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REPORT ON 2018 GROUND GEOPHYSICS

BY CHAMPAGNE RESOURCES LIMITED AND

WAR EAGLE MINING COMPANY

(now WARRIOR GOLD INC.)

ON THE GOODFISH KIRANA PROPERTY,

BERNHARDT, TECK, LEBEL AND MORRISETTE

TOWNSHIPS, NTS MAP SHEETS 32D/04 AND 42A/01

LARDER LAKE MINING DIVISION

NORTHEASTERN ONTARIO

Tom Setterfield, PhD, P.Geo,
GeoVector Management Inc.
December 31, 2019

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SUMMARY

Warrior Gold Inc. (formerly War Eagle Mining Company) controls the 41.22 km^2 Goodfish Kirana property immediately north of Kirkland Lake via a complicated combination of outright ownership and claim options. The Property consists of 232 mining cell claims and 29 patents. The Property was assembled by Champagne Resources Limited, who merged with War Eagle in early 2018; War Eagle changed its name to Warrior Gold on October 1, 2018. Prior to the involvement of Champagne, the Property was subjected to intermittent exploration by a number of different entities. Champagne conducted various desktop studies, examination/sampling of historical core and commissioned a property-wide LiDAR survey before its first major field program of prospecting and drilling in 2016. This was followed in early 2018 by ground and airborne geophysics and drilling (conducted by War Eagle). Additional drilling, prospecting and mapping were conducted in 2019. The purpose of this report is to document the 2018 ground geophysics.

The Property is immediately north of the structural/stratigraphic package of rocks that hosts the Kirkland Lake gold mining camp. The bulk of the Property is underlain by tholeiitic mafic volcanic rocks, a prospective rock type when exploring for mesothermal gold deposits. Timiskaming sediments, another prospective rock type, underlie the southern extremities of the Property. Quartz veins and iron carbonate alteration are abundant, and a number of significant showings are known to occur, in spite of the sparse exposure on the Property. Many of these gold concentrations are spatially associated with either the east-trending Kirana Break or with a north-trending zone east of Goodfish Lake; most are also proximal to felsic porphyry intrusions. A number of exploration shafts have been excavated over the years, and numerous excellent gold intersections have been obtained in historical drilling.

Champagne drilled three holes proximal to the Kirana Break in the central part of the Property in 2016; all holes encountered anomalous grade, but none encountered ore grade gold. Hole GK-16-01intersected 1.5 m @ 1.35 g/t Au associated with a quartz vein in basalt, and 0.9 m @ 1.82 g/t Au associated with a quartz vein cutting a quartz feldspar porphyry; this zone is potentially part of the Kirana Break. Hole GK-16-02 intersected minor sulphides with a maximum gold value of 73 ppb. The best intersection in hole GK-16-03 was 1.5 m @ 0.35 g/t Au in sulphide-bearing basalt; several multi-meter zones of low grade but anomalous gold also occur.

War Eagle drilled five holes in March/April, 2018. All five holes intersected alteration, anomalous pyrite concentrations and anomalous gold (> 1 g/t Au), typically proximal to contacts with sheared quartz feldspar porphyry dikes. The best mineralization was in hole GK18-003, which returned 16.0 m @ 0.87 g/t Au, including 10.53 m @ 1.20 g/t Au. This is one of a series of mineralized intersections in the Goodfish A Zone, including the historical intersection of 12.65 m @ 16.97 g/t Au in nearby 1990 hole GF90-04. Short intervals of anomalous gold were encountered in the two holes drilled on the Kirana Break (GK18-01 and 02). The highest grades were in GK18-04, with a high of 6.72 g/t Au over 0.50 m in a quartz vein on the edge of a quartz feldspar porphyry dike.

Ground geophysics was conducted in two areas on the Property in early 2018: i) proximal to the mineralized Goodfish zones east of Goodfish Lake; and ii) in the Deloye area, around three historical shafts near the Kirana Break. A 46.3 line km grid was cut in the Goodfish area on 100 m spaced east-west and north-south lines. Approximately 4.7 line km of grid was established at Deloye, with seven 335° trending, variably 100 or 200 m spaced lines and one tie line.

A Total Field Magnetic Intensity image of the Goodfish area shows a high magnetic domain northeast of Goodfish Lake, with possible evidence of folded stratigraphy. A first vertical derivative of this data is useful for interpreting the structures-northerly trending magnetic features appear to be offset by northwest trending lineaments. Axes of shallow conductors as shown by VLF data are generally north trending. The chargeability data from the IP survey shows several highs; this data was combined with a structural interpretation to produce drill potential drill targets.

Inversion of the data collected from the Deloye survey allows for three dimensional models of chargeability and resistivity to be created, and for horizontal images of the data (depth slices) to be generated at various levels. A depth slice of chargeability at 25 m depth shows anomalies semi-coincident with the Deloye shafts (i.e. known mineralization) and also strung out more or less along the trace of the Kirana Break to the east-northeast. These anomalies correspond to moderate resistivity highs and have not been tested by drilling. Six areas have been suggested for follow-up work, all moderate to strong chargeability anomalies. Two of these are associated with known showings, and could potentially be trenched. Two are strong chargeability anomalies that may be associated with the Kirana Break, and two are moderate to strong chargeability anomalies away from the break.

The ground geophysical surveying described in this report has generated targets in both areas which should be considered for drilling. The targets in the Goodfish area should be prospected and possibly trenched prior to drilling. Trenching should be considered for the targets in the Deloye area that are associated with known mineral occurrences. Additional IP surveying should also be considered in the Deloye area because the defined targets are all on edge of survey and thus defined by limited data; their exact locations are thus difficult to pinpoint.

1.0 INTRODUCTION

Champagne Resources Limited (Champagne) assembled the 41.22 km^2 Goodfish Kirana property (the Property) immediately north of Kirkland Lake (Fig. 1) via a complicated combination of outright ownership and claim options over a number of years. Champagne merged with War Eagle Mining Company Inc. (War Eagle) in February 2018, and then changed their name to Warrior Gold Inc. in October, 2018. The Property was assembled by Champagne between 2012 and 2018; prior to this period the Property was subjected to intermittent exploration by a number of different entities. Champagne conducted various desktop studies, examination/sampling of historical core and commissioned a property-wide LiDAR survey prior to its first major field program of prospecting and drilling in 2016. This was followed in early 2018 by three dimensional modeling, ground and airborne geophysics and drilling (conducted by War Eagle). Additional drilling, prospecting and mapping were conducted in 2019. The purpose of this report is to document the 2018 ground geophysics. In this report, the terms "Champagne Resources", "War Eagle Mining" and "Warrior Gold" are used almost interchangeably to denote the company controlling the Goodfish Kirana property.

The 1983 North American Datum (NAD83) co-ordinate system is used in this report. The Goodfish Kirana property is in Universal Transverse Mercator (UTM) Zone 17N. All monetary figures quoted in this report are in Canadian dollars.

2.0 PROPERTY DESCRIPTION AND LOCATION

The Goodfish Kirana property occurs 5 km north of the town of Kirkland Lake in Morrisette, Bernhardt, Teck and Lebel townships within the Larder Lake Mining Division (Fig. 2). The Property is approximately 4,122 ha in area and is centered at approximately 574000E/5339000N (UTM Co-ordinates) or 80ºW/48º12'N (latitude/longitude), and straddles National Topographic System (NTS) 1:50,000 map sheets 32D/04 and 42A/01. It consists of 232 mining cell claims and 29 patents (Fig. 2; Map 1; Table 1). The mineral rights to the entire property are 100% owned by Champagne, subject to the certain royalties. Unpatented mining cell claims require work expenditures of at least $400 per 16 hectare claim unit in the first two years, and $400 per year thereafter (by the anniversary of their recording date); all claims are in good standing at the time of writing (Table 1). No permits are necessary for prospecting, but most other exploration activities require notification to or permits from MNDM. Early stage activities such as geophysics, most line-cutting, minor stripping etc. require the submission of an Exploration Plan. Proponents have to provide notice of their intensions to surface rights owners, and are strongly encouraged to consult with Aboriginal communities. More intensive activities such as diamond drilling, trenching and stripping in excess of 100 m^2 require an Exploration Permit from MNDM. Proponents have to provide notice of their intensions to surface rights owners, and consult with Aboriginal communities; these stakeholders and the general public have the opportunity to comment on applications for Exploration Permits.

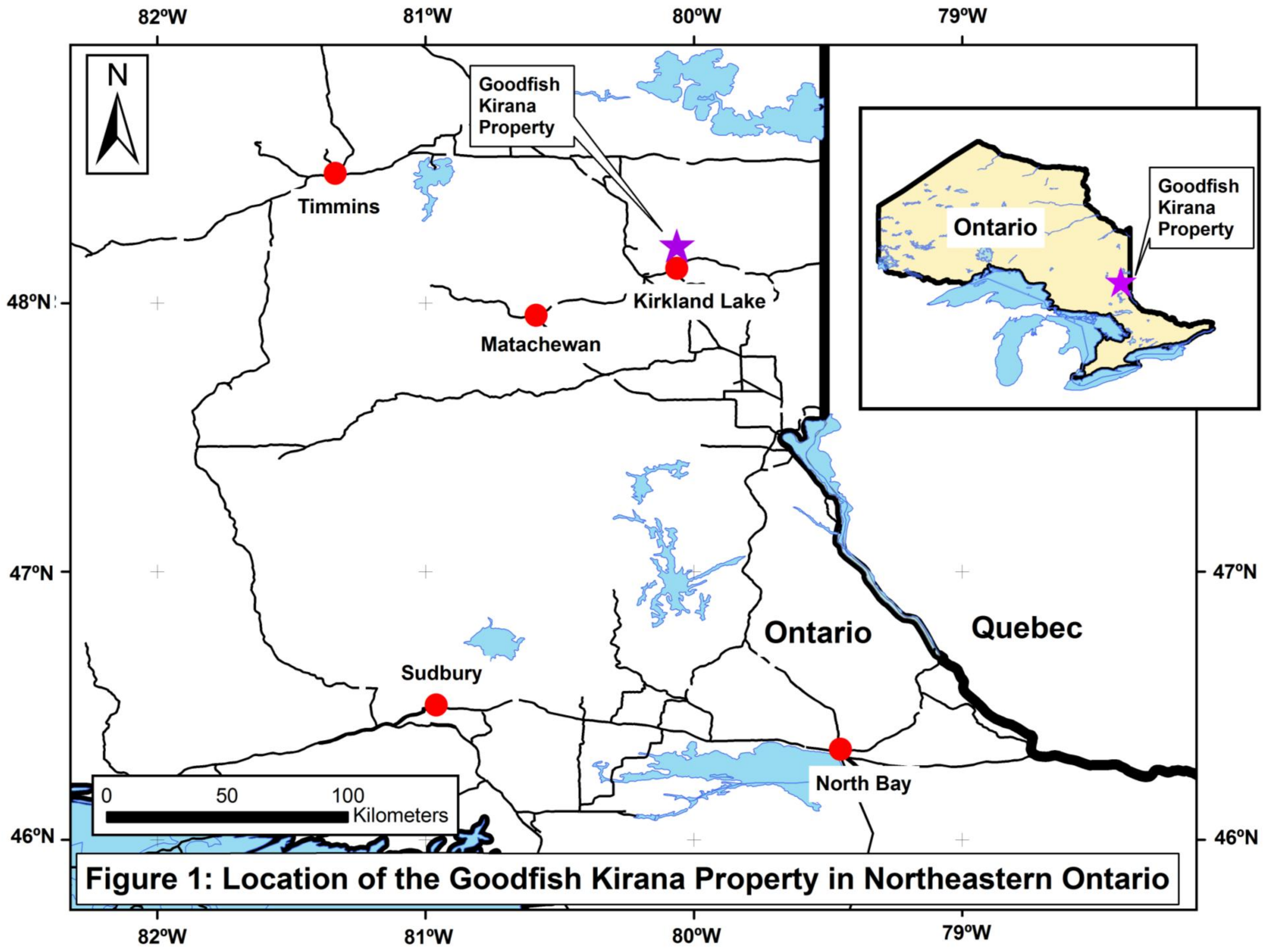

Figure 1: Location of the Goodfish Kirana Property in Northeastern Ontario

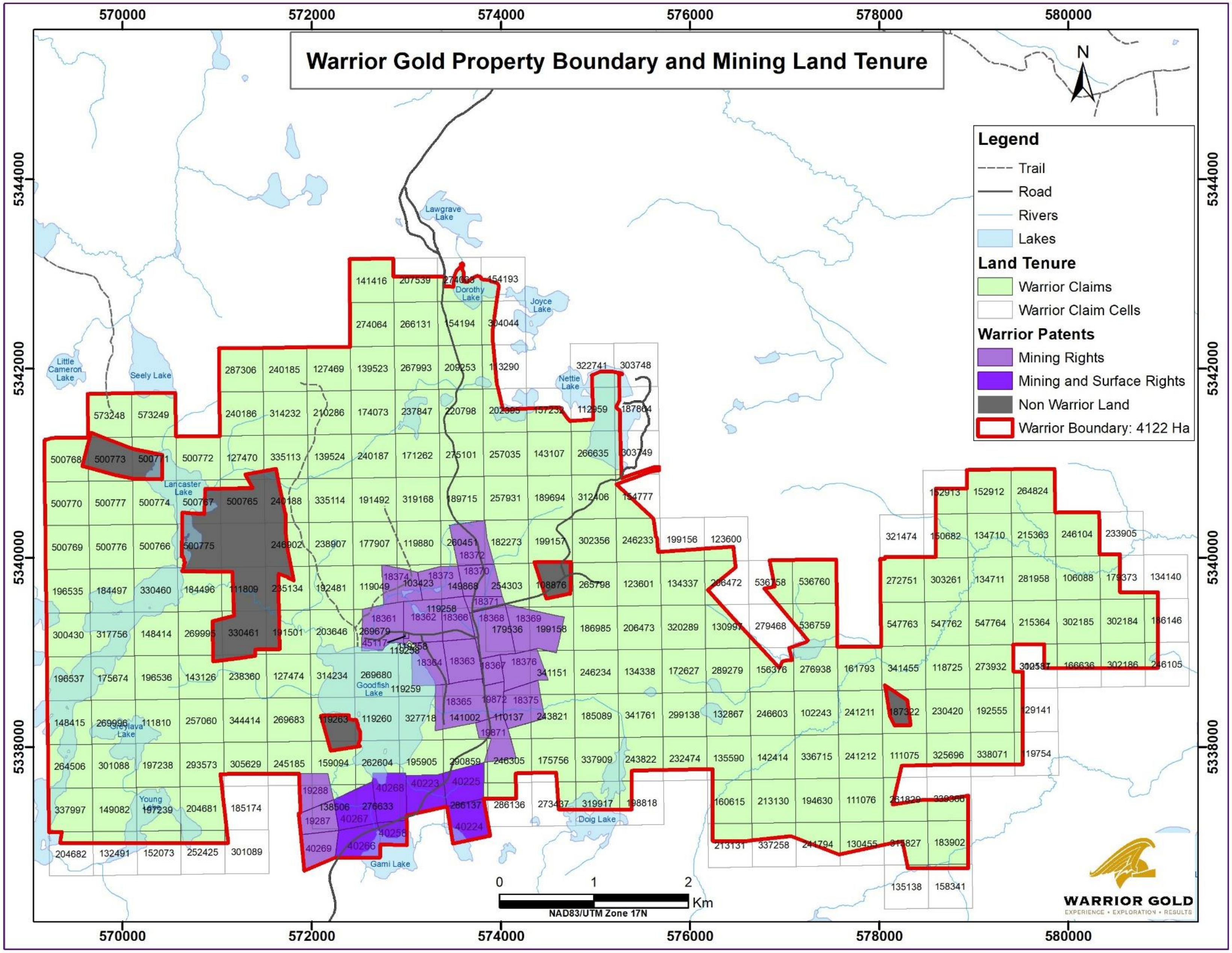

Figure 2: Mining Claim Cells and Patents Comprising the Goodfish-Kirana Property (see also Map 1)

Table 1: Mining Claim Cells and Patents Comprising the Goodfish-Kirana Property

Tenure ID	Tenure Type	Status/ Disposition	Anniversary Date	Holder (100%)	Township
PAT-18361	Patent	MR	N/A	Champagne Resources	Bernhardt
PAT-18362	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18363	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18364	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18365	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18366	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18367	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18368	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18369	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18370	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18371	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18372	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18373	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18374	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18375	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-18376	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-19287	Patent	MR	N/A	Champagne Resources	Teck
PAT-19288	Patent	MR	N/A	Champagne Resources	Teck
PAT-19871	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-19872	Patent	MR	N/A	Champagne Resources	Morrisette
PAT-40223	Patent	MSR	N/A	Champagne Resources	Lebel
PAT-40224	Patent	MSR	N/A	Champagne Resources	Lebel
PAT-40225	Patent	MSR	N/A	Champagne Resources	Lebel
PAT-40258	Patent	MSR	N/A	Champagne Resources	Teck
PAT-40266	Patent	MSR	N/A	Champagne Resources	Teck
PAT-40267	Patent	MSR	N/A	Champagne Resources	Teck
PAT-40268	Patent	MSR	N/A	Champagne Resources	Teck
PAT-40269	Patent	MR	N/A	Champagne Resources	Teck
PAT-45117	Patent	MR	N/A	Champagne Resources	Morrisette
102243	SCMC	Active	2024-03-01	Champagne Resources	Morrisette
103423	SCMC	Active	2022-04-25	Champagne Resources	Bernhardt,Morrisette
106088	SCMC	Active	2021-12-10	Champagne Resources	Morrisette
108876	SCMC	Active	2021-10-15	Champagne Resources	Morrisette
110137	SCMC	Active	2022-05-01	Champagne Resources	Morrisette
111075	SCMC	Active	2021-08-10	Champagne Resources	Lebel,Morrisette
111076	SCMC	Active	2021-08-10	Champagne Resources	Lebel
111809	SCMC	Active	2021-08-08	Champagne Resources	Bernhardt
111810	SCMC	Active	2021-08-08	Champagne Resources	Bernhardt
112959	SCMC	Active	2021-10-15	Champagne Resources	Morrisette
113290	SCMC	Active	2022-02-18	Champagne Resources	Morrisette
118725	SCMC	Active	2021-06-27	Champagne Resources	Morrisette
119049	SCMC	Active	2021-11-16	Champagne Resources	Bernhardt
119258	SCMC	Active	2022-04-16	Champagne Resources	Bernhardt,Morrisette
119259	SCMC	Active	2022-04-16	Champagne Resources	Bernhardt,Morrisette
119260	SCMC	Active	2022-08-12	Champagne Resources	Bernhardt
119263	SCMC	Active	2022-08-12	Champagne Resources	Bernhardt
119754	BCMC	Active	2021-12-08	Champagne Resources	Lebel,Morrisette
119880	SCMC	Active	2022-07-24	Champagne Resources	Bernhardt,Morrisette
123600	SCMC	Active	2021-10-11	Champagne Resources	Morrisette
123601	SCMC	Active	2021-10-15	Champagne Resources	Morrisette
127469	SCMC	Active	2022-02-18	Champagne Resources	Bernhardt
127470	SCMC	Active	2022-02-18	Champagne Resources	Bernhardt
127474	SCMC	Active	2022-08-12	Champagne Resources	Bernhardt
129141	BCMC	Active	2021-12-08	Champagne Resources	Morrisette
130455	SCMC	Active	2021-08-10	Champagne Resources	Lebel

130997	SCMC	Active	2021-06-20	Champagne Resources	Morrisette
132491	BCMC	Active	2021-08-16	Champagne Resources	Teck
132867	SCMC	Active	2021-10-31	Champagne Resources	Morrisette
134140	BCMC	Active	2021-12-10	Champagne Resources	Morrisette
134337	SCMC	Active	2021-10-11	Champagne Resources	Morrisette
134338	SCMC	Active	2022-05-01	Champagne Resources	Morrisette
134710	SCMC	Active	2021-12-10	Champagne Resources	Morrisette
134711	SCMC	Active	2021-12-10	Champagne Resources	Morrisette
135138	BCMC	Active	2022-04-18	Champagne Resources	Lebel
135590	BCMC	Active	2021-10-31	Champagne Resources	Lebel,Morrisette
138506	SCMC	Active	2022-04-04	Champagne Resources	Teck
139523	SCMC	Active	2022-02-18	Champagne Resources	Bernhardt
139524	SCMC	Active	2022-02-18	Champagne Resources	Bernhardt
141002	SCMC	Active	2022-08-03	Champagne Resources	Morrisette
141416	SCMC	Active	2022-02-18	Champagne Resources	Bernhardt
142414	SCMC	Active	2021-08-10	Champagne Resources	Lebel,Morrisette
143107	SCMC	Active	2021-10-15	Champagne Resources	Morrisette
143126	SCMC	Active	2021-08-08	Champagne Resources	Bernhardt
148414	SCMC	Active	2021-08-08	Champagne Resources	Bernhardt
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149082	SCMC	Active	2021-08-16	Champagne Resources	Teck
149868	SCMC	Active	2022-04-25	Champagne Resources	Morrisette
150682	BCMC	Active	2021-12-10	Champagne Resources	Morrisette
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152912	SCMC	Active	2021-12-10	Champagne Resources	Morrisette
152913	BCMC	Active	2021-12-10	Champagne Resources	Morrisette
154193	BCMC	Active	2022-02-18	Champagne Resources	Morrisette
154194	SCMC	Active	2022-02-18	Champagne Resources	Morrisette
154777	SCMC	Active	2021-10-15	Champagne Resources	Morrisette
156376	BCMC	Active	2021-06-20	Champagne Resources	Morrisette
157232	SCMC	Active	2021-10-15	Champagne Resources	Morrisette
158341	BCMC	Active	2022-04-18	Champagne Resources	Lebel
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160615	BCMC	Active	2021-08-10	Champagne Resources	Lebel
161793	BCMC	Active	2021-03-20	Champagne Resources	Morrisette
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233905	BCMC	Active	2021-12-10	Champagne Resources	Morrisette
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237847	SCMC	Active	2022-02-18	Champagne Resources	Bernhardt,Morrisette
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241794	SCMC	Active	2021-08-10	Champagne Resources	Lebel
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302187	BCMC	Active	2021-12-10	Champagne Resources	Morrisette
302356	SCMC	Active	2021-10-15	Champagne Resources	Morrisette
303261	SCMC	Active	2021-12-10	Champagne Resources	Morrisette
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303749	SCMC	Active	2021-10-15	Champagne Resources	Morrisette
304044	SCMC	Active	2022-02-18	Champagne Resources	Morrisette
305629	BCMC	Active	2022-04-10	Champagne Resources	Bernhardt,Teck
310531	BCMC	Active	2021-06-27	Champagne Resources	Morrisette
312406	SCMC	Active	2021-10-15	Champagne Resources	Morrisette
314232	SCMC	Active	2022-02-18	Champagne Resources	Bernhardt
314234	SCMC	Active	2022-08-12	Champagne Resources	Bernhardt
315827	SCMC	Active	2021-08-10	Champagne Resources	Lebel
317756	SCMC	Active	2021-08-08	Champagne Resources	Bernhardt
319168	SCMC	Active	2022-07-24	Champagne Resources	Bernhardt,Morrisette
319917	BCMC	Active	2021-08-11	Champagne Resources	Lebel
320289	SCMC	Active	2021-10-11	Champagne Resources	Morrisette
321474	BCMC	Active	2021-12-10	Champagne Resources	Morrisette
322741	BCMC	Active	2021-10-15	Champagne Resources	Morrisette
325696	SCMC	Active	2021-12-08	Champagne Resources	Lebel,Morrisette
327718	SCMC	Active	2022-08-03	Champagne Resources	Bernhardt,Morrisette
330460	SCMC	Active	2021-08-08	Champagne Resources	Bernhardt
330461	SCMC	Active	2022-08-08	Champagne Resources	Bernhardt
335113	SCMC	Active	2022-02-18	Champagne Resources	Bernhardt
335114	SCMC	Active	2021-07-24	Champagne Resources	Bernhardt
336715	SCMC	Active	2021-08-10	Champagne Resources	Lebel,Morrisette
337258	BCMC	Active	2021-08-10	Champagne Resources	Lebel

337909	SCMC	Active	2022-05-01	Champagne Resources	Lebel,Morrisette
337997	SCMC	Active	2021-08-16	Champagne Resources	Teck
338071	BCMC	Active	2021-12-08	Champagne Resources	Lebel,Morrisette
339366	BCMC	Active	2022-04-18	Champagne Resources	Lebel
341151	SCMC	Active	2022-05-01	Champagne Resources	Morrisette
341455	SCMC	Active	2021-06-27	Champagne Resources	Morrisette
341761	SCMC	Active	2022-05-01	Champagne Resources	Morrisette
344414	SCMC	Active	2022-04-10	Champagne Resources	Bernhardt
500765	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500766	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500767	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500768	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500769	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500770	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500771	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500772	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500773	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500774	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500775	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500776	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
500777	SCMC	Active	2020-04-10	Champagne Resources	Bernhardt
536758	SCMC	Active	2021-12-14	Champagne Resources	Morrisette
536759	SCMC	Active	2021-12-14	Champagne Resources	Morrisette
536760	SCMC	Active	2021-12-14	Champagne Resources	Morrisette
547762	SCMC	Active	2021-04-07	Champagne Resources	Morrisette
547763	SCMC	Active	2021-04-07	Champagne Resources	Morrisette
547764	SCMC	Active	2021-04-07	Champagne Resources	Morrisette
573248	SCMC	Active	2022-01-30	Champagne Resources	Bernhardt
573249	SCMC	Active	2022-01-30	Champagne Resources	Bernhardt

*MR: Mining Rights; MSR: Mining and Surface Rights; SCMC: Single Cell Mining Claim;BCMC: Boundary Cell Mining Claim

3.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

There is excellent access to the majority of the Goodfish Kirana property via a well maintained, all-weather gravel road that trends north from Kirkland Lake to the local airport, and then via a series of bush roads. These latter roads vary from being passable by truck or ATV to only being accessible by foot.

The Property is 5 km north of Kirkland Lake and 100 km east-southeast of Timmins (Fig. 1). Both towns have a long mining history and are home to personnel with the skills to work in the mining industry. The cities of Sudbury and North Bay are also within a four-hour drive of the Property. Water is abundant in the region, and the Property contains an all-weather gravel road and other trails/roads that could be upgraded as necessary. Suitable locations for constructing mineral processing facilities are abundant on the Property. There is a power line on part of the Property, and it would not be difficult to construct a power line to any point on the Property. Prior to mining, the relevant claims must be converted to one or more mining lease(s).

The climate of the project area is continental in nature, with cold winters (-10 to -35°C) and warm summers (+10 to +35°C). Seasonal variations affect exploration to some extent (geological mapping cannot be done in the winter, geophysics and drilling are best done at certain times of the year etc.), but the climate would not significantly hamper mining operations.

The Property has gently rolling topography with a maximum relief of approximately 30 m. Elevation varies from 320 to 350 m Above Sea Level. Several significant lakes occur on the Goodfish Kirana property, as do a number of small lakes and several streams (Fig. 2) but in general the Property is dominated by forest and swamp. The forest is a mixture of jackpine, spruce, birch and poplar trees; swampier areas contain small spruce trees and alders. The bulk of the Property is covered by significant (>1 m) overburden, and outcrop density is low. A number of homes and cottages are present on the eastern and northern shores of Goodfish Lake in the southern part of the Property, and adjacent to Nettie Lake (mostly outside the Property) in the northeast part of the Property (Fig. 2; Map 1). The Kirkland Lake airport is situated 1 km south of Nettie Lake; approximately half of the runway is on the Goodfish Kirana property. This airport is not in regular use.

4.0 GEOLOGICAL SETTING AND MINERALIZATION

4.1 Geological Setting

The Goodfish Kirana property occurs within the Western Abitibi Subprovince as defined by Jackson and Fyon (1991). The structural complexity and poor exposure of the subprovince have made comprehensive stratigraphic syntheses difficult. Instead, the district has been divided into a number of "tectonic assemblages", on the basis of similarities in stratigraphy, lithochemistry, age dates and aeromagnetic and airborne EM signatures (Jackson and Fyon, 1991). Since the initial division of the Abitibi greenstone belt into tectonic assemblages, more accurate and more abundant age dates have enabled a simplified and improved delineation of the assemblages to be made (i.e. Ayer et al., 2005a; b). The Property is underlain by the lower unit of the Blake River Assemblage. This unit is 2704 to 2701 Ma in age, and is dominated by tholeiitic mafic volcanic rocks, with lesser felsic volcanic rocks (Ayer et al., 2005b). Minor amounts of Timiskaming assemblage sediments occur in the northern and southeastern tips of the Property (Fig. 3).

Major gold deposits in the Western Abitibi Subprovince are typically proximal to either the Destor Porcupine Break or the Cadillac-Larder Lake Break, or to associated faults. In Kirkland Lake, most deposits are spatially associated with the Kirkland Lake Main Break (Fig. 3). The Property is north of both the Cadillac-Larder Lake Break and the Kirkland Lake Main Break. The extension of the latter passes just south of or possibly just inside the eastern part of the Property (Fig. 3). The Property is also north of the package of rocks that is most prospective for gold deposits (Timiskaming sediments + alkalic intrusions).

Township-scale mapping by the Ontario Geological Survey adds some detail to the story. The Property is underlain mostly by Archean mafic volcanic rocks, but is locally intruded by quartz-feldspar porphyry intrusions, particularly in the Goodfish Lake area (Fig. 4; Rupert and Lovell, 1970). Mafic intrusions occur in the southeastern part of the Property. Minor amounts of intermediate volcanics occur in the northwestern portion of the Property. Timiskaming sediments occur in the southeastern part, and underlie Nettie Lake in the northern part of the Property (Fig. 4).

An alkalic volcanic or intrusive unit is interlayered with these sediments in the southeastern portion (Jackson, 1995; Unit 11a on Figure 4). Ice flow indicators on the Property vary from southeast to immediately west of south (McClenaghan et al., 1995).

4.2 Mineralization

Anomalous gold values have been obtained from a number of locations on the Property (Section 5). Without exception, this mineralization is incompletely described. This is mainly because not enough work has been completed to properly document features such as thickness, orientation and continuity of mineralization. Anomalous gold is typically associated with quartz ± carbonate ± pyrite veins, and shows a tendency to be spatially associated with the interpreted Kirana Break and with a north-trending zone in the Goodfish Block (Fig. 5). As such, gold mineralization on the Property appears to be typical mesothermal style mineralization. The exception is in the St. Pierre area, where anomalous to economic concentrations of silver, zinc, lead and copper locally occur along with gold in the quartz veins.

5.0 PREVIOUS WORK

5.1 Work Prior to Champagne

Champagne has conducted only limited exploration on the Property, so the results of historical exploration are particularly important in evaluation of the Property. The Property has been subjected to intermittent, localized exploration by various companies or individuals since gold was first discovered on the Property in 1912. No historical mineral resource or mineral reserve estimates have been generated from the Property and there has been no historic mineral production from the Property. The following brief review of previous work has been adapted from Setterfield (2018); a complete description of previous work including references is included therein. Northern Gold Mining Inc. had an option on a large block of ground that included approximately 60% of the Property. They explored this property in 2007 and 2008. Their exploration included an airborne magnetic/electromagnetic (VTEM) survey, a large Induced Polarization survey, and 83 diamond drill holes.

The most intensely explored part of the Property occurs east to northeast of Goodfish Lake, where least five shafts were sunk on three different mineralized zones (A to C; Fig. 6). The mineralized system trends north-northeast over a strike length of at least 1,200 m. Mineralization is associated with northeast-trending quartz-carbonate veins with pyrite, specularite, chalcopyrite and local visible gold. These zones have been tested by a number of drill holes from 1937 to 1995, but no recent drilling had been conducted prior to 2018. The best drill results include: 12.65 m @ 16.97 g/t Au in 1990 hole GF90-04 in A Zone; 3.20 m @ 16.46 g/t Au in 1988 hole KL-88-8 in B Zone; and 0.61 m @ 99 g/t Au in hole L2, drilled in 1941 on the C Zone.

The Kirana Break has historically been defined in the south-central part of the Property. Six exploration shafts (Kirana No. 1 to 5 and Fidelity) occur proximal to the break in the south-central part of the Property (Fig. 7). The break is interpreted by GeoVector to cross the bulk of the Property in an east-northeast direction (Figs. 3 and 5).

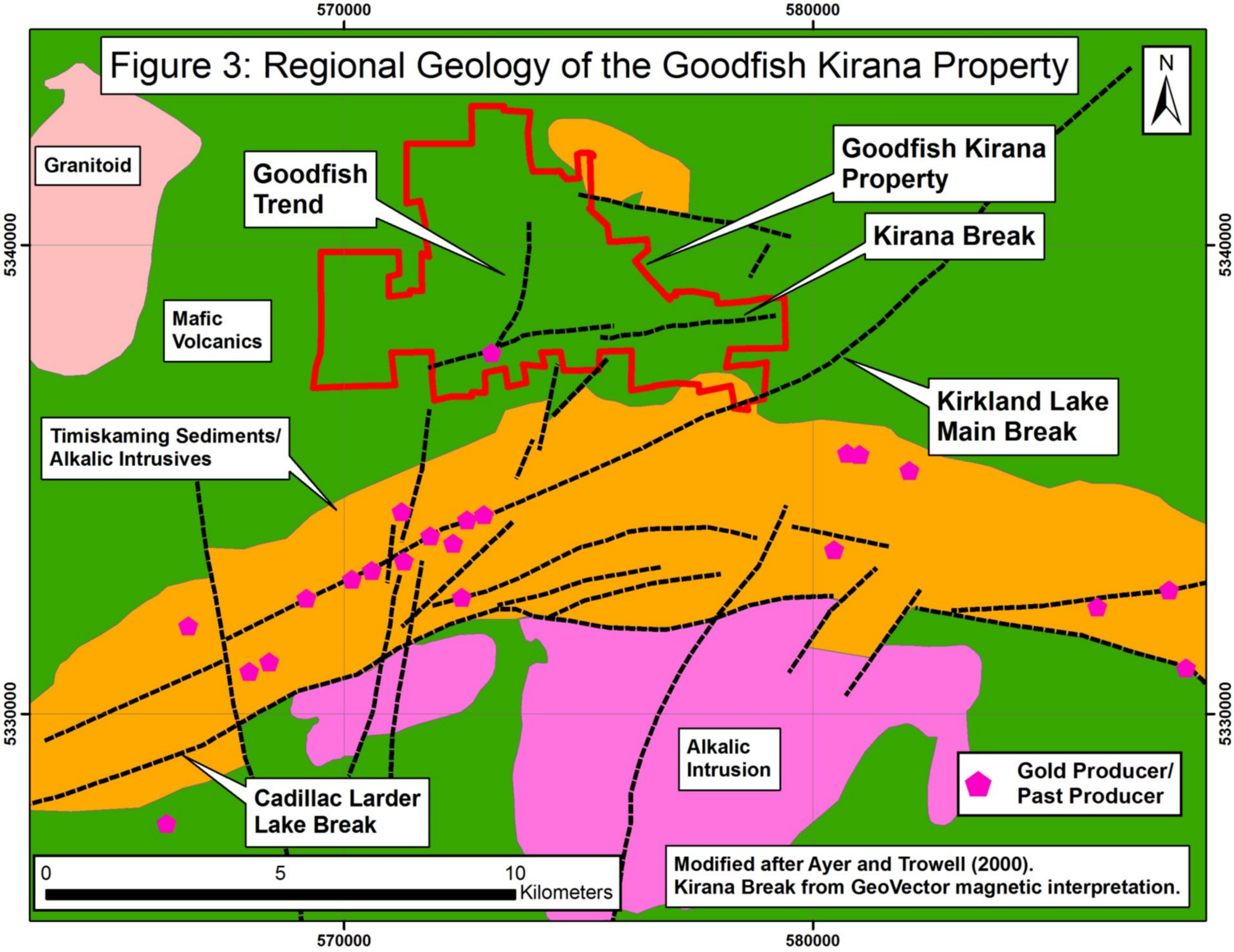

Figure 3: Regional Geology of the Goodfish Kirana Property

Modified after Ayer and Trowell (2000).
Kirana Break from GeoVector magnetic interpretation.

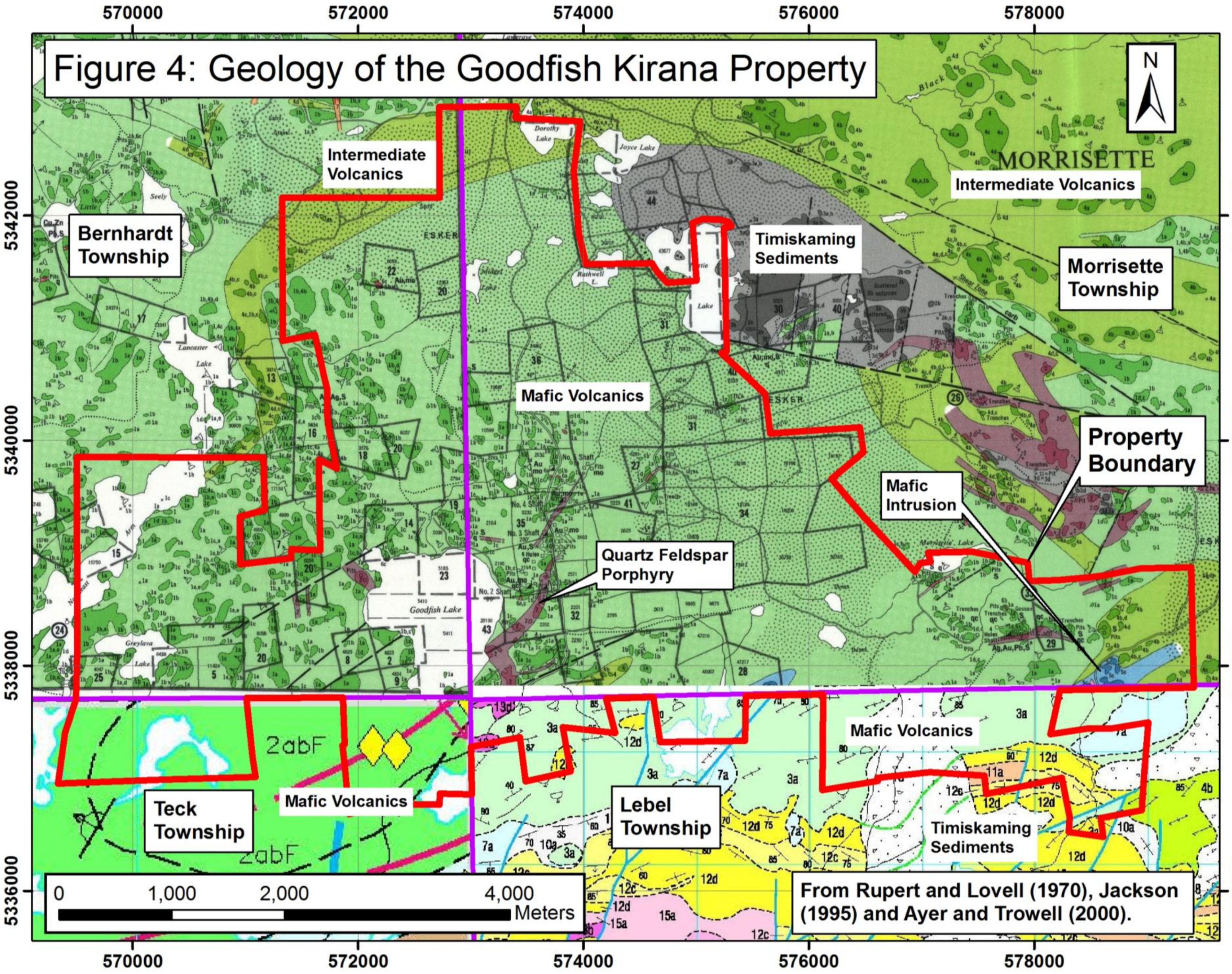

Figure 4: Geology of the Goodfish Kirana Property

From Rupert and Lovell (1970), Jackson (1995) and Ayer and Trowell (2000).

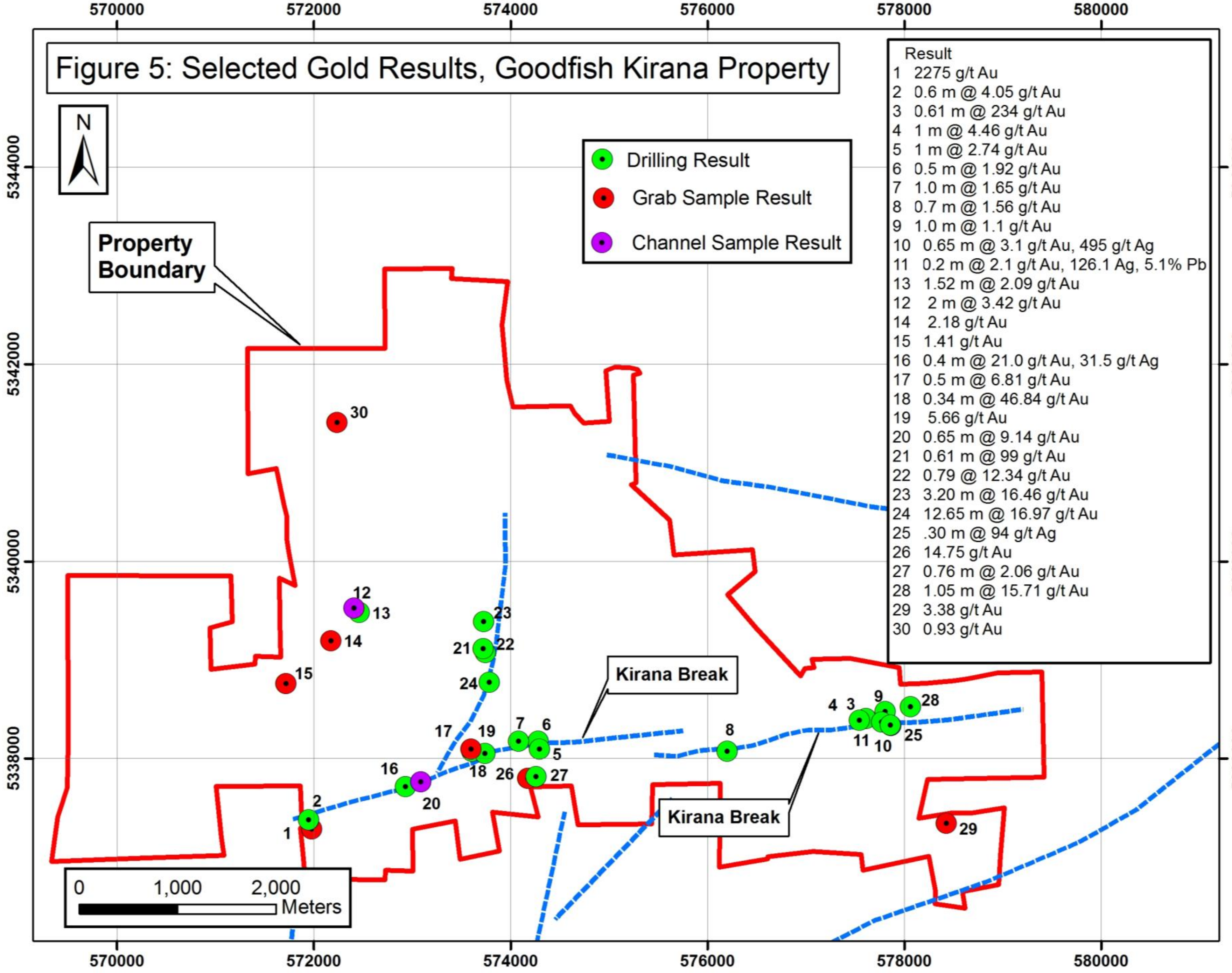

Figure 5: Selected Gold Results, Goodfish Kirana Property

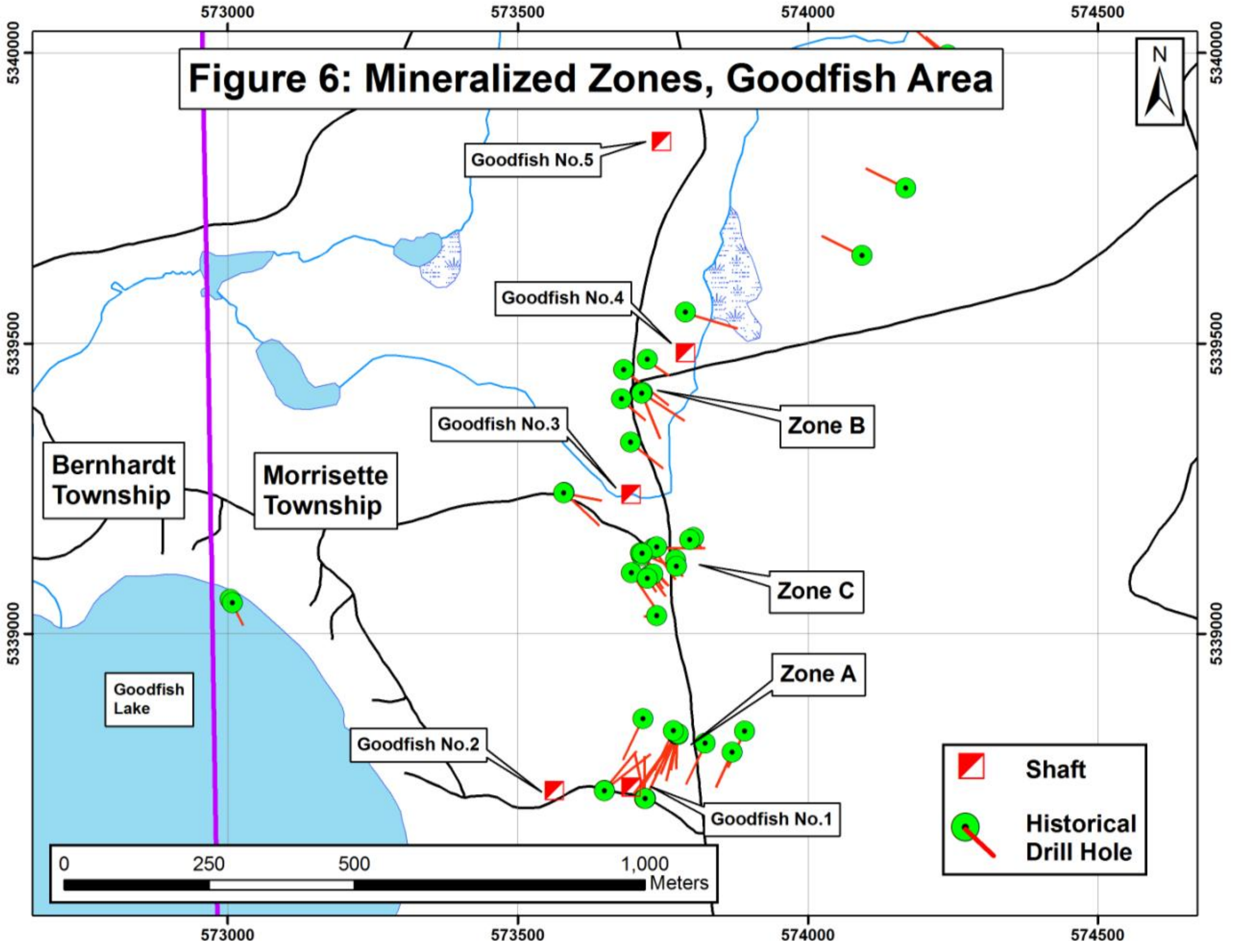

Figure 6: Mineralized Zones, Goodfish Area

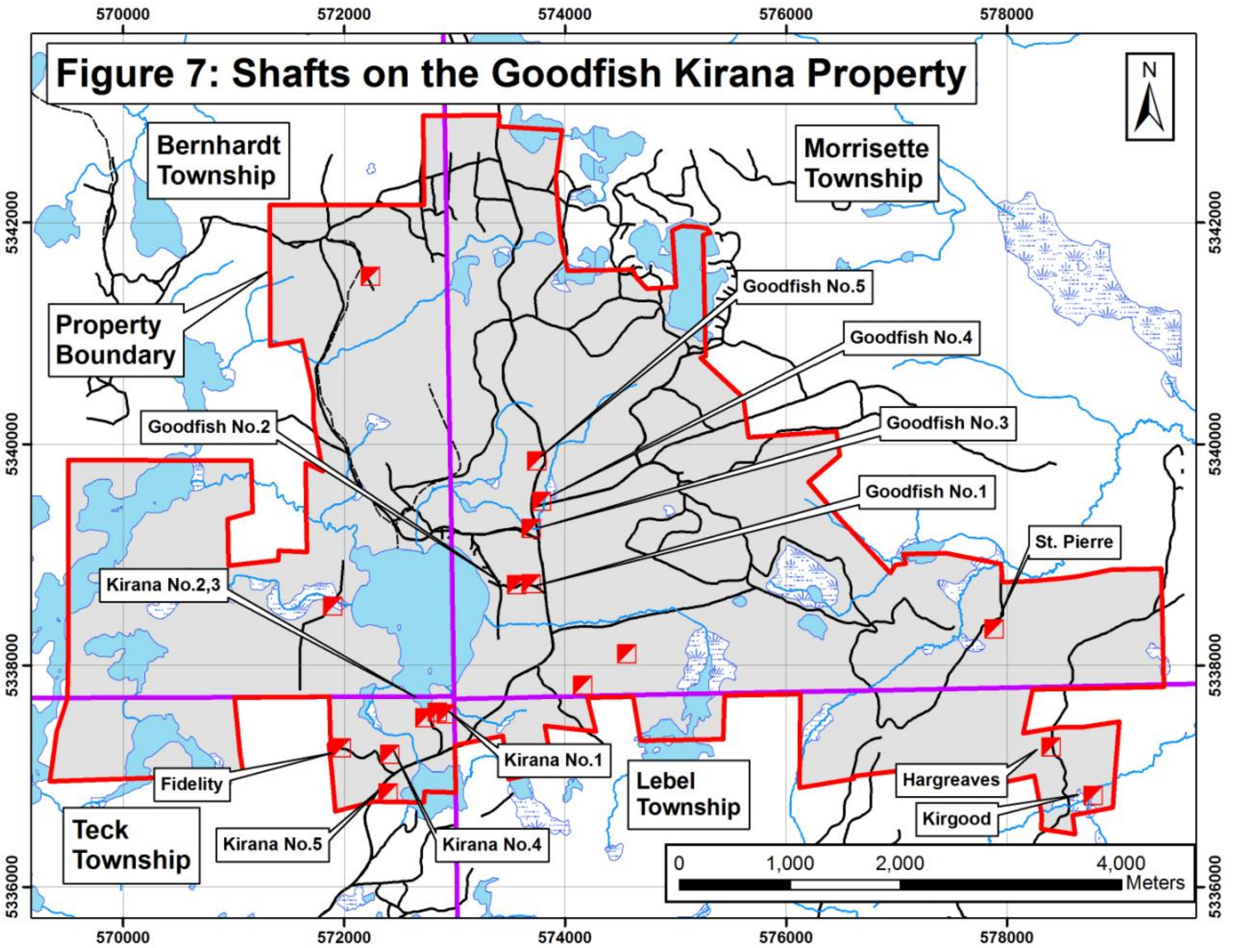

Figure 7: Shafts on the Goodfish Kirana Property

Northern Gold conducted stripping and grab/channel sampling near the Fidelity Shaft in 2007 and 2008. Their best results were channel samples of 1 m @ 40.56 g/t Au and 0.3 m @ 2274.5 g/t Au, as well as several grab samples in excess of 500 g/t Au. They noted that coarse gold was locally present, and that assays showed a clear nugget effect. Accordingly they then collected eight one tonne bulk samples, which had a weighted average of 1.41 g/t Au. Northern Gold drilled 31 holes on the Fidelity Vein in 2008. The best intersection was 0.6 m @ 4.05 g/t Au. Most holes did not encounter mineralization.

The 1987 drill hole KIR-3 intersected 0.4 m @ 21.0 g/t Au and 31.5 g/t Ag on the Kirana Break, 1 km east-northeast of the Fidelity area and immediately south of the Property, and hole KIR-5 intersected 0.5 m @ 6.81 g/t Au on the Kirana Break a further 800 m east. Grab samples with results from 0.005 to 22.10 g/t Au and channel samples as high as 0.65 m @ 9.14 g/t Au were obtained between holes KIR-3 and KIR-5. Hole MS-1, drilled in 2003, intersected a 0.34 m interval which ran 46.84 g/t Au; this was 150 m east of KIR-5.

The Kirana Break in the east-central part of the Property contains two areas of interest, the Link Gold Zone and the St. Pierre shaft area. The Link Gold Zone is interpreted to occur along a splay off the Kirana Break. The 1996 hole ML96-3 intersected several areas of quartz veinlets in diabase, with best results as follows: 4.3' @ 1.32 g/t Au, 5' @ 3.84 g/t Au and 2' @ 234 g/t Au (No. 3 on Figure 5). Northern Gold drilled holes K-08-21 to K-08-23 into the Link Gold Zone in 2008. Hole K-08-21 intersected 2.0 m @ 3.26 g/t Au, but the other two holes did not intersect significant gold grades.

A series of northerly-trending quartz/base metal veins occurs along the Kirana Break 600 m east of the Link Zone. The St. Pierre shaft (Fig. 7) was sunk on the #1 Vein to a depth of 61’, and cross-cutting was done on the 50’ level. A number of 2’ long samples were taken down the shaft; the best results were 39.78 g/t Au, 981 g/t Ag, 26.25% Pb and 0.52% Cu (different samples). By 1930, Mallard Mines had defined approximately 12 short strike length quartz veins, the most important of which were the 010° trending #1 vein and the more common 340° trending veins, including #2. Macassa Mines drilled four holes proximal to the shaft in 1955. The best intersections were 1’ @ 94 g/t Ag, 0.25% Cu and 0.14% Pb on #1 Vein and 0.75’ @ 96 g/t Ag on #2 Vein. Northern Gold's grab samples from the dump had high values of 11.16 g/t Au, 2280 g/t Ag, 5.71% Cu, 25.53% Pb and 5.25% Zn (different samples). Their best channel sample from the immediate area was 0.65 m @ 3.1 g/t Au, 495 g/t Ag, 0.35% Cu and 0.2% Pb. Northern Gold drilled two holes in the area of the St. Pierre shaft in 2008, targeting the mineralized veins. The best result was 0.2 m @ 2.1 g/t Au, 126.1 g/t Ag, 0.32% Cu, 0.38% Zn and 5.1% Pb.

Medici Mineral Corp. surveyed a large portion of the eastern part of the Property with Induced Polarization in 1997. They interpreted a 1.6 km long by 150 m wide "potential sulphide/alteration system" which includes the Link Gold Zone and the St. Pierre Shaft. This zone is open to the east for an additional 430 m strike length on the Property. Medici drilled two holes in this system in 1999; one hole 200 m east of the St. Pierre shaft intersected 1.05 m @ 15.71 g/t Au, and had Cu values as high as 0.57%.

An area near the northwest corner of Goodfish Lake contains two 040° trending, pyrite-iron carbonate bearing shear zones. Chip sampling from one shear zone returned 2 m @ 3.42 g/t Au (No. 12 on Figure 5), and the other one produced 0.6 m @ 1.61 g/t Au. These structures are semi-coincident with a regional structure deduced from magnetic data by GeoVector, and with a chargeability anomaly identified during an Induced Polarization Survey.

The southeastern part of the Property contains a mixture of mafic volcanic rocks and Timiskaming sediments. Two exploration shafts were sunk in mafic volcanics from 1928 to 1930; the east-trending Hargreaves Fault is interpreted by previous workers to control mineralization in this area. Grab samples with a highest value of 3.38 g/t Au were obtained from the Hargreaves shaft area (Fig. 7). Limited drilling has been performed, and the Timiskaming sediments do not appear to have been investigated to any great extent.

5.2 Work Conducted by Champagne

Champagne has undertaken a number of initiatives to make use of historical information pertaining to the Property, and to generate their own initial data: i) GeoVector Management Inc. (GeoVector) undertook a compilation of previous work on the Property and reprocessed regional airborne magnetic data from the Ontario Geological Survey (Ontario Geological Survey, 2003) and Northern Gold VTEM data (Acorn et al., 2008; Madhill, 2009) and IP data; ii) Orix Geoscience Inc. (Orix) used the GeoVector database and additional information to produce two and three dimensional interpretations of the Property; iii) a property-wide LiDAR survey was flown; iv) Ronacher McKenzie Geoscience reprocessed a portion of the 2008 Northern Gold IP data; v) Champagne personnel examined and sampled core drilled by Northern Gold on the Property; and vi) a prospecting program was conducted by Bjorkman Prospecting and overseen by GeoVector.

A LiDAR (Light Detection and Ranging) survey was completed over the Property by KBM Resources Group of Thunder Bay in 2015. Deliverables included a Bare Earth Digital Elevation Model, a mosaic single-image orthophoto covering the entire property, and original LiDAR point cloud data. In addition to its obvious logistical uses as an excellent airphoto (Fig. 8), the LiDAR data is useful for deducing the location of structures which may have controlled the location of mineralized fluids and thus might be loci for metal deposition. These structures (including the Kirana Break) are obvious targets for prospecting.

Champagne conducted a relogging program of 42 selected Northern Gold historic drill holes in 2016 (Neelands, 2017). Most of the holes are along the Kirana Break and in the Fidelity area. They sampled/resampled 31 of these holes, and analyzed core from a further six holes that had been sampled by Northern Gold but not analyzed.

A prospecting program was conducted by Bjorkman Prospecting in October, 2016, planned and overseen by GeoVector (Bjorkman, 2017). The main areas of focus of the program were the Goodfish trend and the western end of the Kirana Break. Seventy-six trenches were found, many of which were overgrown. 190 grab samples were collected, and assayed for gold. Results ranged from below detection to 220.03 g/t Au. Samples with anomalous gold were obtained from three areas: Hargreaves Shaft area in the southeastern part of the Property, the Kirana Break area, and particularly along the Goodfish trend. One sample from the Hargreaves Shaft ran 1.212 g/t Au; several samples from the Kirana area were over 1 g/t Au, with the highest being 8.945. The majority of the samples were collected from the Goodfish trend (Fig. 9). Samples with more than 1 g/t Au were obtained over a 1.2 km strike length, typically from trenches; a number of these had greater than 5 g/t Au. These high grade samples commonly were from quartz-carbonate veins or sheared, silicified mafic volcanics with abundant pyrite. Three samples with >50 g/t Au were collected; the highest value of 220.03 g/t Au came from a quartz-carbonate vein with fine-grained pyrite.

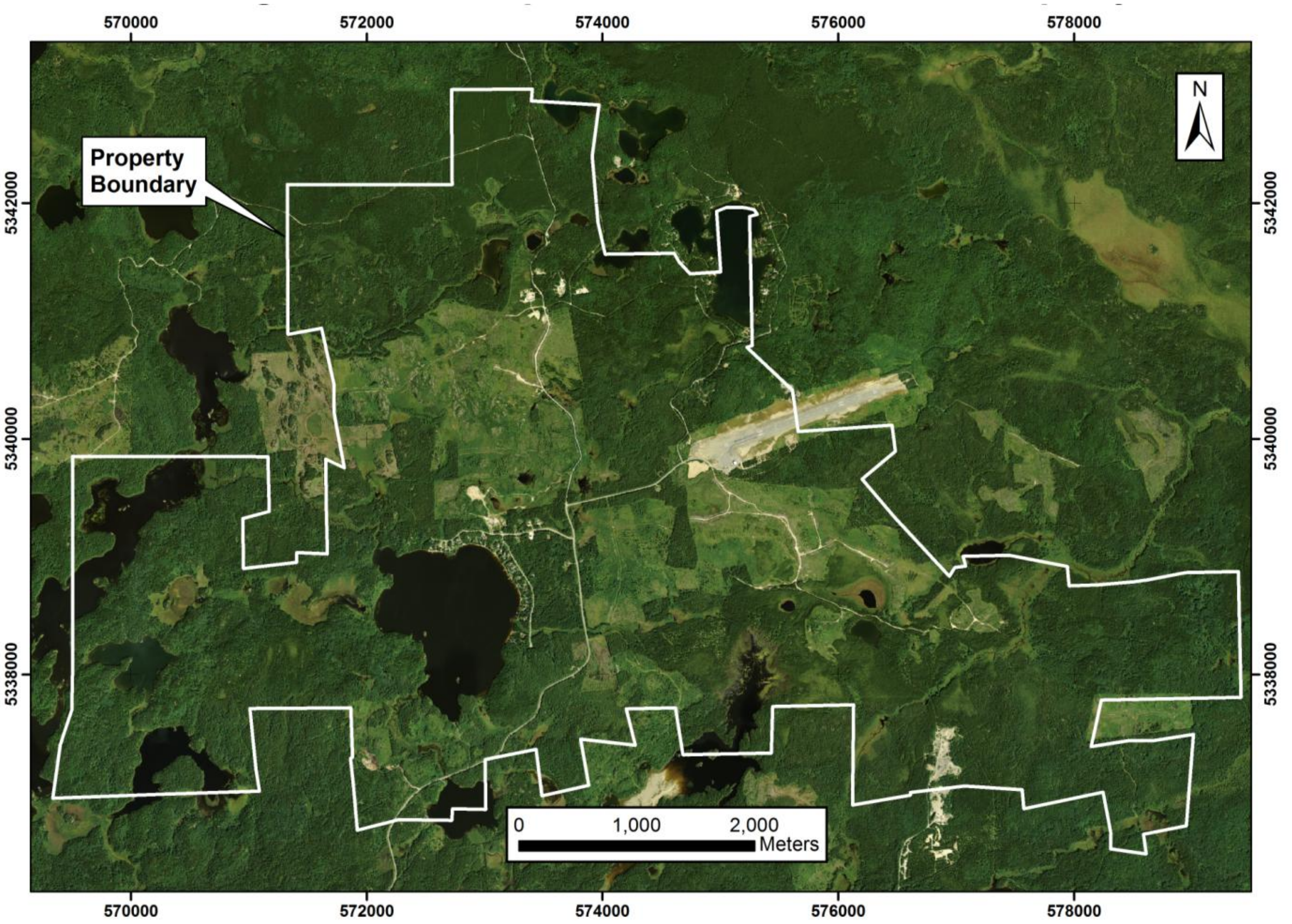

Figure 8: Orthophoto Over the Goodfish Kirana Property as it Existed in 2015

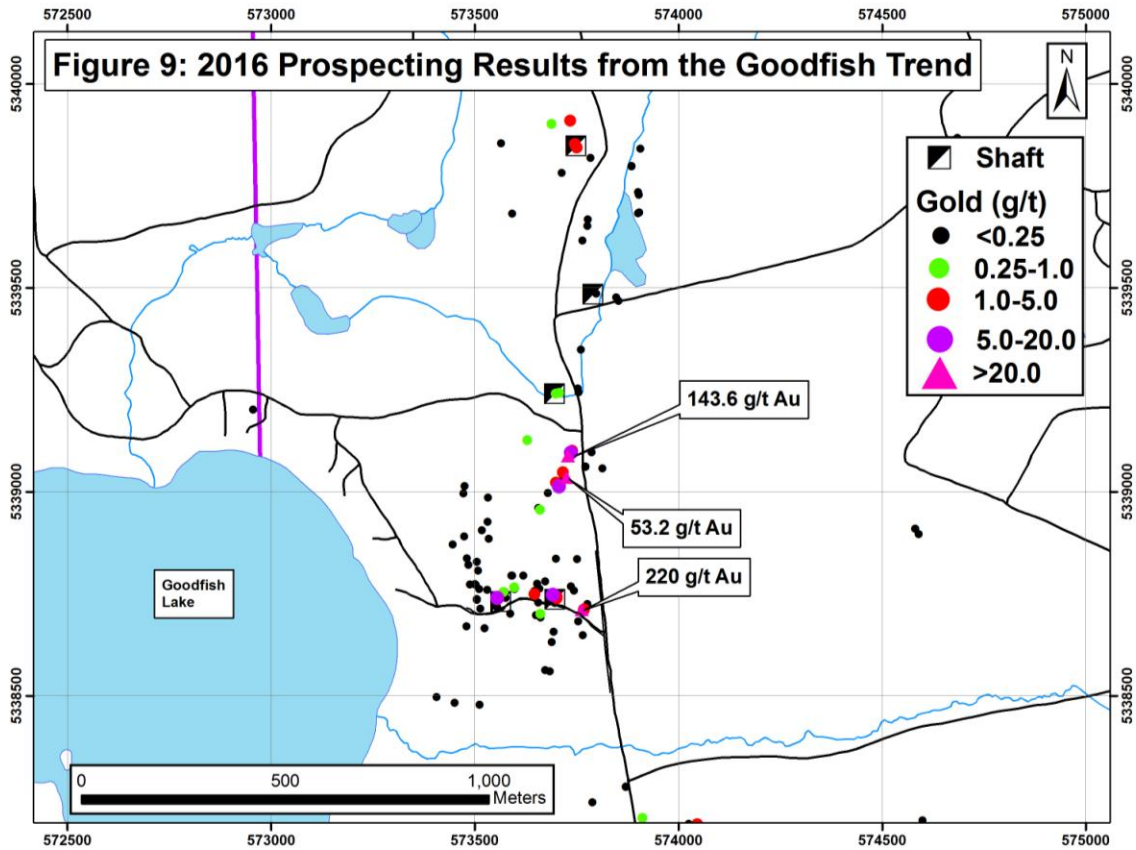
Figure 9: 2016 Prospecting Results from the Goodfish Trend

Champagne drilled three holes (GK-16-01 to 03) in November, 2016, for a total of 560 m (Chadwick and Setterfield, 2018; Fig. 10). The holes were drilled approximately 400 m west-northwest of the St. Pierre shaft, partially to satisfy a commitment made to Terry Link, the vendor of that particular claim block. The program included two holes (GK-16-01 and 03) which tested the north-dipping Kirana Break; the third (GK-16-02) tested a northwest-trending chargeability anomaly. This anomaly was interpreted to coincide with a pyritic zone that had been trenched by Northern Gold. Hole GK-16-01intersected 1.5 m @ 1.35 g/t Au associated with a quartz vein in basalt, and 0.9 m @ 1.82 g/t Au associated with a quartz vein cutting a quartz feldspar porphyry; this zone is potentially part of the Kirana Break. Minor anomalous gold was intersected elsewhere in the hole. Hole GK-16-02 intersected minor sulphides with a maximum gold value of 73 ppb. The best intersection in hole GK-16-03 was 1.5 m @ 0.35 g/t Au in sulphide-bearing basalt; several multi-meter zones of low grade but anomalous gold also occur.

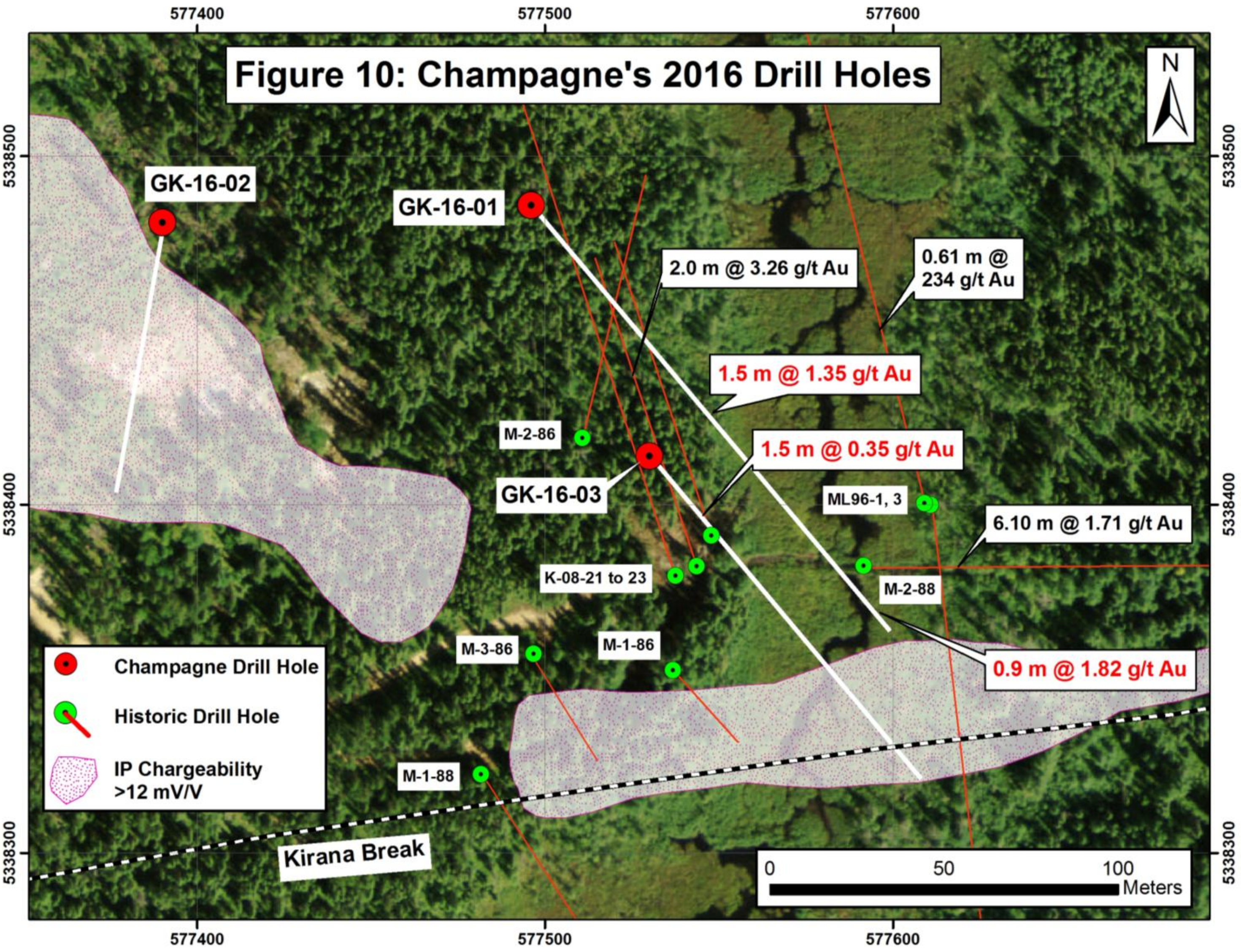
Figure 10: Champagne's 2016 Drill Holes

Five holes (GK18-001 to GK18-005;) were drilled east of Goodfish Lake in early 2018 (Fig. 11). GK18-001 and GK18-002 were drilled to test the 50 m wide Kirana Break intruded by quartz-feldspar porphyry, which was intersected by Northern Gold in 2009 in hole K-08-64, which had a best intersection of 1.65 g/t Au over 1.0 m in sheared basalt. GK18-003 was drilled to test the Goodfish 'A' zone, which was explored to 183 m via a shaft and four levels (150 ft, 300 ft, 450 ft and 600 ft). The zone is at right angles to the Goodfish Splay off the Kirana Break. GK18-004 and GK18-005 were drilled to test Goodfish 'B' Zone (Fig. 6).

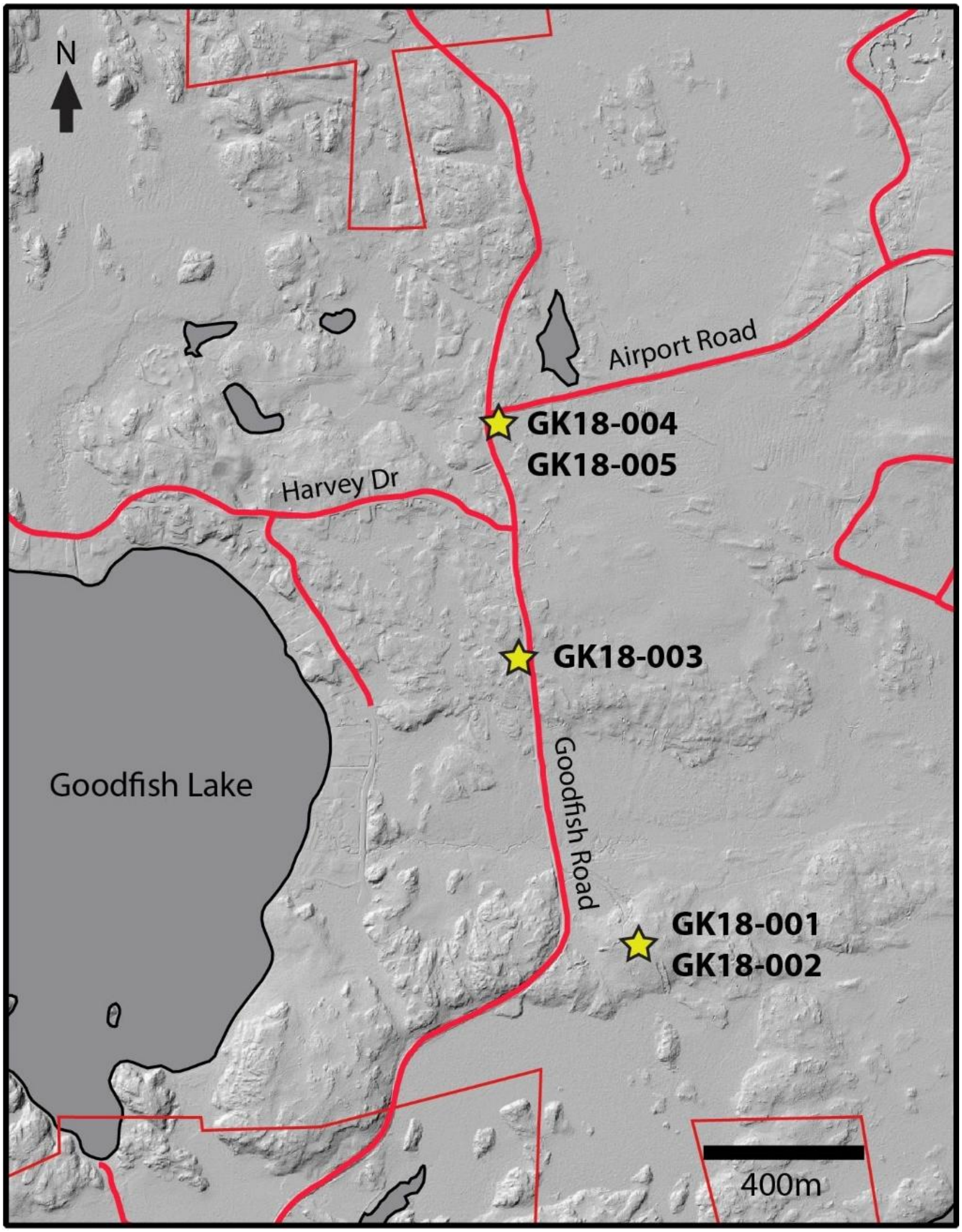

Figure 11: Location of War Eagle's 2018 drill holes GK18-001 to GK18-005.

All five 2018 drill holes intersected anomalous gold (> 1 g/t Au), typically proximal to contacts with sheared quartz feldspar porphyry dikes. Selected drill intersections are shown in Table 2. The best mineralization was in hole GK18-003, which returned 16.0 m @ 0.87 g/t Au, including 10.53 m @ 1.20 g/t Au. This is one of a series of mineralized intersections in the Goodfish A Zone, including the historical intersection of 12.65 m @ 16.97 g/t Au in nearby 1990 hole GF90-04. Short intervals of anomalous gold were encountered in GK18-01 and 02 on the Kirana Break. The highest grades were in GK18-04, with a high of 6.72 g/t Au over 0.50 m in a quartz vein on the edge of a quartz feldspar porphyry dike (Table 2).

Table 2: Selected Intersections from the 2018 Drill Holes

Hole	From (m)	To (m)	Length (m)	Gold (g/t)
GK18-01	66.00	67.00	1.00	1.05
GK18-02	69.00	69.85	0.85	1.46
GK18-03	112.50	128.50	16.00	0.87
including	117.97	128.50	10.53	1.20
GK18-04	6.47	7.89	1.42	2.89
GK18-04	58.30	58.80	0.50	6.72
GK18-05	53.63	54.19	0.56	1.19

6.0 2018 GROUND GEOPHYSICS

6.1 General

Ground geophysics was conducted in two areas in early 2018 (Fig. 12): i) proximal to the mineralized Goodfish zones east of Goodfish Lake (Fig. 6); and ii) in the Deloye area, around three historical shafts near the Kirana Break. A 46.3 line km grid was cut in the Goodfish area on 100 m spaced east-west and north-south lines. Approximately 4.7 line km of grid was established at Deloye, with seven 335° trending, variably 100 or 200 m spaced lines and one tie line (Ploeger and Postman, 2018a; b; Fig. 12). Geophysical work was undertaken by Canadian Exploration Services of Larder Lake, Ontario. Contractor's reports for both surveys are provided in Appendix A.

Magnetic and VLF surveys on the Goodfish grid were completed between March 13 and 30, 2018 (Ploeger and Postman, 2018a). A total of 45.33 line km of magnetics and VLF EM was read. 77,729 magnetometer and GPS readings were collected at one second intervals. 1,813 VLF readings were collected at 25 m intervals. The IP survey consisted of seven east-west lines for a total of 6.68 line km; it took place between March 26 to 30, 2018. It was a dipole-dipole survey at n=10, with an A spacing of 25 m.

A 3D distributed IP survey was conducted on the Deloye grid from November 14 to 18, 2018 (Ploeger and Postman, 2018b). The survey consisted of 78 injection locations that enabled coverage over an area of 1.425 km^2. Twenty receivers were placed in selected locations between the grid lines, and connected to two orthogonal dipoles. 2,740 IP data points were collected, to provide 3D IP information to a maximum depth of 460 m.

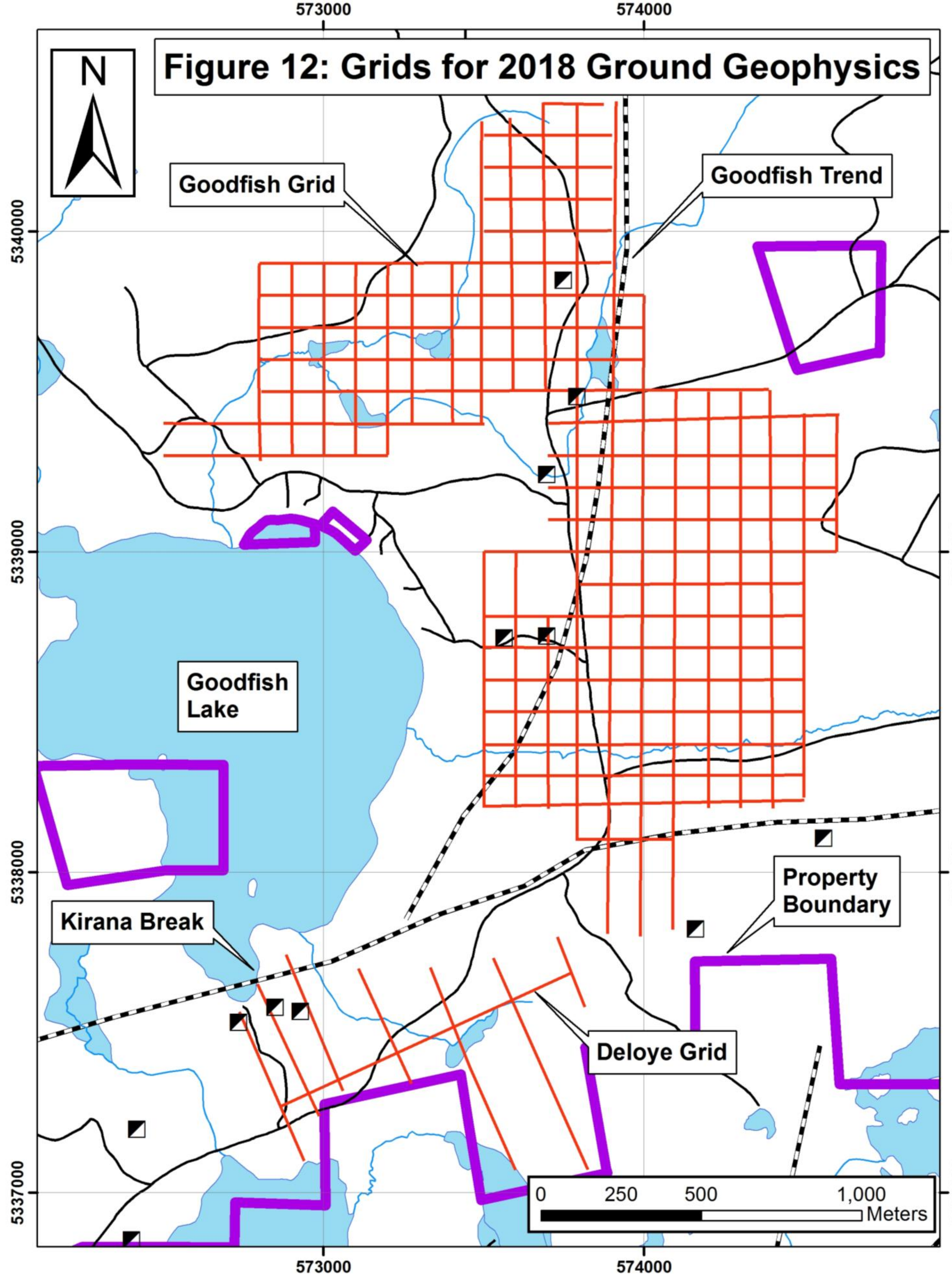
Figure 12: Grids for 2018 Ground Geophysics
N
573000
574000
5340000
5339000
5338000
5337000
Goodfish Grid
Goodfish Trend
Goodfish Lake
Kirana Break
Property Boundary
Deloye Grid
0
250
500
1,000
Meters

6.2 Goodfish Area

The Goodfish survey was reprocessed and interpreted by Bill Doerner of Source One Geophysical (Doerner, 2018; Appendix B). A Total Field Magnetic Intensity (TMI) image shows a high magnetic domain northeast of Goodfish Lake, with possible evidence of folded stratigraphy (Fig. 13). A first vertical derivative of this data is useful for interpreting the structures-northerly trending magnetic features appear to be offset by northwest trending lineaments (Fig. 14). Axes of shallow conductors as shown by VLF data are generally north trending (Fig. 15). A composite structural interpretation is shown in Figure 16.

The chargeability data from the IP survey shows several highs; Figure 17 shows a calculated chargeability plan (depth slice) at 100 m depth. This plan was combined with a structural interpretation to produce drill potential drill targets, shown in Figure 18 (Doerner, 2018). Unfortunately the amount of culture (buildings) close to the east and northeast edges of Goodfish Lake prevented the IP survey from covering the full extent of the grid (compare Fig. 17 with Fig. 13), so not all of the prospective ground was covered by the IP survey.

6.3 Deloye Area

Inversion of the data collected allows for three dimensional models of chargeability and resistivity to be created, and for horizontal images of the data (depth slices) to be generated at various levels. A depth slice of chargeability at 25 m depth shows anomalies semi-coincident with the Deloye shafts (i.e. known mineralization) and also strung out more or less along the trace of the Kirana Break to the east-northeast (Fig. 19). These anomalies correspond to moderate resistivity highs (Fig. 20) and have not been tested by drilling.

Ploeger and Postman (2018b) suggested six areas for follow-up work, all moderate to strong chargeability anomalies (Fig. 21). Two of these, A and B, are associated with known showings, and could potentially be trenched. Targets 1 and 3 are strong chargeability anomalies that may be associated with the Kirana Break, and targets 2 and 4 are moderate to strong chargeability anomalies away from the break.

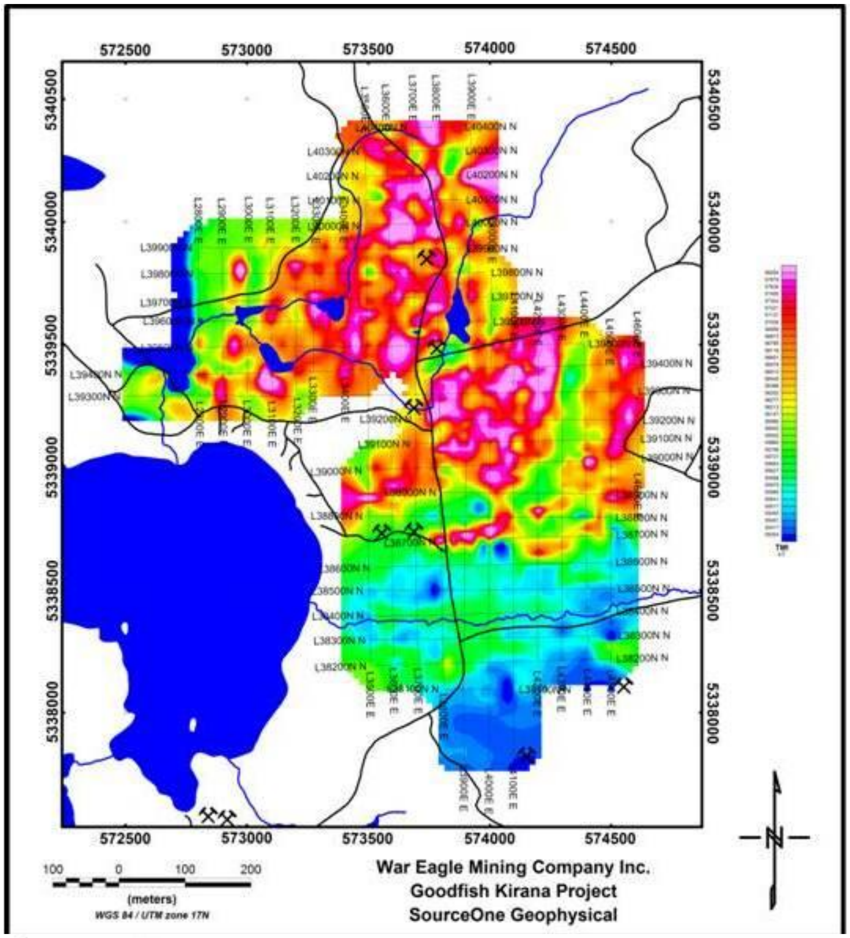

Figure 13: Total Magnetic Intensity Image from CXS 2018 Ground Magnetics, Goodfish Grid (from Doerner, 2018)

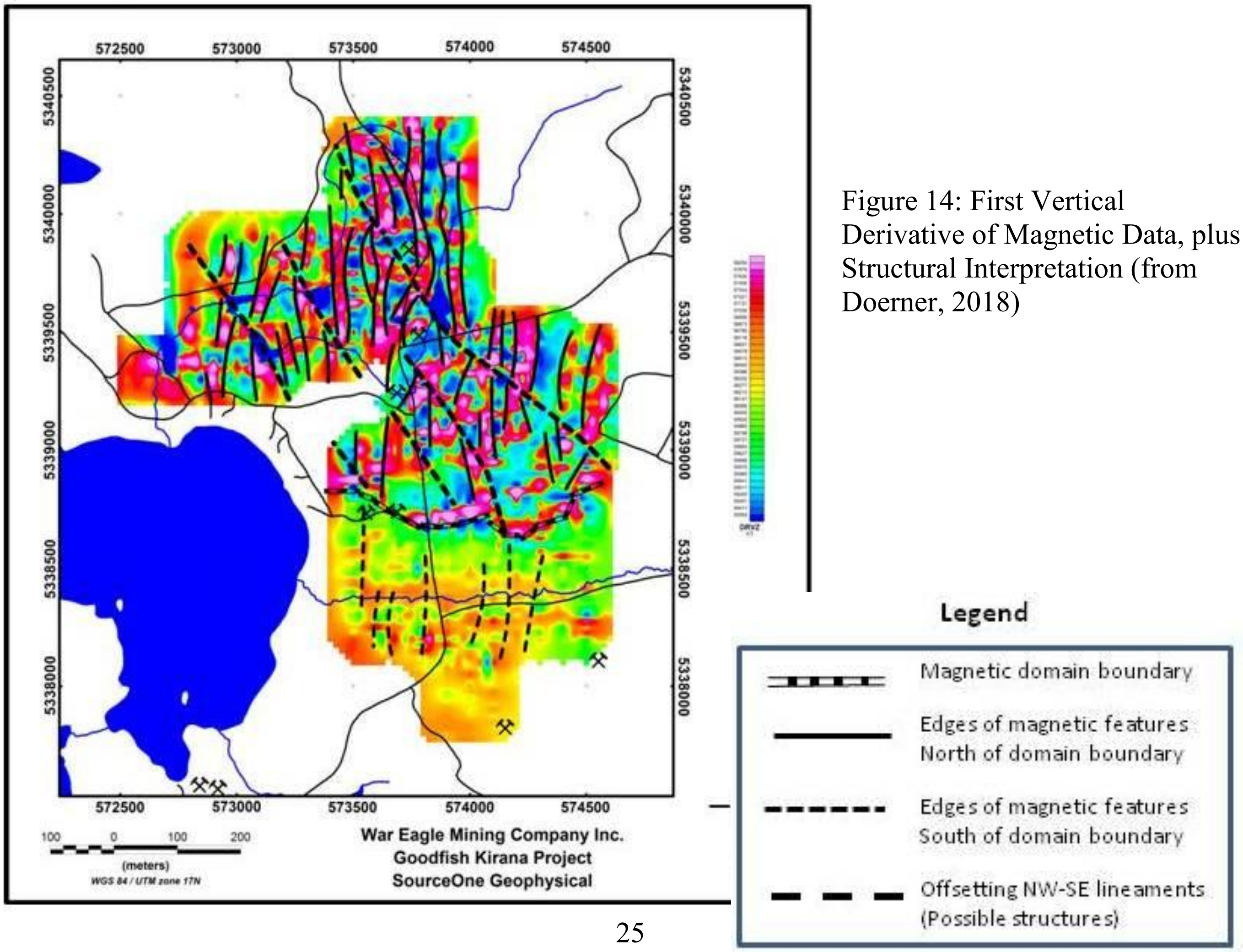

Figure 14: First Vertical Derivative of Magnetic Data, plus Structural Interpretation (from Doerner, 2018)

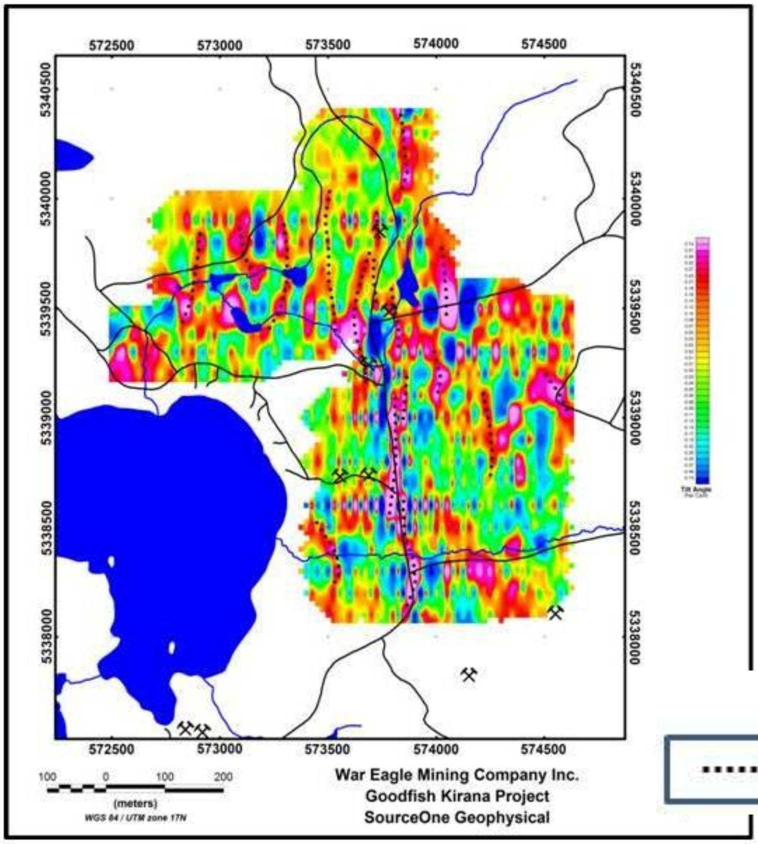

Figure 15: Horizontal Derivative of VLF-EM Data Showing Conductor Axes (from Doerner, 2018)

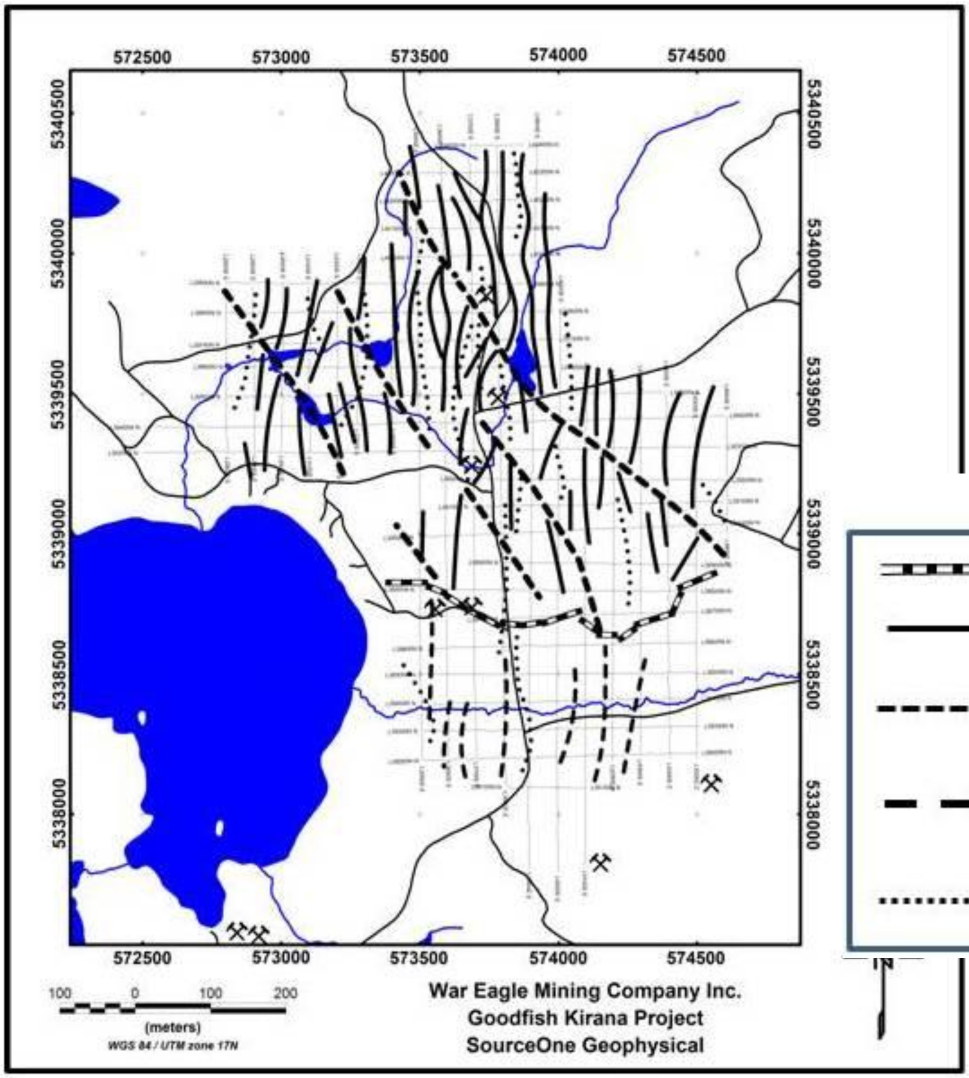

Figure 16: Structural Interpretation from Magnetic and VLF-EM Data (from Doerner, 2018)

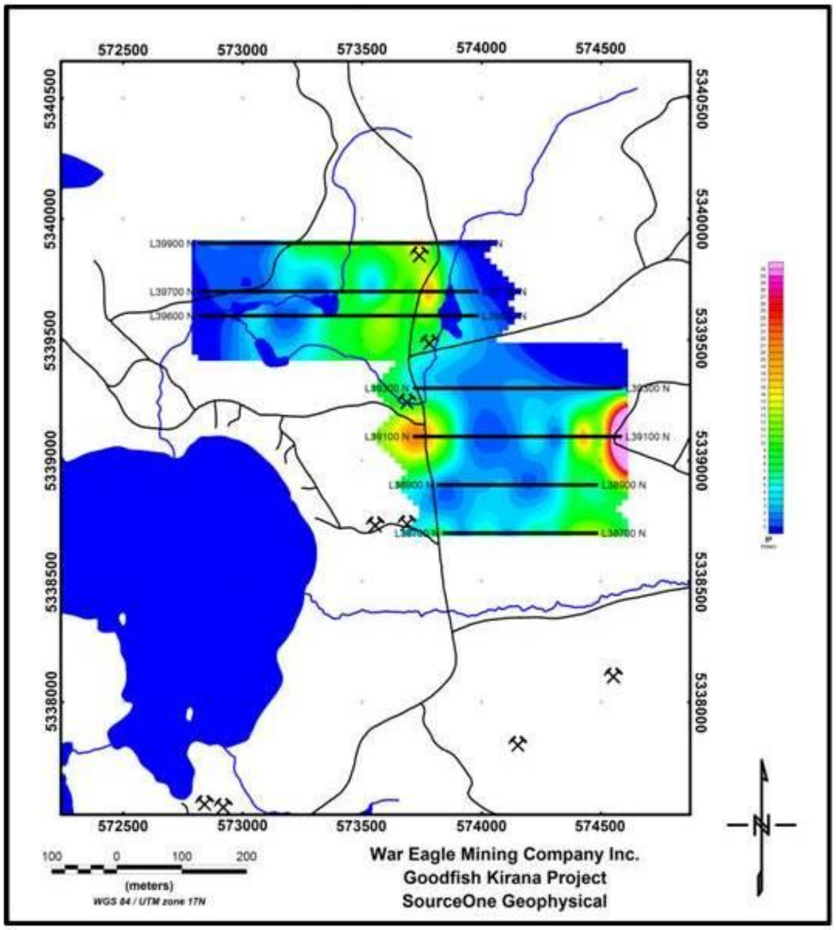

Figure 17: 100 m Depth Slice of Chargeability from CXS Data (from Doerner, 2018)

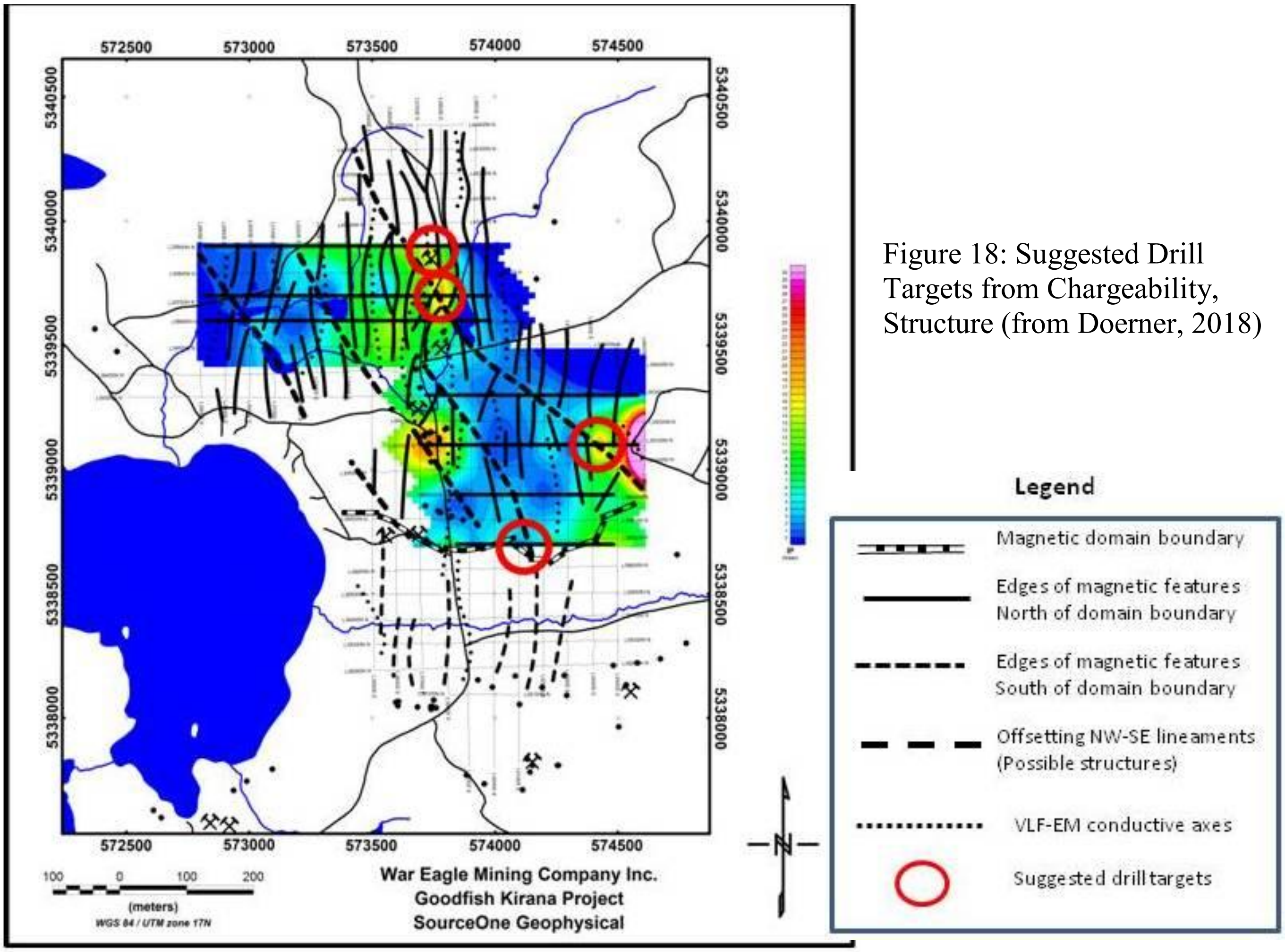

Figure 18: Suggested Drill Targets from Chargeability, Structure (from Doerner, 2018)

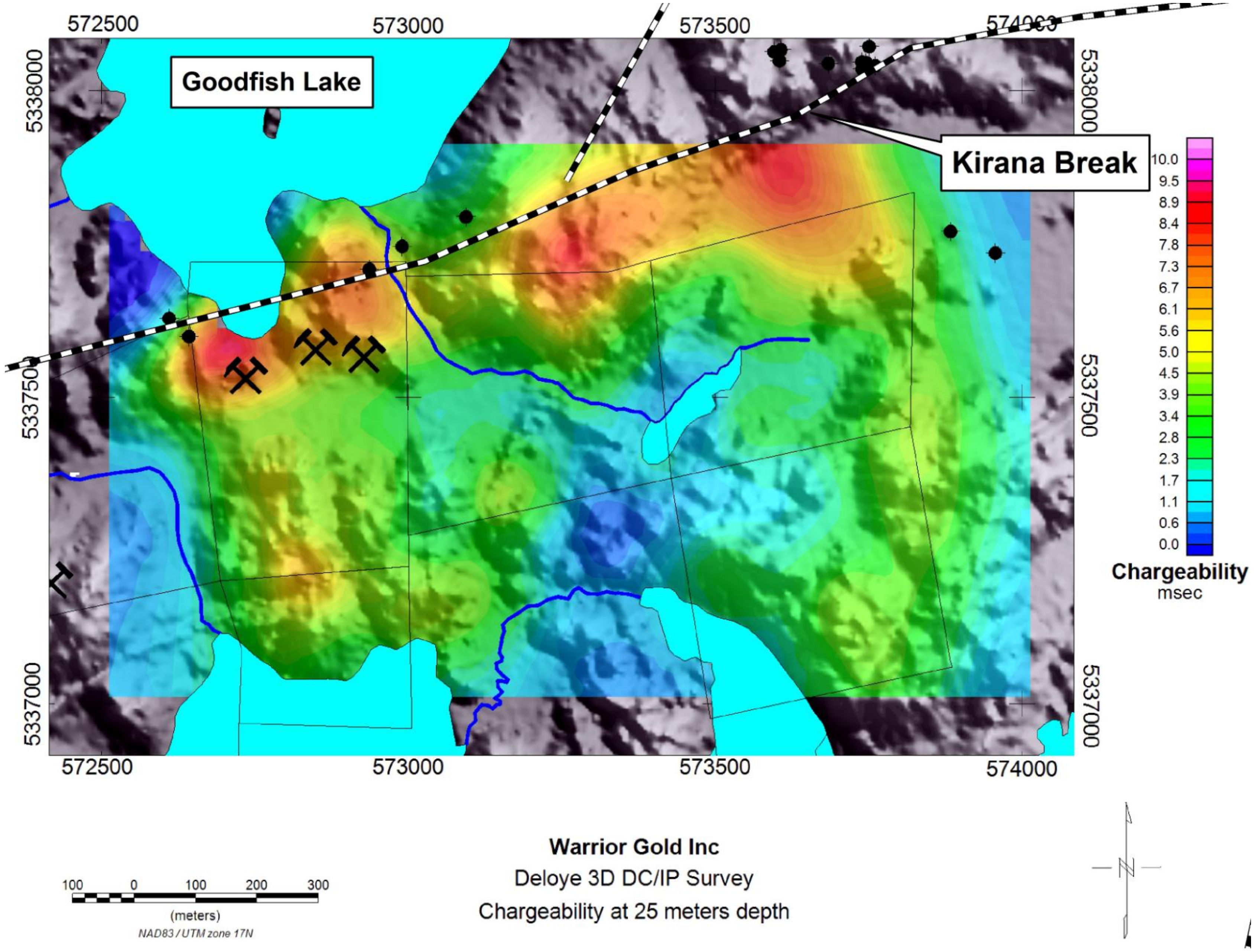

Fig 19: 25 m Depth Slice of Deloye Chargeability, Plotted on LiDAR; Data Processing by Warrior

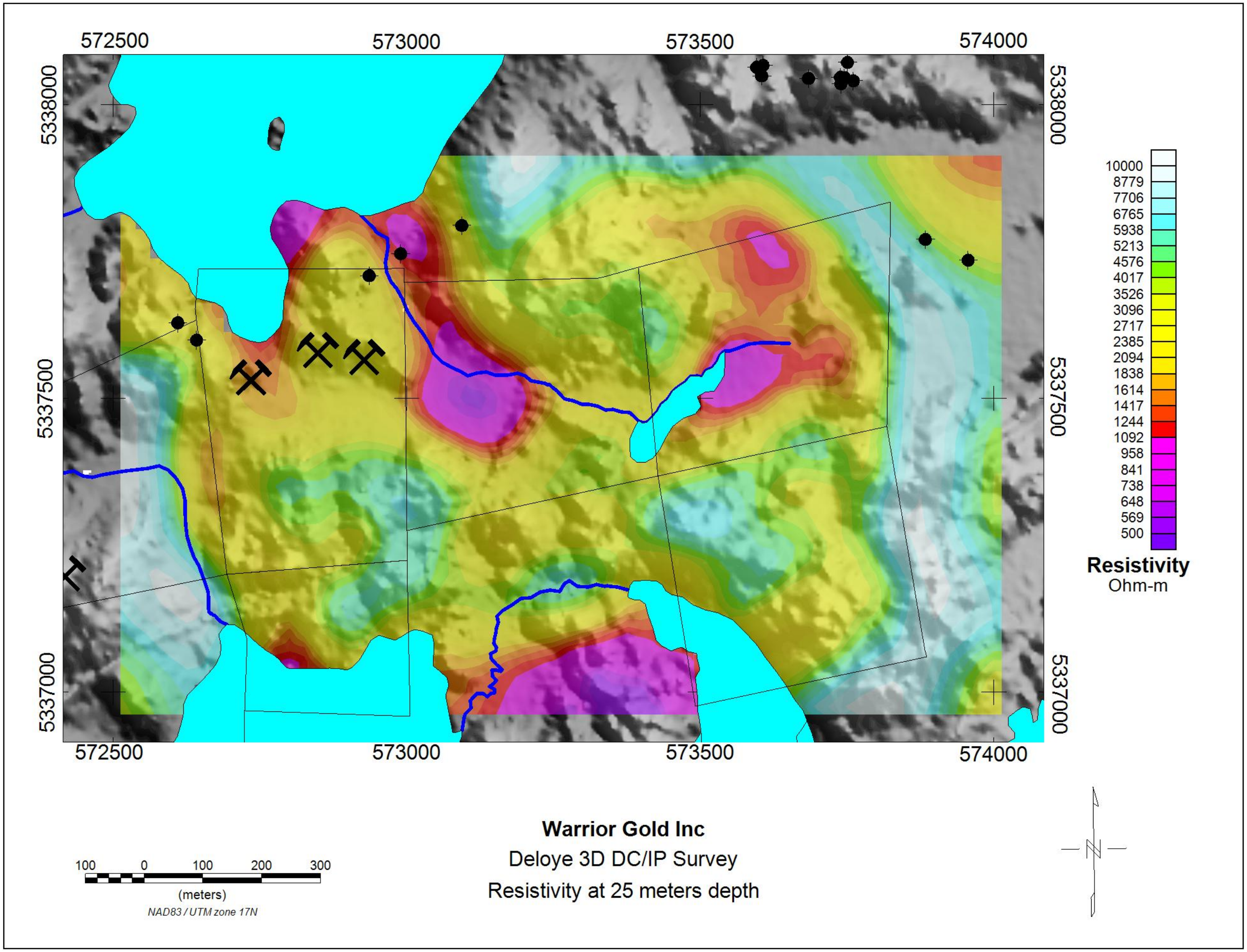

Fig 20: 25 m Depth Slice of Deloye Resistivity, Plotted on LiDAR; Data Processing by Warrior

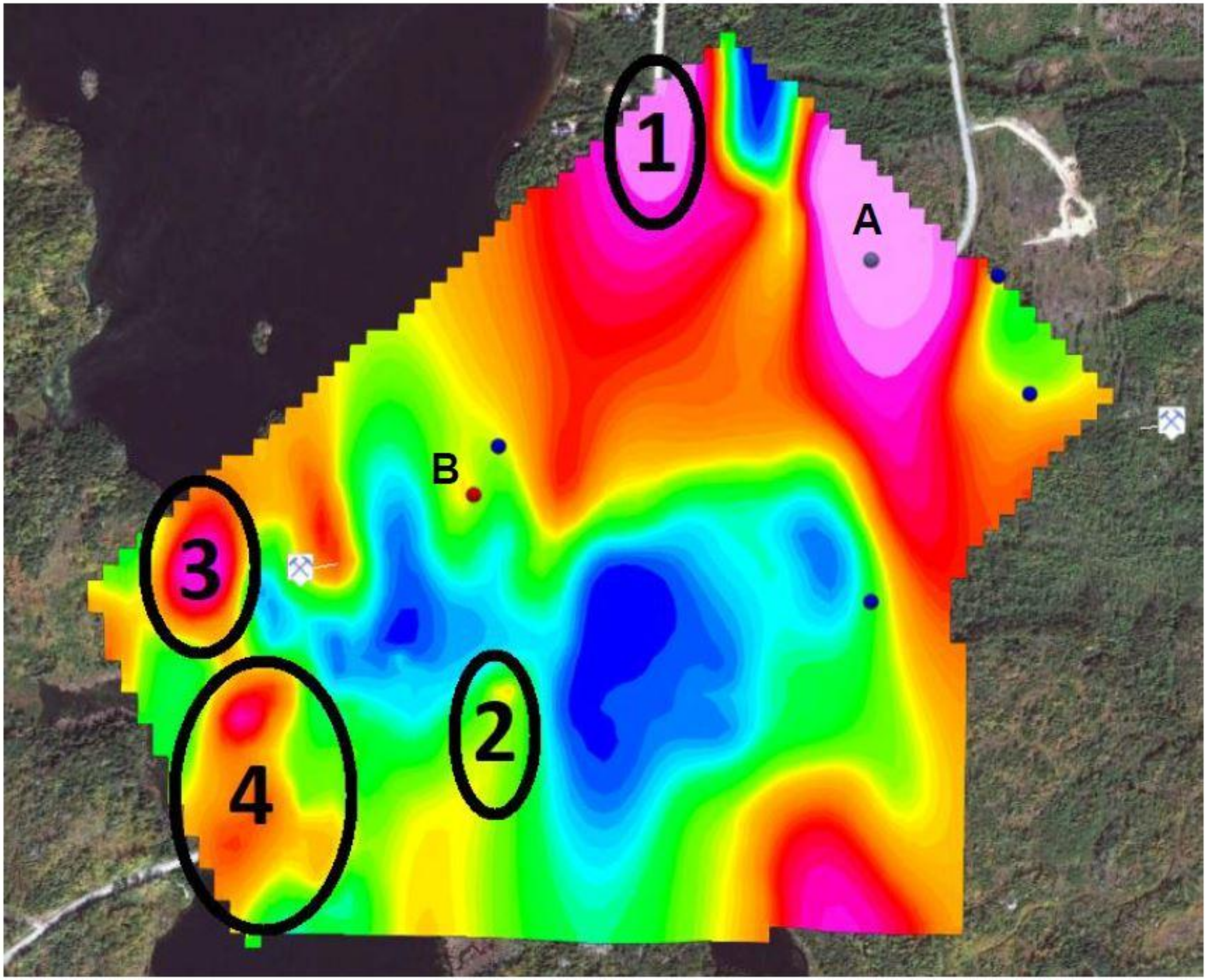

Fig 21: Depth Slice of Deloye Chargeability at 300 m elevation ASL, with Interpreted Targets. From Ploeger and Postman (2018b)

7.0 CONCLUSIONS AND RECOMMENDATIONS

The Goodfish Kirana property is immediately north of the structural/stratigraphic package of rocks that hosts the Kirkland Lake gold mining camp. The bulk of the Property is underlain by tholeiitic mafic volcanic rocks, a prospective rock type when exploring for mesothermal gold deposits. Timiskaming sediments, another prospective rock type, underlie the southern extremities of the Property. Quartz veins and iron carbonate alteration are abundant, and a number of significant showings are known to occur, in spite of the sparse exposure on the Property. Many of these gold concentrations are spatially associated with either the east-trending Kirana Break or with a north-trending zone east of Goodfish Lake; most are also proximal to felsic porphyry intrusions. A number of exploration shafts have been excavated over the years, and numerous excellent gold intersections have been obtained in historical drilling.

Ground geophysics was conducted in two areas in early 2018: i) proximal to the mineralized Goodfish zones east of Goodfish Lake; and ii) in the Deloye area, around three historical shafts near the Kirana Break. A 46.3 line km grid was cut in the Goodfish area on 100 m spaced east-west and north-south lines. Approximately 4.7 line km of grid was established at Deloye, with seven 335º trending, variably 100 or 200 m spaced lines and one tie line.

The Goodfish survey was reprocessed and interpreted by Bill Doerner of Source One Geophysical. A Total Field Magnetic Intensity (TMI) image shows a high magnetic domain northeast of Goodfish Lake, with possible evidence of folded stratigraphy (Fig. 13). A first vertical derivative of this data is useful for interpreting the structures-northerly trending magnetic features appear to be offset by northwest trending lineaments (Fig. 14). Axes of shallow conductors as shown by VLF data are generally north trending (Fig. 15). A composite structural interpretation is shown in Figure 16. The chargeability data from the IP survey shows several highs; Figure 17 shows a calculated chargeability plan (depth slice) at 100 m depth. This plan was combined with a structural interpretation to produce drill potential drill targets, shown in Figure 18 (Doerner, 2018).

Inversion of the data collected from the Deloye survey allows for three dimensional models of chargeability and resistivity to be created, and for horizontal images of the data (depth slices) to be generated at various levels. A depth slice of chargeability at 25 m depth shows anomalies semi-coincident with the Deloye shafts (i.e. known mineralization) and also strung out more or less along the trace of the Kirana Break to the east-northeast (Fig. 19). These anomalies correspond to moderate resistivity highs (Fig. 20) and have not been tested by drilling. Ploeger and Postman (2018b) suggested six areas for follow-up work, all moderate to strong chargeability anomalies (Fig. 21). Two of these, A and B, are associated with known showings, and could potentially be trenched. Targets 1 and 3 are strong chargeability anomalies that may be associated with the Kirana Break, and targets 2 and 4 are moderate to strong chargeability anomalies away from the break.

The ground geophysical surveying described in this report has generated targets in both areas which should be considered for drilling. The targets in the Goodfish area (Fig. 18) should be prospected and possibly trenched prior to drilling. Trenching should be considered for targets A and B in the Deloye area (Fig. 21). Additional IP surveying should also be considered in the Deloye area because the defined targets are all on edge of survey and thus defined by limited data; their exact locations are thus difficult to pinpoint (Ploeger and Postman, 2018b).

8.0 REFERENCES

Acorn, W., Legault, J. and Fiset, N. 2008. Report on a Helicopter-borne Versatile Time Domain Electromagnetic (VTEM) Geophysical Survey, Kirana Property. Northern Gold Assessment Report, KL6209, 21 p. Not in AFRI system.

Ayer, J.A. and Trowell, N.F. 2000. Geological Compilation of the Kirkland Lake Area, Abitibi Greenstone Belt. Ontario Geological Survey Preliminary Map P.3425, scale 1:100,000.

Ayer, J.A., Thurston, P.C., Bateman, R., Gibson, H.L., Hamilton, M.A., Hathway, B., Hocker, S.M., Hudak, G., Lafrance, B., Ispolatov, V.O., MacDonald, P.J., Peloquin, A.S., Piercey, S.J., Reed, L.E., Thompson, P.H., and Izumi, H. 2005a. Ontario Geological Survey Miscellaneous Release - Data (MRD) 155

Ayer, J.A., Thurston, P.C., Bateman, R., Dubé, B., Gibson, H.L., Hamilton, M.A., Hathway, B., Hocker, S.M., Houlé, M.G., Hudak, G., Ispolatov, V.O., Lafrance, B., Lesher, C.M., MacDonald, P.J., Peloquin, A.S., Piercey, S.J., Reed, L.E., and Thompson, P.H. 2005b. Overview of Results from the Greenstone Architecture Project: Discover Abitibi Initiative. Ontario Geological Survey Open File Report 6154, 146 p.

Bjorkman, J. 2017. Fall Prospecting Program Report on the Goodfish Kirana Property. Internal Report, Champagne Resources Ltd., 49 p.

Chadwick, T. and Setterfield, T. 2018. Report on Three Dimensional Modeling and 2016 and 2018 Drilling by Champagne Resources Limited and War Eagle Mining Company (now Warrior Gold Inc.) on the Goodfish Kirana Property, Bernhardt, Teck, Lebel and Morrisette Townships, NTS Map Sheets 32D/04 and 42/A01, Larder Lake Mining Division, Northeastern Ontario. War Eagle Mining Company Inc. Assessment Report, 64 p.

Doerner, B. 2018. Kirana Goodfish Project Goodfish Patents Area Ground Geophysical Survey: Geophysical Survey Analysis and Interpretation. War Eagle Mining Company Inc. Internal Report, 17 p.

Jackson, S.L. 1995. Precambrian Geology, Larder Lake Area. Ontario Geological Survey, Map 2628, scale 1:50,000.

Jackson, S.L. and Fyon, J.A. 1991. The western Abitibi subprovince in Ontario. *In* Geology of Ontario, Ontario Geological Survey Special Volume 4, pp. 405-482.

Madhill, B. 2009. Report on a Helicopter-borne Versatile Time Domain Electromagnetic (VTEM) Geophysical Survey, Kirana Property. Northern Gold Assessment Report, KL-6209, 19 p. Not in AFRI system

McClenaghan, M.B., Veillette, J.J. and Dilabio, R.N.W. 1995. Ice Flow Indicators in the Timmins and Kirkland Lake Areas, Northeastern Ontario. Geological Survey of Canada, Open File 3014, Map, Scale 1:200,000.

Neelands, J.T. 2017. Infill Drill-core Sampling Report (2016) on the Goodfish Kirana Property, Larder Lake Mining Division. Champagne Resources Limited Internal Report, 41 p.

Ontario Geological Survey 2003. Ontario Airborne Geophysical Surveys, Magnetic and Electromagnetic Data, Kirkland Lake area. Ontario Geological Survey, Geophysical Data Set 1102 - Revised.

Ploeger, C.J. and Postman, M. 2018a. Q2476-Goodfish Kirana Project Induced Polarization, Magnetic and VLF EM Surveys. War Eagle Mining Company Inc. Internal Report, 34 p.

Ploeger, C.J. and Postman, M. 2018b. Q2563-Deloye Project 3D Distributed Induced Polarization Survey. War Eagle Mining Company Inc. Internal Report, 61 p.

Rupert, R.J. and Lovell, H.L. 1970. Geology of Bernhardt and Morrisette Townships. Ontario Department of Mines, Geological Report 84, 27 p.

Setterfield, T. 2018. Report on the Goodfish Kirana Property, Bernhardt, Teck, Lebel and Morrisette Townships, NTS Map Sheets 32D/04 and 42/A01, Northeastern Ontario for War Eagle Mining Company Inc. 43-101 Technical Report available on Sedar, 111 p.

9.0 CERTIFICATE OF QUALIFICATIONS

I, Tom Setterfield, PhD, P.Geo. do hereby certify that:

1. I am a Principal of GeoVector Management Inc.
Suite 312, 10 Green St.,
Ottawa, Ontario, K2J 3Z6

2. I graduated with a BSc degree in Geology and Chemistry from Carleton University in 1980. In addition, I have obtained an MSc in Geology from the University of Western Ontario in 1984, and a PhD in Earth Sciences from the University of Cambridge in 1991.

3. I am a member of the Association of Professional Geoscientists of Ontario (membership #0103).

4. I have worked as a geologist for a total of 39 years since my graduation from university.

5. I was involved in the work on the Goodfish Kirana property described in this report.

Dated this 31th Day of December, 2019.

Tom Setterfield

Tom Setterfield

THOMAS N. SETTERFIELD
PRACTISING MEMBER
0103

APPENDIX A: Contractor's Reports

CXS

CANADIAN EXPLORATION SERVICES LTD

WAR EAGLE MINING COMPANY INC.

Q2476 – Goodfish Kirana Project
Induced Polarization, Magnetic & VLF EM Surveys

C Jason Ploeger, P.Geo.
Melanie Postman, B.Sc.

April 19, 2018

Abstract

CXS was initially contracted to perform a walking magnetometer and VLF EM survey over the Goodfish Kirana Property. CXS was subsequently contracted to perform a short Dipole-Dipole IP survey over selected lines of the Goodfish Kirana Property. The survey was designed to trace the strike of the historic known mineralization. To accomplish this a 25-metre A spacing was chosen to a depth of N=10.

WAR EAGLE MINING COMPANY INC.

Q2476 – Goodfish Kirana Project
Induced Polarization, Magnetic & VLF EM Surveys

C Jason Ploeger, P.Geo.
Melanie Postman, B.Sc.

April 19, 2018

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1. SURVEY DETAILS

1.1 PROJECT NAME

This project is known as the **Goodfish Kirana Project**.

1.2 CLIENT

War Eagle Mining Company Inc.
401 Bay Street Suite 2702
PO Box 136
Toronto, Ontario
M5H 2Y4
Canada

1.3 LOCATION

The Goodfish Kirana Property is located approximately 5 km north of Kirkland Lake, Ontario. The survey area is located in Morrisette and Bernhardt Townships and was designed to cover patents L2760, L2794, L2793, L2632, L2038, L2184, L 2232, L 2758, L2195, L2194, L2603, L2625, L2202, L2571, L2814, L2201, L2795, and L2200, within the Larder Lake Mining Division.

Figure 1: Location of the Goodfish Kirana Property

1.4 ACCESS

Access to the Goodfish Kirana Property was via a 4x4 pickup truck. Goodfish Road was travelled north from highway 66 in Kirkland Lake for about 5 kilometres to arrive at the property.

1.5 SURVEY GRID

The grid consists of 46.3 kilometres of previously established grid lines. The grid lines are spaced at 100-metre increments, with stations picketed at 25-metre intervals.

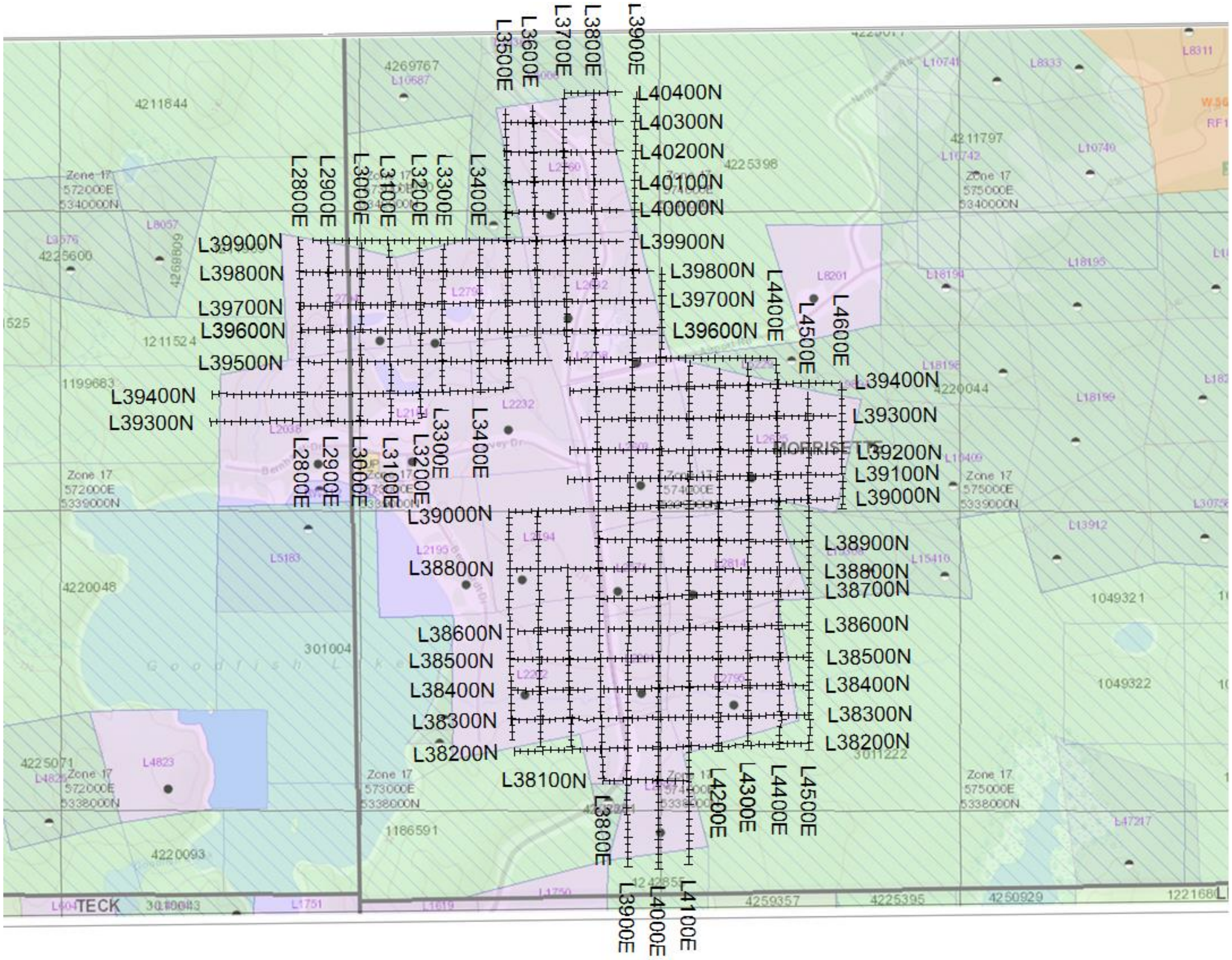


Figure 2: Claim Map with the Goodfish Kirana Grid

2. SURVEY ACQUISITION

2.1 SURVEY LOG

IP Survey Log					
Date	**Description**	**Line**	**Min Extent**	**Max Extent**	**Total Survey (m)**
March 26, 2018	Mobilization. Begin IP survey.	39900N	2800E	3900E	**1100**
March 27, 2018	Continue IP survey.	39700N	2800E	4000E	1200
		39600N	3525E	4000E	475
					1675
March 28, 2018	Continue IP survey.	39600N	2800E	3525E	725
		39300N	3850E	4600E	750
					1475
March 29, 2018	Continue IP survey.	39300N	3700E	3850E	150
		39100N	3700E	4600E	900
		38900N	3800E	4175E	375
					1425
March 30, 2018	Complete IP survey. Demobilize.	38900N	4175E	4500E	325
		38700N	3825E	4500E	675
					1000
Total IP Line Kilometres	**6.675**				

Table 1: IP Survey Log

Magnetic & VLF Survey Log					
Date	Description	Line	Min Extent	Max Extent	Total Survey (m)
March 13, 2018	Begin magnetic and VLF survey.	39500N	3700E	4400E	700
		39400N	3700E	4600E	900
		39300N	3750E	4600E	850
		39200N	3700E	4600E	900
		39100N	3700E	4600E	900
		39000N	3500E	4600E	1100
					5350
March 14, 2018	Continue magnetic and VLF survey.	3800E	38100N	39800N	1700
		3500E	38200N	39000N	800
		3600E	38200N	39000N	800
		3700E	38200N	38800N	600
		38800N	3500E	4500E	1000
		38900N	3800E	4500E	700
		3900E	39000N	39800N	800
					6400
March 15, 2018	Continue magnetic and VLF survey.	4200E	38200N	39475N	1275
		4100E	37800N	39500N	1700
		4000E	37800N	39525N	1725
		38100N	3900E	4000E	100
		3900E	37800N	39000N	1200
					6000
March 16, 2018	Continue magnetic and VLF survey.	38300N	3500E	4500E	1000
		4500E	38200N	39400N	1200
		4600E	39000N	39400N	400
		4400E	38200N	39500N	1300
		38200N	3500E	4500E	1000
		38100N	3800E	4100E	300
					5200
March 17, 2018	Continue magnetic	4300E	38200N	39500N	1300

Magnetic & VLF Survey Log					
Date	**Description**	**Line**	**Min Extent**	**Max Extent**	**Total Survey (m)**
	and VLF survey.				
		38700N	3800E	4500E	700
		38600N	3500E	4500E	1000
		38500N	3500E	4500E	1000
		38400N	3500E	4500E	1000
					5000
March 26, 2018	Continue magnetic and VLF survey.	2900E	39300N	39900N	600
		39500N	2800E	3700E	900
		39400N	2500E	3500E	1000
		39300N	2500E	3200E	700
		2800E	39300N	39900N	600
					3800
March 27, 2018	Continue magnetic and VLF survey.	3800E	39800N	40400N	600
		3700E	39475N	40400N	925
		3600E	39500N	40375N	875
		3500E	39400N	40400N	1000
		3400E	39400N	39900N	500
		3300E	39400N	39900N	500
		3200E	39300N	39900N	600
		3100E	39300N	39900N	600
		3000E	39300N	39900N	600
					6200
March 28, 2018	Continue magnetometer survey.	4000E	39525N	39800N	275
		3900E	39800N	40400N	600
		40400N	3700E	3900E	200
		40300N	3500E	3900E	400
		40200N	3500E	3900E	400
		40100N	3500E	3900E	400
		40000N	3500E	3900E	400
		39900N	2800E	3900E	1100

Magnetic & VLF Survey Log					
Date	**Description**	**Line**	**Min Extent**	**Max Extent**	**Total Survey (m)**
		39800N	2800E	4000E	1200
		39700N	2800E	4000E	1200
					6175
March 29, 2018	Repeated a few lines due to interference from IP survey.	-	-	-	-
March 30, 2018	Completed magnetic and VLF survey.	39600N	2800E	4000E	**1200**
Total Mag Line Kilometres	**45.325**				

Table 2: Magnetic & VLF Survey Log

2.2 PERSONNEL

Crew Member	**Position**	**Resident**	**Province**
Bruce Lavalley	Crew Chief	Britt	Ontario
Claudia Moraga	Receiver Operator	Britt	Ontario
Neil Jack	Transmitter Operator	Kirkland Lake	Ontario
Matthew Cliche	IP Technician	Larder Lake	Ontario
Kaylyn Cowie	IP Technician	Kirkland Lake	Ontario
Andrew Johnson	IP Technician	Kirkland Lake	Ontario
Jacob Halsall	IP Technician	Ottawa	Ontario
Dakota Maurer	Magnetometer Operator	Kirkland Lake	Ontario

Table 3: CXS Personnel

2.3 SAFETY

Canadian Exploration Services Ltd prides itself in creating and maintaining a safe work environment for its employees. Each crew member is briefed on the jobsite location, equipment safety, standard operating procedures along with our health and safety manual. An emergency response plan is generated relating to the specific job and with the jobsite predominantly in the field, which is unpredictable, morning safety briefings are essential. Topics are generally chosen based upon jobsite characteristics of the area, timing, and crew experience.

2.4 INSTRUMENTATION

IP Survey

A 10-channel Elrec Pro receiver were employed for the IP survey. The transmitter consisted of a GDDII (5kW) with a Honda 6500 as a power plant.

Magnetometer and VLF EM Surveys

The magnetic and VLF survey was conducted with a GSM-19 v7 Overhauser magnetometer/VLF. A GPS attached to the magnetometer provided precise coordinates of each sample. A second GSM-19 magnetometer was placed in a stable region to be used as a base station for the diurnal correction.

2.5 SURVEY SPECIFICATIONS

IP Survey

The dipole-dipole survey configuration was used for this survey. This array consists of 11 mobile stainless steel read electrodes and one current electrode (C1). The eleven potential electrodes were connected to the receiver by means of the "Snake". The power locations C1 and C2 were maintained at a distance of 25m behind read electrode and the read electrodes had a 25m spacing to a depth of n=10. A two second transmit cycle time was used with a minimum number of receiver stacks of 9.

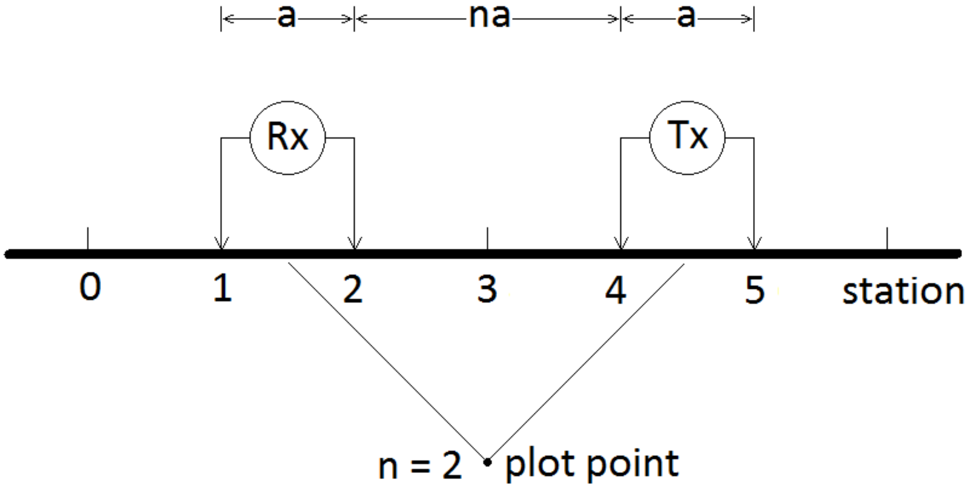


Figure 3: Dipole-Dipole Configuration

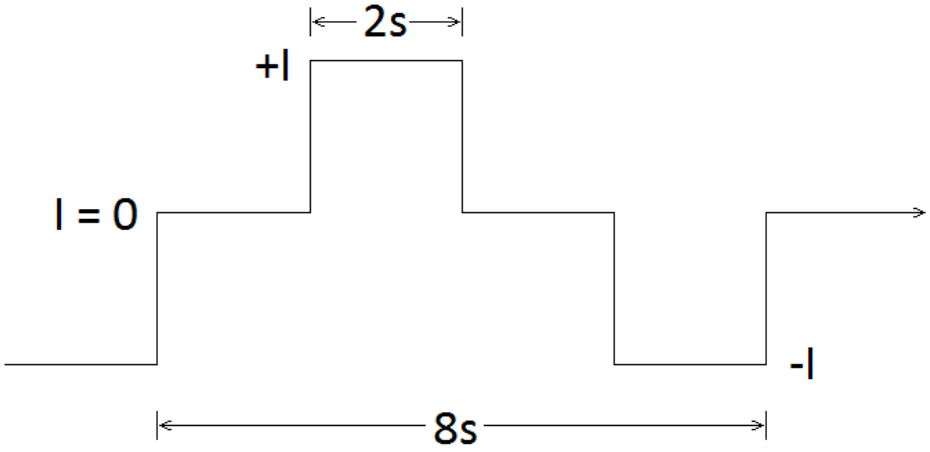


Figure 4: Transmit Cycle Used

A total of 6.675-line kilometres of dipole-dipole IP was performed between March 26th and March 30th, 2018. This consisted of 7 grid lines labeled 38700N through 39900N.

Magnetometer, GPS and VLF EM Surveys

A total of 45.325-line kilometres of magnetometer and VLF was read. This consisted of 77729 magnetometer and GPS samples taken at a 1 second sample interval along with 1813 VLF EM samples taken at a 25-metre sample interval.

3. OVERVIEW OF SURVEY RESULTS

3.1 OVERVIEW

During the winter of 2018, CXS performed an induced polarization survey, a magnetometer survey, and a VLF EM survey over the Goodfish Kirana Project survey area. The IP survey was a dipole-dipole survey at n=10 with an A spacing of 25 metres. The IP survey totalled 6.675-line kilometres and was performed between March 26th to March 30th, 2018. A total of 45.325-line kilometres of walkmag magnetometer and VLF was also read between March 13th, 2018 and March 30th, 2018.

3.2 FIELD NOTES AND CULTURE

Heavy culture was noted on the property that would influence the survey results. The survey area was centered over Goodfish Road, which spanned the length of the grid from 39300N to the south extents. Airport Road and Harvey Drive also crossed part of the grid from east to west. Bernhardt Drive ran parallel to the edges of the grid on the southwest side. Multiple residential properties were also located within the road corridor. Kirkland Lake airport was located 1.5 km East of the grid with the power infrastructure following the roads. A main artery of the OFSC skidoo trail also extended north to south across the grid. All the roads and skidoo trails had consistent traffic during the survey period. Due to the nature of the culture, multiple IP repeat readings were taken to confirm consistency of the values.

3.3 VLF NOTES

Two different transmitter frequencies were used. The 24.0 kHz NAA transmitter located in Cutler, Maine, USA was the frequency of choice. In the cases where the NAA frequency was unavailable, the 25.2 kHz NML transmitter located in LaMoure, North Dakota, USA was used. NML was used for lines 39000-39500N on March 13 2018 and for lines 2800-2900E on March 26, 2018. The 24.8 kHz NLK transmitter located in Seattle, Washington, USA was attempted but the signal was not strong enough for the purposes of this survey.

3.4 ANOMALY NOTES

Strong chargeability and magnetic responses were noted over the Goodish Kirana Property. Due to the distance between IP survey lines, individual axis were difficult to identify. Table 4 below lists the anomalies of interest noted from the induced polarization survey results.

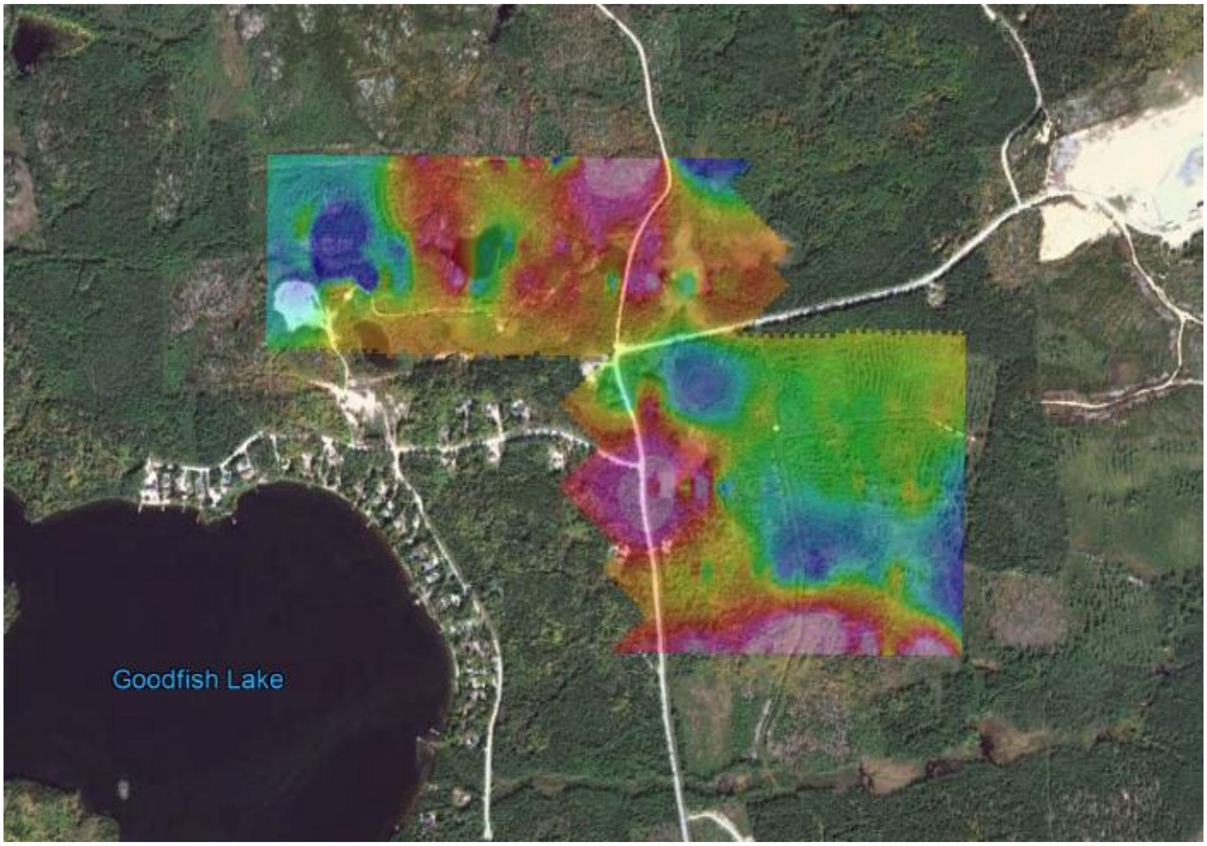


Figure 5: Chargeability grid overlaying Google Earth

Line	Station	Chargeability	Resistivity	Priority	Comments
39900N	3175E	weak	high	4	Possible overburden interface
39900N	3325E	moderate	high	4	Possible overburden related
39900N	3450E	moderate	low	3	Creek - may be structural
39900N	3650E-3675E	strong	high	1	Possible mineralized porphyry
39900N	3725E-3825E	strong	high	1	Possible mineralized porphyry
39700N	3250E	moderate	high	4	Creek
39700N	3475E	weak	high	3	Near beaver pond - may be structural
39700N	3600E-3650E	moderate	high	2	Possible mineralized porphyry

Line	Station	Chargeability	Resistivity	Priority	Comments
39700N	3800E-3825E	moderate	high	1	Possible mineralized porphyry
39700N	3900E	moderate	high	1	Possible mineralized porphyry
39600N	3075E	weak	low	4	Current Channeling - near beaver ponds
39600N	3350E	moderate	low	4	Near beaver ponds
39600N	3475E-3500E	moderate	high	3	On esker - may be structural
39600N	3600E	moderate	high	2	Possible mineralized porphyry
39600N	3725E-3775E	moderate	high	1	Possible mineralized porphyry
39600N	3950E	weak	high	1	Possible mineralized porphyry
39300N	3775E	moderate	high	1	Close to highway and culture - may be mineralized porphyry
39300N	4200E	weak	low	3	May be overburden related
39300N	4425E	weak	low	4	May be overburden related
39100N	3825E	strong	high	1	Close to highway and culture - may be mineralized porphyry
39100N	3900E	weak	high	2	Possible mineralized porphyry
39100N	4350E	weak	low	4	Current channeling
38900N	3875E	weak	high	3	May be structural or narrow chargeable bands.
38900N	3925E	weak	high	3	May be structural or narrow chargeable bands.
38900N	4000E	weak	high	3	May be structural or narrow chargeable bands.
38900N	4050E	weak	high	3	Edge of swamp
38900N	4425E	weak	high	3	Edge of swamp

Line	Station	Chargeability	Resistivity	Priority	Comments
38700N	3925E-3950E	moderate	high	2	Possible mineralized porphyry
38700N	4125E-4250E	high	high	1	Broad chargeability response - may be subparalleling the line
38700N	4350E	high	high	3	Possible overburden interface

Table 4: IP Anomaly Interpretation Table

Inversions were performed on the dipole-dipole induced polarization data using both Res2Dinv and Res3Dinv to produce a model that represents the resistivity and chargeability values with depth. The results of these two inversion methods were compared and the 3D version was presented.

The resistivity inversion produced strong 100,000+ ohmmeter responses at depth. As these values were highly unrealistic, they were removed from the final presentation.

The inversion of IP data indicated a series of generally north trending weak to strong chargeability responses (Figure 6).

A chargeability response generally follows the highway corridor. This response may be related to the road corridor; however, it appears to continue northward beyond the turn to the airport. At this point, the chargeability signature also increases in magnitude as it strikes northward. This most likely indicates that this anomaly is related to a mineralized system that is being masked by the culture of the highway or that is being lost on the edge of the grid on which the current was located.

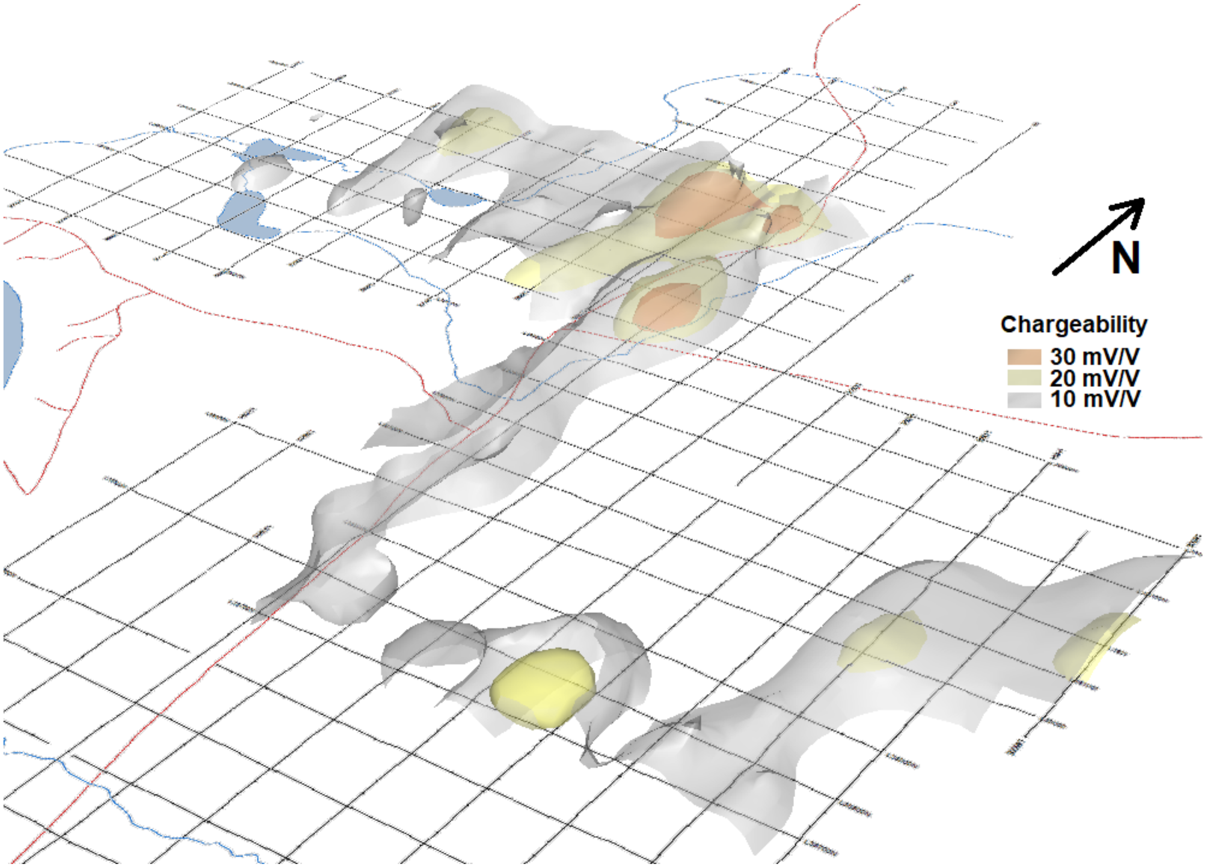


Figure 6: Chargeability Inversion Results

The chargeability anomalies seen in the North section of the grid (Figure 7) extend beyond the airport turn, where it appears to increase in magnitude, which indicates a probable increase in mineralization. The resistivity associated with this chargeability anomaly appears to also increase. This may indicate the presence of a mineralized porphyry. The pseudosections indicate the source of the anomaly should outcrop along the lines. However, the line spacing of the survey should be tightened and extended further northward to better define and constrain the anomaly. Drill testing of these anomalies on lines 39900N and 39600N is also merited.

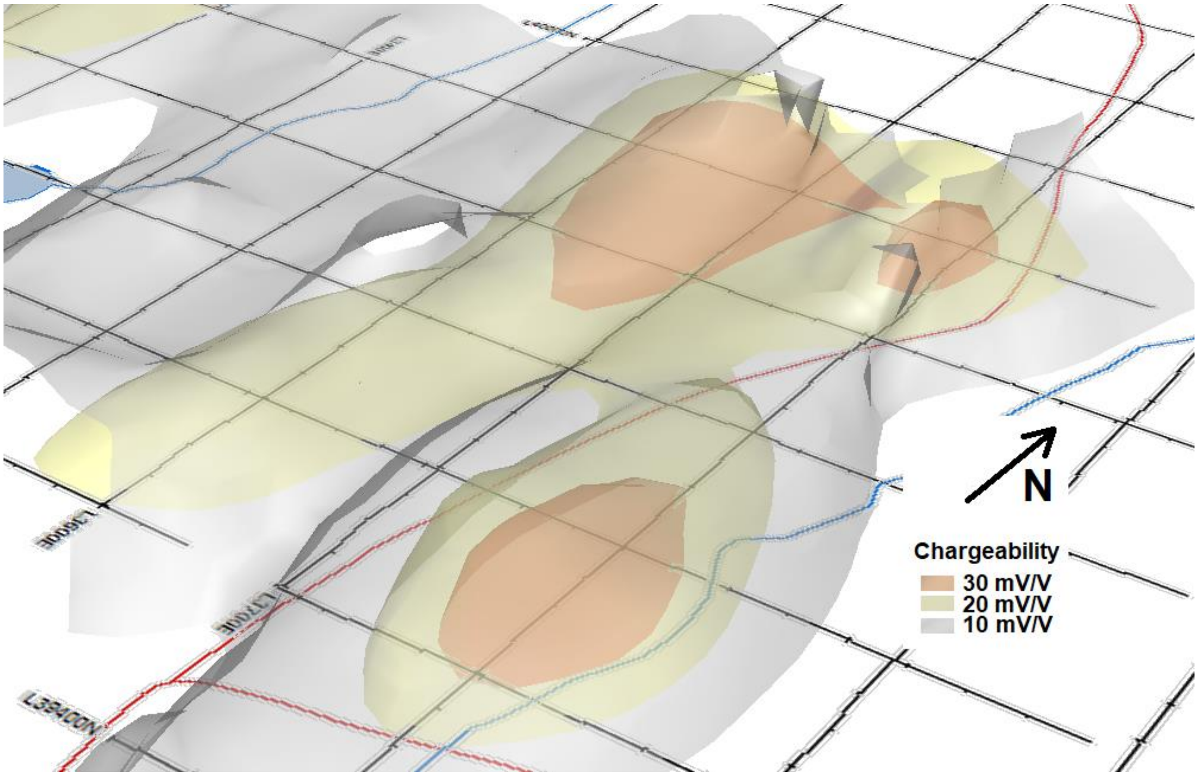


Figure 7: North Chargeability Anomalies

An additional chargeability anomaly trend has also been identified by the inversion (Figure 8). This occurs in the south-east part of the induced polarization survey area. The inversion indicates that this series of anomalies appear to be striking at approximately 45 degrees with a strength greater than 20 mV/V. Associated with these areas of elevated chargeability is an increase in resistivity, indicating a possible siliceous mineralized system. It is recommended to infill the IP survey and extend the survey southward, to better constrain the anomaly.

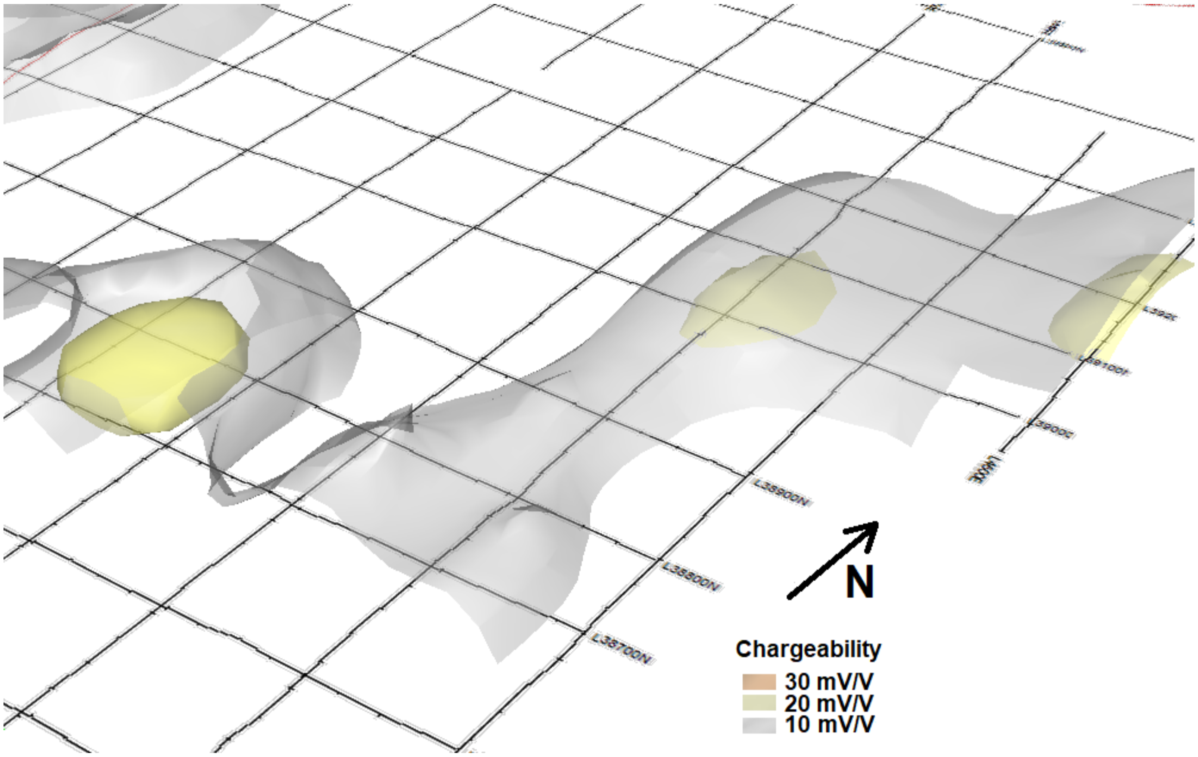


Figure 8: Southeast Chargeability Anomalies

The magnetic signature in Figure 9 indicates the existence of two magnetic units. The primary unit appears as an average magnetic signature, which most likely represents a volcanic unit within the pile. Overprinting this average signature appears to be a series of magnetically elevated signatures. These most likely represent porphyry dikes.

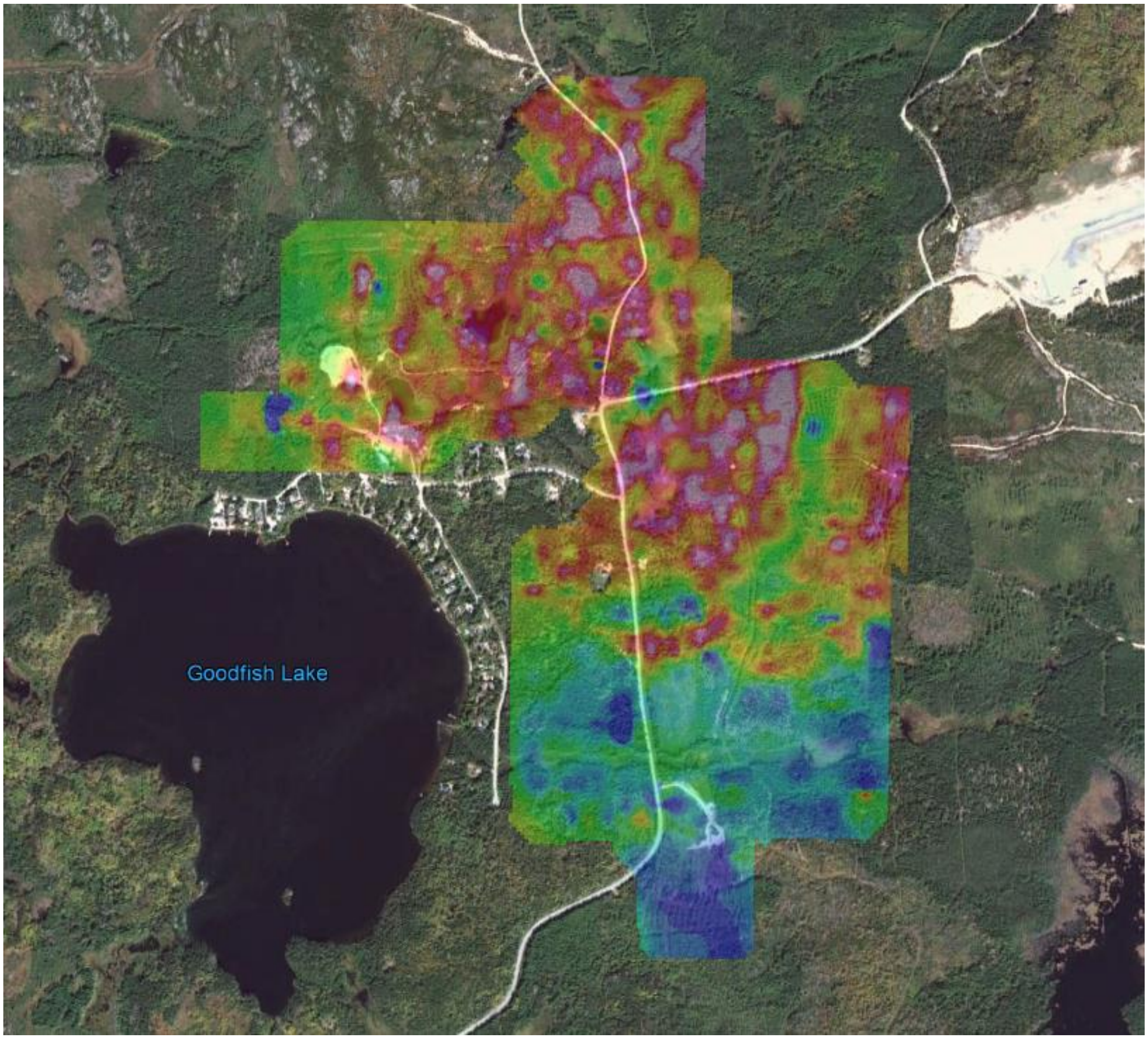
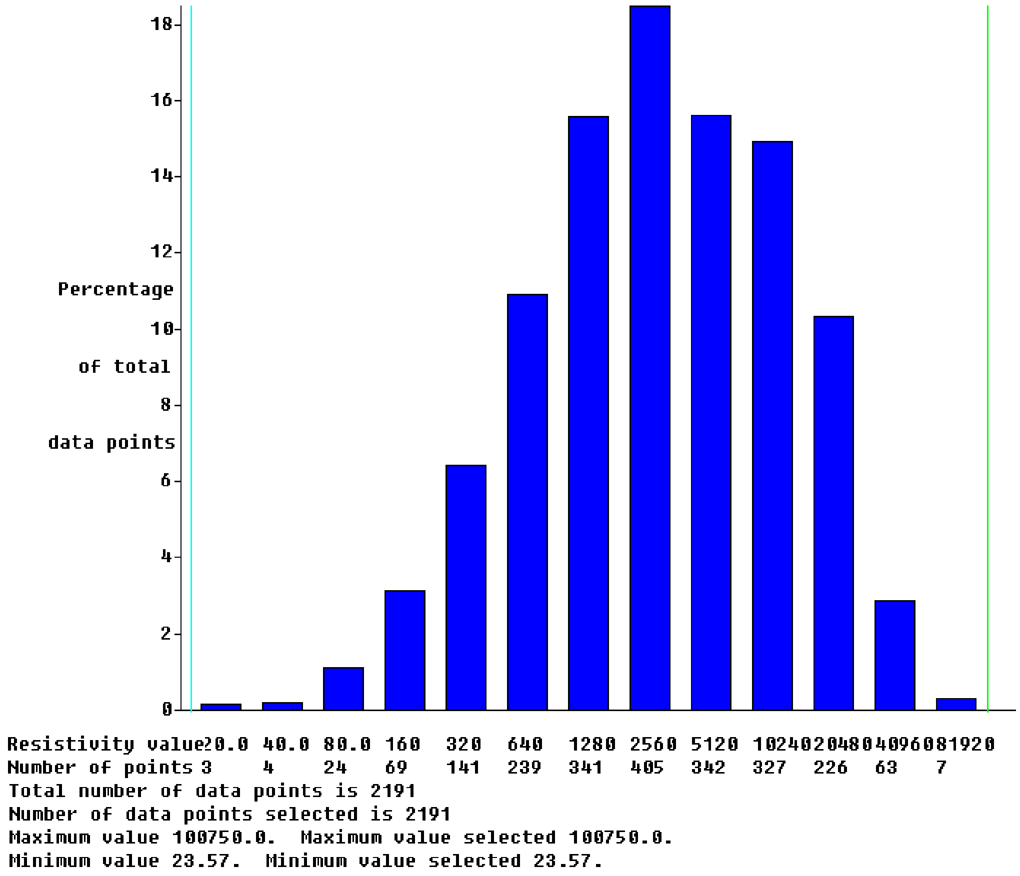


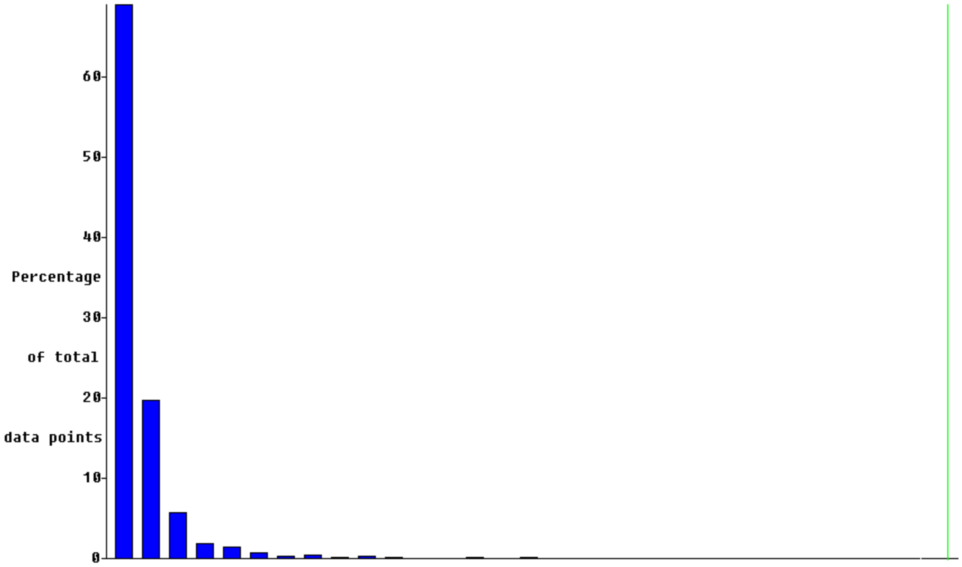
Figure 9: Magnetic grid overlaying Google Earth

3.5 INVERSION STATISTICS



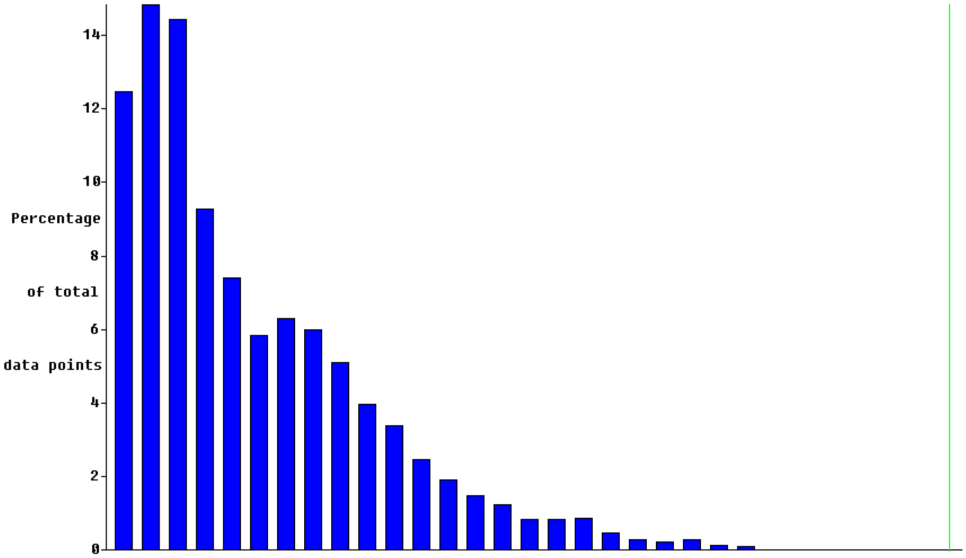
```
Resistivity value20.0 40.0 80.0 160  320  640  1280 2560 5120 10240204804096081920
Number of points 3    4    24   69   141  239  341  405  342  327  226  63   7
Total number of data points is 2191
Number of data points selected is 2191
Maximum value 100750.0.  Maximum value selected 100750.0.
Minimum value 23.57.  Minimum value selected 23.57.
```

Figure 10: Apparent Resistivity Inversion Statistics



```
App. resis. % error     20    40    60    80    100   120   140   160   180   200   220   240   260   280   300
Number of points  1512  125   30    7     2     2     0     1     0     0     1     0     0     0     0     0
Total number of datum points is 2191
Number of data points selected is 2191
Maximum error 203.6.  Maximum error selected 203.6.
Minimum value 0.00.
```

Figure 11: Apparent Resistivity RMS Error Inversion Statistics



```
App. IP misfit    0     2     4     6     8     10    12    14    16    18    20    22    24    26    28    30
Number of points  273   316   162   138   112   74    42    27    18    10    5     3     0     0     0     0
Total number of datum points is 2191
Number of data points selected is 2191
Maximum error 23.7.  Maximum error selected 23.7.
Minimum value 0.00.
```

Figure 12: Chargeability RMS Error Inversion Statistics

3.6 RECOMMENDATIONS

It is recommended that this data be compiled with historical data sets. This would assist in building a model that would better identify and locate the key anomalous features.

Completing the IP survey of the grid is recommended. This would provide line to line tracking and the constraining of the anomalies. A soil survey of the survey area would also be beneficial.

The identified anomalies should be prospected to assist in determining the nature of them. Priority 1 anomalies should also be targeted for drill testing. This includes the anomalies highlighted by the inversion in the northern part of the IP survey area.

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, Melanie Postman, hereby declare that:

1. I am a soon-to-be Geoscientist-in-Training with residence in Virginiatown, Ontario and am presently employed as a Junior Geophysicist with Canadian Exploration Services Ltd. of Larder Lake, Ontario.

2. I graduated with a Bachelor of Science Honors specialization degree in geophysics for professional registration from the University of Western Ontario, in London Ontario, in 2017.

3. I am currently undergoing the application process to register as a Geoscientist-in-Training to later become a practicing member of the Association of Professional Geoscientists.

4. I have previous geophysical work experience during and following my education.

5. I do not have nor expect an interest in the properties and securities of War Eagle Mining Company Inc.

6. I am responsible for assisting with the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my opinion based on my consideration of the information available to me at the time of writing this report.

Melanie Postman, B.Sc.
Junior Geophysicist
(non-professional)

Larder Lake, ON
April 19, 2018

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, C. Jason Ploeger, hereby declare that:

7. I am a professional geophysicist with residence in Larder Lake, Ontario and am presently employed as a Geophysicist and Geophysical Manager of Canadian Exploration Services Ltd. of Larder Lake, Ontario.

8. I am a Practicing Member of the Association of Professional Geoscientists, with membership number 2172.

9. I graduated with a Bachelor of Science degree in geophysics from the University of Western Ontario, in London Ontario, in 1999.

10. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.

11. I am a member of the Ontario Prospectors Association, a Director of the Northern Prospectors Association and a member of the Society of Exploration Geophysicists.

12. I do not have nor expect an interest in the properties and securities of War Eagle Mining Company Inc.

13. I am responsible for the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

C. JASON PLOEGER
PRACTISING MEMBER
2172

C. Jason Ploeger, P.Geo., B.Sc.
Geophysical Manager
Canadian Exploration Services Ltd.

Larder Lake, ON
April 19, 2017

APPENDIX B

THEORETICAL BASIS AND SURVEY PROCEDURES

INDUCED POLARIZATION SURVEY

Time domain IP surveys involve measurement of the magnitude of the polarization voltage (Vp) that results from the injection of pulsed current into the ground.

Two main mechanisms are known to be responsible for the IP effect although the exact causes are still poorly understood. The main mechanism in rocks containing metallic conductors is electrode polarization (overvoltage effect). This results from the buildup of charge on either side of conductive grains within the rock matrix as they block the flow of current. On removal of this current the ions responsible for the charge slowly diffuse back into the electrolyte (groundwater) and the potential difference across each grain slowly decays to zero.

The second mechanism, membrane polarization, results from a constriction of the flow of ions around narrow pore channels. It may also result from the excessive build up of positive ions around clay particles. This cloud of positive ions similarly blocks the passage of negative ions through pore spaces within the rock. On removal of the applied voltage the concentration of ions slowly returns to its original state resulting in the observed IP response.

In TD-IP the current is usually applied in the form of a square waveform, with the polarization voltage being measured over a series of short time intervals after each current cut-off, following a short delay of approximately 0.5s. These readings are integrated to give the area under the decay curve, which is used to define Vp. The integral voltage is divided by the observed steady voltage (the voltage due to the applied current, plus the polarization voltage) to give the apparent chargeability (Ma) measured in milliseconds. For a, given charging period and integration time the measured apparent chargeability provides qualitative information on the subsurface geology.

The polarization voltage is measured using a pair of non-polarizing electrodes like those used in spontaneous potential measurements and other IP techniques.

APPENDIX B

TOTAL FIELD MAGNETIC SURVEY

Base station corrected Total Field Magnetic surveying is conducted using at least two synchronized magnetometers of identical type. One magnetometer unit is set in a fixed position in a region of stable geomagnetic gradient, and away from possible cultural effects (i.e. moving vehicles) to monitor and correct for daily diurnal drift. This magnetometer, given the term ‘base station’, stores the time, date and total field measurement at fixed time intervals over the survey day. The second, remote mobile unit stores the coordinates, time, date, and the total field measurements simultaneously. The procedure consists of taking total magnetic measurements of the Earth’s field at stations, along individual profiles, including Tie and Base lines. A 2-metre staff is used to mount the sensor, in order to optimally minimize localized near-surface geologic noise. At the end of a survey day, the mobile and base-station units are linked, via RS-232 ports, for diurnal drift and other magnetic activity (ionospheric and sferic) corrections using internal software.

For the gradiometer application, two identical sensors are mounted vertically at the ends of a rigid fiberglass tube. The centers of the coils are spaced a fixed distance apart (0.5 to 1.0m). The two coils are then read simultaneously, which alleviates the need to correct the gradient readings for diurnal variations, to measure the gradient of the total magnetic field.

VLF EM SURVEY

The frequency domain VLF electromagnetic survey is designed to measure both the vertical and horizontal in-phase (IP) and Quadrature (OP) components of the anomalous field from electrically conductive zones. The sources for VLF EM surveys are several powerful radio transmitters located around the world which generate EM radiation in the low frequency band of 15-25kHZ. The signals created by these long-range communications and navigational systems may be used for surveying up to several thousand kilometres away from the transmitter. The quality of the incoming VLF signal can be monitored using the field strength. A field strength above 5pT will produce excellent quality results. Anything lower indicates a weak signal strength, and possibly lower data quality. A very low signal strength (<1pT) may indicate the radio station is down.

The EM field is planar and horizontal at large distances from the EM source. The two components, electric (E) and magnetic (H), created by the source field are orthogonal to each other. E lies in a vertical plane while H lies at right angles to the direction of propagation in a horizontal plane. In order to ensure good coupling, the strike of possible conductors should lie in the direction of the transmitter to allow the H vector to pass through the anomaly, in turn, creating a secondary EM field.

The VLF EM receiver has two orthogonal aerials which are tuned to the frequency of the transmitting station. The direction of the source station is located by rotating the sensor around a vertical axis until a null position is found. The VLF EM survey procedure consists of taking measurements at stations along each line on the grid. The receiver is rotated about a horizontal axis, right angles to the traverse and the tilt recorded at the null position.

APPENDIX C

IP Equipment

Iris Elrec Pro Receiver

ELREC Pro unit with its graphic LCD screen

Specifications

- 10 CHANNELS / IP RECEIVER FOR MINERAL EXPLORATION
- 10 simultaneous dipoles
- 20 programmable chargeability windows
- High accuracy and sensitivity

ELREC Pro: this new receiver is a new compact and low consumption unit designed for high productivity Resistivity and Induced Polarization measurements. It features some high capabilities allowing to work in any field conditions.

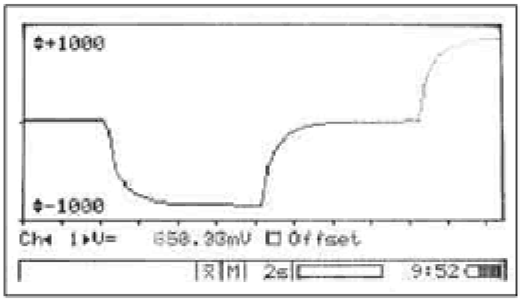
Reception dipoles: the ten dipoles of the ELREC Pro offer an high productivity in the field for dipole-dipole, gradient or extended poly-pole arrays.

Programmable windows: beside classical arithmetic and logarithmic modes, ELREC Pro also offers a Cole-Cole mode and twenty fully programmable windows for a higher flexibility in the definition of the IP decay curve.

IP display: chargeability values and IP decay curves can be displayed in real time thanks to the large graphic LCD screen. Before data acquisition, the ELREC Pro can be used as a one channel graphic display, for monitoring the noise level and checking the primary voltage waveform, through a continuous display process.

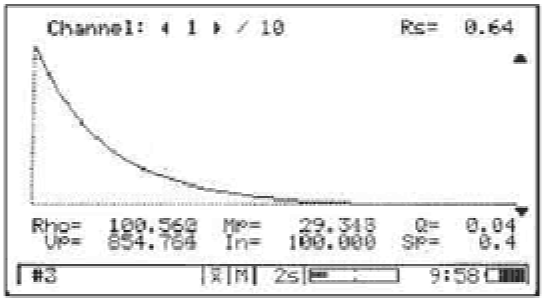
Internal memory: the memory can store up to 21 000 readings, each reading including the full set of parameters characterizing the measurements. The data are stored in flash memories not requiring any lithium battery for safeguard.

Switching capability: thanks to extension Switch Pro box(es) connected to the ELREC Pro unit, the 10 reception electrodes can be automatically switched to increase the productivity in-the-field.



Ch◂ 1▸U= 658.30mV ☐ Offset

Monitoring of the Primary voltage waveform before acquisition



Channel: ◂ 1 ▸ / 10 Rs= 0.64

Rho= 100.560 Mp= 29.348 Q= 0.04
Vp= 854.764 In= 100.000 SP= 0.4

Display of numeric values and IP decay curve during acquisition

FIELD LAY-OUT OF AN ELREC PRO UNIT

The ELREC Pro unit must be used with an external transmitter, such as a VIP transmitter.
The automatic synchronization (and re-synchronization at each new pulse) with the transmission signal, through a waveform recognition process, gives an high reliability of the measurement.

Before starting the measurement, a grounding resistance measuring process is automatically run; this allows to check that all the electrodes are properly connected to the receiver.

Extension Switch Pro box(es), with specific cables, can be connected to the ELREC Pro unit for an automatic switching of the reception electrodes according to preset sequence of measurements; these sequences have to be created and uploaded to the unit from the
ELECTRE II software.

The use of such boxes allows to save time in case of the user needs to measure more than 10 levels of investigation or in case of large 2D or 3D acquisition.

DATA MANAGING

PROSYS software allows to download data from the unit. From this software, one has the opportunity to visualize graphically the apparent resistivity and the chargeability sections together with the IP decay curve of each data point. Then, one can process the data (filter, insert topography, merge data files…) before exporting them to “txt” file or to interpretation software:

RES2DINV or RESIX software for pseudo-section inversion to true resistivity (and

IP) 2D section.
RES3DINV software, for inversion to true resistivity (and IP) 3D data.

TECHNICAL SPECIFICATIONS

- Input voltage:
    - Max. for channel 1: 15 V
    - Max. for the sum from channel 2 to channel 10: 15 V
    - Protection: up to 800V
- Voltage measurement:
    - Accuracy: 0.2 % typical
    - Resolution: 1 µV
- Chargeability measurement:
    - Accuracy: 0.6 % typical
- Induced Polarization (chargeability) measured over to 20 automatic or user defined windows
- Input impedance: 100 MW
- Signal waveform: Time domain (ON+, OFF, ON-, OFF) with a pulse duration of 500ms - 1s - 2s - 4s -8s
- Automatic synchronization and re-synchronization process on primary voltage signals
- Computation of apparent resistivity, average chargeability and standard deviation
- Noise reduction: automatic stacking number in relation with a given standard deviation value
- SP compensation through automatic linear drift correction
- 50 to 60Hz power line rejection
- Battery test

GENERAL SPECIFICATIONS.

- Data flash memory: more than 21 000 readings
- Serial link RS-232 for data download
- Power supply: internal rechargeable 12V, 7.2 Ah battery; optional external 12V standard car battery can be also used
- Weather proof
- Shock resistant fiber-glass case
- Operating temperature: -20 °C to +70 °C
- Dimensions: 31 x 21 x 21 cm
- Weight: 6 kg

APPENDIX C

GDD II 5kW

SPECIFICATIONS

- Protection against short circuits even at 0 ohms
- Output Voltage range: 150V to 2400V in 14 steps
- Power source is a standard 220/240V, 20/60 Hz source
- Displays electrode contact, transmitting power and current

ELECTRICAL CHARACTERISTICS

- Standard Time Base of 2 seconds for time domain – 2 seconds on, 2 seconds' off
- Optional Time Base of DC, 0.5, 1, 2, 4 or 8 seconds
- Output Current Range, 0.030 to 10A
- Output Voltage Range, 150 to 2400V in 14 steps
- Ability to Link 2 GDD transmitters to double power output

CONTROLS

- Switch ON/OFF
- Output Voltage Range Switch: 150V, 180V, 350V, 420V, 500V, 600V, 700V, 840V, 1000V, 1200V, 1400V, 1680V, 2000V and 2400V

DISPLAYS

- Output Current LCD: reads +- 0.0010A

- Electrode Contact Displayed when not Transmitting
- Output Power Displayed when Transmitting
- Automatic Thermostat controlled LCD heater for LCD
- Total Protection Against Short Circuits
- Indicator Lamps Indicate Overloads
-

GENERAL SPECIFICATIONS

- Weather proof
- Shock resistant pelican case
- Operating temperature: -40 °C to +65 °C
- Dimensions: 26 x 45 x 55 cm
- Weight: 40 kg

APPENDIX C

Magnetic Equipment

GSM 19

Specifications

Overhauser Performance

Resolution: 0.01 nT
Relative Sensitivity: 0.02 nT
Absolute Accuracy: 0.2nT
Range: 20,000 to 120,000 nT
Gradient Tolerance: Over 10,000nT/m
Operating Temperature: -40°C to +60°C

Operation Modes

Manual: Coordinates, time, date and reading stored automatically at min. 3 second interval.
Base Station: Time, date and reading stored at 3 to 60 second intervals.
Walking Mag: Time, date and reading stored at coordinates of fiducial.
Remote Control: Optional remote control using RS-232 interface.
Input/Output: RS-232 or analog (optional) output using 6-pin weatherproof connector.

Operating Parameters

Power Consumption: Only 2Ws per reading. Operates continuously for 45 hours on standby.
Power Source: 12V 2.6Ah sealed lead acid battery standard, other batteries available
Operating Temperature: -50°C to +60°C

Storage Capacity

Manual Operation: 29,000 readings standard, with up to 116,000 optional. With 3 VLF stations: 12,000 standard and up to 48,000 optional.

Base Station: 105,000 readings standard, with up to 419,000 optional (88 hours or 14 days uninterrupted operation with 3 sec. intervals)

Gradiometer: 25,000 readings standard, with up to 100,000 optional. With 3 VLF stations: 12,000, with up to 45,000 optional.

Omnidirectional VLF

Performance Parameters: Resolution 0.5% and range to ±200% of total field. Frequency 15 to 30 kHz.

Measured Parameters: Vertical in-phase & out-of-phase, 2 horizontal components, total field coordinates, date, and time.

Features: Up to 3 stations measured automatically, in-field data review, displays station field strength continuously, and tilt correction for up to ±10° tilts.

Dimensions and Weights: 93 x 143 x 150mm and weighs only 1.0kg.

Dimensions and Weights

Dimensions:
Console: 223 x 69 x 240mm
Sensor: 170 x 71mm diameter cylinder
Weight:
Console: 2.1kg
Sensor and Staff Assembly: 2.0kg

Standard Components

GSM-19 magnetometer console, harness, battery charger, shipping case, sensor with cable, staff, instruction manual, data transfer cable and software.

Taking Advantage of a “Quirk” of Physics

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 measurement. In comparison with proton precession methods, RF signal generation also keeps power consumption to an absolute minimum and reduces 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).

- The unique Overhauser unit blends physics, data quality, operational efficiency, system design and options into an instrumentation package that ... exceeds proton precession and matches costlier optically pumped cesium capabilities

APPENDIX D

LIST OF MAPS (IN MAP POCKET)

Posted Contoured Pseudo-Sections with Inversions (1:2500)

1) Q2476-War Eagle-Goodfish Kirana-IP-DpDp-INV-38700N
2) Q2476-War Eagle-Goodfish Kirana-IP-DpDp-INV-38900N
3) Q2476-War Eagle-Goodfish Kirana-IP-DpDp-INV-39100N
4) Q2476-War Eagle-Goodfish Kirana-IP-DpDp-INV-39300N
5) Q2476-War Eagle-Goodfish Kirana-IP-DpDp-INV-39600N
6) Q2476-War Eagle-Goodfish Kirana-IP-DpDp-INV-39700N
7) Q2476-War Eagle-Goodfish Kirana-IP-DpDp-INV-39900N

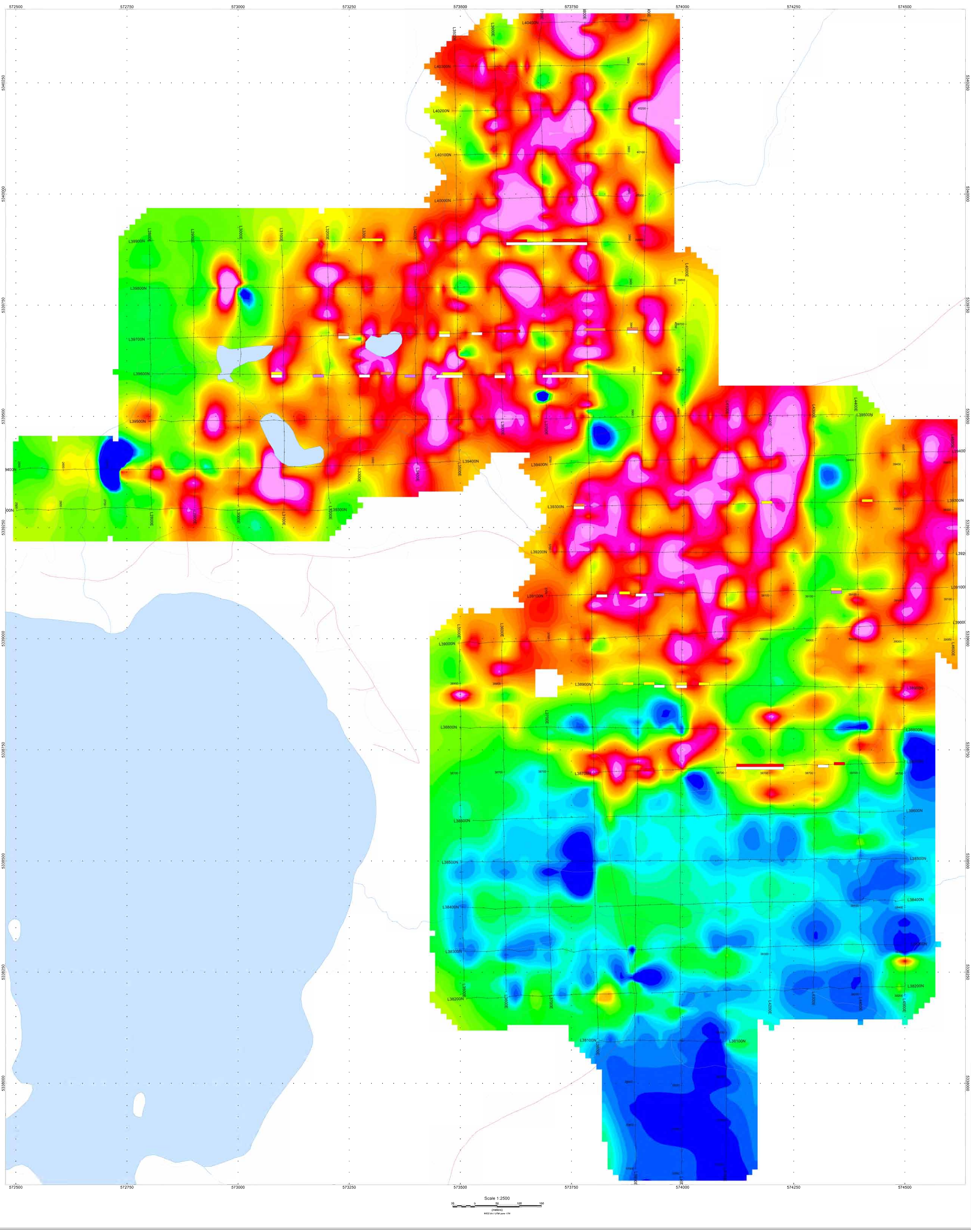
Plan Maps (1:2500)

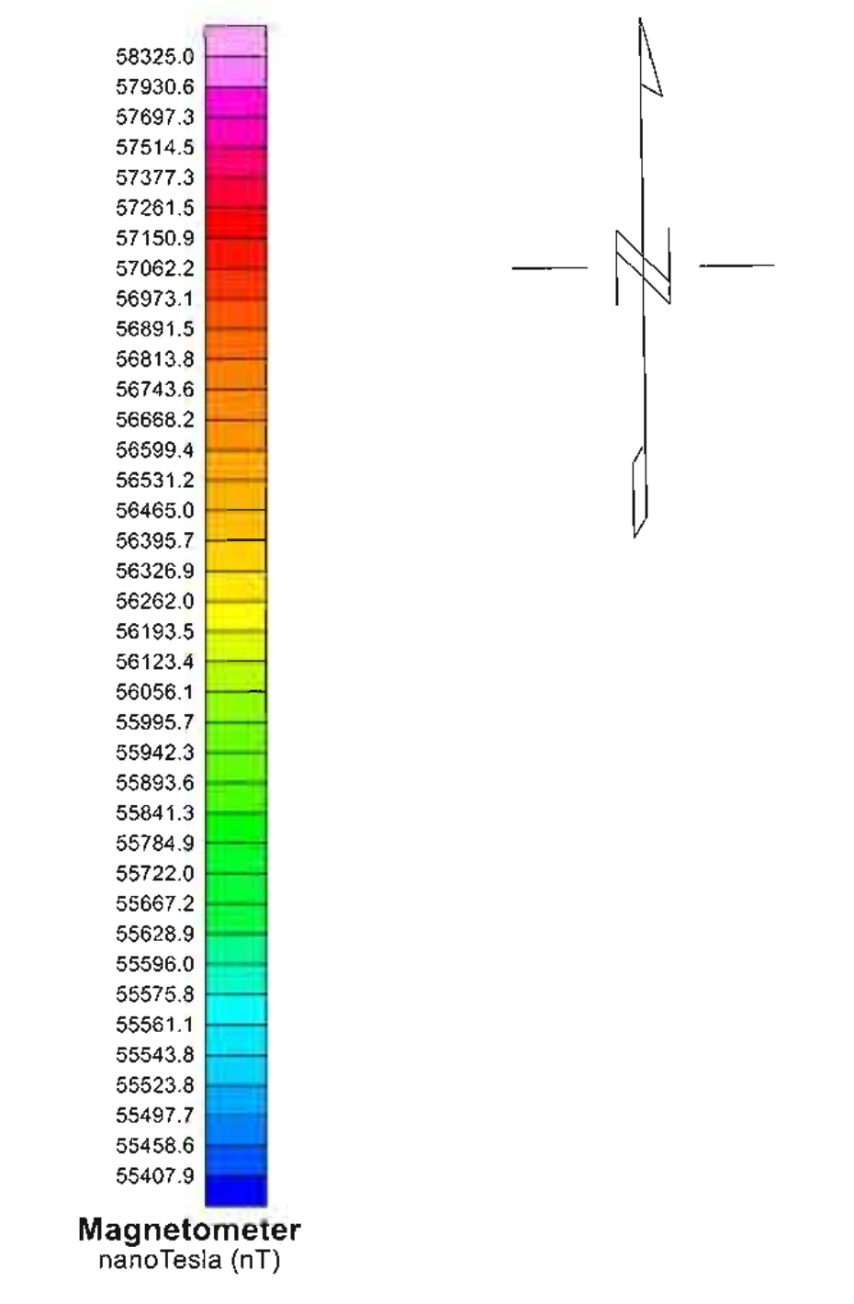
8) Q2476-War Eagle-Goodfish Kirana-IP-DpDp-N2-Chr
9) Q2476-War Eagle-Goodfish Kirana-IP-DpDp-N2-Res
10) Q2476-War Eagle-Goodfish Kirana-Mag-Cont
11) Q2476-War Eagle-Goodfish Kirana-VLF-NAA-NML
12) Q2476-War Eagle-Goodfish Kirana-IP-INV-Chr-0m
13) Q2476-War Eagle-Goodfish Kirana-IP-INV-Chr-25m
14) Q2476-War Eagle-Goodfish Kirana-IP-INV-Chr-50m
15) Q2476-War Eagle-Goodfish Kirana-IP-INV-Res-0m
16) Q2476-War Eagle-Goodfish Kirana-IP-INV-Res-25m
17) Q2476-War Eagle-Goodfish Kirana-IP-INV-Res-50m
18) Q2476-War Eagle-Goodfish Kirana-Interp

Grid Sketch (1:20000)

19) Q2476-War Eagle-Goodfish Kirana-Grid

TOTAL MAPS = 19





🟥 Strong Chargeability Response
🟧 Moderate Chargeability Response
🟨 Weak Chargeability Response
☐ High Resistivity Response
🟪 Low Resistivity Response

War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

DIPOLE DIPOLE IP ANOMALY
MAGNETOMETER PLAN MAP

ELREC PRO and
GSM-19 OVERHAUSER MAGNETOMETER v7

Receiver Operated By:
Dakota....
Processed by:
C Jason Ploeger, B.Sc.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

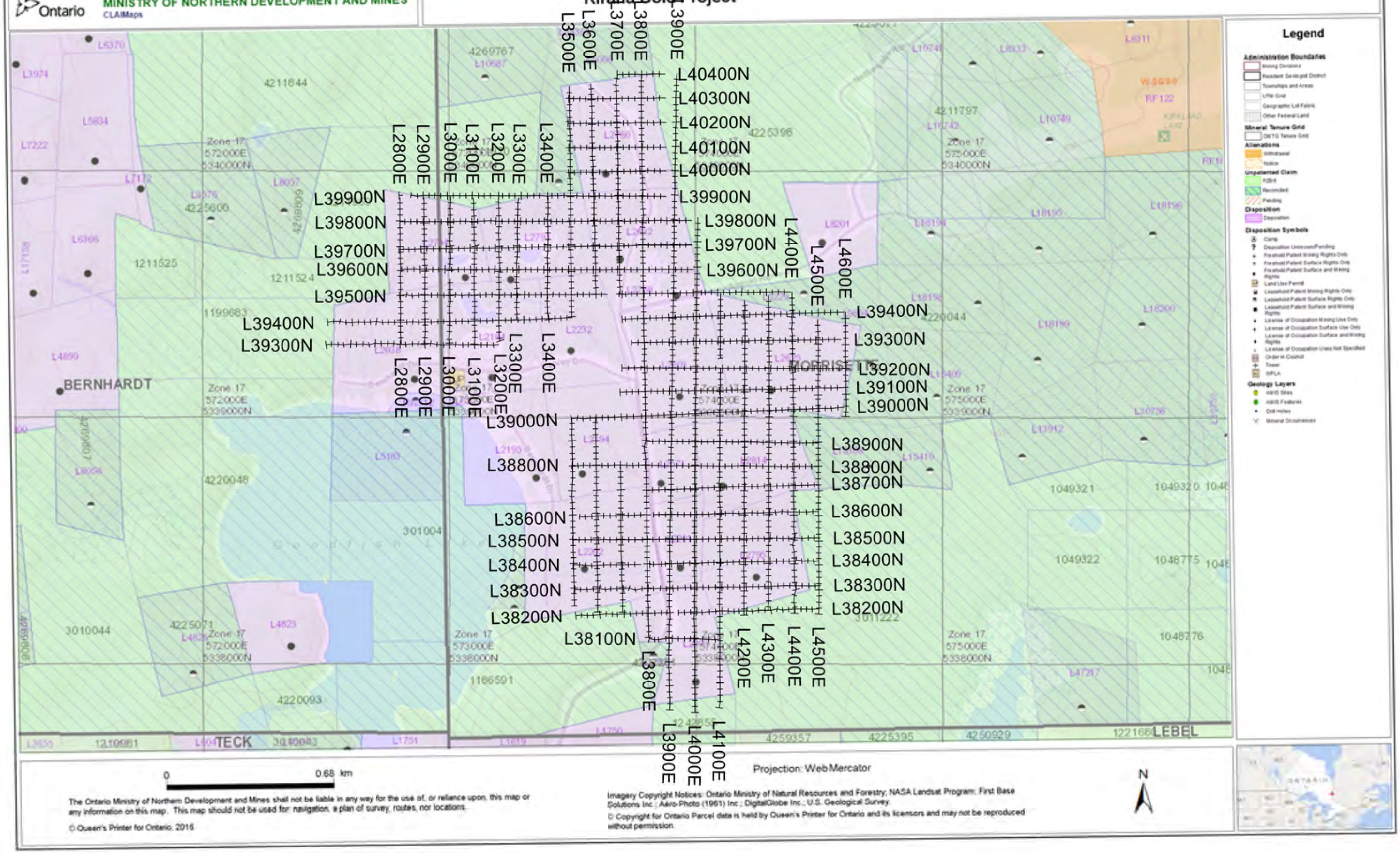
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-War Eagle-Goodfish Kirana-Gold-Interp

Ontario **MINISTRY OF NORTHERN DEVELOPMENT AND MINES**
CLAIMaps

Kirana Gold Project

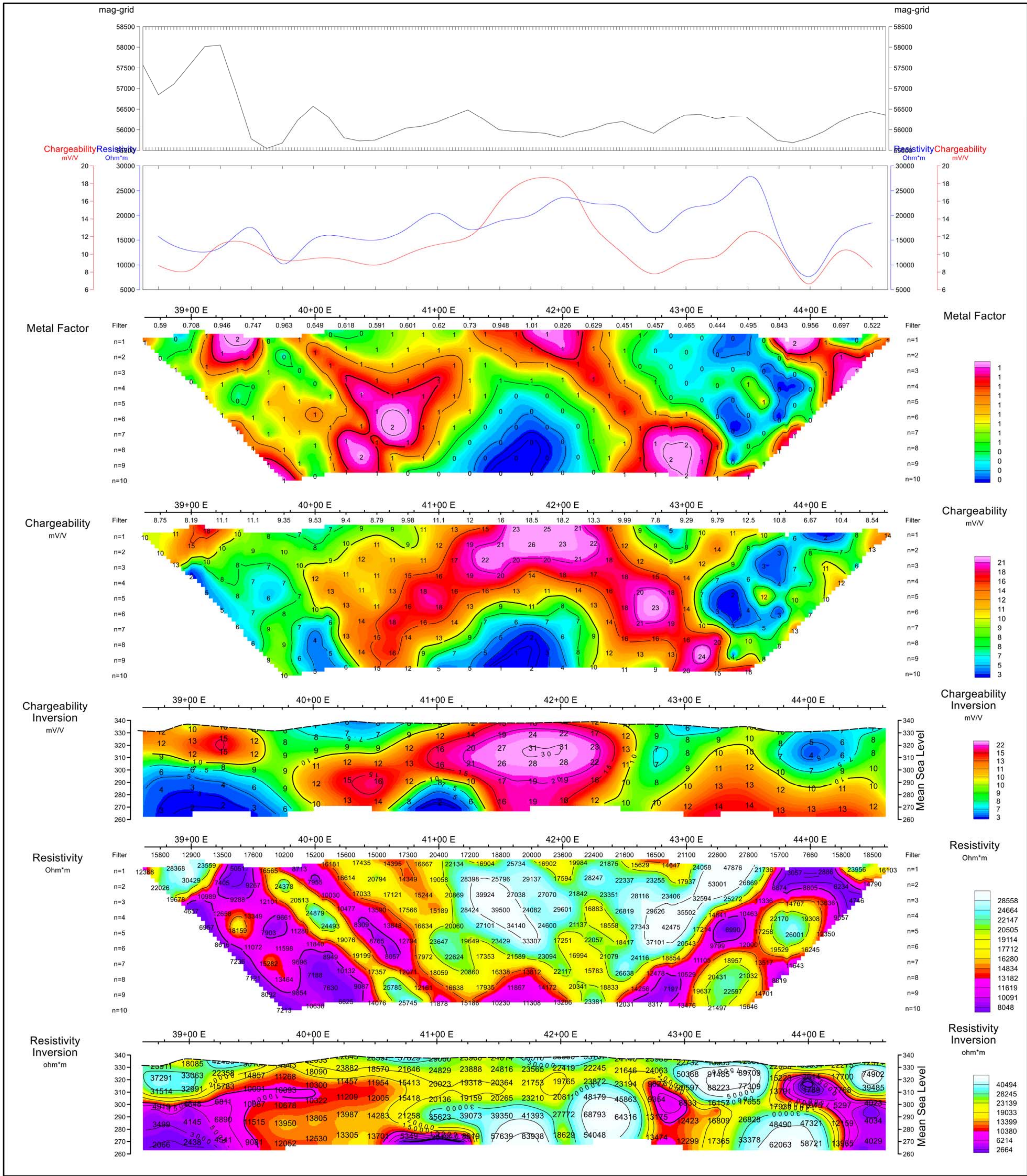
Notes: Enter map notes



Projection: Web Mercator

The Ontario Ministry of Northern Development and Mines shall not be liable in any way for the use of, or reliance upon, this map or any information on this map. This map should not be used for navigation, a plan of survey, routes, nor locations.

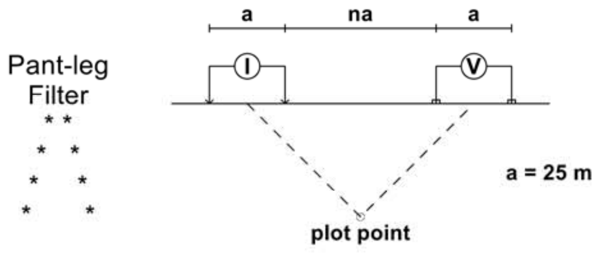
Imagery Copyright Notices: Ontario Ministry of Natural Resources and Forestry; NASA Landsat Program; First Base Solutions Inc.; Aéro-Photo (1961) Inc.; DigitalGlobe Inc.; U.S. Geological Survey.



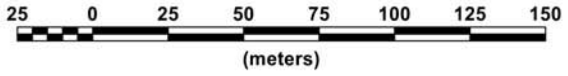
Pseudo Section Plot

387+00 N

Dipole-Dipole Array



Scale 1:2500



War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

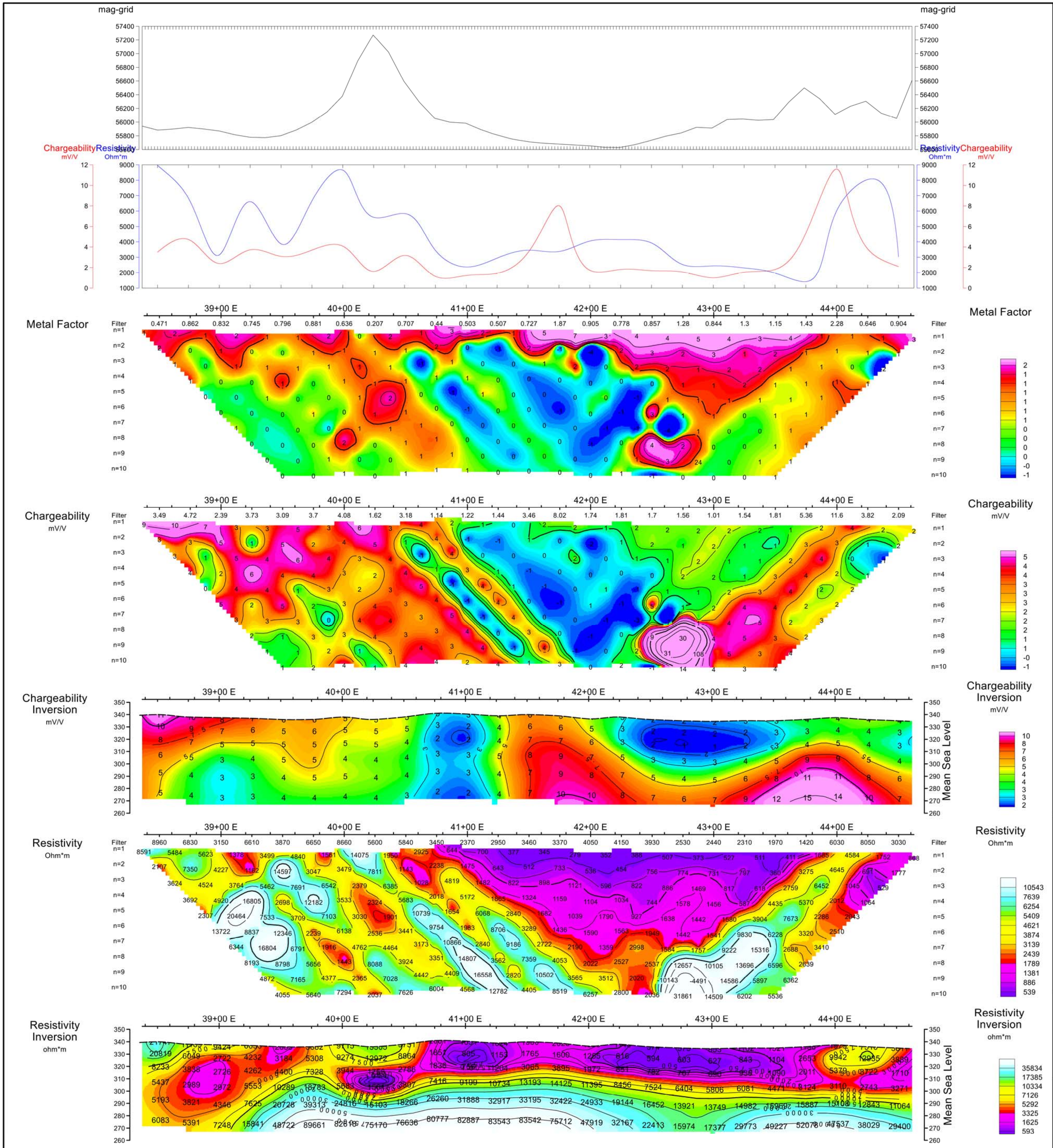
Dipole Dipole Induced Polarization
and Inversion Sections

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

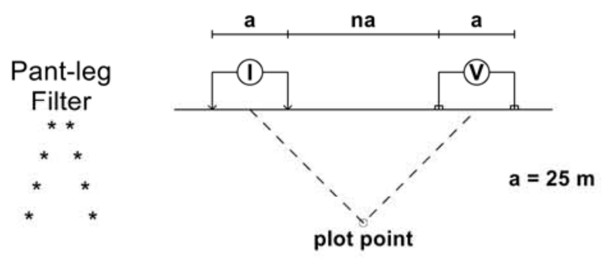
Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-DpDp-INV-38700N



Pseudo Section Plot

389+00 N

Dipole-Dipole Array



Scale 1:2500

25 0 25 50 75 100 125 150

(meters)

War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

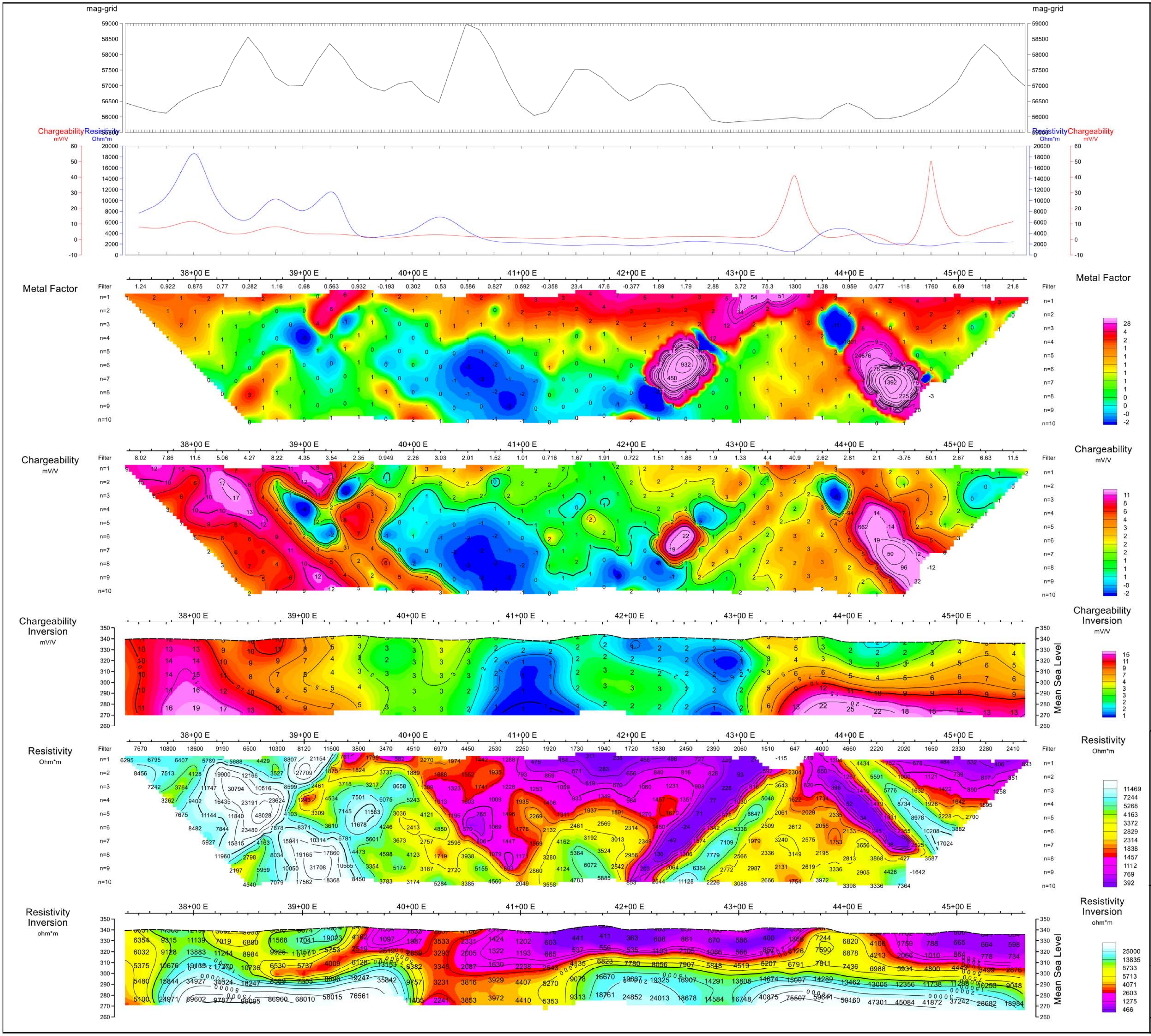
Dipole Dipole Induced Polarization
and Inversion Sections

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

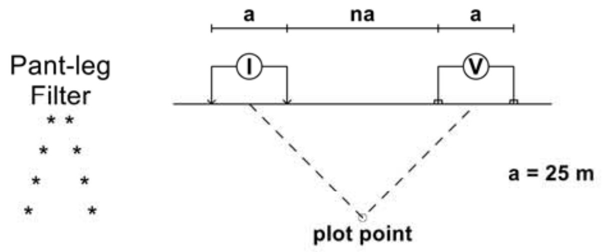
Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-DpDp-INV-38900N



Pseudo Section Plot

391+00 N

Dipole-Dipole Array



Scale 1:2500

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(meters)

War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

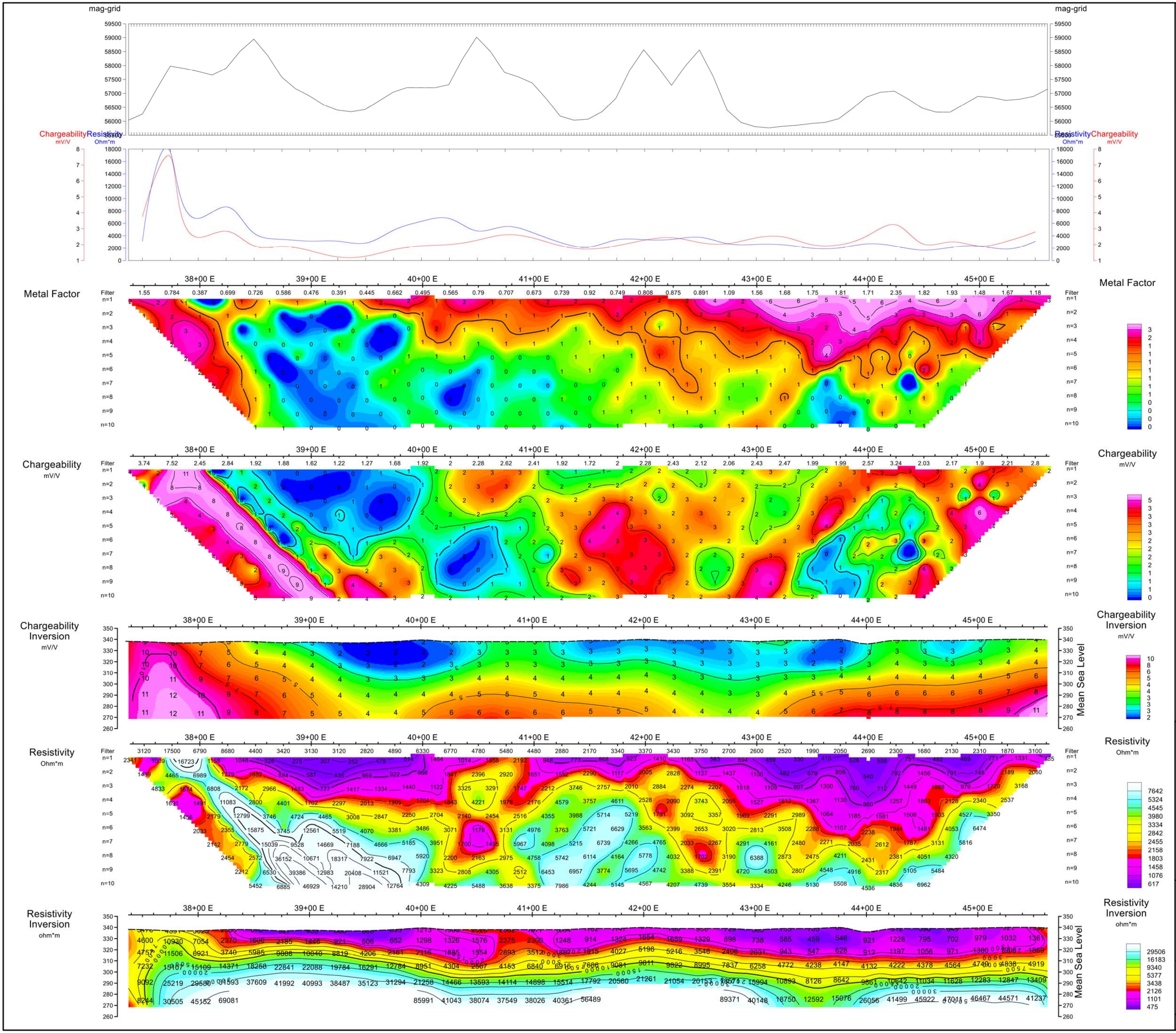
Dipole Dipole Induced Polarization
and Inversion Sections

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

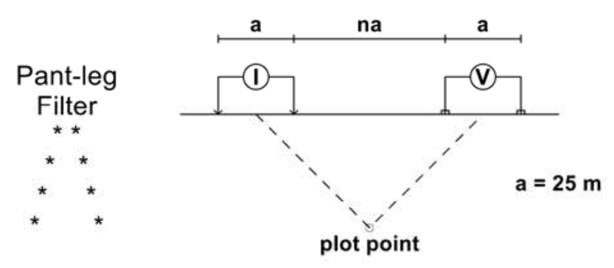
Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-DpDp-INV-39100N



Pseudo Section Plot

393+00 N

Dipole-Dipole Array



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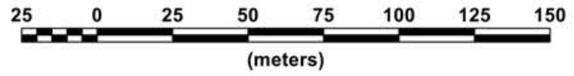


War Eagle Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

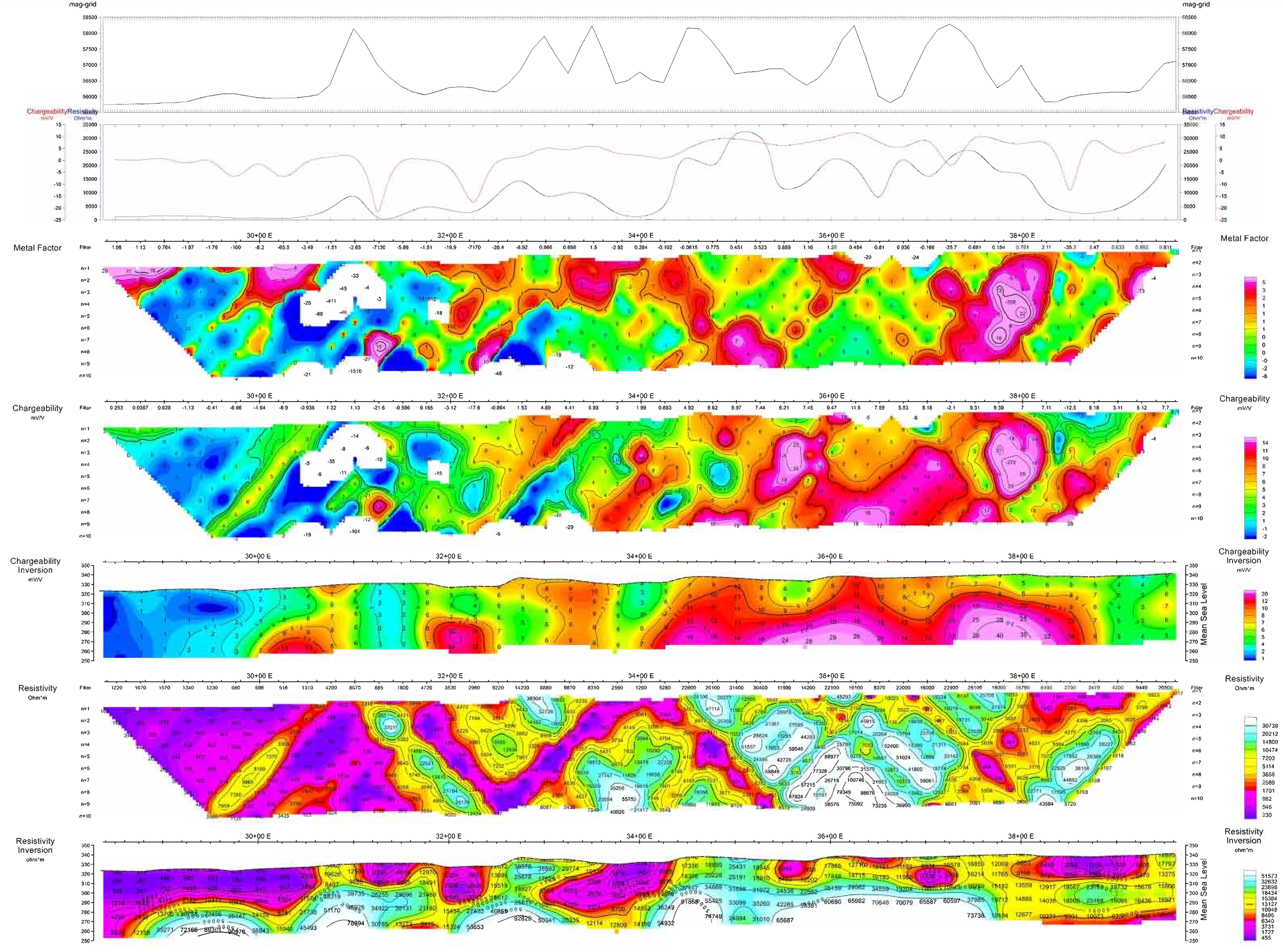
Dipole Dipole Induced Polarization and Inversion Sections

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

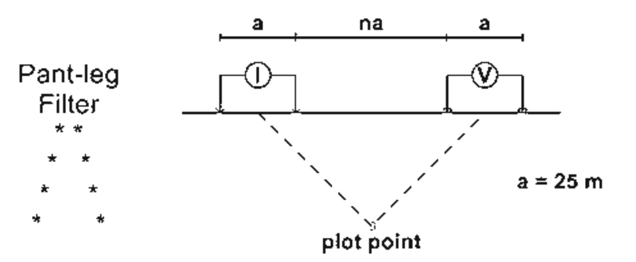
CXS
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-DpDp-INV-39300N



Pseudo Section Plot
396+00 N

Dipole-Dipole Array



Scale 1:2500

25 0 25 50 75 100 125 150

(meters)

War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

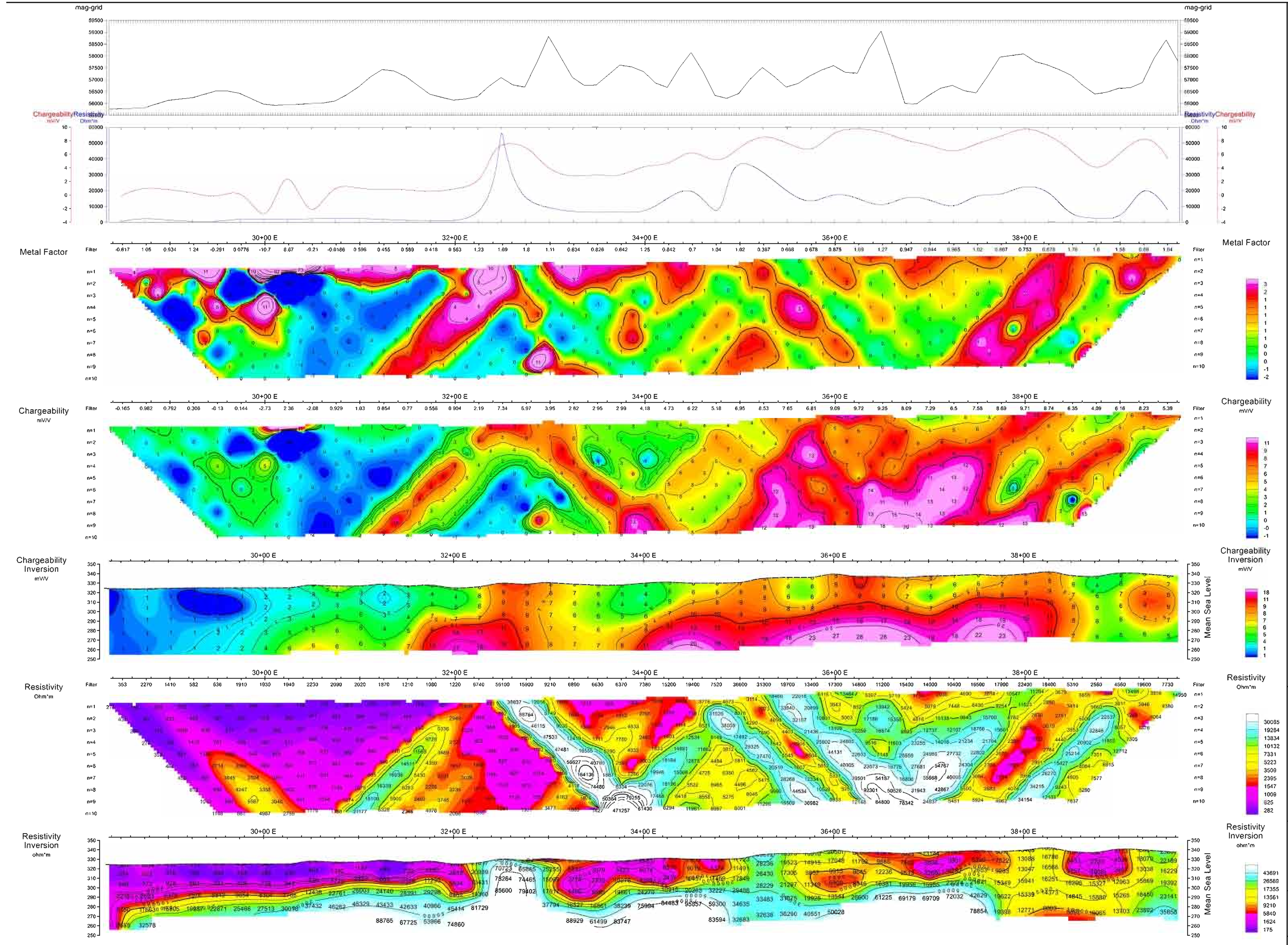
Dipole Dipole Induced Polarization
and Inversion Sections

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

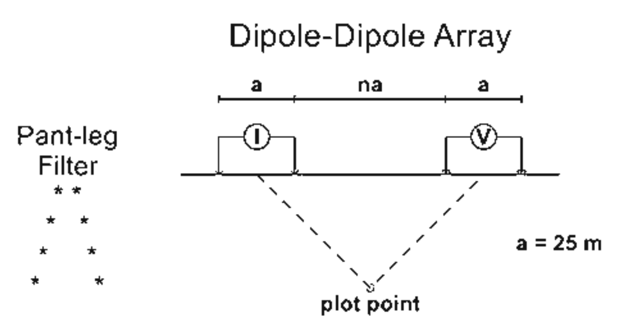
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-DpDp-INV-39600N



Pseudo Section Plot

397+00 N



Scale 1:2500

25 0 25 50 75 100 125 150

(meters)

War Eagle

Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

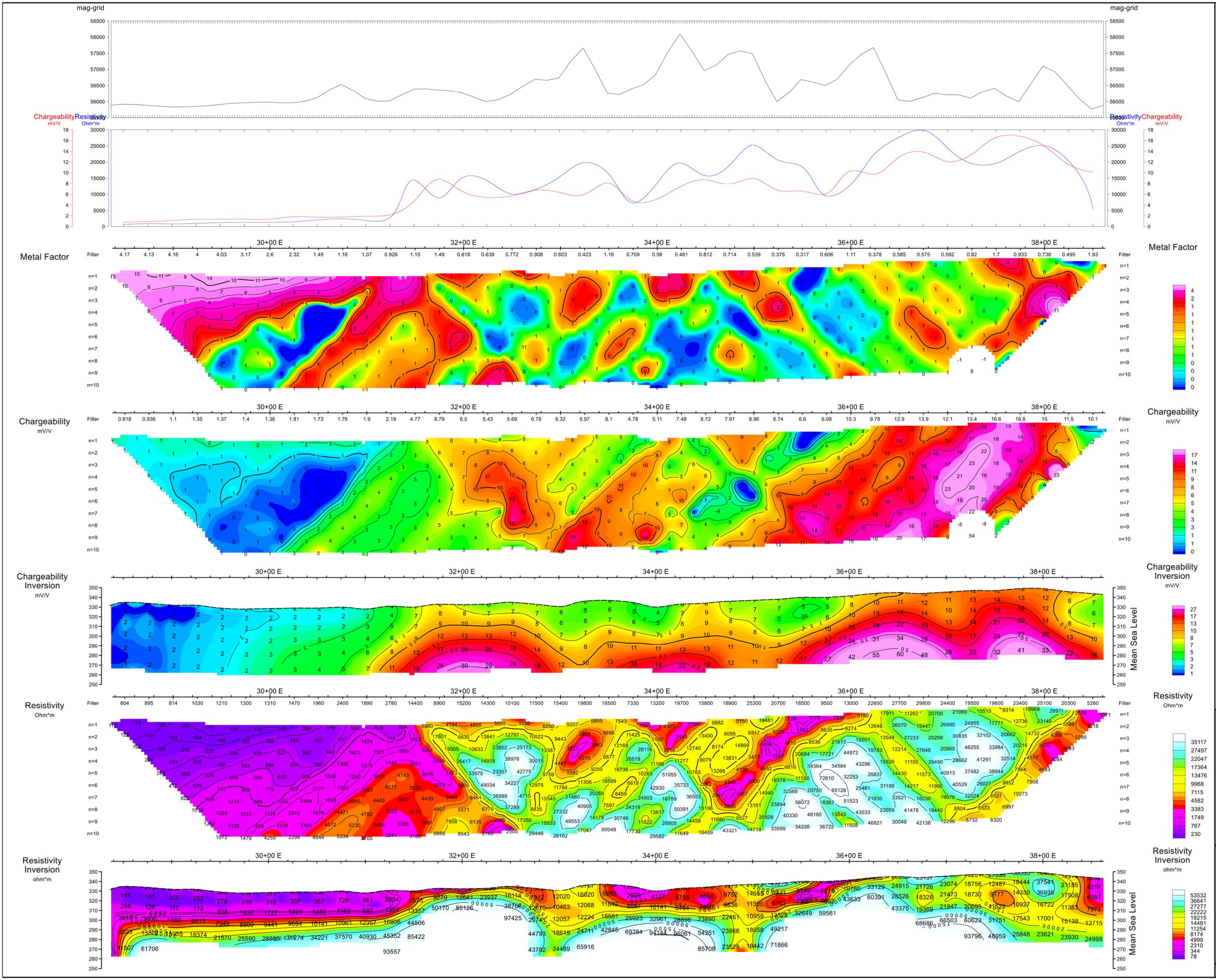
Dipole Dipole Induced Polarization
and Inversion Sections

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CANADIAN EXPLORATION SERVICES LTD

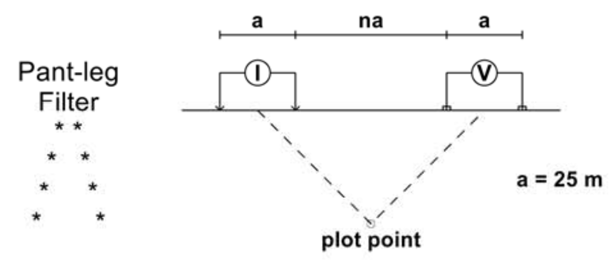
Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-DpDp-INV-39700N



Pseudo Section Plot

399+00 N

Dipole-Dipole Array



Scale 1:2500

25 0 25 50 75 100 125 150

(meters)

War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

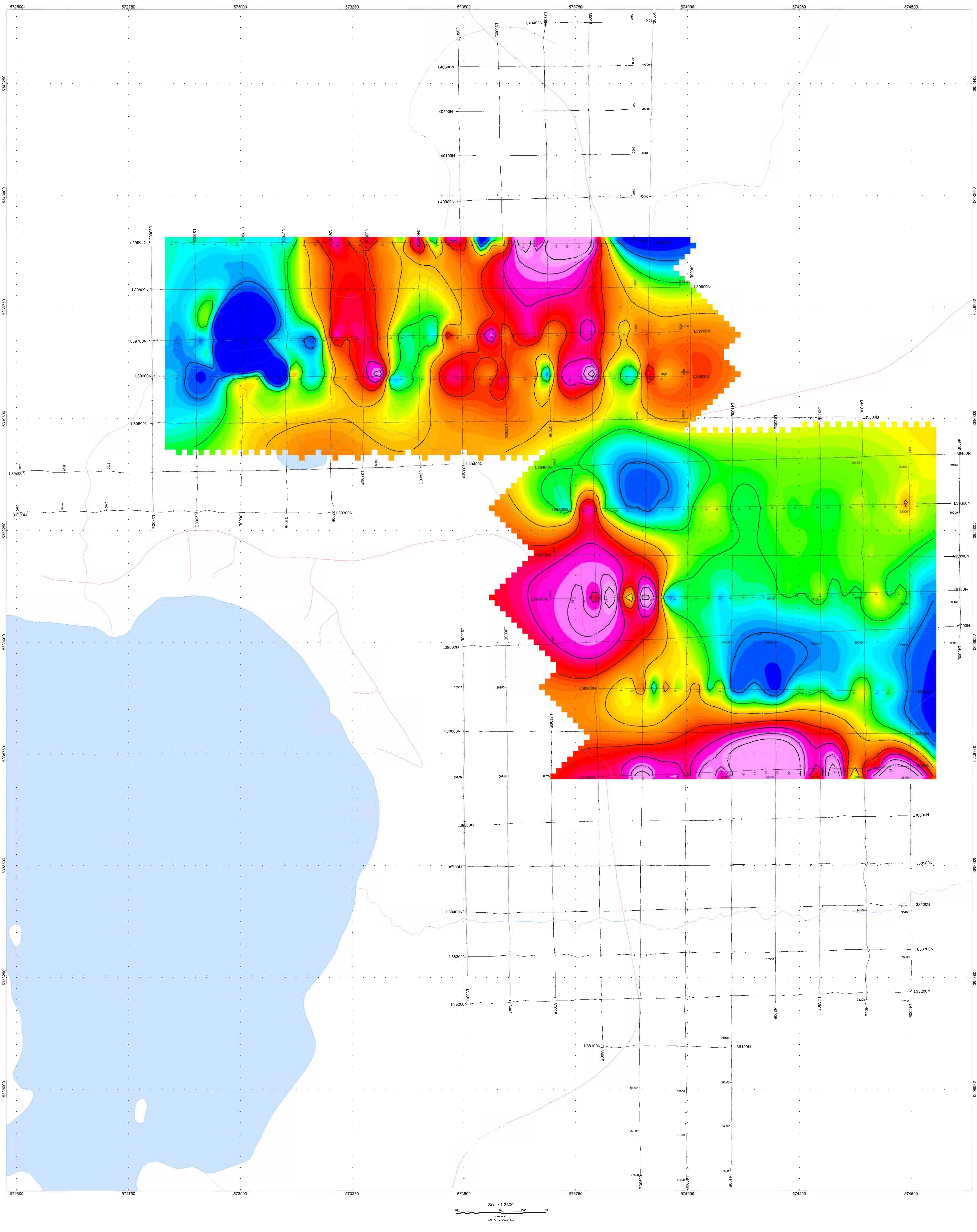
Dipole Dipole Induced Polarization
and Inversion Sections

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-DpDp-INV-39900N



War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

Dipole Dipole Induced Polarization Survey
Chargeability N2 Data

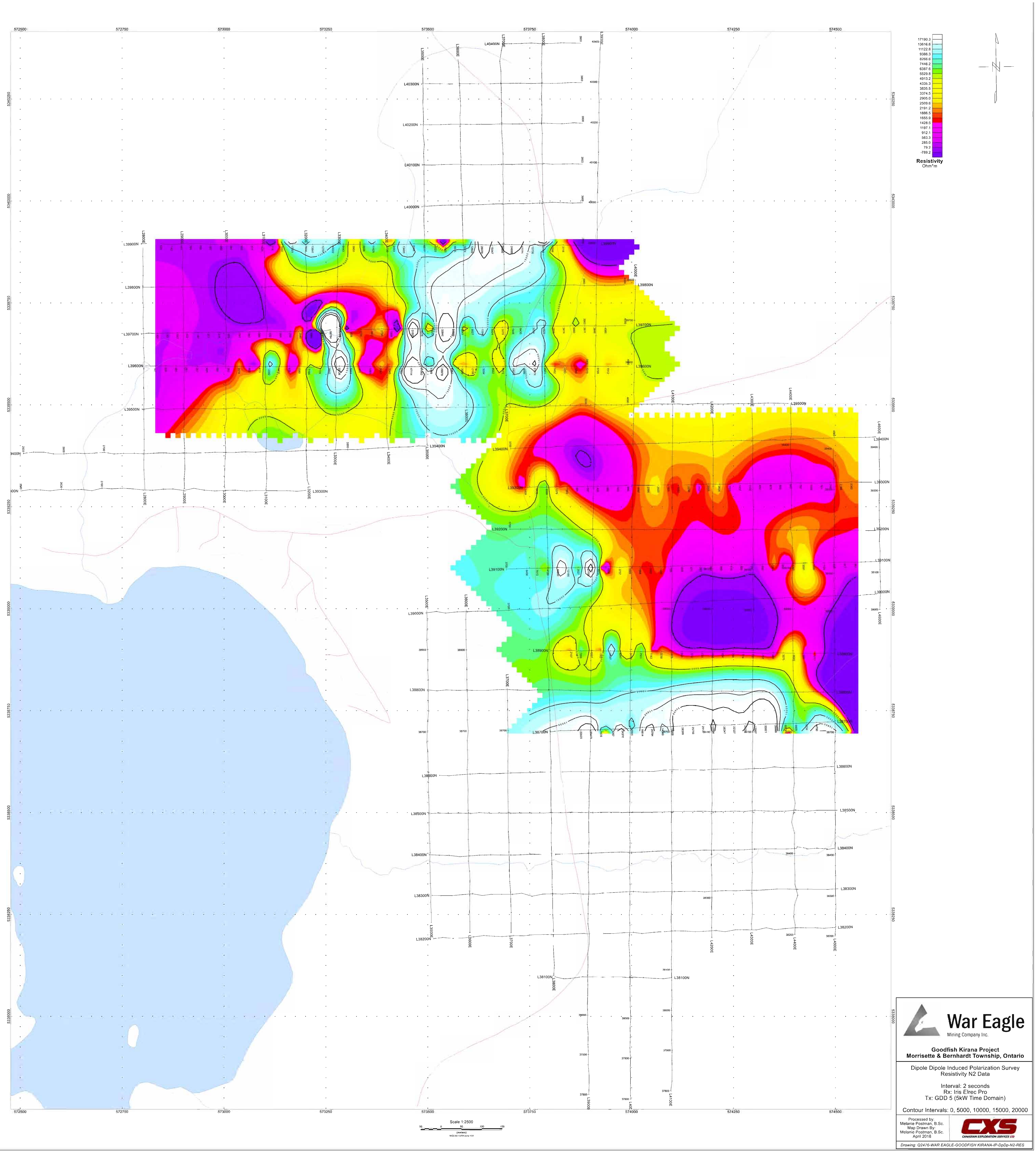
Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Contour Intervals: 0, 2, 4, 6, 8, 10, 12

Proccssed by:
Melanie Postman, B.Sc.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-DpDp-N2-Chr



War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

Dipole Dipole Induced Polarization Survey
Resistivity N2 Data

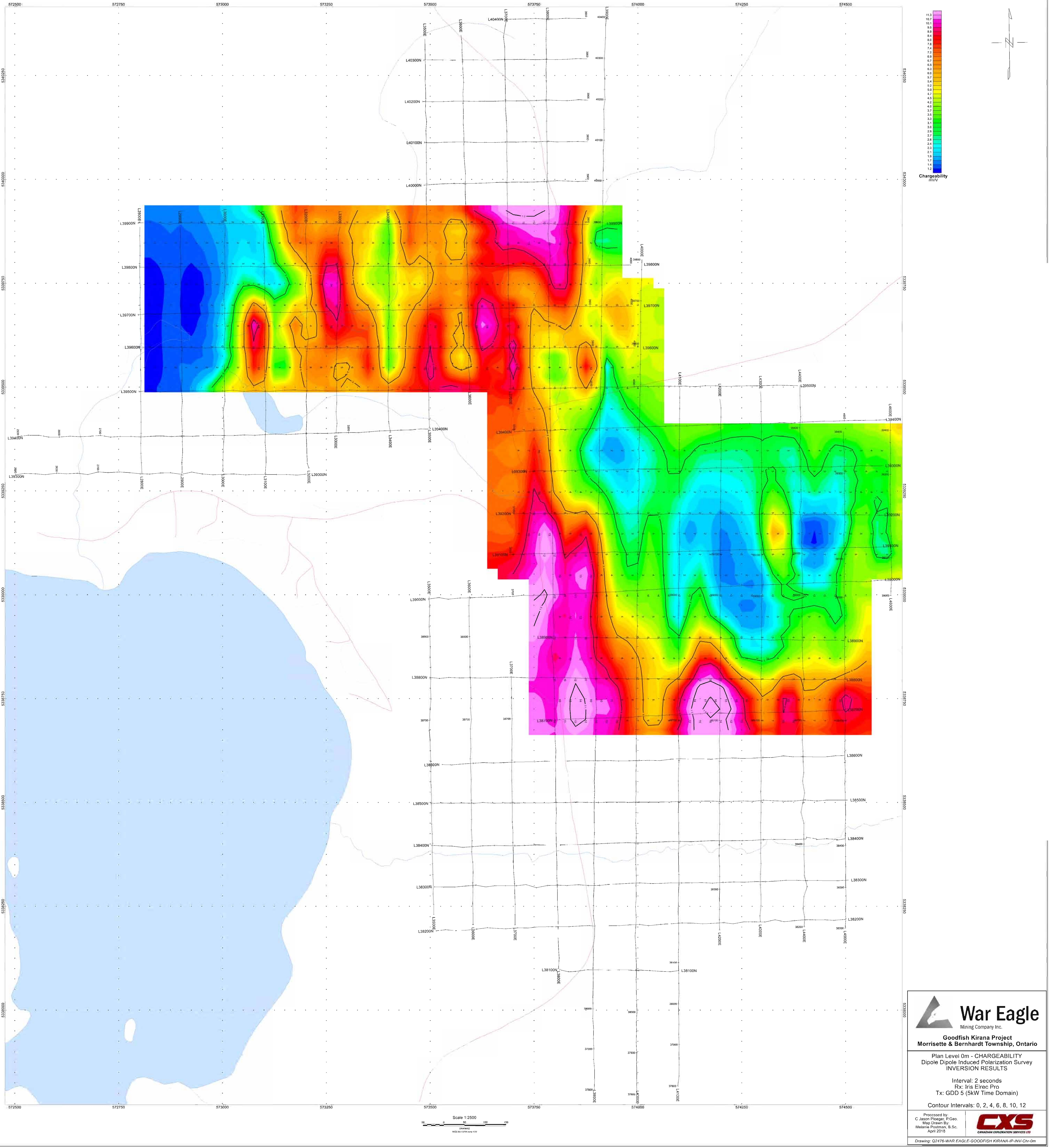
Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Contour Intervals: 0, 5000, 10000, 15000, 20000

Processed by:
Melanie Postman, B.Sc.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-DpDp-N2-RES



War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

Plan Level 0m - CHARGEABILITY
Dipole Dipole Induced Polarization Survey
INVERSION RESULTS

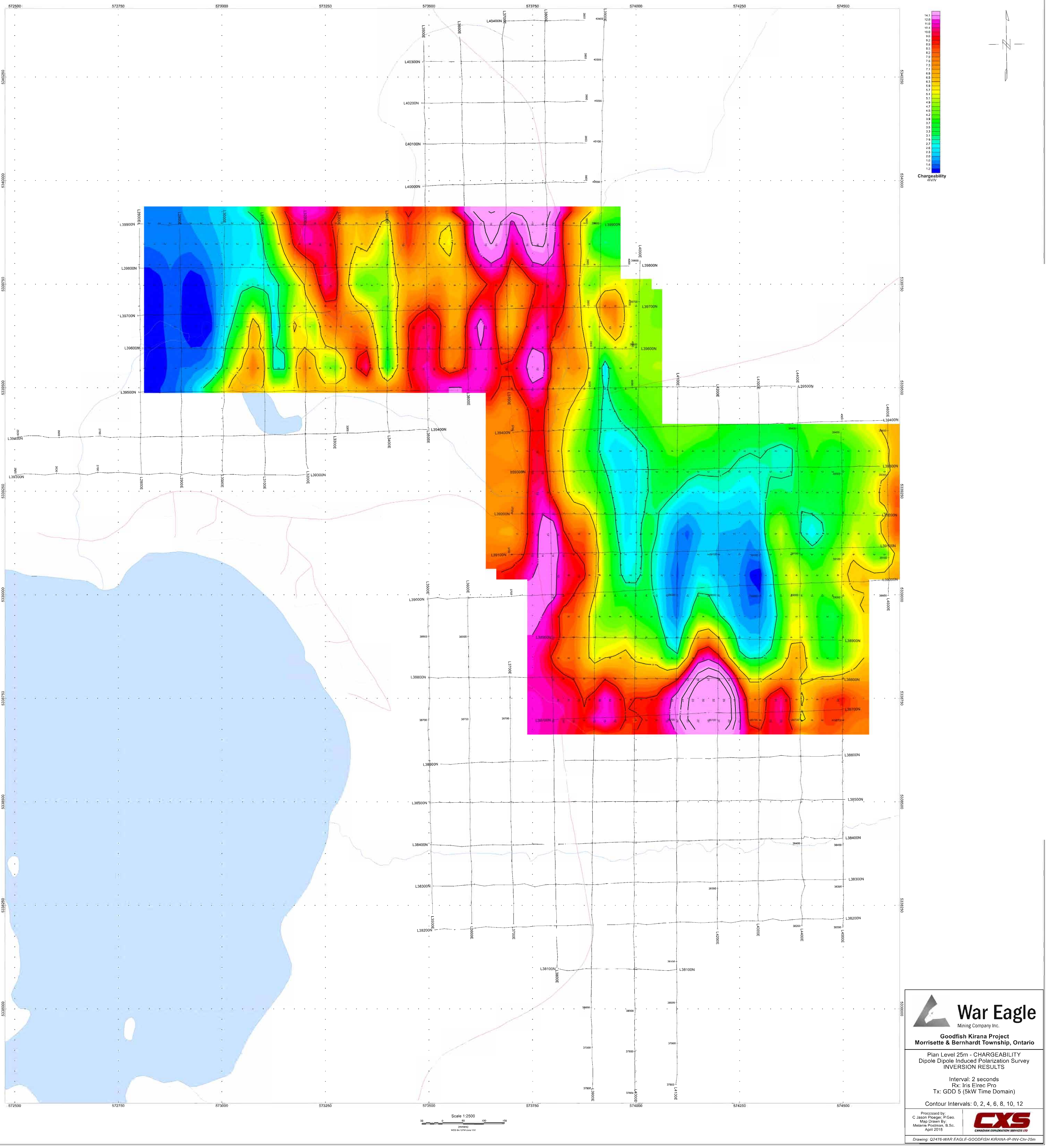
Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Contour Intervals: 0, 2, 4, 6, 8, 10, 12

Proccssed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-INV-Chr-0m



War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

Plan Level 25m - CHARGEABILITY
Dipole Dipole Induced Polarization Survey
INVERSION RESULTS

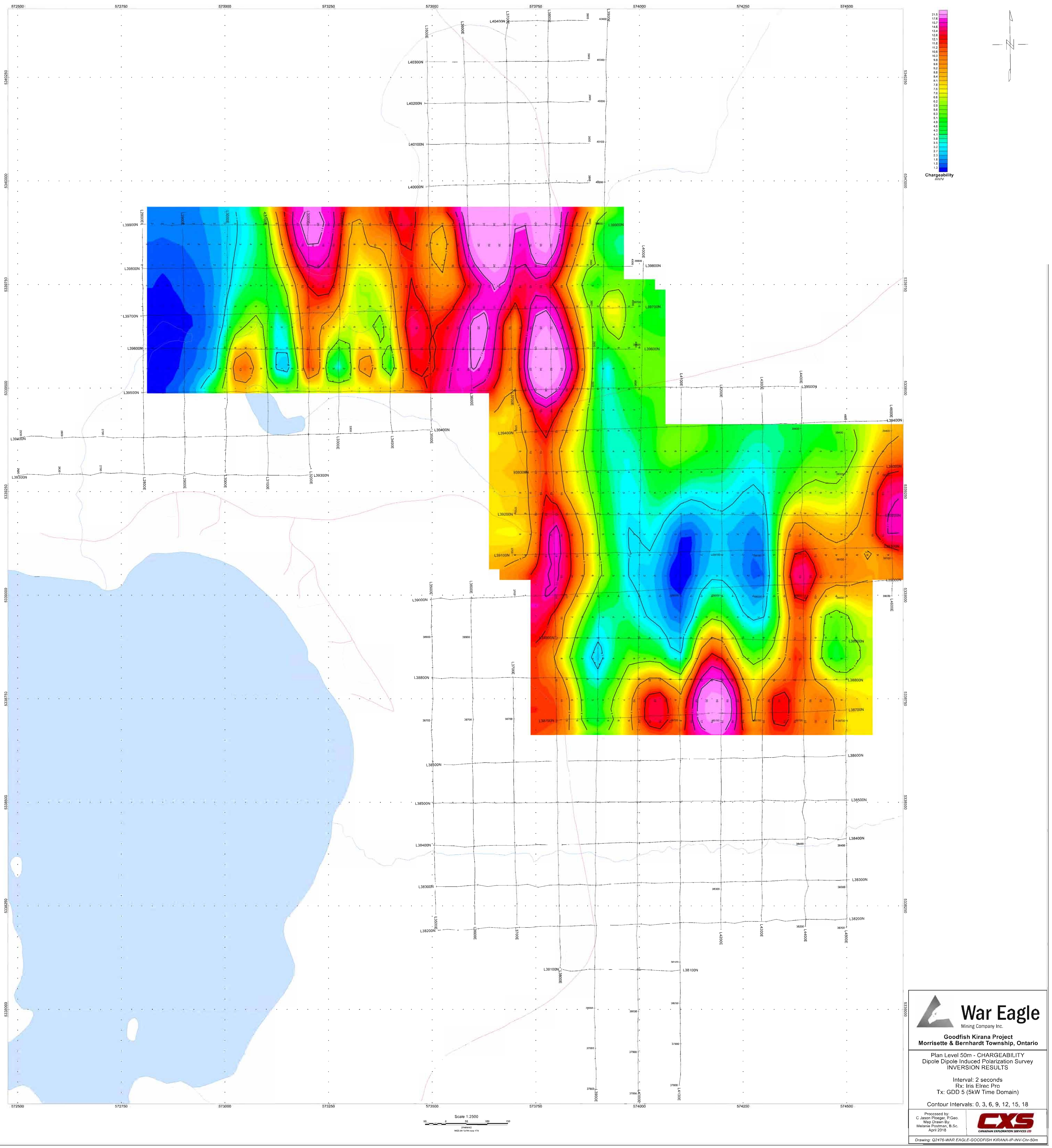
Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Contour Intervals: 0, 2, 4, 6, 8, 10, 12

Proccssed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-INV-Chr-25m



War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

Plan Level 50m - CHARGEABILITY
Dipole Dipole Induced Polarization Survey
INVERSION RESULTS

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Contour Intervals: 0, 3, 6, 9, 12, 15, 18

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

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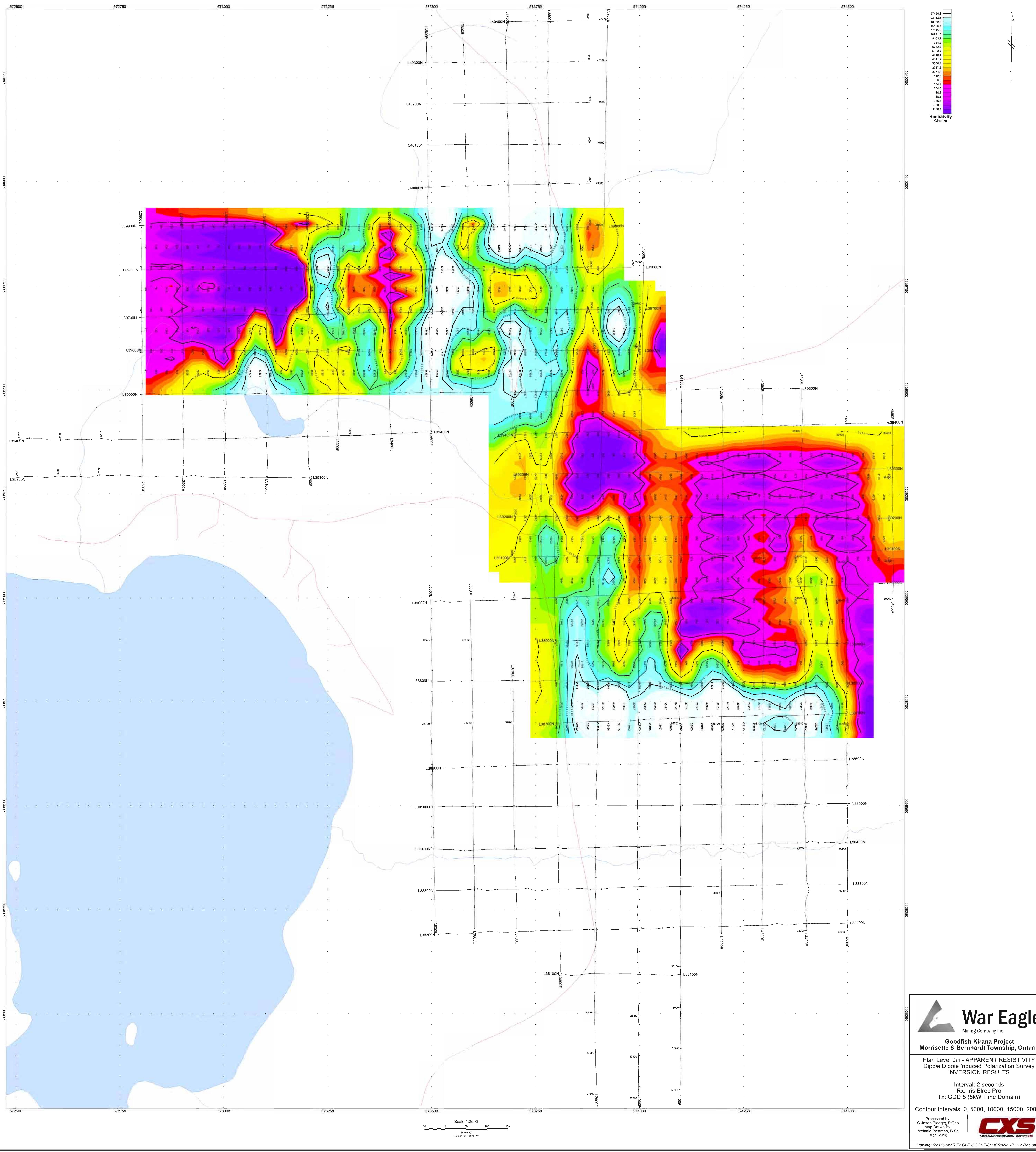
Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-INV-Chr-50m



War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

Plan Level 0m - APPARENT RESISTIVITY
Dipole Dipole Induced Polarization Survey
INVERSION RESULTS

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Contour Intervals: 0, 5000, 10000, 15000, 20000

Processed by:
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Map Drawn By:
Melanie Postman, B.Sc.
April 2018

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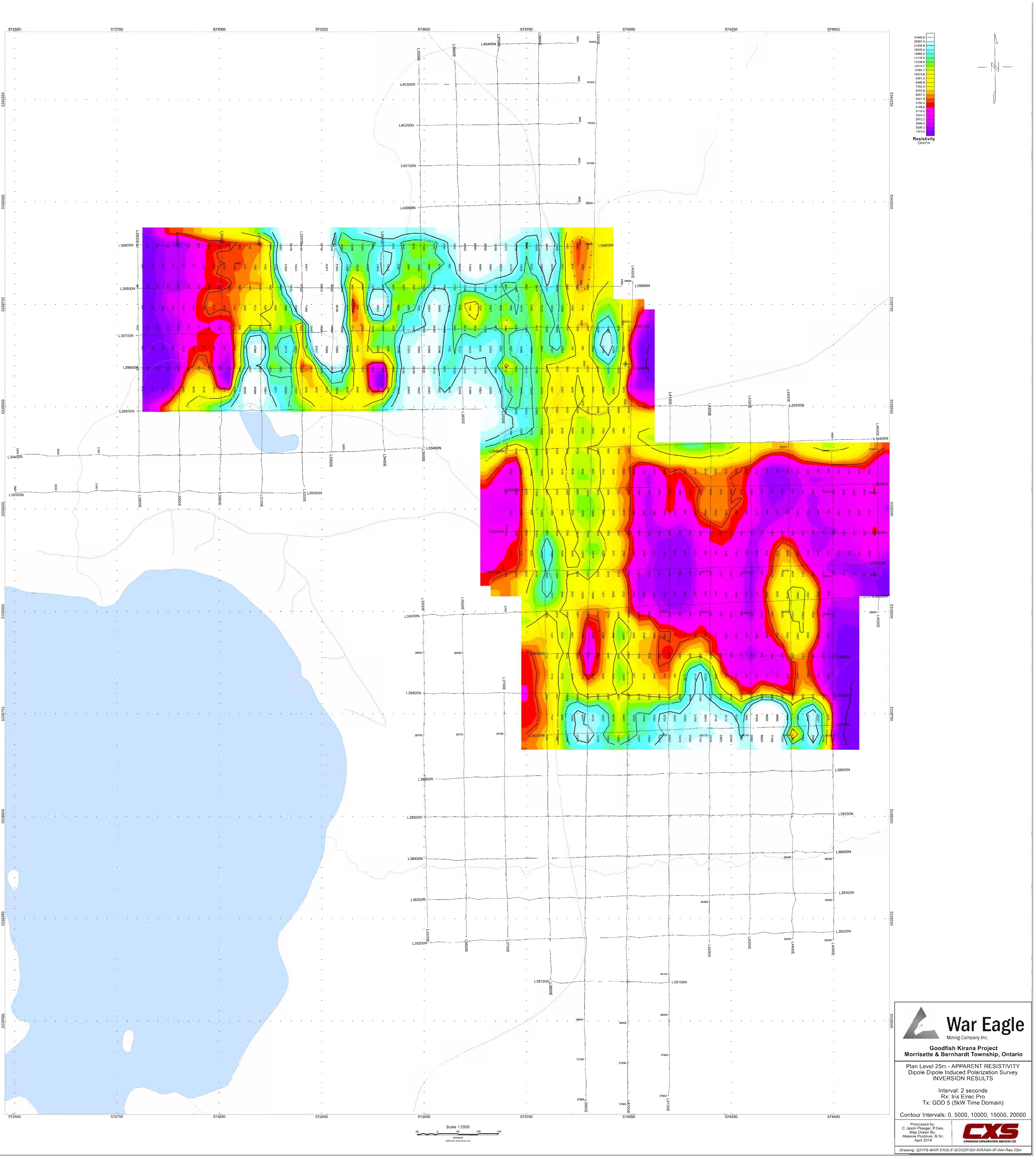
Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-INV-Res-0m



War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

Plan Level 25m - APPARENT RESISTIVITY
Dipole Dipole Induced Polarization Survey
INVERSION RESULTS

Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

Contour Intervals: 0, 5000, 10000, 15000, 20000

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-INV-Res-25m

War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

Plan Level 50m - APPARENT RESISTIVITY
Dipole Dipole Induced Polarization Survey
INVERSION RESULTS

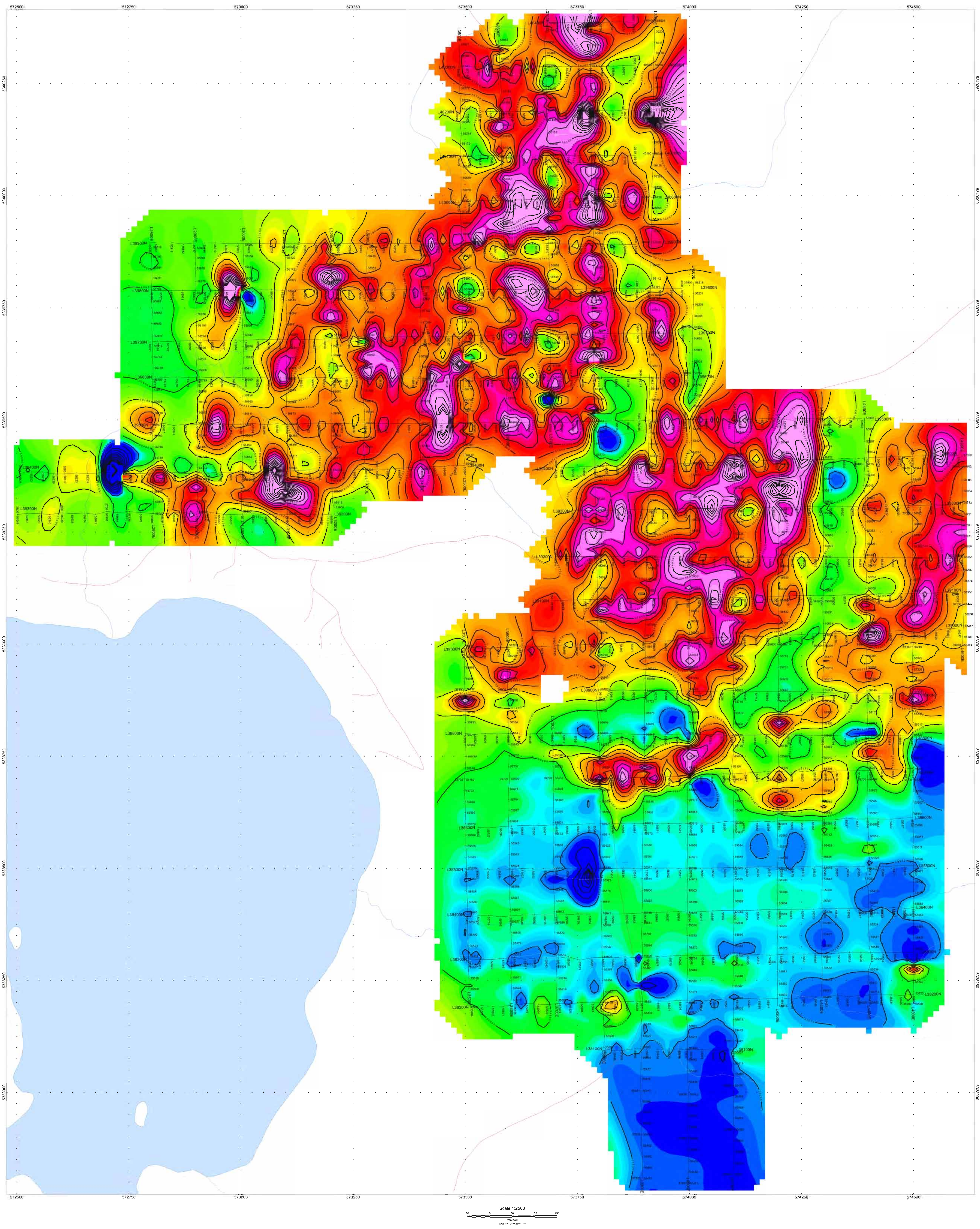
Interval: 2 seconds
Rx: Iris Elrec Pro
Tx: GDD 5 (5kW Time Domain)

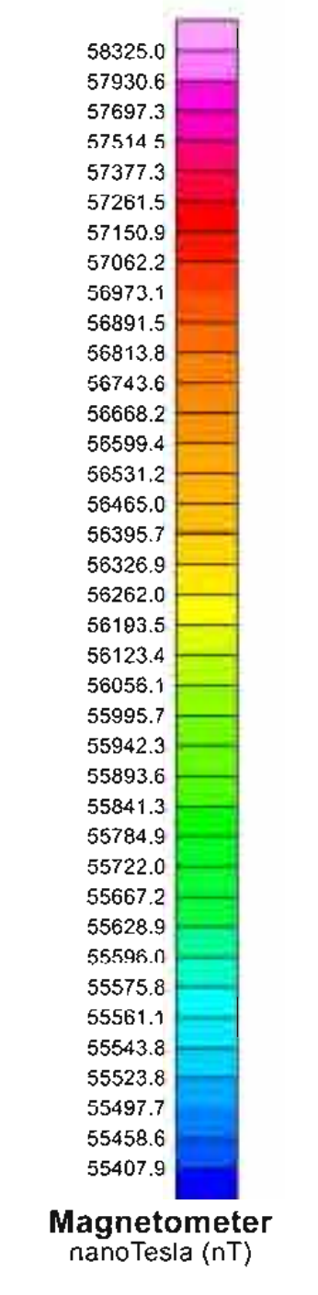
Contour Intervals: 0, 10000, 20000, 30000, 40000

Processed by:
C Jason Ploeger, P.Geo.
Map Drawn By:
Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-IP-INV-Res-50m





War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

TOTAL FIELD MAGNETIC CONTOURED PLAN MAP
Base Station Corrected

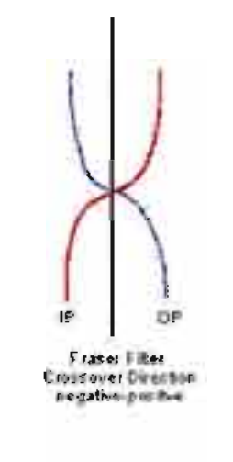
Posting Level: 0nT
Field Inclination/Declination: 74degN/12degW
Station Seperation: Walkmag 1 second
Total Field Magnetic Contours: 300nT

GSM-19 OVERHAUSER MAGNETOMETER v7

Receiver Operated By: Dakota Maurer
Processed by: C Jason Ploeger, P.Geo.
Map Drawn By: Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-MAG-CONT



War Eagle
Mining Company Inc.

Goodfish Kirana Project
Morrisette & Bernhardt Township, Ontario

VLF IN PHASE/OUT PHASE PROFILE
24.0 kHz NAA - CUTLER, USA
25.2 kHz NML - LAMOURE, USA

In Phase: Posted Right/Bottom (Red)
Out Phase: Posted Left/Top (Blue)

Vertical Profile Scales: 3 %/mm

Station Seperation: Walkmag 1 second
Posting Level: 0

GSM-19 MAG/VLF v7

Receiver Operated By: Dakota Maurer
Processed by: C Jason Ploeger, P.Geo.
Map Drawn By: Melanie Postman, B.Sc.
April 2018

CXS
CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2476-WAR EAGLE-GOODFISH KIRANA-VLF-NAA-NML

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CXS

CANADIAN EXPLORATION SERVICES LTD

WARRIOR GOLD INCORPORATED

Q2563 – Deloye Project
3D Distributed Induced Polarization Survey

C Jason Ploeger, P.Geo.
Melanie Postman, B.Sc. **December 12, 2018**

WARRIOR GOLD

EXPERIENCE • EXPLORATION • RESULTS

Abstract

CXS was contracted to perform a 3D Distributed Induced Polarization survey over the Deloye Property. The survey was designed to perform a reconnaissance of the potential mineralization within the underlying geology. To accomplish this, a 3D Distributed IP survey covering a footprint of 1.425 km^2 was performed over the property.

WARRIOR GOLD INCORPORATED

Q2563 – Deloye Project
3D Distributed Induced Polarization Survey

C Jason Ploeger, P.Geo.
Melanie Postman, B.Sc.

December 12, 2018

TABLE OF CONTENTS

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LIST OF TABLES AND FIGURES

1. SUMMARY

1.1 PROJECT NAME

This project is known as the **Deloye Project.**

1.2 CLIENT

Warrior Gold Inc.

25 Adelaide Street East
Suite 1400
Toronto, Ontario
M5C 3A1

1.3 OVERVIEW

CXS performed a 3D Distributed IP survey over the Deloye Project as requested by the management of Warrior. A length of 3.45 kilometres was covered with injected current during the 3D Distributed Induced Polarization survey between November 14, 2018 to November 18, 2018. The survey consisted of 78 injection locations that spanned a footprint of 1.425km^2, data was collected at a 50m current injection interval. A total of 2740 clean IP data points were collected over 2 acquisition days with a maximum depth inverted up to 460 metres.

1.4 OBJECTIVE

The 3D distributed IP survey was designed firstly to test the extent of the known mineralization around a historic mine, and secondly to follow a part of the Kirana Fault that the historical mine is situated along. Crosscutting features were also suspected in the area. The 3D distributed IP survey was conducted to highlight these features.

1.5 SURVEYS & PHYSICAL ACTIVITIES UNDERTAKEN

Survey/Physical Activity	Dates	Total Days in Field	Total Line Kilometres
Line Cutting	October 15, 2018 – October 16, 2018	2	4.725
3D Distributed IP	November 14, 2018 – November 18, 2018	5	3.45

Table 1: Survey & Physical Activity Details Undertaken

1.6 SUMMARY OF RESULTS, CONCLUSIONS & RECOMMENDATIONS

The 3D IP survey was tightly constrained with the property boundaries. With this constraint, the historical showings were all highlighted as areas of elevated chargeability. Using this as a signature guide numerous additional targets were identified.

A compilation of the historic work on the property is recommended. This should then be compared with the chargeability and resistivity models to determine if anomalies can be explained. Any of the unexplained regions should then be prospected.

Expanding the footprint of the survey would create a more robust dataset and allow for a tighter constrained model and is recommended.

1.7 CO-ORDINATE SYSTEM

Projection: UTM zone 17N
Datum: NAD83
UTM Coordinates near center of grid: 573325 Easting and 5337500 Northing

2. SURVEY LOCATION DETAILS

2.1 LOCATION

The Deloye Project is located approximately 5 km north of Kirkland Lake, Ontario.

Figure 1: Location of the Deloye Property (Map data ©2018 Google)

2.2 ACCESS

Access to the property was via a 4x4 pickup truck. Goodfish Road was travelled north from highway 66 in Kirkland Lake for about 5 kilometres to arrive at the property.

2.3 MINING CLAIMS

The survey area covers a portion of mining patents located in Teck, Lebel and Morrisette Townships, within the Larder Lake Mining Division. The property is owned by Champagne Resources Limited, a subsidiary of Warrior Gold Inc. The details of these patents are in the table below.

Cell Number	Cell Type	Ownership of Land	Township
PAT-40267	Patent	Champagne Resources Limited	Teck
PAT-40268	Patent	Champagne Resources Limited	Teck
PAT-40258	Patent	Champagne Resources Limited	Teck
PAT-40223	Patent	Champagne Resources Limited	Lebel
PAT-40225	Patent	Champagne Resources Limited	Lebel, Morrisette
PAT-40224	Patent	Champagne Resources Limited	Lebel
PAT-19871	Patent	Champagne Resources Limited	Morrisette
PAT-18365	Patent	Champagne Resources Limited	Morrisette

Table 2: Mining Land Cells Information

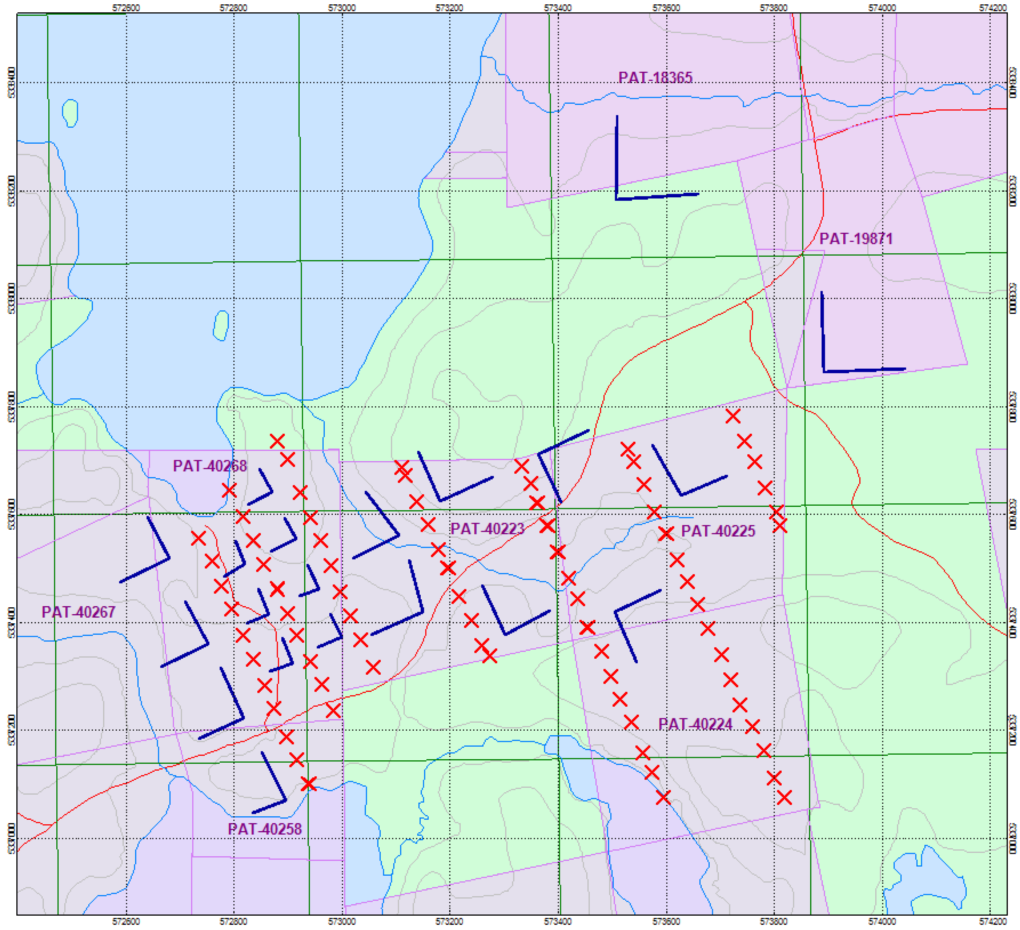

Figure 2: Operational Claim Map with IP Survey Layout

2.4 PROPERTY HISTORY

Significant historical exploration has been carried out over the years all over the survey area. The following list describes details of the previous geoscience work which was collected by the Mines and Minerals division and provided by OGSEarth (MNDM & OGSEarth, 2018).

- **1972: Emil Chorzepa (File 32D04NW0285):**
  Geochemistry – Morrisette and Lebel Townships
  154 samples were collected for assayed. The Laboratory and Research Branch of the Department of Mines and Northern Affairs found traces of gold and/or silver in many of these samples.

- **1975: Emil Chorzepa (File 32D04NW0361):**
  Diamond Drilling – Morrisette and Lebel Townships
  5 drill holes that provided 765 feet of sample in total was drilled on the Chorzepa Gold Property and logged by Emil Chorzepa.

- **1979: Haas Warner Mining Ltd (File 42A01NE0006):**
  Diamond Drilling – Morrisette Township
  Heath and Sherwood performed diamond drilling to obtain 2 drill holes that provided a total of 1144 feet of core sample. Francis T. O'Connor performed core logging on the core samples.

- **1981: Francis T. O'Connor (File 42A01NE0004):**
  Diamond Drilling – Morrisette Township
  Patrick Harrington performed diamond drilling to obtain 2 drill holes that provided a total of 853 feet of core sample. F. Ploeger performed core logging on the core samples.

- **1981: Frank O'Connor (File 42A01NE0092):**
  Diamond Drilling – Lebel Township
  Patrick Harrington performed diamond drilling to obtain a 165 feet core sample.

- **1983: W. Marshall (File 42A01NE0087):**
  Diamond Drilling – Lebel Township
  R & J Poisson Drilling performed diamond drilling on Marshall Option to obtain a 351 feet of core sample. Michael Leahy performed core logging on the core sample.

- **1983: E. Chorzepa (File 32D04NW0229):**
  Diamond Drilling – Lebel Township
  E. Chorzepa drilled and logged 122 feet of core sample.

- **1983: William Marshall (File 32D04NW0223):**
  Diamond Drilling and Geochemical Assaying – Lebel Township
  R & J Poisson Drilling performed diamond drilling Will-Char Option to obtain 3 drill holes that provided a total of 643 feet of core sample. F.P. Tagliamonte performed core logging and gold assaying on the core samples. Sample M3-2 showed positive results for gold assaying.

- **1986: Premier Explorations Inc. (File 42A01NE0081):**
  Geochemical Assaying, Magnetic and VLF-EM – Lebel Township
  Marrel Consultants Ltd. performed magnetic and VLF-EM surveys on 3 claims located in Lebel Township. Gold assaying was performed on 14 samples collected from these claims. Magnetic data showed 2 high anomalies, one of which likely reflected iron inclusions. VLF-EM results did not provide any significant anomalies. All 14 samples returned zero gold content.

- **1986: Jimberlana Minerals N. L. (File 32D04NW0244)**
  Magnetic and VLF-EM – Lebel Township
  Marrel Consultants Ltd. performed magnetic and VLF-EM surveys on 3 claims located in Lebel Township. 2 significant anomalies were observed from the

magnetic data, one of which coincides with a conductor observed in VLF-EM. The second anomaly did not return a VLF response and was interpreted as a result of high iron content in volcanic rocks. VLF showed 2 other conductors, one likely due to a fault structure with a slight magnetic disruption, and the other, likely originated from depth.

- **1987: Premier Explorations Inc. (File 42A01NE0157):**
  Line Cutting, Gridding, Magnetic and VLF-EM – Teck Township
  5.326 miles of grid was cut by Kian Jensen on 5 claims located in Lebel Township, where Marrel Consultants Ltd. performed magnetic and VLF-EM surveys. Strong responses were obtained for both magnetic and VLF-EM. Follow up geophysics survey, geological mapping, and sampling were recommended for 3 localities where negative quadrature values and conductive zones were observed.

- **1988: Lencourt Limited (File 32D04NW0312)**
  Line Cutting, Induced Polarization, Diamond drilling, Geochemical Assaying and Analyses – Morrisette and Bernhardt Townships
  3.15 km line cutting was performed on the Goodfish Property. An induced polarization (IP) survey was carried out over 1.75 km of the grid by Walcer Geophysics. No significant results were observed through the IP survey. 5 holes were drilled but Hartco Mining to obtain 545.29 m of core sample in zone “C”. 11 out of 40 split core samples returned positive gold contents. It was concluded that zone “C” of the Goodfish Lake Property portrayed gold values of interest.

- **1990: Battle Mountain Canada Inc. (File 42A01SE0002)**
  Fixed-Wing Airborne Magnetic and VLF-EM – Teck, Lebel, Otto, Boston, Eby and Grenfell Townships
  Terraquest and Grid Data North performed airborne magnetic and VLF-EM surveys over 6 BMCI properties. Complex magnetic sources and inferred fault structures contributed to additional complexity of the major gold camp. 11 magnetic domains were associated with a series of east-northeast-trending faults. 6 target areas that potentially favoured gold mineralization was identified.

- **1990: International Platinum Corporation (File 32D04NW0304)**
  Diamond Drilling, Geochemical Assaying and Analyses – Morrisette and Bernhardt Townships
  International Platinum Corporation performed diamond drilling to obtain 34 drill holes that provided 11972 feet of core samples on the Goodfish Property. Positive gold mineralization was observed and further drilling in Zone A was recommended to better evaluate gold mineralization in this area.

- **1992: Glencairn Explorations Ltd. (File 42A01NE2003)**
  Diamond Drilling, Geochemical Assaying and Analyses – Morrisette and

Bernhardt Townships
Heath and Sherwood D. D. performed diamond drilling on the Goodfish Property to obtain 38 drill holes that provided 14537 feel of core samples. The samples showed high potential for occurrence of a commercial gold deposit. A 2-phase exploration program was recommended to resolve structural control in high potential zones.

- **1999-2000: Derek Laing (File 42A01NE2033)**
  Stripping, VLF-EM, Magnetic, Mapping and Sampling – Lebel, Morrisette and Teck Townships
  With the help of Ontario Prospectors Assistance Program, Derek Laing stripped an 11 km north-south grid to perform VLF-EM and magnetic surveys on the Kirana Property. VLF and magnetic anomalies reveled that the site was potentially on strike with known faulting such as the Kirana Deposit. Another predominant faulting resembled that found by Chorzepa. Further sampling was recommended to determine drill targets.

- **2003: Michael W. Sutton (File 42A01NE2049)**
  Diamond Drilling, Geochemical Assaying and Analyses – Morrisette Township
  Heath and Sherwood D. D. performed diamond drilling to obtain a drill hole that provided 386 feet of core sample. Michael Sutton performed core logging and Swastika Laboratories Ltd. performed geochemical analyses to determine gold contents in 4 selected samples. Positive gold results were observed, and further drilling was recommended.

- **2004: Thomas A. O’Connor (File 32D04NW2045)**
  Prospecting, Geochemical Assaying and Analyses – Lebel and Morrisette Townships
  Thomas A. O’Connor obtained samples to prospect gold mineralization. Swastika Laboratories Ltd. performed geochemical assaying and reported zero results for 5 out of 6 samples analyzed. The only sample that returned a positive result returned 0.03 g/tonne of gold.

- **2005: Derek L. Laing (File 20000000472)**
  Line Cutting and VLF-EM – Teck and Lebel Townships
  3.5 km line cutting, and a VLF-EM survey was conducted by Derek Laing on the Kirana Group. 4 conductors were detected through the VLF survey. No significant discovery was made.

- **2008: Derek Laing (File 20000002947)**
  Prospecting, Overburden Stripping, Geochemical Assaying and Analyses – Lebel and Teck Townships
  Derek Laing and Derek Laing Junior performed backhoe stripping on Laing Group, whereas Swastika Laboratories Ltd. performed gold assaying on three samples where all samples returned results of <0.001 oz/ton of gold.

- **2008: Northern Gold Mining Inc. (File 20000003440)**
  Diamond Drilling, Geochemical Assaying and Analyses – Morrisette Township
  Cabo conducted diamond drilling to obtain two drill holes that provided 357 m of core samples. Swastika Laboratories Ltd. performed geochemical analyses on samples obtained. No significant results were obtained in relation to high-grade gold. IP and magnetic surveys were recommended.

- **2008: Northern Gold Mining Inc. (File 20000014895)**
  Airborne Versatile Time Domain EM – Bernhardt, Morrisette, Teck and Lebel Townships
  Geotech Ltd. conducted a VTEM survey on the Kirana Property. The survey did not return prominent anomalies that suggested potential deposits. However, interesting trends were observed. Detailed mapping was recommended to determine the cause of such trends.

- **2008-2009: Northern Gold Mining Inc. (File 20000005408)**
  Overburden Stripping and Geochemical Assaying – Bernhardt, Morrisette, Teck and Lebel Townships
  G. Matheson, D. Eves and S. Ames conducted geological mapping and mechanical stripping over 150 claims on the Kirana Property that covered 5915 square metres of land. Geochemical assaying was performed by PolyMet Laboratories, where high concentrations of low-grade gold was detected. Geophysical surveying was recommended to further explore potentials in this area.

- **2008-2009: Northern Gold Mining Inc. (File 20000004847)**
  Diamond Drilling, Geochemical Assaying and Analyses – Bernhardt, Morrisette, Teck and Lebel Townships
  Cabo Drilling Corp., Roscoe Mining and Benoit Drilling performed diamond drilling on Kirana Property to obtain 81 drill holes that provided 13623 m of core samples. PolyMet Laboratories performed geochemical analyses on selected samples and found no major economic mineralization. Further assaying was recommended for unanalyzed samples.

- **2013-2015: Champagne Resources Limited (File 20000014050)**
  Geophysical Interpretation, Core Photography and 3-D Modelling – Bernhardt, Teck, Lebel and Morrisette Townships
  GeoVector Management Inc. performed a detailed compilation of previous work on 32.5 km^2 of Goodfish Kirana property. Champagne Resources, along with CXS Ltd. photographed and moved approximately 13500 m core samples from the property to Larder Lake. Orix Geoscience Inc. digitized existing drill data, produced geological sections and 3-D models for specific areas of the property. A multi-disciplinary exploration program was recommended to further understand mineralization potential in the area.

2.5 GENERAL REGIONAL/LOCAL GEOLOGICAL SETTINGS

The property is located on the Superior Geological province and the Abitibi sub province. The Abitibi sub province is an 800 by 300 km area that is underlain by granite greenstone stratigraphy of the Archean age. In the Archean rock of northern Ontario, the supracrustal rocks are divided into rock groups based on their composition, morphology and geologic distribution. Individual rock units consist of stratified volcanic and/or sedimentary rock units that were created during a specific time, in a similar depositional area or volcanic setting. According to Rupert et Lovell the rock units in the area from oldest to youngest consists of Keewatin type mafic and felsic volcanic flows, Keewatin or Laurentian age early felsic intrusive rocks, Keewatin or Timiskaming metasediments, Haileyburian type mafic and ultramafic intrusive rocks, Algoman age late felsic intrusive rocks, and finally late mafic intrusive rocks.

There are two major East-North East trending faults which are called Kirkland Lake and Larder Lake deformation zones. They extend through the block of Timiskaming sediments. Most gold production in the area is associated with the restricted segment of the Kirkland Lake deformation zone north and northwest of the town. Structurally controlled gold quartz vein mineralization is the dominant deposit type in this district.

Property Geology:

Not many surveys were conducted on this specific area, so there is nothing on the specific geology of the property.

2.6 TARGET OF INTEREST

The target of interest covers multiple features. The first target is the historic mine on the south shore of Goodfish Lake. The second target of interest revolves around the Kirana Break. The third target of interest is the potential of north-south features cross-cutting the survey area.

3. PLANNING

3.1 EXPLORATION PERMIT/PLAN

The 3D Distributed Induced Polarization survey was performed over patents owned by Warrior Gold Inc. Since the land is patented, no plan or permits were required.

3.2 3D IP SURVEY DESIGN

Specialized IP survey design software was used as a tool to assist in the targeting of the survey. In this case a theoretical survey distribution scenario was established to determine the survey results coverage.

For optimal coverage, 20 receivers with 3 read electrodes each were planned in selected locations in between the current injection paths. The 3 read electrodes of each receiver were planned in 2 orthogonal directions, with 50, 100 and 150-metre dipole lengths (grid north-south and grid east-west). Current injections were planned at 50- along the cut grid lines. The infinite was planned far from the survey location to achieve a pole-dipole array scenario. A theoretical depth of 400 metres was obtained from the software with this layout.

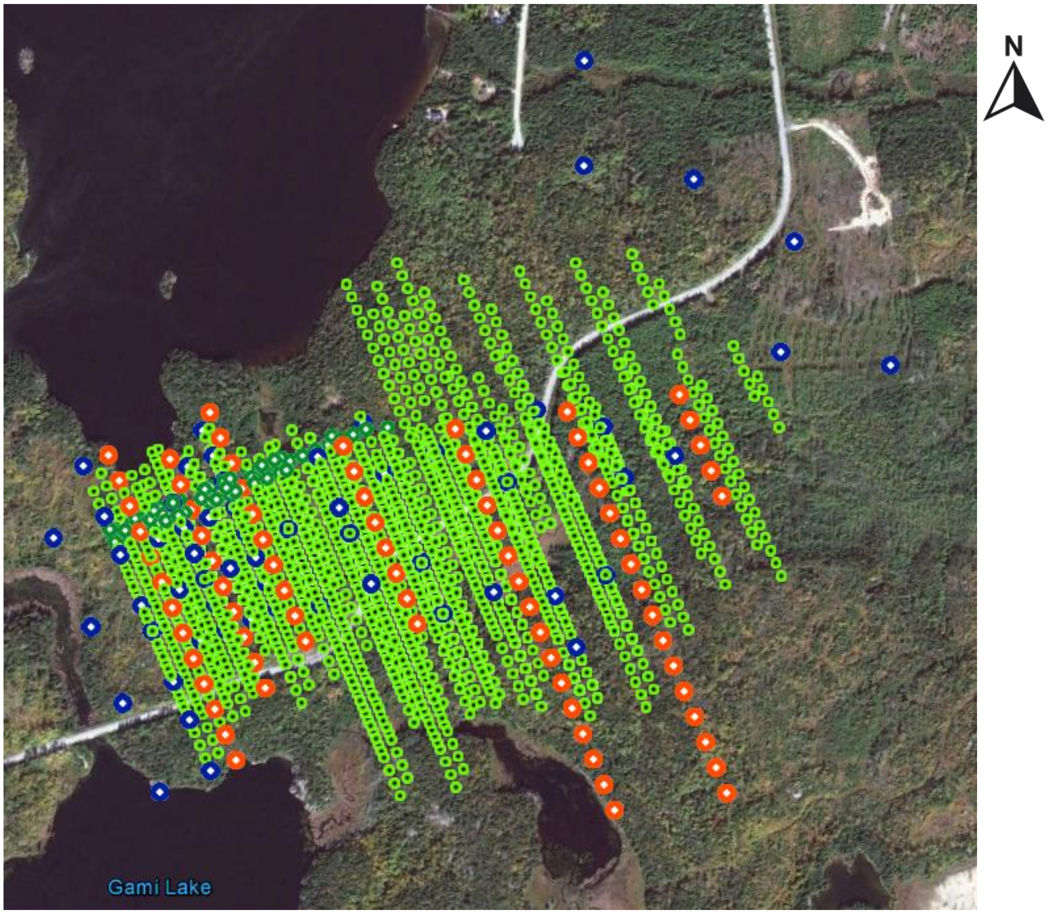

Figure 3: Survey Design Model Looking Down – Red=Current Injection, Blue=Receiver Electrodes, Green=Theoretical Data Point (©2018 Google, Image ©2018 DigitalGlobe)

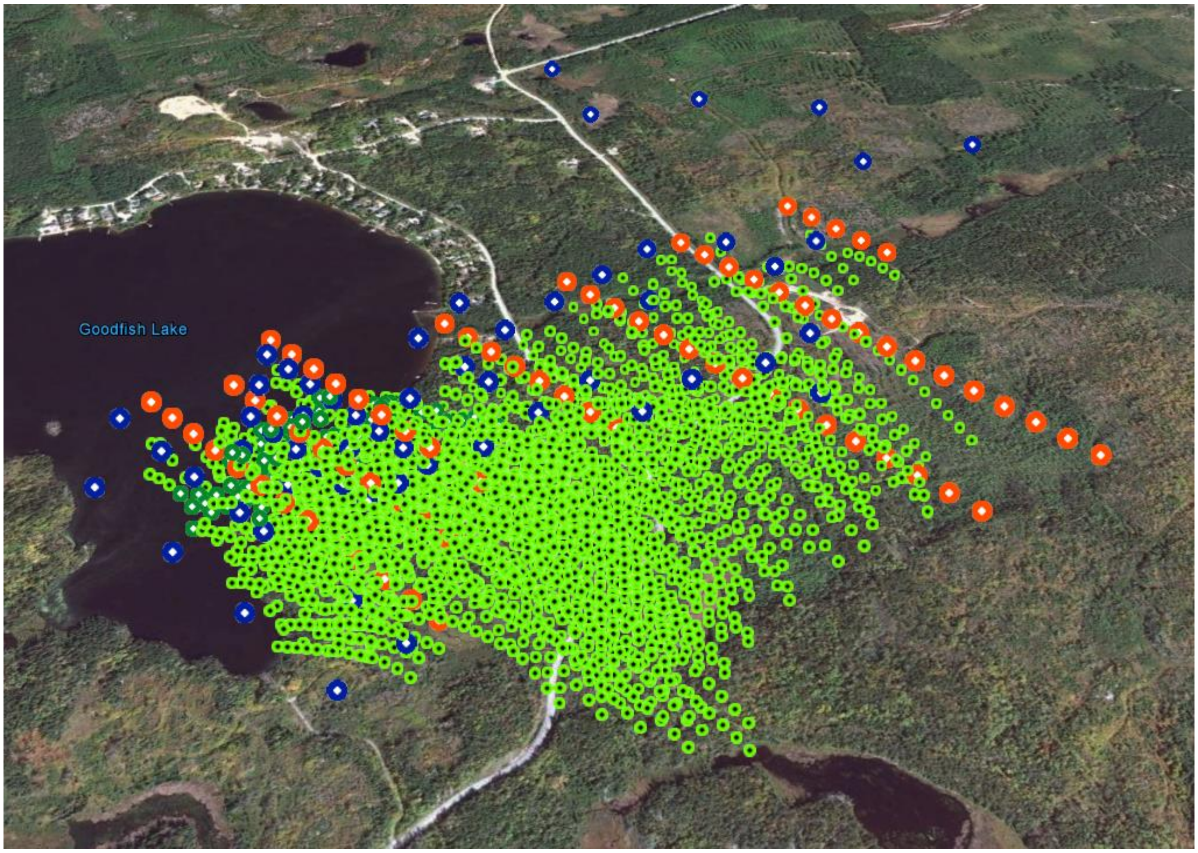

Figure 4: Survey Design Model Looking North – Red=Current Injection, Blue=Receiver Electrodes, Green=Theoretical Data Point (©2018 Google, Image ©2018 DigitalGlobe)

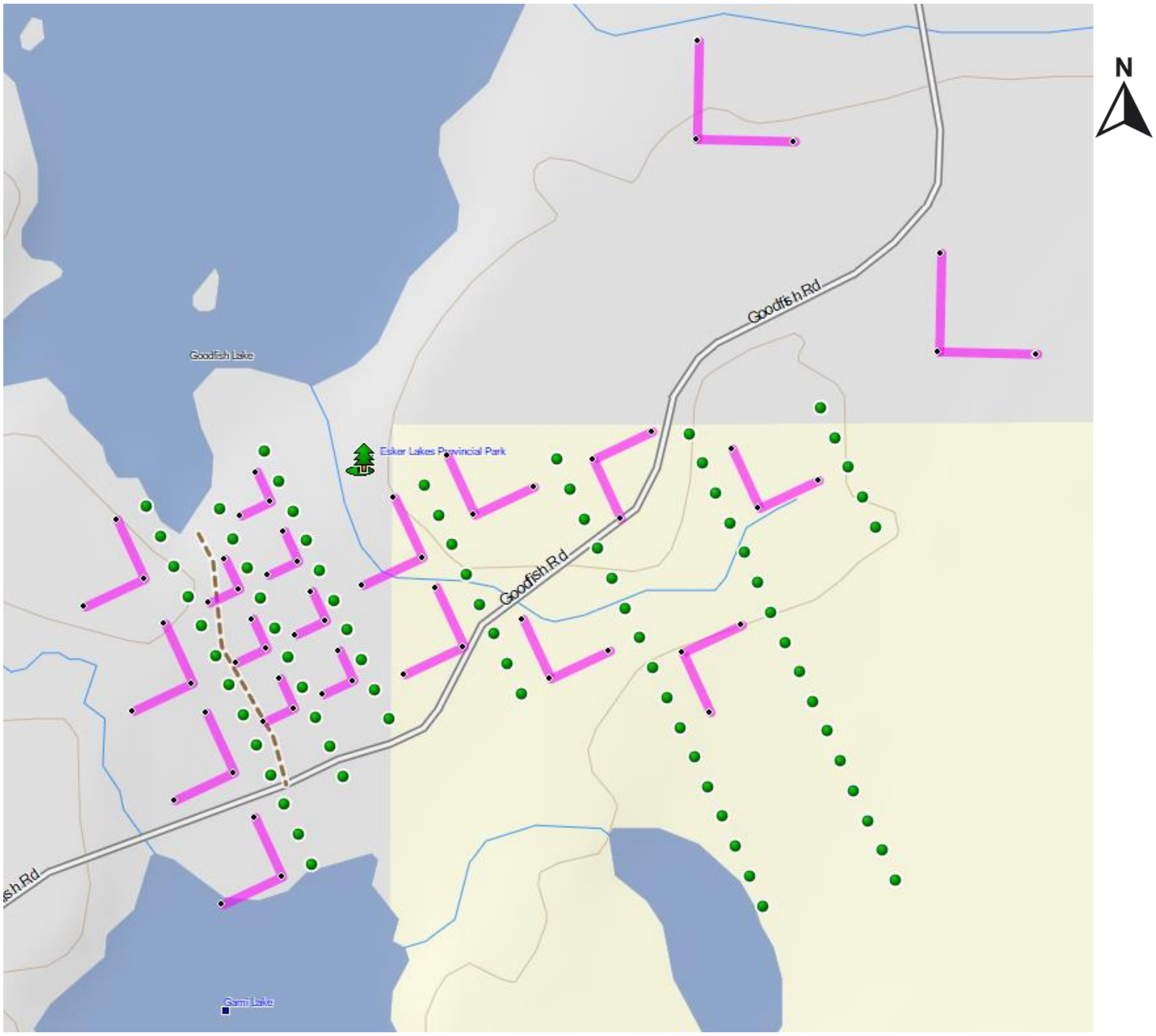

Figure 5: Planned Survey Layout – Green Circles=Current Injections, Pink Lines=Dipoles, Black Dots=Read Electrodes

4. SURVEY WORK UNDERTAKEN

4.1 SUMMARY

CXS was contracted to cut a grid and perform a 3D Distributed Induced Polarization survey over the Deloye Project with a survey area footprint of 1.425 km^2. The crew began to occupy the site in mid November and completed the survey soon after.

A total length of 3.45 kilometres was covered with 78 injected current points for the 3D Distributed Induced Polarization survey occurring between November 14th, 2018 to November 18th, 2018. Collected GPS locations were applied to the electrode field locations.

4.2 SURVEY GRID

A grid consisting of seven 335-degree lines and one baseline at 65-degrees (Figure 7) was cut by Five on Line Contracting based out of Belleterre, Quebec, in mid-October prior to the survey acquisition. IP current injection paths were intended along the grid lines, spaced at 100- or 200- metre intervals. Stations were picketed at 25 metre intervals along the lines.

Figure 6: Survey Grid (©2018 Google, Image ©2018 DigitalGlobe)

4.3 3D IP SURVEY SETUP

20 receivers were placed in 20 previously selected locations in between the grid lines. Each receiver was connected to 2 relatively orthogonal, ~50-, ~100 and ~150-metre dipoles (grid north-south and grid east-west). The coordinates of the read electrodes were recorded by GPS and are listed in Table 3. Due to field conditions exact locations and directions were not always achieved. The infinite was located

approximately 4.0 kilometres north from the east end of the survey area at 573542E, 5341761N to achieve a pole-dipole array scenario. The survey layout covered a footprint of approximately 1.425 km^2 with dimensions 1.5 km (X) x 0.95 km (Y).

Read Electrode	UTM X (m)	UTM Y (m)
402_P1	572853	5337160
402_P2	572897	5337071
402_P3	572836	5337048
403_P1	572776	5337317
403_P2	572819	5337225
403_P3	572733	5337185
404_P1	572710	5337440
404_P2	572752	5337361
404_P3	572665	5337320
405_P1	572640	5337596
405_P2	572680	5337520
405_P3	572590	5337476
406_P1	572804	5337552
406_P2	572821	5337510
406_P3	572782	5337487
407_P1	572845	5337463
407_P2	572866	5337417
407_P3	572825	5337398
408_P1	572890	5337371
408_P2	572910	5337325
408_P3	572868	5337311
409_P1	572979	5337417
409_P2	573001	5337374
409_P3	572956	5337353
410_P1	572937	5337507
410_P2	572957	5337462
410_P3	572922	5337448
411_P1	572894	5337594
411_P2	572916	5337555
411_P3	572871	5337534
412_P1	572849	5337686
412_P2	572871	5337643
412_P3	572828	5337621
413_P1	573044	5337643
413_P2	573107	5337563
413_P3	573018	5337518
414_P1	573126	5337515
414_P2	573150	5337420
414_P3	573056	5337378
415_P1	573261	5337470
415_P2	573303	5337378
415_P3	573384	5337422
416_P1	573143	5337716
416_P2	573183	5337626
416_P3	573278	5337670
417_P1	573407	5337623
417_P2	573364	5337713
417_P3	573454	5337757
418_P1	573547	5337328
418_P2	573505	5337420
418_P3	573589	5337459
419_P1	573576	5337729
419_P2	573628	5337636
419_P3	573717	5337672
420_P1	573888	5338013
420_P2	573892	5337864
420_P3	574043	5337869
421_P1	573509	5338339
421_P2	573508	5338185
421_P3	573663	5338194

Table 3: Receiver Electrode Coordinates

4.4 DATA ACQUISITION

CXS began acquiring IP data on November 16th, 2018. Current injection sites were injected along the grid lines at approximately 50 metre increments. GPS was collected at each injection rod location prior to the current injection and recorded along with the associated injection file created on the current monitor. In total there were 78 current injection locations.

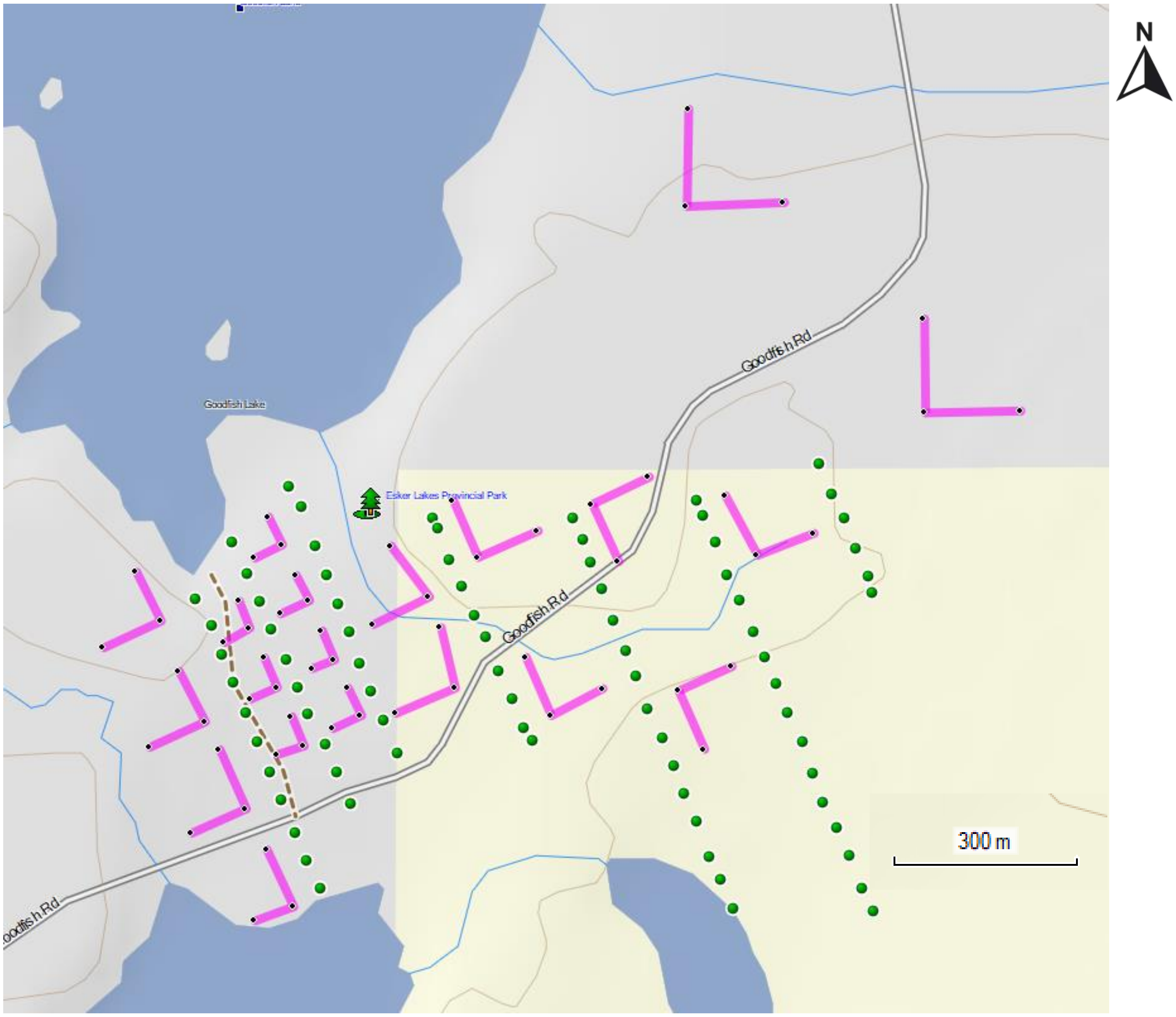

Figure 7: Field Survey Layout with Injection Sites (green dots) in Mapsource

Figure 8: Receiver Dipole Orientations on Google Earth (©2018 Google, Image ©2018 DigitalGlobe)

Figure 9: Topographical Relief Image with the Field Survey Layout Looking Northeast (2018 Google, Image ©2018 DigitalGlobe)

4.5 SURVEY LOG

IP Survey Log					
Date	**Description**	**Line**	**Min Extent**	**Max Extent**	**Total Survey (m)**
November 14, 2018	Mobilize and locate survey area. Begin establishing logger sites and infinite.	-	-	-	-
November 15, 2018	Continue setup of logger and infinite sites.	-	-	-	**-**
November 16, 2018	Finished setting up logger sites. Started IP survey.	200W	125S	100N	225
		400W	600S	125N	725
		600W	500S	50N	550
		34 injections and 1.5 km			
November 17, 2018	Continue and complete IP survey.	600W	50N	200N	150
		800W	125S	275N	400
		1000W	50S	400N	450
		1100W	100S	350N	450
		1200W	200S	300N	500
		44 injections and 1.95 km			
November 18, 2018	Pick up stations and infinite. Demobilize.	-	-	-	-
Total	**3.45 Line Kilometres / 78 Injections**				

Table 4: IP Survey Log

4.6 PERSONNEL

Crew Member / Contractor	**Position**	**Resident**	**Province**
Bruce Lavalley	Crew Chief	Britt	Ontario
Neil Jack	Transmitter Operator	Kirkland Lake	Ontario
Andrew Johnson	IP Technician	Kirkland Lake	Ontario
Joey Emmell	IP Technician	Englehart	Ontario
Mandy Lin	IP Technician	St. Johns	NL
Spencer McGaughey	IP Technician	Kirkland Lake	Ontario
Jason Ploeger	Senior Geophysicist - office	Larder Lake	Ontario
Melanie Postman	Junior Geophysicist - office	Larder Lake	Ontario
Five on Line Contracting	Line Cutters	Belleterre	Quebec

Table 5: Induced Polarization Personnel

4.7 FIELD NOTES: CONDITIONS & CULTURE

The average maximum weather over the field surveying days was -6 degrees Celsius with snow.

Culture was encountered in this survey area that may have had an impact on the survey. Goodfish Road ran through the middle of the survey area. Near logger 421 are homes along Goodfish lake. Topographical features and ground characteristics along the read dipoles and current injection lines are noted in the following two tables.

Logger & Remote Electrode Field Notes (Soil/Topography/Vegetation/Culture notes on dipoles and corresponding electrodes P1/P2/P3)		
402	**Soil**	P1 rocky -- P2 good soil -- P3 swamp
	Topo	P1 on top of hill -- P2 30m from lake -- P3 edge of lake
	Veg	P2 to P1 mixed bush -- P2 to P3 thick spruce
	Culture	P1 next to road
403	**Soil**	P1, P2 rocky -- P3 good soil
	Topo	P2 to P3 downhill
	Veg	P2 to P1 spruce, tag alder -- P2 to P3 mixed bush
	Culture	P3 close to highway
404	**Soil**	P1, P2, P3 swamp
	Topo	P1, P2, P3 flat
	Veg	P1, P2, P3 tag alder swamp
405	**Soil**	P1, P2, P3 rocky
	Topo	P2 to P1 uphill to bumpy -- P2 to P3 side of hill
	Veg	P2 to P1 pine, spruce -- P2 to P3 open bush mix
406	**Soil**	P1, P2, P3 wet
	Topo	P1, P2, P3 flat
	Veg	P1, P2, P3 grass, tag alder, poplar
	Culture	P3 next to trail
407	**Soil**	P1, P2, P3 wet
	Topo	P2 to P1 flat -- P2 to P3 flat to top of cliff -- P3 on top off cliff
	Veg	P1, P2, P3 tag alder, poplar, grass
	Culture	P2 to P3 crosses trail
408	**Soil**	P1, P2, P3 rocky
	Topo	P2 to P1 bumpy -- P2 to P3 downhill -- P3 at bottom of small cliff
	Veg	P1, P2 mossy
	Culture	P3 next to trail
409	**Soil**	P1 good soil -- P2, P3 rocky
	Topo	P2 to P1 downhill to flat -- P2 to P3 bumpy
	Veg	P2 to P1 small poplar -- P2 to P3 mossy

Logger & Remote Electrode Field Notes (Soil/Topography/Vegetation/Culture notes on dipoles and corresponding electrodes P1/P2/P3)

410	**Soil**	P1, P2, P3 good soil
	Topo	P1, P2, P3 flat
	Veg	P1, P2, P3 tag alder, poplar
411	**Soil**	P2 to P1 rocky -- P2 to P3 good soil
	Topo	P2 to P1 uphill on bare outcrop
	Veg	P2 to P3 poplar
	Culture	P2 surrounded by garbage and old car -- P1 15m away from capped shaft
412	**Soil**	P1, P2, P3 very rocky
	Topo	P1, P2, P3 bumpy -- P2 to P3 cross trench
	Culture	P2 to P1, P2 to P3 cross roads -- P2 10m from road in P1 direction
413	**Soil**	P1 very rocky -- P2, P3 good soil
	Topo	P1 side of hill, next to open swamp -- P2, P3 swamp -- P2 to P1 along bottom of hill -- P2 to P3 across swamp, crosses mini river
	Veg	P1 pine -- P2, P3 tag alder
	Other	P1 moved ~12m west due to big hill and lack of wires
414	**Soil**	P1 good soil -- P2 cedar swamp -- P3 rocky
	Topo	P1, P2 flat -- P3 on rocky hill, slight inclination -- P2 to P3 flat to up cliff
	Veg	P1, P2, P3 pine, Jack pine -- P1 tag alder, birch
	Culture	P2 approximately 10m from highway
	Other	P2 moved ~22m due to proximity to highway – P3 has 2 waypoints, electrode is farther point from P2.
415	**Soil**	P1 good soil, slightly rocky -- P2 rocky -- P3 swamp soil
	Topo	P1, P2, P3 flat -- P2 to P3 over a hill, crosses trail to open swamp
	Veg	P1 Jack pine -- P2 tag alder -- P3 Labrador tea
416	**Soil**	P1 good soil -- P2, P3 rocky
	Topo	P1, P3 flat -- P2 on top of rocky hill -- P2 to P1 bumpy -- P2 to P3 uphill then flat
	Veg	P1, P2, P3 pine -- P2, P3 spruce, birch -- P2 to P3 thick bush
417	**Soil**	P1, P2 good soil -- P3 rocky
	Topo	P1, P2 flat -- P3 side of hill -- P1 to P2 flat to uphill -- P2 to P3 slightly downhill
	Veg	P2 mossy, pine, Labrador tea -- P3 clear bush
	Culture	P1 next to highway
	Other	P1 wire was cut when wires were dismantled, likely chewed by an animal
418	**Soil**	P1, P2, P3 good soil
	Topo	P1 on hill -- P2 bumpy topo -- P3 flat -- P1 to P2 to P3 downhill
	Veg	P1 thick bush, Jack pine -- P1, P2 spruce -- P3 mossy, Labrador tea
419	**Soil**	P1, P2, P3 swamp
	Topo	P2 to P1 flat -- P2 to P3 over a small hill
	Veg	P2 to P1 thick bush

Logger & Remote Electrode Field Notes (Soil/Topography/Vegetation/Culture notes on dipoles and corresponding electrodes P1/P2/P3)		
420	**Soil**	P1 rocky -- P2, P3 swamp
	Topo	P1 uphill -- P2 to P1 flat to steep uphill -- P2, P3 flat
	Veg	P1 small bush, balsam -- P2, P3 alder
421	**Soil**	P1 swamp, muddy -- P2, P3 rocky -- P3 sandy
	Topo	P1, P2 flat -- P1 to P2 flat then up a cliff and smooth downhill -- P3, bumpy out-crop -- P2 to P3 flat, then bumpy
	Veg	P1 mossy, Jack pine -- P1 to P2 Jack pine -- P2, P3 mix bush (spruce, poplar, birch)
Infinite	**Soil**	Swamp, muddy
	Topo	Flat
	Veg	Cattails

Table 6: Logger Electrodes, Dipoles, & Remote Electrode Field Notes

Date	Grid Line	Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Electrode Field Notes
11/16/18	200 W	125 S	573811	5337580	330	400	Rocky
11/16/18	200 W	100 S	573805	5337606	329	450	Rocky
11/16/18	200 W	50 S	573784	5337650	327	650	Uphill, rocky
11/16/18	200 W	0	573765	5337698	331	750	Uphill, rocky
11/16/18	200 W	50 N	573745	5337736	325	1000	Bottom of hill, swamp
11/16/18	200 W	100 N	573724	5337783	324	1300	Swamp
11/16/18	400 W	125 N	573530	5337722	321	1400	Swamp
11/16/18	400 W	100 N	573540	5337699	321	1450	Swamp
11/16/18	400 W	50 N	573560	5337657	321	1450	Swamp
11/16/18	400 W	0	573579	5337605	319	1200	Swamp
11/16/18	400 W	50 S	573601	5337565	320	1200	Swamp
11/16/18	400 W	100 S	573622	5337516	320	1350	Swamp
11/16/18	400 W	150 S	573641	5337476	320	1300	Swamp
11/16/18	400 W	200 S	573659	5337435	324	1000	Uphill, rocky
11/16/18	400 W	250 S	573678	5337389	335	400	Top of hill, rocky
11/16/18	400 W	300 S	573703	5337342	331	1200	Swamp
11/16/18	400 W	350 S	573720	5337294	332	1200	Swamp
11/16/18	400 W	400 S	573737	5337248	332	1200	Swamp
11/16/18	400 W	450 S	573760	5337208	338	500	Top of hill, rocky
11/16/18	400 W	500 S	573781	5337164	339	500	Downhill, rocky

Date	Grid Line	Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Electrode Field Notes
11/16/18	400 W	550 S	573801	5337113	336	400	Uphill, rocky
11/16/18	400 W	600 S	573819	5337077	340	500	Top of hill, flat, rocky
11/16/18	600 W	500 S	573596	5337077	317	1100	Next to beaver pond
11/16/18	600 W	450 S	573575	5337124	328	450	Top of hill, rocky
11/16/18	600 W	400 S	573557	5337160	327	400	Flat, rocky
11/16/18	600 W	350 S	573536	5337216	332	600	Slight uphill, rocky
11/16/18	600 W	300 S	573516	5337259	341	400	Flat, rocky
11/16/18	600 W	250 S	573499	5337302	340	750	Downhill, rocky
11/16/18	600 W	200 S	573481	5337347	339	450	Flat, rocky
11/16/18	600 W	150 S	573455	5337393	324	1200	Bottom of steep incline, rocky
11/16/18	600 W	100 S	573437	5337444	318	550	Open swamp
11/16/18	600 W	50 S	573420	5337483	317	750	Open swamp
11/16/18	600 W	0	573400	5337531	316	500	Flat, rocky
11/16/18	600 W	50 N	573381	5337580	318	1800	Flat, rocky, next to road
11/16/18	600 W	100 S	573437	5337444	318	550	Open swamp
11/16/18	600 W	50 S	573420	5337483	317	750	Open swamp
11/16/18	600 W	0	573400	5337531	316	500	Flat, rocky
11/16/18	600 W	50 N	573381	5337580	318	1800	Flat, rocky, next to road
11/16/18	600 W	100 S	573437	5337444	318	550	Open swamp
11/16/18	600 W	50 S	573420	5337483	317	750	Open swamp
11/16/18	600 W	0	573400	5337531	316	500	Flat, rocky
11/17/18	600 W	100 N	573362	5337623	320	500	Next to road, flat, rocky
11/17/18	600 W	150 N	573350	5337658	328	600	Uphill, next to outcrop, rocky
11/17/18	600 W	200 N	573334	5337691	333	800	Top of outcrop, rocky
11/17/18	800 W	275 N	573111	5337689	338	450	Edge of outcrop, rocky
11/17/18	800 W	250 N	573118	5337673	339	550	Flat, rocky
11/17/18	800 W	200 N	573138	5337624	331	800	Side of hill, rocky
11/17/18	800 W	150 N	573159	5337582	324	500	Flat, rocky
11/17/18	800 W	100 N	573179	5337536	322	450	Swamp
11/17/18	800 W	50 N	573197	5337503	322	450	Swamp
11/17/18	800 W	0	573218	5337449	322	1000	Across road, swamp
11/17/18	800 W	50 S	573240	5337404	322	900	Swamp
11/17/18	800 W	100 S	573260	5337359	322	900	Swamp

Date	Grid Line	Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Electrode Field Notes
11/17/18	800 W	125 S	573274	5337339	322	700	Swamp
11/17/18	1000 W	50 S	573059	5337318	334	500	Top of outcrop
11/17/18	1000 W	0	573036	5337369	335	400	Flat, rocky
11/17/18	1000 W	50 N	573016	5337414	331	450	Downhill, rocky
11/17/18	1000 W	100 N	572997	5337458	318	650	Swamp
11/17/18	1000 W	150 N	572981	5337507	319	600	Swamp
11/17/18	1000 W	200 N	572962	5337552	324	400	Side of hill, rocky
11/17/18	1000 W	250 N	572943	5337596	327	400	Top of hill, rocky
11/17/18	1000 W	300 N	572923	5337642	319	600	Flat, rocky
11/17/18	1000 W	350 N	572900	5337704	325	600	Uphill, rocky
11/17/18	1000 W	400 N	572881	5337736	332	500	Rocky
11/17/18	1100 W	350 N	572792	5337646	316	400	Next to lake
11/17/18	1100 W	300 N	572817	5337598	320	850	Next to trail
11/17/18	1100 W	250 N	572836	5337553	316	500	Flat, swamp
11/17/18	1100 W	200 N	572855	5337509	316	500	Swamp
11/17/18	1100 W	150 N	572880	5337463	317	600	Swamp
11/17/18	1100 W	100 N	572899	5337418	319	450	Swamp
11/17/18	1100 W	50 N	572916	5337377	323	450	Side of hill, rocky
11/17/18	1100 W	0	572943	5337329	328	450	Flat, rocky
11/17/18	1100 W	50 S	572964	5337286	327	420	Downhill, rocky, next to road
11/17/18	1100 W	100 S	572985	5337237	325	600	Uphill, rocky, next to road
11/17/18	1200 W	200 S	572939	5337102	323	800	Flat, wet swamp
11/17/18	1200 W	150 S	572917	5337146	323	600	Flat, mossy
11/17/18	1200 W	100 S	572898	5337189	322	500	Flat, swampy
11/17/18	1200 W	50 S	572875	5337241	323	600	Next to trail, rocky
11/17/18	1200 W	0	572857	5337285	330	500	Flat, rocky
11/17/18	1200 W	50 N	572836	5337333	331	400	Flat, rocky
11/17/18	1200 W	100 N	572817	5337378	330	350	Flat, rocky
11/17/18	1200 W	150 N	572796	5337425	317	700	Flat, swamp, next to trail
11/17/18	1200 W	200 N	572778	5337469	316	600	Flat, swamp
11/17/18	1200 W	250 N	572760	5337514	317	900	Flat, swamp
11/17/18	1200 W	300 N	572735	5337557	320	450	Side of hill, rocky

Table 7: Current Injection Field Notes

4.8 SAFETY

Canadian Exploration Services Limited prides itself in creating and maintaining a safe work environment for its employees. Each crew member is briefed on the jobsite location, equipment safety, standard operating procedures along with our health and safety manual. An emergency response plan is generated relating to the specific job and with the jobsite predominantly in the field, which is unpredictable, morning safety briefings are essential. Topics are generally chosen based off jobsite characteristics of the area, timing and crew experience.

Daily topics included:

Date	Safety Topic
November 14, 2018	Field equipment safety. Some of the gear used can be dangerous or easily injure. These include knives, machetes, hammers and Tanaka. Always think safety and pay attention.
November 15, 2018	Working around the highway. Make sure to be visible with High Visibility clothing. Use men working signs and cones.
November 16, 2018	Ice conditions during freeze up varies. Be careful around ponds and flooded areas. Always use pole.
November 17, 2018	Spot and satellite phone use. Emergency route plans. Check in throughout day when working alone.
November 18, 2018	Weekly review.

Table 8: Daily Safety Topics

5. INSTRUMENTATION & METHODS

5.1 INSTRUMENTATION[1]

Twenty 2-channel Full Waver IP receivers were employed for the 3D IP survey. The transmitter consisted of a GDDII (5kW) with a Honda 6500 as a power plant. A current monitor was connected to the transmitter to record the current transmitted.

Time domain IP surveys involve measurement of the magnitude of the polarization voltage that results from the injection of pulsed current into the ground. Apparent resistivity and chargeability are the parameters of interest measured through this procedure.

5.2 THEORETICAL BASIS

Time domain IP (TD-IP) surveys involve measurement of the magnitude of the polarization voltage that results from the injection of pulsed current into the ground.

Two main mechanisms are known to be responsible for the IP effect although the exact causes are still poorly understood. The main mechanism in rocks containing metallic conductors is electrode polarization (overvoltage effect). This results from the buildup of charge on either side of conductive grains within the rock matrix as they block the flow of current. On removal of this current the ions responsible for the charge slowly diffuse back into the electrolyte (groundwater) and the potential difference across each grain slowly decays to zero.

The second mechanism, membrane polarization, results from a constriction of the flow of ions around narrow pore channels. It may also result from the excessive build up of positive ions around clay particles. This cloud of positive ions similarly blocks the passage of negative ions through pore spaces within the rock. On removal of the applied voltage the concentration of ions slowly returns to its original state resulting in the observed IP response.

In TD-IP, the current is usually applied in the form of a square waveform, with the polarization voltage being measured over a series of short time intervals after each current cut-off, following a short delay of approximately 0.5s. These readings are integrated to give the area under the decay curve. The integral voltage is divided by the observed steady voltage (the voltage due to the applied current, plus the polarization voltage) to give the apparent chargeability (Ma) measured in milliseconds. For a given charging period and integration time the measured apparent chargeability provides qualitative information on the subsurface geology.

The polarization voltage is measured using a pair of non-polarizing electrodes like those used in spontaneous potential measurements and other IP techniques.

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[1] Refer to appendix B for instrument specifications.

5.3 SURVEY SPECIFICATIONS

The 3D distributed induced polarization array configuration was used for this survey. This array consists of 60 mobile stainless steel read electrodes and two current electrodes. 20 portable receivers were each connected to 3 read electrodes (P1, P2, and P3) to create 2 orthogonal components with 50-, 100-, and 150-metre dipole spacing. The power location CA was chosen based on field conditions but placed throughout the survey area (randomly or in a grid-like manner). In this case, there were seven 335-degree lines of power locations. Along each line the power transmits were injected at approximately every 50m. The maximum theoretical depth obtained was approximately 400 metres. The second current electrode (the infinite) was stationary for the entire survey at 573542E, 5341761N. The infinite was approximately 4km north of the survey area, placed optimally as far as possible to produce a pole-dipole array scenario. A two second transmit cycle time was used for a duration of 90 seconds for approximately 12 stacks.

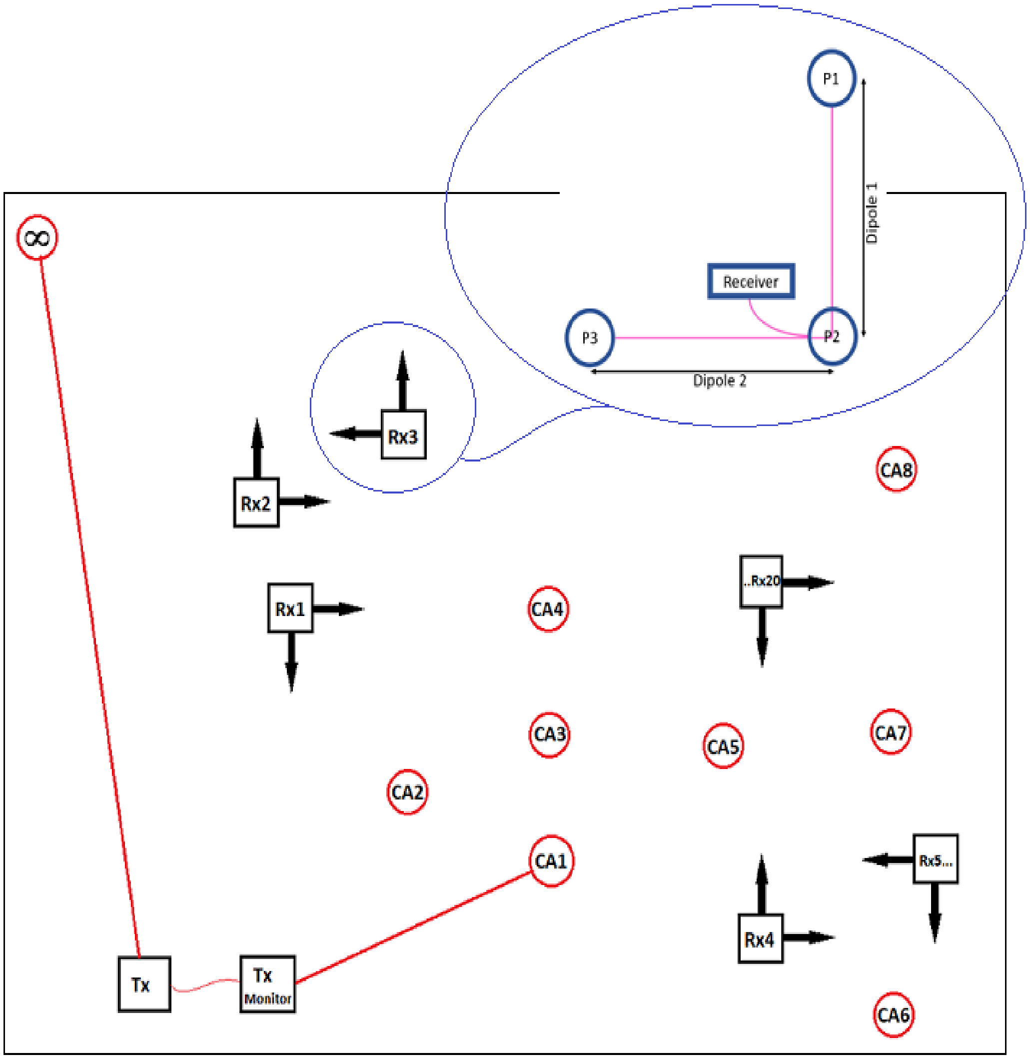


Figure 10: 3D Distributed IP Configuration

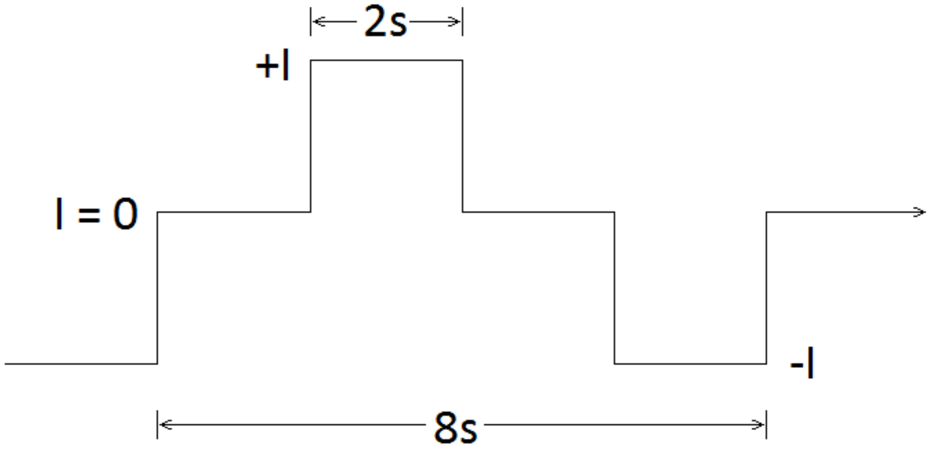


Figure 11: Transmit Cycle Used

6. QUALITY CONTROL & PROCESSING

6.1 FIELD QUALITY CONTROL

Daily 3D IP field quality control steps consisted of the following:

1. Resistivity checks – the resistivity of each dipole was recorded in the field pre- and post-acquisition to ensure dipoles were connected to the receiver properly and the electrode was well contacted with the ground.

2. GPS checks – internal GPS of each receiver was checked that they were placed in the proper position. GPS and injection file time stamps were compared to confirm correlation.

3. Data check – data was dumped daily and confirmed that the number of GPS points matched the number of injection files.

4. Backup – a second current monitor recorded the transmit cycles continuously throughout every acquisition day. If necessary, the backup was used.

5. Repeats – repeats of lines/data were taken if necessary.

6.2 PROCESSING

In the office, processing of the data and quality control was done interchangeably. The steps included:

1. Import positions – GPS coordinates were imported into each corresponding current injection file (IAB) and receiver file (VMN) using the Fullwave Viewer Software.

2. GPS check – the imported positions were confirmed on Google Earth.

3. Synchronization check – in case of GPS lags or different time settings the synchronization of the files was checked to determine they match (Figure 12).

4. Prosys output – a complete .bin file was output from the Fullwave Viewer software.

5. Data quality control – values were viewed in the complete .bin file. Accepted values with a normal M1-M20 range would have a proper transmit cycle, a smooth curve, and a high amplitude low frequency narrow peak (Figure 13). Unaccepted values with an abnormal M1-M20 range (Figure 14, red circle) would not have proper signals (Figure 15). These abnormal values could be due to the dipole being too far from the current injected and/or the background noise being greater than that of the current injected and/or poor dipole coupling. These were removed in the following step.

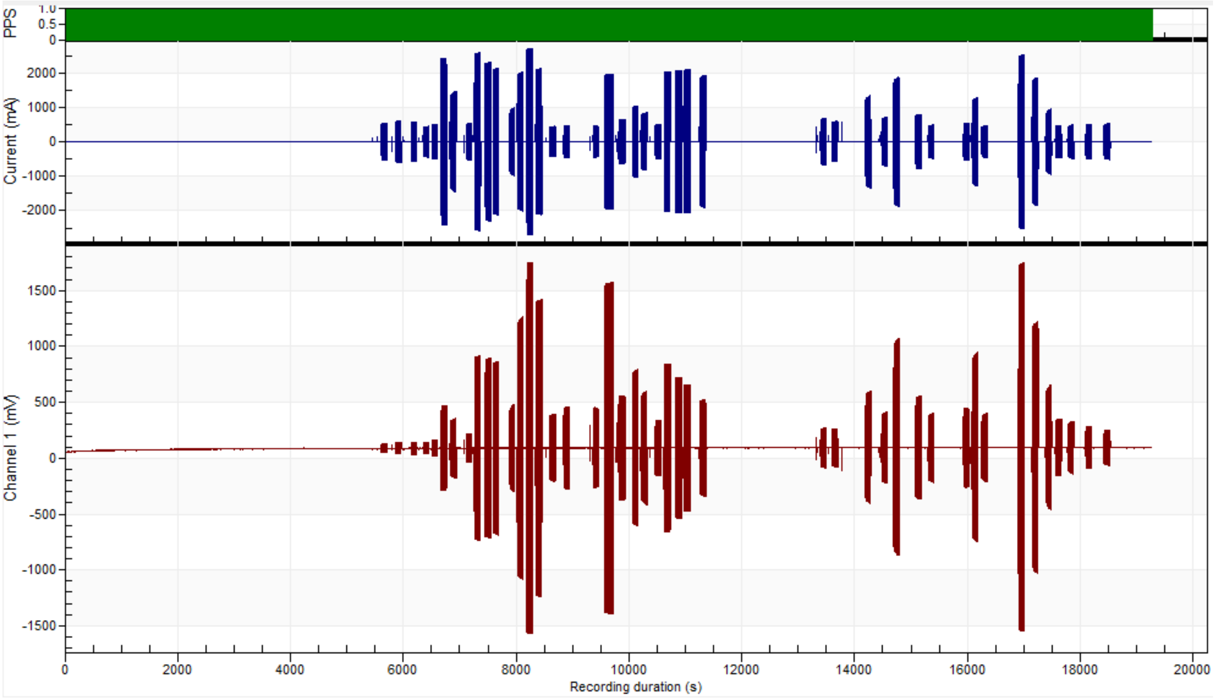
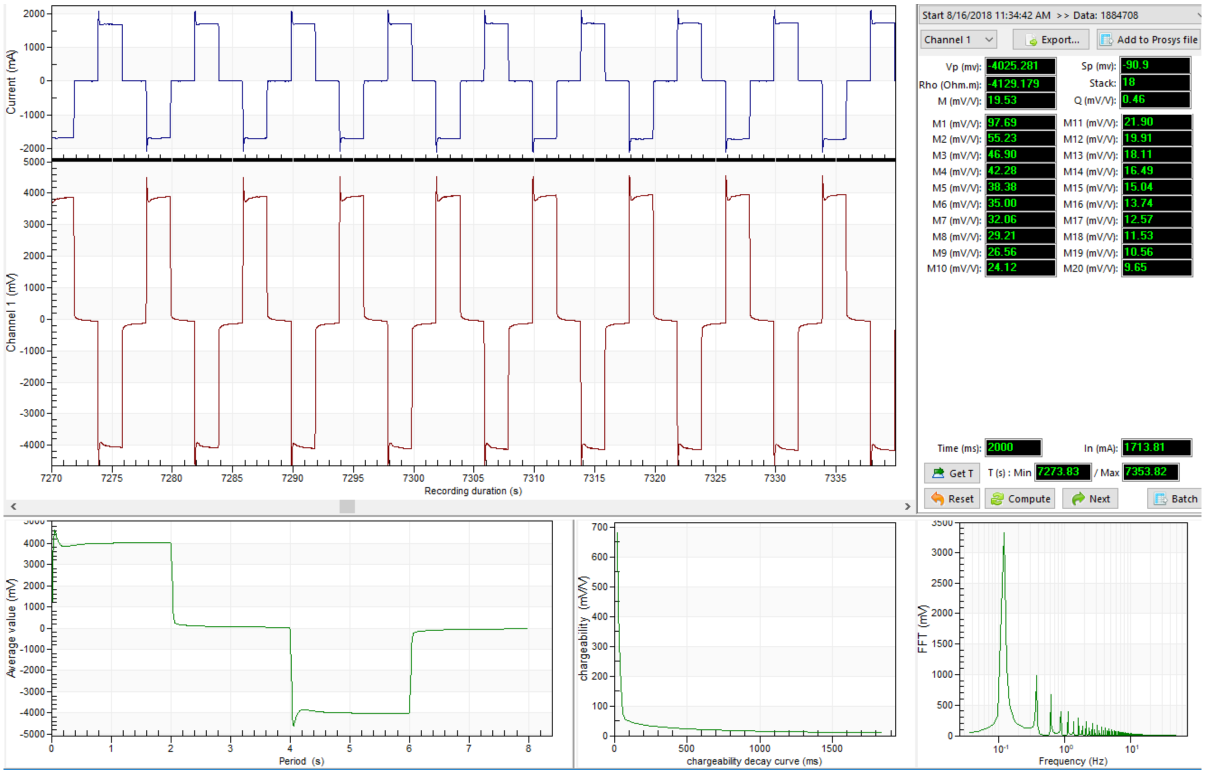


Figure 12: Receiver recordings (red) synchronized with the current injections (blue)


Start 8/16/2018 11:34:42 AM >> Data: 1884708

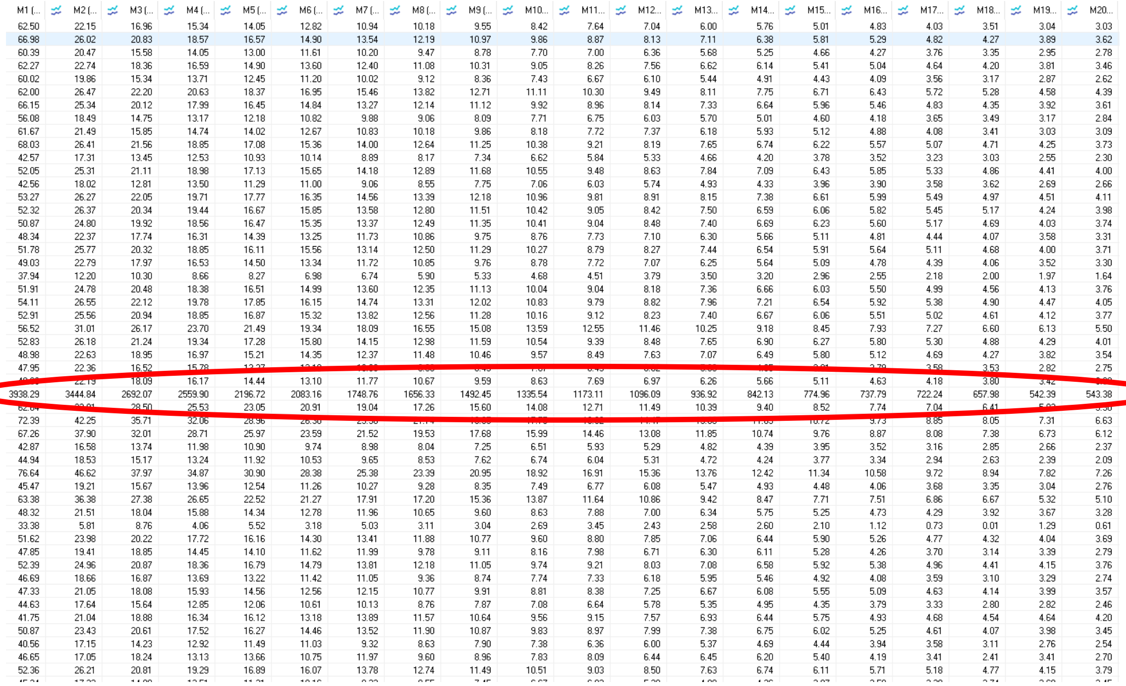
Channel 1

Vp (mv): -4025.281
Rho (Ohm.m): -4129.179
M (mV/V): 19.53
Sp (mv): -90.9
Stack: 18
Q (mV/V): 0.46

M1 (mV/V): 97.69
M2 (mV/V): 55.23
M3 (mV/V): 46.90
M4 (mV/V): 42.28
M5 (mV/V): 38.38
M6 (mV/V): 35.00
M7 (mV/V): 32.06
M8 (mV/V): 29.21
M9 (mV/V): 26.56
M10 (mV/V): 24.12
M11 (mV/V): 21.90
M12 (mV/V): 19.91
M13 (mV/V): 18.11
M14 (mV/V): 16.49
M15 (mV/V): 15.04
M16 (mV/V): 13.74
M17 (mV/V): 12.57
M18 (mV/V): 11.53
M19 (mV/V): 10.56
M20 (mV/V): 9.65

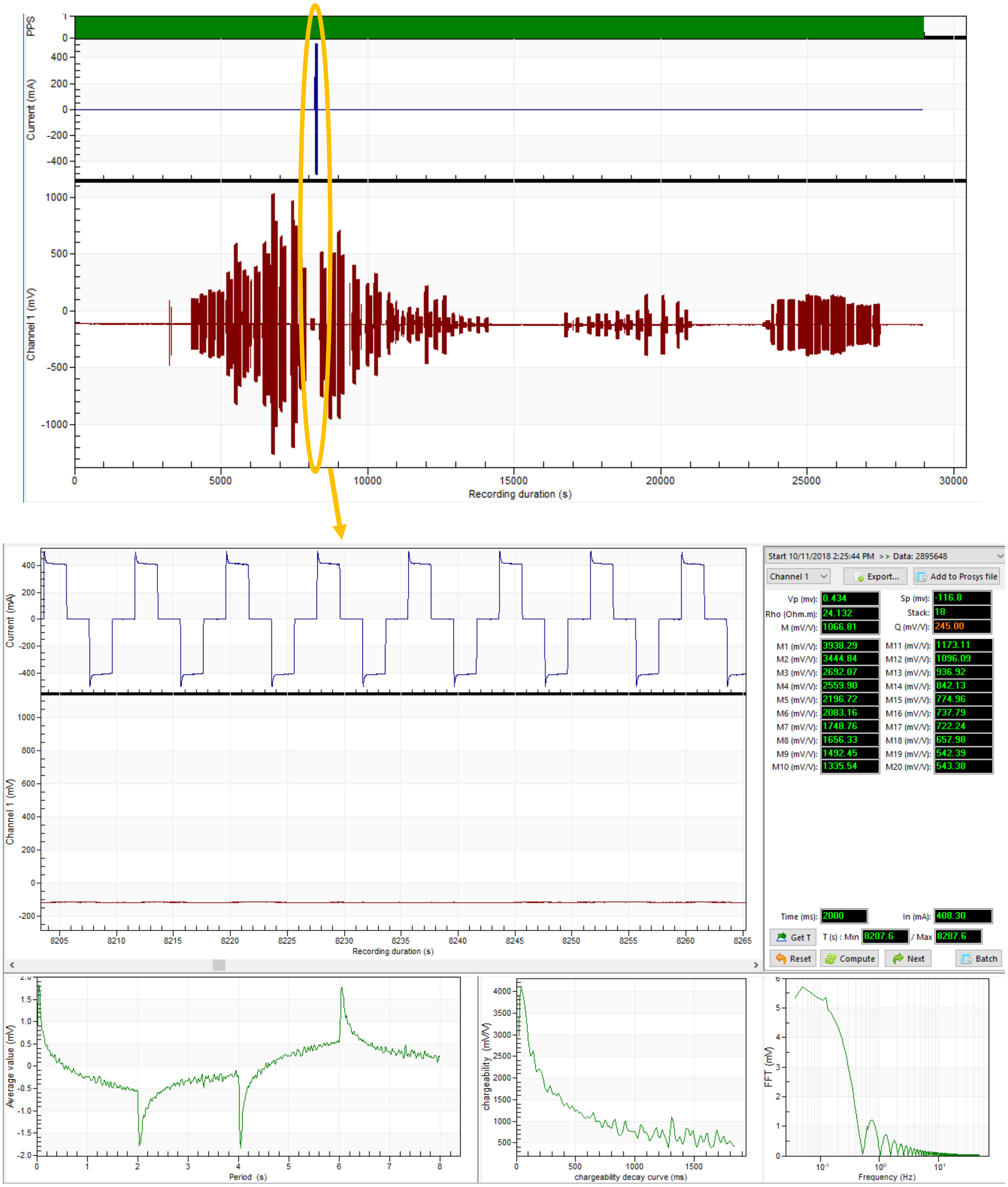
Time (ms): 2000
In (mA): 1713.81
T (s) : Min 7273.83 / Max 7353.82

Figure 13: Good 90 second transmit/read pair. Injection (blue), read signal (red), transmit signal (bottom left), decay curve (bottom centre), FFT (bottom right).



M1 (...	M2 (...	M3 (...	M4 (...	M5 (...	M6 (...	M7 (...	M8 (...	M9 (...	M10...	M11...	M12...	M13...	M14...	M15...	M16...	M17...	M18...	M19...	M20...
62.50	22.15	16.96	15.34	14.05	12.82	10.94	10.18	9.55	8.42	7.64	7.04	6.00	5.76	5.01	4.83	4.03	3.51	3.04	3.03
66.98	26.02	20.83	18.57	16.57	14.90	13.54	12.19	10.97	9.86	8.87	8.13	7.11	6.38	5.81	5.29	4.82	4.27	3.89	3.62
60.39	20.47	15.58	14.05	13.00	11.61	10.20	9.47	8.78	7.70	7.00	6.36	5.68	5.25	4.66	4.27	3.76	3.35	2.95	2.78
62.27	22.74	18.36	16.59	14.90	13.60	12.40	11.08	10.31	9.05	8.26	7.56	6.62	6.14	5.41	5.04	4.64	4.20	3.81	3.46
60.02	19.86	15.34	13.71	12.45	11.20	10.02	9.12	8.36	7.43	6.67	6.10	5.44	4.91	4.43	4.09	3.56	3.17	2.87	2.62
62.00	26.47	22.20	20.63	18.37	16.95	15.46	13.82	12.71	11.11	10.30	9.49	8.11	7.75	6.71	6.43	5.72	5.28	4.58	4.39
66.15	25.34	20.12	17.99	16.45	14.84	13.27	12.14	11.12	9.92	8.96	8.14	7.33	6.64	5.96	5.46	4.83	4.35	3.92	3.61
56.08	18.49	14.75	13.17	12.18	10.82	9.88	9.06	8.09	7.71	6.75	6.03	5.70	5.01	4.60	4.18	3.65	3.49	3.17	2.84
61.67	21.49	15.85	14.74	14.02	12.67	10.83	10.18	9.86	8.18	7.72	7.37	6.18	5.93	5.12	4.88	4.08	3.41	3.03	3.09
68.03	26.41	21.56	18.85	17.08	15.36	14.00	12.64	11.25	10.38	9.21	8.19	7.65	6.74	6.22	5.57	5.07	4.71	4.25	3.73
42.57	17.31	13.45	12.53	10.93	10.14	8.89	8.17	7.34	6.62	5.84	5.33	4.66	4.20	3.78	3.52	3.23	3.03	2.55	2.30
52.05	25.31	21.11	18.98	17.13	15.65	14.18	12.89	11.68	10.55	9.48	8.63	7.84	7.09	6.43	5.85	5.33	4.86	4.41	4.00
42.56	18.02	12.81	13.50	11.29	11.00	9.06	8.55	7.75	7.06	6.03	5.74	4.93	4.33	3.96	3.90	3.58	3.62	2.69	2.66
53.27	26.27	22.05	19.71	17.77	16.35	14.56	13.39	12.18	10.96	9.81	8.91	8.15	7.38	6.61	5.99	5.49	4.97	4.51	4.11
52.32	26.37	20.34	19.44	16.67	15.85	13.58	12.80	11.51	10.42	9.05	8.42	7.50	6.59	6.06	5.82	5.45	5.17	4.24	3.98
50.87	24.80	19.92	18.56	16.47	15.35	13.37	12.49	11.35	10.41	9.04	8.48	7.40	6.69	6.23	5.60	5.17	4.69	4.03	3.74
48.34	22.37	17.74	16.31	14.39	13.25	11.73	10.86	9.75	8.76	7.73	7.10	6.30	5.66	5.11	4.81	4.44	4.07	3.58	3.31
51.78	25.77	20.32	18.85	16.11	15.56	13.14	12.50	11.29	10.27	8.79	8.27	7.44	6.54	5.91	5.64	5.11	4.68	4.00	3.71
49.03	22.79	17.97	16.53	14.50	13.34	11.72	10.85	9.76	8.78	7.72	7.07	6.25	5.64	5.09	4.78	4.39	4.06	3.52	3.30
37.94	12.20	10.30	8.66	8.27	6.98	6.74	5.90	5.33	4.68	4.51	3.79	3.50	3.20	2.96	2.55	2.18	2.00	1.97	1.64
51.91	24.78	20.48	18.38	16.51	14.99	13.60	12.35	11.13	10.04	9.04	8.18	7.36	6.66	6.03	5.50	4.99	4.56	4.13	3.76
54.11	26.55	22.12	19.78	17.85	16.15	14.74	13.31	12.02	10.83	9.79	8.82	7.96	7.21	6.54	5.92	5.38	4.90	4.47	4.05
52.91	25.56	20.94	18.85	16.87	15.32	13.82	12.56	11.28	10.16	9.12	8.23	7.40	6.67	6.06	5.51	5.02	4.61	4.12	3.77
56.52	31.01	26.17	23.70	21.49	19.34	18.09	16.55	15.08	13.59	12.55	11.46	10.25	9.18	8.45	7.93	7.27	6.60	6.13	5.50
52.83	26.18	21.24	19.34	17.28	15.80	14.15	12.98	11.59	10.54	9.39	8.48	7.65	6.90	6.27	5.80	5.30	4.88	4.29	4.01
48.98	22.63	18.95	16.97	15.21	14.35	12.37	11.48	10.46	9.57	8.49	7.63	7.07	6.49	5.80	5.12	4.69	4.27	3.82	3.54
47.95	22.36	16.52	15.78	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.58	3.53	2.82	2.75
[illegible]	22.19	18.09	16.17	14.44	13.10	11.77	10.67	9.59	8.63	7.69	6.97	6.26	5.66	5.11	4.63	4.18	3.80	3.42	[illegible]
3938.29	3444.84	2692.07	2559.90	2196.72	2083.16	1748.76	1656.33	1492.45	1335.54	1173.11	1096.09	936.92	842.13	774.96	737.79	722.24	657.98	542.39	543.38
62.64	[illegible]	28.50	25.53	23.05	20.91	19.04	17.26	15.60	14.08	12.71	11.49	10.39	9.40	8.52	7.74	7.04	6.41	[illegible]	[illegible]
72.39	42.25	35.71	32.06	28.96	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10.72	9.73	8.85	8.05	7.31	6.63
67.26	37.90	32.01	28.71	25.97	23.59	21.52	19.53	17.68	15.99	14.46	13.08	11.85	10.74	9.76	8.87	8.08	7.38	6.73	6.12
42.87	16.58	13.74	11.98	10.90	9.74	8.98	8.04	7.25	6.51	5.93	5.29	4.82	4.39	3.95	3.52	3.16	2.85	2.66	2.37
44.94	18.53	15.17	13.24	11.92	10.53	9.65	8.53	7.62	6.74	6.04	5.31	4.72	4.24	3.77	3.34	2.94	2.63	2.39	2.09
76.64	46.62	37.97	34.87	30.90	28.38	25.38	23.39	20.95	18.92	16.91	15.36	13.76	12.42	11.34	10.58	9.72	8.94	7.82	7.26
45.47	19.21	15.67	13.96	12.54	11.26	10.27	9.28	8.35	7.49	6.77	6.08	5.47	4.93	4.48	4.06	3.68	3.35	3.04	2.76
63.38	36.38	27.38	26.65	22.52	21.27	17.91	17.20	15.36	13.87	11.64	10.86	9.42	8.47	7.71	7.51	6.86	6.67	5.32	5.10
48.32	21.51	18.04	15.88	14.34	12.78	11.96	10.65	9.60	8.63	7.88	7.00	6.34	5.75	5.25	4.73	4.29	3.92	3.67	3.28
33.38	5.81	8.76	4.06	5.52	3.18	5.03	3.11	3.04	2.69	3.45	2.43	2.58	2.60	2.10	1.12	0.73	0.01	1.29	0.61
51.62	23.98	20.22	17.72	16.16	14.30	13.41	11.88	10.77	9.60	8.80	7.85	7.06	6.44	5.90	5.26	4.77	4.32	4.04	3.69
47.85	19.41	18.85	14.45	14.10	11.62	11.99	9.78	9.11	8.16	7.98	6.71	6.30	6.11	5.28	4.26	3.70	3.14	3.39	2.79
52.39	24.96	20.87	18.36	16.79	14.79	13.81	12.18	11.05	9.74	9.21	8.03	7.08	6.58	5.92	5.38	4.96	4.41	4.15	3.76
46.69	18.66	16.87	13.69	13.22	11.42	11.05	9.36	8.74	7.74	7.33	6.18	5.95	5.46	4.92	4.08	3.59	3.10	3.29	2.74
47.33	21.05	18.08	15.93	14.56	12.56	12.15	10.77	9.91	8.81	8.38	7.25	6.67	6.08	5.55	5.09	4.63	4.14	3.99	3.57
44.63	17.64	15.64	12.85	12.06	10.61	10.13	8.76	7.87	7.08	6.64	5.78	5.35	4.95	4.35	3.79	3.33	2.80	2.82	2.46
41.75	21.04	18.88	16.34	16.12	13.18	13.89	11.57	10.64	9.56	9.15	7.57	6.93	6.44	5.75	4.93	4.68	4.54	4.64	4.20
50.87	23.43	20.61	17.52	16.27	14.46	13.52	11.90	10.87	9.83	8.97	7.99	7.38	6.75	6.02	5.25	4.61	4.07	3.98	3.45
40.56	17.15	14.23	12.92	11.49	11.03	9.32	8.63	7.90	7.38	6.36	6.00	5.37	4.69	4.44	3.94	3.58	3.11	2.76	2.54
46.65	17.05	18.24	13.13	13.66	10.75	11.97	9.60	8.96	7.83	8.09	6.44	6.45	6.20	5.40	4.19	3.41	2.41	3.41	2.70
52.36	26.21	20.81	19.29	16.89	16.07	13.78	12.74	11.49	10.51	9.03	8.50	7.63	6.74	6.11	5.71	5.18	4.77	4.15	3.79

__Figure 14: Output .bin file viewed in Prosys. Larger abnormal M1-M20 values circled in red.__



Start 10/11/2018 2:25:44 PM >> Data: 2895648

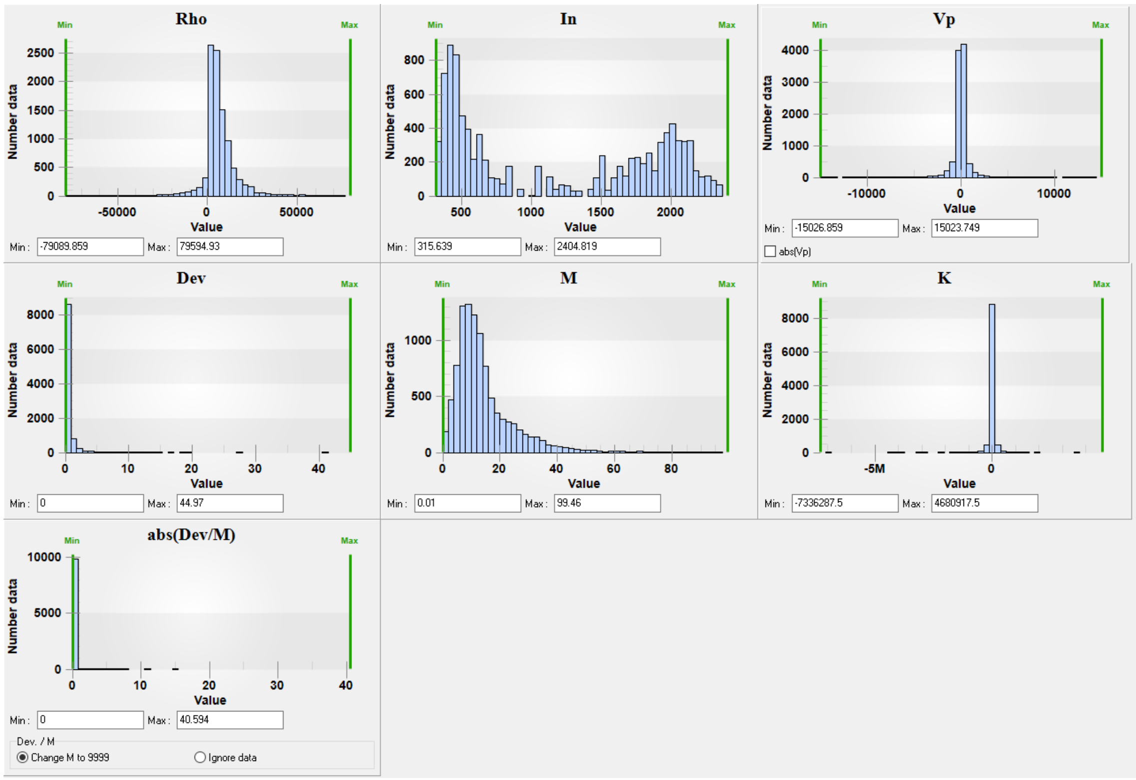
Vp (mv): 0.434
Sp (mv): -116.8
Rho (Ohm.m): 24.132
Stack: 18
M (mV/V): 1066.81
Q (mV/V): 245.00

M1 (mV/V):	3938.29	M11 (mV/V):	1173.11
M2 (mV/V):	3444.84	M12 (mV/V):	1096.09
M3 (mV/V):	2692.07	M13 (mV/V):	936.92
M4 (mV/V):	2559.90	M14 (mV/V):	842.13
M5 (mV/V):	2196.72	M15 (mV/V):	774.96
M6 (mV/V):	2083.16	M16 (mV/V):	737.79
M7 (mV/V):	1748.76	M17 (mV/V):	722.24
M8 (mV/V):	1656.33	M18 (mV/V):	657.98
M9 (mV/V):	1492.45	M19 (mV/V):	542.39
M10 (mV/V):	1335.54	M20 (mV/V):	543.38

Time (ms): 2000
In (mA): 408.30
T (s) : Min 8207.6 / Max 8287.6

Figure 15: Signal, cycle, and curves of abnormal unaccepted M1-20 values.

6. Filtering – Values with unrealistic resistivities and chargeabilities, high standard deviations, large geometric factors, and that are oversaturated were filtered out (Figure 16).



Rho — Min : -79089.859 Max : 79594.93

In — Min : 315.639 Max : 2404.819

Vp — Min : -15026.859 Max : 15023.749

☐ abs(Vp)

Dev — Min : 0 Max : 44.97

M — Min : 0.01 Max : 99.46

K — Min : -7336287.5 Max : 4680917.5

abs(Dev/M) — Min : 0 Max : 40.594

Dev. / M

● Change M to 9999 ○ Ignore data

Figure 16: Filtering options

3D viewing of the raw calculated chargeability and resistivity results was observed in Geosoft Oasis (Figures 17-20; Y=North). Calculated report points from acquisition were recorded at a maximum depth of approximately 650 metres depth.

A total of 2740 filtered data points was collected from this 3D IP survey configuration over a period of 2 days.

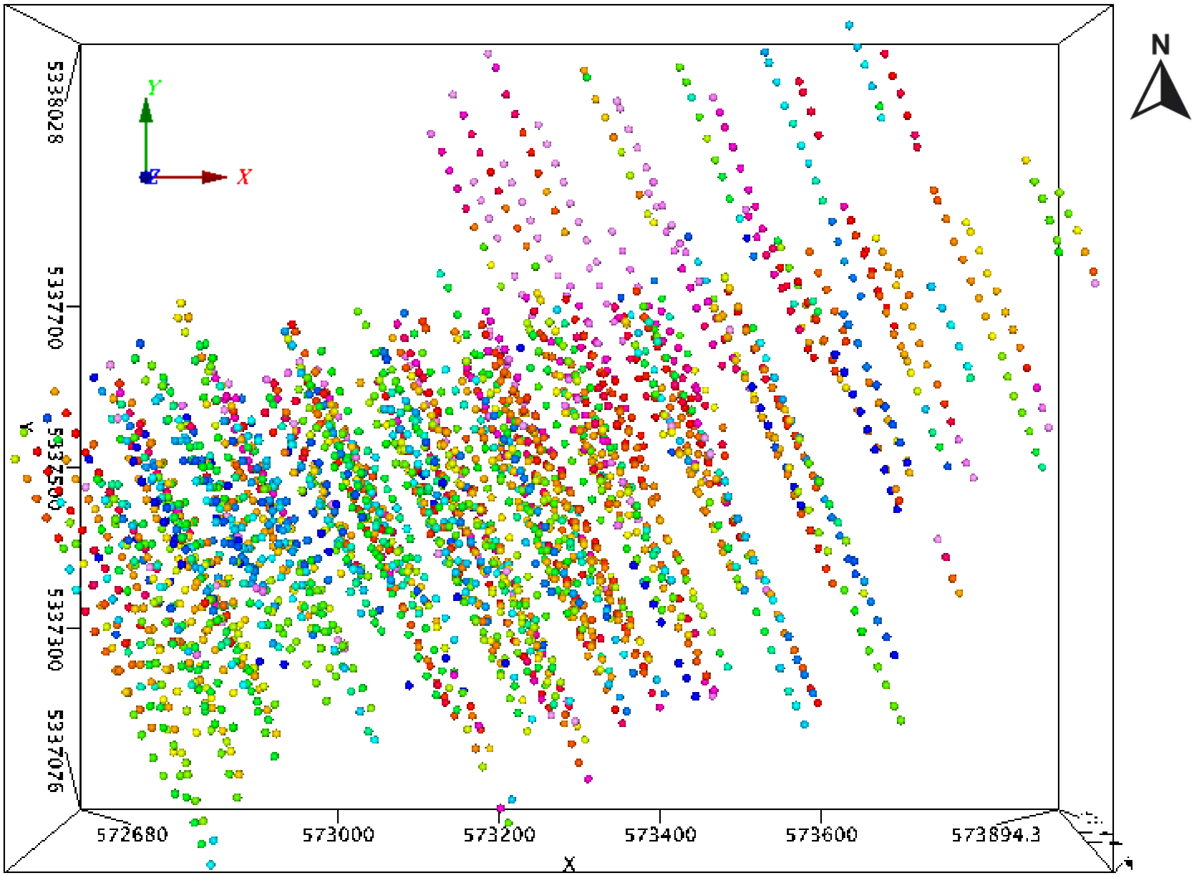


Figure 17: Top view of the raw calculated chargeability data points

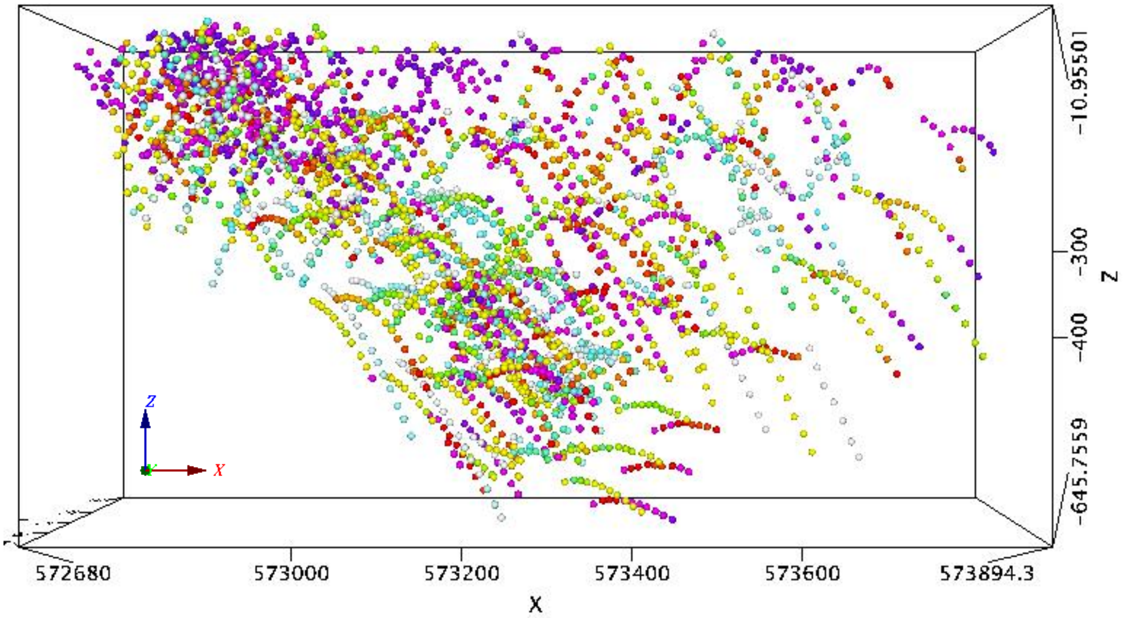


Figure 18: Side view of the raw calculated resistivity data points facing north

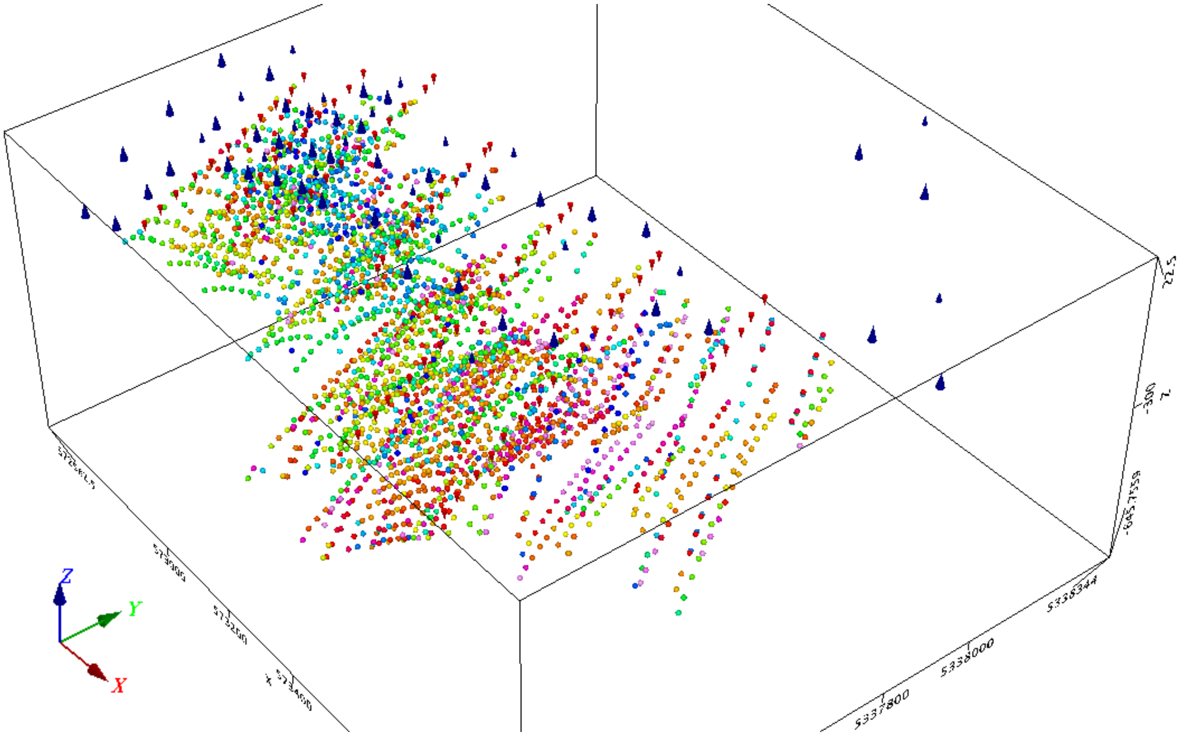


Figure 19: Raw calculated chargeability data points with survey layout

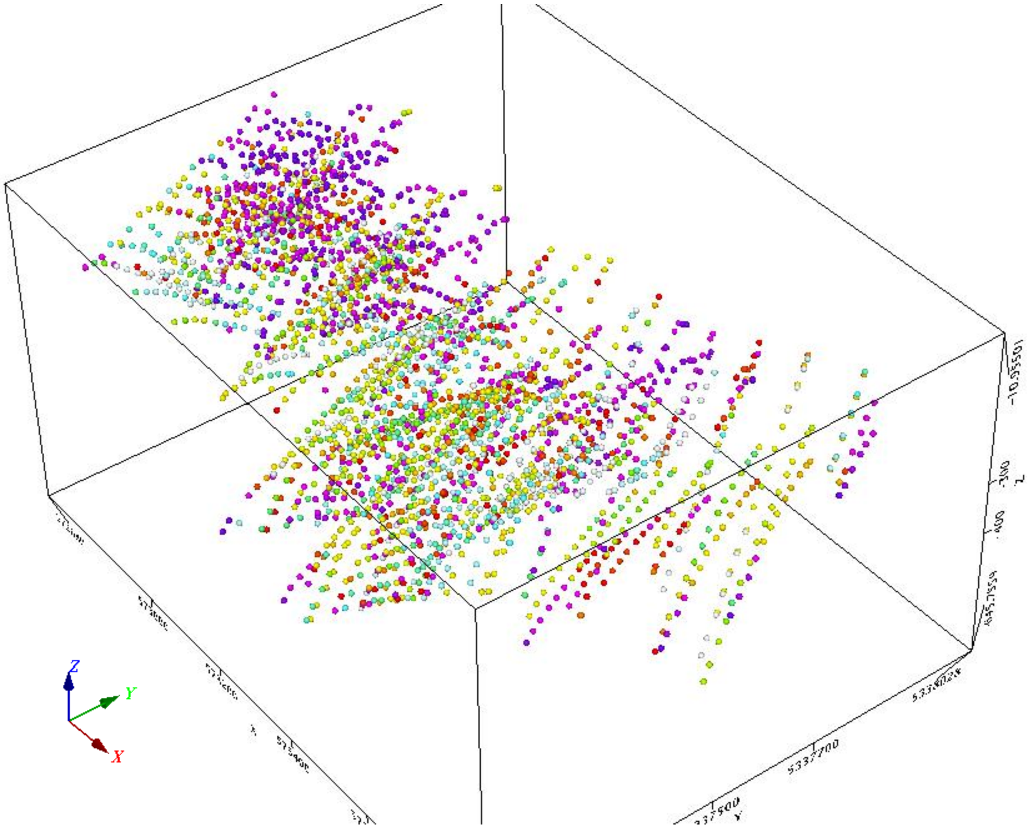
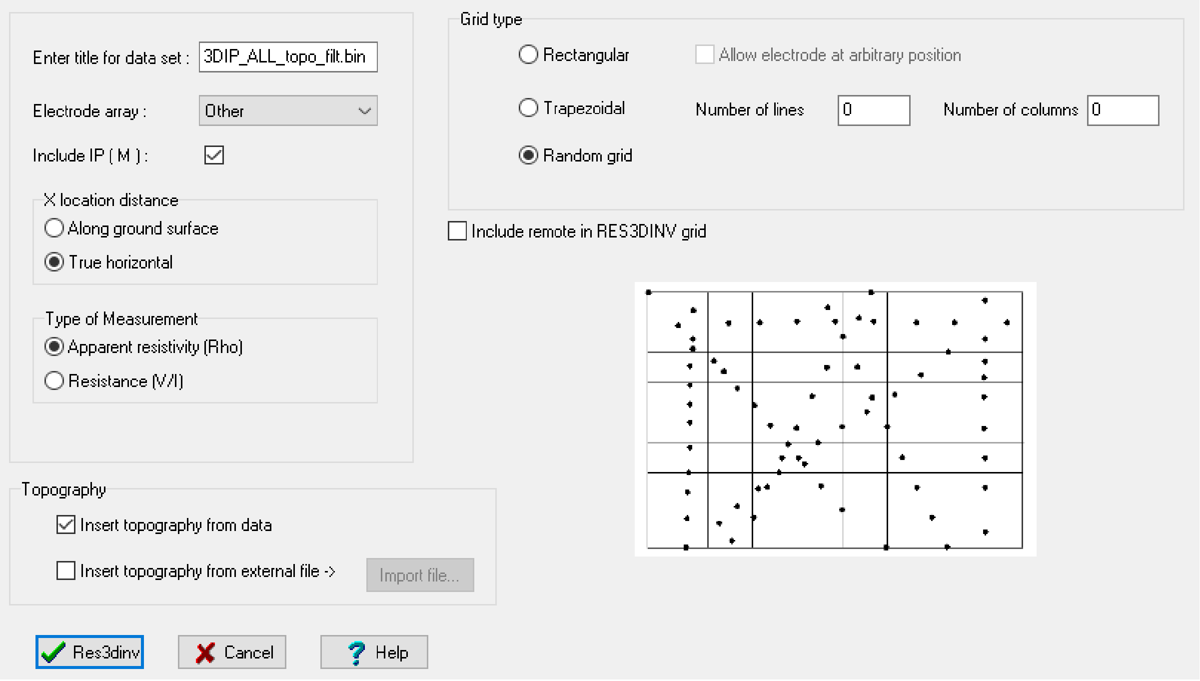


Figure 20: Raw calculated resistivity data points

6.3 INVERSION

Inversions of the filtered data was done in RES3DINV Professional version 3.14.19. This is a 3D inversion software specifically used for resistivity and induced polarization data. From the finalized Prosys file an export to a RES3DINV format was created with specific selections depending on the survey type completed. The selections seen in Figure 21 are standard 3D distributed IP array settings. Depending on the intended survey array type, including the remote may or may not be used. For example, in this case the infinite was placed far away that a pole-dipole array was intended and the remote was not included. Topography was included.



Enter title for data set : 3DIP_ALL_topo_filt.bin

Electrode array : Other

Include IP (M) : ☑

X location distance
○ Along ground surface
● True horizontal

Type of Measurement
● Apparent resistivity (Rho)
○ Resistance (V/I)

Grid type
○ Rectangular ☐ Allow electrode at arbitrary position
○ Trapezoidal Number of lines 0 Number of columns 0
● Random grid

☐ Include remote in RES3DINV grid

Topography
☑ Insert topography from data
☐ Insert topography from external file ->

Figure 21: Export settings selection from Prosys to RES3DINV

Model grid settings were changed depending on the infinite locations and the dipole lengths. A uniform cell size was chosen to be ¼ or 1/5 of the dipole length, in this survey case a cell size of 25m was used (Figure 22). To reduce edge artifacts a few cells extension was added. Manual edits may be needed to the cell size depending on the location of the infinite. In this case no manual edits were made as the remote electrode was at a theoretically infinite location, as in a pole-dipole array scenario. Ten model layers were used with depths to 15, 30, 50, 75, 110, 150, 200, 275, 360, 460 metres.

The theoretical maximum depth obtained from the Fullwave Designer was 400 metres. Calculated report points from acquisition were recorded at a maximum depth of approximately 650 metres depth. However, a maximum depth of 460 metres was used because resolution and sensitivity decrease as depth increases. Sensitivity values represent how well the model is constrained, with higher sensitivities providing less uncertainty and greater validity. To constrain and optimize both the resolution and sensitivity of the inversion a maximum depth of 460m was used.

Important inversion parameters used for the creation of the model are described in Table 10[2].

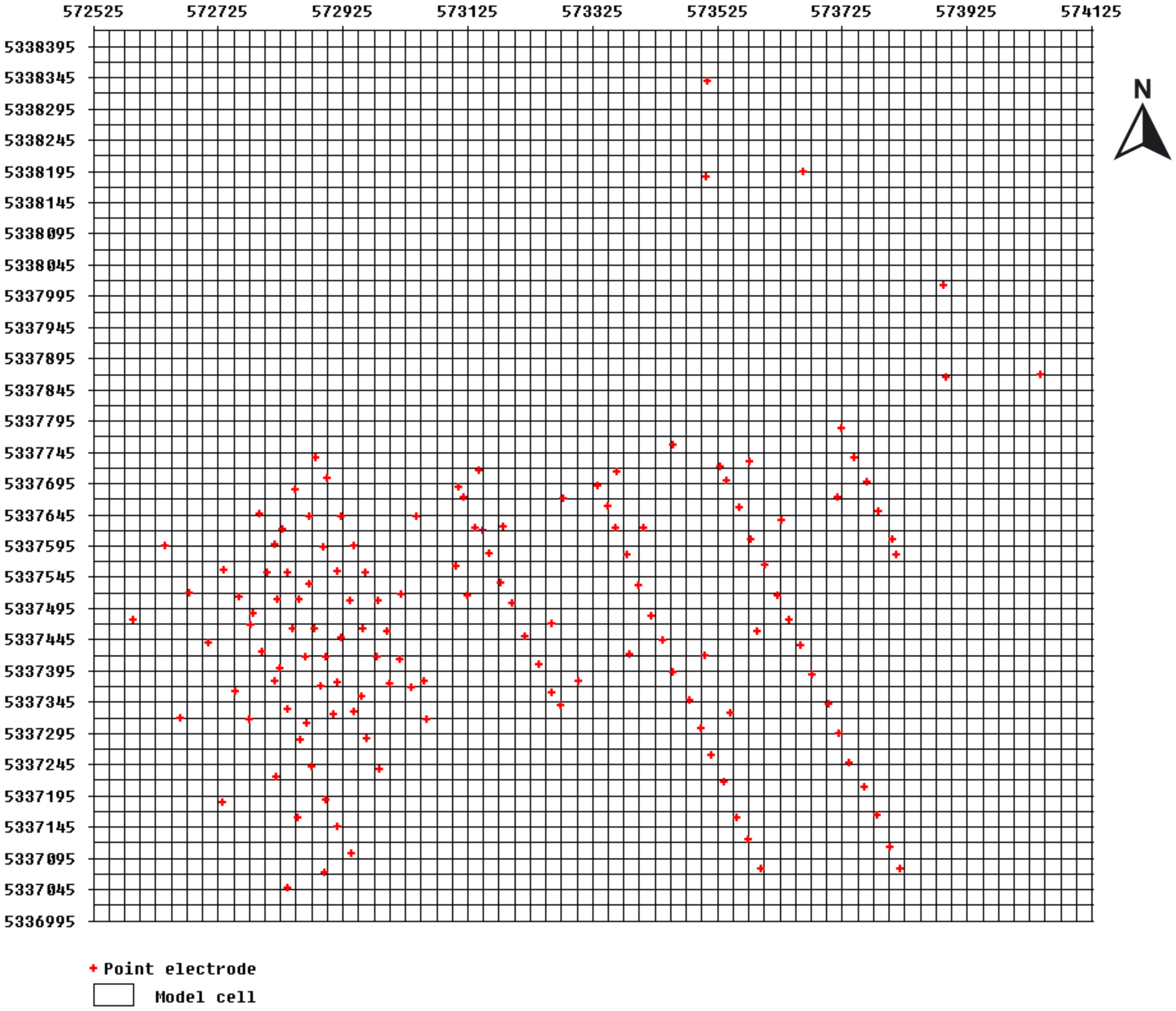


Figure 22: Uniform 25m model cell size – model viewer in RES3DINV

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[2] Refer to the RES3DINV manual and tutorial by Dr. M.H. Loke.

Parameter	Description
Refined Topography	Estimates topography of each interior node individually to take non-linear topography variations within each model block into account.
Higher Damping of 1st layer	Useful to avoid unusually large resistivity variations in the top layer (Loke and Dahlin 2010).
Diagonal Filter Components	Reduces effects of produced structures with boundaries aligned along the horizontal and vertical directions.
Robust Data Constraint	Attempts to minimize the absolute difference between the measured and calculated apparent resistivity values (Claerbout and Muir 1971). Less sensitive to very noisy data point.
Robust Model Constraint	Produces models with regions of more uniform resistivity values with sharper boundaries.
Incomplete Gauss-Newton	An approximate solution of the least-squares equation that uses an iterative linear conjugate-gradient method.
Reference Model	An additional constraint on the model to limit the deviation of the model resistivity from a homogenous reference model. This is normally the average of the apparent resistivity values.
Logarithm of Apparent Resistivity	In 2D systems it is ~impossible to determine whether the measured potential has the same sign as the transmitted current, thus it was assumed apparent resistivity is always positive and the logarithm is used. However, negative apparent resistivity values not caused by noise are observed in 3D distributed IP systems, especially with near-surface large resistivity contrasts and topography. Thus, the logarithm of apparent resistivity is not used because negative apparent resistivity values are real and kept throughout the inversion for a more accurate model. (Loke, 2018)
Forward Modeling Method	The finite-element method with a medium extended 4 horizontal node mesh between electrodes is used for datasets with topography and for improved accuracy.
Non-Linear IP Complex Method	The non-linear method calculates apparent IP using a complex resistivity formula. This method treats the conductivity as a complex quantity with real and imaginary components (Kenma et al. 2000). The complex conductivity and complex potential are calculated. These components are calculated in a two-step inversion process during each iteration. First the resistivity model is calculated, then the IP model is calculated.
IP Model Transformation	The “range-bound” transformation method is used to ensure the model IP values produced by the inversion program does not exceed the lower or upper limits of 0-200 mV/V.

Table 9: Inversion Parametre Descriptions (© (1996-2018) M.H.Loke)

7. RESULTS, INTERPRETATION & CONCLUSIONS

7.1 RESULTS

A final XYZ is outputted from the inversion and provides the resistivity, conductivity, chargeability, and sensitivity values at the centre and the corner of the model blocks. In this case resolution was also calculated.

A horizontal slice of the chargeability and resistivity from the final inversion model overlaid in Google Earth is seen in the following two figures.

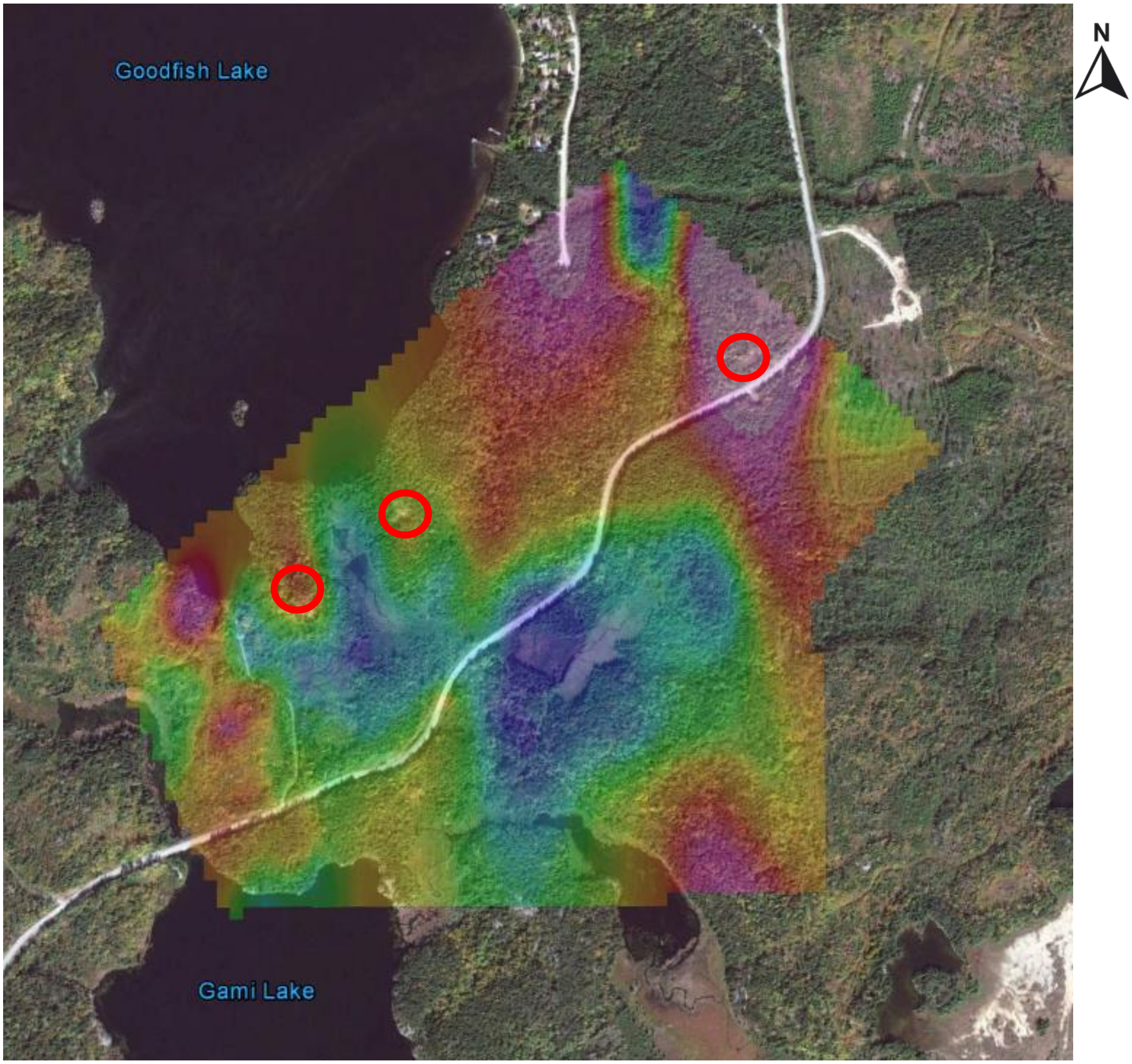

Figure 23: Chargeability grid (300m MSL) overlaying Google Earth. Red circles represent historic showings. (©2018 Google, Image ©2018 DigitalGlobe)

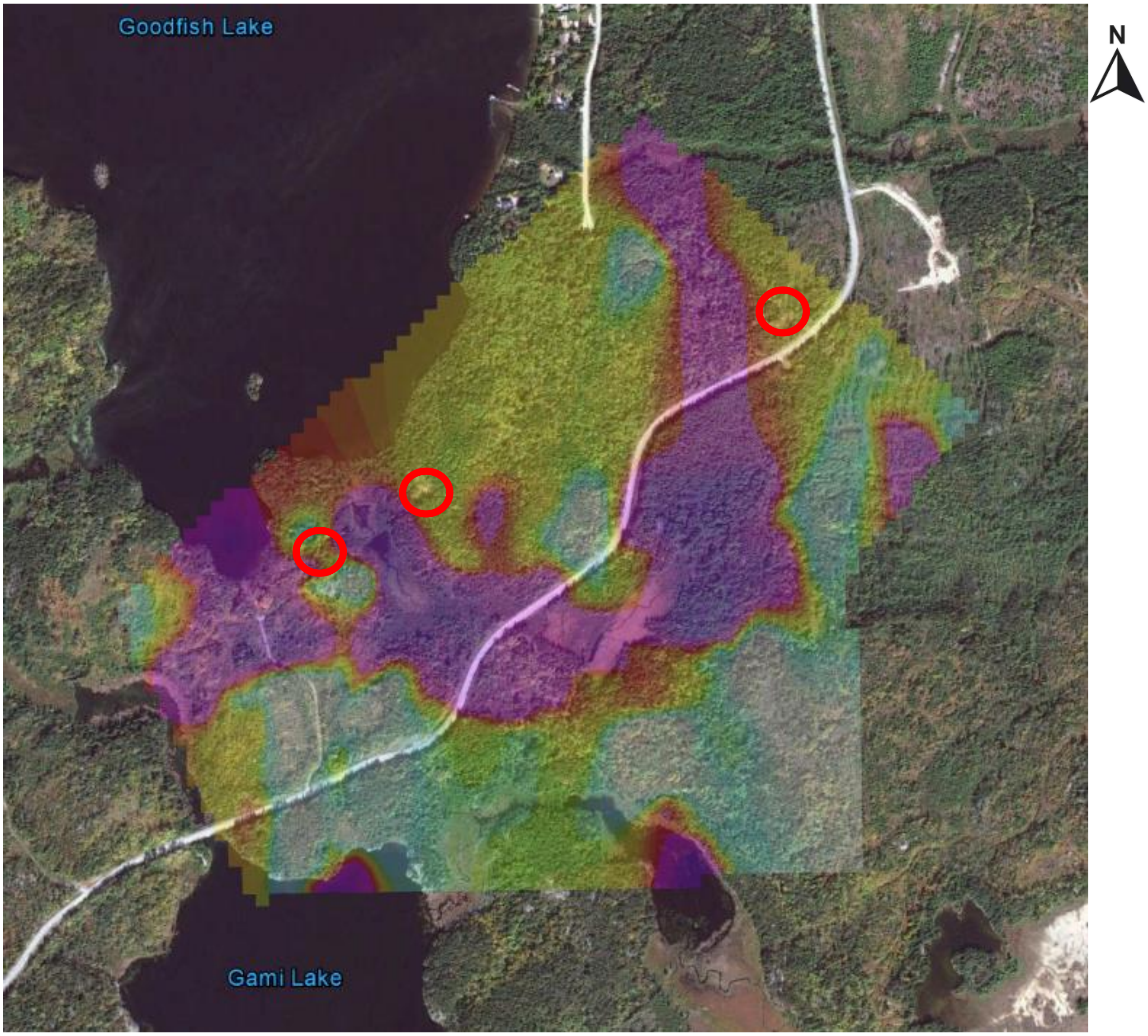

Figure 24: Resistivity grid (300m MSL) overlaying Google Earth. Red circles represent the historic showings. (©2018 Google, Image ©2018 DigitalGlobe)

7.2 INTERPRETATIONS[3]

Targeting of the 3D IP array was based on previous field observations and historic data. The survey was tightly constrained to a series of what are known as the Deloye Patents. A more detailed examination of a historic showing near the south end of the lake was outlined by the client, along with a broad look along the Kirana Structure. The Kirana Structure strikes subparallel to and near the north edge of the Deloye block and strikes off the block mid-block. For this reason, 2 logger sites

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[3] Note for all interpretation figures North is in the Y-direction.

were established on the Goodfish block.

Both inverted chargeability and resistivity data were modelled in 3D. Strong chargeability and high resistivity signatures emerged from the inversion of the dataset indicated by the surface information. Since the survey block is an irregular shape, some of the anomalous features may be stretched due to the geometry of the model edge blocks.

Figure 25 shows an example of the 3D chargeability model at 15mV/V, 20mV/V, 25mV/V and 30mV/V superimposed on the 150 metre MSL chargeability slice. The 3D model chargeability indicates that the historic showings may be related to multiple directions of chargeable features interacting with each other.

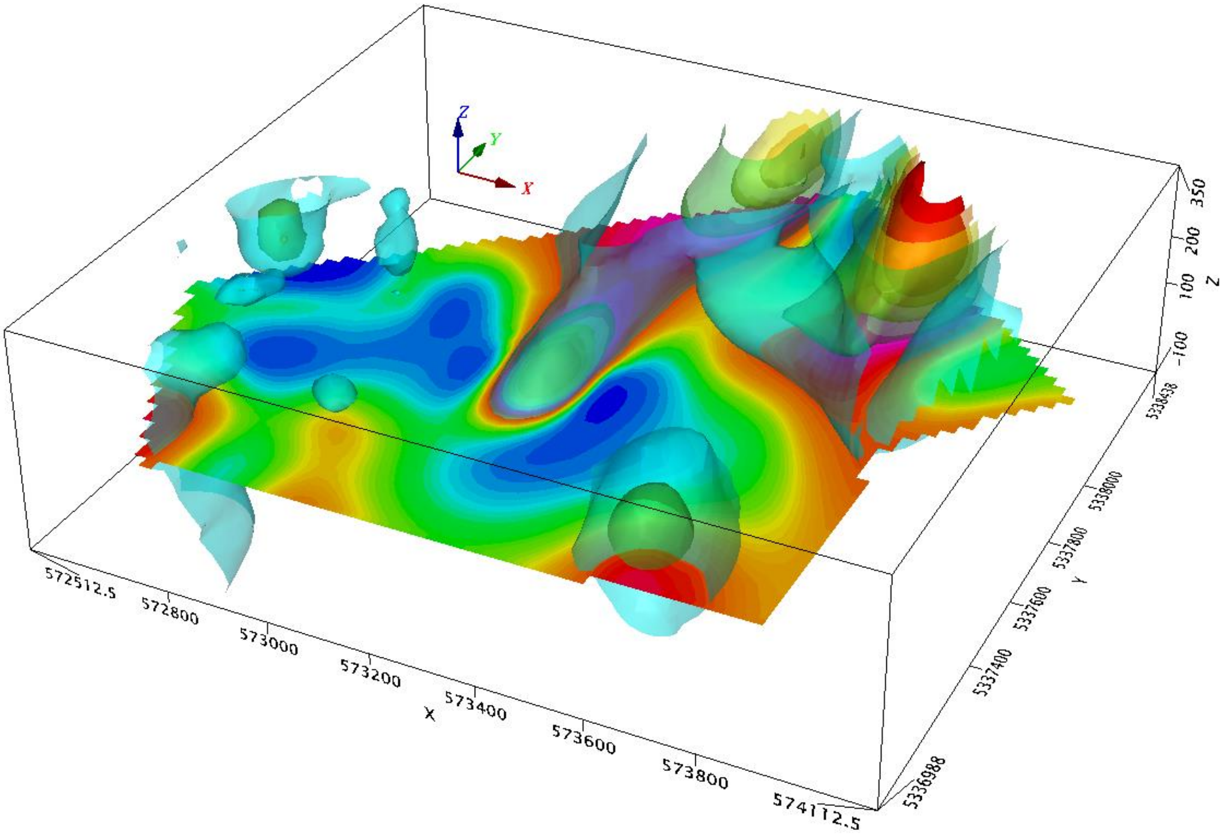

Figure 25: 3D chargeability isosurfaces with 150 metre MSL slice (green/yellow/orange/red isosurface = 15/20/25/30mV/V)

This interaction is best noted in the shallower levels of the model. The Kirana Structure appears to cross the survey area at 70 degrees (Figure 26; 1). This structure is marked by a series of elevated chargeability responses. The elevated portions of this trend appear to represent the intersection of secondary weaker north-south chargeability features (Figure 26, grey circles).

The intersections along the suspected Kirana Trend also appear at the approximate locations of the historic showings, identified on claim maps. This indicates that the favorable mineralization has occurred at these intersections.

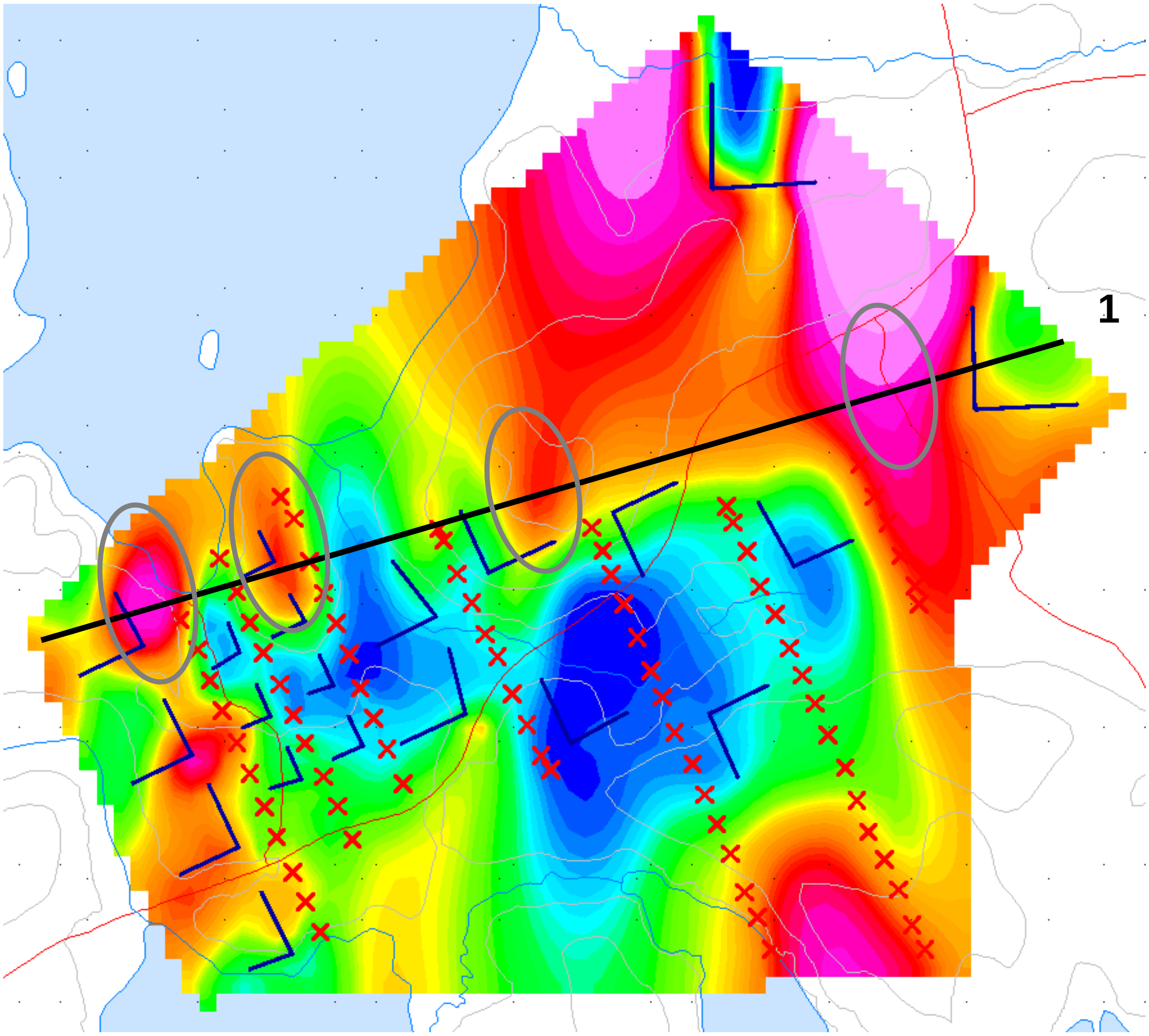

Figure 26: 3D chargeability 300 metre MSL slice looking down with interpretations

A strong resistivity low can be seen within the survey area. Overall this low tends to follow the areas of conductive overburden; however some extra trends do emerge.

The strongest resistivity low trend extends from the south end of Goodfish Lake, southward to Gami Lake (Figure 27; 1). This resistivity low feature appears to be coincident with a chargeability high response and most like is a result of a strong north-south fault.

A strong resistivity low feature on the east side is most likely a byproduct of the inversion due to the lack of equipment and thus data in this area.

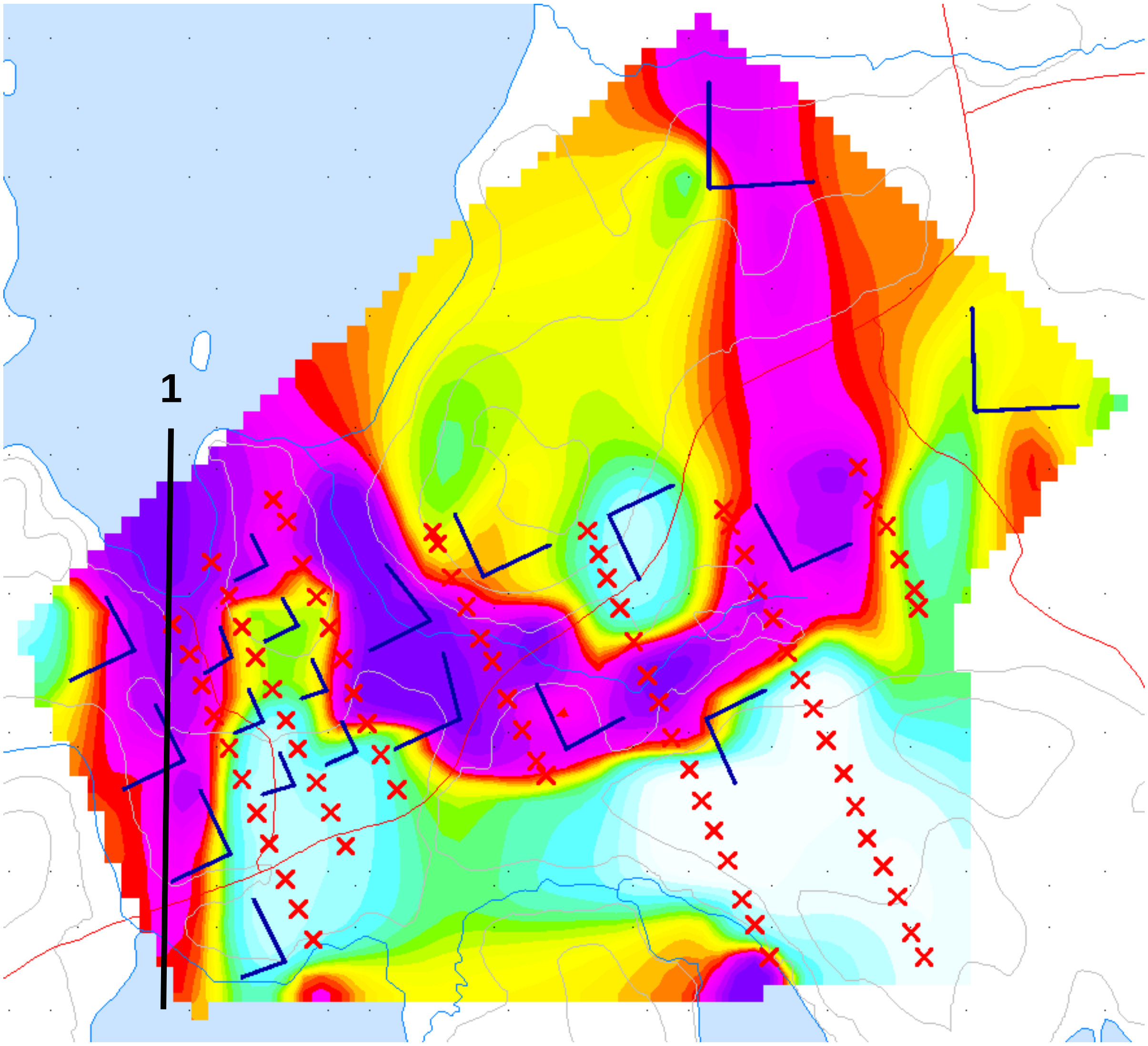

Figure 27: 250 metre (MSL) resistivity inversion slice

From a comparison of the chargeability and resistivity models there appears to be no obvious association between the combination of the models and historic showings.

7.3 RECOMMENDATIONS

The 3D Distributed IP survey was tightly constrained within the property boundaries. With this constraint, the historical showings were all highlighted as areas of elevated chargeability. Using this as a signature four additional targets were derived (Figure 28).

Two chargeability high areas appear in the northern part of the survey area. The east high is associated with a known showing (Figure 28; A is next to the grey dot that identifies the showings location) and the west high exhibits no known showings (Figure 28; 1). This target (Figure 28; 1) was generated with limited data, so the true ground location may vary and should be examined with additional geophysics.

In the central part of the survey area (Figure 28; 2), a small area of elevated chargeability occurs. This high is located near the road, however, also appears on strike and similar to the small chargeable response with the historic showing (Kirana Kirkland, Figure 28; B indicates the red dot as the showing). This indicates a strong possibility that this anomaly is associated with the Kirana-Kirkland zone.

Areas 3 and 4 on Figure 28 appear to be associated with each other. They also are in a similar area as the resistivity low trend, which indicates it is more likely to be associated with a structure. However, it is still recommended to follow up on these anomalies.

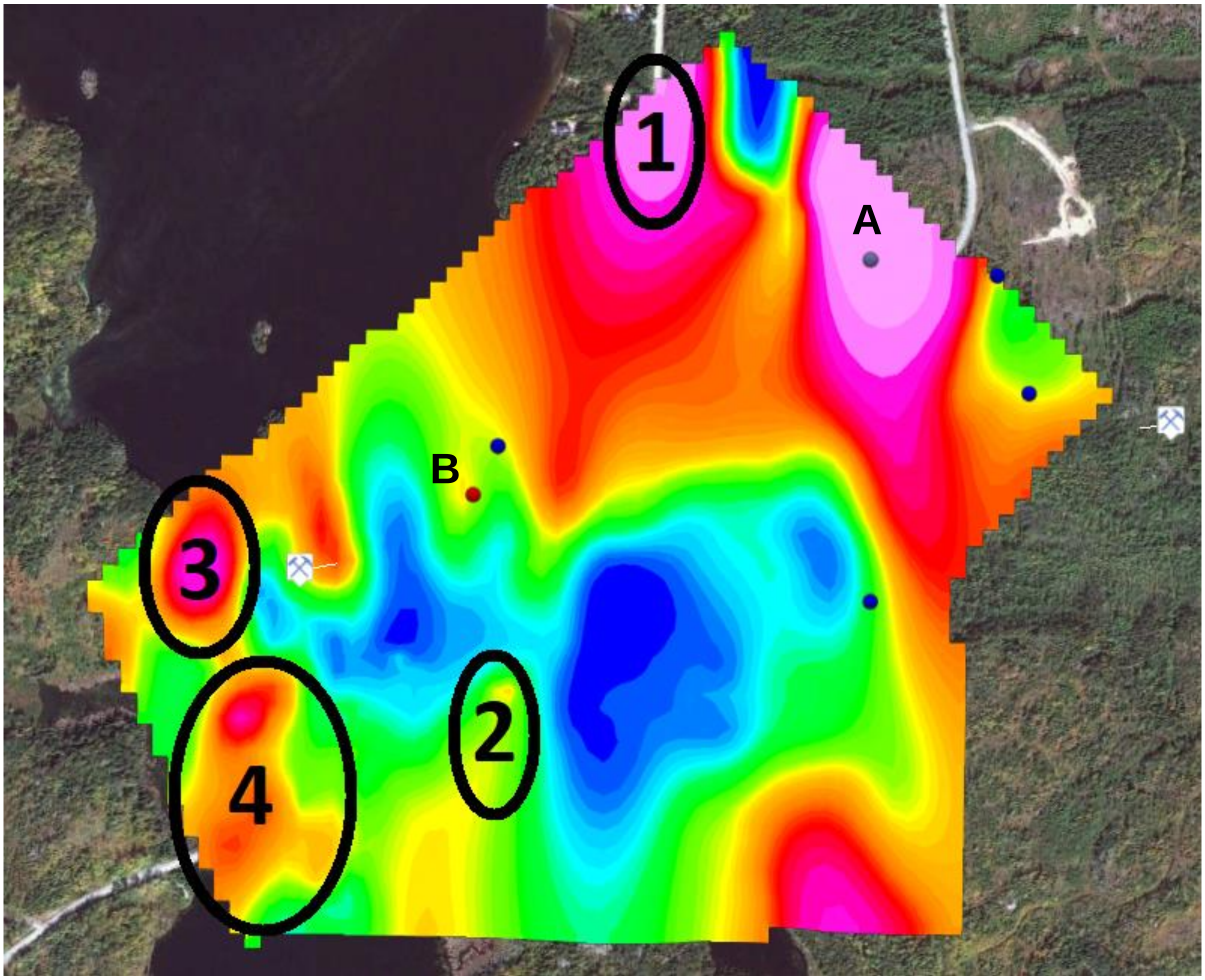

Figure 28: Chargeability 300m MSL slice with interpreted targets. (©2018 Google, Image ©2018 DigitalGlobe)

A compilation of the historic work on the property is recommended. This should then be compared with the chargeability and resistivity models to determine if anomalies can be explained. Any of the unexplained regions should then be prospected.
An expansion of the survey area is also recommended to create a more robust dataset and provide information on features seen in the north section.

7.4 CONCLUSIONS

The 3D IP survey was tightly constrained within the property boundaries. Even with this constraint, the historical showings were all highlighted as areas of elevated chargeability. Using this as a signature guide numerous additional targets were identified.

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, Melanie Postman, hereby declare that:

1. I am a soon-to-be Geoscientist-in-Training with residence in Larder Lake, Ontario and am presently employed as a Junior Geophysicist with Canadian Exploration Services Ltd. of Larder Lake, Ontario.

2. I graduated with a Bachelor of Science Honors specialization degree in geophysics for professional registration from the University of Western Ontario, in London Ontario, in 2017.

3. I am currently undergoing the application process to register as a Geoscientist-in-Training to later become a practicing member of the Association of Professional Geoscientists.

4. I have previous geophysical work experience during and following my education.

5. I do not have nor expect an interest in the properties and securities of Warrior Gold Incorporated.

6. I am responsible for assisting with the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my opinion based on my consideration of the information available to me at the time of writing this report.

Melanie Postman, B.Sc.
Junior Geophysicist
(non-Professional)

Larder Lake, ON
December 12, 2018

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, C. Jason Ploeger, hereby declare that:

1. I am a professional geophysicist with residence in Larder Lake, Ontario and am presently employed as a Geophysicist and Geophysical Manager of Canadian Exploration Services Ltd. of Larder Lake, Ontario.

2. I am a Practicing Member of the Association of Professional Geoscientists, with membership number 2172.

3. I graduated with a Bachelor of Science degree in geophysics from the University of Western Ontario, in London Ontario, in 1999.

4. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.

5. I am a member of the Ontario Prospectors Association, a Director of the Northern Prospectors Association and a member of the Society of Exploration Geophysicists.

6. I do not have nor expect an interest in the properties and securities of Warrior Gold Incorporated.

7. I am responsible for the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

C. JASON PLOEGER
PRACTISING MEMBER
2172

C. Jason Ploeger, P.Geo., B.Sc.
Geophysical Manager
Canadian Exploration Services Ltd.

Larder Lake, ON
December 12, 2018

APPENDIX B

IRIS V-FullWaver Receiver[4]

2 CHANNELS IP FULL WAVE RECORD

- 2 simultaneous dipoles
- Several weeks recording
- Time stamped data

V-Full Waver: this logger for electrical signal is a new concept of compact and low consumption unit designed for advanced Time Domain Induced Polarization, Resistivity and SP measurements. It can work in all field conditions, small, discrete, autonomous and can record continuously without operator.

Compactness: light, discrete and easy to setup on the field, even on remote areas. Autonomous two dipoles logger, no need of the operator during acquisition. V-Full Waver allows a high productivity for dipole-dipole, gradient, extended pole-pole and other arrays. A network of several tens of channels can be quickly installed on the field for deep exploration and advanced processing (perpendicular dipoles, remote reference...)

Internal GPS: an integrated GPS, very accurate and providing PPS signal (one pulse per second) allows to store all time series with time information. This is crucial to process data from several V-Full Waver loggers installed in a same area. This is also useful to correlate with injection dipole waveform, in case this has also been recorded with a I-Full Waver logger.

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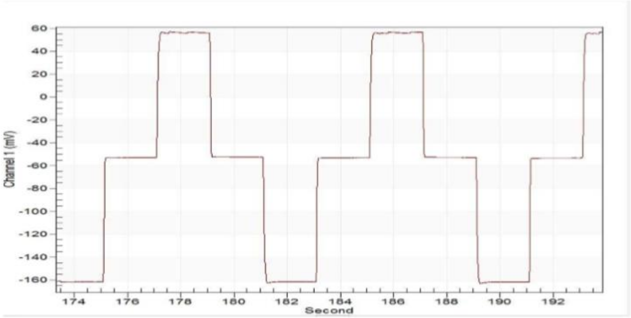
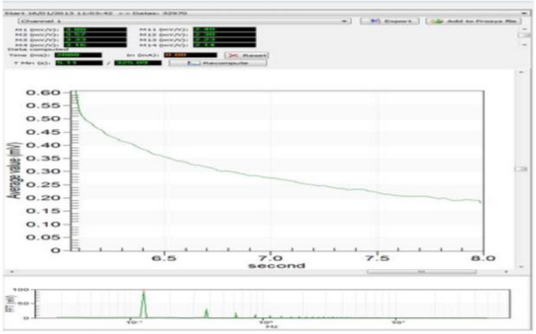
[4] Information obtained from http://www.iris-instruments.com/Pdf_file/V_fullwaver.pdf

High resolution: samples are recorded every 10 (ten) milliseconds (100 Hz sampling frequency). Data from several recorders can be merged and processed together with the Full Wave Viewer program delivered with the system. All data is synchronized through the GPS-PPS time stamping. A post acquisition processing permits to improve the signal-to-noise ratio. This also allows good quality IP data for deep investigations and for noisy areas.

Internal memory: the memory can store up to one month recording time. Then data can directly be transferred to a USB key in a few seconds.





TECHNICAL SPECIFICATIONS

- Max. input voltage: 15 V
- Protection: up to 1 000 V
- Accuracy: 0.2 % typical
- Resolution: 10 µV
- Sampling rate: 10 milli seconds (100 Hz)
- Induced Polarization (chargeability) measured every 10 milliseconds (200 IP windows for a 2 sec pulse)
- Input impedance: 100 MΩ
- Low pass filter Cut off frequency: 10 Hz
- Upper frequency which can be resolved: 50 Hz
- Frequency resolution: up to 34 micro Hz
- Internal GPS with PPS (one pulse per second)
- Time resolution: 250 micro seconds (time stamped samples)
- Battery test
- Contact resistance check

GENERAL SPECIFICATIONS

- LCD display, graphic and alpha numeric with 16 lines of 40 characters
- Data flash memory: one-month recording
- After acquisition: possibility of data storage on a USB key (8 GB or more).
- Power supply: internal Li-Ion rechargeable battery; optional external 12V standard car battery can be also used
- Autonomy: 20 operating hours with the internal Li-Ion battery

- Weather proof IP 67
- Shock resistant resin NK-7, case with handle
- Operating temperature: -20 °C to +70 °C
- Dimensions: 31 x 25 x 15 cm
- Weight: 2.8 kg

APPENDIX B

IRIS I-FullWaver Current Monitor[5]

IP Fullwave Record

- Recording injected current
- Several weeks recording
- Time stamped data

Fullwaver: this logger for electrical signal is a new concept of compact and low consumption unit designed for advanced Time Domain Induced Polarization, Resistivity and SP measurements. It can work in all field conditions, small, discrete, autonomous and can record continuously without operator. I-Fullwaver is connected in series on the AB injection line, it measures and logs very accurately the injected current IAB.

Compactness: light, discrete and easy to setup on the field, even on remote areas. This autonomous logger does not need any operator during the acquisition. I-Fullwaver is connected close to the transmitter or close to any injection electrode

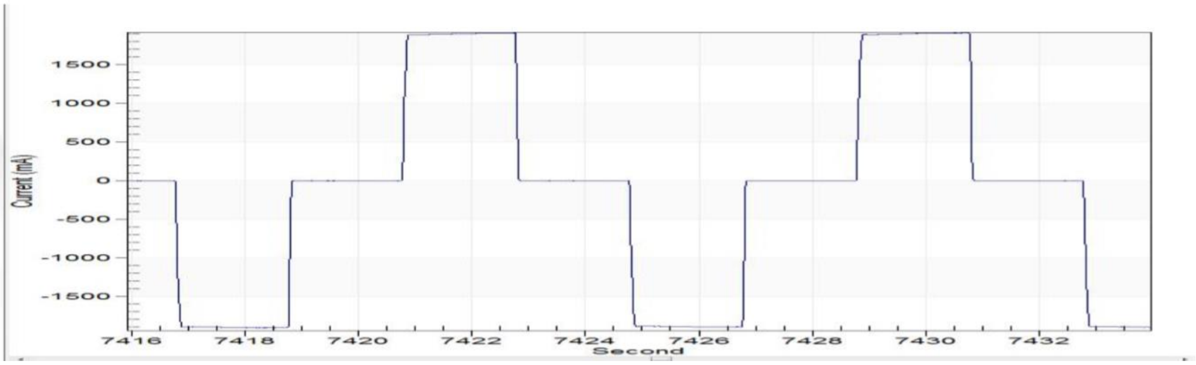
Integrated GPS: an integrated gps, very accurate and providing PPS signal (one pulse per second) allows to store all time series with time information. This is crucial to correlate and process data with V-Fullwaver receiver loggers installed in a same area. This information displays the behaviour of the transmitter, its regulation specifications and the value of Iab in order to compute accurately the apparent resistivity.

---

[5] Information obtained from http://www.iris-instruments.com/Pdf_file/I_fullwaver.pdf

High resolution: samples are recorded every 10 (ten) milliseconds (100 Hz sampling frequency). Data from several recorders (for current and received voltages) can be merged and processed together with the FullWaveViewer program delivered with the system. All data is synchronized through the GPS-PPS time stamping. A post acquisition processing allows to improve the signal-to-noise ratio, giving good quality IP data for deep investigations in noisy areas.

Internal memory: the memory can store up to three months recording time. Then data can directly be transferred to a USB key in a few seconds.



TECHNICAL SPECIFICATIONS

- Current range: +/- 25 000 mA
- Current resolution: 0.1 mA
- Accuracy: +/- 1 mA
- Protection: up to 50 A and 3 000 V
- Magnetic sensor
- Magnetization offset (offset memory): up to 0.05%
- Offset calibration
- Sampling rate: 10 milliseconds (100 Hz)
- Integrated GPS with PPS (one pulse per second)
- Time resolution: 250 micro seconds (time stamped samples)
- Battery test

GENERAL SPECIFICATIONS

- LCD display, alpha numeric with 4 lines of 20 characters
- Data flash memory: three months recording
- After acquisition: possibility of data storage on a USB key (8 Gb or more).
- Power supply: internal Li-Ion rechargeable battery; optional external 12V standard car battery can be also used
- Autonomy: 20 operating hours with the internal Li-Ion battery.
- Weather proof IP 67
- Shock resistant resin NK-7, case with handle
- Operating temperature: -20 °C to +70 °C
- Dimensions: 31 x 25 x 15 cm
- Weight: 3.0 kg

APPENDIX B

GGD II 5kW

SPECIFICATIONS

- Protection against short circuits even at 0 ohms
- Output Voltage range: 150V to 2400V in 14 steps
- Power source is a standard 220/240V, 20/60 Hz source
- Displays electrode contact, transmitting power and current

ELECTRICAL CHARACTERISTICS

- Standard Time Base of 2 seconds for time domain – 2 seconds on, 2 seconds’ off
- Optional Time Base of DC, 0.5, 1, 2, 4 or 8 seconds
- Output Current Range, 0.030 to 10A
- Output Voltage Range, 150 to 2400V in 14 steps
- Ability to Link 2 GDD transmitters to double power output

CONTROLS

- Switch ON/OFF
- Output Voltage Range Switch: 150V, 180V, 350V, 420V, 500V, 600V, 700V, 840V, 1000V, 1200V, 1400V, 1680V, 2000V and 2400V

DISPLAYS

- Output Current LCD: reads +- 0.0010A

- Electrode Contact Displayed when not Transmitting
- Output Power Displayed when Transmitting
- Automatic Thermostat controlled LCD heater for LCD
- Total Protection Against Short Circuits
- Indicator Lamps Indicate Overloads

GENERAL SPECIFICATIONS

- Weather proof
- Shock resistant pelican case
- Operating temperature: -40 °C to +65 °C
- Dimensions: 26 x 45 x 55 cm
- Weight: 40 kg

APPENDIX C

REFERENCES

Claerbout, J.F., Kuras, O., Meldrum, P.I., Ogilvy, R.O. and Hollands, J., 2006. Electrical resistivity tomography applied to geologic, hydrogeologic, and engineering investigations at a former waste-disposal site. Geophysics, **71**, B231-B239.

GEM Systems. (2007). *GSM-19 v7.0 Instruction Manual.* GEM Systems Inc. Advanced Magnetometers.

Google. (2018). *Location of the Deloye Property.* Retrieved December 7, 2018 from https://www.google.ca/maps/@48.0849136,-81.5190258,7.75z

Google & DigitalGlobe. (2018). *Chargeability grid (300m MSL) overlaying Google Earth. Red circles represent the historic showings.* Google Earth. Imagery date September 25, 2013. Accessed on December 11, 2018.

Google & DigitalGlobe. (2018). *Chargeability 300m MSL slice with interpreted targets.* Google Earth. Imagery date September 25, 2013. Accessed on December 11, 2018.

Google & DigitalGlobe. (2018). *Receiver Dipole Orientations on Google Earth.* Google Earth. Imagery date September 25, 2013. Accessed on December 7, 2018.

Google & DigitalGlobe. (2018). *Resistivity grid (300m MSL) overlaying Google Earth. Red circles represent the historic showings.* Imagery date September 25, 2013. Accessed on December 11, 2018.

Google & DigitalGlobe. (2018). *Survey Design Model Looking Down – Red=Current Injection, Blue=Receiver Electrodes, Green=Theoretical Data Point.* Google Earth. Imagery date September 25, 2013. Accessed on December 7, 2018.

Google & DigitalGlobe. (2018). *Survey Design Model Looking North – Red=Current Injection, Blue=Receiver Electrodes, Green=Theoretical Data Point.* Google Earth. Imagery date September 25, 2013. Accessed on December 7, 2018.

Google & DigitalGlobe. (2018*). Survey Grid.* Google Earth. Imagery date September 25, 2013. Accessed on December 7, 2018.

Google & DigitalGlobe. (2018). *Topographical Relief Image with the Field Survey Layout Looking Northeast.* Google Earth. Imagery date September 25, 2013. Accessed on December 7, 2018.

Kenma, A., Binley, A., Ramirez, A. and Daily, W., 2000. Complex resistivity tomography for environmental applications. Chemical Engineering Journal, **77**, 11-18.

Loke, M. H., 2018. Tutorial: 2-D and 3-D electrical imaging surveys. (available for download from www.geotomosoft.com)

Loke, M. H. (1996-2018). Rapid 3-D Resistivity & IP inversion using the least-squares method (For 3-D surveys using the pole-pole, pole-dipole, dipole-dipole, rectangular, Wenner, Wenner-Schlumberger and non-conventional arrays) On land, aquatic, cross-borehole and time-lapse surveys. Geotomo Software Sdn Bhd.

Loke, M.H. and Dahlin, T., 2010. Methods to Reduce Banding Effects in 3-D Resistivity Inversion. Near Surface 2010 – 16th European Meeting of Environmental and Engineering Geophysics 6 – 8 September 2010, Zurich, Switzerland, A16.

Loke, M.H., Dahlin, T., Rucker, D.F., 2014. Smoothness-constrained time-lapse inversion of data from 3-D resistivity surveys. Near Surface Geophysics, **12**, 5-24.

MNDM & OGSEarth. (2018). *OGSEarth*. Ontario Ministry of Northern Development and Mines.

APPENDIX D

DIGITAL DATA

The digital data contains

1) PDF copy of this report
2) PDF copy of the maps
3) Raw data in binary format
4) Raw data in CSV format
5) Ascii XYZ of inversion results
6) Packed Oasis maps
7) Oasis databases
8) 3D Oasis voxels created

APPENDIX E

LIST OF MAPS (IN MAP POCKET)

Grid Sketch (1:5000)

1) Q2563-WarriorGold-Deloye-3DIP-Layout-Claims

IP Plan Map (1:5000)

2) Q2563-WarriorGold-Deloye-3DIP-Inv-Chr_350MSL
3) Q2563-WarriorGold-Deloye-3DIP-Inv-Chr_300MSL
4) Q2563-WarriorGold-Deloye-3DIP-Inv-Chr_250MSL
5) Q2563-WarriorGold-Deloye-3DIP-Inv-Chr_200MSL
6) Q2563-WarriorGold-Deloye-3DIP-Inv-Chr_150MSL
7) Q2563-WarriorGold-Deloye-3DIP-Inv-Chr_100MSL
8) Q2563-WarriorGold-Deloye-3DIP-Inv-Res_350MSL
9) Q2563-WarriorGold-Deloye-3DIP-Inv-Res_300MSL
10) Q2563-WarriorGold-Deloye-3DIP-Inv-Res_250MSL
11) Q2563-WarriorGold-Deloye-3DIP-Inv-Res_200MSL
12) Q2563-WarriorGold-Deloye-3DIP-Inv-Res_150MSL
13) Q2563-WarriorGold-Deloye-3DIP-Inv-Res_100MSL

TOTAL MAPS = 13

877.504.2345 | info@cxsltd.com | www.cxsltd.com

APPENDIX B: IP Interpretation Presentation

Kirana-Goodfish Project Goodfish Patents Area Ground Geophysical Survey

Geophysical Survey Analysis

And

Interpretation

Source One Geophysical

Signal from the Sun

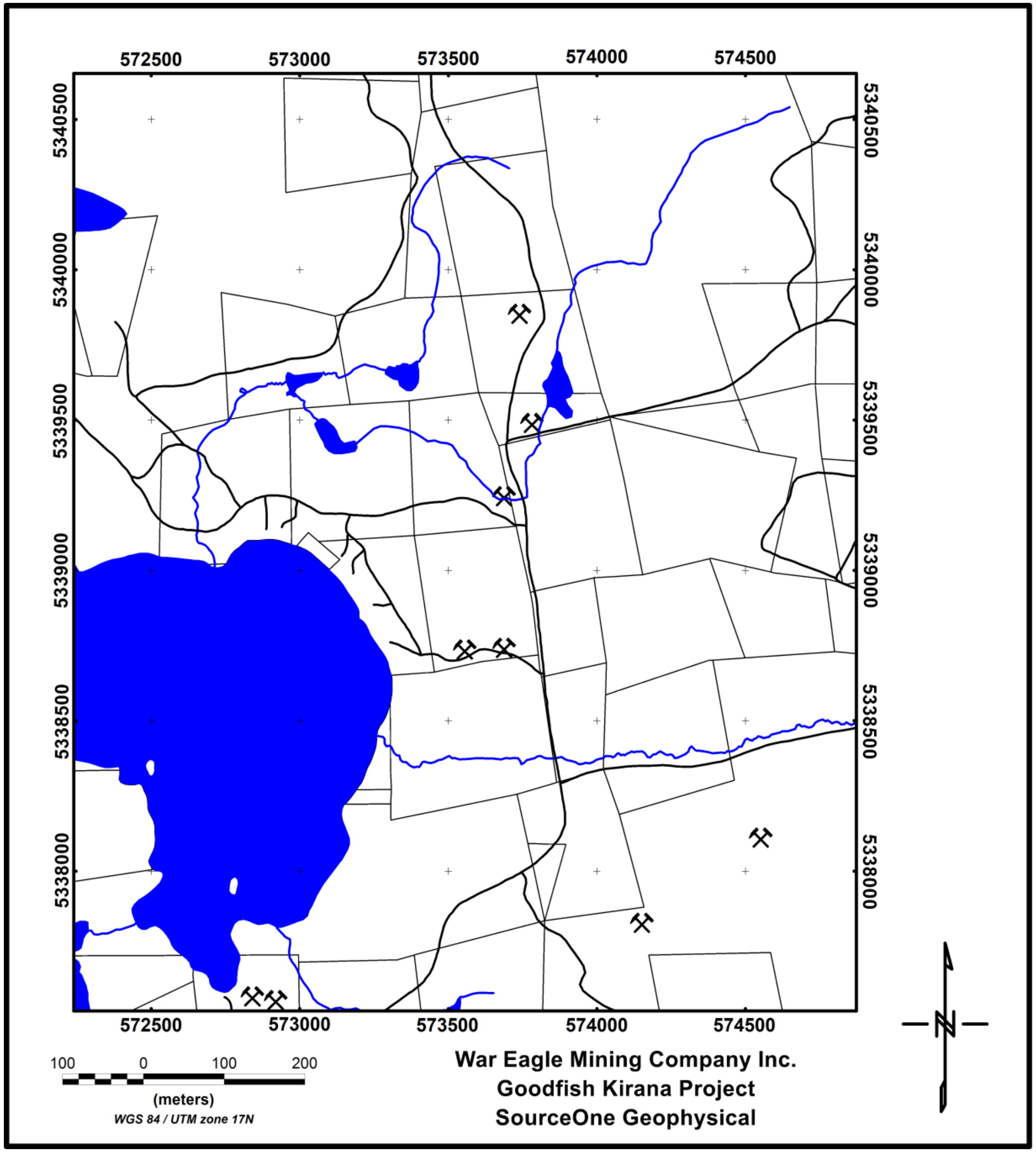
Contents

Introduction

In March of 2018, Canadian Exploration Services conducted an induced polarization (IP) survey, a total-field magnetometer survey and a VLF-EM survey for War Eagle Mining Company. The IP data were acquired in a dipole-dipole array to a depth of n=10. A total of 6.675 line kilometers of IP data were collected between March 26th and March 3th, 2018. A total of 45.3 kilometers of walking magnetometer data and VLF data were acquired between March13th and March 30th, 2018 for a total of 77,729 magnetometer and GPS samples taken at 1 second intervals and 1813 VLF readings taken at 25 meter intervals.

In May of 2018, SourceOne Geophysical was contracted by War Eagle Mining Company to process the geophysical data and provide an interpretation with the goal of identifying favorable locations for drilling targets in an attempt to discover additional gold and associated mineralization.

Introduction



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Goodfish Kirana Project
SourceOne Geophysical

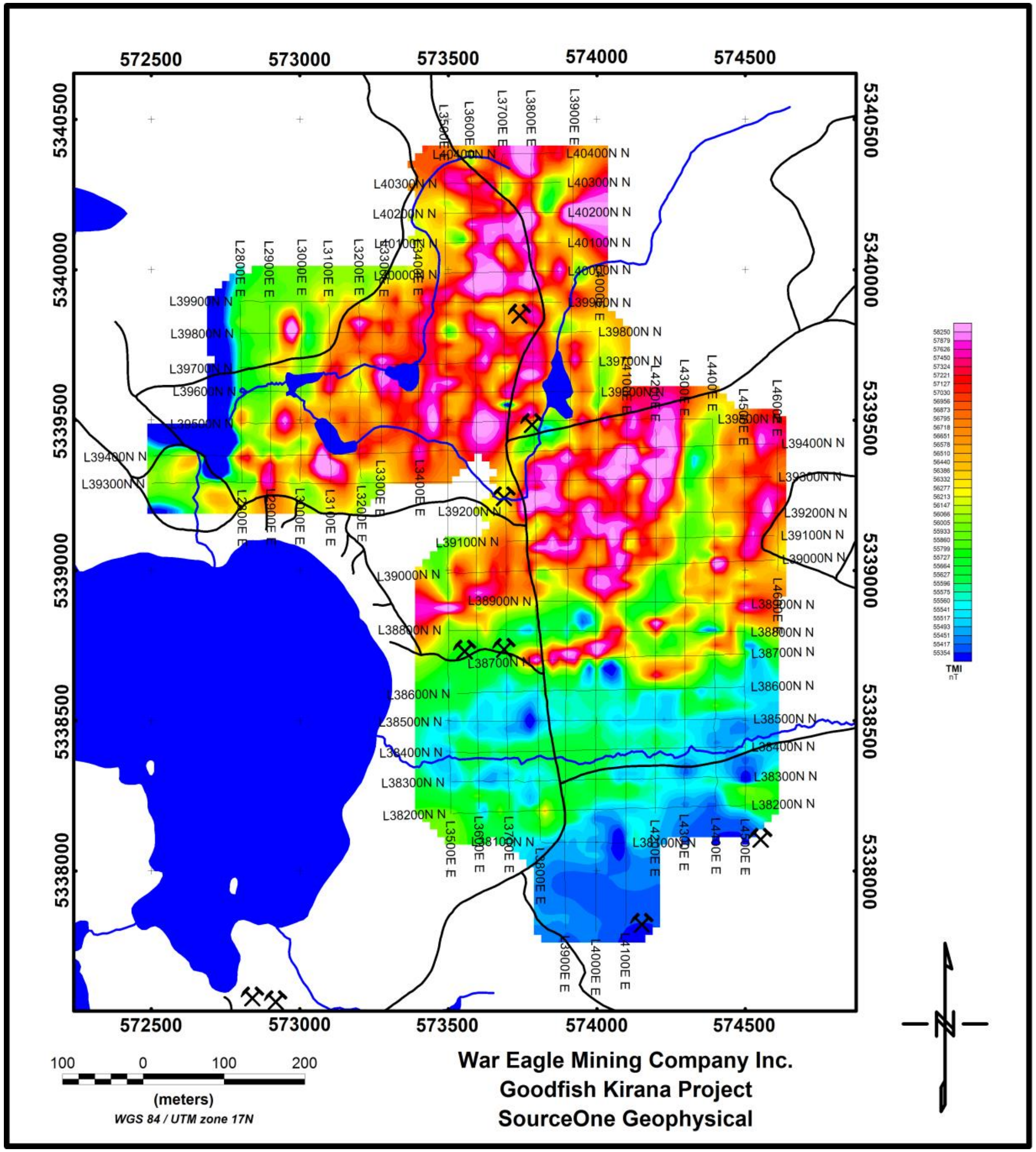
The Goodfish Patented Claims lie about 5 kilometers North of the town of Kirkland Lake and immediately to the Northeast of Goodfish Lake.

Legend

— Claim Boundary

⚒ Mine Shaft

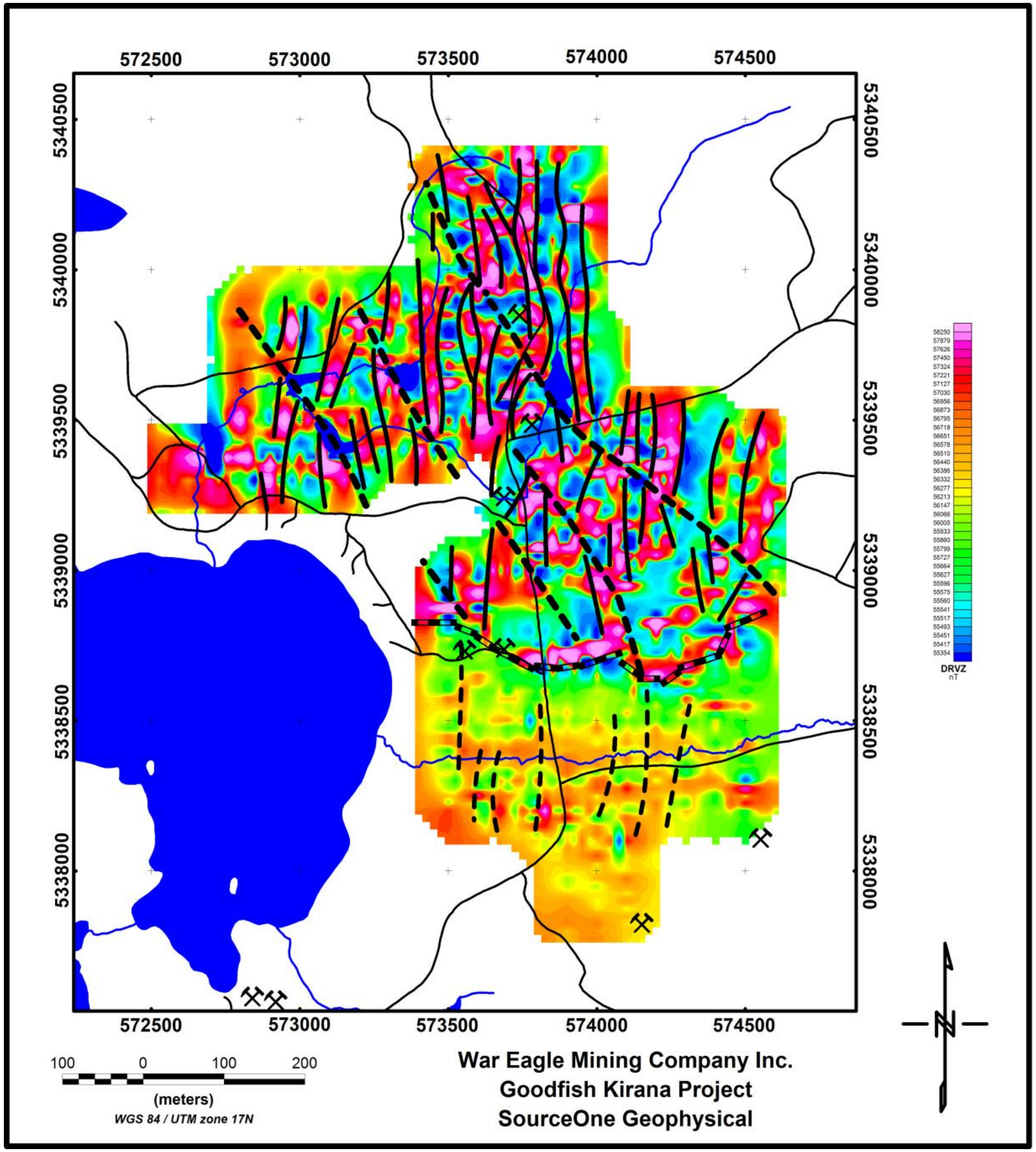
Total Field Magnetic Survey



Total Field magnetic data were acquired on the displayed set of perpendicular profiles.

The data were gridded and are displayed in plan view.

Magnetic 1st Vertical Derivative



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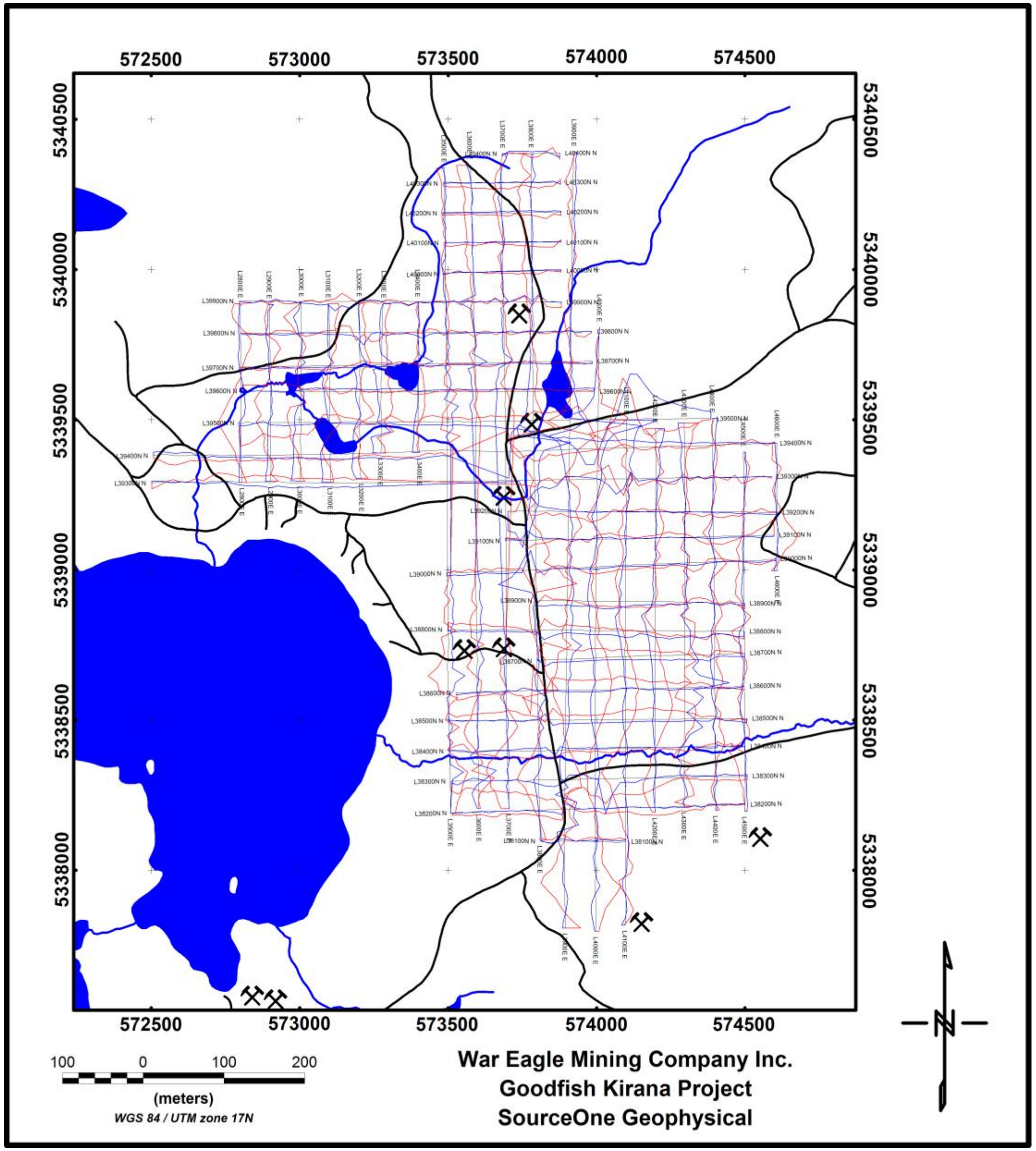
Directional derivative filters were applied to the Total Field data and structural features were interpreted.

Legend

- Magnetic domain boundary
- Edges of magnetic features North of domain boundary
- Edges of magnetic features South of domain boundary
- Offsetting NW-SE lineaments (Possible structures)

VLF-EM Profiles



The VLF-EM data were acquired on the displayed set of perpendicular profiles.

The data were plotted as profiles and are displayed in plan view.

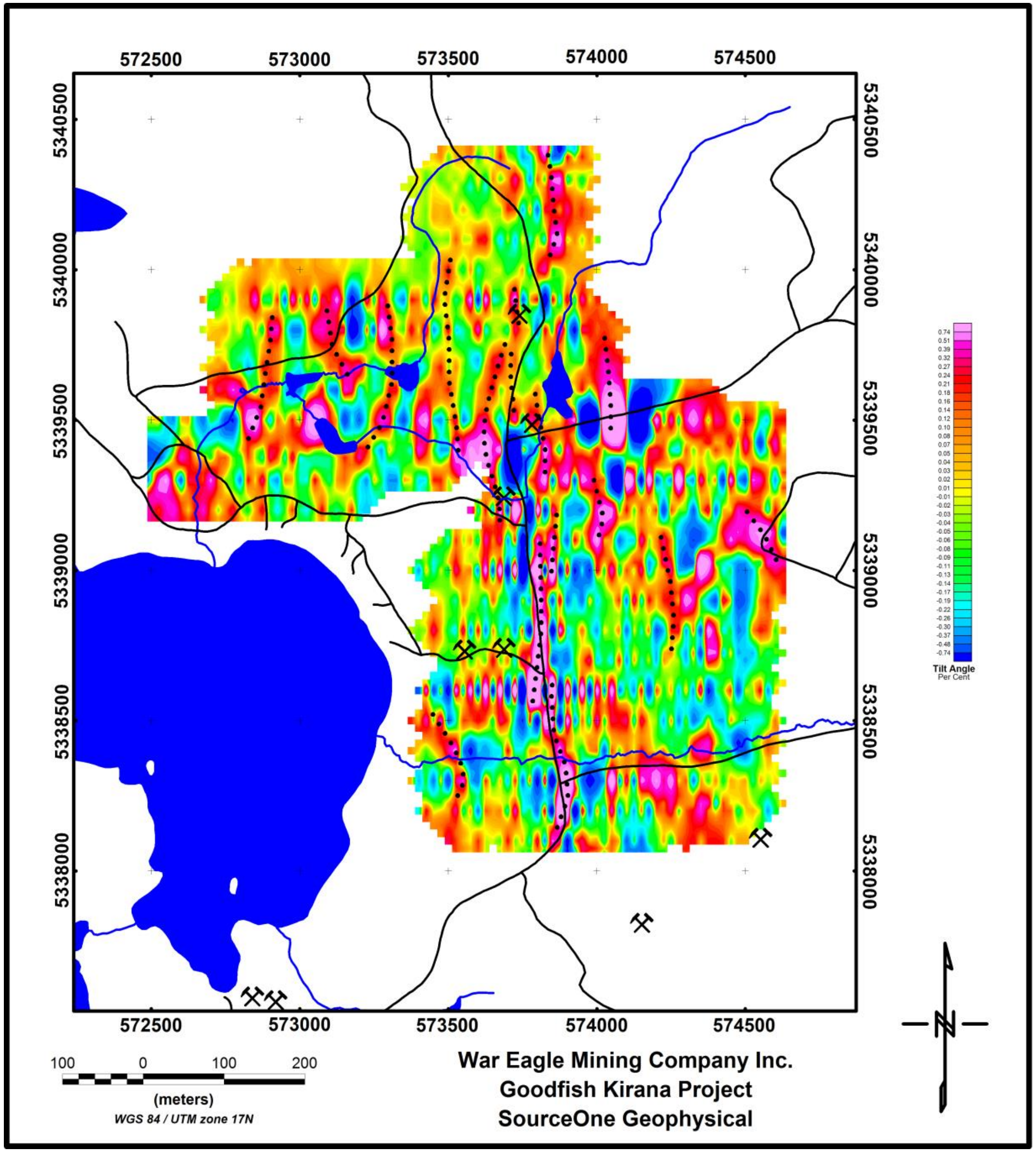
Transmitter for N-S Lines
25.2 kHz NML – Lamoure, USA
Transmitter for E-W Lines
25.2 kHz NAA – Cutler, USA

Legend

🟥	In-Phase Data
🟦	Quadrature Data

VLF-EM Horizontal Derivative

SourceOne

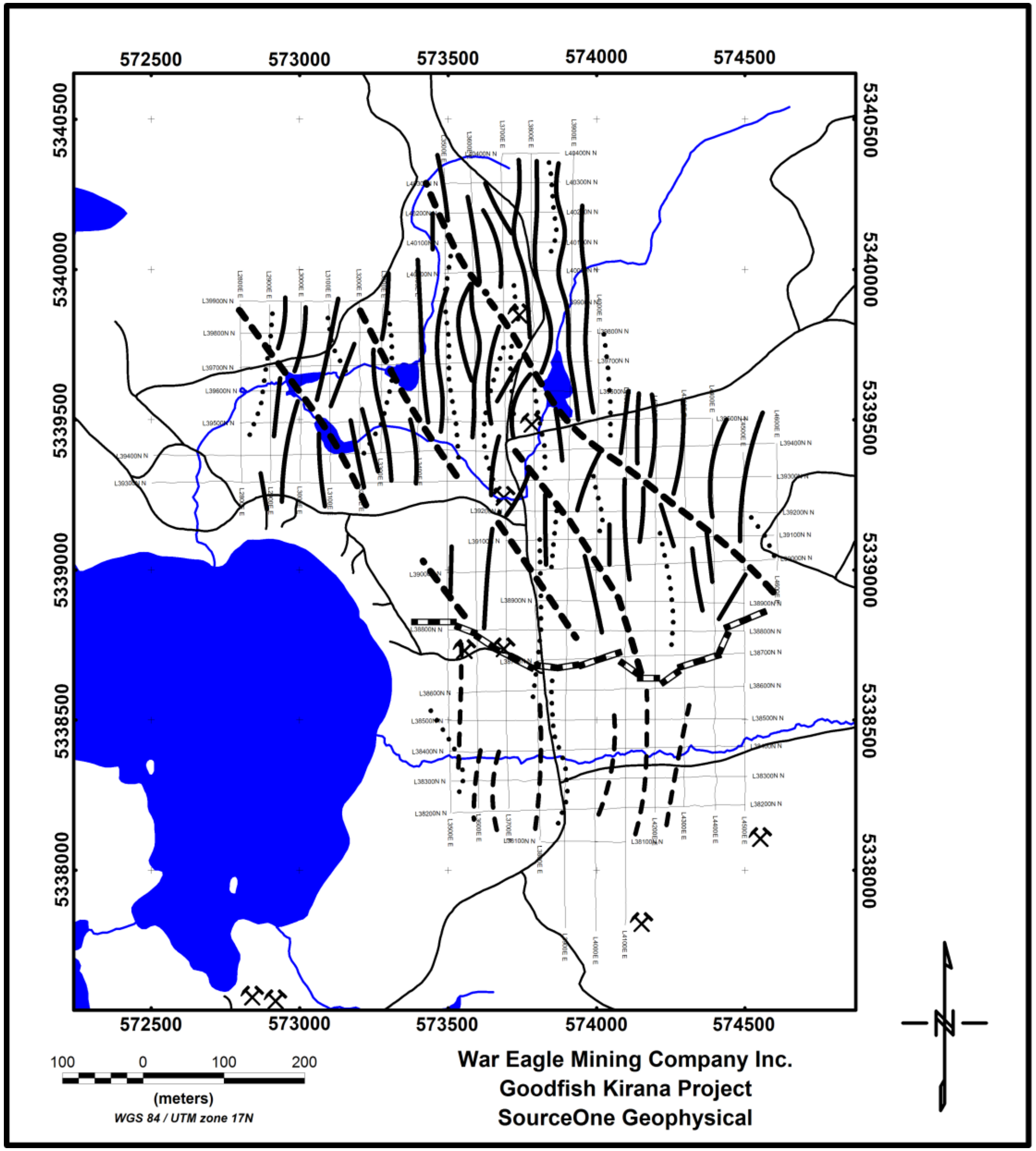


The Horizontal Derivative for for the E-W lines was calculated and locations of cross-over conductor axes identified

Legend

.... VLF-EM conductive axes

Structural Interpretation Map



Interpreted structural control from the magnetic and VLF-EM data are displayed over a map of the Goodfish Patented Claims area.

Legend

Magnetic domain boundary

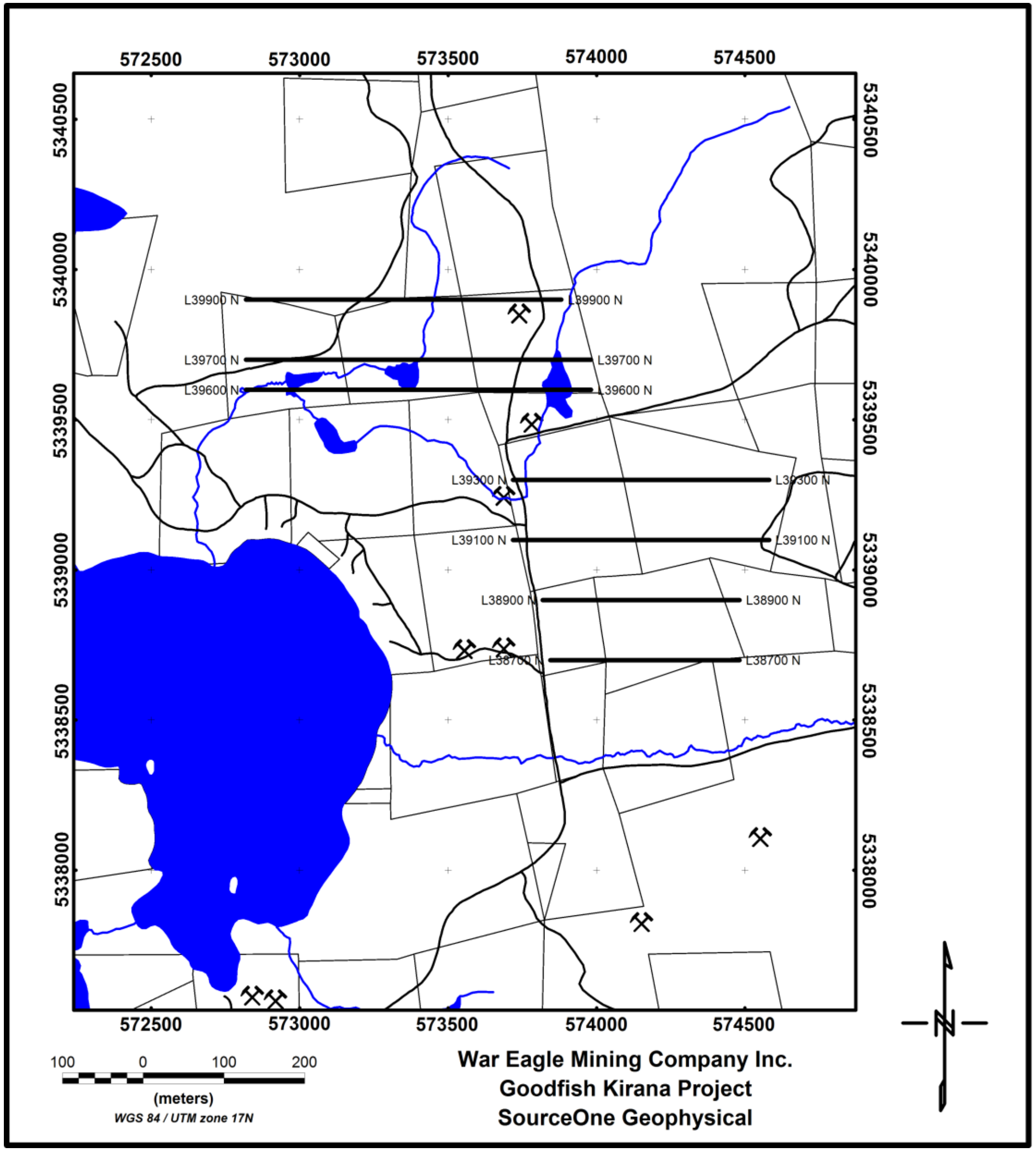
Edges of magnetic features
North of domain boundary

Edges of magnetic features
South of domain boundary

Offsetting NW-SE lineaments
(Possible structures)

VLF-EM conductive axes

DC/IP Survey



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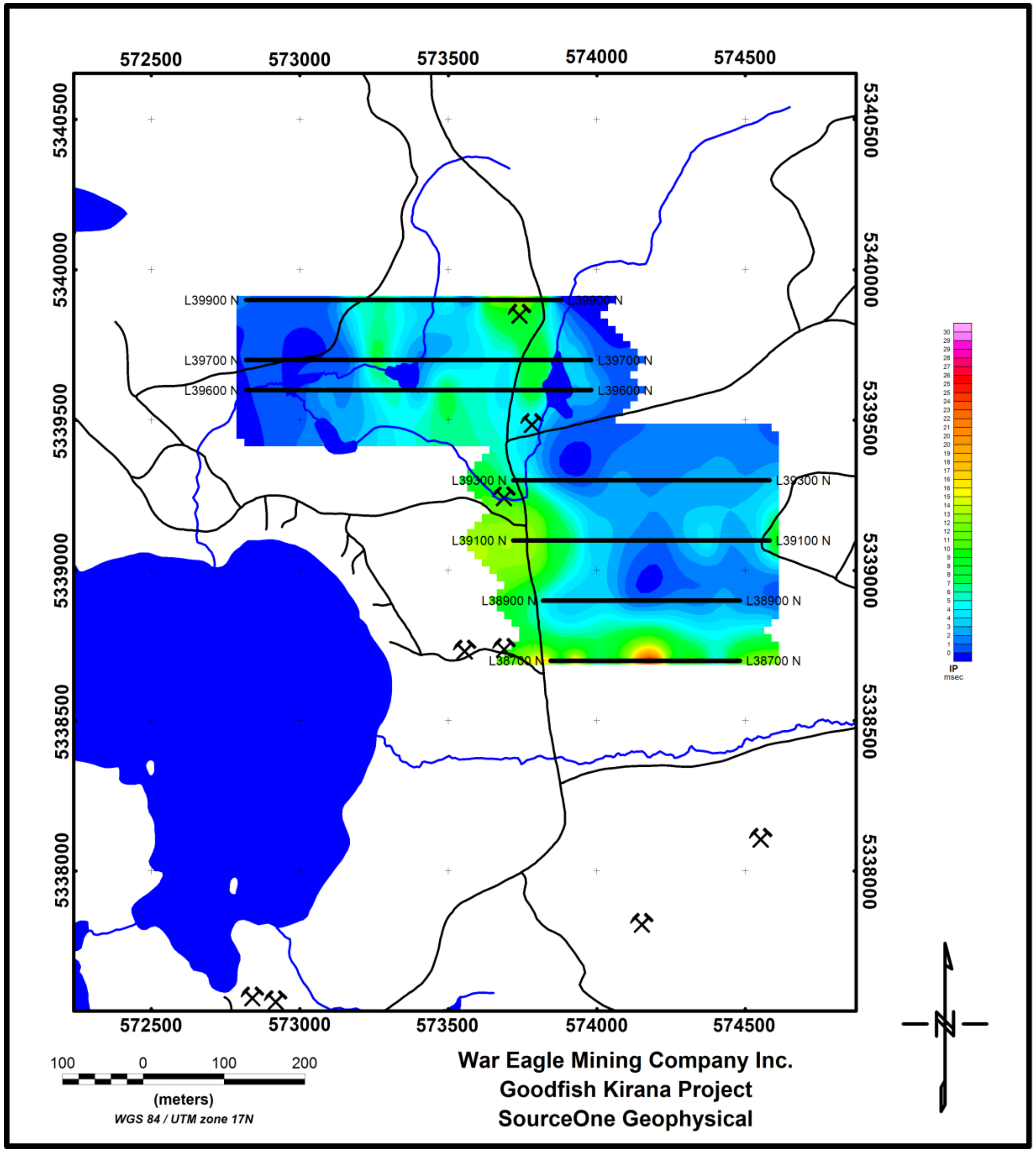
Seven East-West profiles of dipole-dipole DC resistivity and Induced Polarization (IP) data were acquired.

The data were inverted in 2-D for each profile individually using the UBC-GIF inversion program.

Legend

▬	DC/IP line location

DC/IP Survey

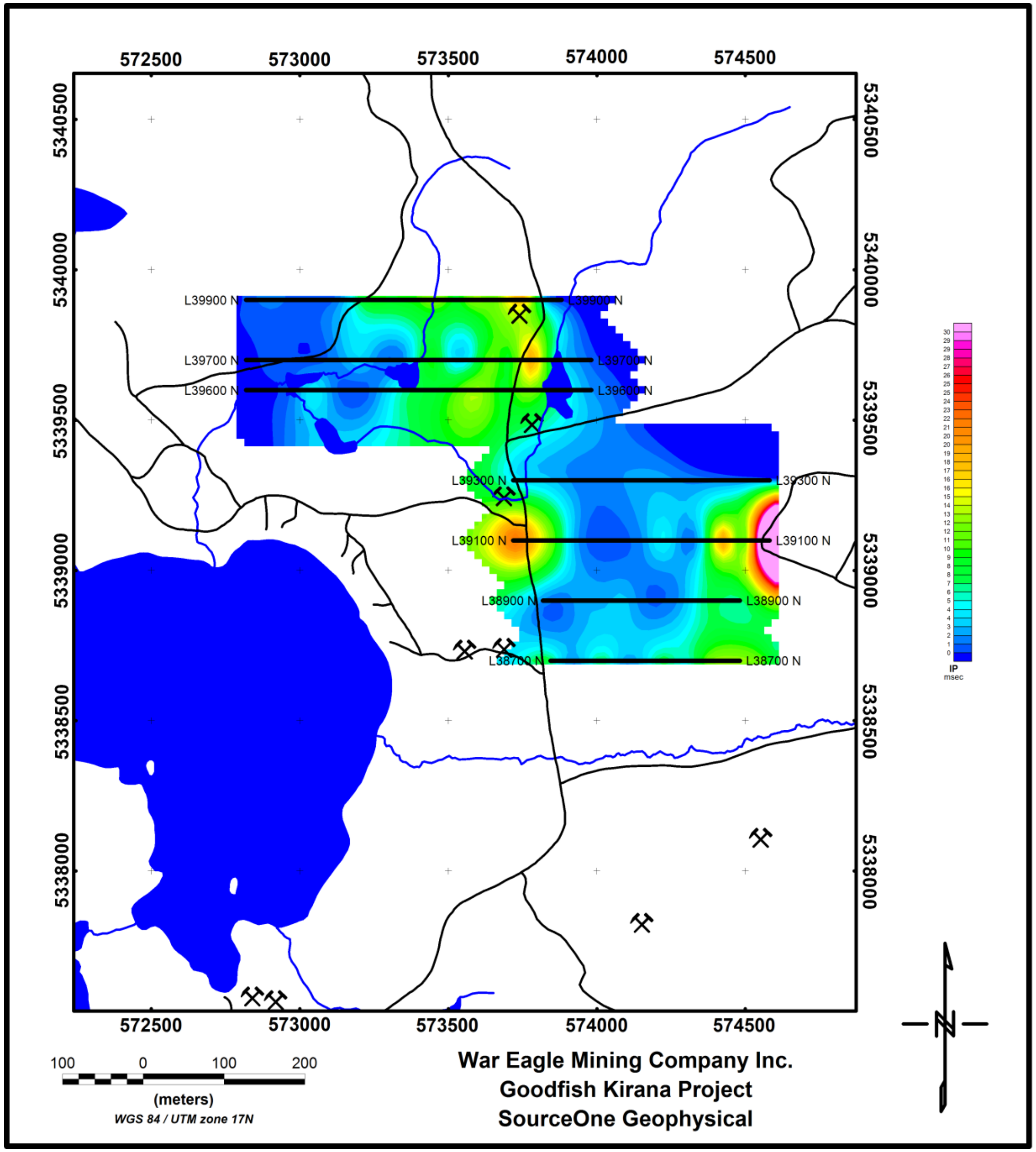


Plan view of 2-D inversions of DC/IP data at 25 meters depth.

Legend

▬ DC/IP line location

DC/IP Survey

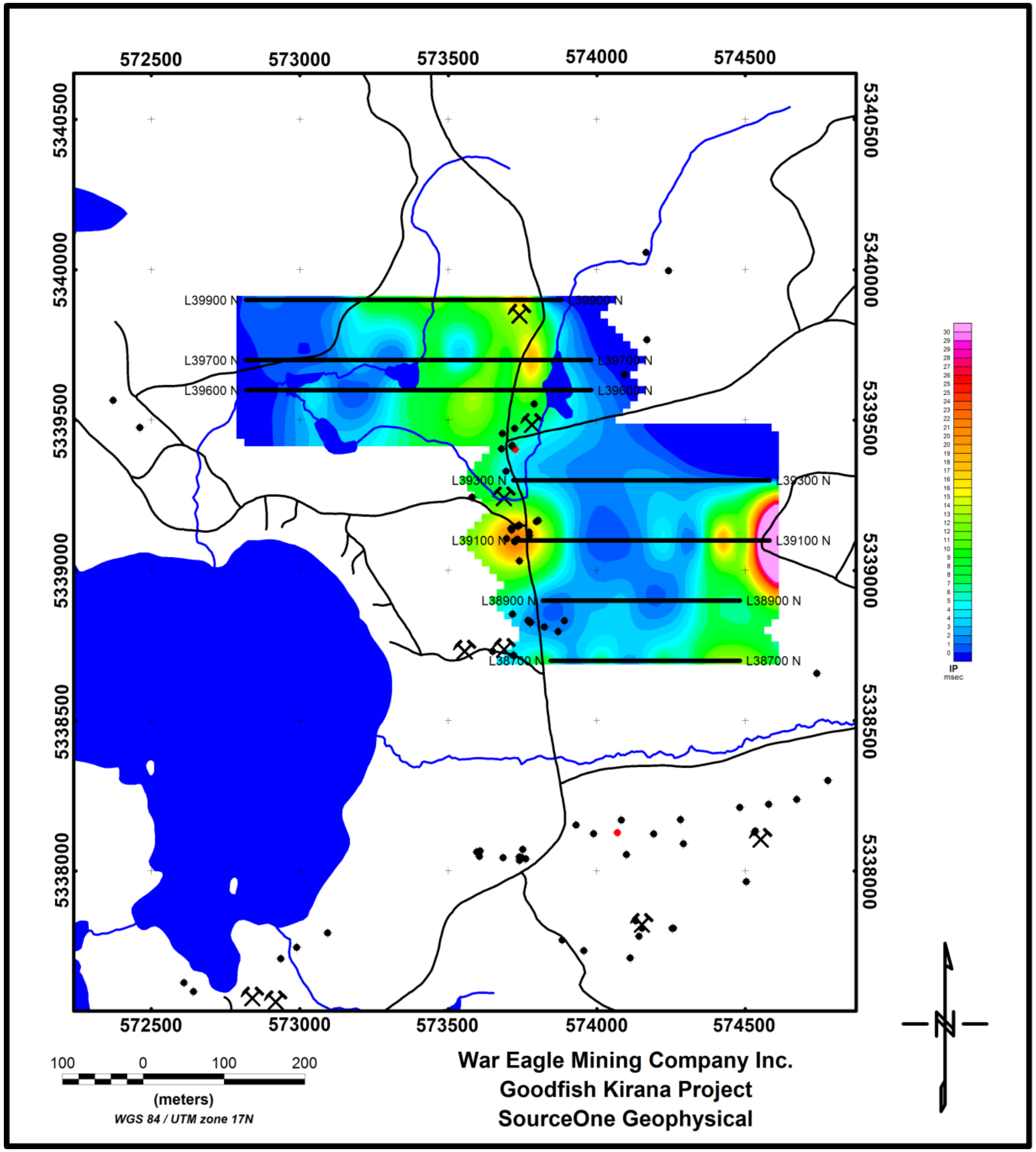


Plan view of 2-D inversions of DC/IP data at 100 meters depth.

Legend

▬	DC/IP line location

DC/IP Survey

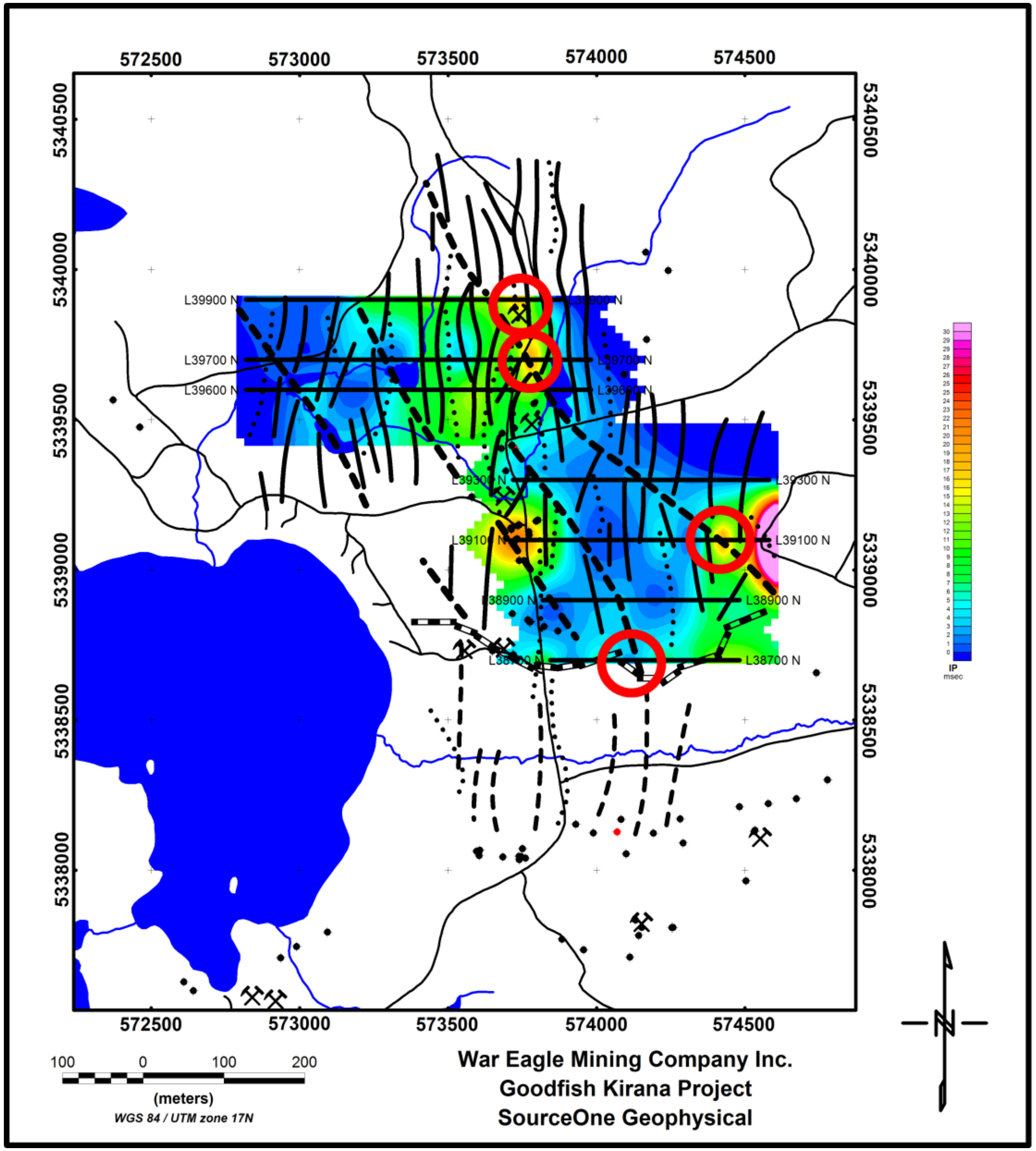


Plan view of 2-D inversions of DC/IP data at 100 meters depth with historical drill hole locations and recent Champagne Resources drill Hole locations.

Legend

—	DC/IP line location
●	Historical drill hole location
🔴	Champagne Resources drill hole location

Interpretation



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Structural map overlaid on plan map of 2-D IP inversions at 100 meters depth with suggested next round drill targets.

Legend

Magnetic domain boundary

Edges of magnetic features North of domain boundary

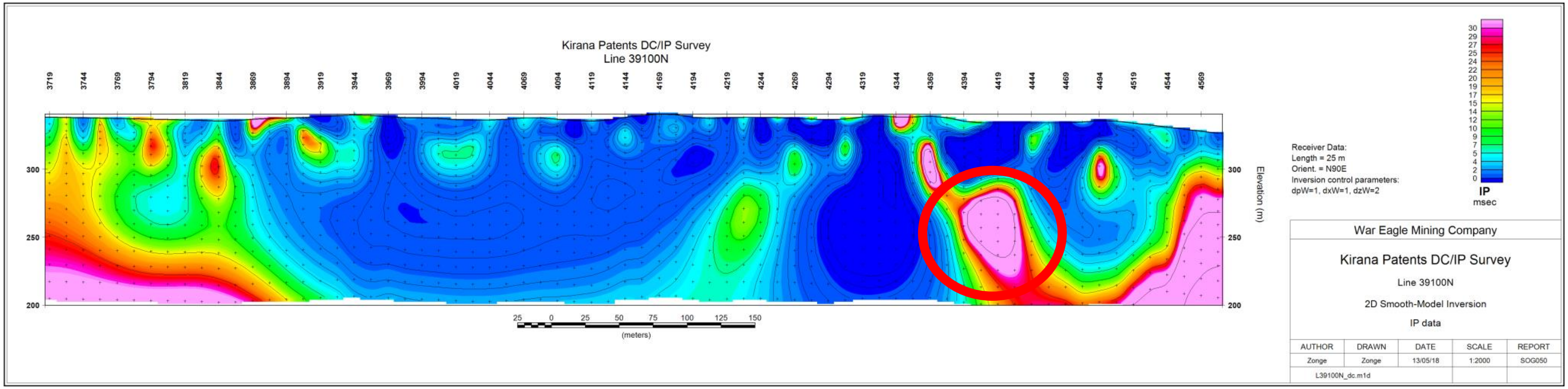
Edges of magnetic features South of domain boundary

Offsetting NW-SE lineaments (Possible structures)

VLF-EM conductive axes

Suggested drill targets

Interpretation



Example 2D IP inversion from Line 39100N. The identified IP anomaly suggested for drill testing is circled in red.

Conclusions

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- Multiple magnetic lineations and VLF-EM conductors have been identified and analyzed as controls for mineralization.

- Several large NW-SE trending structural features have been identified and analyzed as controls for mineralization.

- Four separate IP anomalies have been identified as possible sulfide mineral occurrences and have been recommended for drill testing. These targets have not been tested by historical drilling.

Recommendations

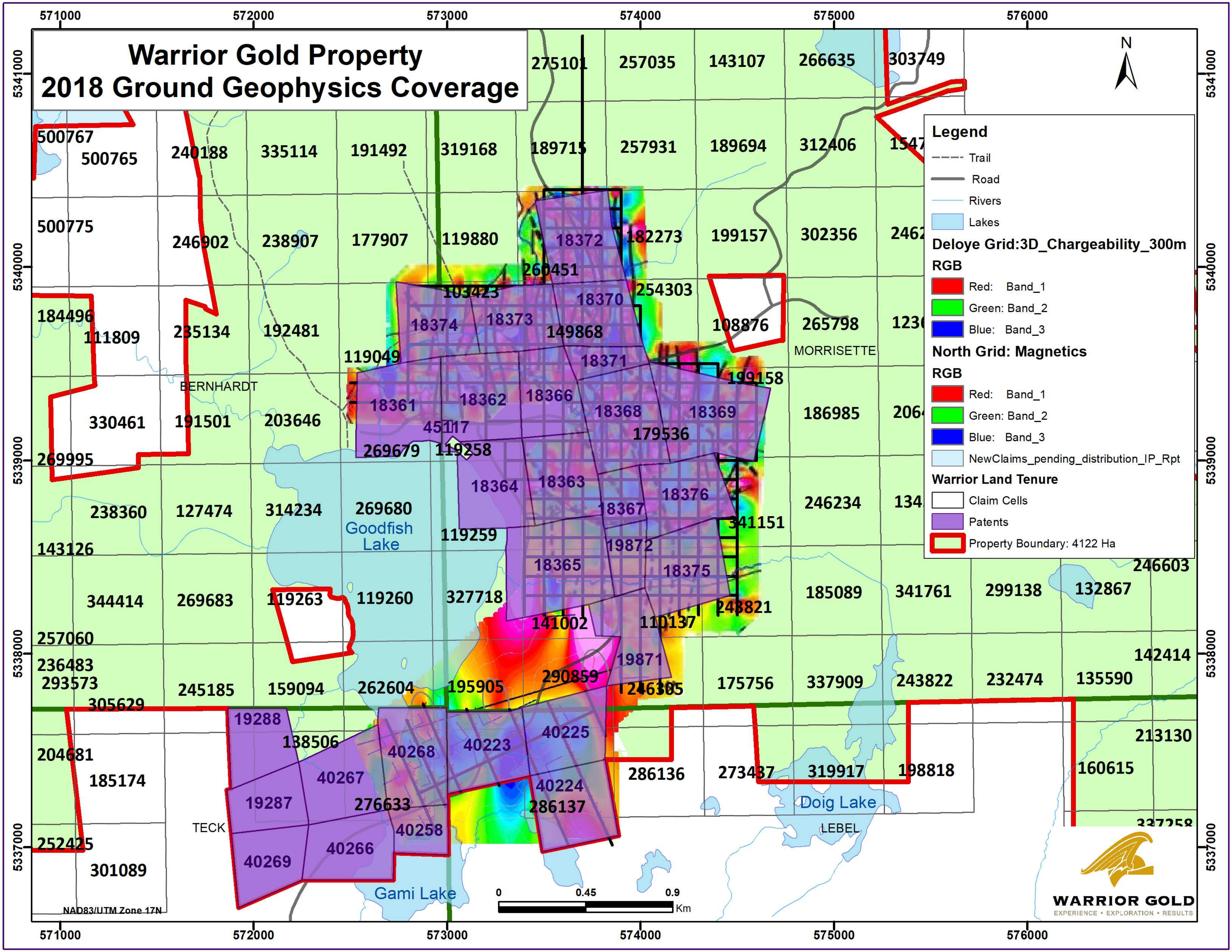
SourceOne

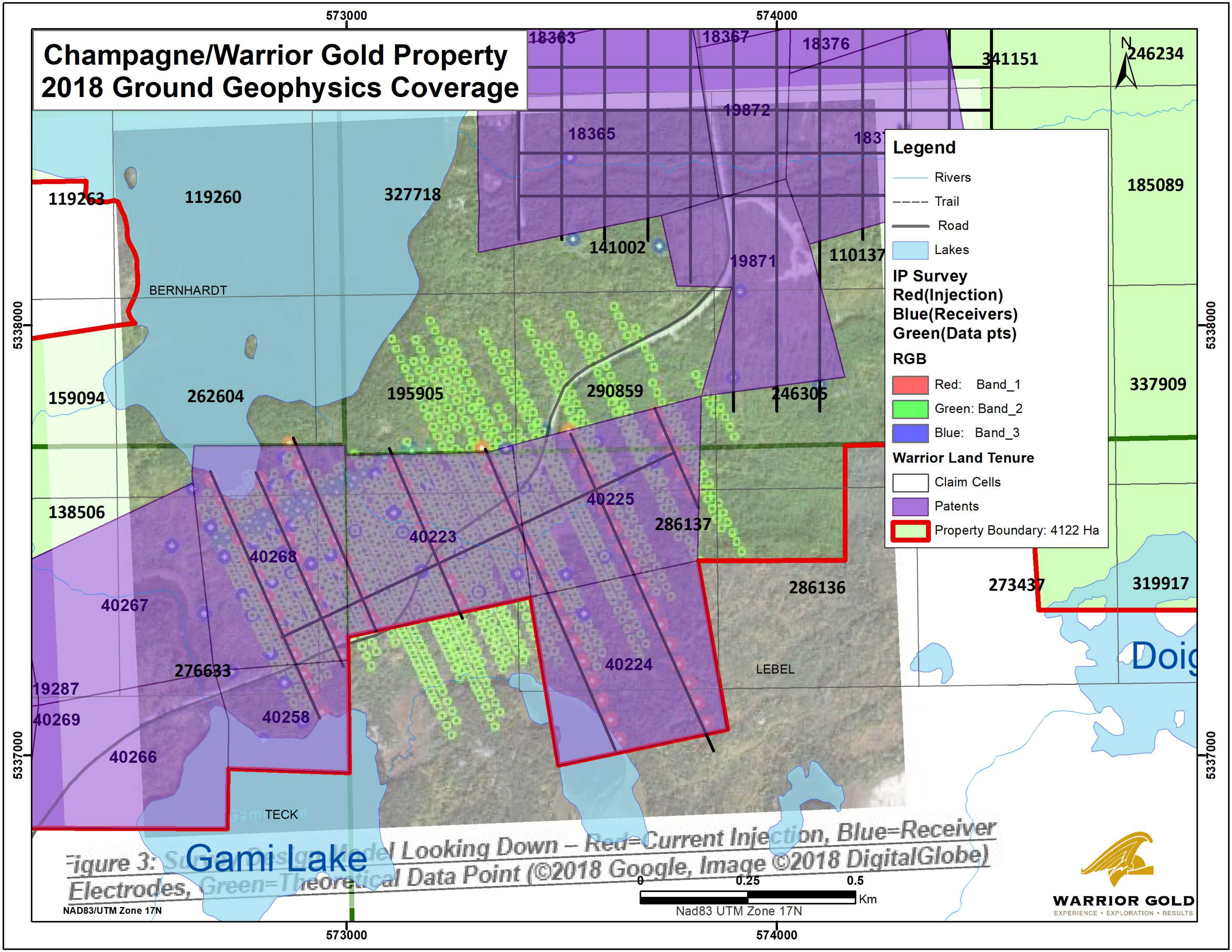
- It is recommended that the DC/IP survey be expanded to the north, south and east of the current grid in order to more clearly define IP anomalies that occur at the edges of the current survey extent.
- The results of the TerraQuest airborne magnetic and VLF-EM survey should be incorporated with the results of the ground geophysical surveys to better understand the larger structural environment of the Kirana property.
- The geophysical interpretation should be reassessed in terms of any future drill results.

Warrior Gold Property Boundary and Mining Land Tenure

Warrior Gold Property Boundary and Mining Land Tenure

Warrior Gold Property
2018 Ground Geophysics Coverage





Champagne/Warrior Gold Property
2018 Ground Geophysics Coverage

Legend

- Rivers
- Trail
- Road
- 🟦 Lakes

IP Survey
Red(Injection)
Blue(Receivers)
Green(Data pts)

RGB

- 🟥 Red: Band_1
- 🟩 Green: Band_2
- 🟦 Blue: Band_3

Warrior Land Tenure

- ☐ Claim Cells
- 🟪 Patents
- 🟩 Property Boundary: 4122 Ha

Figure 3: Survey Design Model Looking Down – Red=Current Injection, Blue=Receiver Electrodes, Green=Theoretical Data Point (©2018 Google, Image ©2018 DigitalGlobe)