6.7	2.1	23.42	72.9
4300	5450	6.1	-1.8	23.23	72
4300	5462.5	-5.8	-0.7	23.25	73.8
4300	5475	-4.1	0.9	23.22	75.1
4300	5487.5	-3.9	1.1	23.23	71.2
4300	5500	-3.9	2.4	23.51	65.4
4300	5512.5	-4.8	2.3	24.38	67.7
4300	5525	7.2	1.7	25.02	65.9
4300	5537.5	15	-2	25.79	67.9
4300	5550	19.7	-4.1	25.89	70.2
4300	5562.5	20.7	-4.9	25.63	73.1
4300	5575	-23.8	-6.5	24.77	73.2
4300	5587.5	-23.4	-6.8	23.86	77
4300	5600	23.1	-6.2	22.73	72.9
4300	5612.5	22	5.3	22.14	78.7
4300	5625	-22.1	-4.7	21.79	73.8
4300	5637.5	-21.5	-4.2	21.35	75.6
4300	5650	-21.7	2.8	20.82	70
4300	5662.5	21.5	3.5	20.52	73.6
4300	5675	21.8	3.3	20.42	71.9

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Line	Station	InPhase	Quadrature	Total Field	Direction
4300	5687 5	-21 9	-2 9	20 07	72 5
4300	5700	-22 1	-3 2	19 9	73
4300	5712 5	-22 5	-2 6	19 65	71 8
4300	5725	22 8	-2 5	19 34	78 4
4300	5737 5	22 4	-2 9	19 22	73
4300	5750	22 3	-2 6	19 04	71 5
4400	4250	26 7	-4 1	25 06	55 8
4400	4262 5	-26 3	4 4	24 57	66 9
4400	4275	-27 6	-5 2	24 15	75
4400	4287 5	-29	-6 2	23 87	66 2
4400	4300	29 8	6 9	23 3	70 1
4400	4312 5	28 5	7 2	22 26	63 9
4400	4325	26 8	5 9	21 78	58 9
4400	4337 5	27 3	5 2	21 76	84 1
4400	4350	27 4	6 2	22 38	75 5
4400	4362 5	-28 4	-7 9	22 31	75
4400	4375	-28 3	-8 8	22 16	76 1
4400	4387 5	-28	-8 7	21 66	81
4400	4400	-27 5	7 5	21 23	82 8
4400	4412 5	-26 9	-7 5	21 36	84 8
4400	4425	-26 5	-7 7	21 61	81 2
4400	4437 5	-24 6	-7	22 13	74 8
4400	4450	-22 7	-6 2	22 39	76 8
4400	4462 5	-22	-6 3	21 97	64 6
4400	4475	-21 1	-6 5	21 83	77 5
4400	4487 5	-19	-5 7	21 72	78 6
4400	4500	-16	-4 9	21 4	73 9
4400	4512 5	-13 3	2 7	21 66	72 5
4400	4525	-11 3	1 9	22 14	57 5
4400	4537 5	-10 7	0 8	22 87	77 3
4400	4550	-10 8	-0 8	23 84	79 5
4400	4562 5	-13	-2	24 52	72 5
4400	4575	15 5	-4 6	24 37	73 9
4400	4587 5	16 4	4 2	23 89	68 7
4400	4600	-15 4	3 9	23 4	71
4400	4612 5	14 4	2 7	23 55	72 9
4400	4625	13 9	3 1	23 43	77 8
4400	4637 5	13	2 3	23 64	78 8
4400	4650	12 4	2 6	23 68	76 1
4400	4662 5	-11 6	2 6	23 73	73 8
4400	4675	-11 4	-1 7	23 63	68 1
4400	4687 5	-11 5	-2	24 53	72 3
4400	4700	-11 1	2 1	24 88	68 7

Line	Station	InPhase	Quadrature	Total Field	Direction
4400	4712 5	-13	3 7	25 16	62 9
4400	4725	-13 7	-4 9	25	68 2
4400	4737 5	14	5 8	24 93	61 5
4400	4750	15 3	-6	24 63	74 3
4400	4762 5	14 6	6 3	24 53	70 3
4400	4775	-12 9	-5 3	24 75	73 3
4400	4787 5	-10 8	-4	24 99	71 8
4400	4800	-8 9	3 2	24 75	68 1
4400	4812 5	8 7	3 1	24 52	72 7
4400	4825	-6 8	2 9	24 71	75 6
4400	4837 5	6 6	2 9	25 04	76 4
4400	4850	-5 8	3 1	24 64	67 4
4400	4862 5	5 5	2 9	24 87	74 5
4400	4875	-6 2	3 1	24 95	73 6
4400	4887 5	-5 3	2 6	24 61	66
4400	4900	-6 7	-2 5	24 54	73 2
4400	4912 5	-6 3	-2 6	24 68	75 2
4400	4925	-7 1	-2 8	24 87	74 9
4400	4937 5	-8 4	-4 1	24 7	67 5
4400	4950	-9 2	5 4	24 62	68 9
4400	4962 5	-9 5	-5 1	24 6	62 4
4400	4975	-9 7	-5 5	24 57	64 6
4400	4987 5	-10 3	-6 5	24 24	58 9
4400	5000	-11 3	-6 4	23 96	75 3
4400	5012 5	-11 2	-6 6	23 96	78 8
4400	5025	-10 7	-6 3	23 83	75 1
4400	5037 5	-10 3	-6	23 98	75 2
4400	5050	10 4	-6 4	24 16	77 3
4400	5062 5	9 1	5 2	24 44	85 4
4400	5075	8 7	-5 3	24 65	83 1
4400	5087 5	-8 8	-6 3	24 44	73 5
4400	5100	9 5	-6 7	24 36	79 2
4400	5112 5	8 9	7 3	24 03	73 8
4400	5125	-9 7	7 7	24 14	75 8
4400	5137 5	9 7	8 2	23 91	70
4400	5150	9 2	8 3	23 87	74 4
4400	5162 5	8 4	8	23 71	66 4
4400	5175	9	8 3	24 01	69 6
4400	5187 5	9 2	-8 8	23 99	70 7
4400	5200	-9 9	9 2	23 97	73 2
4400	5212 5	10	-9 4	23 84	70 9
4400	5225	-9 8	9	23 94	77 6
4400	5237 5	9 4	-8 9	23 75	72 4

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Line	Station	InPhase	Quadrature	Total Field	Direction
4400	5250	8	-8.5	23.8	73.4
4400	5262.5	-7.6	-8.1	23.52	71
4400	5275	-6.9	7.2	23.59	63.9
4400	5287.5	6.7	7.1	23.86	55.4
4400	5300	-8.8	8	24.18	41.6
4400	5312.5	10.5	9.2	23.79	51.7
4400	5325	12.8	-9.1	23.65	50.1
4400	5337.5	14.4	-8.8	23.45	51.9
4400	5350	-16.5	-8.8	23.38	58.2
4400	5362.5	-17.3	-8.9	23.06	58.8
4400	5375	-18.2	-7.2	23.16	65.4
4400	5387.5	-18.8	-6.7	23.44	76
4400	5400	19.8	-6.2	23.77	63.2
4400	5412.5	-24.2	-8	23.77	60.9
4400	5425	-26.8	9.5	23.1	68
4400	5437.5	-27.7	-9.3	22.98	73.5
4400	5450	28.4	-8.7	22.42	59.8
4400	5462.5	29.1	-8.3	22.29	68.4
4400	5475	30	-8.5	21.64	67.6
4400	5487.5	-29.1	8.2	21.33	69.4
4400	5500	-29.2	8.2	20.95	69.1
4400	5512.5	-27.9	-7.1	20.08	74.8
4400	5525	25.4	-6.3	19.88	74.1
4400	5537.5	-24	-4.7	19.77	78.2
4400	5550	21.4	3.9	19.6	64.3
4400	5562.5	20.5	3.8	19.53	69
4400	5575	20.1	4	19.69	69.2
4400	5587.5	-20.5	5.1	19.48	70.4
4400	5600	-21.2	-6.5	19.36	63
4400	5612.5	21.5	-7.9	18.81	71.9
4400	5625	20.2	-7	18.15	72.9
4400	5637.5	-18.6	-5.7	18.06	63.7
4400	5650	-17.6	5.3	17.96	74.2
4400	5662.5	-16.4	-4.7	17.95	67.7
4400	5675	14.5	-4.4	17.81	62.3
4400	5687.5	13.8	4.5	17.82	70.8
4400	5700	13.7	5.3	17.72	69.2
4400	5712.5	12.9	5.5	17.52	64.8
4400	5725	11.5	5.3	17.55	70.5
4400	5737.5	10.4	5.2	17.52	71.2
4400	5750	9	4.5	17.63	66.2
4500	3750	14.7	0.6	23.65	62.2
4500	3762.5	17.7	1.9	23.14	65.1

Line	Station	InPhase	Quadrature	Total Field	Direction
4500	3775	20.6	3.5	23.18	67.1
4500	3787.5	23.8	-6	23.06	76.9
4500	3800	25	5.9	22.24	60.4
4500	3812.5	25.5	5.5	21.6	60.5
4500	3825	25.4	-4.5	21.25	54.7
4500	3837.5	-25.2	3.8	21.35	74.6
4500	3850	27.7	4.5	20.8	57.4
4500	3862.5	28.7	5.3	20.37	68.4
4500	3875	28.5	5.6	19.99	63.7
4500	3887.5	29.7	-4.2	19.8	53.9
4500	3900	-30.1	-4.8	19.59	52.3
4500	3912.5	-29.3	3.4	18.96	53.4
4500	3925	-28.4	-2.4	18.83	64.9
4500	3937.5	-27.2	-1.2	18.64	71.4
4500	3950	26.3	0	18.45	71.2
4500	3962.5	-26.3	0	18.18	69
4500	3975	-26.6	0.3	18.12	64.8
4500	3987.5	-28	0.1	17.99	59.8
4500	4000	-27.9	0.3	17.84	59.1
4500	4012.5	-29	-0.7	17.74	65.8
4500	4025	29.9	-1.8	17.72	71.5
4500	4037.5	-31	-2	17.81	59.9
4500	4050	31.6	2.8	17.64	52.8
4500	4062.5	30	1.5	17.64	61.4
4500	4075	29.3	1.1	17.59	62.8
4500	4087.5	27.8	0	17.52	65
4500	4100	26.5	0.1	17.77	66.6
4500	4112.5	26.4	0	18.03	65.1
4500	4125	-27	0.6	18.26	62.2
4500	4137.5	-26.2	0.2	18.33	69.2
4500	4150	26	0.2	18.52	59.2
4500	4162.5	-25.2	1	18.74	61.1
4500	4175	25.7	0.4	19.13	60.7
4500	4187.5	24.8	1.2	19.37	58.6
4500	4200	-25.3	0.6	19.99	59.3
4500	4212.5	-26.1	1.3	20.42	64.5
4500	4225	-26.3	-1.5	20.77	68.1
4500	4237.5	25.3	1.8	20.91	69.8
4500	4250	24.4	1.9	21.19	75.5
4500	4262.5	23.5	1.7	21.68	74.5
4500	4275	23.6	1.2	21.81	72.8
4500	4287.5	23	1.3	22.19	74.2
4500	4300	22.3	0.8	22.49	75.8

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Line	Station	InPhase	Quadrature	Total Field	Direction
4500	4312 5	20 6	0 5	22 8	71 2
4500	4325	-19 4	1 4	23 42	73 3
4500	4337 5	-17 8	1 6	23 74	72 3
4500	4350	-15 5	2 6	24 37	78
4500	4362 5	-14 2	3	25 23	68 7
4500	4375	17 5	1 4	25 9	63 1
4500	4387 5	-19 8	0 3	25 99	65 1
4500	4400	-20 1	0 1	26 55	67 1
4500	4412 5	-20 7	0 3	27 1	66 3
4500	4425	22 5	0	27 02	62 9
4500	4437 5	24 5	-1 5	27 44	67 8
4500	4450	-26	2 2	27 23	66 2
4500	4462 5	-25 4	-2 4	27 45	76 5
4500	4475	-25	-1 3	27 79	77 9
4500	4487 5	25 5	-1 4	28 15	69 2
4500	4500	-24 6	0 9	28 19	72 8
4500	4512 5	24 7	1	28 27	68 3
4500	4525	23 8	0 2	28 55	72 2
4500	4537 5	23 2	0 7	28 81	67 4
4500	4550	-23 2	0 1	28 89	70 7
4500	4562 5	-23	-0 1	29 18	71 6
4500	4575	-23 7	-0 1	29 77	69 2
4500	4587 5	-23 7	-0 2	29 64	65 7
4500	4600	-23 5	-0 3	29 59	60 5
4500	4612 5	-23 9	-0 2	29 79	69
4500	4625	-23 2	0 1	30 04	65 3
4500	4637 5	-21 4	0 2	30 18	70
4500	4650	-22 5	0 7	30 2	67 9
4500	4662 5	-22 1	0 7	30 68	69 4
4500	4675	-22 4	0 5	30 75	69 9
4500	4687 5	-22 2	1 4	31 22	72
4500	4700	20 6	1 7	31 65	88 8
4500	4712 5	20 4	2 9	31 75	75
4500	4725	19 8	3 5	31 9	67 9
4500	4737 5	-19	3 7	32 53	76 5
4500	4750	-19 3	4 2	32 7	77 5
4500	4762 5	19 8	4 4	32 76	71 4
4500	4775	20 7	3 7	32 89	72 5
4500	4787 5	-22 4	2 8	33 2	66 6
4500	4800	23 6	1 9	33 15	63 3
4500	4812 5	26 8	0	33 02	68 9
4500	4825	27 2	-0 9	32 91	73
4500	4837 5	27 5	1 2	32 52	68 4

Line	Station	InPhase	Quadrature	Total Field	Direction
4500	4850	28 2	-1 6	32 35	71 6
4500	4862 5	29	2 8	31 82	68 5
4500	4875	-28 3	3 2	31 87	74 2
4500	4887 5	-28 5	-3 3	31 04	71 4
4500	4900	-28 2	-3 5	30 7	73 1
4500	4912 5	26 5	-3 2	30 16	78 1
4500	4925	25 9	-3 3	30 04	77 6
4500	4937 5	-25 4	-3 6	30 03	84 3
4500	4950	-24 2	-3 8	30 08	86 3
4500	4962 5	23 7	-3 3	29 78	79 6
4500	4975	21 4	-4	30 1	-86 2
4500	4987 5	-21 4	-3 6	30 17	-89 1
4500	5000	21	-3 3	30 47	81 5
4600	3750	-11 9	2	19 62	77 7
4600	3762 5	13	-1 8	19 47	68 8
4600	3775	-14 3	-2 6	19 33	65 5
4600	3787 5	-15 7	3	19 4	69 5
4600	3800	16 4	2 8	19 37	69 7
4600	3812 5	17 9	3 2	19 49	70
4600	3825	-19 1	-4	19 42	60 6
4600	3837 5	-20 9	-4 4	19 09	68 2
4600	3850	-22 3	-3 8	19 2	77 5
4600	3862 5	-21 8	-3 8	19 04	64 2
4600	3875	-22 9	-2 6	18 87	74 5
4600	3887 5	-23 8	-2 4	18 41	66 8
4600	3900	-23 9	-2 4	18 12	65 5
4600	3912 5	-25 5	-2 4	17 69	67 8
4600	3925	-25 9	-2 5	17 32	68
4600	3937 5	-25 6	-2 5	16 76	57 1
4600	3950	-24 5	-2 8	16 85	51 5
4600	3962 5	-23 9	-1 5	17 32	54 9
4600	3975	-24 2	-2 6	17 47	57 2
4600	3987 5	-24 3	-3 7	17 57	55 8
4600	4000	-24 8	-5 1	17 78	48 5
4600	4012 5	25	-5 7	18 16	52 8
4600	4025	25 7	5 4	18 41	61 6
4600	4037 5	25 2	5 6	19 13	59 5
4600	4050	-25 3	5 4	19 18	59 8
4600	4062 5	24 3	4 9	19 28	63 9
4600	4075	24 5	5 2	19 28	59 4
4600	4087 5	24 1	-4 5	19 27	57
4600	4100	23 5	4 6	19 18	57 8
4600	4112 5	23 4	-4 4	19 18	61 6

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Happy-Feliz VLF-EM Seattle

Line	Station	InPhase	Quadrature	Total Field	Direction
4600	4125	-23	4.4	18.97	60.7
4600	4137.5	-22.2	-3.8	18.83	55.9
4600	4150	-21.5	3.8	18.91	54.7
4600	4162.5	20.9	-4.1	18.99	59.7
4600	4175	20.6	3.3	18.8	67.1
4600	4187.5	19.5	3.2	18.95	62.4
4600	4200	18.6	2.5	18.87	60.8
4600	4212.5	18.3	1.9	18.74	60.7
4600	4225	-17.3	1.5	19.06	57.6
4600	4237.5	17.4	1.3	19.31	60.9
4600	4250	17.1	1.4	19.61	63.1
4600	4262.5	-16.9	-0.6	19.93	66.9
4600	4275	-17.4	-0.6	20.75	66.1
4600	4287.5	-19.7	1.8	20.91	64.1
4600	4300	-22.5	-2.7	21.13	67.6
4600	4312.5	-26.3	-5	21.27	63.5
4600	4325	-29.2	-7.5	20.39	59.6
4600	4337.5	-29.7	-7.3	19.91	58.5
4600	4350	-29.8	-6.3	19.59	63.3
4600	4362.5	-30	-6.1	19.32	59.4
4600	4375	-29.7	-5.4	19.22	63
4600	4387.5	29.7	5	19.33	60.8
4600	4400	30.7	-4.5	19.46	73.4
4600	4412.5	-31.9	-5.8	19.26	61.8
4600	4425	-32.7	-7.8	18.83	62.3
4600	4437.5	-32.7	-7.9	18.46	66.7
4600	4450	-32.3	7.1	18.2	70.4
4600	4462.5	-30.4	6.7	17.83	63.9
4600	4475	29.1	-7.4	17.65	58
4600	4487.5	28.8	-6.4	17.39	62.7
4600	4500	27.2	-6.3	17.35	52.8
4600	4512.5	-25.9	5.9	17.33	59.5
4600	4525	25.3	5.9	17.4	61.5
4600	4537.5	-24	-4.7	17.53	63.9
4600	4550	22.8	-4.2	17.58	62.5
4600	4562.5	22.4	-4.6	17.79	65.8
4600	4575	-21.7	-4.6	17.91	64.9
4600	4587.5	21	-5	18.25	63.2
4600	4600	-21.2	-4.5	18.2	59.7
4600	4612.5	-21.1	-4	18.49	65.6
4600	4625	-21.1	-4.2	18.65	60.3
4600	4637.5	-20.6	3.3	18.89	64.5
4600	4650	-20.3	3.5	19	56.6

Line	Station	InPhase	Quadrature	Total Field	Direction
4600	4662.5	19.7	-3.1	19.41	57.1
4600	4675	20.7	3.5	19.78	61.2
4600	4687.5	-21.6	3.5	19.94	74.6
4600	4700	-22.4	5.2	20.16	62
4600	4712.5	22.2	5.7	20.09	59.1
4600	4725	22.6	5.9	19.96	63.1
4600	4737.5	-22.4	5.4	19.87	56.2
4600	4750	21	5.3	20.04	58.6
4600	4762.5	22.1	-5.4	19.82	57.8
4600	4775	20.6	-4.8	19.84	55.1
4600	4787.5	-19.7	-4.9	20	57.7
4600	4800	-20	-4.3	19.72	68.4
4600	4812.5	19.5	-4.2	20.02	67.8
4600	4825	-18.9	3.8	20.25	70.3
4600	4837.5	18.8	-3.6	19.93	68.6
4600	4850	-17	-2.2	20.06	73.8
4600	4862.5	-15.6	1.3	20.33	71.8
4600	4875	-15.5	-1.1	20.89	68
4600	4887.5	-15.4	-1.6	20.99	69.2
4600	4900	-14.8	-0.6	21.55	63.9
4600	4912.5	-15	0.3	22.02	67
4600	4925	-17.4	-1.8	22.84	61.6
4600	4937.5	-20.5	-3.9	22.96	69.7
4600	4950	-22.8	-5.8	22.86	62.3
4600	4962.5	-24.1	-6.5	22.87	66.6
4600	4975	-26	-8	23.06	64.7
4600	4987.5	28.7	-10.1	22.53	64.2
4600	5000	-29.9	11.5	21.99	59.9
4700	3750	20.2	-4.9	17.64	65.7
4700	3762.5	-19	5.2	15.07	62.3
4700	3775	18.8	5.2	14.34	66
4700	3787.5	17.8	5.2	14.21	72.8
4700	3800	17.3	3.7	14.29	70.2
4700	3812.5	15.7	1.9	14.42	69.7
4700	3825	-14.5	-0.2	14.44	67.3
4700	3837.5	-12.8	0.5	14.84	66.1
4700	3850	12.2	1.4	14.98	66.5
4700	3862.5	-12.4	1.8	15.28	72.1
4700	3875	-12.8	2.2	14.95	65
4700	3887.5	-12.8	3.5	14.67	62.2
4700	3900	-13.1	3.6	14.38	62.4
4700	3912.5	-12.1	3.7	14.01	59.4
4700	3925	11.3	3.8	13.62	63.8

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Line	Station	InPhase	Quadrature	Total Field	Direction
4700	3937 5	10 8	3 3	13 44	59 1
4700	3950	10 6	4 7	13 26	61
4700	3962 5	-10 5	4 2	13 07	64 1
4700	3975	-10 8	4 1	13 04	66 2
4700	3987 5	-11 6	3 4	12 62	55 3
4700	4000	-12 3	2 7	12 28	55 4
4700	4012 5	-12 8	1 4	12 13	69 7
4700	4025	-14 2	1 8	11 75	56 9
4700	4037 5	-15 3	1 3	11 52	61 1
4700	4050	16 2	1	11 87	62 3
4700	4062 5	-15 9	1 8	11 76	54 4
4700	4075	-16	2 8	11 85	62
4700	4087 5	-15 7	3	12 09	66 5
4700	4100	-16 4	2 3	12 3	55 9
4700	4112 5	-17 9	2 2	12 2	54 3
4700	4125	-18 2	2 9	12 35	51 9
4700	4137 5	-18 6	2 8	12 64	62 9
4700	4150	-23 6	-0 3	12 61	45
4700	4162 5	-25 2	0 2	12 32	38 9
4700	4175	-25 4	-2 4	12 16	62 5
4700	4187 5	-25 7	1 9	11 99	68 7
4700	4200	-25 3	2 3	11 68	58 9
4700	4212 5	-26 4	3 5	11 37	60 1
4700	4225	-27 6	3 1	11	56 1
4700	4237 5	-26 9	3 1	10 72	56 7
4700	4250	-25 7	2	10 5	64
4700	4262 5	25 3	-1 4	10 42	66 2
4700	4275	-24 5	-0 4	10 21	57 7
4700	4287 5	23	0 2	10 15	64 3
4700	4300	-23	-0 2	10 03	62 9
4700	4312 5	-22 3	-0 2	10 01	63
4700	4325	-21 9	0 4	10	64
4700	4337 5	-21 1	-0 1	9 83	72 7
4700	4350	-19 2	0 2	9 8	71 2
4700	4362 5	-19 1	0 8	9 6	72 7
4700	4375	-18 5	2 2	9 56	71 6
4700	4387 5	-15 9	1 6	9 57	72 3
4700	4400	15 4	2 5	9 54	73 2
4700	4412 5	14 6	3 1	9 5	70 4
4700	4425	14 9	2	9 52	58 2
4700	4437 5	14 4	1 1	9 71	65 3
4700	4450	14 1	0 3	9 83	64 1
4700	4462 5	16 4	2 2	9 84	66

Line	Station	InPhase	Quadrature	Total Field	Direction
4700	4475	17 1	2 9	9 86	66 3
4700	4487 5	-17 1	2 5	9 91	66 5
4700	4500	16	-3 1	10 08	58 6
4700	4512 5	15 3	-2 9	10 4	65 1
4700	4525	-16 2	3 5	10 85	66 2
4700	4537 5	-15	2 5	11 35	69 2
4700	4550	-15 8	-2 5	11 97	64 1
4700	4562 5	-16 3	-3 3	12 52	61 4
4700	4575	16 6	-2 7	12 69	44 3
4700	4587 5	15 3	3 7	14 1	64 8
4700	4600	-16 3	-3 2	14 77	60 4
4700	4612 5	-15 8	-3 2	15 33	67 7
4700	4625	-16 1	-3 3	15 61	61 2
4700	4637 5	-16 9	-2 5	16 43	62 8
4700	4650	-16 5	-2 4	16 9	67 5
4700	4662 5	-16 7	-1 8	17 54	66 4
4700	4675	-16 3	1 3	18 55	72 9
4700	4687 5	-16 6	0 5	19 05	67 9
4700	4700	-16 1	0 1	19 91	76
4700	4712 5	16 1	0 2	20 41	69 5
4700	4725	15 1	1 8	21 41	76 7
4700	4737 5	-14 7	2 2	22 96	77 8
4700	4750	15 2	2 9	24 26	79 1
4700	4762 5	17 3	1 9	25 74	70 3
4700	4775	-20 7	0 2	26 67	68 8
4700	4787 5	25 6	2 8	27 5	73 5
4700	4800	-26 7	3 3	27 54	69 7
4700	4812 5	-27 9	3 3	28 07	70 8
4700	4825	-29 3	-4 5	28 4	80 2
4700	4837 5	-31 2	-5 1	28 15	72 9
4700	4850	-32 4	-6 4	27 97	72 8
4700	4862 5	-32 7	-6	27 75	71
4700	4875	-32 4	-5 7	27 27	69 4
4700	4887 5	32 4	-5 2	27 32	76 8
4700	4900	-32	5 3	26 95	74
4700	4912 5	-31 3	-4 5	26 52	71 9
4700	4925	-30 4	-5 4	26 01	70 5
4700	4937 5	-30	-4 7	25 67	74 1
4700	4950	31 9	-4 1	23 19	75 9
4700	4962 5	31	-4	22 86	77 4
4700	4975	-29 2	2 8	22 44	87
4700	4987 5	28 4	3 2	22 17	69 7
4700	5000	26 8	2 5	21 66	78 9

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Line	Station	InPhase	Quadrature	Total Field	Direction
4800	3750	-0 4	0 6	10 88	68
4800	3762 5	0 1	0 3	12 03	56 4
4800	3775	-0 2	0 1	11 95	57 3
4800	3787 5	-0 9	0 2	11 08	66 2
4800	3800	0 3	0 6	12	57 5
4800	3812 5	1 6	0 6	11 74	60 1
4800	3825	1 7	0 1	11 81	59 3
4800	3837 5	1 2	0 2	11 55	61 5
4800	3850	1 7	1	11 45	61 9
4800	3862 5	2 4	2	11 51	62 1
4800	3875	-2 1	-2	12 19	56 1
4800	3887 5	-2 8	-2	11 82	59 5
4800	3900	-1 2	-1 3	11 92	58 3
4800	3912 5	-0 1	-0 1	12 66	52 9
4800	3925	-0 4	0	12 76	52 4
4800	3937 5	0	-0 4	12 76	52 5
4800	3950	-1 3	-0 4	12 23	56 2
4800	3962 5	-1	-0 3	11 72	60
4800	3975	-1 7	-0 3	11 7	59 4
4800	3987 5	-1 8	0 2	11 48	61 9
4800	4000	-3 4	0	11 84	58
4800	4012 5	-2 8	-0 5	13 09	47 9
4800	4025	-6	0 1	11 41	61 4
4800	4037 5	-4 4	0 4	12 13	53 9
4800	4050	-5 6	2 2	11 38	60 5
4800	4062 5	-4 8	1 7	10 79	66 1
4800	4075	-4 8	1 6	11 14	61 5
4800	4087 5	-3 8	1 7	11 63	55 5
4800	4100	-4 3	2 6	11 19	59 4
4800	4112 5	3 9	1 7	11	60 9
4800	4125	-4 7	0 9	10 68	65 2
4800	4137 5	-4 2	0 3	11 25	57 7
4800	4150	-4 4	0 8	11 52	53 8
4800	4162 5	-4 8	0 3	11 38	57
4800	4175	5 2	1 3	11 93	51 6
4800	4187 5	-6 4	-1 5	11 7	54 4
4800	4200	-7 6	3	11 8	53 3
4800	4212 5	-9	-2 9	11 46	56 4
4800	4225	-10 6	-3 9	10 7	65 7
4800	4237 5	-10 3	-3 7	11 47	55 5
4800	4250	10 6	-5 2	12 13	48 6
4800	4262 5	11 5	-6 3	11 84	53 4
4800	4275	-12 2	7 3	11 93	52 1

Line	Station	InPhase	Quadrature	Total Field	Direction
4800	4287 5	-12 6	-7 4	11 72	54 6
4800	4300	-11 4	-7 5	12 39	46 7
4800	4312 5	-13 1	8	11 96	53 4
4800	4325	14	9 4	11 99	53 4
4800	4337 5	-13 9	-10 5	12 44	50 2
4800	4350	-15 1	-10 8	12 25	52 2
4800	4362 5	15	10 5	12 53	49 8
4800	4375	15 3	11 2	12 43	50 1
4800	4387 5	16 2	11 7	12 01	54
4800	4400	-16 1	10 7	11 85	55 7
4800	4412 5	-14 1	-9 7	12 61	50 2
4800	4425	-15 6	-10 7	12 28	53 5
4800	4437 5	-14 9	-11 9	12 6	50 8
4800	4450	-15 8	-11	12 26	53 9
4800	4462 5	-14 9	11 9	13 05	48 2
4800	4475	-17	-12 5	13	49 2
4800	4487 5	-19 6	-13 1	12 61	51 8
4800	4500	-21 5	-14 2	11 67	58 8
4800	4512 5	-20	-11 6	12 61	52 2
4800	4525	-20 8	-10 3	12 03	56 5
4800	4537 5	-19 4	-7 3	12 46	53 6
4800	4550	-20 4	-6	12 54	53 4
4800	4562 5	-18 8	-4 9	13 04	47 9
4800	4575	-19 1	-5 1	10 77	54 9
4800	4587 5	55 7	-33 2	0 58	26 7
4800	4600	59 6	-34 5	0 58	29 9
4800	4612 5	57 4	-28 8	0 63	32 4
4800	4625	62 1	-26 9	0 61	29 9
4800	4637 5	56 8	29 9	0 58	31 2
4800	4650	97 9	35 5	0 48	33 4
4800	4662 5	85 9	31 5	0 52	29 9
4800	4675	89 8	40 5	0 51	34 5
4800	4687 5	77	35 9	0 49	23 6
4800	4700	103	38 7	0 47	28 7
4800	4712 5	78 5	-45	0 5	30 2
4800	4725	74 9	35 2	0 52	23 9
4800	4737 5	103 6	-46 3	0 44	24 3
4800	4750	92 9	-44 7	0 47	21 3
4800	4762 5	75 6	37 1	0 49	23 4
4800	4775	89 7	32 7	0 53	23 9
4800	4787 5	94 6	32 8	0 49	16 9
4800	4800	86	37 7	0 51	22 1
4800	4812 5	83 1	34 7	0 51	28 4

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Line	Station	InPhase	Quadrature	Total Field	Direction
4800	4825	104	-53.8	0.46	33.8
4800	4837.5	98.2	36.2	0.51	35.7
4800	4850	110.8	-35.3	0.43	26
4800	4862.5	81.7	-36.9	0.51	29.7
4800	4875	102.2	-25	0.51	21.7
4800	4887.5	75	-30.5	0.49	19.7
4800	4900	72.3	-37.4	0.57	31.2
4800	4912.5	74.1	-41.6	0.5	24.8
4800	4925	77.2	-25.9	0.55	21.7
4800	4937.5	84.7	-28.6	0.54	12.3
4800	4950	95.9	-46.1	0.45	21.3
4800	4962.5	83.3	-33	0.53	26.5
4800	4975	64.9	-29.5	0.55	21.6
4800	4987.5	91.7	-33.4	0.48	12.4
4800	5000	78.6	-48.1	0.5	22.6
4900	3750	3.1	3.3	11.54	60.1
4900	3762.5	3.1	3.1	13	49.3
4900	3775	4.4	3.1	12.78	50.8
4900	3787.5	6.1	4	12.26	54.3
4900	3800	7	4.7	12.64	52.3
4900	3812.5	8.2	5.2	11.62	60.6
4900	3825	7.4	4.4	11.48	62
4900	3837.5	4.5	3.2	12.89	51.3
4900	3850	3.7	2.6	12.67	52.3
4900	3862.5	4.8	3	11.99	57
4900	3875	5.7	3.7	11.61	59.9
4900	3887.5	6.2	4.3	11.88	57.6
4900	3900	8	5.7	11.82	58.3
4900	3912.5	7.2	5.9	12.72	51.1
4900	3925	8.8	7.5	12.5	52.7
4900	3937.5	10.5	9.1	11.65	59.2
4900	3950	10.1	8.4	12.63	51.8
4900	3962.5	10	8.7	12.79	50.5
4900	3975	11	8.7	12.61	52.1
4900	3987.5	11.3	8.3	11.92	57
4900	4000	12.1	8.7	11.9	57.3
4900	4012.5	11.9	9.1	11.99	56.4
4900	4025	10.4	9	12.92	49.9
4900	4037.5	10.6	9	13.13	48.9
4900	4050	9.7	9.1	13.25	47.9
4900	4062.5	9	7.7	13.07	49.4
4900	4075	8	6.5	12.98	49.9
4900	4087.5	7.3	6	12.82	50.9

Line	Station	InPhase	Quadrature	Total Field	Direction
4900	4100	7.7	6.2	12.84	51
4900	4112.5	7.5	6.5	12.97	50.2
4900	4125	8.8	7.6	12.75	51.5
4900	4137.5	8.7	7.5	13.34	48.2
4900	4150	8.8	7.5	13.14	49.2
4900	4162.5	9.6	7.8	12.6	52.7
4900	4175	8.7	7.3	12.97	50.2
4900	4187.5	8.7	7.3	13.27	48.5
4900	4200	7.1	6.1	13.3	48.6
4900	4212.5	4.6	3.7	13.36	48.1
4900	4225	3.1	2	13.18	49.4
4900	4237.5	2.2	1.8	13.39	47.6
4900	4250	0.9	0.8	12.96	50.3
4900	4262.5	-0.7	-0.2	12.69	52
4900	4275	-2	-0.9	12.53	52.9
4900	4287.5	-3.4	-0.9	12.19	55.1
4900	4300	-3.2	1	12.38	53.4
4900	4312.5	-4.1	-0.9	13.17	47.6
4900	4325	-3.3	-0.1	12.97	49.1
4900	4337.5	-2.8	-0.2	13.06	48.4
4900	4350	-1.3	0.8	12.95	42.1
4900	4362.5	-0.8	1	12.85	49.3
4900	4375	0.2	1.4	12.56	51
4900	4387.5	-0.4	2	12.74	49.8
4900	4400	-0.3	1.7	12.8	49
4900	4412.5	2.1	1.2	12.81	49.1
4900	4425	1.6	2.9	12.25	53
4900	4437.5	-1.5	4.6	12.03	54.9
4900	4450	-4.1	4	12.63	50.2
4900	4462.5	-5.4	1.9	12.67	49.8
4900	4475	-7.8	0	12.58	50.1
4900	4487.5	-9	-0.6	12.39	51.4
4900	4500	-8.9	-0.3	12.46	49.6
4900	4512.5	-7.7	0.5	12.28	50.6
4900	4525	-8.1	1.4	11.77	55.3
4900	4537.5	-7.1	0.8	11.68	55.9
4900	4550	-7.1	1.2	12.29	50.1
4900	4562.5	-6.7	1.4	11.49	59
4900	4575	6.9	1.6	11.6	57.6
4900	4587.5	7.2	-0.3	11.62	57.5
4900	4600	8.7	1.9	12.05	55.5
4900	4612.5	9.5	3.1	11.9	57.8
4900	4625	-10.4	-3.3	12.7	52.1

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Line	Station	InPhase	Quadrature	Total Field	Direction
4900	4637 5	-10 7	-3 1	13 02	50 1
4900	4650	-10 9	-3 3	12 56	54 1
4900	4662 5	-10 3	-4 5	12 91	50 9
4900	4675	-11 6	-6 3	12 78	52 7
4900	4687 5	-11 3	-5 6	12 58	54 1
4900	4700	-11	-4 7	13 08	50 7
4900	4712 5	-11 5	-5 1	12 77	53 4
4900	4725	-11 2	-5 1	12 92	52 7
4900	4737 5	-12 2	-5 8	12 38	56 9
4900	4750	-12 5	-6 8	12 62	54 7
4900	4762 5	-13 7	-3 8	12 38	57 4
4900	4775	-18 3	-8 3	12 86	55
4900	4787 5	-20	-9	13 5	51 3
4900	4800	-18 5	-9	13 65	49 7
4900	4812 5	-18 1	-9 2	12 54	56
4900	4825	-18 9	-6 8	13 48	50 4
4900	4837 5	-20 2	-7 5	13 22	51 6
4900	4850	-27 1	-8 6	13 31	51 4
4900	4862 5	-31 9	-11 6	11 37	66 1
4900	4875	-33 6	-12 8	10 86	72
4900	4887 5	-20 3	-5 9	12 2	58 1
4900	4900	-10 9	-3 2	12 9	53 6
4900	4912 5	-9 7	-2 7	12 89	54 2
4900	4925	-6 4	-2 6	11 51	67 2
4900	4937 5	-6 4	-1 7	13 48	51 4
4900	4950	-3 7	-1 7	12 67	56 3
4900	4962 5	-0 2	-1 2	12 57	58
4900	4975	8 2	-0 7	12 21	61
4900	4987 5	3 9	-0 7	11 9	63 4
4900	5000	8 4	-1 4	11 46	70 6

Line	Station	InPhase	Quadrature	Total Field	Direction
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Appendix A

Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4100	4500	23 7	-0 3	3 62	-65 1
4100	4512 5	24 6	0 7	3 56	-71
4100	4525	23	0 3	3 51	-67 6
4100	4537 5	24 5	-0 1	3 62	-67 4
4100	4550	25 2	0 1	3 55	-64 3
4100	4562 5	23 7	0	3 51	-59 7
4100	4575	24 5	0 9	3 61	-61 8
4100	4587 5	26 7	0 3	3 62	-69 9
4100	4600	26 8	0 4	3 64	-70 6
4100	4612 5	28 9	1 9	3 58	-68
4100	4625	30 2	3	3 56	-68 7
4100	4637 5	31 6	3 4	3 64	-66 1
4100	4650	32 2	5 5	3 51	-64 1
4100	4662 5	31 5	5 6	3 52	-61 2
4100	4675	33	6 2	3 5	-64 2
4100	4687 5	33 6	7	3 48	-51 7
4100	4700	32 2	6 7	3 54	-59 4
4100	4712 5	32 2	6 3	3 29	-58 9
4100	4725	32 5	6 2	3 23	-64
4100	4737 5	30 6	7 1	3 13	-51 6
4100	4750	30 2	7 6	3 03	-53 6
4100	4762 5	30 2	6 5	3 14	-56 6
4100	4775	30	7 5	3 1	-66 7
4100	4787 5	30 6	8 1	3 09	-67 7
4100	4800	30 9	7 9	3 17	-69
4100	4812 5	30 8	7 6	3 23	-74 7
4100	4825	31 6	8 4	3 24	-73 2
4100	4837 5	31 6	8 1	3 24	-68 2
4100	4850	29 9	7 2	3 26	-57 5
4100	4862 5	29 4	6 7	3 1	-57
4100	4875	30 9	8 5	3 18	-52 9
4100	4887 5	31 5	11 5	3 34	-44 7
4100	4900	32 6	13 4	3 28	-47 3
4100	4912 5	31 9	12 3	3 28	-51 9
4100	4925	33 9	12 1	3 29	-65 5
4100	4937 5	32 1	12 2	3 1	-59 3
4100	4950	33 1	14 6	3 09	-55 2
4100	4962 5	34 1	14 1	3 11	-45 6
4100	4975	33 4	15 3	3 09	-55 5
4100	4987 5	32 9	13	3 27	62
4100	5000	34 6	15 2	3 46	72
4100	5012 5	33 8	17 6	2 51	-67 3
4100	5025	31 6	20 6	2 43	-62 3
4100	5037 5	31 1	19 3	2 43	-71 5

Line	Station	InPhase	Quadrature	Total Field	Direction
4100	5050	32 5	20 8	2 47	-66 6
4100	5062 5	32 2	19 5	2 46	-68
4100	5075	32	19 1	2 5	-70
4100	5087 5	32 5	19 3	2 72	-77 5
4100	5100	33 2	18 5	2 41	-75
4100	5112 5	31 8	19 7	2 32	-68 8
4100	5125	30 8	19 4	2 24	-73
4100	5137 5	31 3	20 5	2 41	-66 8
4100	5150	29 6	17 9	2 78	-75 6
4100	5162 5	30 2	18 5	2 96	-73 6
4100	5175	30 5	19 3	3 17	-64 8
4100	5187 5	31 1	19 7	3 25	-69 7
4100	5200	32 3	18 2	3 45	-72 5
4100	5212 5	31 5	18	3 77	-79 6
4100	5225	33	18 6	3 66	-73 2
4100	5237 5	33 2	17 9	3 7	-74 2
4100	5250	31 4	18 2	3 66	-85 5
4100	5262 5	32 6	18 9	3 39	-72 5
4100	5275	31	17 5	3 31	-79 9
4100	5287 5	31 2	16 9	3 25	-73 9
4100	5300	30 9	17 4	3 56	-79
4100	5312 5	31 3	17 3	3 2	-74
4100	5325	30 6	18	3 14	-75 6
4100	5337 5	29 3	17 2	3 02	-84 1
4100	5350	28 9	17 3	3 08	-88
4100	5362 5	27 2	17 3	3 42	-82 5
4100	5375	29 2	16 3	3 43	-72
4100	5387 5	29 5	17 3	3 39	-69 4
4100	5400	28 2	17 9	3 61	-82 9
4100	5412 5	28 6	16 8	3 39	-86 6
4100	5425	27 6	14 7	3 56	-73 9
4100	5437 5	27 2	15 8	3 54	-79 7
4100	5450	24	14 9	3 68	-77 7
4100	5462 5	24 5	14 1	3 77	-68 4
4100	5475	23 5	14 5	3 73	-89 2
4100	5487 5	21 8	12 9	3 82	87
4100	5500	20	10 3	3 79	-79 1
4100	5512 5	19 4	10 7	3 75	-71 9
4100	5525	18 8	9 4	3 96	-65 9
4100	5537 5	15	9 2	4 29	-79 8
4100	5550	17	9 2	4 18	-61 7
4100	5562 5	16 3	7 8	4 21	-68 6
4100	5575	15 5	9 3	4 25	-72 5
4100	5587 5	15 2	7 6	4 42	-66 2

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Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4100	5600	15 9	8 1	4 41	-62 3
4100	5612 5	15	6 7	4 47	-73
4100	5625	13 7	6 6	4 37	-77 1
4100	5637 5	11 6	5 4	4 46	-74 8
4100	5650	10 3	4 4	4 49	-70 5
4100	5662 5	9 5	4 2	4 37	-78 8
4100	5675	9 1	5 4	4 4	-82 8
4100	5687 5	8 6	5 4	4 24	-79 2
4100	5700	10	5 8	4 17	-77 2
4100	5712 5	8 2	5 1	4 07	-85 2
4100	5725	6 5	3 4	4 05	-76 3
4100	5737 5	6 8	4 1	4 06	-79 4
4100	5750	7 4	4 9	4 19	-78 1
4200	4500	24	7 7	4 15	-80 9
4200	4512 5	23 9	7 6	4 01	-84 4
4200	4525	23 6	4 8	3 86	-69 7
4200	4537 5	22 9	5 2	3 82	-76 3
4200	4550	22 8	5	3 58	-65 3
4200	4562 5	21 8	4 7	3 55	-71 7
4200	4575	22 4	4 2	3 59	-75 1
4200	4587 5	23	4 4	3 52	-64 5
4200	4600	22 7	4 4	3 42	-71 4
4200	4612 5	21	2 6	3 28	-73 9
4200	4625	21	3 5	3 23	-76 9
4200	4637 5	20 8	1 5	3 16	-64 2
4200	4650	19 8	2 1	3 14	-69 1
4200	4662 5	19 9	1 6	3 08	-71 6
4200	4675	22 5	2 2	3 01	-65 5
4200	4687 5	24	3	2 93	-60 1
4200	4700	24	4 1	2 95	-65 5
4200	4712 5	27 7	4 7	2 98	-61 2
4200	4725	26 3	5 4	2 92	-58 6
4200	4737 5	28 1	5 2	2 79	-69 9
4200	4750	29 9	6 2	2 85	-50 6
4200	4762 5	28 5	5 7	2 87	-64 7
4200	4775	29 6	8 6	2 58	-56 7
4200	4787 5	27 9	7 8	2 42	-67 1
4200	4800	27 3	7 4	2 57	-62 7
4200	4812 5	28 4	5 9	2 67	-60 9
4200	4825	26 6	4 8	2 69	-75 5
4200	4837 5	26 9	5 8	2 68	-70 1
4200	4850	26 1	3 9	2 67	-76
4200	4862 5	25 5	6 2	2 78	-69 6
4200	4875	26 6	6 1	2 81	-62 9

Line	Station	InPhase	Quadrature	Total Field	Direction
4200	4887 5	25 9	7 8	2 77	-60 3
4200	4900	24 8	5	2 82	-58 6
4200	4912 5	24 5	5	2 96	-60 2
4200	4925	23 5	6 1	2 9	-73 3
4200	4937 5	22 9	6	2 86	-67 6
4200	4950	23 9	6 6	2 91	-64 3
4200	4962 5	23 6	6 2	3 02	-71 2
4200	4975	22 2	8 2	2 93	-69 2
4200	4987 5	22 6	8 4	3 02	-67 5
4200	5000	20 2	4 1	3 89	-61 4
4200	5000	22 5	8 6	2 83	-67 5
4200	5012 5	19 9	5	3 89	-58 1
4200	5025	18 6	5	3 88	-54 7
4200	5037 5	20 5	5	3 96	-58 4
4200	5050	18 9	6 6	4	-56 2
4200	5062 5	19 5	6	4 02	-59
4200	5075	18 2	6 4	4	-56 2
4200	5087 5	19 3	5 5	4 02	-63 7
4200	5100	17 8	7	4	-54
4200	5112 5	18 7	6 4	4 03	-52 8
4200	5125	18 3	5 4	3 93	-58 7
4200	5137 5	18 4	4 4	3 93	-69 1
4200	5150	17 8	5 2	3 9	-65 5
4200	5162 5	18 5	5 1	3 94	-67 3
4200	5175	18 3	6 5	3 91	-56 6
4200	5187 5	17 3	5 2	4	-62 3
4200	5200	18 4	5 6	3 99	-69 3
4200	5212 5	16 1	5 6	4 03	-65
4200	5225	17 7	4 1	4 06	-64 2
4200	5237 5	18 2	3 9	4 01	-59 9
4200	5250	16 5	5 1	4 08	-60 7
4200	5262 5	17 4	4 4	4 1	-59 4
4200	5275	17 3	5	4 12	-74 5
4200	5275	19 4	4 3	4 7	-80 8
4200	5287 5	18 7	5 1	4 09	-69
4200	5300	19 6	5	4 1	-72 1
4200	5300	19 8	6 1	4 29	-56 6
4200	5312 5	19 9	5 2	4 62	-80 7
4200	5325	19 7	5 5	4 45	-62 4
4200	5337 5	19 9	7 2	3 84	-46 4
4200	5350	21 9	6 4	4 1	-65 6
4200	5362 5	21 1	6 5	4 45	-62
4200	5375	22 6	7 3	4 28	-61 9
4200	5387 5	22 5	5 5	4 4	-73 4

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Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4200	5400	24 4	6 6	4 11	-58 4
4200	5412 5	24 2	7 9	4 11	-58 4
4200	5425	21 8	7 1	4 13	-50 5
4200	5437 5	24 1	7 4	4 19	-60
4200	5450	18 7	3 8	4 04	-80 5
4200	5462 5	20 1	6 3	4	-73 9
4200	5475	14 1	0 2	4 07	-77 6
4200	5487 5	16 9	3 3	3 81	-76 6
4200	5500	13 1	1 5	3 4	-63 3
4200	5512 5	12 8	-0 3	3 61	-76
4200	5525	13 5	2	3 22	-76 3
4200	5537 5	12 4	2 1	3 53	-87 3
4200	5550	12 5	4 3	3 2	-76 2
4200	5562 5	13 4	4 8	3 25	-77 8
4200	5575	15 1	8 3	2 95	-65 1
4200	5587 5	15 5	6 5	3 06	-66 8
4200	5600	14 7	6 2	3 1	-75 7
4200	5612 5	15 4	7 6	3 15	-65 7
4200	5625	15 2	5 3	3 45	-80
4200	5637 5	15 5	6 5	3 22	-80 6
4200	5650	9 4	2 6	3 87	-78 9
4200	5662 5	10 8	3 1	3 7	-81 1
4200	5675	7 8	2 3	4 1	-83 1
4200	5687 5	9	1 6	3 93	-80 3
4200	5700	4 5	2 2	4 44	-78 1
4200	5712 5	7 9	2 5	4 27	-82 6
4200	5725	2 6	0 1	4 51	-87 4
4200	5737 5	4	0 9	4 47	-89 9
4200	5750	-2 4	-1 2	4 53	89 6
4200	5762 5	0	0 5	4 45	-83 4
4300	5000	14 7	4 4	4 33	-71 6
4300	5012 5	14 7	3 1	4 36	-68 5
4300	5025	13 7	2 8	4 4	-74 3
4300	5037 5	14 3	2 9	4 38	-68 1
4300	5050	13 1	2 7	4 33	-74 5
4300	5062 5	10 4	3 3	4 39	84 7
4300	5075	10 9	2 9	4 32	-89 6
4300	5087 5	10	1 5	4 34	-76 5
4300	5100	10 1	1 6	4 34	-75 4
4300	5112 5	10 5	2	4 43	-79 5
4300	5125	9 2	1 3	4 11	-75 3
4300	5137 5	8 8	0	4 43	-71
4300	5150	8	0 2	4 41	-65 5
4300	5162 5	8 9	0 5	4 42	-57 4

Line	Station	InPhase	Quadrature	Total Field	Direction
4300	5175	9	0 8	4 47	-62 4
4300	5187 5	10 1	0 5	4 49	-52 4
4300	5200	10 4	1 1	4 48	-48 7
4300	5212 5	10 1	0 4	4 54	-54 8
4300	5225	8 9	0	4 57	-59 5
4300	5237 5	9 2	-0 5	4 58	-60
4300	5250	9 1	-0 3	4 68	-70 5
4300	5262 5	9 1	0 1	4 69	-71 5
4300	5275	7 9	-0 1	4 67	-66 4
4300	5287 5	8 1	0 7	4 74	-79 6
4300	5300	9 1	0 7	4 67	-69 3
4300	5312 5	9 3	0 4	4 62	-65 4
4300	5325	9 4	1 1	4 65	-62 6
4300	5337 5	12 5	-2 2	4 78	-43 9
4300	5350	12 3	1 4	4 58	-48 2
4300	5362 5	12 6	1 5	4 69	-54 5
4300	5375	12 8	1 4	4 68	-54 9
4300	5387 5	12 2	1 3	4 74	-65 8
4300	5400	14 2	1	4 76	-51
4300	5412 5	15 1	2 4	4 75	-61 5
4300	5425	17 6	5	4 71	-56 1
4300	5437 5	18 2	4 8	4 66	-59 1
4300	5450	18 6	4 8	4 63	-62 1
4300	5462 5	17 9	4 9	4 63	-62
4300	5475	17 8	4 2	4 53	-51 2
4300	5487 5	15 7	4 1	4 5	-64 5
4300	5500	17	4 7	4 5	-70 4
4300	5512 5	16	4 5	4 55	-70 4
4300	5525	15	4 4	4 54	-72 5
4300	5537 5	11 3	4	4 57	-71 5
4300	5550	8 8	2 1	4 5	-71 4
4300	5562 5	7 6	2 1	4 52	-67 7
4300	5575	6 2	1 2	4 48	-69 3
4300	5587 5	6	1 4	4 38	-66 8
4300	5600	6 7	1 1	4 28	-67 7
4300	5612 5	5 2	0 5	4 23	-63 8
4300	5625	4 5	2 5	4 18	-66 6
4300	5637 5	4 7	1 3	4 11	-65 9
4300	5650	3 7	1 6	4 12	-69 2
4300	5662 5	3 4	2 2	4 12	-68 1
4300	5675	2 7	1 1	4 03	-65 4
4300	5687 5	1 7	1 7	3 99	-67 1
4300	5700	1 2	1 7	3 98	-66 2
4300	5712 5	0 3	1 9	3 92	-68 6

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Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4300	5725	-0.9	1.4	3.84	-61.3
4300	5737.5	-0.3	1.9	3.83	-67.3
4300	5750	-0.3	0.6	3.76	-69
4400	4250	-18.4	-5.7	3.4	-74.9
4400	4262.5	-19.1	-5.9	3.48	-60.8
4400	4275	-21.2	-5.4	3.68	-52.1
4400	4287.5	-18.9	-6.1	3.74	-61
4400	4300	-20.9	-5.7	3.78	-57.5
4400	4312.5	-19.7	-6.4	3.62	-65.4
4400	4325	-19.1	-5.3	3.55	-70
4400	4337.5	-23.3	-1.5	3.88	-42
4400	4350	-20.4	-7.4	3.81	-52.4
4400	4362.5	-20.9	-6.5	3.8	-54.2
4400	4375	-22.2	-6.8	3.86	-53.1
4400	4387.5	-20.7	-6.9	3.91	-50.8
4400	4400	-20.9	-5.1	4.02	-48.4
4400	4412.5	-23.9	-1.5	4.25	-46.7
4400	4425	-21	-5.6	4.24	-51.1
4400	4437.5	-19	-5.4	4.42	-59.7
4400	4450	-18.5	-3.8	4.45	-58.8
4400	4462.5	-17.6	-5	4.35	-69.5
4400	4475	-17.3	-4.7	4.43	-57.9
4400	4487.5	-17	-4.3	4.44	-54.8
4400	4500	-14.7	-3.3	4.46	-61.6
4400	4512.5	-13.4	-3	4.45	-61.6
4400	4525	-11.9	-1.3	4.37	-76.9
4400	4537.5	-12.4	-1.9	4.35	-57.3
4400	4550	-12.6	-1	4.28	-55
4400	4562.5	-11.5	-1.2	4.27	-62.8
4400	4575	-12.4	-2	4.34	-63.3
4400	4587.5	-11	-1.9	4.28	-70.3
4400	4600	-11.5	-1.3	4.22	-68.8
4400	4612.5	-10.4	-1	4.22	-67
4400	4625	-10.9	-1.5	3.98	-60.9
4400	4637.5	-11.1	-2.8	4.09	-61.8
4400	4650	-12.2	-2.2	4.25	-62.5
4400	4662.5	-11.1	-2.7	3.57	-65.7
4400	4675	-11.6	-3.2	3.53	-72.6
4400	4687.5	-10.7	-3.9	4.37	-68.2
4400	4700	-10.3	-3.4	4.46	-72.5
4400	4712.5	-12.2	-4.2	4.7	-78.1
4400	4725	-12.9	-4.9	4.87	-73.8
4400	4737.5	-14.1	-6.9	4.8	-78.8
4400	4750	-15.7	-7.7	4.92	-65.8

Line	Station	InPhase	Quadrature	Total Field	Direction
4400	4762.5	-16.6	-8.8	5.15	-72.1
4400	4775	-16.1	-8.7	5.36	-69.6
4400	4787.5	-13.7	-7	5.36	-69.9
4400	4800	-12	-6.2	5.21	-71.9
4400	4812.5	-11.1	-6.5	5.28	-67.7
4400	4825	-10	-6.1	5.09	-64.7
4400	4837.5	-9.9	-5.7	5.14	-62.5
4400	4850	-6.3	-5.5	5.1	-69.4
4400	4862.5	-4.6	-5.1	5.05	-63
4400	4875	-4.2	-4.6	4.94	-61.5
4400	4887.5	-2.7	-4.3	4.92	-69.9
4400	4900	-2.2	-4.3	4.68	-63.5
4400	4912.5	-1.1	-3.9	4.67	-61
4400	4925	-0.2	-2.7	4.73	-62.4
4400	4937.5	-0.8	-4	4.6	-68.9
4400	4950	-0.6	-4.2	4.75	-68
4400	4962.5	-1.4	-4.4	4.49	-73.9
4400	4975	-1.2	-4.8	4.4	-72.5
4400	4987.5	0.5	-3.9	4.1	-77.7
4400	5000	-1.3	-2.9	3.34	-60.1
4400	5012.5	-1.1	-4.1	3.72	-54.8
4400	5025	-1.5	-5.8	3.59	-58.1
4400	5037.5	-1.3	-4.8	3.64	-61.5
4400	5050	-0.8	-4.9	3.76	-59.3
4400	5062.5	0.4	-2.1	3.64	-47.2
4400	5075	1.8	-2.1	3.66	-53
4400	5087.5	0.3	-3.6	3.79	-62.9
4400	5100	-0.6	-2.9	3.74	-56.1
4400	5112.5	-0.7	-3.5	3.75	-60.1
4400	5125	-1.9	-4.2	3.6	-58.5
4400	5137.5	-0.9	-5	3.55	-64.4
4400	5150	-0.5	-3	3.3	-60.1
4400	5162.5	0.1	-4.6	3.39	-67.2
4400	5175	-1.2	-4.3	3.52	-63.8
4400	5187.5	-0.8	-5.3	3.62	-62.7
4400	5200	-2.3	-4.4	3.57	-60.7
4400	5212.5	-1.4	-6.4	3.49	-63.2
4400	5225	-2.7	-5.8	3.46	-56.7
4400	5237.5	-0.3	-5.3	3.45	-62.3
4400	5250	2.4	-3.5	3.5	-61.4
4400	5262.5	1.1	-4.5	3.51	-63.7
4400	5275	1.3	-3.6	3.55	-70.3
4400	5287.5	2.4	-4.6	3.65	-78.2
4400	5300	0.2	-5.7	3.69	89.5

Appendix A

Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4400	5312 5	-1 4	-5 4	3 89	-80 9
4400	5325	-1 8	-6 3	3 81	-83
4400	5337 5	-1 3	-4 7	3 85	-81
4400	5350	-1 9	-5 4	3 77	-74 6
4400	5362 5	-2 1	-3 8	3 8	-73 1
4400	5375	-2 6	-3 1	3 82	-66 7
4400	5387 5	-4 4	-5 2	3 91	-57
4400	5400	-4 9	-5	3 93	-70
4400	5412 5	-6 8	-4 8	3 94	-72 3
4400	5425	-8 2	-4 9	3 99	-63 9
4400	5437 5	-6 7	-6	4 05	-59 7
4400	5450	-6 8	-4 9	4 13	-70 9
4400	5462 5	-5 6	-3 3	4 12	-63 5
4400	5475	-5 1	-3 1	4 13	-64 6
4400	5487 5	-5 1	-2 7	4 18	-62 6
4400	5500	-2 3	-2 9	4 19	-63
4400	5512 5	-0 2	-0 4	4 23	-59 3
4400	5525	1 3	1 3	4 27	-62 3
4400	5537 5	4 4	3 4	4 22	-54 5
4400	5550	7 2	3 3	4 21	-70 7
4400	5562 5	7 8	5 2	4 14	-64 8
4400	5575	8 7	6 3	4	-65 6
4400	5587 5	7 3	6 1	3 98	-66 1
4400	5600	8 3	4	3 91	-72 5
4400	5612 5	7	4 2	3 85	-64 7
4400	5625	8	3 1	3 75	-64 8
4400	5637 5	7 6	3 3	3 65	-73 7
4400	5650	7 6	3 5	3 66	-62 9
4400	5662 5	8 2	3 8	3 65	-68 4
4400	5675	9 4	3 7	3 73	-74 1
4400	5687 5	8 7	4 4	3 63	-66 1
4400	5700	7 3	4 2	3 66	-68 4
4400	5712 5	9 2	1 9	3 58	-72 6
4400	5725	6 7	0 5	3 55	-68 4
4400	5737 5	7 1	0 7	3 57	-66 8
4400	5750	5 2	-1 1	3 59	-71 6
4500	3750	2 7	6 6	3 33	-65 8
4500	3762 5	-1 5	4 9	3 19	-64 2
4500	3775	-5 1	2 2	3 1	-62 9
4500	3787 5	-10 3	-1	2 97	-52
4500	3800	-16 2	-4 6	2 86	-67 5
4500	3812 5	-16 1	-4 8	2 81	-69 1
4500	3825	-18 4	-5	2 78	-72 3
4500	3837 5	-18 3	-8	2 74	-56 4

Line	Station	InPhase	Quadrature	Total Field	Direction
4500	3850	-21 3	-8 8	2 67	-72 3
4500	3862 5	-23 2	-10 5	2 74	-59 2
4500	3875	-22 4	-11 2	2 81	-62 3
4500	3887 5	-23 3	-9 2	2 88	-72 3
4500	3900	-22 3	-7 6	2 75	-75 6
4500	3912 5	-22 2	-7 3	2 66	-71 3
4500	3925	-20 8	-7 6	2 79	-61 1
4500	3937 5	-19 6	-7 9	2 78	-54 6
4500	3950	-19 2	-6 2	2 84	-53 5
4500	3962 5	-19 7	-4 3	2 84	-60
4500	3975	-18 3	-2 9	2 77	-61 9
4500	3987 5	-20	-1 9	2 67	-64 6
4500	4000	-19 9	-1 1	2 63	-66 8
4500	4012 5	-21 3	-2 2	2 72	-58 3
4500	4025	-22 3	-4 1	2 56	-51 4
4500	4037 5	-22 1	-4	2 67	-62
4500	4050	-21 6	-3 1	2 67	-68 3
4500	4062 5	-22 3	-4 6	2 67	-61 3
4500	4075	-21 9	-2 5	2 65	-56 9
4500	4087 5	-22 1	-3	2 6	-55 9
4500	4100	-19 8	-2 6	2 64	-54 2
4500	4112 5	-21 9	-2 6	2 63	-55 8
4500	4125	-19 7	-4	2 69	-59 3
4500	4137 5	-19 3	-3 1	2 73	-50 6
4500	4150	-19 2	-2 8	2 78	-63 3
4500	4162 5	-19 2	-2 2	2 83	-60 1
4500	4175	-19 9	-1 6	2 82	-61 7
4500	4187 5	-20 2	-2 2	2 82	-63 3
4500	4200	-19 9	-2 4	2 95	-60
4500	4212 5	-19 2	-4	3 08	-56 7
4500	4225	-17 9	-6	3 14	-51 8
4500	4237 5	-18 3	-2 8	3 16	-53 9
4500	4250	-17 9	-4 7	3 18	-48 2
4500	4262 5	-17 6	-3 5	3 27	-49 6
4500	4275	-18 2	-2 8	3 12	-53 6
4500	4287 5	-16 9	-2 7	3 13	-49 6
4500	4300	-15 7	-2 9	3 02	-48 8
4500	4312 5	-14	-0 7	3 08	-54 9
4500	4325	-14 9	-0 6	3 17	-54 4
4500	4337 5	-14 1	-1 8	3 1	-55
4500	4350	-13 9	-1 2	3 07	-51 1
4500	4362 5	-13 3	-0 5	3 1	-60 9
4500	4375	-14 3	0 2	3 07	-63 2
4500	4387 5	-15 6	1	2 99	-63 2

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Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4500	4400	-15 1	-1 6	2 82	-61 9
4500	4412 5	-14 8	-0 7	2 77	-60 9
4500	4425	-16 7	-0 8	2 73	-64 1
4500	4437 5	-16 8	-1 5	2 69	-59 8
4500	4450	-18 5	0	2 62	-60 5
4500	4462 5	-15 8	-0 9	2 51	-50 8
4500	4475	-16 8	0 6	2 55	-50 7
4500	4487 5	-16 5	0	2 46	-61 1
4500	4500	-18 2	-0 8	2 41	-56 9
4500	4512 5	-17 8	1 6	2 34	-59 7
4500	4525	-17 5	1 8	2 34	-58 4
4500	4537 5	-17 8	1 4	2 42	-64 3
4500	4550	-16 9	2	2 44	-59 8
4500	4562 5	-18	2 1	2 38	-60 5
4500	4575	-17 5	0 4	2 4	-61 5
4500	4587 5	-19 1	2	2 3	-66 9
4500	4600	-18 7	0 3	2 31	-72 2
4500	4612 5	-21 7	-0 3	2 31	-63 9
4500	4625	-21 4	0 4	2 44	-66 8
4500	4637 5	-20 2	-1 3	2 45	-64
4500	4650	-18 1	1	2 47	-63 7
4500	4662 5	-19 1	-1 4	2 47	-61 5
4500	4675	-19 9	-2 1	2 4	-61 8
4500	4687 5	-19 6	0 2	2 34	-60 9
4500	4700	-12 5	-1 7	2 39	-44 3
4500	4712 5	-16 7	1	2 31	-57 3
4500	4725	-17 6	2 4	2 33	-64 5
4500	4737 5	-19 1	0 8	2 31	-55 4
4500	4750	-17 3	1 8	2 3	-55 6
4500	4762 5	-18 2	1	2 24	-60 6
4500	4775	-17 7	0 2	2 26	-59 8
4500	4787 5	-21 7	0 5	2 24	-65 4
4500	4800	-22 7	0	2 23	-67 9
4500	4812 5	-24 4	0 2	2 3	-62 7
4500	4825	-23 5	-2 2	2 26	-59 4
4500	4837 5	-22 8	-2 8	2 22	-62 2
4500	4850	-20 8	-0 4	2 23	-59 5
4500	4862 5	-20 4	-0 6	2 17	-62 3
4500	4875	-21 1	-0 7	2 19	-55 9
4500	4887 5	-19 9	-0 7	2 22	-57 6
4500	4900	-16 5	-1 2	2 33	-55 2
4500	4912 5	-16 8	-1 8	2 41	-52 4
4500	4925	-16 2	-3 7	2 41	-55 2
4500	4937 5	-11 1	-4 6	2 66	-43 3

Line	Station	InPhase	Quadrature	Total Field	Direction
4500	4950	-10 4	-5	2 68	-43 4
4500	4962 5	-14	-2 9	2 63	-51 3
4500	4975	-9 6	-5 8	2 76	-38 5
4500	4987 5	-10 7	-5 5	2 87	-44 1
4500	5000	-12 5	-3 9	2 83	-51 8
4600	3750	0 1	6 6	2 79	-39 6
4600	3762 5	5 5	5	2 7	-48 3
4600	3775	4 1	4 1	2 49	-51 7
4600	3787 5	3 6	6 2	2 47	-48 1
4600	3800	4 6	8 7	2 46	-47 5
4600	3812 5	2 8	8 2	2 5	-47 1
4600	3825	3 3	8 2	2 5	-54 8
4600	3837 5	2 8	7	2 43	-46 8
4600	3850	-1 1	8 9	2 39	-34 1
4600	3862 5	0 9	7 3	2 22	-50 7
4600	3875	-4 8	9 6	2 18	-38
4600	3887 5	-5 3	9 3	2 29	-43 5
4600	3900	-4 5	3 8	2 3	-46 8
4600	3912 5	-12 2	6 2	2 11	-43 1
4600	3925	-14 4	6 1	2 05	-43 1
4600	3937 5	-12 8	-4 9	1 92	-53 8
4600	3950	-15 7	-5 8	1 93	-61 6
4600	3962 5	-18	-8 7	1 81	-56 9
4600	3975	-20 4	-10 9	1 8	-56 8
4600	3987 5	-19 8	-9 4	1 59	-56 7
4600	4000	-20 2	-13 1	1 46	-63 1
4600	4012 5	-21	-13 7	1 31	-58
4600	4025	-22 9	-15 2	1 3	-48 2
4600	4037 5	-19 5	-12 9	1 35	-53 4
4600	4050	-23 4	-10 1	1 65	-52 4
4600	4062 5	-21 7	-9 9	1 55	-47 1
4600	4075	-17 6	-12 1	1 24	-52 7
4600	4087 5	-18 9	-11 9	1 22	-51 8
4600	4100	-18 5	-9 3	1 36	-51
4600	4112 5	-17 4	-9 5	1 35	-50 6
4600	4125	-14 8	-7 5	1 27	-52 8
4600	4137 5	-17 1	-7 4	1 22	-56 9
4600	4150	-16 1	-7 7	1 31	-57 8
4600	4162 5	-17	-14 7	1 04	-53 1
4600	4175	-64 1	22 7	0 89	-37 1
4600	4187 5	-66 5	18 8	0 92	-40 6
4600	4200	-80 5	24 5	0 85	-42 2
4600	4212 5	-162	59 8	0 82	-37 4
4600	4225	-141 7	64 2	0 83	-46 3

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Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4600	4237 5	-48 3	-55 7	0 52	-41 6
4600	4250	-284	110 9	0 93	-20 6
4600	4262 5	-185	71 6	0 75	-21 3
4600	4275	-53 3	4 6	1 02	-44
4600	4287 5	-25 8	-10 4	0 95	-50 8
4600	4300	-58 8	19 4	0 91	-46 8
4600	4312 5	-67 6	17 9	0 89	-45 3
4600	4325	-27	-8 8	0 77	-50 7
4600	4337 5	-30 1	-14 9	0 85	-55 9
4600	4350	-31 5	-20 7	0 79	-47 6
4600	4362 5	-28 4	-21	0 84	-52 1
4600	4375	-24 2	-14 4	0 86	-47 1
4600	4387 5	-24 1	-18 8	0 74	-56 5
4600	4400	-63 4	18	0 83	-30 7
4600	4412 5	-37 9	-24 8	0 72	-50 3
4600	4425	-98 2	39 4	0 96	-39 8
4600	4437 5	-56 9	20 9	0 86	-21 3
4600	4450	-82 1	30 3	0 92	-34 3
4600	4462 5	-80 2	21 6	0 97	-40
4600	4475	-27 5	-18 8	0 68	-58 2
4600	4487 5	-33 1	-28 9	0 57	-56 3
4600	4500	-45 2	-22 8	0 6	-62 4
4600	4512 5	-31 3	-8	0 81	-56
4600	4525	-26 7	-10 1	1 03	-53 3
4600	4537 5	-27 6	-7 1	1 15	-49 5
4600	4550	-21 6	-10 6	1 24	-54 4
4600	4562 5	-22 3	-9 1	1 35	-51 3
4600	4575	-22 6	-6 1	1 41	-50 3
4600	4587 5	-21 4	-7 8	1 53	-51 2
4600	4600	-16 7	-7 8	1 65	-55 8
4600	4612 5	-18	-6 3	1 74	-50
4600	4625	-17	-7 1	1 99	-57 6
4600	4637 5	-15 6	-5 9	2 01	-51 7
4600	4650	-17 6	-3 3	2 14	-59 7
4600	4662 5	-17 6	-5 6	2 2	-59 5
4600	4675	-18 9	-6 4	2 22	-57 1
4600	4687 5	-24 5	-0 3	2 3	-43 5
4600	4700	-19 7	-6 6	2 31	-57 5
4600	4712 5	-19 7	-5 5	2 19	-60 7
4600	4725	-19 4	-6 8	2 21	-54 7
4600	4737 5	-20 7	-7 5	2 32	-64 1
4600	4750	-19 3	-5 6	2 35	-62 6
4600	4762 5	-23 1	-5 8	2 45	-57 3
4600	4775	-22 5	-6 3	2 43	-62 2

Line	Station	InPhase	Quadrature	Total Field	Direction
4600	4787 5	-20 7	-7 3	2 42	-57 7
4600	4800	-20 3	-7	2 37	-51 2
4600	4812 5	-18 1	-6 8	2 35	-51 9
4600	4825	-18 6	-7 2	2 43	-48 6
4600	4837 5	-18 1	-6 7	2 42	-53 8
4600	4850	-17 8	-5 4	2 59	-47
4600	4862 5	-15 8	-4 7	2 59	-50 9
4600	4875	-17 2	-4 7	2 68	-55 9
4600	4887 5	-15	-5 5	2 72	-51 7
4600	4900	-15 7	-4 5	2 75	-58 8
4600	4912 5	-17 1	-5 9	2 77	-56 8
4600	4925	-16 9	-7 1	2 88	-61
4600	4937 5	-16 6	-7 5	2 99	-53 9
4600	4950	-16 7	-7 6	3 01	-59 5
4600	4962 5	-16 8	-7 6	3 05	-57 8
4600	4975	-17 1	-7 7	3 14	-57 5
4600	4987 5	-16 9	-6 1	3 22	-59 5
4600	5000	-16 5	-8	3 31	-61 7
4700	3750	5 1	2 5	2 66	-52 3
4700	3762 5	5	0 5	2 3	-55 8
4700	3775	6 3	0 7	2 24	-49 6
4700	3787 5	11 1	-0 7	2 41	-43 7
4700	3800	11 3	-2 9	2 39	-46 9
4700	3812 5	10 2	-3 5	2 19	-46
4700	3825	7 8	0	2 13	-47 5
4700	3837 5	6 8	3 2	2 1	-49
4700	3850	10	3 8	2 07	-48 4
4700	3862 5	17 1	1 7	2 13	-41 2
4700	3875	14 2	7 2	2 16	-51 1
4700	3887 5	13 8	6 8	1 98	-53 6
4700	3900	16 4	9 4	1 78	-51 4
4700	3912 5	12 4	12 9	1 66	-56 6
4700	3925	15 8	10 4	1 67	-50 8
4700	3937 5	12 2	13 4	1 46	-55 2
4700	3950	13 2	13 1	1 54	-52 6
4700	3962 5	8 8	7 8	1 7	-47 7
4700	3975	17 7	3 1	1 71	-45 5
4700	3987 5	6 7	9 8	1 75	-56 5
4700	4000	6 6	9 2	1 64	-54
4700	4012 5	15 5	2 3	1 64	-40 1
4700	4025	0 6	5 9	1 7	-50 7
4700	4037 5	4 8	-2 3	1 76	-44 3
4700	4050	-5 4	0 1	1 89	-46 9
4700	4062 5	-4 5	-2 4	2 04	-53 8

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Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4700	4075	-7 3	-2 2	1 81	-48 3
4700	4087 5	-3 5	-8 9	2 01	-40 5
4700	4100	-8 8	-3 7	2 12	-53 2
4700	4112 5	-9 3	-4 4	2 17	-55 2
4700	4125	-12 9	-5 1	2 06	-58 6
4700	4137 5	-10 9	-4 6	2 14	-47 6
4700	4150	-12	-5 5	2 06	-65 8
4700	4162 5	-13 2	-3 4	2 04	-70 4
4700	4175	-6	-8 2	2 17	-45
4700	4187 5	-5 5	-7 2	2 28	-41 5
4700	4200	-12 5	-4 5	2 03	-50 9
4700	4212 5	-11	-2 8	2 19	-50 1
4700	4225	-10 6	-2 7	2 27	-53 6
4700	4237 5	-10 4	-2 2	2 1	-55
4700	4250	-9 2	-0 1	1 96	-50 2
4700	4262 5	-10 1	0 3	2 05	-47 2
4700	4275	-9 9	-1 8	2 15	-54 3
4700	4287 5	-9 6	-1 2	2	-47 8
4700	4300	-10 2	-1	2	-48 6
4700	4312 5	-11	-0 7	2 02	-50 8
4700	4325	-10 8	-1 5	1 95	-48 3
4700	4337 5	-4 7	-6 3	2 02	-39 1
4700	4350	-3 2	-4 8	2 07	-39
4700	4362 5	-5 8	-4 3	2 08	-37 6
4700	4375	-4 6	-3 4	2 04	-38
4700	4387 5	-4 7	-5 3	2 07	-42 2
4700	4400	-7 2	-3 9	2 12	-38
4700	4412 5	-5 5	-4 1	2 18	-41 4
4700	4425	-9 7	0 1	2 18	-53 7
4700	4437 5	-10 5	0 4	2 16	-49 6
4700	4450	-10 5	3 9	2 22	-50 5
4700	4462 5	-10	1	2 38	-49 1
4700	4475	-11 3	0 6	2 33	-49 6
4700	4487 5	-13 3	-0 6	2 37	-51 4
4700	4500	-13 8	-1 2	2 5	-58 5
4700	4512 5	-14 4	-3 1	2 39	-52 7
4700	4525	-14 8	-4 8	2 77	-49 4
4700	4537 5	-12 4	-5 4	2 91	-42 8
4700	4550	-12 9	-5 4	2 99	-49 1
4700	4562 5	-12 7	-2 6	3 02	-54
4700	4575	-13 5	-1 8	2 94	-68 7
4700	4587 5	-10 5	-2 3	3 11	-50 8
4700	4600	-10 2	-2	3 01	-54 9
4700	4612 5	-9 2	-1 4	3 01	-48 9

Line	Station	InPhase	Quadrature	Total Field	Direction
4700	4625	-8 5	-1 4	3 13	-56
4700	4637 5	-8	-2	3 18	-54 1
4700	4650	-7 8	-0 9	3 17	-51 7
4700	4662 5	-6 8	0 3	3 08	-53 6
4700	4675	-3 1	-3 2	3 05	-41 9
4700	4687 5	-6 9	2 4	2 95	-52 9
4700	4700	-3 6	-3 2	3 04	-41 2
4700	4712 5	-7 9	-0 6	3	-51 5
4700	4725	-7	-1 9	3 14	-42
4700	4737 5	-8 4	-3 5	3 17	-40 4
4700	4750	-9 7	-3 8	3 26	-39 8
4700	4762 5	-12 7	-1 8	3 28	-53 6
4700	4775	-15 4	-1 2	3 32	-54 4
4700	4787 5	-18 3	-2	3 49	-50
4700	4800	-17 2	-2	3 37	-50 8
4700	4812 5	-14 7	-0 1	3 53	-44 9
4700	4825	-15 4	-0 4	3 35	-35 7
4700	4837 5	-13 5	1 6	3 44	-40
4700	4850	-13 2	1 4	3 5	-40 3
4700	4862 5	-13 3	0 5	3 41	-42
4700	4875	-15 4	-1	3 18	-47 4
4700	4887 5	-9 8	0	3 11	-34 9
4700	4900	-10	1 7	3 17	-37 1
4700	4912 5	-10 6	1 4	3 24	-39
4700	4925	-10 5	1 2	3 29	-42 6
4700	4937 5	-10 3	1 2	3 26	-39
4700	4950	-8 1	0 2	2 81	-34 7
4700	4962 5	-9 3	-1 2	2 89	-31 9
4700	4975	-8 1	-1 9	3 2	-27 4
4700	4987 5	-8 3	1 1	2 9	-42 9
4700	5000	-7 3	-3 8	2 58	-36 2
4800	3750	6 2	5 4	2 13	-37 8
4800	3762 5	11	4	2 1	-50 2
4800	3775	10 3	4	2 15	-48 7
4800	3787 5	5 5	5	2 22	-39 1
4800	3800	9 5	3 4	2 13	-46 1
4800	3812 5	5 1	7 4	2 12	-42 5
4800	3825	8 7	9	2 08	-42 6
4800	3837 5	6 1	6 8	1 83	-42 7
4800	3850	5	7 2	1 8	-43 4
4800	3862 5	3 2	9 6	1 47	-39 8
4800	3875	17 4	4 7	1 34	-49 1
4800	3887 5	4 9	10 3	1 54	-39 9
4800	3900	8 5	7 5	2 04	-42 6

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Line	Station	InPhase	Quadrature	Total Field	Direction
4800	3912 5	17 3	7 5	2 07	-51 5
4800	3925	17 6	8 6	2 06	-48 8
4800	3937 5	17	10 5	2 08	-49 7
4800	3950	11 9	9 2	1 99	-40 5
4800	3962 5	12 6	9 9	1 89	-35 1
4800	3975	9 6	8 8	1 73	-34 3
4800	3987 5	12 9	8 6	1 69	-32 3
4800	4000	14 5	9 2	1 6	-36
4800	4012 5	24 6	9 9	1 54	-52 7
4800	4025	11 2	11 6	1 55	-32 8
4800	4037 5	6 7	10 5	1 51	-40 4
4800	4050	11 2	12 9	1 49	-33 7
4800	4062 5	10 6	15 7	1 32	-29 1
4800	4075	3 9	19 1	1 16	-34
4800	4087 5	-5 2	15	1 1	-40 7
4800	4100	-6	16 4	1 04	-31 9
4800	4112 5	-6 7	16	1 02	-32 5
4800	4125	-4 5	17 4	0 92	-26 4
4800	4137 5	-8 7	13 1	0 96	-34 7
4800	4150	-21 5	15 9	0 87	-35
4800	4162 5	-10 3	11 3	0 94	-35 1
4800	4175	-20 7	11 1	0 95	-41 5
4800	4187 5	-8 7	12 6	1	-37 9
4800	4200	-13 7	13 1	1 1	-37 6
4800	4212 5	-13 3	10 4	1 09	-35 6
4800	4225	-16	10 9	1 1	-26 9
4800	4237 5	-13 1	4 8	1 25	-36 6
4800	4250	6 8	-6 3	1 22	-52
4800	4262 5	6	-10 5	1 02	-48
4800	4275	-18 7	2 4	1 31	-43 5
4800	4287 5	-25 3	0 7	1 22	-40 9
4800	4300	2 8	-12 4	0 92	-59
4800	4312 5	0 7	-13 5	1 19	-47 5
4800	4325	-0 7	-13	1 33	-48 4
4800	4337 5	1 7	-11 7	1 27	-54 2
4800	4350	-3 6	-12	1 33	-49 4
4800	4362 5	-5 5	-16 3	1 37	-54 5
4800	4375	-7 6	-16 1	1 36	-51 2
4800	4387 5	-30	-2 3	1 47	-43 1
4800	4400	-31 1	-4 4	1 49	-39 2
4800	4412 5	-15 2	-18 1	1 44	-49 2
4800	4425	-27 7	-3 4	1 51	-41 6
4800	4437 5	-28 3	-0 8	1 53	-44 1
4800	4450	-28 8	0 3	1 46	-39 5

Line	Station	InPhase	Quadrature	Total Field	Direction
4800	4462 5	-12 1	-12 2	1 34	-53 8
4800	4475	-7 1	-14 8	1 2	-52 4
4800	4487 5	-32 4	6 8	1 27	-40 1
4800	4500	-32 7	1 5	1 22	-32 9
4800	4512 5	-7 9	-14 2	1 09	-48 2
4800	4525	-38 6	10	1 07	-40 5
4800	4537 5	-45 1	11 8	1 04	-40 1
4800	4550	-55 5	8 7	0 96	-38 7
4800	4562 5	-9 4	-22 1	0 73	-58 7
4800	4575	-10 9	-16 8	0 81	-55 2
4800	4587 5	-94 1	34	0 85	-36 1
4800	4600	240 9	-85 4	0 9	1 3
4800	4612 5	-136 4	54 8	0 8	-5 7
4800	4625	-44 5	7 6	1 04	-36 3
4800	4637 5	-34 4	7	1 24	-44
4800	4650	-34 7	2 5	1 27	-37 2
4800	4662 5	-12 3	-12 4	1 18	-48 2
4800	4675	-12 6	-11 8	1 14	-53 6
4800	4687 5	-15 6	-8 9	1 08	-59 7
4800	4700	-51 9	11 9	1 18	-43 7
4800	4712 5	-37 8	9 9	1 21	-37 7
4800	4725	-14 5	-15 2	1 09	-51 8
4800	4737 5	-21 5	-14 6	1 12	-50 9
4800	4750	-12 8	-8 8	1 11	-50 9
4800	4762 5	-18 6	-10	1 24	-54 2
4800	4775	-9 9	-10 6	1 15	-54 8
4800	4787 5	-14 1	-7 7	1 08	-57 3
4800	4800	-37 4	9 5	1 16	-39 4
4800	4812 5	-16 1	-10	1 13	-50 2
4800	4825	-39 1	10 9	1 24	-43 7
4800	4837 5	-36 3	6 2	1 24	-23
4800	4850	-15 7	-9 9	0 91	-56 2
4800	4862 5	-19 4	-19 1	0 94	-47 6
4800	4875	-22 2	-14 8	1 12	-48 6
4800	4887 5	-50 2	11 5	1 11	-43 7
4800	4900	-48 3	12 7	1 13	-38 1
4800	4912 5	-14 3	-11 5	1 04	-53 5
4800	4925	-15 2	-15	1 1	-57 2
4800	4937 5	-40	7 2	1 19	-39 8
4800	4950	-12 2	-9 9	1 02	-57 6
4800	4962 5	-36	10 2	1 13	-40 8
4800	4975	-10 2	-10 4	0 88	-57
4800	4987 5	-0 5	-6 3	1 01	-48 6
4800	5000	-4 9	-12 9	1 05	-52 1

Appendix A

Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4900	3750	18 7	7 9	2 18	-47 2
4900	3762 5	19 1	7 1	2 29	-57 6
4900	3775	18 1	7 1	2 24	-55 9
4900	3787 5	17 3	6 2	2 34	-49 2
4900	3800	18 5	6 5	2 34	-53 7
4900	3812 5	23 6	-2	2 3	-42 3
4900	3825	24 2	-0 9	2 21	-40 1
4900	3837 5	19 3	7 5	2 13	-54 1
4900	3850	21	6 6	2 1	-51 9
4900	3862 5	28 7	-1 8	2 15	-44 3
4900	3875	27 2	-1 1	2 35	-42 9
4900	3887 5	28 4	-1	2 47	-45 2
4900	3900	20 3	10	2 44	-46 6
4900	3912 5	23 5	9 4	2 47	-54 4
4900	3925	24	11 2	2 51	-50 4
4900	3937 5	31	1 2	2 72	-42 3
4900	3950	25	12 1	2 66	-51 6
4900	3962 5	25 5	9 6	2 71	-54 4
4900	3975	26 7	11 5	2 66	-51 5
4900	3987 5	31 7	4 1	2 72	-43 4
4900	4000	33 1	2 3	2 79	-43 2
4900	4012 5	34 4	1 5	2 63	-42 2
4900	4025	26 1	12 2	2 62	-54
4900	4037 5	25 4	13 7	2 6	-56 1
4900	4050	26 1	10	2 55	-61 6
4900	4062 5	24	12	2 45	-56 4
4900	4075	25 6	11	2 47	-54 3
4900	4087 5	26 9	12 9	2 6	-53 1
4900	4100	27 4	15	2 36	-53 4
4900	4112 5	26 4	14 5	2 32	-55 1
4900	4125	22 9	12 5	2 11	-51 7
4900	4137 5	25 5	12 9	2 32	-58 7
4900	4150	24 7	13 9	2 3	-55 3
4900	4162 5	25 1	14 8	2 4	-49 2
4900	4175	24 3	13 5	2 36	-51 8
4900	4187 5	24 8	11 1	2 42	-57 5
4900	4200	23 3	12 3	2 52	-56 1
4900	4212 5	22 2	13 8	2 53	-58 1
4900	4225	21 7	14 4	2 58	-55 4
4900	4237 5	21	11 8	2 51	-57 8
4900	4250	19 2	14 4	2 49	-51 5
4900	4262 5	28 5	3 5	2 53	-44 7
4900	4275	29 7	4 9	2 42	-42 5
4900	4287 5	28 7	4 3	2 41	-40 9

Line	Station	InPhase	Quadrature	Total Field	Direction
4900	4300	30 8	3	2 32	-43 5
4900	4312 5	21 3	12 2	2 26	-57 7
4900	4325	21 5	14 6	2 22	-54 1
4900	4337 5	19 5	13 6	2 19	-55 8
4900	4350	20 4	7 8	2 18	-69 4
4900	4362 5	19 6	12 8	2 03	-55
4900	4375	19 8	13	1 96	-49 7
4900	4387 5	17 8	14 2	1 87	-52 3
4900	4400	17 6	13 7	1 68	-51 8
4900	4412 5	21 8	12 4	1 67	-50 1
4900	4425	32 8	-5 4	1 58	-34 4
4900	4437 5	31 6	-6 5	1 57	-30 1
4900	4450	36 6	-4 6	1 58	-36 3
4900	4462 5	41 5	-6 2	1 53	-38 2
4900	4475	17 3	23 6	1 38	-50 4
4900	4487 5	42 5	-0 9	1 46	-34 3
4900	4500	42 4	-6	1 34	-37 2
4900	4512 5	49 3	-5 9	1 15	-39 2
4900	4525	46 8	-13 2	1 07	-31 5
4900	4537 5	46 3	-12 1	1 1	-27 6
4900	4550	40 2	-11 1	1 1	-36 8
4900	4562 5	29 7	-6 5	1 5	-26 8
4900	4575	27 4	-9 3	1 45	-29 9
4900	4587 5	24 8	-8 7	1 49	-30 9
4900	4600	27 4	-8 7	1 33	-30
4900	4612 5	21	-8 2	1 42	-25 5
4900	4625	18 3	-11 8	1 45	-32 4
4900	4637 5	14 5	-7 2	1 56	-35
4900	4650	16 2	-10 4	1 61	-26 6
4900	4662 5	16 5	-11 1	1 58	-32 7
4900	4675	16	-9 1	1 56	-29 8
4900	4687 5	15 5	-8 9	1 52	-27 3
4900	4700	14 5	-10 6	1 45	-33 9
4900	4712 5	10 9	-12 4	1 45	-27 7
4900	4725	5 7	-13 7	1 66	-31 3
4900	4737 5	3 7	-9 1	1 84	-27 8
4900	4750	1 3	-12 3	1 78	-31 5
4900	4762 5	0 5	-10	2 13	-31
4900	4775	-0 5	-8 7	2 09	-32 4
4900	4787 5	0 7	-8 1	2 3	-35 7
4900	4800	-3	-8 6	2 19	-38 9
4900	4812 5	-3 1	-7 8	2 31	-32 1
4900	4825	-5 6	-7 4	2 63	-38 3
4900	4837 5	-7 9	-8 9	2 57	-39 7

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Happy-Feliz Grid VLF-EM Hawaii

Line	Station	InPhase	Quadrature	Total Field	Direction
4900	4850	-11	-8 6	3 07	-41 2
4900	4862 5	-12 8	-8 9	3 15	-32 2
4900	4875	-12	-8 2	3 01	-34 2
4900	4887 5	-8 4	-5 1	3 24	-40 6
4900	4900	-3 9	-3 9	3 37	-43 5
4900	4912 5	-1 5	-2 8	3 34	-41 6
4900	4925	0 5	-2 5	3 31	-35 4
4900	4937 5	1 6	-0 6	3 39	-43 4
4900	4950	2	-0 9	3 19	-40 6
4900	4962 5	4 2	-0 9	3 34	-37 3
4900	4975	5 9	-3 1	3 69	-38 4
4900	4987 5	7 8	-3 1	3 27	-38
4900	5000	10 7	-0 7	3 51	-35 9

Line	Station	InPhase	Quadrature	Total Field	Direction
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Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4100	4500	-9	-5 9	5 11	-1 7
4100	4512 5	-6 7	-5 1	5 05	-8
4100	4525	-7 2	-5 4	5 11	-5 4
4100	4537 5	-7	-6 6	5 21	-5 5
4100	4550	-7 4	-5 7	5 19	-1 9
4100	4562 5	-7 6	-6 2	5 29	0 9
4100	4575	-8 3	-7 6	5 23	-1 9
4100	4587 5	-8 4	-6 2	5 22	-9 6
4100	4600	-8 6	-6 9	5 11	-10 1
4100	4612 5	-9 8	-6 6	4 94	-6 6
4100	4625	-9 7	-7	4 79	-8 8
4100	4637 5	-8 7	-6 7	4 67	-5 1
4100	4650	-8 8	-5 7	4 54	-3 5
4100	4662 5	-8 1	-6 3	4 48	0 3
4100	4675	-8 9	-6 4	4 35	-0 8
4100	4687 5	-9 2	-7 4	4 24	12 3
4100	4700	-9 3	-8 5	4 06	5 7
4100	4712 5	-10 6	-8 4	3 93	4 6
4100	4725	-10 9	-8 4	3 81	-0 3
4100	4737 5	-10	-8	3 7	11 9
4100	4750	-8 3	-7 2	3 76	8 3
4100	4762 5	-6 8	-7 2	3 61	5 2
4100	4775	-4 7	-5 1	3 63	-4 9
4100	4787 5	-3 4	-3 3	3 48	-7 9
4100	4800	-2 2	-2	3 61	-7 1
4100	4812 5	-3 4	-2 6	3 54	-13 5
4100	4825	-3 8	-2 1	3 49	-12
4100	4837 5	-3 4	-2 7	3 37	-5 3
4100	4850	-2 8	-0 5	3 36	4 3
4100	4862 5	-3 1	1 5	3 4	2 9
4100	4875	-2 9	0 3	3 33	6 1
4100	4887 5	-4 4	-1 6	3 39	12 4
4100	4900	-4	-0 5	3 42	11 9
4100	4912 5	-4 7	-1 9	3 43	6 9
4100	4925	-4 8	-1 5	3 37	-6 3
4100	4937 5	-2 7	-1 2	3 45	-1 1
4100	4950	-3 8	-0 7	3 5	3 9
4100	4962 5	-2 7	-0 3	3 5	13 8
4100	4975	-2 5	-0 2	3 4	2 5

Line	Station	InPhase	Quadrature	Total Field	Direction
4100	4987 5	-1 4	-0 7	3 44	63
4100	5000	-4 3	-2 3	3 46	73
4100	5012 5	-13 8	1 3	6 19	-8 2
4100	5025	-14 4	2 2	5 98	-0 8
4100	5037 5	-14 5	1 3	6 14	-11 5
4100	5050	-14 3	2	6 19	-6 8
4100	5062 5	-13 5	2 9	6 36	-7 2
4100	5075	-13 6	2	6 26	-7 4
4100	5087 5	-13 1	2 3	6 26	-16 1
4100	5100	-12 9	2 2	6 15	-11 1
4100	5112 5	-13 1	1 8	6 22	-6
4100	5125	-13 6	1 1	6 19	-8 3
4100	5137 5	-13 8	1 2	6 11	-1 7
4100	5150	-13 6	0 6	6 13	-10 5
4100	5162 5	-13	0 9	6 23	-9 7
4100	5175	-12 4	1 6	6 4	-0 3
4100	5187 5	-12 3	0 6	6 26	-6
4100	5200	-13 4	0	6 36	-9 4
4100	5212 5	-14 7	-0 9	6 53	-16 4
4100	5225	-15	-1 3	6 72	-8 8
4100	5237 5	-14 9	-0 9	7 17	-10
4100	5250	-14 8	-1 2	7 27	-18 6
4100	5262 5	-15 3	-1 9	7 46	-6 3
4100	5275	-15	-2 5	7 94	-12 9
4100	5287 5	-14 4	-1 6	8 11	-6 8
4100	5300	-13 5	-1 7	8 27	-13
4100	5312 5	-13 7	-2 3	8 38	-5
4100	5325	-14	-3 1	8 27	-6 6
4100	5337 5	-13 5	-2 7	8 33	-14 9
4100	5350	-12 3	-2 6	8 25	-19
4100	5362 5	-10 4	-0 7	8 25	-12 6
4100	5375	-9 5	0 7	8 05	-2 5
4100	5387 5	-9 4	0 4	8 18	0 1
4100	5400	-9 6	0 1	8 14	-12 6
4100	5412 5	-8 8	0 5	8 53	-14 8
4100	5425	-9 3	0 1	8 41	-1 5
4100	5437 5	-9 1	0 4	8 36	-7 6
4100	5450	-8 9	0 9	8 39	-4 3
4100	5462 5	-9 1	1 8	8 4	5 2

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Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4100	5475	-9.9	0.9	8.66	-15
4100	5487.5	-10.9	1.5	8.77	-17.9
4100	5500	-12.1	1.5	8.85	-0.9
4100	5512.5	-14.5	0.9	8.79	5.1
4100	5525	-17.4	-0.3	8.66	12.9
4100	5537.5	-20.9	-1.8	8.33	0.4
4100	5550	-21.4	-2	8.27	17
4100	5562.5	-23.8	-2.9	7.92	9.1
4100	5575	-26.1	-4.6	7.59	4.7
4100	5587.5	-27.1	-4.9	7.2	10.3
4100	5600	-27.7	-4.8	6.95	14.9
4100	5612.5	-27.4	-4.4	6.87	3.3
4100	5625	-27.5	-4.9	6.59	-1.3
4100	5637.5	-29	-5.9	6.52	2.1
4100	5650	-29.4	-7.9	6.55	5.4
4100	5662.5	-29.1	-7.9	6.53	-4.1
4100	5675	-27.8	-10	6.31	-10.9
4100	5687.5	-26.9	-9.1	6.23	-9
4100	5700	-25	-8.9	6	-8.9
4100	5712.5	-23.3	-8.6	5.88	-16.6
4100	5725	-19.8	-5.6	5.61	-8.4
4100	5737.5	-18.3	-3.5	5.55	-12.7
4100	5750	-16.5	-3.2	5.53	-10.8
4200	4500	-12.7	-3	5.95	-13.6
4200	4512.5	-13.2	-3.3	6.3	-18.1
4200	4525	-14.2	-3.3	6.38	-2.2
4200	4537.5	-15.5	-4.8	6.34	-10.5
4200	4550	-14.8	-2.8	6.31	-0.3
4200	4562.5	-14.7	-2.7	6.33	-6.1
4200	4575	-13.3	-1	6.2	-9.7
4200	4587.5	-13.6	-0.8	6.26	0.5
4200	4600	-13.7	-0.2	6.32	-5.8
4200	4612.5	-14.2	0	6.46	-9.5
4200	4625	-13.8	0.2	6.57	-12.9
4200	4637.5	-13.4	1.5	6.47	-1.1
4200	4650	-13.8	2.3	6.67	-6.3
4200	4662.5	-13.5	2.5	6.84	-9.7
4200	4675	-13.6	2.9	6.99	-4.4
4200	4687.5	-14.1	3.6	7.02	1.3

Line	Station	InPhase	Quadrature	Total Field	Direction
4200	4700	-15.3	2.7	7.16	-4.1
4200	4712.5	-16.5	1.9	7.19	1.3
4200	4725	-18.5	0.9	7	3.2
4200	4737.5	-17.9	0.3	6.83	-8.4
4200	4750	-15.9	2.6	6.8	8.5
4200	4762.5	-14.5	3.2	6.78	-3.7
4200	4775	-12.5	4.8	6.74	5.2
4200	4787.5	-10.9	5.8	6.57	-5.8
4200	4800	-8.7	6	6.45	-0.8
4200	4812.5	-7.1	7.8	6.47	1.8
4200	4825	-6.7	8.3	6.47	-11.1
4200	4837.5	-5.1	9.1	6.55	-5
4200	4850	-4.8	8.4	6.81	-9.2
4200	4862.5	-7.1	7.2	6.77	-4.2
4200	4875	-7.4	6.6	6.75	5.3
4200	4887.5	-8.7	5.7	6.77	8.2
4200	4900	-8.9	6	6.85	11.7
4200	4912.5	-10.8	5	6.88	8.6
4200	4925	-9.7	5.6	6.7	-5.2
4200	4937.5	-10.4	6.5	6.81	0.6
4200	4950	-11.5	6.3	6.69	2.8
4200	4962.5	-11.9	5.4	6.61	-4
4200	4975	-11.9	5.3	6.48	-0.8
4200	4987.5	-12.8	4.4	6.42	1.5
4200	5000	-6	-0.1	2.98	5.7
4200	5012.5	-5.8	-1	2.91	8.3
4200	5025	-5.9	-0.3	2.89	12.4
4200	5037.5	-4.9	0.4	2.92	7
4200	5050	-4.4	-0.6	2.92	10.8
4200	5062.5	-5.6	-0.9	2.87	7.5
4200	5075	-6	-0.9	2.88	10.3
4200	5087.5	-5.2	-0.7	2.86	2.4
4200	5100	-5.6	-3.8	2.87	12.6
4200	5112.5	-5.3	-3.2	2.85	13.6
4200	5125	-3.9	-1.2	2.83	6.6
4200	5137.5	-4.8	-2.3	2.85	-3.5
4200	5150	-4	-3.7	2.85	0.2
4200	5162.5	-4.2	-3	2.82	-0.7
4200	5175	-3.6	-3.9	2.86	9.2

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Line	Station	InPhase	Quadrature	Total Field	Direction
4200	5187 5	-3 5	-4 1	2 87	3 4
4200	5200	-3 8	-5 1	2 88	-4 1
4200	5212 5	-4	-4 1	2 84	1 4
4200	5225	-3 2	-4 3	2 86	0 6
4200	5237 5	-2	-4 5	2 92	6 6
4200	5250	-2 3	-3 6	2 9	4 6
4200	5262 5	-3 8	-3 3	2 92	1 1
4200	5275	-4 2	-5	2 88	-9 1
4200	5287 5	-3 4	-5 3	2 9	-2 9
4200	5300	-3 9	-6 1	2 96	-6 6
4200	5312 5	-7 5	-4	6 84	11 6
4200	5325	-7 4	-3 9	6 4	-0 9
4200	5337 5	-7 4	-3 5	6 22	1
4200	5350	-7 9	-3 3	6 29	-2 6
4200	5362 5	-7 6	-2 4	6 53	-8 2
4200	5375	-8 7	-3 1	6 53	3 5
4200	5387 5	-8 7	-2 7	6 5	14 3
4200	5400	-9 5	-3 3	6 49	13
4200	5412 5	-10 5	-3 8	6 52	11 9
4200	5425	-11 8	-5 2	6 65	22 5
4200	5437 5	-14 9	-5	6 71	-1 6
4200	5450	-17 5	-6 1	7 05	-5 6
4200	5462 5	-19 6	-7 2	6 87	-2 3
4200	5475	-22 7	-8 7	6 57	-2 8
4200	5487 5	-23 3	-10	6 26	-3 9
4200	5500	-22 7	-9 8	6 21	10 5
4200	5512 5	-23 2	-7 8	6 24	-14 5
4200	5525	-23 2	-8 1	6 25	-5
4200	5537 5	-24 8	-9 5	6 46	-5 6
4200	5550	-25 9	-10 3	6 71	-3 6
4200	5562 5	-26 2	-12 3	6 8	4 2
4200	5575	-26 4	-12 1	7	4 5
4200	5587 5	-25 2	-11 1	6 71	2 9
4200	5600	-23 8	-9 2	6 56	-5 3
4200	5612 5	-22 9	-7 1	6 33	-9 5
4200	5625	-22	-5 9	6 21	-7 2
4200	5637 5	-23 1	-8 5	6 42	-7 2
4200	5650	-24 4	-10 7	6 41	-4 3
4200	5662 5	-24 9	-10 2	6 5	-6 2

Line	Station	InPhase	Quadrature	Total Field	Direction
4200	5675	-23 3	-10 2	6 26	-9 7
4200	5687 5	-21 4	-9 6	6 19	-8
4200	5700	-21 5	-9 3	6 15	-4 9
4200	5712 5	-20 7	-9 5	6 07	-15 5
4200	5725	-20 8	-10 1	6 15	-13 7
4200	5737 5	-21 3	-9 9	5 98	-11 7
4200	5750	-22 9	-12	5 74	-20 1
4300	5000	-16	3 4	3 05	-2
4300	5012 5	-17 5	1 9	3 02	0 7
4300	5025	-15 6	3 4	3 01	-5
4300	5037 5	-15 1	3 4	3	0
4300	5050	-15 2	3 6	3	-6 1
4300	5062 5	-15 8	1 9	2 99	-27 1
4300	5075	-15 7	1 6	2 98	-22 2
4300	5087 5	-15	0 9	3	-7 9
4300	5100	-13 9	2	3 01	-7
4300	5112 5	-14 1	0 6	3 02	-10 4
4300	5125	-14 1	2 1	3 04	-6 2
4300	5137 5	-13 7	2 1	3 05	-1 9
4300	5150	-12 6	1 5	3 06	5 3
4300	5162 5	-13 5	1 9	3 11	11 8
4300	5175	-12 3	1	3 11	6 1
4300	5187 5	-13 3	-0 3	3 17	15 8
4300	5200	-13 2	1	3 16	20 5
4300	5212 5	-13 6	-0 1	3 19	15 2
4300	5225	-13 2	0 2	3 17	9 8
4300	5237 5	-13 7	0	3 22	10
4300	5250	-15 3	-0 6	3 23	-1 3
4300	5262 5	-15 6	-2 1	3 24	-1 8
4300	5275	-16 3	-2 1	3 22	2 1
4300	5287 5	-16 6	-3 4	3 19	-10 7
4300	5300	-16 8	-1 4	3 22	0
4300	5312 5	-15 6	-0 7	3 21	3
4300	5325	-16	0	3 24	6 6
4300	5337 5	-16 9	0 7	3 3	24
4300	5350	-15 6	-0 6	3 31	20 8
4300	5362 5	-16 4	0 8	3 34	15 5
4300	5375	-16 3	0 1	3 34	16
4300	5387 5	-17 5	0 2	3 36	4 8

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Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4300	5400	-20 8	0 2	3 41	18 8
4300	5412 5	-24 5	-1 9	3 48	9 3
4300	5425	-30	-3 4	3 48	14 5
4300	5437 5	-32 8	-6 9	3 3	12 3
4300	5450	-33 6	-7 3	3 23	9 7
4300	5462 5	-31 8	-6 7	3 15	11 5
4300	5475	-30 5	-2	3 16	23 4
4300	5487 5	-30 2	-2 5	3 11	9 6
4300	5500	-28 1	-2 1	3 12	4 4
4300	5512 5	-29	-0 2	3 1	6 3
4300	5525	-31 4	-1 4	3 11	5 6
4300	5537 5	-40	-7 4	3 1	7 6
4300	5550	-44 5	-10 7	2 98	9
4300	5562 5	-46	-14 1	2 92	11 5
4300	5575	-47 7	-16	2 88	9 1
4300	5587 5	-47 8	-16 7	2 76	10 8
4300	5600	-46 5	-12 8	2 73	6 2
4300	5612 5	-44 5	-13 1	2 7	11 3
4300	5625	-42 2	-12 2	2 65	6 6
4300	5637 5	-41 5	-9 4	2 63	8 5
4300	5650	-39 4	-9	2 58	3 1
4300	5662 5	-40 1	-7 8	2 6	5
4300	5675	-38 3	-7 2	2 57	6
4300	5687 5	-38 7	-5 7	2 55	4 4
4300	5700	-37 6	-5 2	2 5	4 7
4300	5712 5	-36 2	-4 3	2 48	1 7
4300	5725	-34 8	-3 9	2 43	8 8
4300	5737 5	-33 3	-4 2	2 41	2 7
4300	5750	-32 2	-3 7	2 29	-0 3
4400	4250	-6 5	1 4	5 53	-12 3
4400	4262 5	-5 7	2 3	5 52	0 7
4400	4275	-7 2	2	5 44	9 6
4400	4287 5	-8 2	0 8	5 61	-0 4
4400	4300	-8 4	0 7	5 52	3 4
4400	4312 5	-7 7	0 8	5 42	-3 7
4400	4325	-6 6	1 7	5 58	-9 9
4400	4337 5	-5 4	1 4	5 63	18 1
4400	4350	-6 4	1 3	5 62	8 6
4400	4362 5	-7 1	0 3	5 59	6 8

Line	Station	InPhase	Quadrature	Total Field	Direction
4400	4375	-6 4	0 1	5 5	7 4
4400	4387 5	-6	0 4	5 49	9 7
4400	4400	-3 5	1 2	5 57	11 4
4400	4412 5	-3 1	1 4	5 39	11 8
4400	4425	-3 1	0 9	5 16	7 3
4400	4437 5	-1 4	1 6	5 23	-2
4400	4450	-1 6	0 6	5 15	-0 1
4400	4462 5	-1	0	5 1	-11 7
4400	4475	-0 8	-0 6	5 18	-0 1
4400	4487 5	1 1	-0 2	5 11	3 1
4400	4500	2 2	-0 3	5 07	-2 8
4400	4512 5	3 3	0 1	5 04	-2 9
4400	4525	3	0 9	4 91	-17 2
4400	4537 5	3 8	0 4	5	4 3
4400	4550	2 2	-0 7	4 99	7 8
4400	4562 5	0 9	-2 3	4 83	1 1
4400	4575	-2 4	-3 6	4 6	0
4400	4587 5	-3 4	-3 9	4 39	-6 2
4400	4600	-2 2	-3 4	4 31	-4 6
4400	4612 5	-2 2	-2 4	4 2	-3
4400	4625	-1 9	-2 1	4 13	2 6
4400	4637 5	0	-1	4 08	2 6
4400	4650	0 3	-0 3	4 18	0 5
4400	4662 5	1 9	0 3	3 86	-2 5
4400	4675	2 3	1 1	3 91	-10 5
4400	4687 5	2 2	0 8	3 9	-5
4400	4700	3 2	1	3 98	-8 6
4400	4712 5	3	0	3 94	-14 1
4400	4725	2 5	-0 4	3 85	-9 9
4400	4737 5	4 3	1 1	3 76	-16 9
4400	4750	5 7	0 8	3 73	-1 5
4400	4762 5	7 4	2 5	3 61	-8 4
4400	4775	9 2	2 5	3 62	-5 3
4400	4787 5	8	3 1	3 48	-6 6
4400	4800	7 8	3 3	3 51	-9 2
4400	4812 5	9 1	2 4	3 47	-3 9
4400	4825	8	2 9	3 53	-1 5
4400	4837 5	6 6	2	3 61	1 3
4400	4850	4 9	2 3	3 79	-6 4

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Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4400	4862 5	1 6	0 9	3 83	1 5
4400	4875	0	0 7	3 78	2 1
4400	4887 5	-1 1	0 9	3 68	-6 2
4400	4900	-2 5	0 5	3 69	1 4
4400	4912 5	-3 5	0 8	3 71	4
4400	4925	-6 9	-1 2	3 6	2 9
4400	4937 5	-6 8	-1 2	3 59	-3 7
4400	4950	-8 3	-2 2	3 48	-3
4400	4962 5	-8 1	-2 1	3 39	-10 1
4400	4975	-9 6	-2 2	3 29	-7 8
4400	4987 5	-10 9	-4 4	3 14	-13 1
4400	5000	-10 9	-3 7	3 59	5 7
4400	5012 5	-10 9	-3 3	3 52	11
4400	5025	-9 7	-4	3 43	7 1
4400	5037 5	-8 8	-3 2	3 35	5 9
4400	5050	-11	-3 8	3 31	7 6
4400	5062 5	-10 2	-4 6	3 28	18 1
4400	5075	-9 2	-6 4	3 22	15 7
4400	5087 5	-9	-5 6	3 18	5 3
4400	5100	-8	-5 2	3 2	11 7
4400	5112 5	-7 7	-5 9	3 24	5 9
4400	5125	-7 6	-5 3	3 21	7 6
4400	5137 5	-7 9	-5 8	3 16	0 7
4400	5150	-6 9	-6 8	3 19	5 1
4400	5162 5	-6 3	-5 1	3 18	-2 4
4400	5175	-7 8	-6 9	3 17	1 3
4400	5187 5	-7	-5 6	3 16	2
4400	5200	-6 5	-5 9	3 06	4 1
4400	5212 5	-7 1	-5 3	2 99	2 1
4400	5225	-7 7	-5 6	2 95	8 4
4400	5237 5	-9	-6 3	2 95	2 2
4400	5250	-9 4	-6	3 01	4 1
4400	5262 5	-8 3	-6 1	3 05	2 1
4400	5275	-7 5	-3 9	3	-4 9
4400	5287 5	-8 3	-3	2 95	-12 8
4400	5300	-9 3	-3 6	3 03	-25 8
4400	5312 5	-9 7	-3 7	3 1	-15
4400	5325	-11 8	-4 7	3 19	-17 7
4400	5337 5	-14	-5 3	3 18	-14 7

Line	Station	InPhase	Quadrature	Total Field	Direction
4400	5350	-15 6	-5 7	3 07	-7 8
4400	5362 5	-15 9	-7	3 05	-6 8
4400	5375	-16 3	-4	3	0 4
4400	5387 5	-15 7	-3 8	3 01	10 4
4400	5400	-17 4	-2 5	2 96	-2 4
4400	5412 5	-19 6	-5	3 04	-5
4400	5425	-21 7	-5 8	2 99	1 5
4400	5437 5	-20 8	-5 2	2 98	5 8
4400	5450	-21 8	-4 5	2 94	-8 6
4400	5462 5	-22 9	-4 5	2 92	-1 6
4400	5475	-25 9	-4 5	2 83	-4 1
4400	5487 5	-27 1	-4 2	2 85	-3 2
4400	5500	-27 1	-5 9	2 93	-5 1
4400	5512 5	-29 6	-7 1	2 87	-1 9
4400	5525	-29 7	-7 4	2 85	-4 3
4400	5537 5	-29 5	-7 5	2 84	1 7
4400	5550	-31 7	-8 9	2 76	-13 9
4400	5562 5	-31	-9 8	2 7	-7 3
4400	5575	-32 9	-12 4	2 62	-6 4
4400	5587 5	-33 7	-15 1	2 53	-4 4
4400	5600	-34 4	-18 2	2 44	-11 4
4400	5612 5	-32 4	-17 2	2 41	-2 6
4400	5625	-30	-15 3	2 31	-3 4
4400	5637 5	-29 6	-16 2	2 26	-12 3
4400	5650	-28 2	-13 2	2 26	-0 7
4400	5662 5	-28 4	-10 2	2 24	-6
4400	5675	-26 7	-13 6	2 2	-11 3
4400	5687 5	-27	-13 4	2 19	-2 1
4400	5700	-22 8	-11 2	2 16	-4 3
4400	5712 5	-16 2	-11 3	2 22	-6 1
4400	5725	-19 6	-10 9	2 23	-2 4
4400	5737 5	-17 5	-9 7	2 21	0 7
4400	5750	-13 7	-4 8	2 19	-4
4500	3750	-22 4	-6 5	5 89	4 6
4500	3762 5	-22 7	-5 6	6 05	10 7
4500	3775	-21 4	-5 9	6 05	12 9
4500	3787 5	-20 1	-5 9	6 1	24 3
4500	3800	-17 3	-1 9	5 97	6 8
4500	3812 5	-14 9	-0 1	5 83	5 5

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Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4500	3825	-12 7	2 6	5 98	0 6
4500	3837 5	-11 7	4 4	6 2	19 7
4500	3850	-12 6	3 8	6	0 8
4500	3862 5	-11 4	4 8	6 29	12 7
4500	3875	-9 9	4 7	6 49	7 3
4500	3887 5	-9 1	5 7	6 64	-4
4500	3900	-10 7	4 1	6 72	-7 4
4500	3912 5	-10 7	4 9	6 85	-5 6
4500	3925	-10 3	5 8	6 85	5 3
4500	3937 5	-10 1	6 7	6 92	12 4
4500	3950	-9 5	6 3	7 06	12 2
4500	3962 5	-9 6	5 9	6 99	6 9
4500	3975	-10 8	5	7 14	5 3
4500	3987 5	-11	3 8	7 38	1 6
4500	4000	-10 7	4	7 29	-0 9
4500	4012 5	-11 6	3 9	7 47	8 2
4500	4025	-11 1	3 4	7 77	14 4
4500	4037 5	-11 5	2 4	8 05	2 2
4500	4050	-11 5	1 8	8 26	-5 8
4500	4062 5	-10 3	2 9	8 27	0 6
4500	4075	-9 6	3 4	8 4	3 9
4500	4087 5	-8 4	4 2	8 38	6 4
4500	4100	-7 7	4 2	8 54	7
4500	4112 5	-8	4 1	8 67	5 8
4500	4125	-8 3	3 4	8 9	1 2
4500	4137 5	-7 9	3 8	9 06	9 4
4500	4150	-7 5	3 7	9 15	-2 1
4500	4162 5	-6 8	4 5	9 06	0 6
4500	4175	-7 3	4	8 95	-0 5
4500	4187 5	-6 2	4 4	8 95	-2 9
4500	4200	-6 8	4 5	9 09	-0 8
4500	4212 5	-7 6	2 8	9 11	3 2
4500	4225	-7 9	3 2	9 1	6 7
4500	4237 5	-8 1	3	9 02	6 3
4500	4250	-7 3	3 4	8 94	12 3
4500	4262 5	-6 4	3 7	8 83	10 4
4500	4275	-7 4	3 2	8 64	7 1
4500	4287 5	-7 5	2 1	8 53	9 1
4500	4300	-7 8	2 2	8 5	10 5

Line	Station	InPhase	Quadrature	Total Field	Direction
4500	4312 5	-7 4	2 5	8 4	4 2
4500	4325	-6 4	3 3	8 29	6
4500	4337 5	-5 8	3 4	8 37	5 8
4500	4350	-4 7	4 5	8 34	11 9
4500	4362 5	-3 9	5 2	8 43	2 9
4500	4375	-5 5	2 8	8 75	0 2
4500	4387 5	-7 1	1 9	8 86	1 5
4500	4400	-7 8	1 2	8 83	4
4500	4412 5	-8 3	1 6	8 74	3 7
4500	4425	-8 8	1 4	8 66	0
4500	4437 5	-10 6	0 5	8 54	3 8
4500	4450	-10 4	-0 3	8 47	1 8
4500	4462 5	-10 6	0 6	8 52	11 2
4500	4475	-9 7	0 4	8 5	10 8
4500	4487 5	-9 2	1 2	8 44	0 8
4500	4500	-8 9	1 6	8 19	4 7
4500	4512 5	-9 3	1 2	8 12	0 7
4500	4525	-9 4	0 7	7 99	4
4500	4537 5	-9	0	8 04	-1 7
4500	4550	-8 8	0 4	7 91	2 8
4500	4562 5	-8 6	0 9	7 77	3 6
4500	4575	-8 2	1 3	7 7	2 3
4500	4587 5	-7 2	1 6	7 46	-1 9
4500	4600	-7 4	1 6	7 24	-8 6
4500	4612 5	-6 5	2 8	7 12	0 5
4500	4625	-6 3	3 5	7 21	-1 7
4500	4637 5	-6 1	3 7	7 11	2 3
4500	4650	-5 5	4	7 1	0 9
4500	4662 5	-5 4	4 2	7 01	2 9
4500	4675	-4 9	3 9	6 64	1 8
4500	4687 5	-4 4	4 5	6 68	4 5
4500	4700	-5 2	4	6 66	21 5
4500	4712 5	-5	4	6 45	8 4
4500	4725	-4 6	4 2	6 52	2 2
4500	4737 5	-4 7	4 3	6 73	12 2
4500	4750	-4 7	3 8	6 74	12 1
4500	4762 5	-5 1	3 9	6 8	6 6
4500	4775	-5	4	6 72	9
4500	4787 5	-5 4	3 6	6 55	2 8

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Line	Station	InPhase	Quadrature	Total Field	Direction
4500	4800	-6 5	3	6 44	-0 4
4500	4812 5	-7 1	2 2	6 32	3 1
4500	4825	-7 5	2 9	6 14	6 8
4500	4837 5	-7 9	2 9	6 28	3 1
4500	4850	-9 9	1	6 4	4 1
4500	4862 5	-11 6	0 1	6 05	-0 1
4500	4875	-11 6	0 2	5 79	5 3
4500	4887 5	-11 9	0 6	5 67	2 4
4500	4900	-11 5	0 7	5 62	3 5
4500	4912 5	-11 1	1 6	5 43	5 8
4500	4925	-10	3	5 54	3 7
4500	4937 5	-9 3	2 9	5 63	12 7
4500	4950	-9 2	2 9	5 66	12 8
4500	4962 5	-9	3 9	5 83	5 4
4500	4975	-8 8	4 7	5 87	18 3
4500	4987 5	-8 7	4 2	5 77	12 9
4500	5000	-9 4	3 8	5 83	6
4600	3750	-14 3	-5 9	5 46	18 2
4600	3762 5	-16	-6 3	5 43	9 1
4600	3775	-17 8	-8 6	5 09	8 1
4600	3787 5	-19 2	-8 7	4 61	11 7
4600	3800	-20 9	-9 9	4 77	13 6
4600	3812 5	-21 1	-10 6	4 3	15 4
4600	3825	-21 2	-11 4	3 9	7 7
4600	3837 5	-21 1	-12	3 61	16 4
4600	3850	-21 6	-13 2	3 25	28 1
4600	3862 5	-19 2	-10 6	2 95	13 9
4600	3875	-18 1	-9 8	2 56	24 8
4600	3887 5	-19	-10 3	2 42	18 1
4600	3900	-13 1	-9 2	2 11	16 2
4600	3912 5	-13 2	-7 9	1 86	20 5
4600	3925	-8 6	-10 4	1 66	22 4
4600	3937 5	-9 7	-3 5	2 05	11 7
4600	3950	-6 3	-0 5	2 11	4 7
4600	3962 5	-3 3	-0 7	2 12	8 8
4600	3975	-2 1	-0 3	2 15	8 6
4600	3987 5	-1 4	1 7	2 31	6 7
4600	4000	-2 3	-1 3	2 39	-0 2
4600	4012 5	-3 7	-3	2 53	2 8

Line	Station	InPhase	Quadrature	Total Field	Direction
4600	4025	-3 3	-2 1	2 6	10 6
4600	4037 5	-1 2	-2 9	2 55	8 2
4600	4050	-2 7	-2 3	2 63	8 1
4600	4062 5	-1 8	-3 8	2 49	12 1
4600	4075	-2	-3 4	2 36	6 3
4600	4087 5	0	-3 4	2 39	5 1
4600	4100	-2 2	-3 1	2 46	4 3
4600	4112 5	-1 9	-3 3	2 52	8 7
4600	4125	-4 9	-3 5	2 61	5 3
4600	4137 5	-2	-1 9	2 63	0
4600	4150	-2 2	-2 8	2 67	0 2
4600	4162 5	-2	-3 1	2 63	4 4
4600	4175	0 3	-2 3	2 59	11 2
4600	4187 5	-0 5	-1 6	2 49	6 5
4600	4200	0 1	-1	2 4	4 8
4600	4212 5	2 2	-1 2	2 43	5 1
4600	4225	1 4	0 4	2 45	1 5
4600	4237 5	1	0 1	2 51	5 1
4600	4250	0 6	0 2	2 62	7 9
4600	4262 5	0 8	0 2	2 66	11 9
4600	4275	0 8	0 7	2 74	13 5
4600	4287 5	-1 6	-0 1	2 88	10 8
4600	4300	-3 2	-1 7	3 02	16
4600	4312 5	-6 7	-2 5	2 99	10 8
4600	4325	-7	-3 1	2 86	5 8
4600	4337 5	-6 8	-4 9	2 91	2 9
4600	4350	-5 8	-2 3	3	8 7
4600	4362 5	-5 2	-1 4	3 1	3 5
4600	4375	-4 6	-2 4	3 26	8 2
4600	4387 5	-3 7	-1 5	3 31	3 4
4600	4400	-4 2	-2 2	3 51	16 8
4600	4412 5	-4 1	-1 9	3 65	4 6
4600	4425	-6	-2 1	3 65	5 2
4600	4437 5	-4 8	-2 7	3 58	9
4600	4450	-2 9	-1 8	3 6	12 1
4600	4462 5	-2 6	-2 4	3 58	5 2
4600	4475	-1 3	-3 7	3 55	-2 5
4600	4487 5	-2 3	-2 2	3 62	2 2
4600	4500	-1 3	-1 4	3 78	-6

Appendix A

Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4600	4512 5	-1 1	-1 6	4 51	0 2
4600	4525	-0 2	-1	4 6	1 9
4600	4537 5	0 3	-1 2	4 95	4 5
4600	4550	0 8	-0 6	5 04	2 8
4600	4562 5	0 2	-0 5	4 99	6 1
4600	4575	0 3	-0 9	4 89	5 8
4600	4587 5	0 2	-1 1	4 88	4 4
4600	4600	-1 2	-0 4	4 86	0 7
4600	4612 5	-1 5	-0 5	4 87	6 6
4600	4625	-1 3	-0 6	4 97	0 9
4600	4637 5	-2 1	-0 8	5	6 7
4600	4650	-2 3	0 3	4 96	-2 5
4600	4662 5	-1 7	0 1	4 95	0 3
4600	4675	-2 6	0 3	4 94	3 3
4600	4687 5	-2	-0 6	4 98	16 8
4600	4700	-2 7	-1 4	4 91	4 1
4600	4712 5	-3 1	-1 4	4 83	0
4600	4725	-1 3	-1 2	4 79	5 2
4600	4737 5	-0 3	0	4 68	-3 1
4600	4750	1 4	-0 6	4 67	-1 9
4600	4762 5	0 9	0 1	4 58	-0 5
4600	4775	2 7	0 7	4 51	-5 1
4600	4787 5	3 6	1	4 44	-1 7
4600	4800	2 5	0 5	4 23	7 2
4600	4812 5	1 8	0 5	4 27	6 6
4600	4825	1 4	1 2	4 31	9 7
4600	4837 5	2 5	0 6	4 23	5 3
4600	4850	1 2	0	4 01	12 6
4600	4862 5	2 1	0 9	3 89	9 5
4600	4875	1 1	0 9	3 8	6 3
4600	4887 5	1 8	1 5	3 8	8 8
4600	4900	2 4	3 6	3 84	3
4600	4912 5	2 5	3 3	3 85	4 9
4600	4925	0 2	2 2	3 98	3
4600	4937 5	-1 7	0 6	3 98	9 9
4600	4950	-4	-0 5	4 03	2 5
4600	4962 5	-5 4	-1 2	3 99	5 3
4600	4975	-7 8	-4	3 85	2 7
4600	4987 5	-8 4	-2 6	3 78	0

Line	Station	InPhase	Quadrature	Total Field	Direction
4600	5000	-7 2	-4	3 7	-4 3
4700	3750	-23 8	-6 7	7 54	4 7
4700	3762 5	-25 2	-6	7 55	2 5
4700	3775	-24 5	-5 1	7 37	7 8
4700	3787 5	-24 2	-5 3	7 34	14 8
4700	3800	-22 5	-3 6	7 2	11 6
4700	3812 5	-20 5	-1	7 22	10 6
4700	3825	-20	-0 3	7 36	8 6
4700	3837 5	-19 6	0	7 46	8 3
4700	3850	-20 8	-0 1	7 46	9
4700	3862 5	-23 5	-2 2	7 5	15 9
4700	3875	-26	-3 7	7 2	7 3
4700	3887 5	-26 9	-4 7	6 95	5 5
4700	3900	-26 8	-5	6 72	7 3
4700	3912 5	-25 9	-4 1	6 53	5 7
4700	3925	-23 8	-3 8	6 36	11 6
4700	3937 5	-22 5	-2 7	6 33	8 2
4700	3950	-20 9	-1 9	6 33	11 6
4700	3962 5	-18 7	-0 9	6 42	16 8
4700	3975	-18 2	-0 7	6 59	19 8
4700	3987 5	-17 5	-1	6 63	9 4
4700	4000	-17 2	-0 1	6 7	11 2
4700	4012 5	-16	0 5	6 7	24 5
4700	4025	-14 2	1 3	6 57	13 9
4700	4037 5	-13 4	2 3	6 6	17 4
4700	4050	-11 2	4 3	6 7	18
4700	4062 5	-10 2	5 9	6 86	9 3
4700	4075	-8 8	7 3	7	16 7
4700	4087 5	-8 7	7 9	7 2	22
4700	4100	-7 8	7 8	7 42	10 8
4700	4112 5	-8 8	7 9	7 53	9 4
4700	4125	-8 9	7 9	7 94	6 1
4700	4137 5	-9 5	8 3	8 37	19
4700	4150	-12 7	6	8 68	-0 3
4700	4162 5	-14 7	4 2	8 73	-6 5
4700	4175	-15 4	4 9	8 76	17 1
4700	4187 5	-16	3 8	8 75	22
4700	4200	-16 8	3 6	8 71	12
4700	4212 5	-16 8	3	8 74	12 3

Appendix A

Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4700	4225	-17 6	2 2	8 83	8 3
4700	4237 5	-17 7	2 2	8 58	7 7
4700	4250	-16 8	3 3	8 56	13 9
4700	4262 5	-15 8	3 8	8 57	16 1
4700	4275	-15	4 1	8 54	6 8
4700	4287 5	-13 5	5	8 52	14 6
4700	4300	-13 1	5 5	8 65	11 9
4700	4312 5	-12 5	4 8	8 5	11 2
4700	4325	-12 2	4 8	8 53	12 2
4700	4337 5	-11 4	4 8	8 45	20 6
4700	4350	-10 7	5	8 32	19 5
4700	4362 5	-8 7	6 3	8 25	21 1
4700	4375	-7 8	6 3	8 28	19 7
4700	4387 5	-6 9	5 8	8 5	19
4700	4400	-6	6 4	8 61	20 4
4700	4412 5	-4 8	6 2	8 82	17 1
4700	4425	-4 6	5 1	8 96	5 4
4700	4437 5	-5	3 7	8 97	12 3
4700	4450	-5 9	2 6	9 01	11 7
4700	4462 5	-7 6	0 8	8 94	13 1
4700	4475	-6 8	0 2	8 89	13 3
4700	4487 5	-5 8	1	8 83	12 2
4700	4500	-3 8	1 1	8 92	2 7
4700	4512 5	-2 9	2 1	9 15	10 2
4700	4525	-2 1	3	9 22	11 3
4700	4537 5	-2	3 3	9 23	15
4700	4550	-3 2	3	9 11	9 4
4700	4562 5	-3 3	2 1	9 1	4 8
4700	4575	-3 7	1 5	9 28	-11 8
4700	4587 5	-4 5	2 1	9 46	7 7
4700	4600	-5 7	1 2	9 75	3 9
4700	4612 5	-6 6	1 4	9 85	11 5
4700	4625	-7 7	1 5	9 74	4 1
4700	4637 5	-8 8	1 9	9 66	5
4700	4650	-9 9	2 6	9 58	9 7
4700	4662 5	-10 8	2 6	9 4	6 9
4700	4675	-10 5	3	9 22	16 6
4700	4687 5	-10	3 1	9 1	9 1
4700	4700	-9 1	3 8	9 16	18 8

Line	Station	InPhase	Quadrature	Total Field	Direction
4700	4712 5	-7 7	4 4	9 07	11 8
4700	4725	-6 4	5	9 11	19 6
4700	4737 5	-4 3	6 5	9 33	22 1
4700	4750	-4 1	7	9 43	24 2
4700	4762 5	-5	5 9	9 58	14 9
4700	4775	-6 6	4	9 6	12 9
4700	4787 5	-10 5	1	9 78	17 3
4700	4800	-10 8	0 1	9 85	13
4700	4812 5	-11 8	0 7	10 27	14 1
4700	4825	-13	0 3	10 28	22 7
4700	4837 5	-14 1	-0 9	10 23	14 5
4700	4850	-14 8	-0 3	10 05	12 5
4700	4862 5	-15 3	-0 5	9 58	9 7
4700	4875	-14 9	0 2	9 3	7 2
4700	4887 5	-15 1	-0 3	9 14	14 9
4700	4900	-16 3	-1 4	9 23	11 8
4700	4912 5	-15 5	-0 1	9 27	9 5
4700	4925	-14 8	-0 2	9 22	6 4
4700	4937 5	-14 7	0 1	9 12	9 5
4700	4950	-14 2	0 5	8 87	10 2
4700	4962 5	-14	1 5	8 82	11 8
4700	4975	-12 4	2 7	8 41	18 8
4700	4987 5	-12 1	1 8	7 93	2
4700	5000	-10 7	2 8	7 64	9
4800	3750	-10 3	-3 1	9 88	14
4800	3762 5	-9 9	-2 1	9 68	2 9
4800	3775	-10 2	-3 1	9 65	4 4
4800	3787 5	-9 4	-3	9 47	12 5
4800	3800	-10 2	-2 9	9 51	4 9
4800	3812 5	-10 7	-4 4	9 61	8 4
4800	3825	-12 5	-4 9	9 62	8 7
4800	3837 5	-13 3	-5 1	9 61	9 6
4800	3850	-14 2	-6 1	9 45	9
4800	3862 5	-14 8	-6 1	9 18	11 2
4800	3875	-15 4	-5 3	8 9	6
4800	3887 5	-15 8	-5 5	8 52	10 1
4800	3900	-15 5	-5 7	8 22	9 1
4800	3912 5	-16	-5 4	7 85	3 5
4800	3925	-16 9	-5 7	7 41	5 3

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Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4800	3937 5	-17	-5 8	7	4 9
4800	3950	-17 4	-6	6 46	9 6
4800	3962 5	-18 4	-6	6 06	12 9
4800	3975	-17 6	-5 4	5 34	13 5
4800	3987 5	-17 4	-5	5 26	15 8
4800	4000	-18 5	-5	5 22	12 8
4800	4012 5	-19	-4 5	5 21	-1
4800	4025	-19 6	-6 2	5 13	17 2
4800	4037 5	-19 5	-5 1	4 75	9 4
4800	4050	-18 3	-4 4	4 45	16 9
4800	4062 5	-17 3	-4 5	4 28	22 6
4800	4075	-14 4	-3 9	4 13	16 1
4800	4087 5	-15 5	-3 9	4 13	9 5
4800	4100	-15 1	-4 2	4 1	14 4
4800	4112 5	-14 6	-4 3	4 02	16 2
4800	4125	-14 2	-4 8	4 05	21 3
4800	4137 5	-14	-4 4	3 96	14
4800	4150	-13 7	-2 2	3 78	9 9
4800	4162 5	-11 2	-4	3 08	14 4
4800	4175	-11 3	-3 3	2 9	6 9
4800	4187 5	-11 6	-4 1	3	10 8
4800	4200	-10 4	-3 6	3 51	9 9
4800	4212 5	-10 8	-4 1	3 79	12 6
4800	4225	-8 8	-4 2	3 95	22 2
4800	4237 5	-8 2	-2 2	3 87	12 7
4800	4250	-7 6	-1 6	3 85	2
4800	4262 5	-7 1	-3 2	3 87	8 6
4800	4275	-7	-2 3	3 93	7 3
4800	4287 5	-6 7	-2	3 94	10 8
4800	4300	-5 4	-1 8	3 79	-1 7
4800	4312 5	-5 7	-1 6	3 8	10 7
4800	4325	-5 8	-2 3	3 88	10 7
4800	4337 5	-5 2	-2 7	3 85	6
4800	4350	-5 1	-2 1	3 78	9 1
4800	4362 5	-3 4	-1 1	3 7	4 6
4800	4375	-2 2	-0 5	3 83	5 8
4800	4387 5	-1 2	-0 8	3 89	11 3
4800	4400	0 9	0 6	4 3	13 6
4800	4412 5	1 9	1 8	4 63	6 5

Line	Station	InPhase	Quadrature	Total Field	Direction
4800	4425	1 3	-1 1	4 77	10 6
4800	4437 5	0 1	-0 3	4 85	6 6
4800	4450	0 4	-1 2	5 06	11 9
4800	4462 5	-0 5	-1 9	5 17	1 4
4800	4475	-4 1	-2 8	5 28	4 9
4800	4487 5	-4 5	-4 7	5 17	10
4800	4500	-4 1	-3 4	5 1	17 2
4800	4512 5	-4 1	-1 7	4 87	9 1
4800	4525	-3 2	-0 5	4 27	14
4800	4537 5	-3 2	-1 2	4 2	11 7
4800	4550	-3	0 7	4 16	12
4800	4562 5	-2 5	0 5	4 23	-0 3
4800	4575	-4 3	0 2	4 38	6 8
4800	4587 5	-5 9	-0 1	4 67	6 8
4800	4600	-7 3	-1 9	4 69	12 7
4800	4612 5	-8	0	4 52	15 1
4800	4625	-7 7	-1 2	4 44	9 4
4800	4637 5	-7 3	0 4	4 3	5 5
4800	4650	-5 3	0 5	4 33	14 7
4800	4662 5	-6 2	0 5	4 48	8 3
4800	4675	-7 2	0	4 53	2 7
4800	4687 5	-7 1	-0 2	4 63	-5 8
4800	4700	-7	-0 1	4 76	2 3
4800	4712 5	-6 5	0 2	4 64	9 3
4800	4725	-6	0	4 5	0 8
4800	4737 5	-5 2	-0 1	4 32	-0 8
4800	4750	-5 8	-0 6	4 64	-0 2
4800	4762 5	-5 7	-0 8	4 74	-4 3
4800	4775	-6 8	-1 5	4 7	-3
4800	4787 5	-6 2	-1 9	4 65	-7 6
4800	4800	-4 8	-1 1	4 53	6 5
4800	4812 5	-3 7	-0 6	4 52	4 5
4800	4825	-3 2	-0 1	4 53	3 8
4800	4837 5	-2	-0 4	4 33	23 9
4800	4850	0	0 1	4 01	-4
4800	4862 5	0 7	1 9	3 97	1 3
4800	4875	0 6	1 2	3 84	4 1
4800	4887 5	1 3	1 2	3 77	-1 3
4800	4900	0 9	1 3	3 72	9 1

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Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4800	4912 5	1	0 6	3 71	-4 4
4800	4925	0 7	0 9	3 78	-10 3
4800	4937 5	-0 6	1	3 95	2 8
4800	4950	-0 8	-0 4	3 81	-11 8
4800	4962 5	0	-1 1	3 62	-1 6
4800	4975	-1 8	-2 1	3 39	-8 5
4800	4987 5	-0 5	-2	3 39	-3 4
4800	5000	0	-0 9	3 27	-0 3
4900	3750	-18 2	-1 3	9 96	4 3
4900	3762 5	-16 9	-1 6	9 77	-8 2
4900	3775	-16 4	-0 8	9 75	-5 7
4900	3787 5	-14 7	0 2	10 01	0 4
4900	3800	-13 5	0 8	10 42	-1
4900	3812 5	-13 2	0 7	10 69	9 6
4900	3825	-13 8	0 3	10 85	12
4900	3837 5	-15 9	-1 6	10 96	-0 1
4900	3850	-17 4	-1 9	10 88	1
4900	3862 5	-17 5	-1 9	10 9	6 2
4900	3875	-17 6	-1 1	10 85	8 5
4900	3887 5	-18 2	-1 8	10 76	5 8
4900	3900	-18 1	-1 4	10 74	6 2
4900	3912 5	-17 9	-1 1	10 59	-2 9
4900	3925	-17 7	-0 4	10 33	0 2
4900	3937 5	-17 2	-0 1	10 11	8 6
4900	3950	-17 7	-0 5	9 87	0 2
4900	3962 5	-17 9	0	9 82	-0 8
4900	3975	-18 4	0 2	9 67	2
4900	3987 5	-17 9	-0 1	9 6	9 6
4900	4000	-18 8	-0 2	9 63	9 6
4900	4012 5	-17 1	0 7	9 62	10 2
4900	4025	-17	1 4	9 68	1 7
4900	4037 5	-16 5	1 4	9 83	1 4
4900	4050	-16 6	1 4	9 82	-1 7
4900	4062 5	-17 3	0 7	9 67	2 7
4900	4075	-18 4	-0 8	9 66	5 3
4900	4087 5	-18 5	-1	9 63	7 1
4900	4100	-17 4	-0 6	9 52	7 4
4900	4112 5	-17 3	-0 4	9 47	6 5
4900	4125	-16 1	0 5	9 44	9 2

Line	Station	InPhase	Quadrature	Total Field	Direction
4900	4137 5	-15 8	0 8	9 36	2 3
4900	4150	-15 3	0 9	9 23	5 7
4900	4162 5	-15 4	0 6	9 13	12 5
4900	4175	-15 8	0 3	9 16	8 3
4900	4187 5	-15 3	0	9 17	4 1
4900	4200	-15 6	-0 4	8 99	6
4900	4212 5	-16 3	-2 4	8 67	4 7
4900	4225	-17 3	-3 7	8 59	7 6
4900	4237 5	-17 4	-3 4	8 76	2 7
4900	4250	-18 1	-3 7	8 94	9 9
4900	4262 5	-20	-5 1	9 05	12 8
4900	4275	-20 8	-6 4	8 87	13 9
4900	4287 5	-20 4	-6 1	8 79	16 8
4900	4300	-21 3	-5 8	8 72	13 4
4900	4312 5	-21 3	-5 5	8 62	1 1
4900	4325	-20 6	-5 2	8 51	4 1
4900	4337 5	-20 1	-5 1	8 35	3 2
4900	4350	-19 9	-4	8 09	-14 8
4900	4362 5	-18 5	-3 2	7 88	4 8
4900	4375	-17 1	-1 5	7 93	9
4900	4387 5	-16 6	-0 3	7 87	7 1
4900	4400	-16 5	-0 1	7 84	7 6
4900	4412 5	-17	-0 4	7 66	7 3
4900	4425	-17 5	1 3	7 47	14 1
4900	4437 5	-18 1	2 3	7 69	17 4
4900	4450	-20 7	1 7	7 57	10
4900	4462 5	-21 7	1 5	7 44	10 5
4900	4475	-23 8	0	7 29	10 5
4900	4487 5	-25	-0 4	7 07	11 6
4900	4500	-24 2	0 4	6 83	8 2
4900	4512 5	-22 8	1 6	6 62	8 9
4900	4525	-22 1	2 6	6 67	15 3
4900	4537 5	-20 8	2 6	6 55	15 9
4900	4550	-19 2	3 2	6 28	5 9
4900	4562 5	-17 1	4 7	6 22	18 9
4900	4575	-16 6	4 5	6 3	17 3
4900	4587 5	-14 2	4 3	6 22	18
4900	4600	-14 2	4 2	6 17	16 9
4900	4612 5	-13 4	4	5 98	22 2

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Happy-Feliz Grid VLF-EM Maine

Line	Station	InPhase	Quadrature	Total Field	Direction
4900	4625	-13	3 2	5 83	15 4
4900	4637 5	-12 7	2 9	5 8	13 2
4900	4650	-12	3 6	5 84	21 6
4900	4662 5	-11 7	4 3	5 67	15 4
4900	4675	-11 6	2 8	5 51	17 1
4900	4687 5	-11	3 4	5 43	20 2
4900	4700	-9 9	4 3	5 5	15 5
4900	4712 5	-8 8	3 9	5 57	21 8
4900	4725	-7 1	4 5	5 61	20 3
4900	4737 5	-6 3	4 7	5 92	22 6
4900	4750	-4 9	4 5	5 65	19 8
4900	4762 5	-5 9	4 5	5 99	22 2
4900	4775	-6 3	2 8	5 85	20 2
4900	4787 5	-6 6	1 8	5 98	16 9
4900	4800	-6 1	1 8	6 05	14 4
4900	4812 5	-4 4	2 4	6 23	20 5
4900	4825	-3 2	3 1	6 87	13 9
4900	4837 5	-0 7	3 3	7 13	16 8
4900	4850	-0 4	3 6	7 2	16 1
4900	4862 5	-1	2 6	7 39	24 5
4900	4875	-0 5	2 2	7 62	23 8
4900	4887 5	-1 3	2 1	7 58	14 4
4900	4900	-2 3	1 1	7 47	12 2
4900	4912 5	-3 2	1	7 4	14 3
4900	4925	-3 4	0 6	7 55	20 7
4900	4937 5	-3 9	0 3	7 39	7 8
4900	4950	-3 8	0 8	7 26	11 7
4900	4962 5	-4 7	1 4	7 32	12
4900	4975	-5 4	1	7 33	13 5
4900	4987 5	-5 5	1 3	7 35	14 1
4900	5000	-7 1	1 5	7 37	16

Line	Station	InPhase	Quadrature	Total Field	Direction
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Appendix B

VLf-EM Theory

VLF-EM THEORY

The VLF-EM method is well described in standard texts (eg Telford *et al* 1990) and by McNeill and Labson (1990). Modulated radio waves in the range of 15.0 to 25.0 KHz are used to communicate with submerged submarines and are useful in mineral exploration. The antennas from which the signals are radiated are vertical wires, commonly located in valleys or craters to permit longer wire length (Figure VLF-1(a)). This antenna configuration generates a wave with a vertical electrical field and a horizontal magnetic field propagating away from the source. The wave propagates between the ionosphere and the earth's surface, reflecting off both at a shallow angle (Figure VLF-1(b)). At a great distance, the radius of curvature is so large that it is effectively a plane wave.

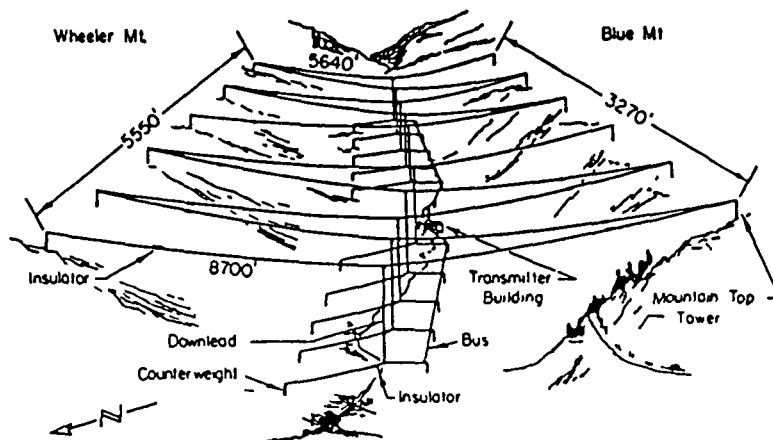
A steeply-dipping conductor with a strike in the direction of the transmitter will be optimally coupled to the horizontal magnetic flux. This magnetic flux will induce a secondary field in the conductor (H_s), which opposes the primary or source field. This is generated by circulating eddy currents which tend to concentrate at the top of the conductor (Figure VLF-2(a)). The current distribution can be considered to be a linear source located at the top of the conductor and consequently, the anomaly shape is relatively insensitive to the dip of conductor. The current at the top of the conductor produces a cylindrical magnetic field centred on the current axis. The primary horizontal magnetic field and the secondary field induced in the conductor add vectorially to produce a resultant magnetic field whose attitude traces out a sine wave or cross-over as shown in Figure VLF-2(a).

The Omni IV VLF-EM receiver used in this survey records the signal so that a normal in-phase component cross-over consists of a positive to negative response moving from grid west to east or grid south to north. The wavelength of the response in a general sense is proportional to the depth of the target. Deep targets tend to produce longer wavelength anomalies while shallow anomalies have a shorter wavelength. Half the distance between the peak and trough of the response is roughly equal to the depth to the current source except where the depth to the top of the target is much less than the skin depth. In this situation, the separation tends to be in the order of the skin depth.

Using the horizontal component as a phase reference, it is possible to partition the secondary vertical field into in-phase and quadrature components. If the conductor is a poor to moderate conductor, the sign of the quadrature will follow that of the in-phase component. If the target conductance is high, the quadrature will display a sign opposite that of the in-phase component (Figure VLF-2(b)).

Cross-over responses may also be induced by interfering responses from nearby conductors, sometimes producing reverse-crossovers with senses opposite to that normally occurring over a discrete conductor. In addition, topography can generate false cross-over responses resembling those from bedrock conductors. VLF-EM waves follow the surface topography to some extent with the degree of correlation determined by the conductivity of the local earth. In very conductive ground, the VLF wave follows topography quite closely and cross-over responses similar to those expected from a bedrock conductor can be generated by undulating topography with suitable spatial wavelengths (Figure VLF-2(c)). In poorly conductive ground, the wavelength of the topographic effect is much longer, reflecting the greater depth of penetration by the VLF-EM wave. In these situations, it is relatively easy to discriminate between bedrock conductors and topographic anomalies.

(a)



(b)

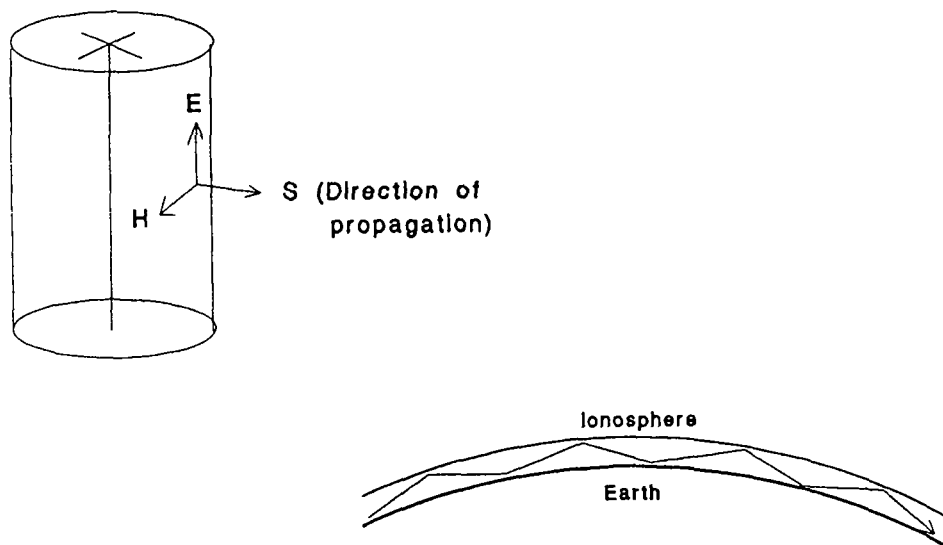


Figure VLF-1 VLF source fields and propagation (a) Diagram showing Jim Creek, WA VLF transmitter (McNeill and Labson 1990) (b) Propagation of VLF field at a distance from the antenna The VLF wave propagates between the earth's ionosphere and the surface with a vertical electrical field and horizontal magnetic field At great distances the signal forms a plane wave

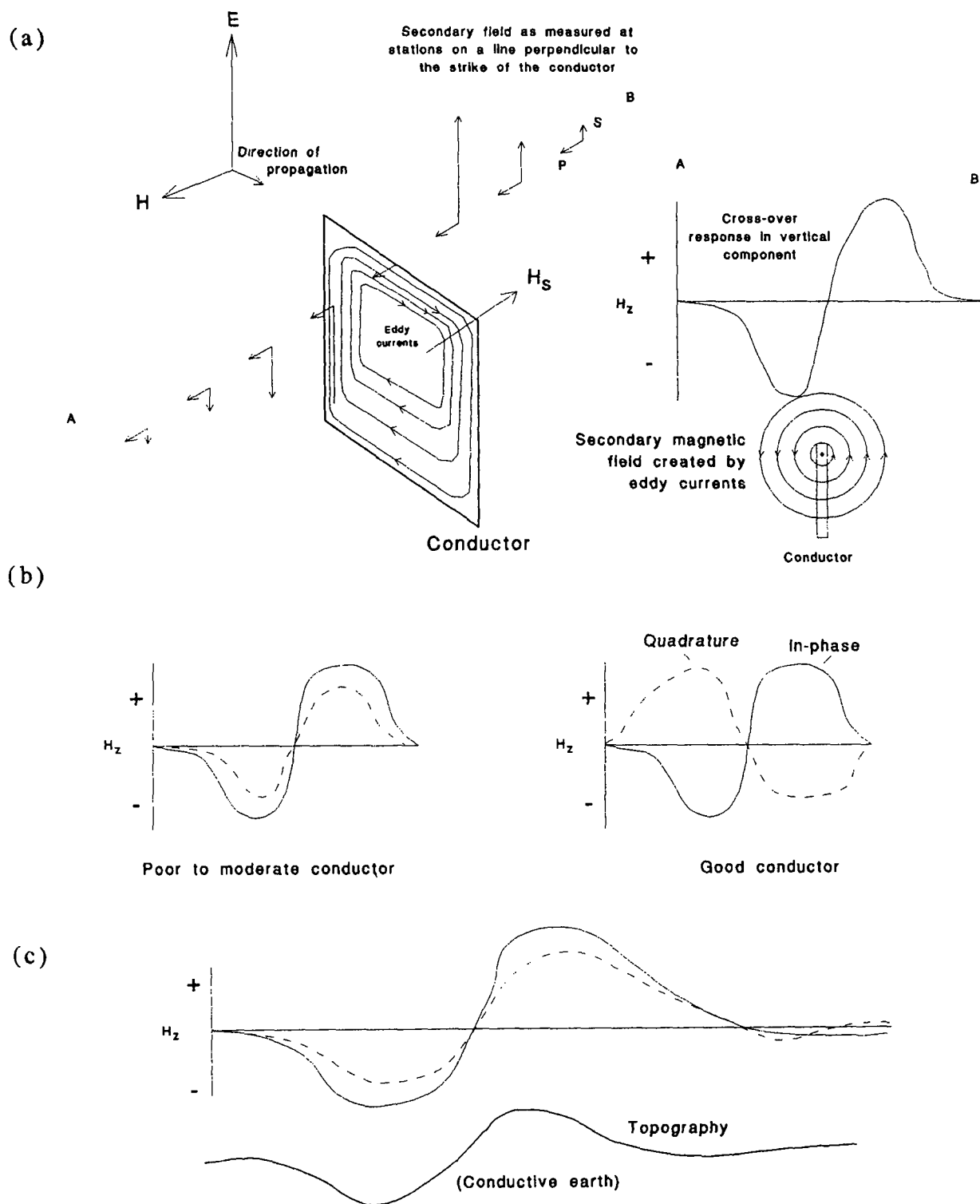


Figure VLF-2 VLF responses (a) The horizontal magnetic flux from a VLF signal induces a secondary field in a conductor. This, together with the primary field, produces a cross-over response (b) Quadrature sign can be determined by target conductance (c) If the ground is conductive, topography can induce VLF responses similar to those expected from bedrock conductors

Appendix C
Geochemical Analyses and Sample Descriptions

Happy - Feliz Property Rock Samples

206351 (B1)	strongly weathered, limonite altered quartz-monzonite, fine grained interlocked groundmass of quartz & felsic minerals, mafics obliterated or altered to limonite, weak argillic alteration remnant, but heavy oxidation obscures any detail, no sulfides noted, possible limonite after sulfide
206352 (B2)	weathered biotite quartz monzonite, Fe-oxidation along fractures & on surfaces, fresh, primary biotite, no sulfides seen
206353 (B3)	weathered, weakly altered (argillic) limonitic quartz-monzonite, ksparg>plagioclase, equigranular, interlocked, med-grain crystalline groundmass, mafics destroyed, trace tarnished pyrite, fine grained, isolated, sub cubic
206354 (B4)	Fine grained, possibly chilled margin felsic dike, limonitic altered prophyry ghosts of lath shaped minerals Feldspars show moderate to weak clay alteration, 1% limonite cubes after pyrite, fine grained & disseminated
206355 (B5)	argillic altered, limonite oxidized quartz monzonite with secondary quartz eyes, <1% pale orange clay altered cubes, limonite after pyrite *looks interesting for alteration*
206356 (B6/7)	could not differentiate into 2 distinct samples - so combined them instead Weak argillic altered, limonite weathered, quartz monzonite, mafics gone, quartz-manganese fracture fillings, possible purple fluorite crystals seen in one piece
206357 (B8)	biotite quartz orthogneiss well indurated, minor pieces of off white, massive opaque quartz with a vitreous luster - looks like a typical quartz boudin within classic Yukon Group metavolcanics
206358 (B9 or HP-3-R-01)	grey, fine grained, interlocked groundmass of quartz (opaque) and feldspar, trace interstitial fine grained pyrite and trace silvery pyrite (arsenopyrite?) along weakly limonitic altered fractures (possibly late stage dacitic dike), possible relict biotite ghosts and outlines suggest a biotite quartz monzonite protolith
206359	opaque, yellowish white massive quartz vein within argillic altered and bleached quartz monzonite, monzonite shows vugs with elongated quartz crystal growths

ME ANALYTICAL LABORATORIES LTD.
(ISO 9002 Accredited Co.)

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GEOCHEMICAL ANALYSIS CERTIFICATE

Midnight Mines Ltd. PROJECT HAPPY FELIZ File # A300295

Box 31291, Whistler BC V1A 5P7 Submitted by: Bill Harris

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SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	X	W	Au**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb
SI	<1	4	<3	6	<3	2	<1	<2	04	<2	<8	<2	<2	2	<5	<3	<3	<1	06	<.001	<1	1	<01	2	<01	<3	01	.25	<01	<2	<2
A 206351	2	173	<3	21	<3	23	7	72	1.95	7	<8	<2	11	12	<5	<3	<3	20	.15	.077	25	7	.03	123	<01	<3	41	.03	16	<2	34
A 206352	2	106	<3	16	<3	9	5	104	2.68	<2	<8	<2	14	19	<5	<3	3	60	25	.074	13	12	70	274	08	<3	1.30	.07	.30	3	8
A 206353	1	159	18	16	6	11	3	61	.85	12	<8	<2	23	5	<5	<3	54	3	04	.015	15	5	02	32	<01	<3	.24	02	11	<2	32
A 206354	1	150	<3	23	<3	6	7	50	1.97	9	<8	<2	9	23	<5	<3	<3	16	08	.067	30	7	02	88	<01	<3	.45	03	.20	2	6
A 206355	1	101	4	22	<3	5	3	41	1.81	10	<8	<2	11	16	<5	<3	<3	18	10	.060	21	5	03	113	<.01	<3	44	04	19	<2	18
A 206356	2	100	28	14	4	5	3	62	2.33	33	<8	<2	12	11	<5	<3	109	38	06	.051	13	13	.30	68	01	<3	79	03	25	2	683
A 206357	2	40	<3	20	<3	28	9	189	3.32	2	<8	<2	17	10	<5	<3	<3	62	.06	.019	33	54	97	168	21	<3	1.95	.05	1.30	<2	242
A 206358	3	271	5	29	4	8	13	102	2.67	4	<8	<2	6	25	<5	<3	<3	50	62	.089	17	13	83	42	09	<3	1.83	.12	17	2	23
A 206359	2	59	<3	8	3	8	3	43	3.14	3	<8	<2	<2	5	<5	<3	<3	17	01	.002	1	8	02	7	01	<3	.07	<.01	.02	6	2
STANDARD DS4/AU-R	6	124	29	155	<.3	33	11	755	3.04	21	<8	<2	3	26	5.1	5	5	71	49	.086	15	139	54	136	.08	<3	1.63	03	14	4	498

GROUP 10 - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK R150 60C AU** GROUP 3B - 30.00 GM SAMPLE ANALYSIS BY FA/ICP

DATE RECEIVED: JAN 31 2003 DATE REPORT MAILED: Feb 10/03 SIGNED BY: C. L. TOYE, C LEONG, J. WANG, CERTIFIED B C ASSAYERS



ANALYTICAL

AMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
206379	2	4	<3	41	<.3	6	4	487	1.91	<2	<8	<2	4	79	<5	<3	<3	40	51	.074	8	14	49	220	13	<3	92	09	49	2
206380	1	79	20	62	<.3	15	8	193	2.59	34	<8	<2	6	31	5	<3	6	54	.33	.087	21	19	48	276	.08	<3	1.23	.01	22	<2
206381	1	84	3	35	<3	13	10	561	2.35	28	<8	<2	3	42	<5	<3	<3	54	60	.076	16	19	.43	270	.07	<3	1.32	.02	.10	<2
206382	1	91	5	29	<3	11	8	408	1.99	19	<8	<2	3	45	<5	<3	3	55	68	.085	16	15	.36	246	.07	<3	96	02	.10	<2
206383	<1	26	<3	17	<.3	4	5	167	1.05	8	<8	<2	<2	23	<.5	<3	<3	27	29	.040	6	5	11	106	.03	<3	43	03	05	<2
206384	1	75	6	41	<.3	12	8	232	2.62	30	<8	<2	6	37	<5	<3	<3	62	58	.074	17	20	62	242	.10	<3	1.57	.02	20	<2
206385	1	69	6	48	<3	13	9	265	2.42	31	<8	<2	8	33	<5	<3	5	52	.51	.066	19	21	51	201	.09	<3	1.39	.02	.13	<2
206386	1	81	5	34	<3	11	6	197	2.02	33	<8	<2	5	36	<5	<3	<3	51	52	.061	15	15	.36	162	.08	<3	99	02	.10	<2
206387	1	87	8	48	<3	13	9	249	2.84	63	<8	<2	9	34	<5	<3	7	61	46	.059	21	25	.69	208	.11	<3	1.67	.01	.18	<2
206388	1	69	7	26	<3	9	5	138	1.45	29	<8	<2	4	30	<.5	<3	3	33	38	.052	12	13	.25	148	.05	<3	.83	.02	.08	<2
206389	2	130	9	56	.5	15	13	374	3.03	114	<8	<2	15	45	5	<3	11	58	.60	.061	28	29	75	242	.08	<3	1.70	.01	.21	3
206390	2	145	12	37	5	17	8	232	2.28	59	<8	<2	10	64	<5	3	4	47	75	.075	27	33	.37	428	.03	<3	1.46	.02	.14	<2
206391	1	84	7	29	4	9	6	134	1.54	66	<8	<2	7	26	<5	<3	4	35	28	.043	18	11	13	202	.02	<3	.76	.03	.06	<2
206392	2	114	12	42	.4	13	6	181	2.28	67	<8	<2	12	68	<.5	<3	5	53	61	.057	22	26	.38	338	.03	<3	1.45	.02	.11	<2
206393	1	132	8	34	.6	11	8	191	2.04	40	<8	<2	9	46	<.5	<3	6	44	.56	.051	22	15	25	311	.02	<3	1.26	.02	.13	<2
206394	1	127	7	33	6	11	7	181	1.95	37	<8	<2	9	44	<5	<3	6	42	.55	.049	21	16	.24	299	.02	<3	1.21	.02	.12	<2
206395	2	109	8	43	6	13	10	313	2.56	41	<8	<2	9	47	<5	<3	7	58	57	.064	25	23	47	374	.03	<3	1.58	.02	.17	<2
206396	2	218	13	44	1.3	20	10	211	3.00	87	<8	<2	19	80	<5	<3	7	56	1.07	.054	54	25	41	644	.01	<3	2.14	.01	.22	<2
206397	2	282	18	36	1.7	17	7	163	3.22	101	<8	<2	34	69	<5	3	6	46	1.01	.055	75	23	33	863	<.01	<3	2.41	.01	.25	4
206398	2	253	9	50	1.2	15	10	233	2.89	75	<8	<2	21	47	<.5	<3	9	43	57	.058	79	23	40	453	.01	<3	1.78	.01	.23	<2
206399	1	42	5	37	<3	11	5	125	1.88	26	<8	<2	5	16	<5	<3	4	44	19	.017	18	20	34	181	.05	<3	1.01	.01	.06	<2
206400	1	72	10	27	<3	10	7	125	1.94	18	<8	<2	6	24	<5	<3	7	45	.22	.032	27	17	.25	194	.04	<3	1.09	.01	.11	<2
TANDARD DS4	1	71	5	37	6	8	6	158	1.69	14	<8	<2	10	23	<5	<3	5	38	24	.041	32	13	.20	239	.02	<3	98	.02	.11	<2
	1	184	7	38	9	13	7	182	2.51	27	10	<2	15	53	<5	<3	9	38	52	.050	65	18	25	563	<.01	<3	2.12	.02	.19	<2
	6	120	29	158	<3	33	12	774	3.09	21	<8	<2	4	27	4.9	5	5	73	51	.081	16	159	55	138	.09	<3	1.66	.03	.15	3

Sample type: SOIL SS80 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

GEOCHEMICAL ANALYSIS CERTIFICATE

Midnight Mines Ltd. PROJECT HAPPY FELIZ File # A300296 Page 1

Box 31293, Whitehorse YT Y1A 5P7 Submitted by: Bill Harris

44

PLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Hg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	
06301	2	4	3	48	<.3	5	4	528	2.00	<2	<8	<2	4	85	<5	<3	<3	41	.56	.083	9	14	54	241	13	3	1.01	.10	48	2	
06302	2	99	8	25	.6	9	6	155	2.02	21	<8	<2	7	38	<5	<3	4	46	.30	.025	30	13	21	276	.02	<3	1.17	.02	13	<2	
06303	3	83	6	27	<.3	11	7	181	2.24	21	<8	<2	5	27	<5	<3	5	40	.22	.032	30	18	.32	206	.04	<3	1.08	.02	15	<2	
06304	2	43	6	21	<3	4	5	123	1.83	17	<8	<2	5	20	<.5	<3	8	48	.15	.028	12	11	27	125	.07	<3	.81	.01	.13	<2	
	3	98	6	37	<3	7	8	174	2.73	39	<8	<2	7	22	<5	<3	6	55	.22	.045	18	16	43	148	.04	<3	1.23	.01	.13	<2	
06305	4	125	6	37	<3	8	8	164	3.25	38	<8	<2	10	30	<5	<3	6	64	.29	.061	24	14	.52	205	.06	<3	1.38	.01	.18	<2	
06306	7	150	7	46	<3	7	8	176	3.72	69	<8	<2	12	29	<5	<3	9	67	.25	.064	20	13	.53	142	.07	<3	1.28	.01	.22	<2	
06307	4	177	10	48	.4	8	6	78	2.40	56	9	<2	11	53	<5	<3	9	43	.38	.072	30	13	.32	207	.03	<3	1.08	.02	.10	<2	
06308	14	267	47	61	1.2	8	7	118	3.35	374	<8	<2	13	81	<5	11	17	50	.41	.075	33	13	.35	275	.02	<3	1.52	.02	.19	<2	
06309	7	190	17	50	.4	7	8	142	2.95	108	<8	<2	12	64	<5	3	9	56	.35	.064	26	12	43	166	.05	<3	1.07	.02	.21	<2	
206310	8	210	17	46	1.1	6	6	97	2.19	120	<8	<2	10	50	<5	<3	15	36	.25	.045	22	9	21	199	.02	<3	1.01	.02	.11	<2	
206311	2	97	7	30	1.1	6	7	135	1.49	34	<8	<2	5	29	<5	<3	8	31	.27	.051	30	7	15	169	.01	<3	1.09	.03	.10	<2	
206312	3	139	8	33	1.3	10	7	174	2.15	45	<8	<2	7	58	<5	<3	3	57	.52	.065	41	14	24	304	.01	<3	1.79	.02	.15	<2	
206313	1	71	5	34	.3	10	5	155	1.28	8	<8	<2	3	50	<.5	<3	<3	36	.99	.058	12	12	.19	204	.02	<3	.86	.03	.07	<2	
206314	2	57	4	42	<.3	13	9	234	2.13	16	<8	<2	8	33	<.5	<3	6	55	.54	.052	18	22	41	150	.04	<3	1.13	.01	.09	<2	
206360	1	67	11	56	<3	9	10	261	3.40	37	<8	<2	3	18	<5	<3	4	109	.21	.075	10	18	21	86	.12	<3	.66	.01	.08	<2	
206361	2	55	9	48	<3	10	8	208	2.94	30	<8	<2	3	17	<5	<3	4	86	.18	.055	9	19	34	112	.10	<3	1.02	.02	.12	<2	
206362	1	25	3	20	<.3	3	4	104	1.11	11	<8	<2	<2	12	<.5	<3	<3	30	.12	.036	5	5	.13	70	.03	<3	.40	.02	.06	<2	
206363	1	42	5	38	<.3	6	8	204	2.25	23	<8	<2	2	16	<.5	<3	<3	70	.20	.067	8	11	.18	91	.07	<3	.53	.02	.08	<2	
206364	1	56	7	36	<3	6	8	225	2.27	28	<8	<2	3	18	<5	<3	7	59	.23	.072	10	12	26	130	.06	<3	.71	.02	.11	<2	
206365	1	53	7	37	<3	7	8	214	2.08	29	<8	<2	3	19	<5	<3	<3	51	.22	.062	10	12	30	149	.05	<3	.82	.02	.12	<2	
206366	<1	60	5	37	<.3	6	8	239	2.25	28	<8	<2	3	18	<.5	<3	3	57	.23	.071	10	11	.27	142	.05	<3	.73	.02	.11	<2	
206367	1	34	6	35	<.3	5	7	179	2.00	23	<8	<2	<2	15	<5	<3	<3	63	.18	.060	7	10	.18	93	.07	<3	.53	.02	.08	<2	
206368	1	103	10	48	<3	6	12	332	3.29	48	<8	<2	3	22	<5	<3	3	74	.29	.090	13	14	.39	200	.06	<3	.98	.02	.17	<2	
206369	1	188	11	133	<.3	13	22	480	6.59	43	<8	<2	10	45	9	<3	5	157	.39	.099	20	27	1	33	343	.13	<3	2.92	.02	.54	<2
206370	1	40	7	45	<.3	7	9	452	2.14	39	<8	<2	2	18	<.5	<3	3	49	.19	.037	12	15	.27	185	.05	<3	.77	.02	.10	<2	
206371	1	39	9	45	<3	8	9	439	2.15	39	<8	<2	3	18	<5	<3	<3	51	.19	.036	12	14	.27	182	.05	<3	.76	.02	.09	<2	
206372	1	52	13	59	<3	10	16	871	2.78	157	<8	<2	3	18	<5	5	4	54	.21	.057	11	17	.29	179	.04	<3	.87	.02	.09	<2	
206373	1	33	5	43	<3	9	9	180	2.37	18	<8	<2	3	20	5	<3	3	67	.24	.048	12	17	.53	126	.10	<3	1.26	.02	.22	<2	
	1	32	7	34	<3	8	7	125	1.76	17	<8	<2	2	20	<5	<3	3	47	.14	.035	10	14	30	116	.06	<3	.99	.02	.12	<2	
206374	1	46	12	61	<3	15	14	273	3.49	22	<8	<2	4	28	5	<3	4	92	.22	.044	15	29	.85	161	.14	<3	2.04	.02	.41	<2	
206375	1	63	16	59	<3	12	10	206	3.08	38	<8	<2	5	33	<5	<3	6	75	.23	.066	17	21	.60	199	.10	<3	1.58	.02	.29	<2	
206376	1	69	19	51	3	9	7	128	2.20	35	<8	<2	2	33	<5	<3	6	48	.20	.066	16	16	40	230	.06	<3	1.24	.02	.22	<2	
206377	1	72	21	56	<3	9	8	174	2.52	58	<8	<2	4	34	<5	<3	6	56	.23	.076	16	16	.46	224	.07	<3	1.28	.02	.25	<2	
206378	1	75	16	76	<.3	13	10	222	2.99	45	<8	<2	6	40	<5	<3	4	67	.36	.104	21	23	71	303	.11	<3	1.55	.02	.36	<2	
STANDARD DS4	6	119	30	156	<3	33	12	764	3.00	23	9	<2	4	27	5.1	5	6	72	.51	.085	16	158	55	137	.09	<3	1.65	.03	.14	3	

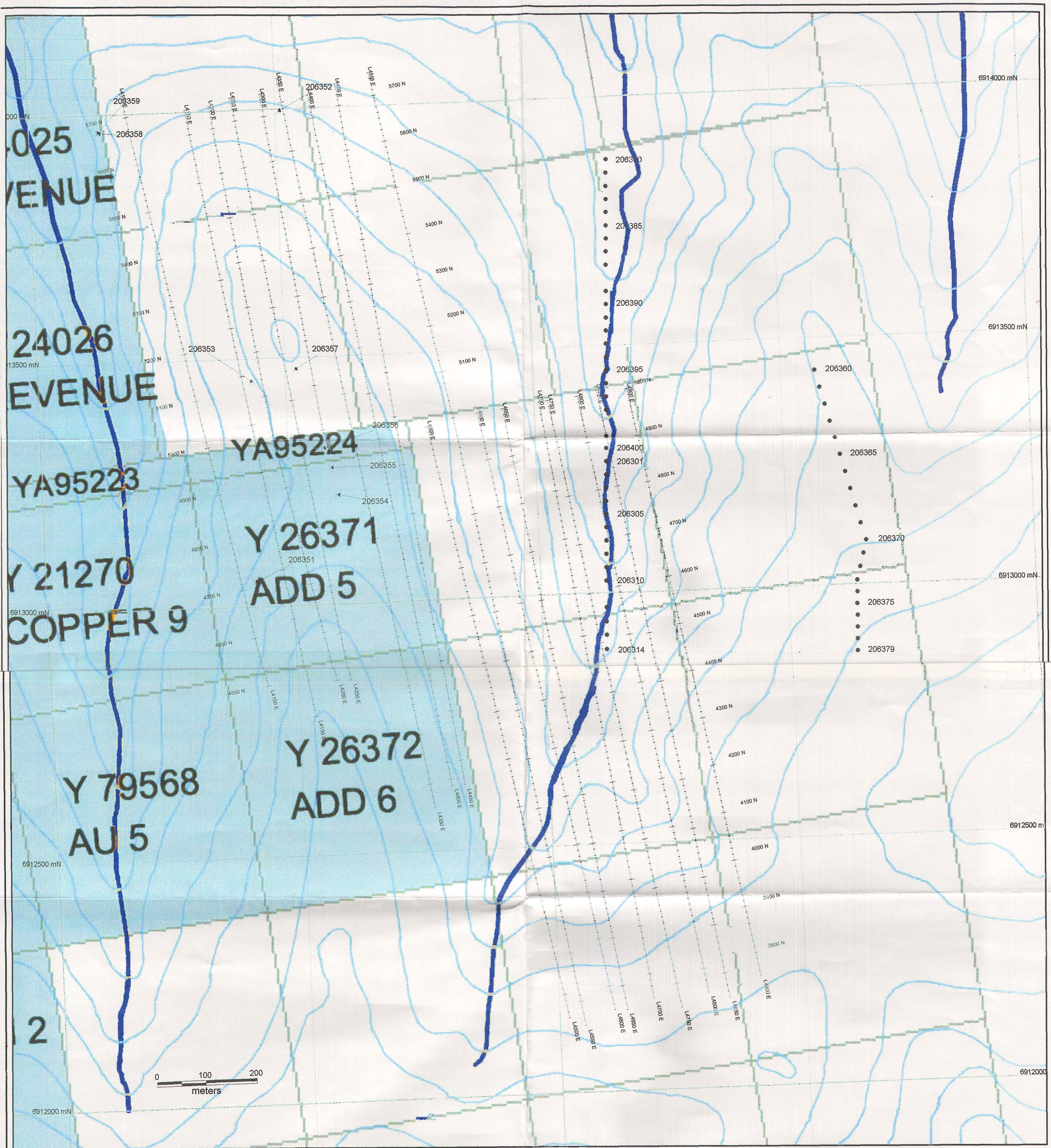
YUKON ENERGY, MINING
& RESOURCES LTD.
PO Box 2703
Whitehorse, Yukon Y1A 5A7

GROUP 10 - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.
UPPER LIMITS - AG, AU, HG, W = 100 PPM, MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM, CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
- SAMPLE TYPE - SOIL SS80 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns

DATE RECEIVED JAN 31 2003 DATE REPORT MAILED Feb 10/03 SIGNED BY: C. L. TOYE, C. LEONG, J. WANG, CERTIFIED B C ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only

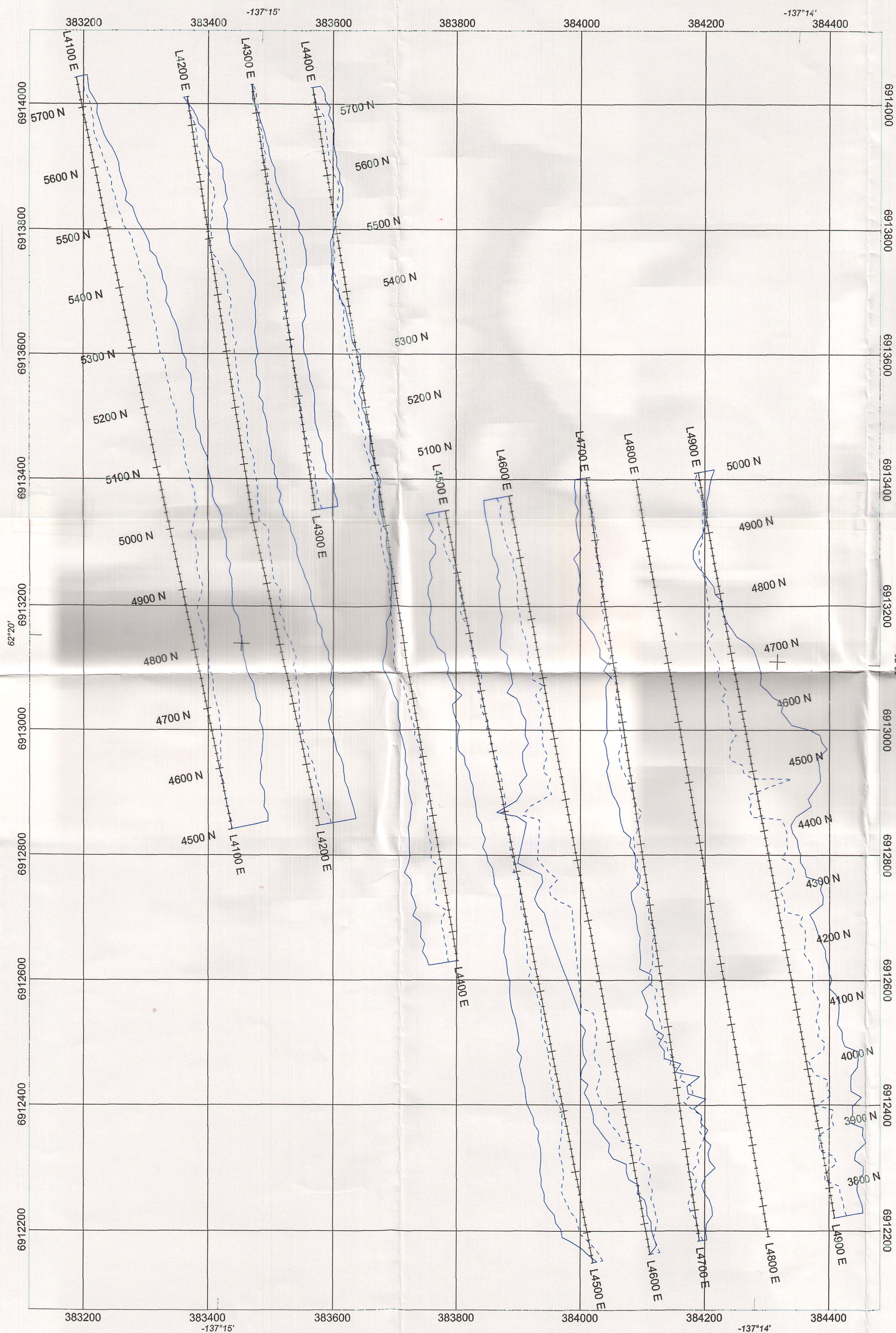
Data LFA



- Soil sample location
- ✕ Rock sample location

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MIDNIGHT MINES	
HAPPY / FELIZ PROPERTY ROCK and SOIL SAMPLE LOCATION MAP WHITEHORSE MINING DISTRICT NTS 115 I/6 Figure 6	
Date: 31/1/2003	
Author: SC	
Scale: 1:5000	Aurora Geoscience Ltd

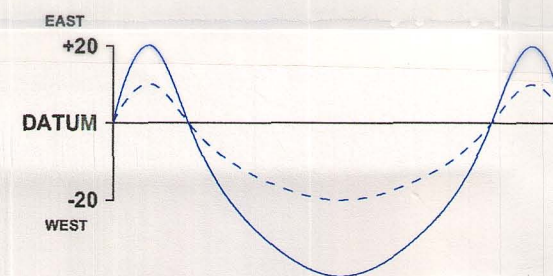


NPM

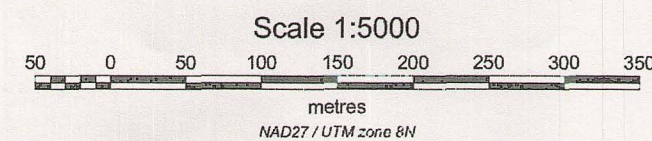
LEGEND

VLF - EM

INSTRUMENT : SCINTREX OMNI IV
 STATION : HAWAII (NPM)
 STATION : 23.4 kHz
 PROFILE SCALE : 1 cm = 20%
 IN PHASE :
 QUADRATURE :



IN-PHASE DATUM : 0%
 QUADRATURE DATUM : 0%
 DATA FILE : HAWAII_VLF.gdb
 OPERATORS : TM



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MIDNIGHT MINES

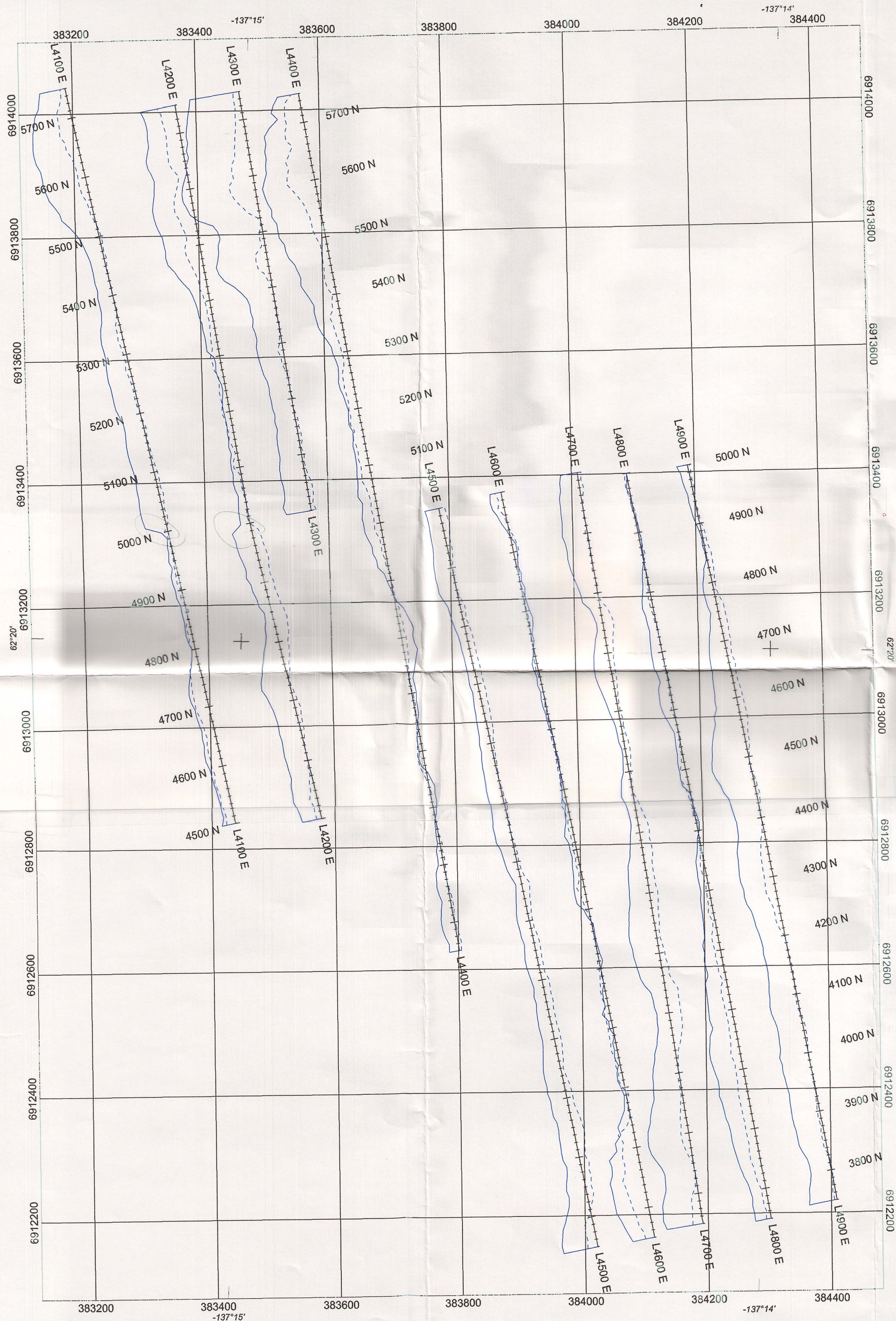
HAPPY / FELIZ PROPERTY

VLF - EM PROFILES

(HAWAII, 23.4 kHz)

YUKON, CANADA
 WHITEHORSE MINING DISTRICT NTS : 115 I/6
 FIGURE : 5C DATE SURVEYED : Jan 20 - 23, 2003
 MAP NAME (DATE / DRAWN BY) : HAWAII_VLF.MAP (29-01-03/SC)

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LEGEND

VLF - EM

INSTRUMENT : SCINTREX OMNI IV

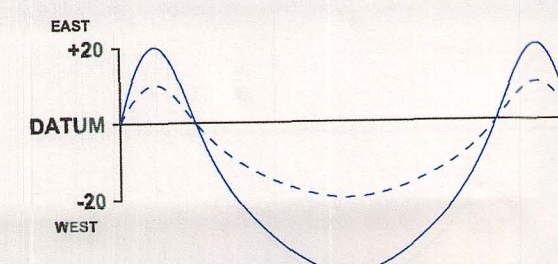
STATION : CUTLER (NAA)

STATION : 24.0 kHz

PROFILE SCALE : 1 cm = 20%

IN PHASE :

QUADRATURE :

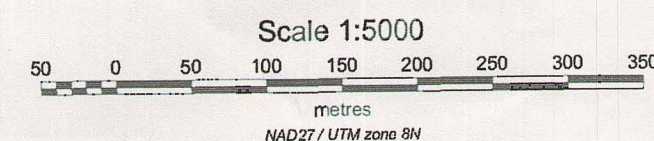


IN-PHASE DATUM : 0%

QUADRATURE DATUM : 0%

DATA FILE : CUTLER_VLF.gdb

OPERATORS : TM



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MIDNIGHT MINES

HAPPY / FELIZ PROPERTY VLF - EM PROFILES (CUTLER, 24.0 kHz)

YUKON, CANADA

WHITEHORSE MINING DISTRICT

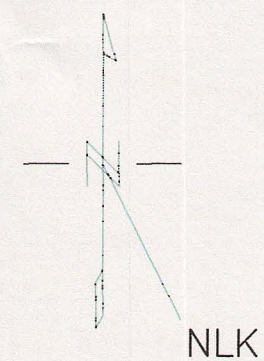
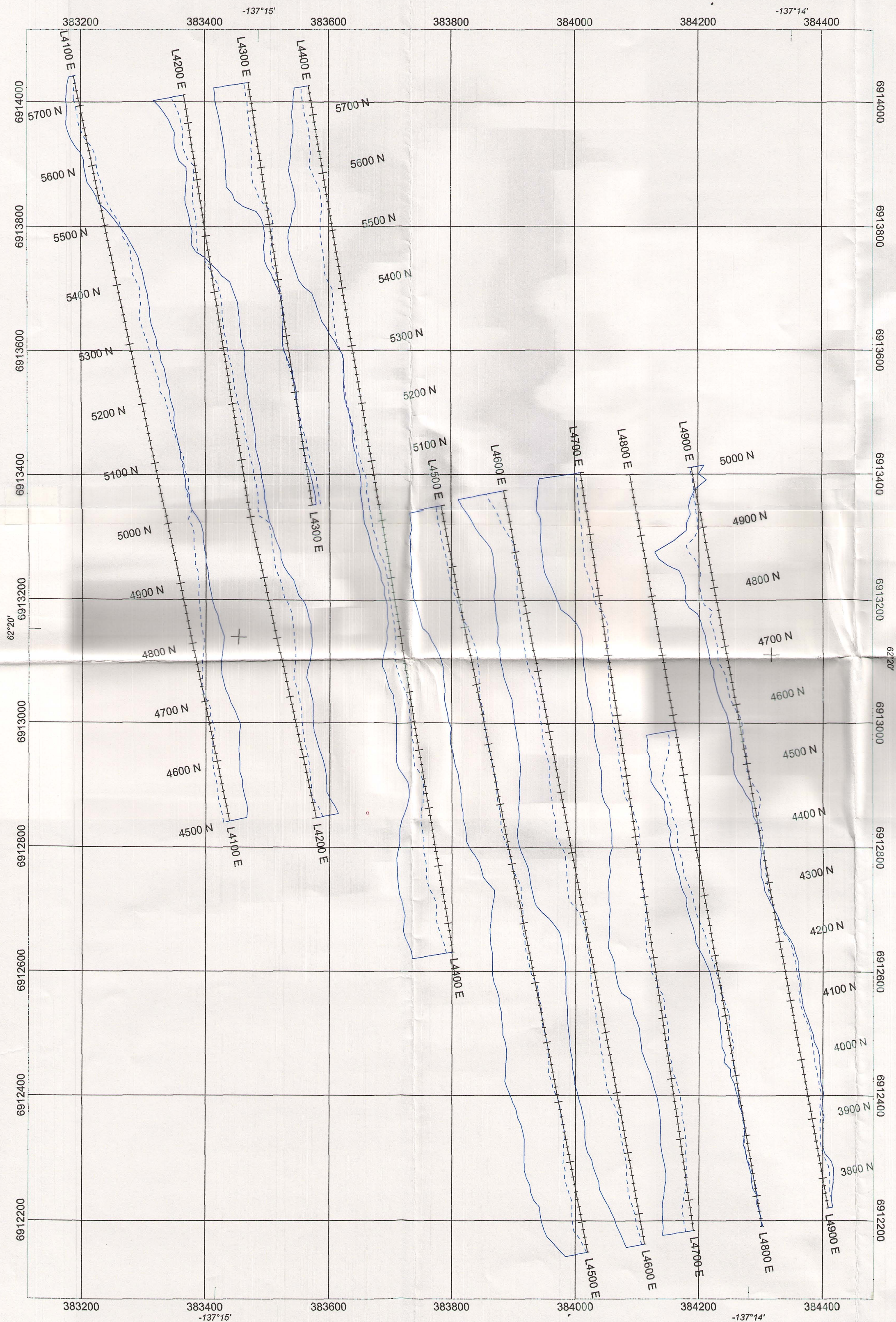
NTS : 115 I/6

FIGURE : 5B

DATE SURVEYED : Jan 20 - 23, 2003

MAP NAME (DATE / DRAWN BY) : CUTLER_VLF.MAP (29-01-03/SC

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LEGEND

VLF - EM

INSTRUMENT : SCINTREX OMNI IV

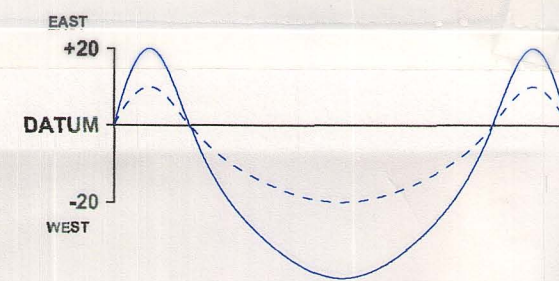
STATION : SEATTLE (NLK)

STATION : 24.8 kHz

PROFILE SCALE : 1 cm = 20%

IN PHASE :

QUADRATURE :

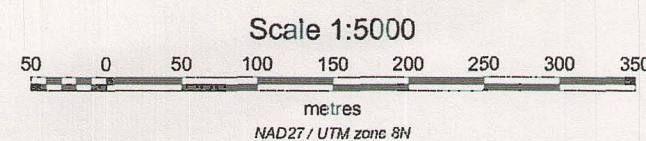


IN-PHASE DATUM : 0%

QUADRATURE DATUM : 0%

DATA FILE : SEATTLE_VLF.gdb

OPERATORS : TM



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MIDNIGHT MINES

HAPPY / FELIZ PROPERTY
VLF - EM PROFILES
(SEATTLE, 24.8 kHz)

YUKON, CANADA

WHITEHORSE MINING DISTRICT

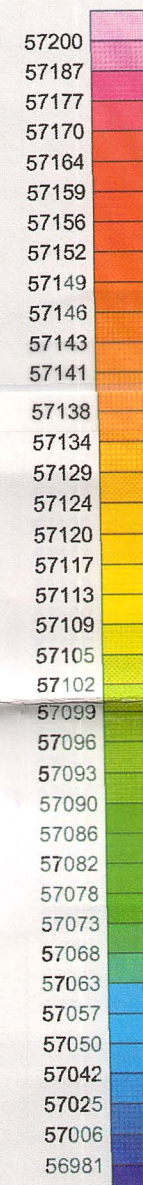
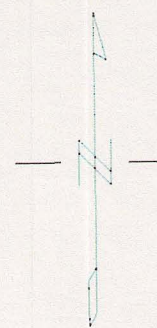
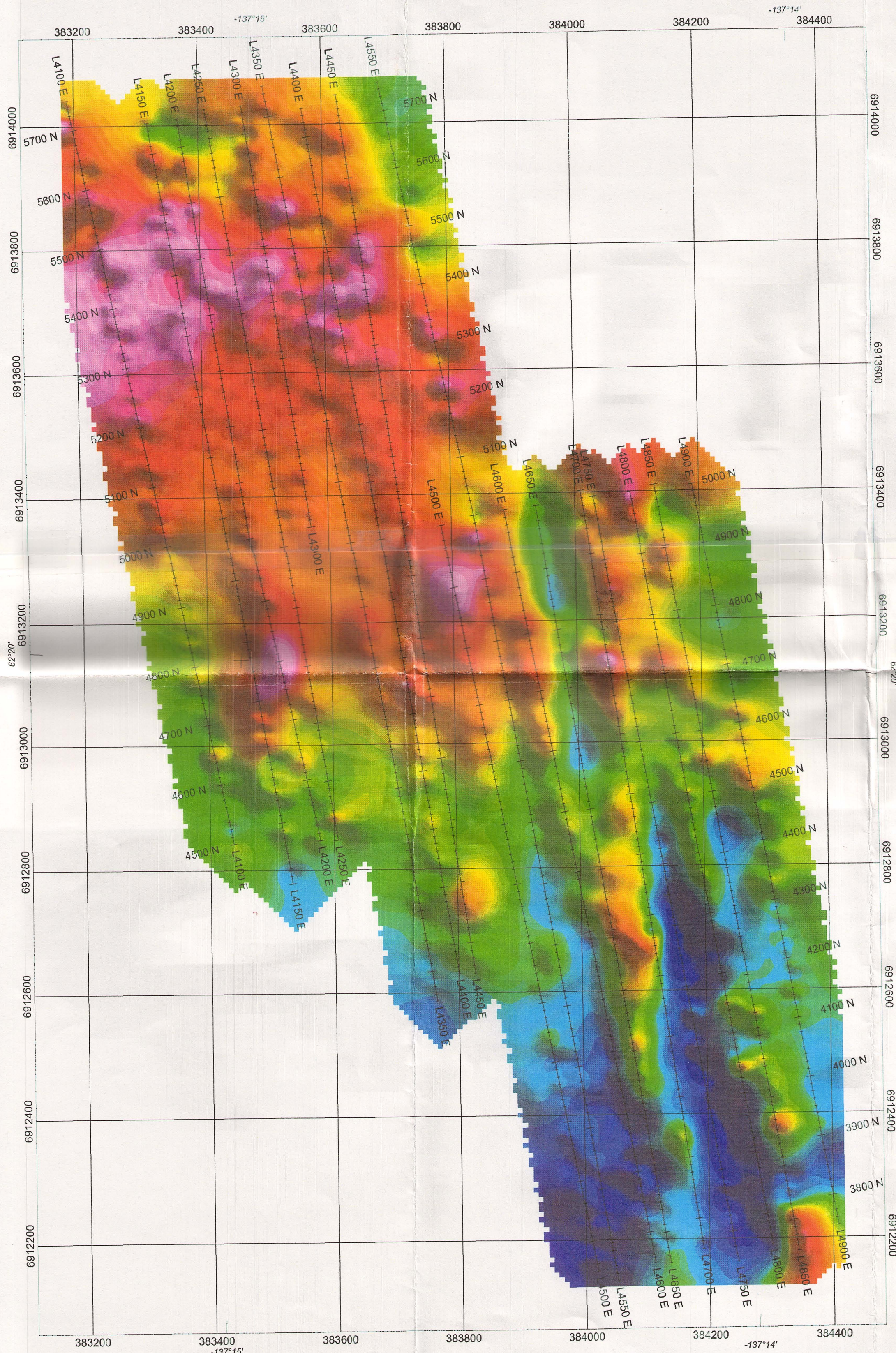
NTS : 115 I/6

FIGURE : 5A

DATE SURVEYED : Jan 20 - 23, 2003

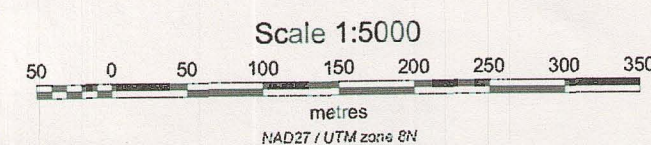
MAP NAME (DATE / DRAWN BY) : SEATTLE_VLF.MAP (29-01-03/SC)

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TOTAL FIELD MAGNETICS
nT

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MIDNIGHT MINES
HAPPY-FELIZ PROPERTY
SHADED RELIEF TOTAL MAGNETIC FIELD
WHITEHORSE MINING DISTRICT, YUKON
NTS 115 I/6
Figure: 4
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