REPORT ON A
IP/RESISTIVITY SURVEY
BLACKFLAKE WEST PROPERTY
HEARST AREA, ONTARIO

For XMET Inc.
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Toronto, Ontario M5H 1T1
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By Smart Geophysics Canada Inc.
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Ref. 14-05
November, 2014

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Summary

IP/resistivity surveys were done over two strong VTEM targets, one large in area and one small, on XMET's Blackflake West property. Total production was 7,550 m. The results are presented on plan maps at 1:10,000 and stacked pseudosections at 1:5,000.

The main VTEM target is well represented as a chargeability high / resistivity low. Depths to the target appear to be on the order of 75 metres. The strongest response appears to be on line 500N with the target centered near the base line. Areas where chargeabilities are anomalous but resistivities are not suggest a disseminated target, something that would not appear in the VTEM survey.

The much smaller secondary VTEM target, surveyed on line 300N, has no clear IP or resistivity expression.

Cover page : Base Camp

Table of Contents

Figures

Attachments

Maps

The results of the survey are presented in 2 plan maps at 1:10,000 and 7 stacked pseudosections at 1:5,000. All maps show drainage from NRCAN geogratis.ca, land tenure from Ontario MNDM claimap3 website and the survey grid. Map types are colour/line contours of Mx chargeability and apparent resistivity.

Stacked pseudosections show colour / line contours of Mx chargeability and apparent resistivity. There is one set of stacked pseudosections for each of the 7 lines surveyed with IP/resistivity (300N, 400N, 500N, 600N, T300W, B0 and T150E).

Digital results (this report, raw and processed ASCII data files, Geosoft database and map files) are archived on DVD.

IP/RESISTIVITY SURVEY
BLACKFLAKE WEST PROPERTY - HEARST AREA, ONTARIO

Profile IP/resistivity surveys were done on XMET's Blackflake West Property. The property is centered about 80 km west northwest of Hearst, Ontario or 30 km north of Highway 11. The property is in the Feagan Lake Administrative Area. The work was done for XMET Inc. by Smart Geophysics Canada Inc. under Smart Geophysics job number 14-05.

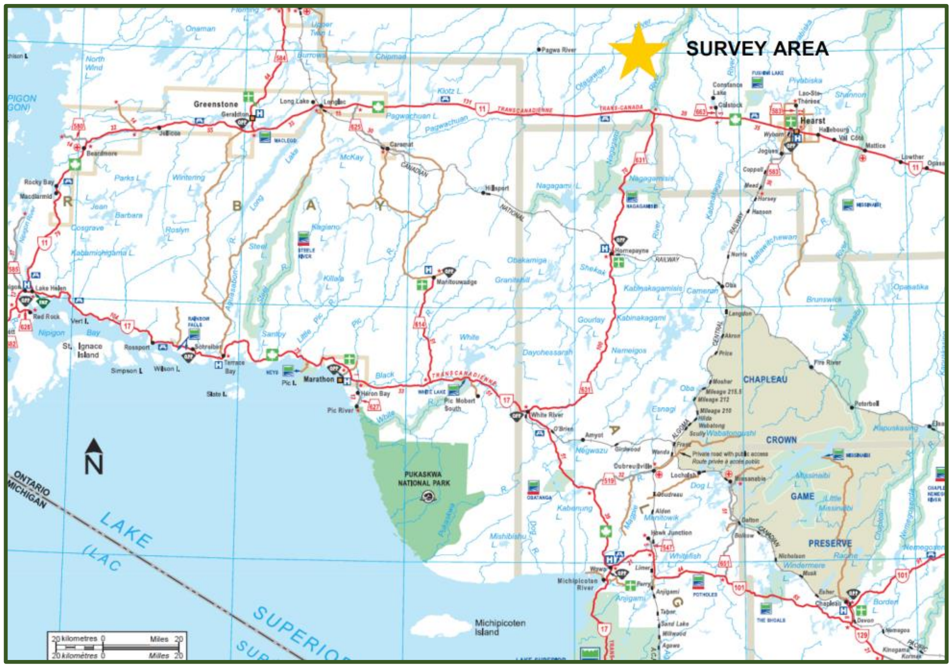


Figure 1. Regional location map

The field work was done from October 21 to 25, 2014. The survey was done in time domain, 2 second current pulse. A pole-dipole array was used with 'a' = 50m, n=1,10. Results are presented as colour contoured chargeability and apparent resistivity pseudosections at 1:5,000 and plan maps at 1:10,000. Total production was 7,550 m.

1. Background

The area was lightly explored until 2009 when Zenyatta Ventures and Cliffs Natural Resources Exploration Canada staked 28 blocks (495 claims), identified for their potential to host nickel, copper, and PGM mineralization. The 28 blocks were flown with VTEM in early 2010. 22 EM and magnetic targets were identified for follow-up modelling and drill testing. One of these targets, code named Uniform, became Zenyatta's Albany graphite deposit. The deposit is marked by strong, single peak EM anomalies on 6 lines – total strike length 750m. It has no clear magnetic expression – area magnetic relief is neutral (www.metalscreek.com). The EM anomalies are consistent with a flat topped, strong conductor at moderate depths.

After ground TDEM surveys and drilling, the target was found to be 2 very rare (hydrothermal) graphite pipes, separated by about 250m. The surface area of the pipes are 200x 300m (west pipe) and 50x200m (east pipe). The MDI report lists pyrite and pyrrhotite as gangue minerals.

Metals Creek Resources Blackflake West property is made up of 12 claims immediately west of Zenyatta's property (figure 2). In the winter of 2013/2014, they flew parts of their claim block with VTEM at wide line spacings. An isolated strong bedrock conductor was seen on one line, 6 km west of the Zenyatta Albany pipes.

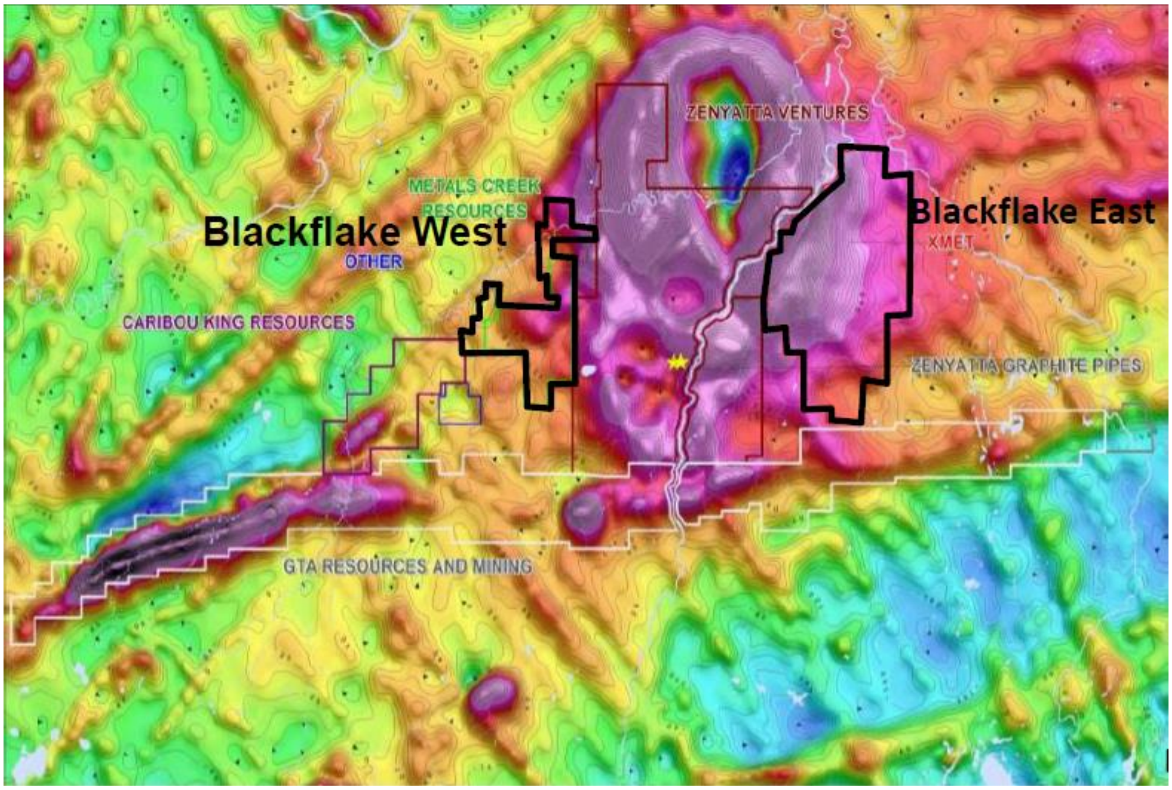


Figure 2. Regional TMI and claim holders. Zenyatta graphite pipes shown as 2 yellow stars. www.xmet.ca

In May, 2014 XMET acquired an option to earn a 50% interest in the Blackflake West property from Metals Creek Resources. In July/August, 2014, XMET completed a ground magnetic survey over and around this isolated VTEM anomaly. In September, 2014, they flew the area over and around this isolated VTEM anomaly with VTEM at a tighter line spacing. EM offset profiles from this survey are shown in figure 3, taken from an October 27 XMET corporate presentation. Metals Creek's isolated single line VTEM anomaly became a roughly circular, 750 m diameter, EM target made up of a confusing mix of single peak, strong EM anomalies, suggesting a complex bedrock conductor or conductors at intermediate depths. Smaller isolated conductors are seen to the east, northeast and north.

Reading from an October 14, 2014 press release from XMET – 'Our team is very excited to drill the target, as fast as possible so that we can deliver the results to the market. To this end ground geophysical IP is scheduled to begin shortly to refine the target to help us orientate the drills.'

Most of the IP/resistivity survey lines were set out over the main VTEM conductor. One line was set out over the smaller VTEM target to the east. Traditional profile IP was selected with an array with sufficient penetration to reach targets at depths to about 250 metres under ideal conditions.

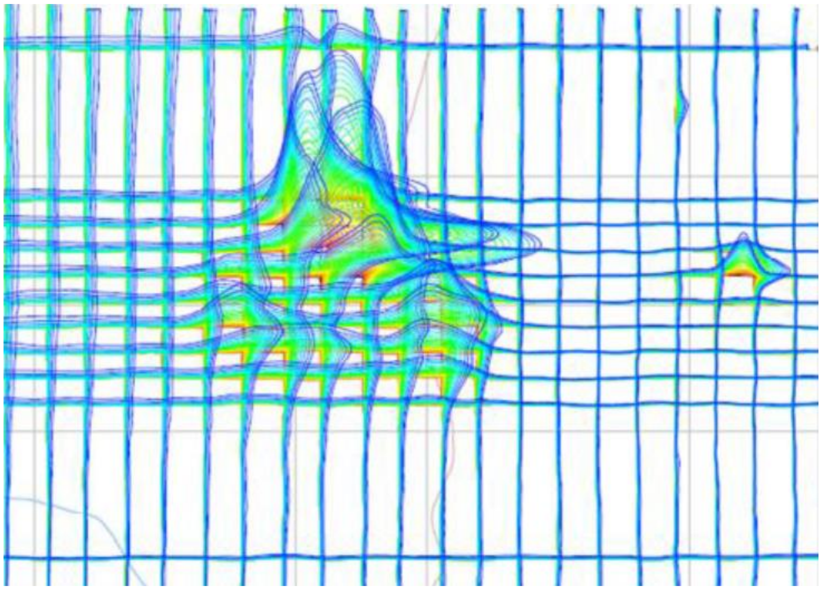


Figure 3. VTEM EM offset profiles. XMET VTEM survey – Blackflake West property. www.xmet.ca

2. Survey

2.1 Survey Grid

The survey grid is shown in figure 4. There are 4 east/west lines (300N, 400N, 500N, 600N) and 3 north/south lines (T300W, B0, T150E). They are in claims 4275417, 4276040, 4278058 and 4278059, all held 100% by Metals Creek Resources Corp. Station ranges are 600W to 600E (400N, 500N, 600N), 1100E to 2100E (300N), 300S to 700N (T300W) and 0 to 1000N (B0, T150E). Total grid extent is 7,600 m.

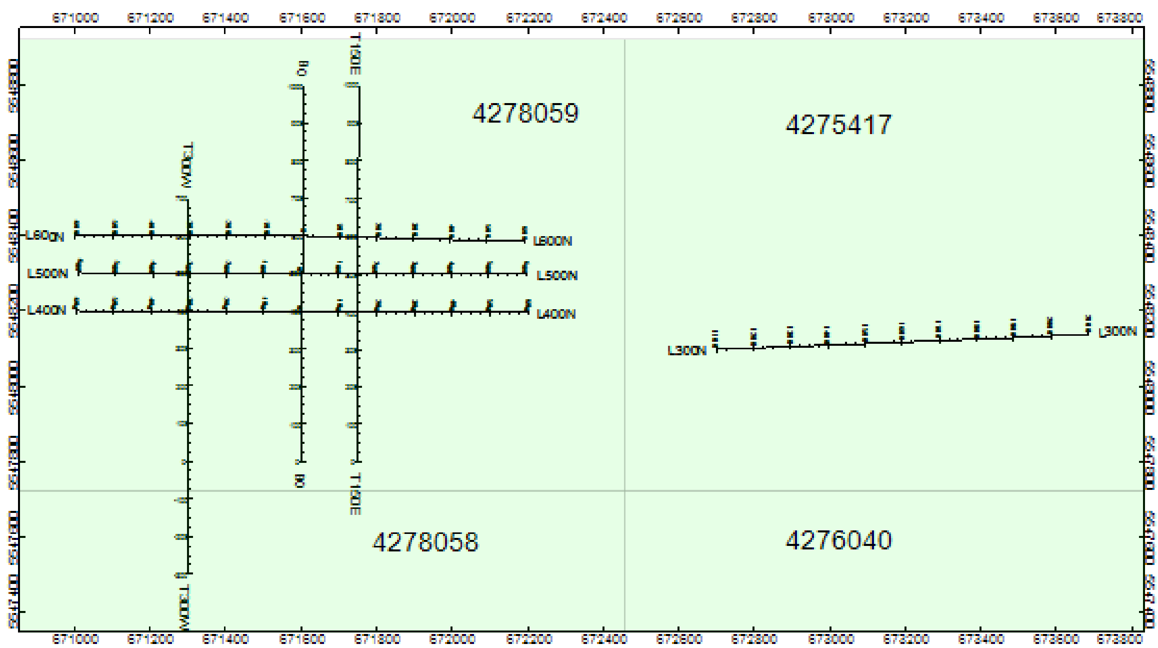


Figure 4. Survey Grid Lines

Grid registration is from GPS control points, at which UTM coordinates were taken using a Garmin GPSMAP 62S hand held GPS receiver. GPS control points are commonly at line ends and base line crossings. UTM coordinates at these control points are listed in table 1.

Line	Station	UTM e	UTM n
B0	0	671600	5547800
	400N	671600	5548199
	500N	671600	5548300
	600N	671605	5548400
	1000N	671606	5548797
300N	1100E	672700	5548100
	2100E	673685	5548140
400N	600W	671004	5548202
	B0	671600	5548199
	600E	672200	5548196
500N	600W	671011	5548301
	B0	671600	5548300
	600E	672197	5548297
600N	600W	671002	5548398
	B0	671605	5548400
	600E	672190	5548386
T300W	300S	671300	5547502
	500N	671303	5548300
	700N	671303	5548499
T150E	B0	671750	5547800
	500N	671751	5548295
	1000N	671752	5548799

Table 1. GPS Control Points. NAD83, Z16N

Grid access from Highway 11 was as follows. Turn north on Pitopiko Road, about 7.5 km west of Highway 631 or 70 km west of Hearst. The intersection of Highway 11 and Pitopiko road is at 671645e, 5516160n. Follow Pitopiko road for about 11 km, then turn left at the first 'Y' and then right at the second 'Y'. Park at 663020e, 5542255n. It takes about 70 minutes to get here from Hearst. From the parking location, it is a 1 hour ARGO ride to camp. Camp was located at 671755e, 5546509n. From camp there is a 1.4 km trail to B0 / 300N. It takes about 35 minutes to walk the trail.

2.2 Personnel

Overall survey control was maintained by Alex Jelenic. Field personnel included Nick Bain – crew chief, Scott Mortson – operator and field assistants Jeff Boettcher, Tyler Laberge, Rene McDonald and William McCloskey. Data processing was handled by Alex Jelenic.

2.3 Equipment

The IP receiver was an ELREC Pro unit from Iris Instruments. The ELREC Pro can handle up to 10 channels (potential dipoles). The IP decay can be sampled at up to 20 programmable windows. Window settings for the current survey are listed in table 2.

The IP transmitter was a GDD TxII hooked up to a 5,000 watt motor generator. A 2 second current pulse was used.

ID	Start	End	Width	Mid-Point
Vp	1260	2000	740	1630
M4	50	70	20	60
M5	70	110	40	90
M6	110	150	40	130
M7	150	230	80	190
M8	230	310	80	270
M9	310	450	140	380
M10	450	590	140	520
M11	590	820	230	705
M12	820	1050	230	935
M13	1050	1410	360	1230
M14	1410	1770	360	1590

Table 2. Resistivity and Chargeability Window Settings (msec)

2.4 Survey Procedures

A pole-dipole array was used with 'a' = 50m, n=1,10. The moving current electrode was always west of the potential electrodes for lines 300N, 400N, 500N and 600N and always south of the potential electrodes for lines T300W, B0 and T150E. Pseudosection plot point depths for this array range from 37.5m (n=1) to 262.5m (n=10). Production is summarized in table 3. Distance is from the station of the first moving current electrode to the station of the last potential electrode on any line. As so measured, total production was 7,550 metres.

Line	C1-Min	Rn-Max	#Readings	#Dipoles	Distance	Date
B0	0N	950N	14	127	950	October 21, 2014
T150E	0N	1000N	11	108	1000	October 25, 2014
T300W	300S	700N	12	116	1000	October 22, 2014
L300N	1100E	2100E	12	114	1000	October 24, 2014
L400N	600W	600E	16	155	1200	October 23, 2014
L500N	600W	600E	15	147	1200	October 23, 2014
L600N	600W	600E	16	154	1200	October 25, 2014
				Total	**7,550 m**	

Table 3. Production Summary

2.5 Data Processing and Presentation

At the end of every survey day, the IP/resistivity data are dumped from the Elrec Pro to a PC. Output is a text file, identified by date. Raw data from each survey line are collected in text files, identified by line number. The data are checked for quality and quantity. The data are archived for transfer to Smart Geophysics. Office based data processing and presentation are based largely on Geosoft Oasis Montaj.

The collated text files of IP/resistivity data for each survey line are taken into a Geosoft database. UTM coordinates for each line/station of the interpolated grid are added. The Mx chargeability is calculated as the weighted average of M11 and M12. Mx = M11*0.255 + M12*0.745. The effective mid-point of Mx chargeability is at 870 msec.

The grid is drawn as a series of interpolated straight line segments between GPS control points. Land tenure has been downloaded as *.shp files from the MNDMF claimap3 website. Lakes, rivers and roads have been downloaded as 1:50,000 *.shp files from NRCAN geogratis.ca.

The results of the surveys are presented in 2 plan maps at 1:10,000 and 7 stacked pseudosections at 1:5,000. All maps show drainage from NRCAN geogratis.ca and land tenure from Ontario MNDM claimap3 website. Plan maps show colour contours of n=3 Mx chargeability and n=3 apparent resistivity. The n=3 pseudosection plot point depth is 87.5m.

Stacked pseudosections show colour/line contours of Mx chargeability and apparent resistivity. There is one set of stacked pseudosections for each of the 7 lines surveyed with IP/resistivity (300N, 400N, 500N, 600N, T300W, B0 and T150E). Colour zoning for Mx chargeability or apparent resistivity is the same for plan maps and all pseudosections. The stacked pseudosection plot for line 500N is shown in figure 5.

Digital results (this report, raw and processed ASCII data files, Geosoft database and map files) are archived on DVD.

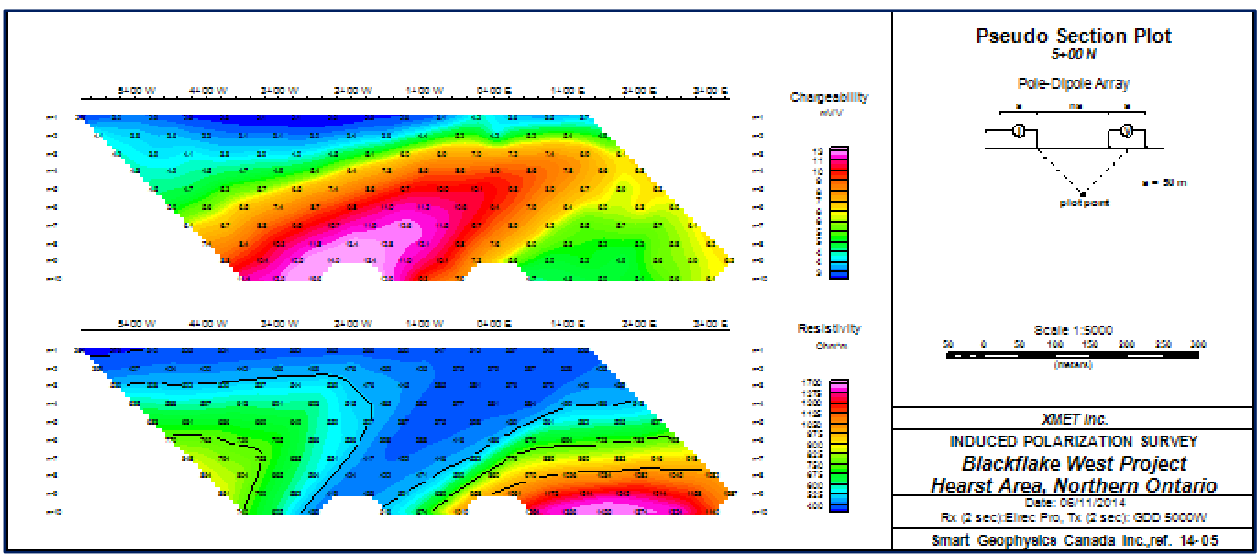


Figure 5. Mx Chargeability and Apparent Resistivity Pseudosection. Line 500N

3 Survey Results – Overall Statistics

Overall statistics for all Mx chargeabilities and apparent resistivities and for those from the first dipole only are listed in table 4. Also shown are the percentages of chargeabilities in 4 ranges. Units are mV/V for chargeability and ohm.m for apparent resistivity. A total of 921 dipoles were read.

quantity		#	average	mean	min	max	>2.5	2.5 - 5	5 – 10	>10
Mx	all	921	6.21	5.83	1.32	16.60	8%	31%	49%	12%
	n=1	96	2.72	2.67	1.59	4.23	41%	59%	-	-
rhoa	all	921	650	586	220	3067				
	n=1	96	326	327	220	406				

Table 4. IP/resistivity statistics

As with most surveys in this type of terrain, background levels for Mx are ≤ 5 mV/V. 49% of all Mx values are in the range of 5 to 10 mV/V, the conventional range for 'weak' IP anomalies. A moderate IP anomaly normally means peak Mx values of 10 to 20 mV/V and strong means peak Mx values more than 20 mV/V. Under these criteria, 12 % of all chargeabilities are moderately anomalous.

In the absence of bedrock conductors, the electrical resistivity of most crystalline rock is more than 50,000 ohm.m. Sea water has a resistivity of around 1 ohm.m. Overburden resistivities in the Canadian Shield are commonly in the range 50 to 200 ohm.m. In the absence of bedrock conductors, most variations in apparent resistivity are due to variations in the conductivity and thickness of the overburden. Most soil and bedrock conductivities are determined by water content and ground water conductivity.

In the absence of bedrock conductors, n=1 resistivities more than 10,000 ohm.m usually means some outcrop and a prospecting history. n=1 resistivities in the range of 2,000 to 10,000 ohm.m often means access to bedrock may be possible by back hoe stripping. N=1 resistivities less than 1,000 ohm.m usually mean no outcrop, some thickness of overburden and some reduction in the amplitude of IP anomalies from any underlying chargeable bodies.

95% of the n=1 apparent resistivities from this survey are in the very narrow range of 250 to 400 ohm.m. This implies some thickness of overburden that is uniform in thickness and resistivity. The pseudosections suggest an overburden thickness on the order of 75m. Modelling should give a better estimate.

4. Discussion

The main VTEM target is seen as a coincident chargeability high / resistivity low at a depth of around 75 metres. The overburden, which looks uniform in thickness and conductivity, reduces IP and resistivity anomaly clarity and amplitudes. The best IP/resistivity response appears to be on line 500N near the base line. 2D inversions should add some clarity to any interpretation. A comparison of the IP/resistivity and VTEM results would help as well. This might be done with a layered compilation that includes all relevant recent geophysical data – regional magnetics, results from XMET's ground magnetic, VTEM and IP/resistivity surveys and results from any EM, magnetic and IP/resistivity modelling.

The smaller VTEM target east of the main target has no clear IP or resistivity expression. The target is probably too small.

There may be areas where the IP results appear anomalous but the resistivities are not. These may be disseminated targets, targets that would not appear in the VTEM survey. These disseminated targets might be clearer in the inverted 2D sections.

5. Conclusions

IP/resistivity surveys were done over two strong VTEM targets, one large in area and one small, on XMET's Blackflake West property. Total production was 7,550 m. The results have been presented on plan maps at 1:10,000 and stacked pseudosections at 1:5,000.

The main VTEM target is well represented as a chargeability high / resistivity low. Some thickness of conductive overburden blurs the anomalies and reduces anomaly amplitudes. Depths to the target appear to be on the order of 75 metres. The strongest response appears to be on line 500N with the target centered near the base line. Areas where chargeabilities are anomalous but resistivities are not suggest a disseminated target, something that would not appear in the VTEM survey.

The much smaller secondary VTEM target, surveyed on line 300N, has no clear IP or resistivity expression.

Alex Jelenic B.Sc., P.Geo
November 11, 2014

CERTIFICATE OF AUTHOR

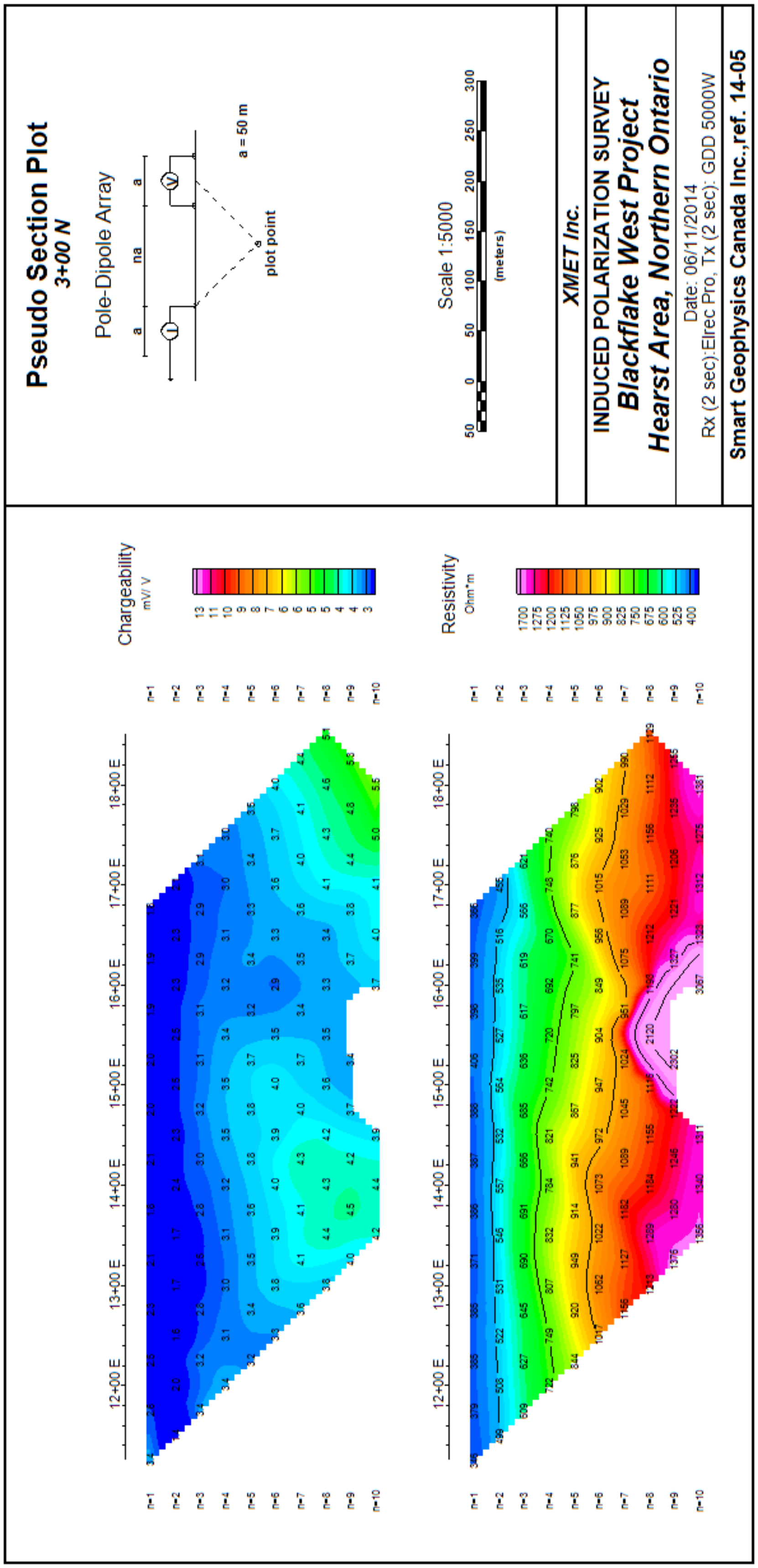
I, Alexander Jelenic, B. Sc., P. Geo., do hereby certify that

1. I graduated with a Bachelor of Science degree in Geophysics from York University, Toronto, Canada in 2000.
2. I am a member of the Association of Professional Geoscientists of Ontario.
3. I have practiced Geophysical Exploration and Geosciences continuously since 1996, I have worked on projects in minerals exploration for base, precious and noble metals throughout Canada, South America, Mexico, Dominican Republic, Australia, Europe and Asia.
4. I am responsible for the overall preparation of this report. Most of the technical information in this report is derived from geophysical surveys conducted by Smart Geophysics Canada Inc. for XMET Inc. and information provided by XMET Inc.
5. I am president of Smart Geophysics Canada Inc. at 45 Kingswood Drive, King City, Ontario L7B 1K8. www.smartgeophysics.com. ajelenic@gmail.com.

Dated this 11th Day of November, 2014

Alexander Jelenic, B. Sc., P. Geo.

MAP IMAGES
IP/RESISTIVITY SURVEY
BLACKFLAKE WEST PROPERTY
HEARST AREA, ONTARIO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Hearst Area, Northern Ontario
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Smart Geophysics Canada Inc.,ref. 14-05
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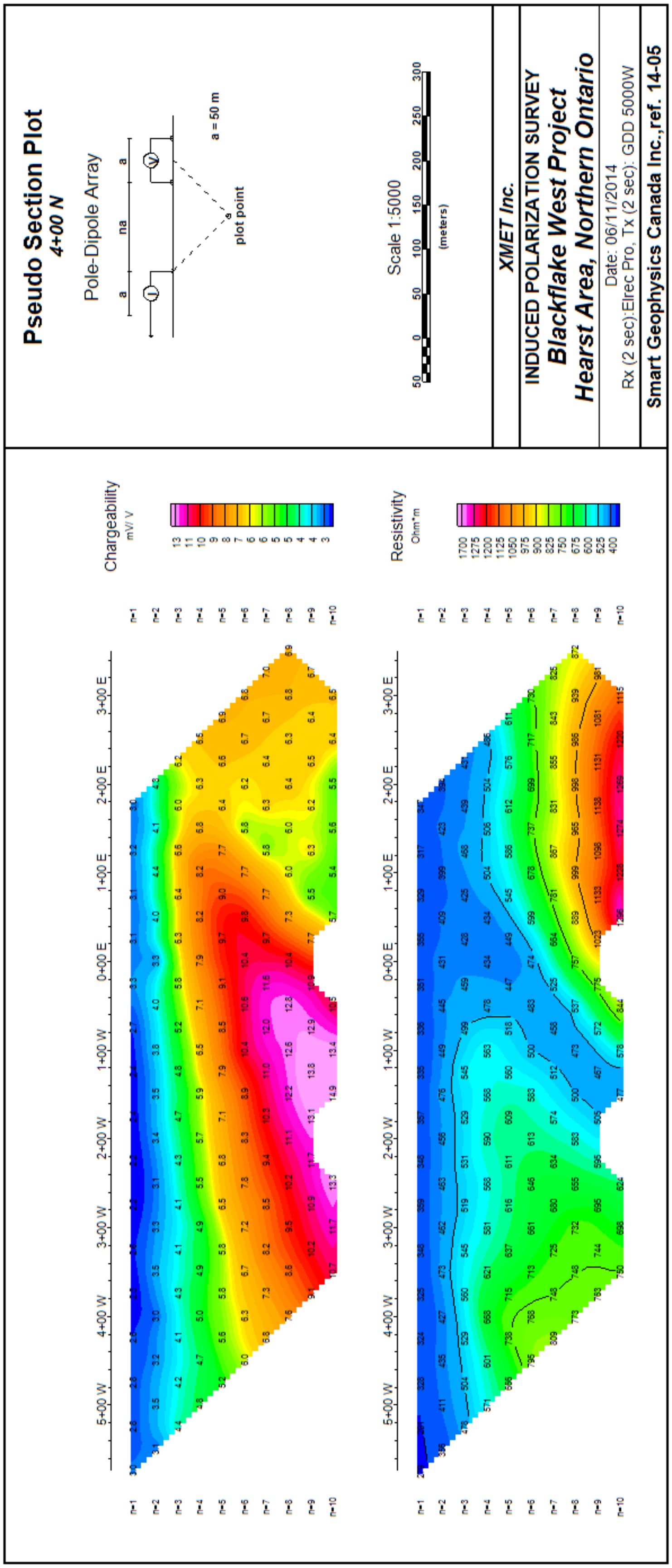
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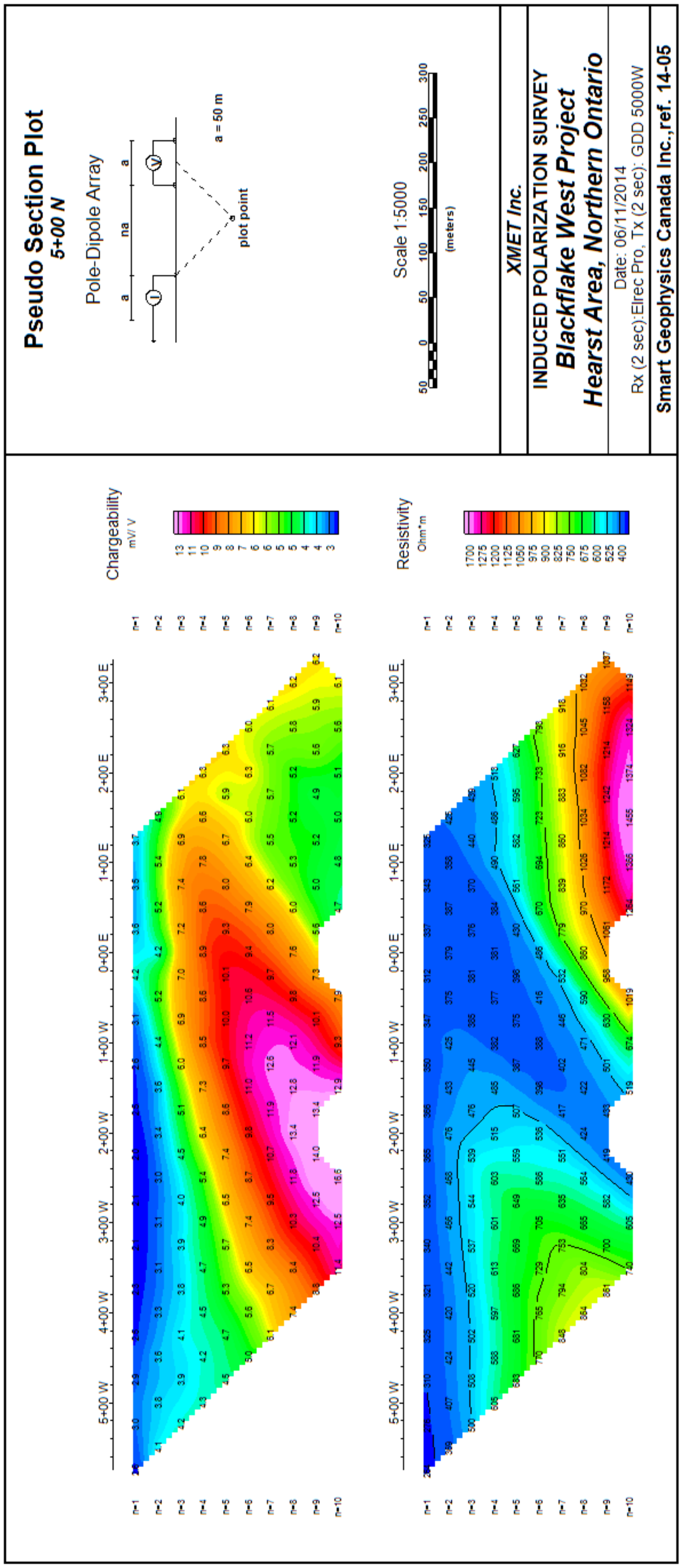
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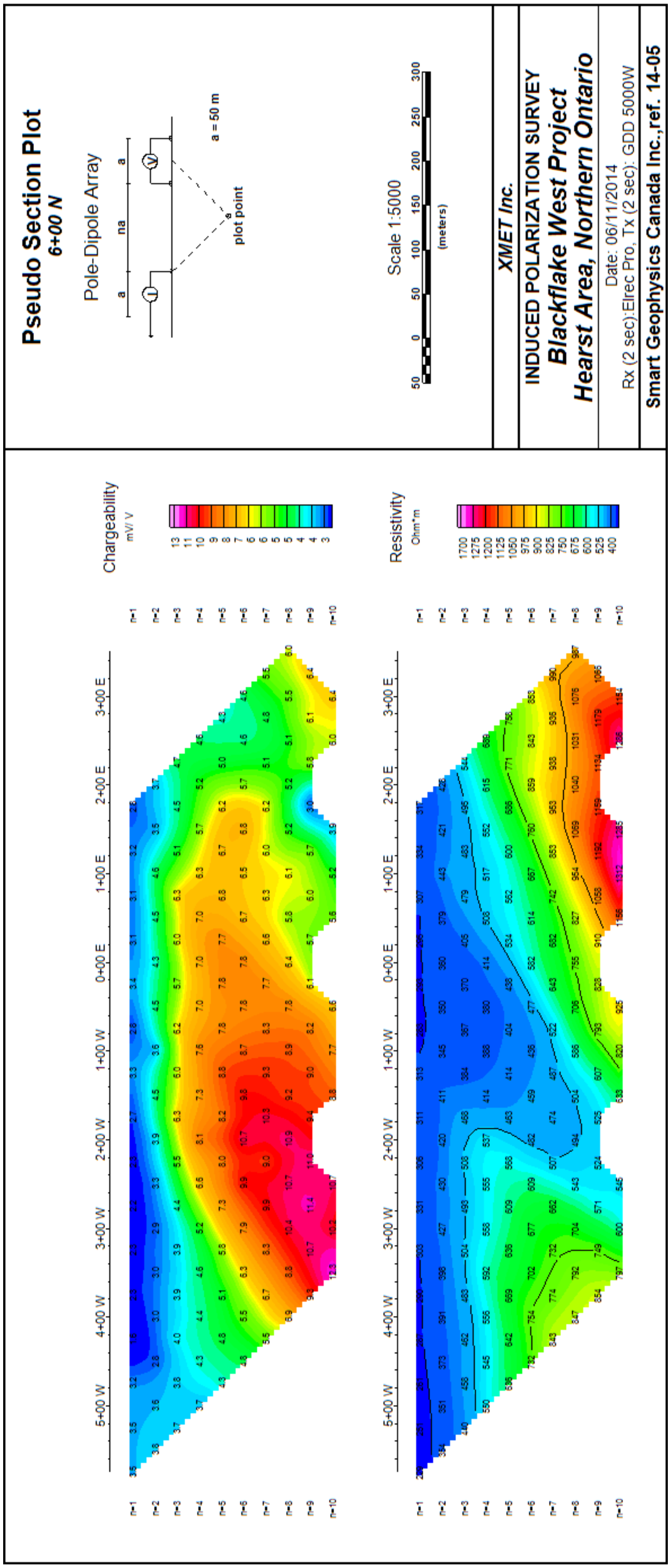
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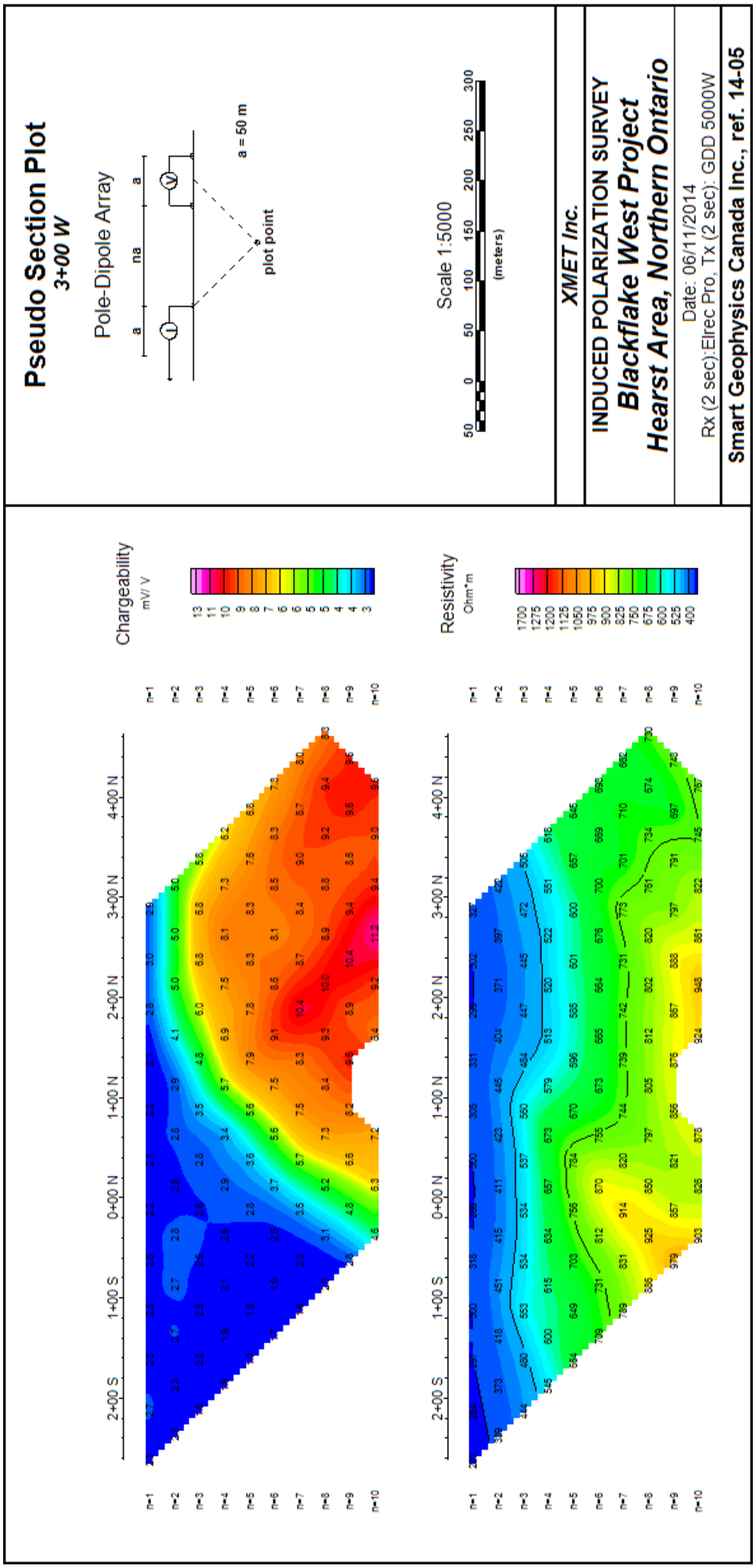
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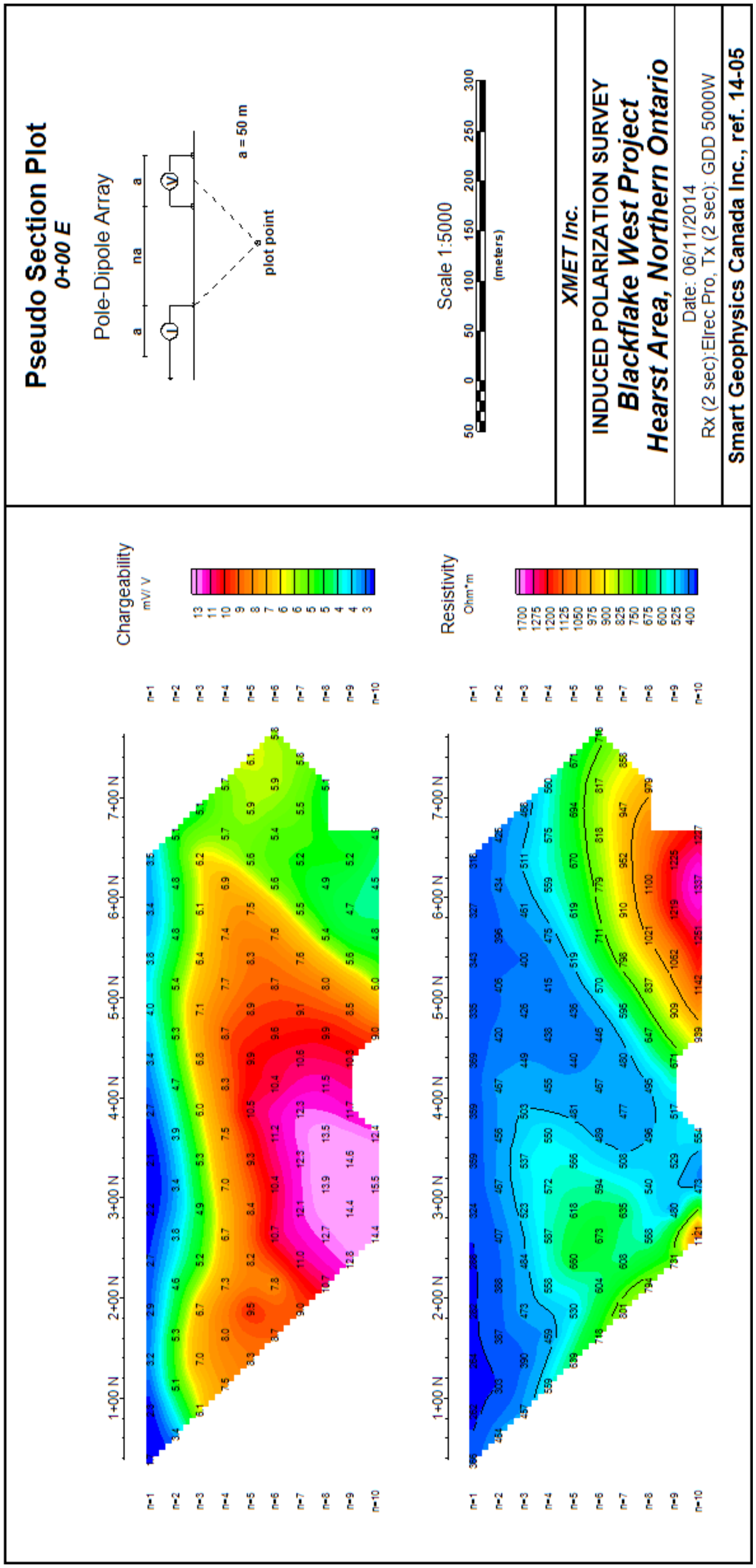

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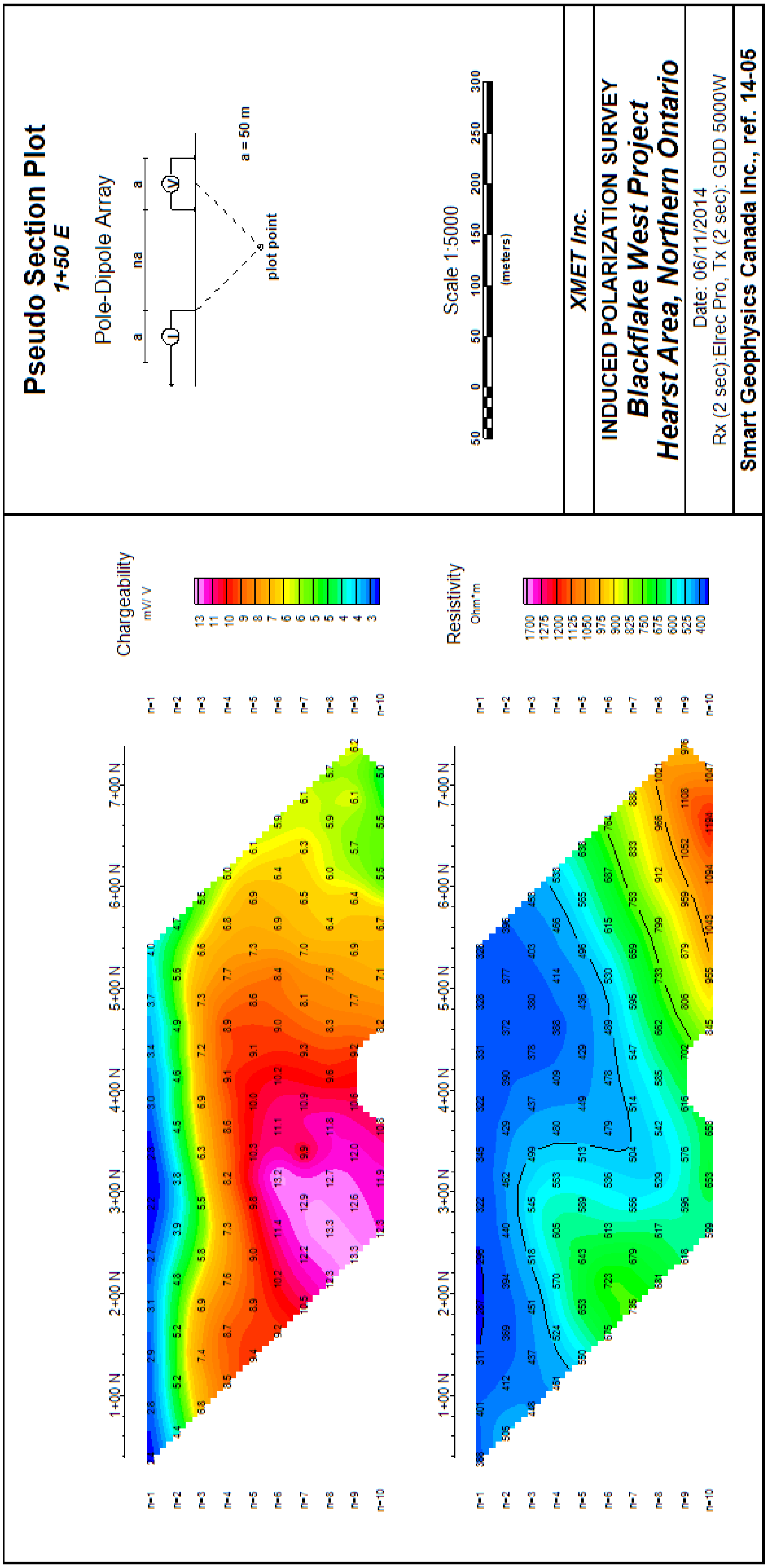
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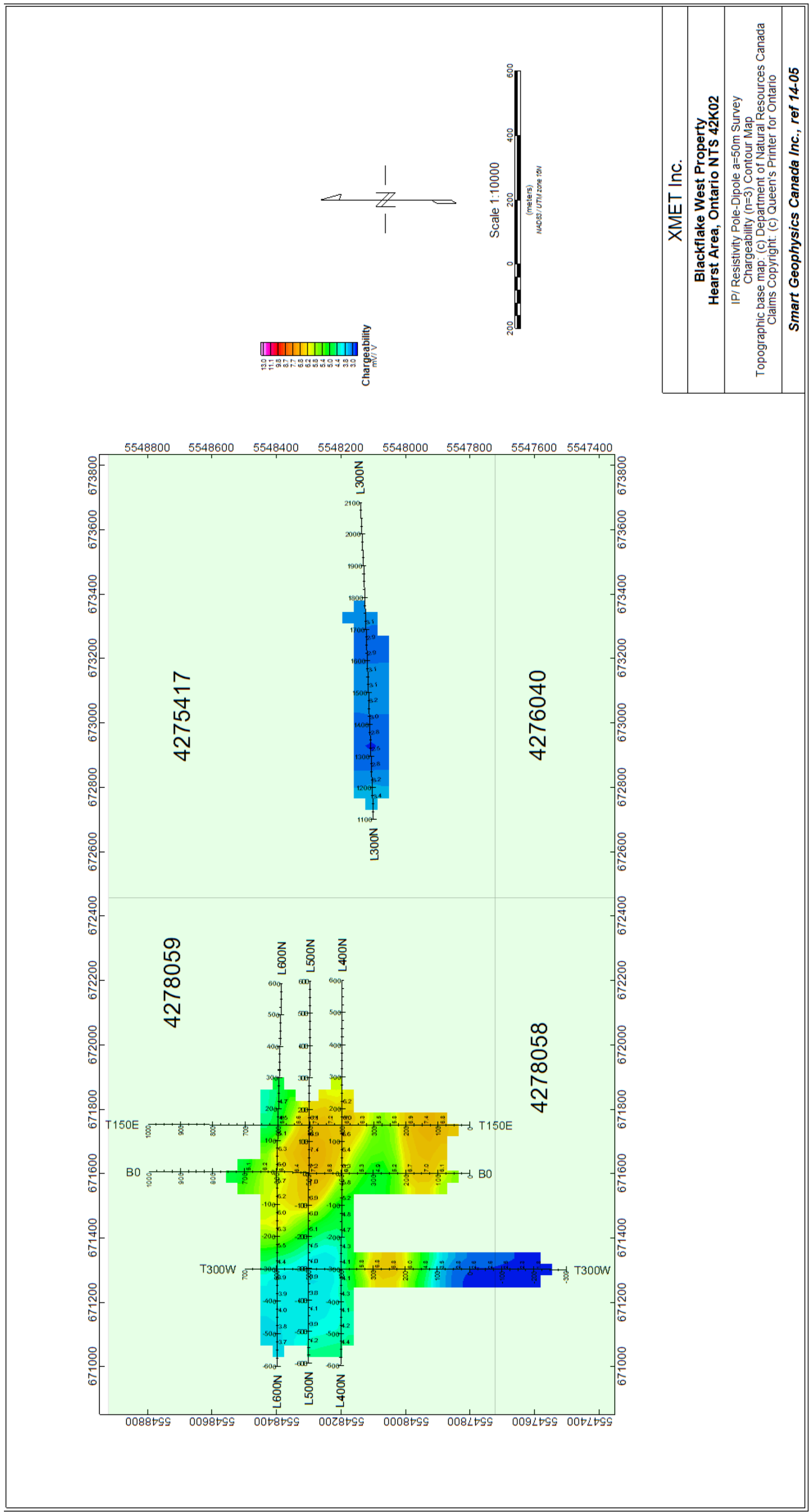
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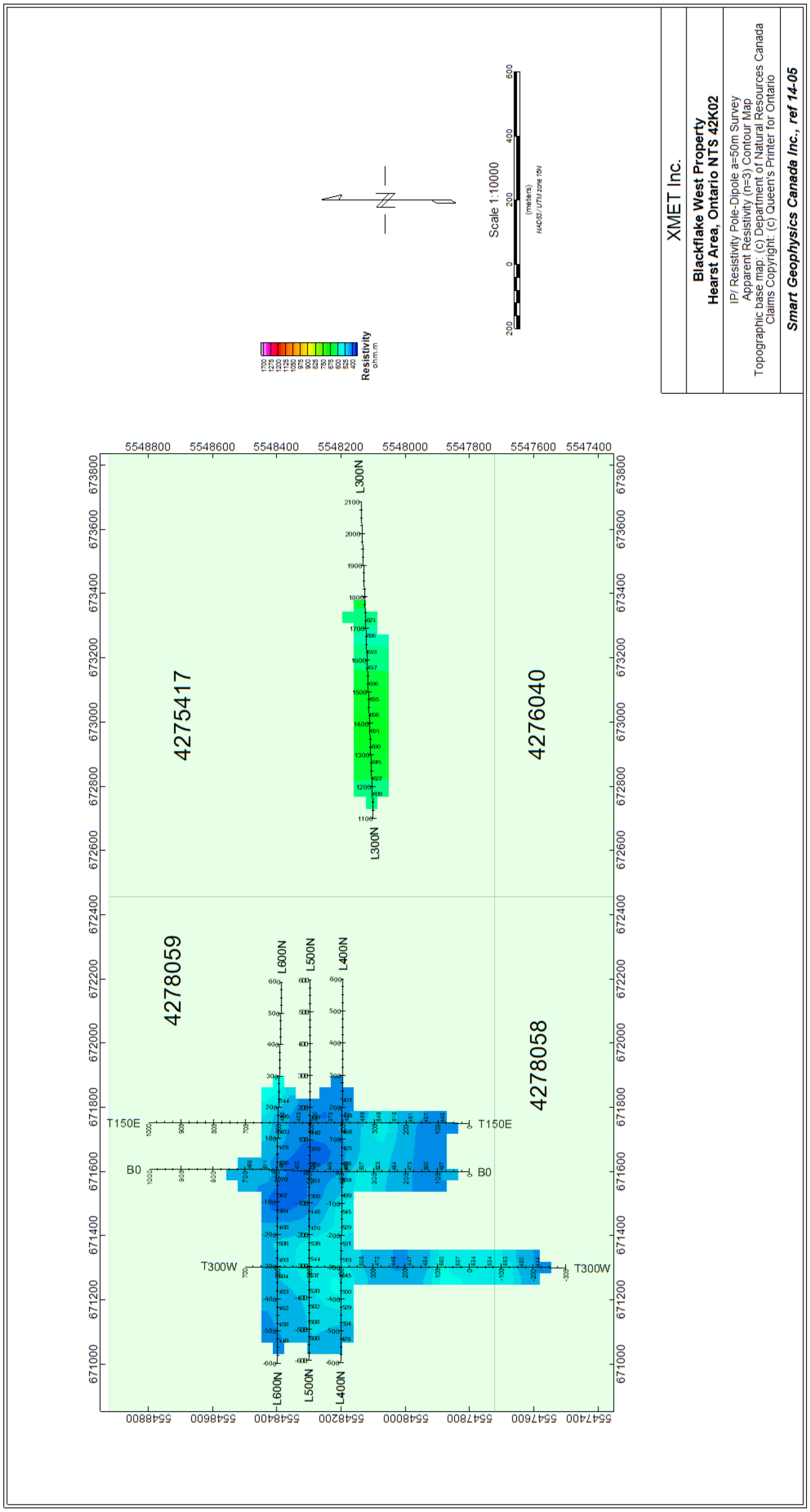
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