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GEOPHYSICAL REPORT

FOR

FIRST MINERALS EXPLORATION LIMITED

ON THE

JACKSON LAKE PROJECT

ABOTOSSAWAY AND AGUONIE TOWNSHIPS

SAULT STE. MARIE MINING DIVISION

NORTHERN ONTARIO

Prepared by: J. C. Grant, May 2020

J. C. Grant

Amended by: Bruce Edgar (HBSc, P. Geo.), June 2020

SUMMARY

The services of Exsics Exploration Limited were retained by Mr. Robert Young on behalf of the company, First Minerals Exploration Limited, (FMEL), to perform a ground geophysical program completed between April 5th and the 20th, 2020. Exploration work consisted of a VLF-EM and magnetic survey across the northern portion of the Jackson Lake Property. The purpose of the survey is to generate geophysical targets to guide further exploration on the property.

The Jackson Lake Property held by First Minerals Exploration Limited is comprised of 31 cells located in the east-northeast section of Abotossaway Township and the west-northwest section of Aguonie Township. The survey was completed over the northern portion of the property, east, west and south of Jackson Lake, encompassing claims 118986, 243862, 261007, 338825, 231161, 177824, 158306, 279177, 297812, and 326926. The north central boundary of the Jackson Lake Property is located approximately 11 kilometers south of the Town of Dubreuilville, Ontario and about 34 kilometers northwest of the Wawa Ontario. The center of the property is at UTM NAD83 (Zone 16N) 681795E, 5346890N.

The magnetic survey appears to correlate well with the geological characteristics of the property. Three of the more predominant structures outlined appear to represent diabase dikes which trend NNW. There are at least two to three main east-west magnetic highs cutting across the survey area. In a number of locations these mag highs appear to correlate with gabbroic units observed in surface outcrops (Sage 1993). The most predominant magnetic high is located centrally within the property, striking east from line 2000ME to 1400ME, and may extend as far as line 850ME where it terminates at the western edge of the easternmost diabase dike. There is a VLF conductor associated with the northern edge of the western section of this high. There is also a conductor striking WNW obliquely from the mag high, and obliquely to an interpreted fault/shear zone striking northeast.

In a number of locations there are VLF conductors associated with the mag highs. There are also a number of VLF conductors which appear to branch obliquely from mag high trends and from the main interpreted shear zone/faults trending northeast across the property

Heather and Arias (1992) indicate that the Western domain of the GLDZ is similar to the Eastern domain in terms of high strain zone orientations and deformation style. The Western domain is composed of 085° to 115° striking brittle and brittle-ductile high strain zones.

It is well documented that quartz veins containing sulphides and gold mineralization are often found within shears and tension shears/fractures on contacts of felsic intrusive units (often quartz porphyry), and in the proximity of gabbroic units. The Jackson Lake property features east-west magnetic highs in areas that have been mapped as gabbroic units (Sage, 1993), and in proximity to felsic intrusive quartz porphyries. VLF conductive zones aligned on the margins of magnetic highs are therefore important areas to prospect. Likewise, VLF conductors observed at oblique angles to the mag highs and northeast trending interpreted shears zones/faults are equally important areas to investigate. In the GLDZ Eastern domain, tension shears/fractures striking obliquely from extensive shear zones can host quartz veining containing sulphides and significant gold mineralization.

The initial surveys were successful in locating and outlining several areas of interest as well as at least three potential structural trends across the survey area. These trends would be the northwest striking dike like units, the northeast to southwest trending fault and/or shear zones and the east-west striking magnetic high trends with VLF conductor association. The three east-west magnetic high trends most likely represent one main feature that has been offset and or faulted by the dike like units and the southwest to northeast faults and or shear zones.

A follow up detailed geological survey and prospecting should be considered across the grid especially in the area of the faults and/or shears as well as the east-west striking magnetic high trends. The property should be further followed up with an Induced Polarization survey to better define these faults and or shear zones as well as the east-west striking magnetic highs. The IP survey should be done at 100 meter line spacing and mainly concentrate on the east-west magnetic highs as well as the southwest to northeast striking faults and or shears.

TABLE OF CONTENTS

List of Figures

Appendix

INTRODUCTION

The Jackson Lake Property held by First Minerals Exploration Limited is comprised of 31 cells located in the east-northeast section of Abotossaway Township and the west-northwest section of Aguonie Township. Refer to Figure 3A for the location of the claims within the Townships. The following claims represent the portion of the claim block that was covered by the current ground program: 118986, 243862, 261007, 338825, 231161, 177824, 158306, 279177, 297812, and 326926. Refer to Figure 3B for the grid map and claim numbers covered by the current program.

The services of Exsics Exploration Limited were retained by Mr. Robert Young on behalf of the company, First Minerals Exploration Limited, (FMEL), to complete a ground geophysical program completed between April 5th and the 20th that consisted of Magnetic and EM surveys across the majority of the property. The purpose of the survey is to generate geophysical targets to guide further exploration on the property.

LOCATION and ACCESS

The north central boundary of the Jackson Lake Property is located approximately 11 kilometers south of the Town of Dubreuilville, Ontario and about 34 kilometers northwest of Wawa, Ontario. The center of the property is at UTM NAD83 (Zone 16N) 681795E, 5346890N.

The Property is located in the east-northeast section of Abotossaway Township and the west northwest section of Aguonie Township. More specifically the grid lies to the northeast of Rowan Lake and southeast of Lanier Lake. Jackson Lake generally covers the central and northern sections of the grid. Both Townships are located within the Sault Ste. Marie Mining Division, Northern Ontario. (see Figures 1 and 2)

Access to the grid was relatively easy. The TransCanada Highway travels north from Wawa for 38 kilometers to where a good all weather access road branches roughly east to slightly northeast and travels for 30 kilometers to the Village of Dubreuilville. A second all weather gravel road runs south then southeast from Dubreuilville for about 14 kilometers to the Alamos Mine site, Island Gold Mine. The survey crew parked at the southern split at this point and used skidoos along a gravel un-ploughed road that ran southwest for 8 kilometers to the railway stop of Goudreau and then continued for another 2 kilometers to the northern boundary of the claim block and survey area.

The crew worked out of a rental house in the Village and was able to access the grid within an hour. Refer to Figure 1 and 2.

Figure 1. Location Map

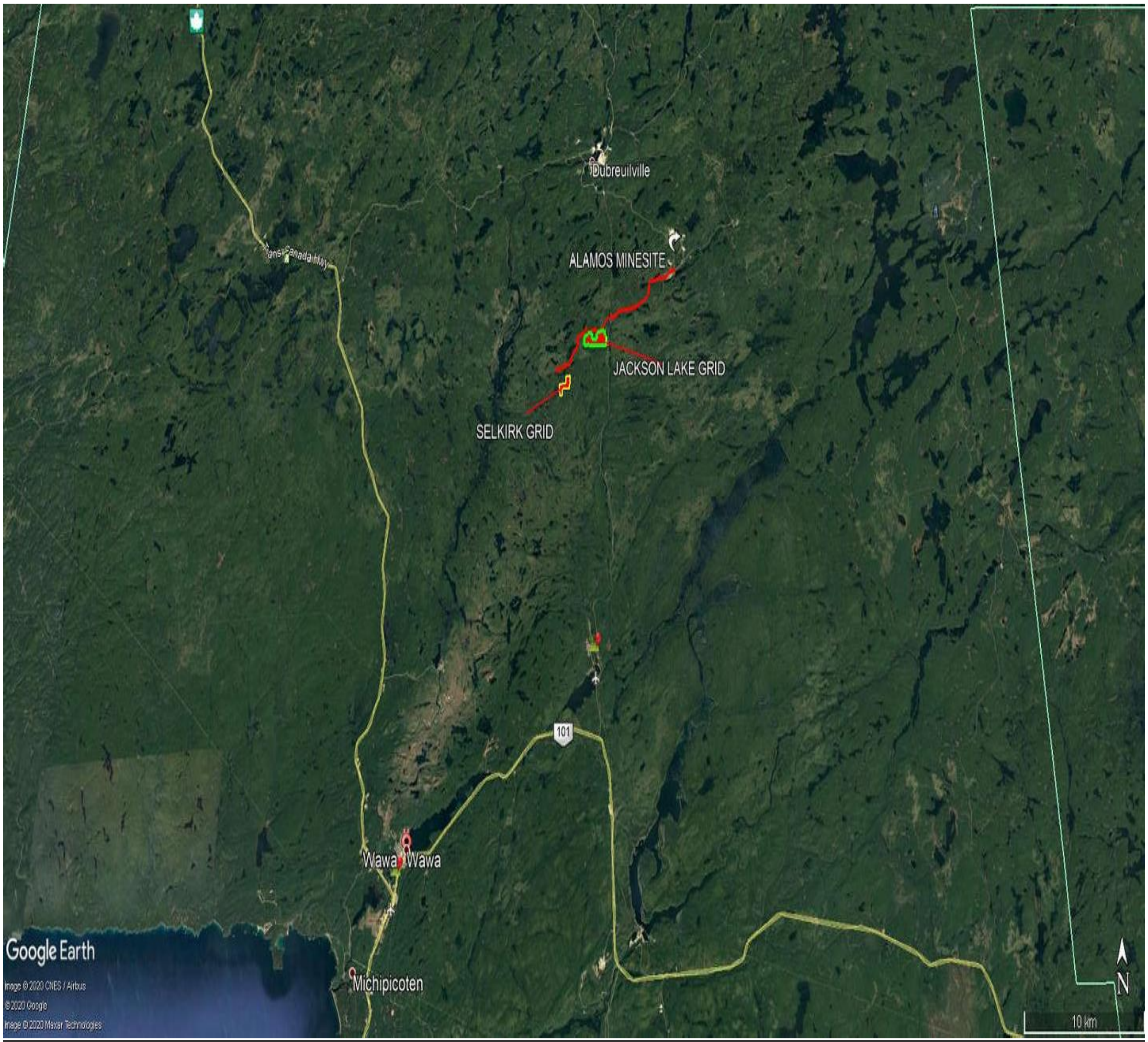


Figure 2. Property Location Map

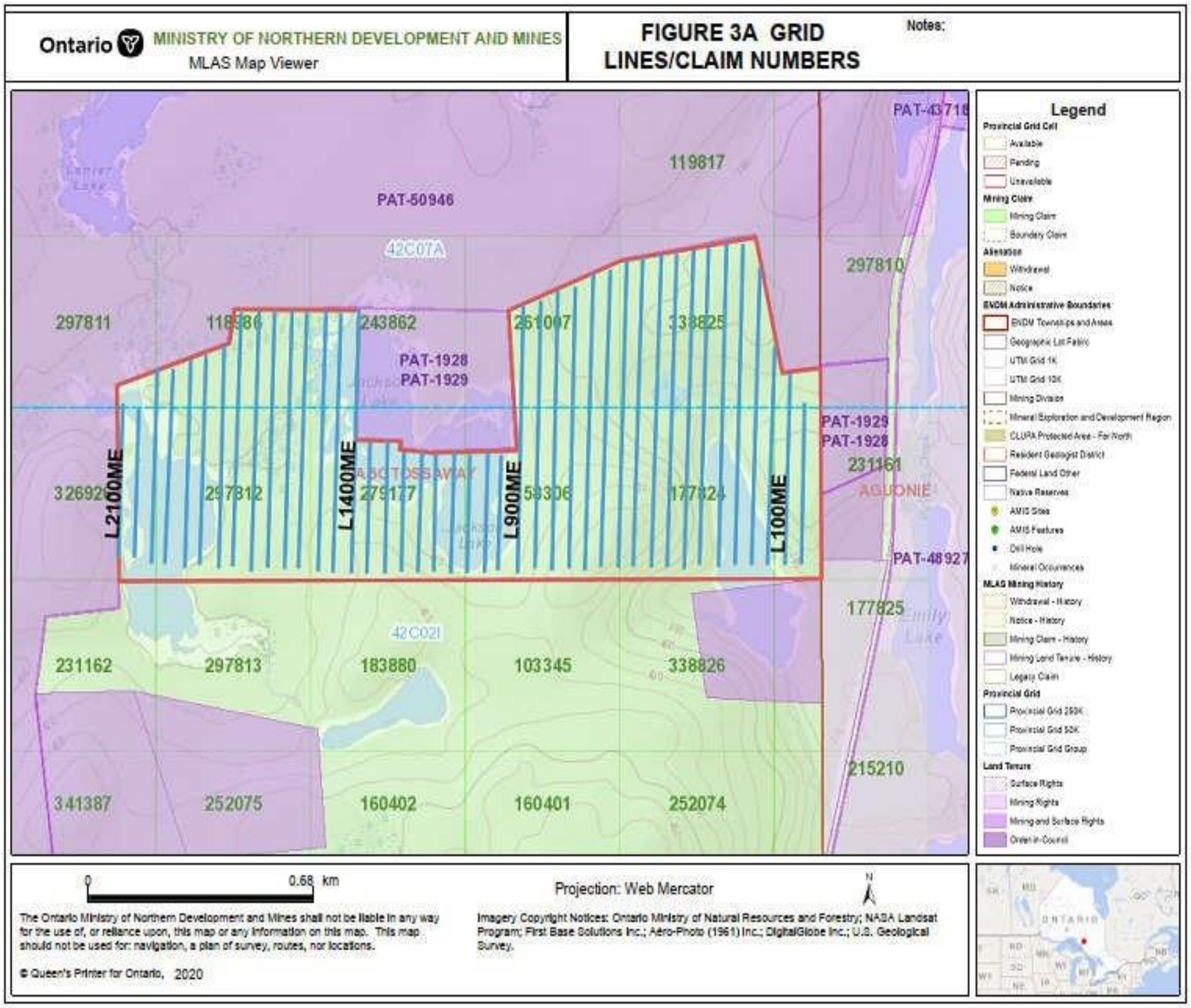


Figure 3A. Jackson Lake Grid

HISTORY

Gold was discovered in the Goudreau- Lochalsh area as early as 1896 in Emily Bay of Dog Lake. Other discoveries followed as claims were staked searching for iron ore bodies after the turn of the 20th century. Within a few years of the end of the First World War, gold was discovered on numerous properties in the area, most notably the Cline (1918) and Edwards (1924) mines in the Eastern domain of the Goudreau Lake Deformation Zone (GLDZ), the Magino (1918) mine east of the current property, and the Murphy (1921) mine west of the current property.

Historical data for the current Jackson Lake Property of FMEL in the MNDM Assessment files is extremely limited.

In 1969, A. Coppellan drilled two diamond drill holes on the west side of Jackson Lake. Intermediate to mafic metavolcanic rocks were reportedly intersected as well as disseminated pyrite mineralization. No assay data was reported for these holes (Sage, 1993). Sage, during the course of Ontario Geological

Survey regional mapping, sampled iron formation several hundred meters to the west of Jackson Lake that returned 0.04oz/t Au.

In 1984 a geophysical program was completed by geologists R. G. Reid and S. M. Sears for R. J. McGowan on what was then called the "Jackson Lake" property. In their report, Reid and Sears mention a significant gold discovery having been made just east of Jackson Lake on the Algoma Central Railway (ACR) ground, but the author could find no data in the MNDM assessment files which would support this statement. Being ACR ground, there was no requirement to file work on the property with the MNDM.

In 1986 and 1987, Tilsey and Associates completed a comprehensive exploration program in the Goudreau area on the McVeigh Creek and Jackson Lake claim groups for Faldo Mines & Energy Corp. The program included geological mapping, geophysical surveys, geochemical exploration, and stripping of target areas followed by sampling and assaying of mineralized zones. A zone of carbonate-altered mafic volcanics containing quartz-tourmaline veins was located on the western shore of Jackson lake (Current claim 279177). A 1.5-meter-long chip sample returned an assay of 1080ppb Au.

Although there is abundant evidence of prospecting (old trenches and pits), there is very little historical information available on the Jackson Lake Group.

Patricia Mines Inc. held the Jackson Lake Property in 1998. The property includes area to the east and west of Jackson Lake and is rectangular in shape, approximately l km x 0.4 km. It lies to the southwest of the Goudreau town site. The exploration program consisted of geological mapping and sampling, soil sampling and prospecting. The purpose of exploration on this property was to identify the western extension of the gold-bearing Goudreau deformation zone across the McVeigh Creek fault. The McVeigh Creek Fault is a prominent north-south lineament occurring along the eastern boundary of Abotossaway Township and approximately 1km to the east of the Jackson Lake property. Vertical and horizontal offset along the fault is difficult to estimate but may be on the order of several kilometers (Shore and Trancanelli, 1999).

REGIONAL GEOLOGY:

The Regional geology is described by K. B. Heather and Z. G. Arias (1992) as follows:

Archean supracrustal rocks in the immediate Goudreau-Lochalsh area consist of felsic to intermediate, pyroclastic metavolcanics which are capped by pyrite-bearing iron formation. Immediately to the north are pillowed, massive and schistose mafic to intermediate metavolcanic rocks which are interpreted to be younger in age than the iron formation and felsic metavolcanic rocks. Several medium- to coarse-grained quartz dioritic to dioritic sills and/or dikes intrude all of the metavolcanic rocks. Several felsic intrusions ranging in composition from nepheline syenite to tonalite/trondhjemite occur within the study area. The metamorphic grade of the supracrustal rocks is greenschist, except for a narrow band of amphibolite grade rocks adjacent to the external tonalite-granodiorite granitoid rocks to the north. All of the rocks described above are cross-cut by northwest- and northeast-striking diabase dikes.

Two regionally extensive, subparallel zones of deformation, referred to as the Goudreau Lake Deformation Zone (GLDZ) and the Cradle Lakes Deformation Zone (CLDZ), have been defined using the deformation intensity (i.e., strain intensity) of the supracrustal rocks, the deformation style, and the distribution and density of discrete high-strain zones. The majority of the known gold deposits and occurrences *are located within the GLDZ, a 4.5 km wide by over 30 km long, east-northeast- to east-striking arcuate zone which is subparallel to the major lithological and foliation trends. The CLDZ is located south of the GLDZ and is at least 5 to 10 km in length and approximately l to 2 km in width.*

The GLDZ can be subdivided into four structural domains (northern, southern, western and eastern) based on style of deformation, lineation patterns, and the orientation and the sense of apparent shear displacement on sets of high-strain zones. Correspondingly, the style and geometry of the gold mineralized zones is different within each of the structural domains.

Gold mineralization occurs in all rock types (excluding diabase dikes) in the area associated with high-strain zone hosted quartz veins. There is a spatial association of gold mineralization with felsic porphyry dikes and stocks, the contacts of dikes being particularly favourable sites for shearing and gold deposition. The alteration associated with the gold mineralization is of limited areal extent, being confined to the discrete high-strain zones. Mafic metavolcanic and metaintrusive rocks are typically intensely altered to an assemblage of "biotite, Fe-carbonate, pyrite, pyrrhotite, quartz and minor potassium feldspar and, in other places, less intensely altered to an assemblage of chlorite, calcite, and minor pyrrhotite and/or pyrite. Felsic rnetavolcanic and metaintrusive rocks are typically intensely altered to an assemblage of quartz, sericite, pyrite, Fe-carbonate, albite, hematite, pyrite and/or pyrrhotite and, in other places, less altered to a similar assemblage except that chlorite replaces sericite as the dominant mineral.

The property lies within the Goudreau-Lochalsh area of the Wawa Greenstone Belt, which is comprised of a major succession of supracrustal rocks of Archean age, represented by several cycles of volcanic activity and a series of sedimentary rocks. The claim group is believed to be located towards the northern boundary of the western domain of the Goudreau Lake Deformation Zone (GLDZ) as defined by the Ontario Geological Survey. The majority of known gold deposits in the area are located within this 30 kilometer long, 4 kilometer wide, east-northeast trending, arcuate zone. Structural controls appear to be the most important factor in the localization of gold-bearing quartz veins in this area, and the GLDZ is comprised of numerous, systematically oriented shear zones.

The geology of the region is best known from the works of E. L. Bruce (1940), in Ontario Dept. of Mines, Vol. 49, pt 3, and from various Ontario Geological Survey reports by R. P. Sage, K. B. Heather and Z. G. Arias (1987 through 1993).

PROPERTY GEOLOGY

The Jackson Lake property is situated central to the GLDZ Western Domain. The area was mapped by Sage (1993). The property is underlain predominantly by Archean mafic metavolcanics in the form of massive flows and chlorite schists. There are also instances of pillowed flows, amydaloidal units and massive medium grained flows. These units strike generally from 070° to 100°, with the most common orientation slightly north of east, and dip steeply north.

A solitary example of chemical metasedimentary rocks in the form of a sulphide-carbonate facies iron formation is located just inland from the northeast corner of Buck Lake. Tilsley (1987) describes it as *"a sheared carbonate- rich zone approximately one to two meters wide with a central band of sulphide mineralization"*. A sample of the material assayed 5663 ppb Au across 15 centimeters.

Metamorphosed mafic to ultramafic intrusives in the form of quartz gabbros and carbonitized units have intruded the mafic metavolcanics. Gabbroic outcrops are witnessed in the north-eastern and south-eastern portions of the property, as well as the south, central and northern portions to the west of the property.

Felsic intrusive rocks in the form of quartz porphyries are found in a number of locations on the property, but are most numerous in the central and northern portions of the western part of the property.

Proterozoic diabase dikes cut all units in a north-northwesterly direction.

Tilsley (1987) describes shear zones on the property as such:

"The rocks of the property exhibit zones of shearing which appears to post date rocks older than the diabase and may be related to late stage tectonic activity in the volcanic belt contemporaneous with intrusion of the dioritic plugs. Shearing is observed to be accompanied locally by carbonate alteration and quartz veining."

The recent geophysical survey appears to have outlined a number of shears/faults trending northeast across on the property.

WORK COMPLETED

Ground Program:

The current ground program consisted of a total field magnetic survey that was done in conjunction with a VLF-EM survey using the Terraplus GSM-19 system. Specifications for this system can be found as Appendix C of this report. The survey consisted of a two man crew, one man lead the survey using a hand held GPS unit to control flagged, north- south grid lines commencing at UTM point 682030E and 5347275N which represented the north end of grid line 900ME. This line was flagged at 25 meter intervals from this start point to the southern boundary of the claim block. Additional grid lines were then established from this line at 50 meter intervals from line 900ME to and including 50ME and again at 50 meter intervals from 900ME to 2100ME. All of these parallel lines were also flagged at 25 meter intervals and all lines were established from the north boundary of the block to the southern boundary of the block. The second crew member completed the magnetic and VLF-EM survey across this same flagged grid in conjunction with the first crew member. In all a total of 28.5 kilometers were compassed, paced flagged and surveyed across the claim block between April 5th and the 20th.

Personnel:

The field crew directly responsible for the collection of the raw field data was as follows:

Norm Collins	Timmins, Ontario
Chad Gloster	Timmins, Ontario

The entire ground program was carried out under the direct supervision of J. C. Grant of Exsics Exploration Limited.

Refer to the Figure 3B below that shows the grid layout that was completed across the Jackson Lake Property.

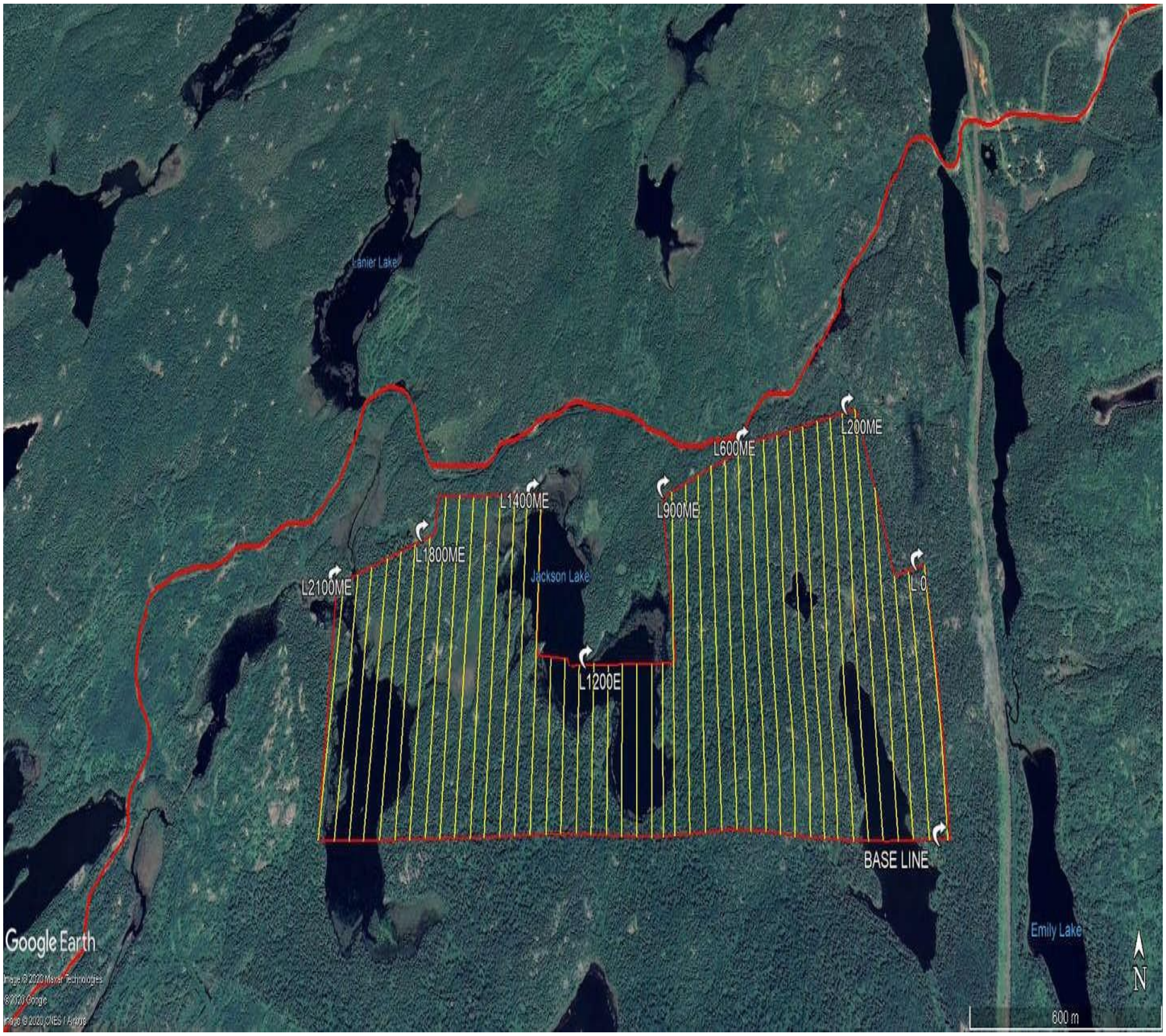


Figure 3B. Completed Jackson Lake Grid

Survey Specifications:

Magnetic and VLF-EM Survey:

Line spacing:	50 meters
Station spacing:	25 meters
Reading intervals:	25 meters
Magnetic diurnal monitoring:	base station recorder, 30 second record intervals
	UTM point for the base station, 681760E/5347475N
Unit accuracy:	+/- 0.5 nT, magnetics 0.5 % VLF

Reference field:	56500 nT
Datum subtracted:	56000 nT
VLF Frequency:	Cutler, Maine 24.0 Khz, EM coupling is not pertinent to the survey.
Parameters measured:	In phase and quadrature component of the secondary field.
Parameters plotted:	In phase component.

Once the magnetic survey was completed, the magnetic data was merged with the base station recorder data, corrected and then plotted onto a base map at a scale of 1:5000. The data had a background of 56000 nT removed for ease in plotting. The data was then contoured at 100 gamma intervals where ever possible. A copy of this contoured color plan map is included in the report and as an attachment along with the report.

The collected in-phase component of the VLF-EM survey was also plotted onto a base map at a scale of 1: 5000 and then profiled at 1cm = +/- 20 percent. Once the data was profiled any and all conductor axis were then interpreted and placed on the plan map. A copy of the VLF profiled plan map is included within the report and as an attachment along with the report.

SURVEY RESULTS

The magnetic survey outlined the suspected geological characteristics of the property. Three of the more predominant structures outlined appear to represent dike like features. The first dike like structure can be traced from the south ends of lines 600 and 650 meters east to the north ends of line 950ME. It is represented by a narrow magnetic high striking northwest.

The central section of the dike is cut off or interrupted by two northeast to south west striking faults and or shear zones. The northern limb of the suspected fault/shear zone can be traced from the northern section of line 200ME to the southern tip of line 1650ME. This limb is characterized by a series of magnetic lows between magnetic highs.

The southern fault/shear structure can be traced from 100ME in the central section of the line and north of the lake to at least line 1100ME through the southern bay of Jackson Lake.

The second dike like unit appears to strike northwest from the southern tip of line 1250ME to the northern tip of line 1550ME. This dike like unit is represented by a series of small bullseye like mag highs that run along the western shore of Jackson lake. This dike like unit is cross cut by the northern limb of the main northeast to southwest fault/shear zone at is southern end and another shear/fault like structure striking northeast to southwest that can be traced from 1400ME at the north end to the north end of lie 2000ME. This northern fault/shear zone appears to run into another dike like unit that runs northwest between lines 2000ME and ten western edge of the grid.

Structurally, there are at least two to three main east-west magnetic highs cutting across the survey area. The most predominant high relates to a good narrow high striking east from line 2000ME to 1400ME and may extend as far as line 850ME where it terminates at the western edge of the northwest striking dike like unit. There is a VLF conductor associated with the northern edge of the western section of this high.

There is a modest set of magnetic highs lying along the northern fault/shear zone lying between 1950ME to 1550ME that has a modest VLF conductor associated with it.

Another narrow magnetic high lies between 1850ME and 1350ME that lies between two of the fault/shear zones. This magnetic structure has a VLF conductor associated with its strike albeit somewhat distorted due to the dike at the eastern end of the high.

There is another good magnetic high unit lying between lines 900ME and 650ME trapped between the two northeast to southwest striking fault/shear zones. There does not appear to be any VLF zones with this feature.

A final area of interest would be the magnetic high situated between lines 600ME and 300ME that lies south of the southern fault/shear zone. This high has a VLF zone associated with its eastern tip that may extend out into the lake.

The VLF survey outlined a series of short conductor axis scattered across the northeastern section of the grid area but there does not appear to be any definite magnetic correlation with the zones. The majority of the VLF trends appear to have been distorted and or faulted by the dike like units and the main fault/shear zones.

DISCUSSION

Heather and Arias (1992) indicate that the Western domain of the GLDZ is similar to the Eastern domain in terms of high strain zone orientations and deformation style. The Western domain is composed of 085° to 115° striking brittle and brittle-ductile high strain zones.

It is well documented that quartz veins containing sulphides and gold mineralization are often found within shears and tension shears/fractures on contacts of felsic intrusive units (often quartz porphyry), and in the proximity of gabbroic units. The Jackson Lake property features east-west magnetic highs in areas that have been mapped as gabbroic units (Sage, 1993), and in proximity to felsic intrusive quartz porphyries. VLF conductive zones aligned on the margins of magnetic highs are therefore important areas to prospect. Likewise, VLF conductors observed at oblique angles to the mag highs and northeast trending interpreted shears zones/faults are equally important areas to investigate. In the GLDZ Eastern domain, tension shears/fractures striking obliquely from extensive shear zones can host quartz veining containing sulphides and significant gold mineralization. The Edwards mine, Cline mine, and a number of other gold occurrences feature this style of mineralization.

At the historic Murphy Mine, located 2.5 kilometers southwest of the Jackson Lake property, the auriferous quartz veining is hosted in a similar 090° to 115° shear zone.

CONCLUSIONS AND RECOMMENDATIONS:

The initial surveys were successful in locating and outlining several areas of interest as well as at least three potential structural trends across the survey area. These trends would be the northwest striking dike like units, the northeast to southwest trending fault and or shear zones and the east-west striking magnetic high trends with VLF conductor association. The three east-west magnetic high trends most likely represent one main feature that has been offset and or faulted by the dike like units and the southwest to northeast faults and or shear zones.

A follow up detailed geological survey should be considered across the grid especially in the area of the faults and or shears as well as the east-west striking magnetic high trends. The property should be further followed up with an Induced Polarization survey to better define these faults and/or shear zones as well as the east-west striking magnetic highs. The IP survey should be done at 100 meter line spacing and mainly concentrate on the east-west magnetic highs as well as the southwest to northeast striking faults and/or shears.

Respectfully submitted

J. C. Grant

J. C. Grant, CET, FGAC

May 2020

REFERENCES

Bruce, E. L. — Geology of the Goudreau-Lochalsh Area, Forty-Ninth Annual Report of the Ontario Department of Mines, Vol XLIX, Part III, 1940

Gledhill, T.L. — Michipicoten Gold Area, District of Algoma, Ontario Department of Mines 36th Annual Report, part l, p. 1-49, 1927

Heather, K. B. — Regional Structural Geology Related to Gold Mineralization in the Goudreau,-Lochalsh Area, District of Algoma, Ontario, Geological Survey Paper G. 1987

Heather, K. B., Arias, Z. — Geological and Structural Setting of Gold Mineralization in the Goudreau - Lochalsh Area, Wawa Gold Camp, Open File Report 5832, 1992

Reid, R. G., Sears, S. M. — Report on a Geophysical Survey over the properties of R. J. McGowan, Abotossaway Township, SSM Mining Division,1984

Sage, R. P. — Geology of the Goudreau-Lochalsh and Kabenung Lake Areas, District of Algoma, Ontario geological Survey Paper, 1987

Sage, R.P. — Geology of Abotossaway, Corbiere, Leclaire and Musquash Townships and part of Dunphy Towship; Ontario Geological Survey, Open File Report 5587, 308p, 1993

Shore, G. T., — Geological Exploration Summary Report, Jackson Lake property for Tracanelli, T. Patricia Mines Inc., March 1999

Tilsley, James E. — Magnetic and VLF-EM Surveys, Jackson lake and McVeigh Creek properties, Goudreau Area, Sault Ste. Marie Mining Division, Ontario, October 10, 1986

Tilsley, James E. — Faldo Mines and Energy Corporation, Humus Geochemical Survey, Jackson Lake Property, Goudreau Area, Sault Ste. Marie Mining Division, Ontario, September 29, 1987.

Tilsley, James E. — Summary Report, Exploration Program 1987, Faldo Mines and Energy Corporation, McVeigh Creek and Jackson Lake properties Sault Ste. Marie Mining Division, Ontario, 1988

Thomson, E. — Goudreau Gold Area, Michipicoten District, Ontario; Geological Report 1921, part D, p. 17d-26d

Various Authors — MNDM AFRI assessment file 42CO2NE0950- historical data- Murphy mine under various historical names- reports, prospectus' and maps/plans from 1925 through 1964

CERTIFICATION

I, John Charles Grant, of 108 Key Crescent, in the City of Timmins, Province of Ontario, hereby certify that:

1). I am a graduate of Cambrian College of Applied Arts and Technology, 1973, Sudbury Ontario Campus, with a 3 year Honors Diploma in Geological and Geophysical Technology.

2). I have worked subsequently as an Exploration Geophysicist for Tech Exploration Limited, (5 years, 1975 to 1980), and currently as Exploration Manager and Chief Geophysicist for *Exsics Exploration Limited, since May, 1980.

3) I am a member in good standing of the Certified Engineering Technologist Association, (CET), since 1984.

4) I am in good standing as a Fellow of the Geological Association of Canada, (FGAC), since 1986.

5). I have been actively engaged in my profession since the l5'h day of May, 1975, in all aspects of ground exploration programs including the planning and execution of field programs. project supervision, data compilation, interpretations rind reports.

6). I have no specific or special interest nor do I expect to receive any such interest in the herein described property. I have been retained by the property holders and or their Agents a Geological and Geophysical Consultant and Contract Manager.

/John Charles Grant, CET., FGAC.

GEOLOGICAL ASSOCIATION OF CANADA
JOHN GRANT
FELLOW

Qualification

CERTIFICATE OF AUTHOR

I, Bruce Alexander Edgar, Honors BSc., P. Geo, do hereby certify that:
I am currently employed as a Consulting Geologist residing at:
5782 Highland Avenue, Niagara Falls, Ontario, L2G-4X4

I graduated with an Honors Bachelor of Science Degree in Geological Sciences from Brock University in 1981.

I am a practicing member of the Association of Professional Geoscientists of Ontario (Registration Number 2018).

I have worked as a geologist for over 30 years since graduation from Brock University. My experience includes conception, planning/budgeting, implementation and completion of numerous surface geological, geophysical, geochemical programs, and underground programs on many properties for numerous Exploration and Mining companies. The work has included the writing of project reports and technical reports.

I have had prior involvement with the Goudreau – Lochalsh- Missinabie area having worked as a geologist for a number of companies on claims in the area over the past 30 years. I completed prospecting on the Jackson Lake property in the Fall of 2017.

I have amended the report by John Grant of Exsics Exploration Ltd. in the following manner: a Summary has been added to the beginning of this report using information from various sections of the report completed by John Grant. A History section has been amended. A Discussion section has been added. Additional maps have been added to Appendix A. Invoicing has been included in Appendix B. A Daily Work Log has been included in Appendix D.

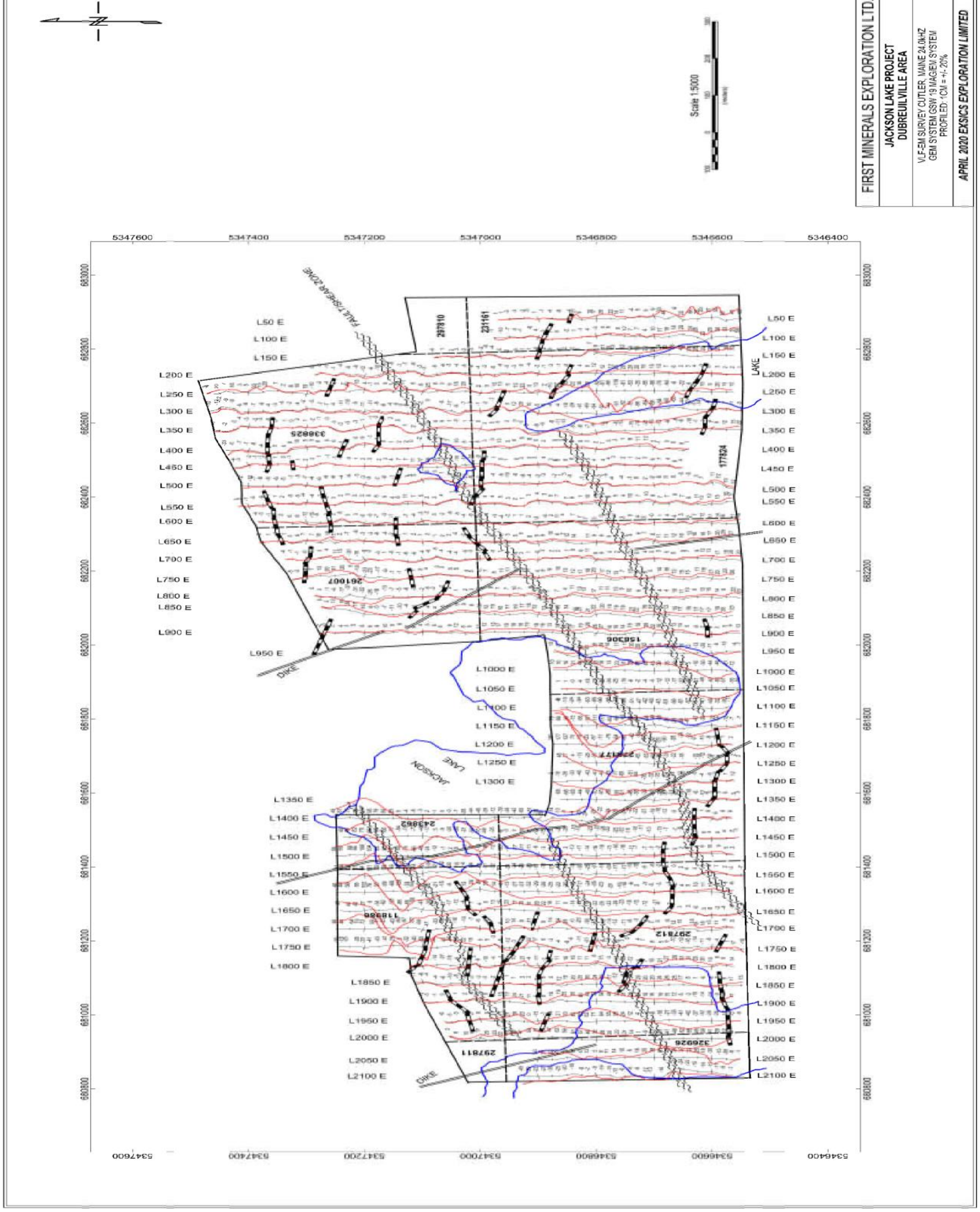
I have received no compensation for this report other than normal consulting fees.

Dated this 25th day of June, 2020.

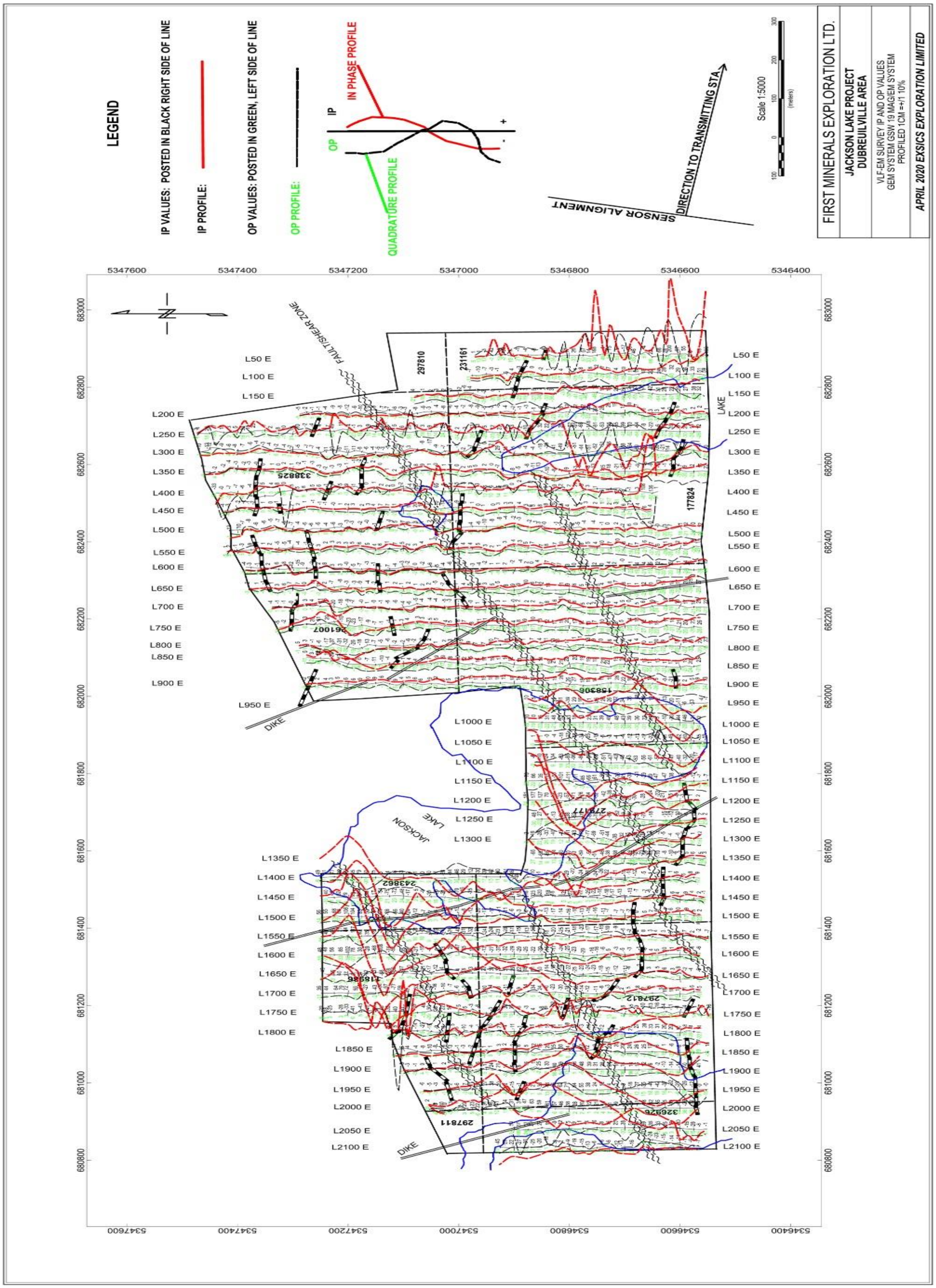
Bruce Edgar, (Honors BSc, P. Geo.)

APPENDIX A

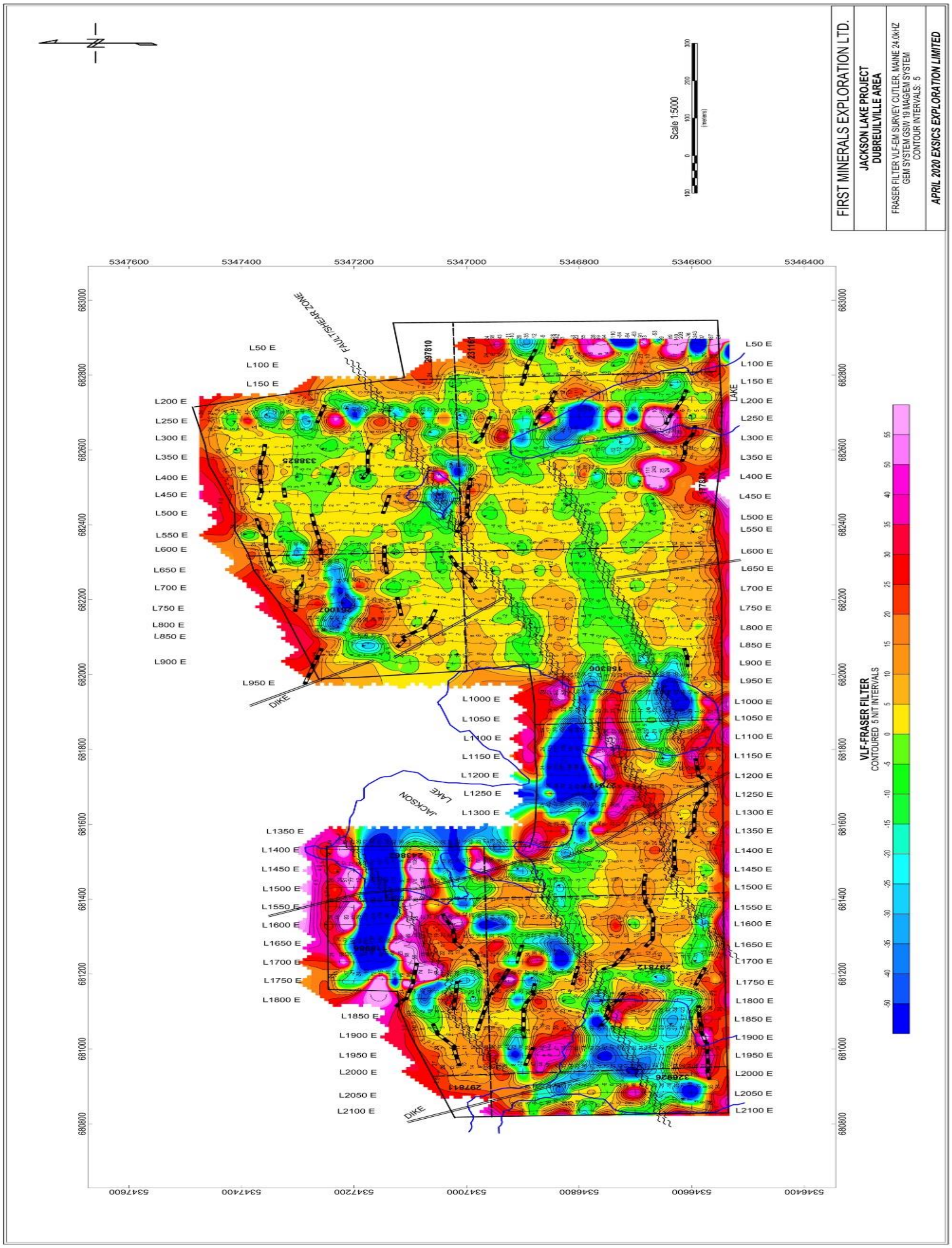
Geophysical Survey Maps



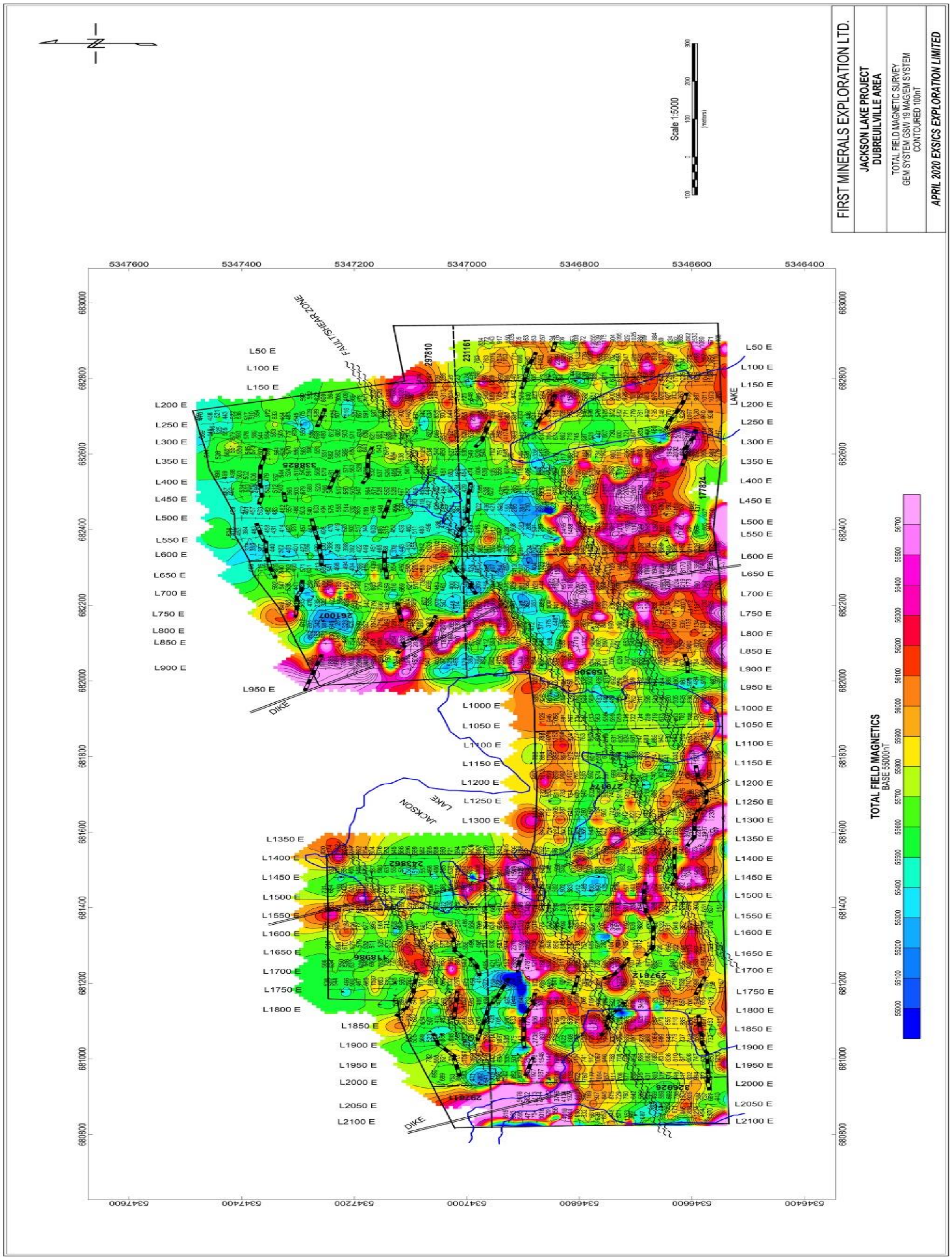
VLF-EM Survey (Profiled)



VLF-EM Survey IP and OP



VLF-EM Survey Fraser Filter Contours



Total Field Magnetics

APPENDIX B

Invoicing

APPENDIX C

Geophysical Instrument Equipment Specifications v7.0

Overhauser

Magnetometer / Gradiometer / VLF (GSM-19 v7.0)

GEM's unique Overhauser system combines data quality, survey efficiency and options into an instrument that matches costlier optically pumped Caesium devices.

And the latest v7.0 technology upgrades provide even more value:

- **Data export in standard XYZ (i.e. line-oriented) format for easy use in standard commercial software programs**
- **Programmable export format for full control over output**
- **GPS elevation values provide input for geophysical modelling**
- **Enhanced GPS positioning resolution**
  <1.5m standard GPS for high resolution surveying
  <1.0m OmniStar GPS
  <0.7m for newly introduced CDGPS
- **Multi-sensor capability for advanced surveys to resolve target geometry**
- **Picket marketing / annotation for capturing related surveying information on-the-go**

And all of these technologies come complete with the most attractive savings and warranty in the business!

Overhauser (GSM-19) console with sensor and cable. Can also be configured with additional sensor for gradiometer (simultaneous) readings.

The GSM-19 v7.0 Overhauser instrument is the total field magnetometer / gradiometer of choice in today's earth science environment – representing a unique blend of physics, data quality, operational efficiency, system design and options that clearly differentiate it from other quantum magnetometers.

With data quality exceeding standard proton precession and comparable to costlier optically pumped cesium units, the GSM-19 is a standard (or emerging standard) in many fields, including:

- Mineral exploration (ground and airborne base station)
- Environmental and engineering
- Pipeline mapping
- Unexploded Ordnance Detection
- Archeology
- Magnetic observatory measurements
- Volcanology and earthquake prediction

Taking Advantage of the Overhauser Effect

Overhauser effect magnetometers are essentially proton precession devices – except that they produce an order-of-magnitude greater sensitivity. These "supercharged" quantum magnetometers also deliver high absolute accuracy, rapid cycling (up to 5 readings / second), and exceptionally low power consumption.

The Overhauser effect occurs when a special liquid (with unpaired electrons) is combined with hydrogen atoms and then exposed to secondary polarization from a radio frequency (RF) magnetic field.

The unpaired electrons transfer their stronger polarization to hydrogen atoms, thereby generating a strong precession signal – that is ideal for very high-sensitivity total field measurements.

In comparison with proton precession methods, RF signal generation also keeps power consumption to an absolute minimum and eliminates noise (i.e. generating RF frequencies are well out of the bandwidth of the precession signal).

In addition, polarization and signal measurement can occur simultaneously – which enables faster, sequential measurements. This, in turn, facilitates advanced statistical averaging over the sampling period and/or increased cycling rates (i.e. sampling speeds).

Other advantages are described in the section called, "GEM's Commercial Overhauser System" that appears later in this brochure.

Key System Components

Key components that differentiate the GSM-19 from other systems on the market include the sensor and data acquisition console. Specifications for components are provided on the right side of this page.

Sensor Technology

GEM's sensors represent a proprietary innovation that combines advances in electronics design and quantum magnetometer chemistry.

Electronically, the detection assembly includes dual pick-up coils connected in series opposition to suppress far-source electrical interference, such as atmospheric noise. Chemically, the sensor head houses a proprietary hydrogen-rich liquid solvent with free electrons (free radicals) added to increase the signal intensity under RF polarization.

From a physical perspective, the sensor is a small size, light-weight assembly that houses the Overhauser detection system and fluid. A rugged plastic housing protects the internal components during operation and transport.

All sensor components are designed from carefully screened non-magnetic materials to assist in maximization of signal-to-noise. Heading errors are also minimized by ensuring that there are no magnetic inclusions or other defects that could result in variable readings for different orientations of the sensor.

Optional omni-directional sensors are available for operating in regions where the magnetic field is near-horizontal (i.e. equatorial regions). These sensors maximize signal strength regardless of field direction.

Data Acquisition Console Technology

Console technology comprises an external keypad / display interface with internal firmware for frequency counting, system control and data storage / retrieval. For operator convenience, the display provides both monochrome text as well as real-time profile data with an easy-to-use interactive menu for performing all survey functions.

The firmware provides the convenience of upgrades over the Internet via the GEMLinkW software. The benefit is that instrumentation can be enhanced with the latest technology without returning the system to GEM -- resulting in both timely implementation of updates and reduced shipping / servicing costs.

About GEM Advanced Magnetometers

GEM Systems, Inc. delivers the world's only magnetometers and gradiometers with built-in GPS for accurately-positioned ground, airborne and stationary data acquisition. The company serves customers in many fields including mineral exploration, hydrocarbon exploration, environmental and engineering, Unexploded Ordnance Detection, archeology, earthquake hazard prediction and observatory research.

Key products include the QuickTracker™ Proton Precession, Overhauser and SuperSenser™ Optically-Pumped Potassium instruments. Each system offers unique benefits in terms of sensitivity, sampling, and acquisition of high-quality data. These core benefits are complemented by GPS technologies that provide metre to sub-metre positioning.

With customers in more than 50 countries globally and more than 20 years of continuous technology R&D, GEM is known as the only geophysical instrument manufacturer that focuses exclusively on magnetic technology advancement.

"Our World is Magnetic"

Specifications

Performance

Sensitivity:	< 0.015 nT / √Hz @ 1 Hz
Resolution:	0.01 nT
Absolute Accuracy:	+/- 0.1 nT
Range:	10,000 to 120,000 nT
Gradient Tolerance:	> 10,000 nT/m
Samples at:	60+, 5, 3, 2, 1, 0.5, 0.2 sec
Operating Temperature:	-40C to +50C

Operating Modes

Manual: Coordinates, time, date and reading stored automatically at minimum 3 second interval.

Base Station: Time, date and reading stored at 3 to 60 second intervals.

Remote Control: Optional remote control using RS-232 interface.

Input / Output: RS-232 or analog (optional) output using 6-pin weatherproof connector.

Storage - 16 MB (# of Readings)

Mobile:	738,760
Base Station:	2,708,821
Gradiometer:	625,112
Walking Mag:	1,354,410

Dimensions

Console:	223 x 69 x 240 mm
Sensor:	175 x 75mm diameter cylinder

Weights

Console with Belt:	2.1 kg
Sensor and Staff Assembly:	1.0 kg

Standard Components

GSM-19 console, GEMLinkW software, batteries, harness, charger, sensor with cable, RS-232 cable, staff, instruction manual and shipping case.

Optional VLF

Frequency Range: Up to 3 stations between 15 to 30.0 kHz

Parameters: Vertical in-phase and out-of-phase components as % of total field. 2 components of horizontal field amplitude and total field strength in pT.

Resolution: 0.1% of total field

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Represented By:

APPENDIX D

Daily Work Log

DATE (2020)	WORK LOG	APPROX KM	COMMENTS
APR. 4TH	MOB TO DUBREVILLE		
APR. 5TH	LINE 900E-1100E	2.25KM	
APR. 6TH	LINES 1150E-1400E	4.8KM	
APR. 7TH	LINES 1450E-1700E	4.2 KM	
APR. 8TH	LINE 1750E-2100E	4.2 KM	TO TIMMINS, RAIN DELAY
APR.16TH	MOB TO DUREVILLE		
APR. 17TH	LINES 850E-700E	3.25KM	
APR. 18TH	LINE 650E-400E	5.00 KM	
APR. 19TH	LINES 350E-50E	4.80KM	
APR. 20TH	ATTEMPTED ACCESS TO SELKIRK GRID		RETURN TO TIMMINS
	TOTAL KM COVERED	28.5 KM	