

# EARTHPROBE SURVEY INTERPRETATION REPORT

WATERSHED GOLD PROPERTY

Ontario, Canada



Sanatana Resources Inc. 1925-925 West Georgia St Vancouver, BC V6C 3L2 Canada

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Prepared By:

CARACLE CREEK INTERNATIONAL CONSULTING INC.

Julie Palich, M.Sc., P.Geo - Geophysicist Wei Qian, Ph.D., P.Geo - Senior Geophysicist

#### Office Locations

**Toronto** 

34 King Street East, 9th Floor Toronto, ON Canada, M5C 2X8

Tel: +1.416.368.1801 Fax: +1.416.368.9794 Canada@caraclecreek.com

Vancouver

409 Granville Street, Suite 1409 Vancouver, BC Canada, V6C 1T2

Tel: +1.604.637.2050 Fax: +1.604.602.9496 Canada@caraclecreek.com

Sudbury

25 Frood Road Sudbury, ON Canada, P3C 4Y9

Tel: +1.705.671.1801 TF: +1.866.671.1801 Fax: +1.705.671.3665 Canada@caraclecreek.com

Johannesburg

7th Floor The Mall Offices 11 Cradock Avenue, Rosebank South Africa

Tel: +1.27 (0) 11.880.0278 Fax: +1.27 (0) 11.447.4814 Africa@caraclecreek.com

www.cciconline.com

This report has been prepared by Caracle Creek International Consulting Inc. (Caracle Creek) on behalf of Sanatana Resources Inc.

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## 1.0 EXECUTIVE SUMMARY

An EarthProbe high resolution resistivity/induced polarization (DCIP) survey was completed by Caracle Creek International Consulting Inc. (Caracle Creek) over 338 Ha on the Watershed Gold Property in the Chester and Yeo Townships, Ontario. The work was undertaken at the request of Sanatana Resources Inc ("Sanatana"). The survey was completed from June 10 – July 20, 2011. Total production was 21.7 line-kilometres. The results have been presented as resistivity and chargeability pseudosections and as contour maps.

Surface resistivity within the Watershed is characterized by a moderate to low resistivity  $(1,500 - 8,000 \, \text{Ohm.m})$  and low chargeability (less than 20 mV/V). Beneath these surficial features, resistivity increases with increasing depth with basement exhibiting resistivity greater than 15,000 Ohm.m. Twenty-three anomalous features of significance have been identified across the survey area; several other smaller features are also present in the data and may warrant future investigation if these more prominent features return mineralization of interest.

Summary of anomalous features identified from the EarthProbe survey.

Anomaly ID Survey Lines Identified R		Recommendation	Priority		
Clam Lake Area					
CL001	L14, L15, L16	Ground truth and drill	1		
CL002	L13	Ground truth and drill	1		
CL003	L14, L15	Drill test	3		
	Chester	Area			
CHS001	L10, L11, L12?	Ground truth and drill	1		
CHS002	L10, L8?, L9?, L11?	Drill test	3		
CHS003	L11	Ground truth and drill	1		
CHS004	L11	Ground truth	2		
CHS005	L10	Ground truth	2		
CHS006	L12	Ground truth	2		
CHS007	L11	Ground truth	3		
CHS008	L8, L7?	Ground truth and drill	1		
	Claim Lak	es Area			
CML001	L3, L2	Ground truth and drill	1		
CML002	L2, L3	Ground truth and drill	1		
CML003	L1, L2, L3	Ground truth and drill	1		
CML004	L3,	Ground truth	2		
CML005	L4	Ground truth	2		
CML006	L4	Drill test	3		
CML007	L5	Ground truth and drill	1		
CML008	L5, L6?	Drill test	3		
CML009	L5	Drill test	2		
CML010	L7	Ground truth and drill	1		
CML011	L6, L7	Ground truth	2		
CML012	L6, L7	Ground truth	2		

In order to assist with drill targeting, localized 3D inversion is recommended over the Clam Lake area, the northern portion of the Chester Area around the Chester showing, and over the northern portion of L1, L2 and L3 in the Claim Lakes Area. Inversion will assist is providing enhanced spatial resolution of the priority features.

## 2.0 Introduction

Caracle Creek International Consulting Inc. ("Caracle Creek") of Toronto, Ontario, Canada was contracted by Sanatana Resources Inc Inc. ("Sanatana") of Sudbury, Ontario, Canada to conduct an EarthProbe Survey on the Watershed Gold Property project area (the "Property"). EarthProbe is a high resolution DC resistivity and induced polarisation (IP) logging and tomography survey system. This report is intended to serve as an interpretation report to the EarthProbe survey and has been written in an appropriate format to file with the Ontario Ministry of Northern Development and Mines and Forestry (MNDMF) for assessment credit if required.

The following report summarises the results of the EarthProbe surface DCIP survey undertaken on the Property from June 10 – July 20, 2011.

## 2.1 Objectives

The objectives of the survey were to map the resistivity and chargeability signature of the Property to locate potential extensions of the Cote Lake mineralization trend and identify potential drilling targets.

#### 3.0 PROJECT AREA BACKGROUND

#### 3.1 Property Location and Description

The Property is located ~165 km north of Sudbury, Ontario and ~ 130 km south of Timmins, Ontario at approximately 425000E and 5266322N, UTM Zone 17N NAD83 (Figure 3-1). The town of Gogama is approximately 26 km northeast of the Property. Access to the Property is via Highway 144 from Sudbury and Timmins or from Sultan Road, which begins at the intersection of Highway 144 and Highway 560. Several dirt roads heading west from Highway 144 and north from Sultan Road can be used to access the property.

The Property consists of 46 contiguous, unpatented claims comprising 7,840 ha in the Porcupine Mining Division within the Yeo, Chester, Neville, and Benneweis Townships. At the time of the survey, all claims were owned by Augen Gold Corp. of 360 Bay Street, Suite 500, Toronto, Ontario. On February 14, 2011, Augen Gold Corp. entered into an option and joint venture agreement with Sanatana. Under this agreement, Sanatana is granted the option to acquire up to 51% undivided interest in the 46 mineral claims through a combination of payment, share issues, and exploration activities over the next 5 years.

As part of this agreement, Sanatana is required to make exploration expenditures of \$1,000,000 on or before the first anniversary of the agreement. On October 28, 2011, Augen Gold Corp. became a whollyowned subsidiary of Trelawney Mining and Exploration Inc.

On December 15, 2011, Trelawney Augen Acquisition Company became a wholly owned subsidiary of IAMGOLD and the terms of the option agreement were directly transferred under the new ownership agreement. As part of this transfer the Project claims were registered to Sanatana Resources Inc. of 1925-925 West Georgia St, Vancouver, BC.

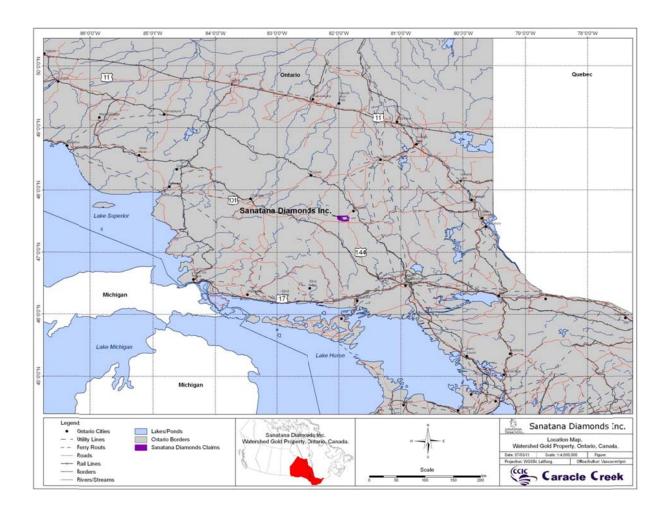


Figure 3-1. Location of Sanatana Resources' Watershed Gold Property near Gogama, Ontario

## 3.1.1 IP Survey Location

The IP survey covers portions of claims 3017670, 3017672, 3017674, 3017665, 3017666, 3017667, and 3011820. Details of these claims are summarized in Table 3-1. The survey location is shown in Figure 3-2.

Table 3-1. Watershed Property claims surveyed using EarthProbe DCIP

Claim Number	Claim Holder at time of Survey	Township	Units	Area (ha)	Line-km Surveyed	Claim Due Date
3017670	Augen Gold Corp 100%*	Yeo	10	160	2.11	17-Mar-2013
3017672	Augen Gold Corp 100%*	Yeo	10	160	6.50	17-Mar-2013
3017674	Augen Gold Corp 100%*	Yeo	16	256	7.44	17-Mar-2013
3017666	Augen Gold Corp 100%*	Chester	3	48	1.35	25-Feb-2013
3017667	Augen Gold Corp 100%*	Chester	3	48	1.12	25-Feb-2013
3017665	Augen Gold Corp 100%*	Chester	3	48	2.04	25-Feb-2013
3011820	Augen Gold Corp 100%*	Chester	1	16	1.14	20-Jan-2013

<sup>\*</sup>all claims are currently registered to Sanatana Resources Inc.

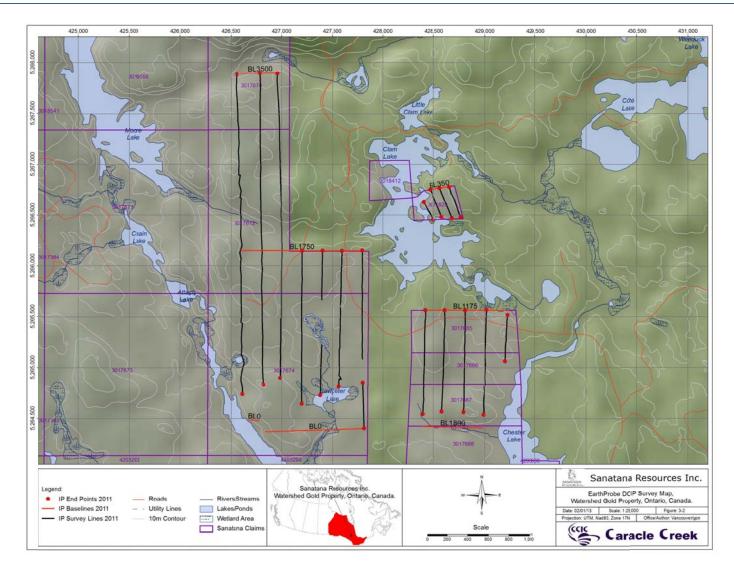


Figure 3-2. Exploration location of the EarthProbe DCIP survey on the Watershed Gold Property, Chester and Yeo Townships, Ontario

### 3.2 Geological Setting and Deposit Type

The Watershed Gold Property lies within the southern Swayze Greenstone Belt, which is part of the Western Abitibi Subprovince of the Superior Province. The southern Swayze Greenstone Belt is an ESE-trending syncline that extends from Esther to Brunswick townships (Siragusa, 1993). The outer limb of the syncline is composed of tholeitic flows of greenschist facies. The inner part of the syncline is composed of tholeitic and clac-alkaline metavolcanic rocks; the core is composed of clastic metasediments. The metasediments in the west part of the belt are intruded by the Jerome porphyry. Iron formation and subvolcanic gabbroic rocks are also present in the southern Swayze Greenstone Belt.

Local geology is shown in Figure 3-3. In Chester township, felsic to intermediate intrusive rocks of the Chester Granitoid Complex separate the northern and southern limbs of the syncline (Heather and Shore, 1999). The northern part of this pluton is the host of several gold occurrences. In the southeastern part of Yeo township, a more mafic component of the Chester Granitoid Complex merges with the southern limb of the syncline. The contact between the mafic and felsic to intermediate intrusive rocks forms an S-shaped migmatitic fringe in the Chester township (Siragusa, 1993). The contact zone between the northern limb of the syncline and the granitic pluton in Chester township is also migmatitic.

Most of the base metal occurrences in the southern Swayze Greenstone Belt are associated with iron formation (Heather and Shore, 1999). There are two types of base metal mineralization in the iron formation: chlorite-quartz-chalcopyrite±sphalerite±galena breccia zones and minor amounts of stratiform/stratabound pyrite-pyrrhotite±sphalerite. Base metals are also associated with gold occurrences in the Chester Granitoid Complex. Minor chalcopyrite-pyrite mineralization occurs in some of the granitoid complexes. Most of the gold mineralization is associated with quartz veins (Heather and Shore, 1999).

Several mineral occurrences have historically been identified at the Property; of these only the Chester gold occurrence is within the DCIP survey area (Figure 3-4).

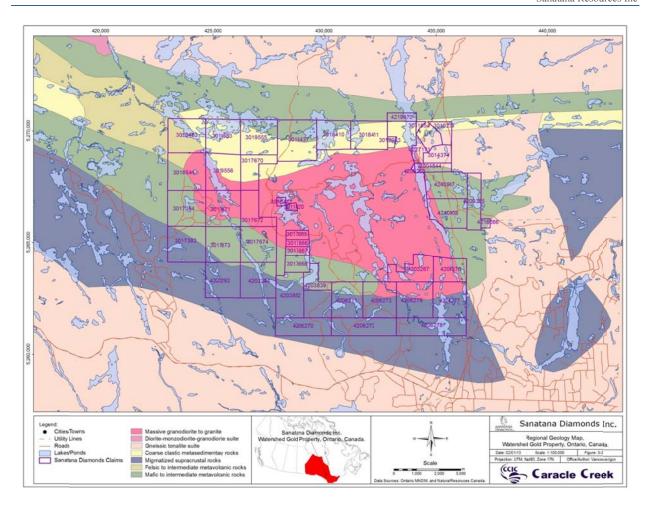


Figure 3-3. Local geology of Sanatana's Watershed Property near Gogama, Ontario.

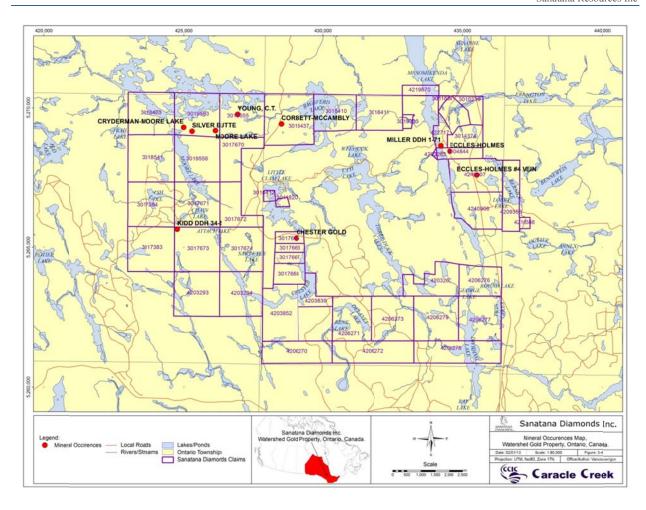


Figure 3-4. Map showing the locations of mineral occurrences on the Watershed Property.

#### 3.2.1 Chester Gold Occurrence

The Chester Gold occurrence (MNDMF MDI: MDI41P12SW00020) is located in claim 3017666 within the Chester Granitoid Complex. Gold is hosted by quartz veins in a stockwork of joints in granites trending parallel to diabase dikes. In 1993, massive pyrite and visible gold was reported in the veins however most of the pyrite is disseminated. A grab sample collected by the OGS in 1994 returned 143.16 g/t Au and 7.5 g/t Ag. In 2009, Augen Gold Corp collected grab samples from the Chester Gold occurrence that returned 270.0, 133.0, 69.3, 57.9 and 35.0 g/t Au. A subsequent drilling program conducted by Augen in the same year, comprising four drillholes totaling 299.5 m (McRoberts, 2010) was undertaken to test the potential beneath the Chester Gold occurrence. The best intersection was in hole

CG09-06 which was 0.413 g/t over 0.3 m. Drilling failed to identify significant gold mineralization underlying the historic gold occurrence.

### 3.3 Related Ground Geophysical Exploration

#### 3.3.1 Chester Gold Area, Spectral IP/Resistivity and Magnetic/VLF survey

Spectral IP/resistivity and magnetic/VLF surveys were completed by JVX on the Chester Gold Grid located on claims 3017665 and 3017666, between January 24 – 31, 2010 and December 8 – 10, 2009, respectively. The Chester Gold Grid comprises 11 north/south lines with a length of 600 m at 100 m spacing and a tie line at 300S. Total production was 5,925 m IP/resistivity and 7,475 m magnetics/VLF.

The magnetic/VLF survey was undertaken using a Gem Systems GSM-19WV mobile receive and Gem Systems GSM-19 base station. Total magnetic intensity and VLF readings were taken every 12.5 m. The IP/resistivity survey was undertaken using the Scintrex IPR12 receiver, GDD TXII time domain transmitter and Huntec2.5 kVA time domain transmitter. IP/resistivity readings were taken with a pole-dipole array (a=25, n = 1 to 6).

The Chester gold showing is associated with a relative magnetic high resistivity low (1900 Ohm.m) with a north-northwesterly trend (Figure 3-4). A more prominent resistivity low (470 Ohm.m) is present approximately 300 m to the southwest. Both low resistivity features are associated with relative chargeability lows.

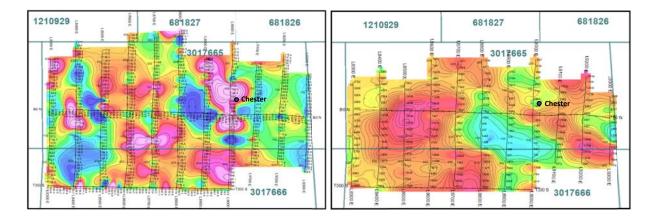


Figure 3-5. Total magnetic intensity (left) and resistivity (right) results from the Chester gold area survey conducted by JVX.

### 3.3.2 Trelawney Mining and Exploration Inc.

Trelawney Mining and Exploration Inc. ("Trelawney") holds the Chester Property claims located adjacent to Sanatana's Watershed Gold Property (to the east). Trelawney states on their website (www.trelawneymining.com) that the Chester property hosts at least 12 mineralized structures and several historic mines including the Chester 1 Mine. Ground IP and magnetic surveys were undertaken over the Chester Property extending up to the boundary of Sanatana's claim 3011820. Based on an "IP" plan map released by Trelawney, both the Chester 1 and Chester 2 Mine areas are characterized by an interpreted resistivity low, and a resistivity low extends east from the eastern boundary of claim 3011820.

#### 4.0 SURVEY DESIGN AND APPROACH

The geophysical survey was undertaken using the EarthProbe high resolution DCIP system. The system can be configured for the collection of high resolution surface IP data, borehole vertical profiles (VP), and/or multi-bore/surface-to-bore tomographic images. For this survey, data were collected using a high resolution surface DCIP configuration.

In this report, conventional electrode nomenclature is used whereby "A" denotes the positive current electrode, "B" the negative current electrode, "M" the positive potential electrode and "N" the negative potential electrode.

#### 4.1 IP Theory

When a voltage is applied to the ground, electrical current predominantly flows in the electrolyte-filled capillaries within the rock. If certain mineral particles that transport current by electrons (e.g. most sulphides, some oxides, and graphite) are also present, then the ionic charges build up at the particle-electrolyte interface. This accumulation of charge creates a voltage that tends to oppose the current flow across the interface. When the current is switched off, the created voltage slowly decreases as the accumulated ions diffuse back into the electrolyte. This type of induced polarization is known as electrode polarization.

A similar effect occurs if clay particles are present in the conducting medium. Charged clay particles attract oppositely-charged ions from the surrounding electrolyte; when the current stops, the ions slowly diffuse back to their equilibrium state. This process is known as membrane polarization and results in induced polarization effects even in the absence of mineralized conductors.

Most IP surveys for mineral exploration are carried out by taking measurements in the time-domain and measure the combined IP effects of electrode and membrane polarization. Time-domain measurements involve sampling the waveform at intervals after the current is switched off, to derive the apparent chargeability ( $M_a$ ), which is a measure of the strength of the induced polarization effect. At the same time as chargeability measurements are collected, apparent resistivity ( $\rho_a$ ) measurements can be derived from the constant current on-time of the waveform after the initial IP charging effects are over, providing further information about the presence or absence of conductive minerals within the host rocks.

## 4.2 System Specifications

A summary of the survey specifications can be found in Table 4-1.

Table 4-1. Specifications of the EarthProbe system

Survey Item	Specifications
Contractor	Caracle Creek International Consulting Inc.
Survey Type	Direct current resistivity and induced polarization survey
DCIP System	EarthProbe High Resolution surface and borehole DCIP
Data Type	Full-waveform
Survey Configuration	Surface DCIP – 16 lines using Wenner Alfa array
Voltage Input	800 V
Electrode Spacings	4.4 m – 10 m

#### 4.3 Surface IP Survey

Line location and electrode information are summarized in Table 4-2. IP data were collected along 16 surface lines (totalling 21.7 line-kilometres) spaced 100 m to 200 m apart (Figure 3.2). Approximately 3.3 line-kilometres of planned survey were not completed due to the inundation of the survey area with water at the time of the survey. The size of the area covered by the IP survey is approximately 338 hectares. The electrode separation was 4.4 m - 10 m. The electrode configuration used for this survey was the Wenner-alfa configuration. Stainless steel stakes were used for current electrodes (A-B) as well as for the potential electrodes (M-N). In this array, A-M-N-B is equally spaced, and for each reading, the "a-spacing" between all electrodes is incremented by one.

L4 to L12 used a combination of 4.4 m and 10 m dipole spacings whereby the north and south ends of the line were flanked by up to 160 m of electrodes spaced at 10 m to increase the depth of investigation; a 4.4 m dipole spacing was used through the centre of the line. A roll-along configuration with up to 50%

overlap was also used on L1 to L11 to increase the effective depth of investigation over the centre of the survey area.

For this survey, the electric current waveform was generated using a 2,048 millisecond (ms) square wave change cycle (512 ms positive charge, 512 ms off, 512 ms negative charge, 512 ms off). The delay time used after the charge shut off was 128 ms.

Table 4-2. Survey line information

Line Number	Survey Area	Easting Start	Northing Start	Easting End	Northing End	Line Orientation	Line Length (m)	Dipole Length (m)
L1	Claim Lakes	426561	5267889	426616	5264737	N-S	3261	10
L2	Claim Lakes	426789	5267898	426824	5264818	N-S	3198	10
L3	Claim Lakes	426958	5267892	426986	5264885	N-S	3190	10
L4	Claim Lakes	427200	5266151	427197	5264642	N-S	1572	4.4 - 10
L5	Claim Lakes	427399	5266151	427376	5264725	N-S	1019*	4.4 - 10
L6	Claim Lakes	427598	5266150	427568	5264811	N-S	1988	4.4 - 10
L7	Claim Lakes	427798	5266153	427803	5264852	N-S	1555*	4.4 - 10
L8	Chester Area	428414	5265595	428390	5264541	N-S	1069	4.4 - 10
L9	Chester Area	428612	5265585	428583	5264568	N-S	1054	4.4 - 10
L10	Chester Area	428810	5265578	428796	5264562	N-S	1041	4.4 - 10
L11	Chester Area	429017	5265568	428991	5264536	N-S	1051	4.4 - 10
L12	Chester Area	429224	5265519	429197	5265062	N-S	466	4.4 - 10
L13	Clam Lake	428400	5266626	428500	5266436	330	220	4.4
L14	Clam Lake	428460	5266756	428579	5266482	330	317	4.4
L15	Clam Lake	428559	5266770	428687	5266456	330	348	4.4
L16	Clam Lake	428655	5266777	428767	5266477	330	334	4.4

<sup>\*</sup>L5 and L7 line length represents total line distance surveyed. Survey data are split spatially due to the presence of uncrossable swampland.

#### 4.4 QA/QC

Several QA/QC criteria were applied during the survey to assess the quality of the data. Acceptable thresholds for the survey were established by the operator based on industry accepted practices and site specific conditions. The QA/QC criteria used for this survey are summarised in Table 4-3.

Table 4-3. QA/QC data verification criteria

Survey Component	QA/QC Measure	Acceptable Threshold
Waveform	Current and voltage waveform must be a castle shape and the correlation of the current and voltage time series must be above a defined threshold	0.9
Injection current	Injected current must be within a defined range	Above 0.01 mA
Measured voltage	Measured voltage must be within a defined range	5 – 10,000 mV
Stacked voltages	Standard deviation of stacked voltage data must be below a defined threshold	5%
Self-potential	System self-potential must be below a defined threshold	100 mV

#### 5.0 Data Processing and Presentation

## 5.1 Data Processing

From the time domain data, data binning starts at 28 ms and finish at 488 ms. There are total of 21 windows with width of 20 ms. The apparent chargeability (Mx) is derived from an integration of these 21 windows. It is noted that the chargeability presented by the EarthProbe system will differ from chargeability reported using traditional DCIP systems due to differences in the sampling windows, which impacts the Mx calculation. Due in part to collection of data from earlier shut-off times, made possible by a cleaner shut-off decay signal compared to traditional systems, chargeability calculated from the EarthProbe system will in general be higher than that reported by traditional DCIP systems. The wider range of chargeability values returned from the EarthProbe system should in theory lead to better anomaly discrimination.

Apparent resistivity is calculated from the primary voltage and transmitted current using K factors based on the Wenner-alpha array geometry.

#### 5.2 Surface IP Pseudosections

Surface IP pseudosections are presented in Appendix 3. Figure 5-1 depicts an example surface pseudosection generated for this survey. Distance along the line is plotted along the x-axis with reference to its northing in metres (m). Pseudodepth below the surface is plotted on the y-axis and has been approximated based on application of the formula:

$$D = AB/3$$

whereby D is the approximate distance of reading from the borehole (m) and AB is the distance between the current electrodes (m). This assumption is typically used as a rule-of-thumb for the Wenner Alfa array, such was applied during this survey. True depth of responses however will be dependent upon the resistivity of the media and can only be determined with reasonable accuracy by undertaking a 2D or 3D inversion, as applicable.

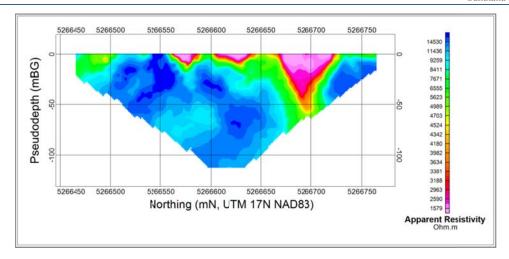


Figure 5-1: Example of the apparent resistivity pseudosection for surface line for L15.

### 5.3 Surface IP Contour Maps

Surface IP contour maps are presented in Appendix 4. Figure 5-2 depicts an example surface contour map generated for this survey. Contour maps were generated at various depth intervals (n = 2, 5, 10, 15, 20, 30, and 40) using Geosoft Oasis Montaj using minimum curvature gridding.

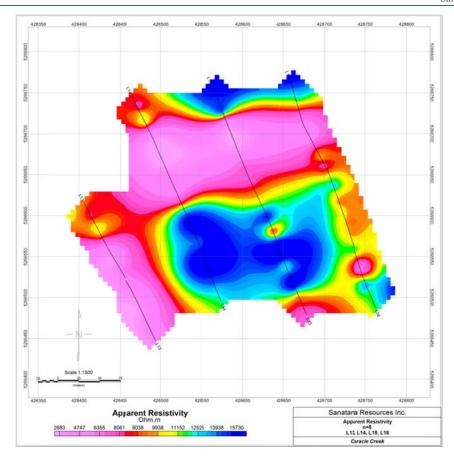


Figure 5-2: Example of an apparent resistivity plan map for n=5 for the Clam Lake area.

#### **6.0 DATA INTERPRETATION**

Apparent resistivity and chargeability pseudosections for all surface lines are presented in Appendix 3. Plan maps for Clam Lake (n=2, 5, 10, 15 and 20), and Chester Area and Claim Lakes (n=2, 5, 10, 15, 20, 30, and 40) are provided in Appendix 4.

In general the Watershed project area is characterized by surficial features of low to moderate resistivity (1,500 - 8,000 Ohm.m) and low chargeability (less than 20 mV/V). Beneath these surficial features, resistivity increases with increasing depth with basement exhibiting resistivity greater than 15,000 Ohm.m. Background chargeability in the survey area is interpreted to be less than 20 mV/V.

#### 6.1 Clam Lake Area

Due to the small size of the claim, investigation of the Clam Lake area was predominantly limited to the top 100 m of the subsurface. Three features of interest were identified in the Clam Lake Area:

- CL001: A shallow zone of low resistivity (<1,000 Ohm.m) is present across L14, L15 and L16, centred on approximately 5266700 mN (UTM 17N NAD83). CL001 extends over a lateral distance of 80 m and is strongest on L14 and L15. CL001 occurs in line with a low resistivity feature present on the adjacent Trelawney Cote Lake claims.
- CL002: A shallow zone of low resistivity (<1,000 2,500 Ohm.m) is present on L13, centred on 5266500 mN, extending over a distance of 50 m. There are several interpreted faults in the area and therefore, this feature may represent an off-set of feature CL001.
- CL003: A moderate chargeability zone (> 30 mV/V) is present below a depth of 50 m below L15, centred on approximately 5266625 mN. This feature is reflected on L14 at 5226650 mN and also to a weaker extent on L13, where it appears to shallow towards the surface.

#### 6.2 Chester Area

Investigation of the Chester area extended to depths between approximately 180 - 220 m below surface, excepting L12, which extended to approximately 125 m. Several features of interest were identified in the Chester Area:

- CHS001: A shallow, but depth extensive zone of low resistivity (<1,000 Ohm.m) was identified on L10 and L11, centred at approximately 5265250 mN. This feature extends laterally over 150 m on L10 and L11. A weaker, shallow reflection of this feature is present on L12 at 5265275 mN. A zone of higher chargeability (100 -130 mV/V) is present on L11, coincident with the zone of low resistivity.</li>
- CHS002: A zone of high chargeability (100 -0130 mV/V) is present on L10, centred at 5265250 mN, below a depth of 100 m. This feature may be present on L8, L9 and L11, suggesting a locally pervasive lithologic unit.
- CHS003: A second shallow zone of low resistivity (<1,000 Ohm.m) is present on L11, centred at approximately 5265010 mN. CHS003 is narrower in extent than CHS001 (30 − 70 m) but shows similar depth extent and orientation. Deeper (50 m − 100 m depth) portions of this feature correlate to a zone of higher chargeability (80 130 mV/V).

- CHS004: A shallow zone of low resistivity (<1,000 Ohm.m) is present on L11, centred at 5265350 mN. This feature is relatively narrow (40 m) and exhibits less depth extent compared to CHS001 and CHS003. Spatially this feature corresponds to the Chester Gold Showing.
- CHS005: A shallow zone of low resistivity (<1,000 Ohm.m) is present on L10, centred at 5264825 mN, extending laterally over 100 m.
- CHS006: A zone of low resistivity (1,500 Ohm.m) and high chargeability (100 mV/V) is present on L12 at a depth of approximately 80 m, centred on 5265300 mN.
- CHS007: A shallow zone of high chargeability (130 mV/V) is present at the south end of L11 extending north to 5264850 mN. This feature is coincident with a surficial region of low resistivity (<1,500 Ohm.m), but is not reflected on adjacent line L10.
- CHS008: A zone of low resistivity (<1,000 Ohm.m) is present on L8, centred at 5264700 mN. This feature is laterally extensive over at least 300 m, and has not been fully defined to the south. This feature may be related to CML010, located on L7.

#### 6.3 Claim Lakes Area

Investigation of the Claim Lakes area extended to depths between approximately 220 - 400 m below surface, excepting L5 which was broken by an impassable swamp and therefore was run as two short arrays, investigating depths up to 180 m. Several features of interest were identified in the Claim Lakes area:

- CML001: A shallow, low resistivity zone (<1,500 Ohm.m) is present on L3 (5267000 mN) and L2 (5266950 mN). This feature is laterally extensive on L3 over 200 m, and over 120 m on L2, with an apparent depth extent of up to 100 m. CML001 is strongest on L3.
- CML002: A shallow, low resistivity zone (<1,500 Ohm.m) is present on L2 and L3, centred on 5266400 mN. This feature is laterally extensive over 200 m. CML002 is strongest on L2 but appears to extend to greater depths on L3. CML002 appears to be associated with a linear chargeability high (100 130 mV/V) on L2 and L3 that projects to the surface along the southern flank/portion of the anomaly.
- CML003: A shallow, low resistivity zone (<1,500 Ohm.m) is present on L1 (5266100 mN), L2 (5266100 mN) and L3 (5266050 mN). This feature is laterally extensive over 100 m, with an apparent depth extent of up to 100 m. CML003 is strongest on L2 and exhibits an associated chargeability high (100 mV/V) on L2 and L3.

- CML004: A shallow, low resistivity zone (<1,500 Ohm.m) is present on L3 (5265025 mN) and is laterally extensive over 150 m with an apparent depth extent of up to 75 m. This feature may be related to CML005 on L4.
- Numerous additional shallow zones of low resistivity, extend across the northern portion of L1, L2, and L3. Although potentially continuous across all three lines, these features are shallower in extent than those features specifically identified above. Ground truthing of the northern portion of these lines is recommended with potential future targeting if the named features above return favourable results.
- CML005: A shallow, low resistivity zone (<1,500 Ohm.m) is present on L4 (5265175 mN) and is laterally extensive over 150 m with an apparent depth extent of 50 m. This feature may be related to CML004 on L3, or CML007 on L5.
- CML006: An intermittent zone of moderate to low resistivity (<1,500 5,000 Ohm.m) and high chargeability (greater than 40 mV/V) is present below a depth of approximately 75 m at 5265525 mN on L4. This feature projects to depths of 200 m (to the south) over a distance of 150 m.
- CML007: A shallow, low resistivity zone (<1,500 Ohm.m) is present on L5 (5264875 mN) and is laterally extensive over 150 m with an apparent depth extent of 50 m. This feature may be related to CML005 on L4, and is weakly reflected on L6 (5264900 mN)
- CML008: A small zone of low resistivity (<1,500 Ohm.m) is located beneath CML007 at a depth of 50 80 m with a lateral extent of 80 m. This feature is coincident with a zone of high chargeability (greater than 60 mV/V). This feature may be weakly reflected on L6.
- CML009: An intermittent zone of moderate to low resistivity (<1,500 5,000 Ohm.m) and high chargeability (greater than 60 mV/V) is present below a depth of approximately 40 m at 5264950 mN. This feature projects to depths of 120 m to the north over a distance of 150 m.
- CML010: A shallow, low resistivity zone (<1,500 Ohm.m) is present on L7 (5264680 mN) and is laterally extensive over 150 m with an apparent depth extent of 50 m. This feature is coincident with a zone of high chargeability (greater than 50 mV/V) and may be related to CML007 on L8.
- CML011: A shallow, low resistivity zone (<1,500 Ohm.m) is present on L6 (5265825 mN) and L7 (5265650 mN) and is laterally extensive over 50 m with an apparent depth extent of 50 m.
- CML012: A shallow, low resistivity zone (<1,500 Ohm.m) is present on L6 (5265920 mN) and L7 (5265800 mN) and is laterally extensive over 1000 m with an apparent depth extent of 30 50 m.

#### 7.0 CONCLUSIONS AND RECOMMENDATIONS

The EarthProbe DCIP surface data collected have successfully imaged the subsurface with a theoretical depth of investigation of 100 m in the Clam Lake area, 180 - 220 m in the Chester area, and 220 - 400 m in the Claim Lakes area. Results of the survey have been presented and analysed as pseudosections and contour maps to identify potentially anomalous resistivity and chargeability features.

Surface resistivity within the Watershed is characterized by a moderate to low resistivity (1,500 – 8,000 Ohm.m) and low chargeability (less than 20 mV/V). Beneath these surficial features, resistivity increases with increasing depth with basement exhibiting resistivity greater than 15,000 Ohm.m. Twenty-three anomalous features of significance have been identified across the survey area; several other smaller features are also present in the data and may warrant future investigation if these more prominent features return mineralization of interest. The location of the centre point of each anomalous feature is presented on Figure 7-1. Table 7-1 summarizes the anomalies and provides recommendations for their follow-up.

Table 7-1. Summary of anomalous features identified from the EarthProbe survey.

Anomaly ID Survey Lines Identified		Recommendation	Priority		
Clam Lake Area					
CL001	L14, L15, L16	Ground truth and drill	1		
CL002	L13	Ground truth and drill	1		
CL003	L14, L15	Drill test	3		
	Chester A	Area			
CHS001	L10, L11, L12?	Ground truth and drill	1		
CHS002	L10, L8?, L9?, L11?	Drill test	3		
CHS003	L11	Ground truth and drill	1		
CHS004	L11	Ground truth	2		
CHS005	L10	Ground truth	2		
CHS006	L12	Ground truth	2		
CHS007	L11	Ground truth	3		
CHS008	L8, L7?	Ground truth and drill	1		
	Claim Lake	s Area			
CML001	L3, L2	Ground truth and drill	1		
CML002	L2, L3	Ground truth and drill	1		
CML003	L1, L2, L3	Ground truth and drill	1		
CML004	L3,	Ground truth	2		
CML005	L4	Ground truth	2		
CML006	L4	Drill test	3		
CML007	L5	Ground truth and drill	1		
CML008	L5, L6?	Drill test	3		
CML009	L5	Drill test	2		
CML010	L7	Ground truth and drill	1		
CML011	L6, L7	Ground truth	2		
CML012	L6, L7	Ground truth	2		

In order to assist with drill targeting, localized 3D inversion is recommended over the Clam Lake area, the northern portion of the Chester Area around the Chester showing, and over the northern portion of L1, L2 and L3 in the Claim Lakes Area. Inversion will assist is providing enhanced spatial resolution of the priority features.

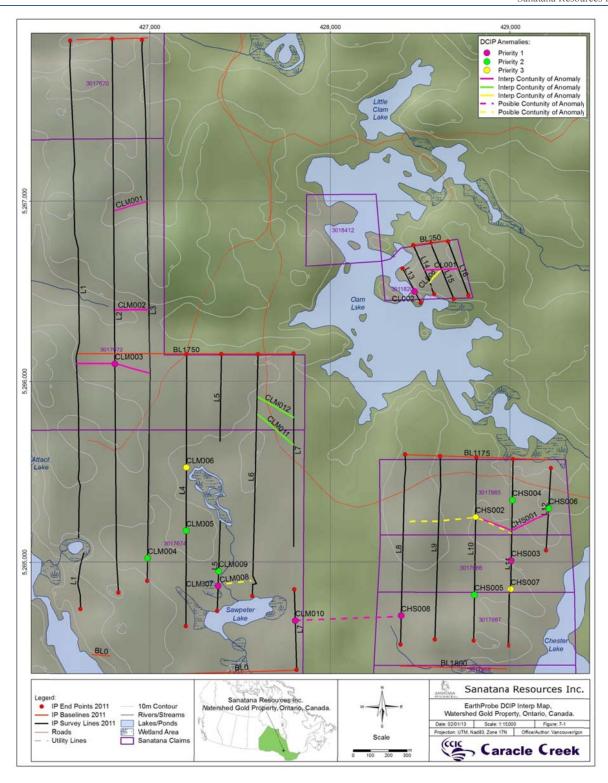


Figure 7-1: Location of the centre points of anomalous features identified from the EarthProbe DCIP survey, Watershed Gold Property, Ontario.

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## 9.0 STATEMENT OF AUTHORSHIP

This Report, titled "EarthProbe Survey Interpretation Report, Watershed Gold Property, Ontario, Canada", and dated February 29, 2012 was prepared and signed by the following authors:

Julie Palich

Geophysicist, M.Sc., P.Geo. February 29, 2012

Toronto, Ontario

Wei Qian

Senior Geophysicist, Ph.D., P.Geo. February 29, 2012

# APPENDIX 1

# **CCIC QUALIFICATIONS**

Caracle Creek International Consulting Inc. is an international consulting company with the head office of Canadian operations based in Sudbury, Ontario, Canada. CCIC provides a wide range of geological and geophysical services to the mineral industry. With offices in Canada (Sudbury and Toronto, Ontario and Vancouver, British Columbia) and South Africa (Johannesburg), CCIC is well positioned to service its international client base.

CCIC's mandate is to provide professional geological and geophysical services to the mineral exploration and development industry at competitive rates and without compromise. CCIC's professionals have international experience in a variety of disciplines with services that include:

- Exploration Project Generation, Design and Management
- Data Compilation and Exploration Target Generation
- Property Evaluation and Due Diligence Studies
- Independent Technical Reports (43-101)/Competent Person Reports
- Mineral Resource/Reserve Modelling, Estimation, Audit; Conditional Simulation
- 3D Geological Modelling, Visualization and Database Management

In addition, CCIC has access to the most current software for data management, interpretation and viewing, manipulation and target generation.

The primary author of this Report is Ms. Julie Palich, M.Sc, P.Geo. Ms. Palich, a geophysicist with CCIC. Preparation of this report was also assisted by Dr. Wei Qian, PhD., P.Geo, Senior Geophysicist for CCIC Canada. The qualifications of Dr. Wei Qian and Ms. Julie Palich are provided herewith.

## **Statement of Qualifications**

- I, WEI QIAN, of the City of Markham, in the Province of Ontario, do herby certify that:
- 1. I am a registered professional geoscientist of Ontario (#1126), with license to practice in the Province of Ontario.
- 2. I am a Consulting Senior Geophysicist of Caracle Creek International Consulting Inc. in the office located at 34 King Street East  $-9^{th}$  Floor, Toronto, Ontario.
- 3. I hold a Ph.D. in Exploration Geophysics, from University of Uppsala, Sweden (1992).
- 4. I have been practicing my profession continuously since 1992.
- 5. I am a member of the Society of Exploration Geophysicists (SEG), European Association of Geoscientist and Engineers (EAGE) and past President of the Canadian Exploration Geophysics Society (KEGS).
- 6. I have published more than 30 papers on international peer-reviewed journals in exploration geophysics and worked on more than 50 projects in mineral exploration worldwide.
- 7. This report is compiled from data obtained from the EarthProbe DCIP survey carried out on the Watershed Gold Property by a crew of CCIC personnel. This survey was conducted between June 10 July 20, 2011.
- 8. I do not hold any interest in Sanatana Resources Inc., nor in the property discussed in this report, nor in any other property held by this company, nor do I expect to receive any interest as a result of writing this report.

Wei Qian, Ph.D., P.Geo Senior Geophysicist February 29, 2012



## **Statement of Qualifications**

I, JULIE PALICH, of the City of Toronto, in the Province of Ontario, do herby certify that:

- 1. I am a registered professional geoscientist of Ontario (#1880), with license to practice in the Province of Ontario.
- 2. I am a Geophysicist and Geochemist employed by Caracle Creek International Consulting Inc. in the office located at 34 King Street East 9<sup>th</sup> Floor, Toronto, Ontario.
- 3. I hold a B.Sc. in Geophysical Engineering from the Colorado School of Mines (1996) and a M.Sc. in Geophysics/Geochemistry from Monash University (2001).
- 4. I am a member of the Society of Exploration Geophysicists (SEG), and Canadian Exploration Geophysics Society (KEGS).
- 5. I have been a practitioner in the fields of geophysics and geochemistry continuously since 1996 and have worked on a variety of properties including gold, nickel sulfides, Cu-Pb-Zn, coal, and mineral sands.
- 6. This report is compiled from data obtained from the EarthProbe DCIP survey carried out on the Watershed Gold Property by a crew of CCIC personnel. This survey was conducted between June 10 July 20, 2011.
- 7. I do not hold any interest in Sanatana Resources Inc., nor in the property discussed in this report, nor in any other property held by this company, nor do I expect to receive any interest as a result of writing this report.

1PIN

Julie Palich, M.Sc., P.Geo Geophysicist February 29, 2012





#### **APPENDIX 2**

GLOSSARY OF TERMS AND UNITS OF MEASURE

Apparent resistivity ( $\rho_a$ ) A measurement of resistivity which is calculated as the product of the measured resistance (R) and a geomagnetic factor ( $K_g$ ) such that  $\rho_a = K_g R$ , in units of  $\Omega/m$ .

**Apparent chargeability** ( $M_a$ ) A measure of the over- or applied voltage over the observed voltage defined by the area (A) beneath the voltage-time decay curve over a defined time interval ( $t_1$  to  $t_2$ ) and normalized by the supposed steady-state primary voltage,  $V_p$ , such that  $M_a = A/V_p$ , in units of mV/V.

QA/QC: Quality Assurance/ Quality Control

**Quality Assurance (QA)**: information collected to demonstrate and quantify the reliability of data. Quality assurance provides a measurement of the uncertainty in the underlying data.

**Quality Control (QC)**: procedures used to maintain a desired level of quality in the data. Quality Control leads to corrections of errors or changes in procedures that improve overall data quality.

#### **Units of Measure**

The Metric System is the primary system of measure used in this report. Applicable units of measure are presented in Table 1. Metals and minerals acronyms in this report conform to mineral industry accepted usage and the reader is directed to www.maden.hacettepe.edu.tr/dmmrt/index.html for a glossary.

#### Units of Measure

Measure	Units
Length	kilometres (km), metres (m) and centimetres (cm)
Area	hectares (ha)
Volume	cubic metres (m <sup>3</sup> )
Current	milliamperes (mA)
Apparent Resistivity (ρ)	ohm metres $(\Omega.m)$
Chargeability (M)	millivolts per volt $(mV/V)$

## **APPENDIX 3**

## SURFACE DCIP PSEUDOSECTIONS

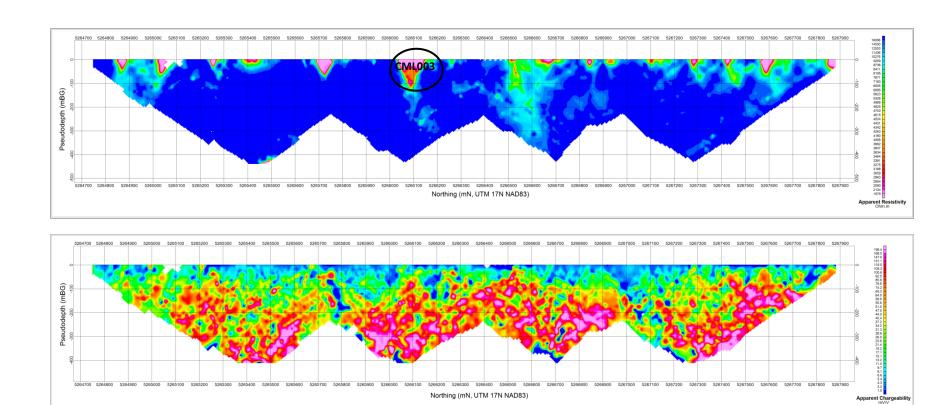


Figure A3-1. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L1.

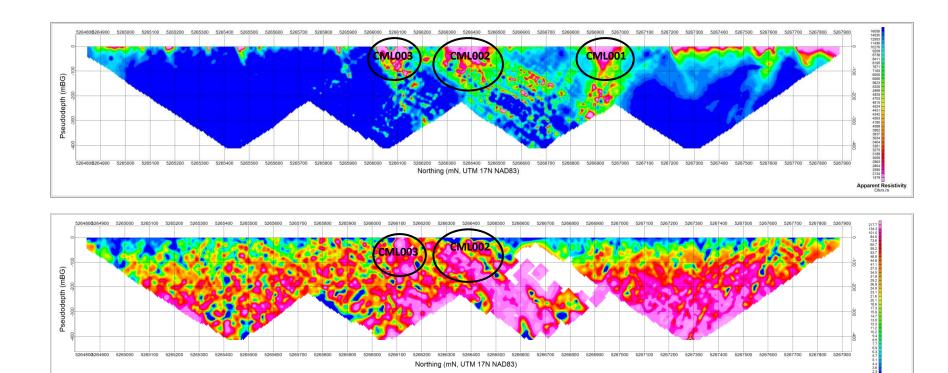
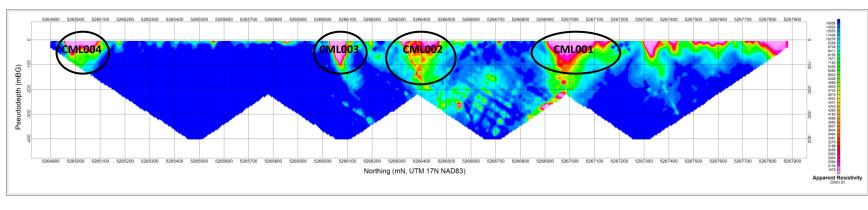


Figure A3-2. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L2.



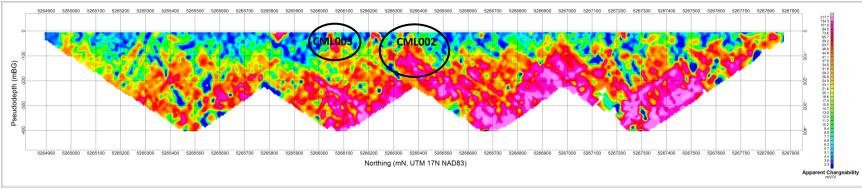
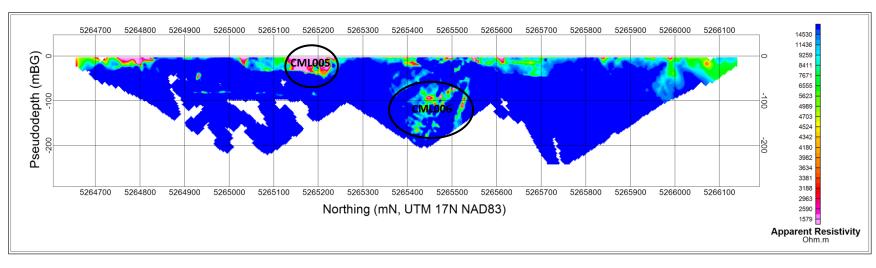


Figure A3-3. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L3.



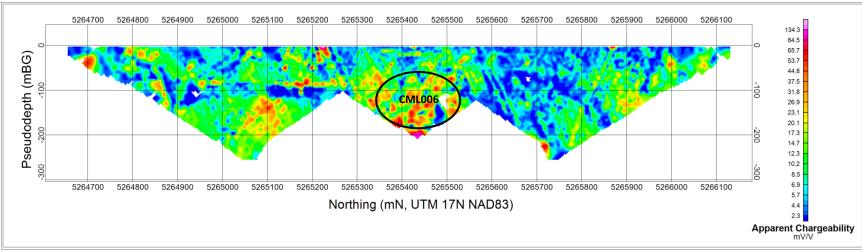
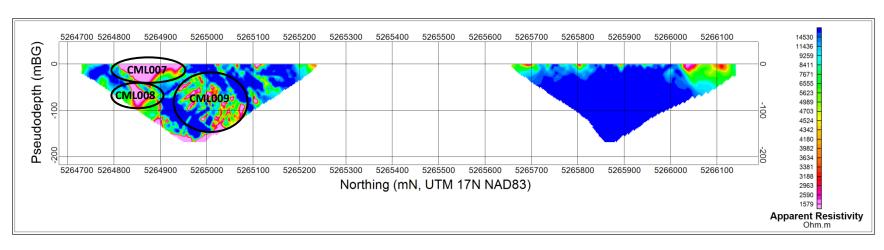


Figure A3-4. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L4.



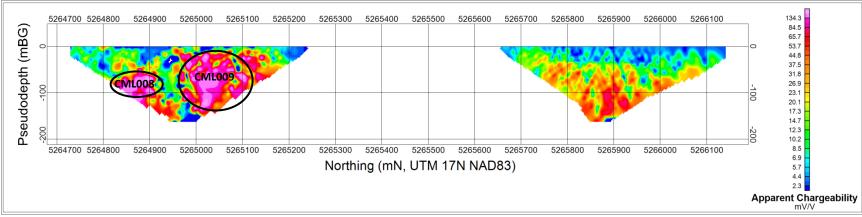
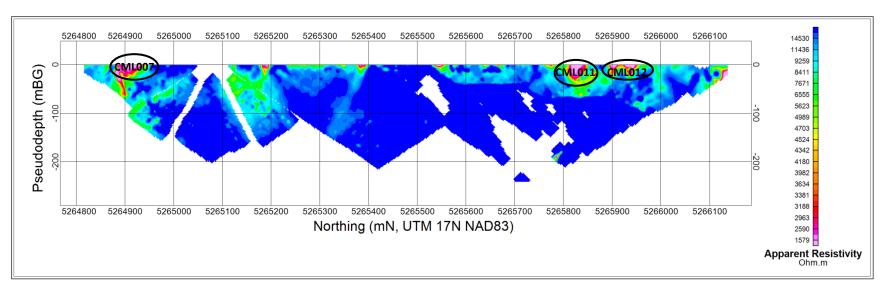


Figure A3-5. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L5.



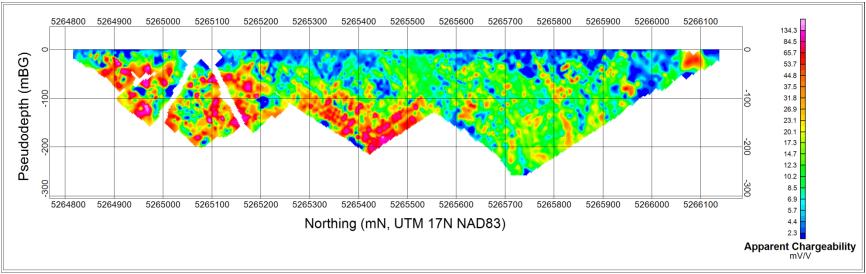
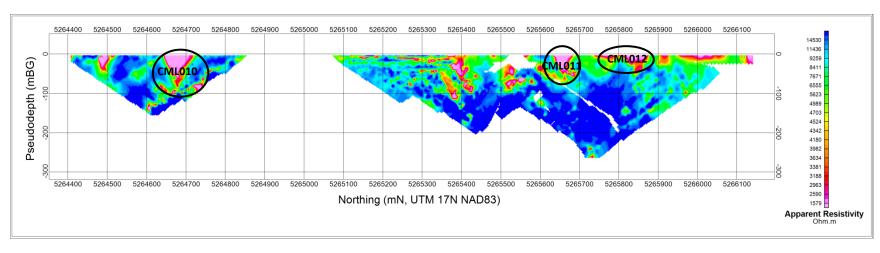


Figure A3-6. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L6.



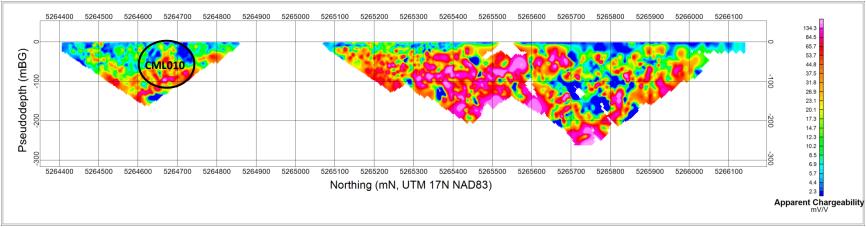
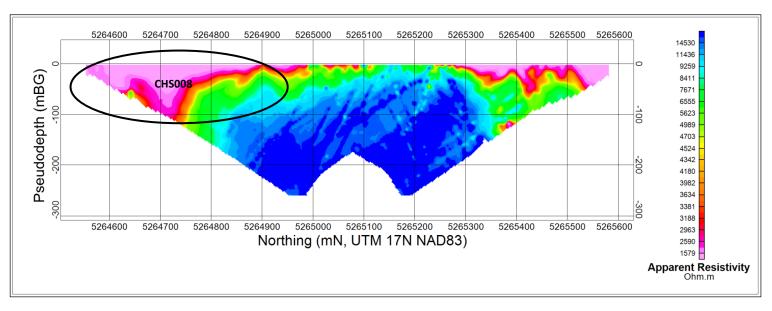


Figure A3-7. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L7.



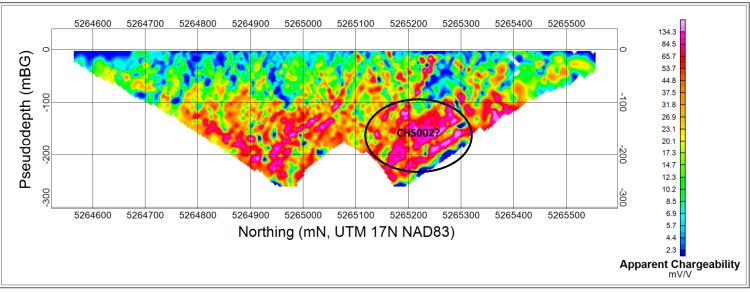
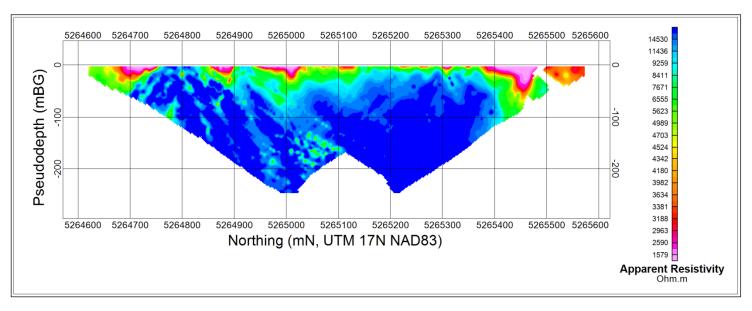


Figure A3-8. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L8.



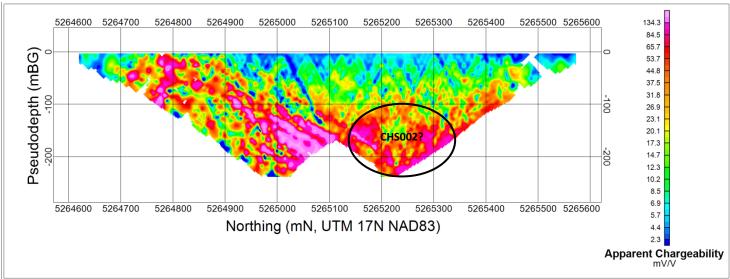
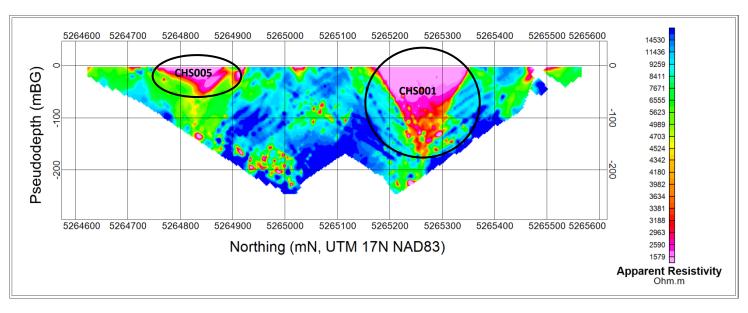


Figure A3-9. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L9.



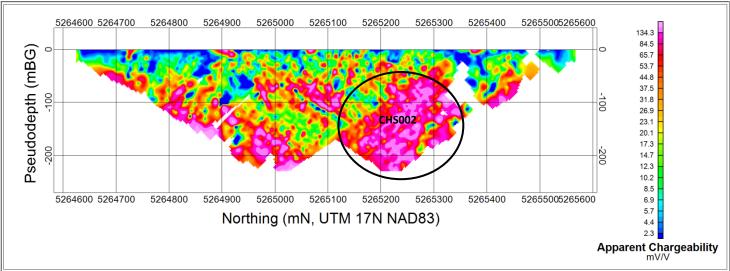
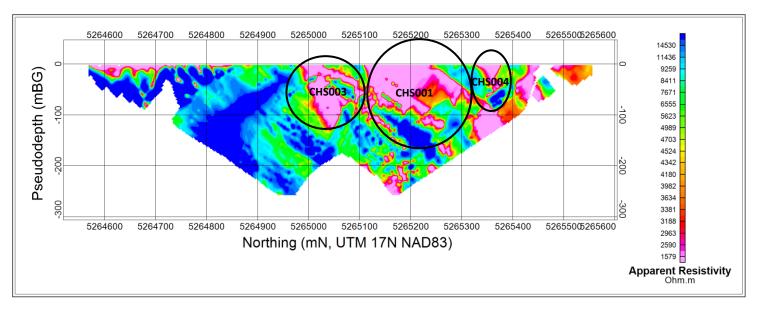


Figure A3-10. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L10.



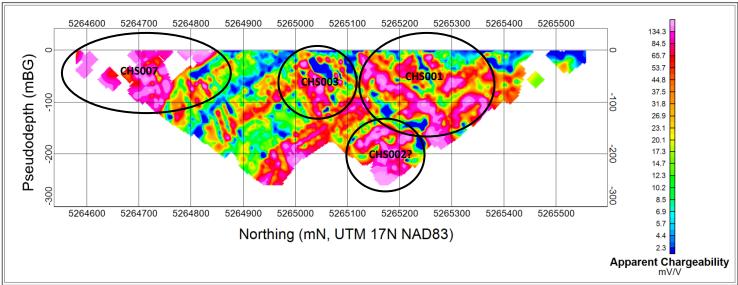
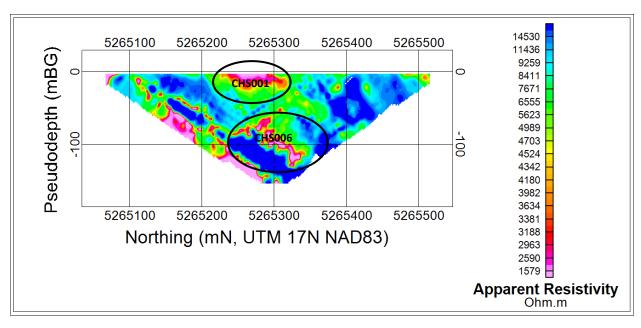


Figure A3-11. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L11.



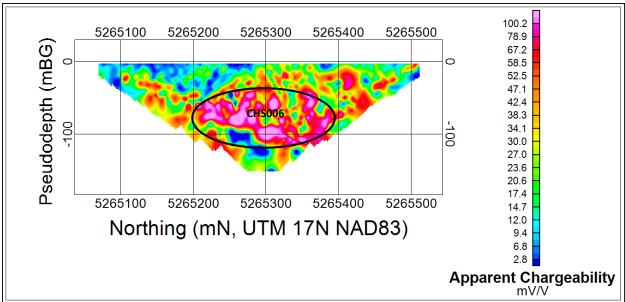
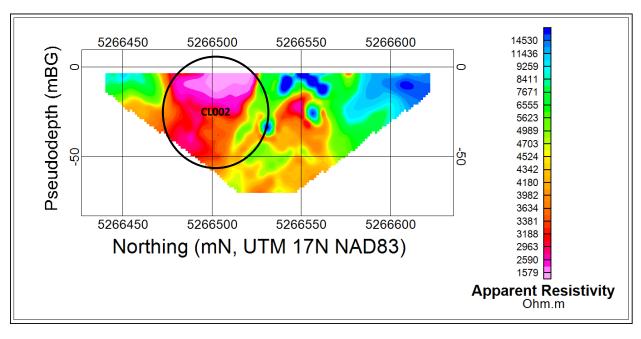


Figure A3-12. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L12.



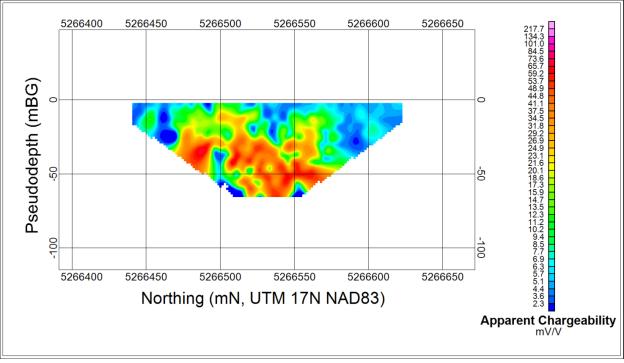
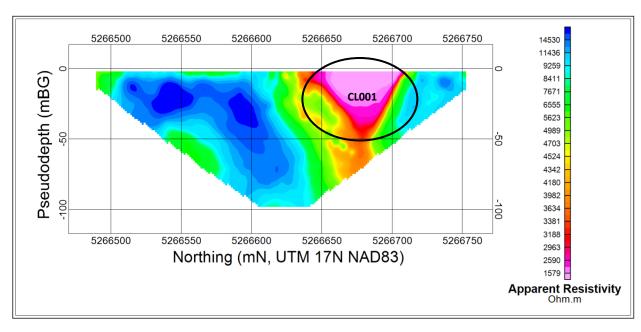


Figure A3-13. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L13.



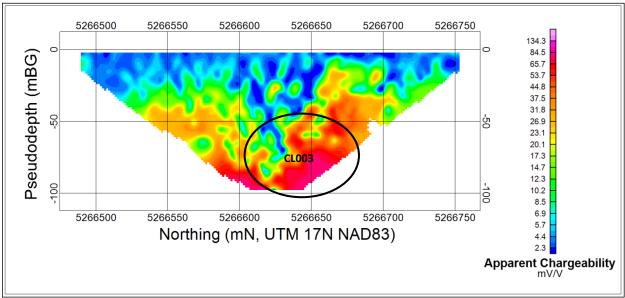
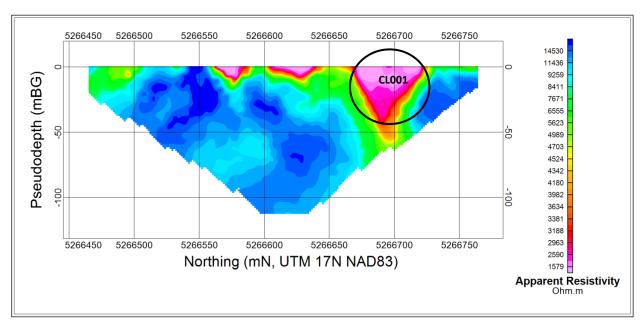


Figure A3-14. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L14.



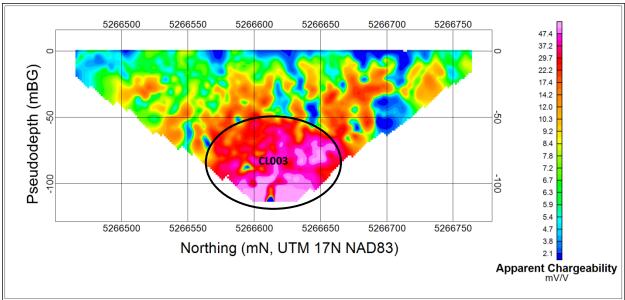
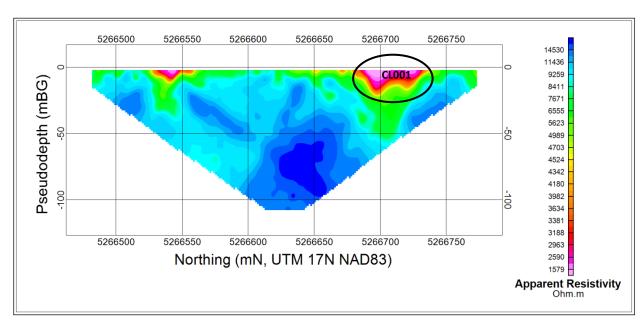


Figure A3-15. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L15.



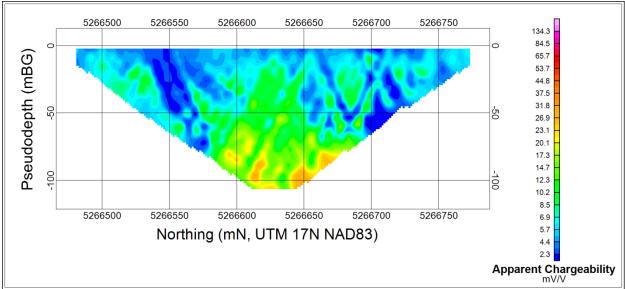
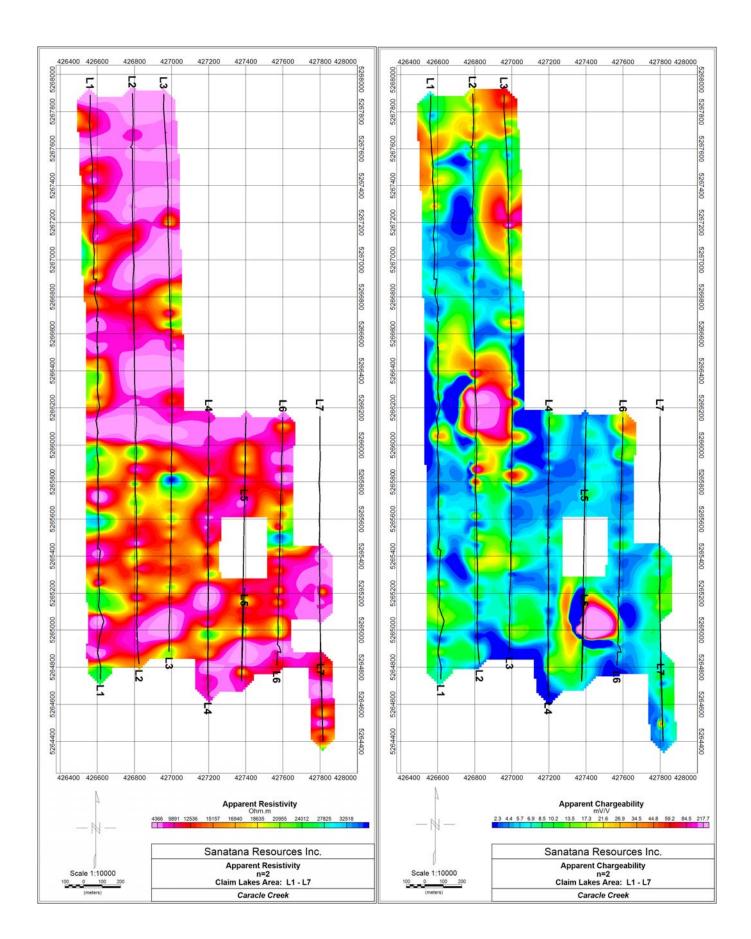
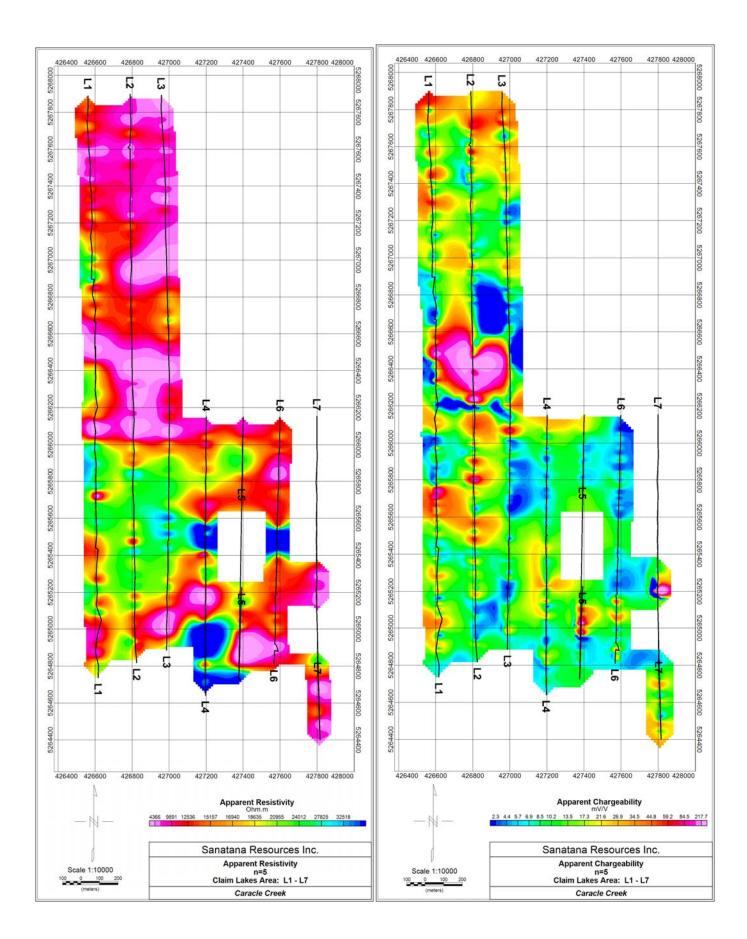


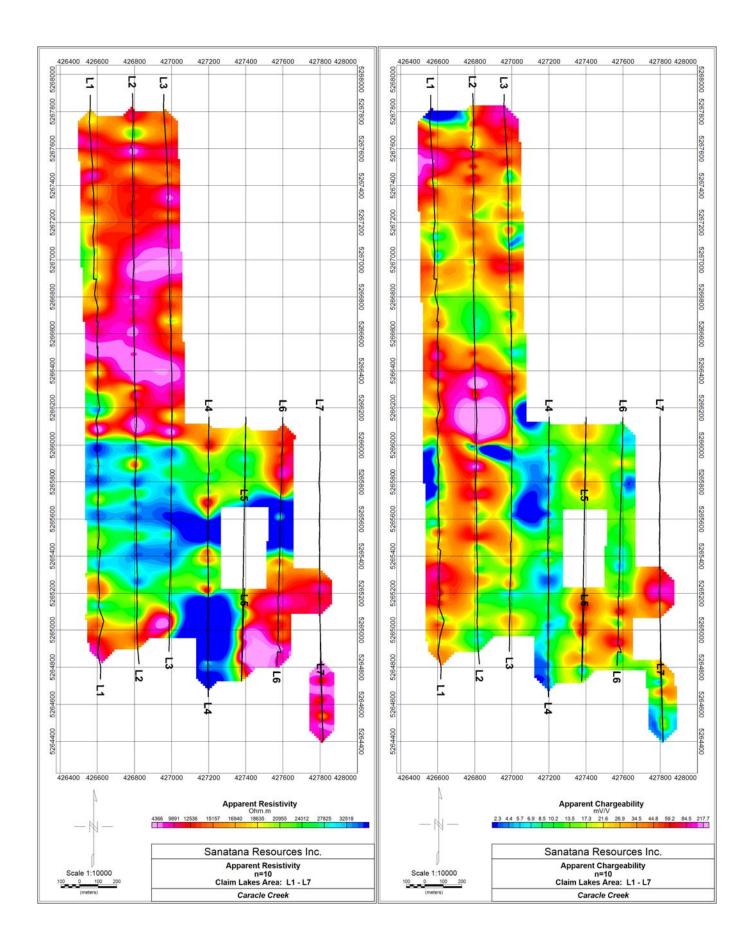
Figure A3-16. Apparent resistivity (above) and apparent chargeability (below) pseudosections for surface line L16.

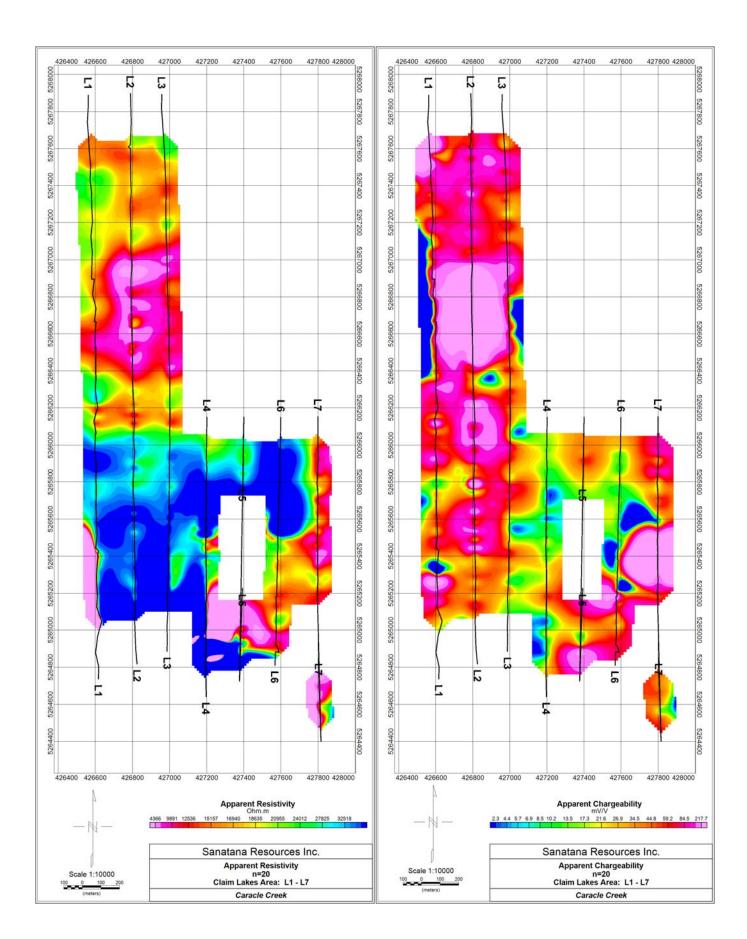
## **APPENDIX 4**

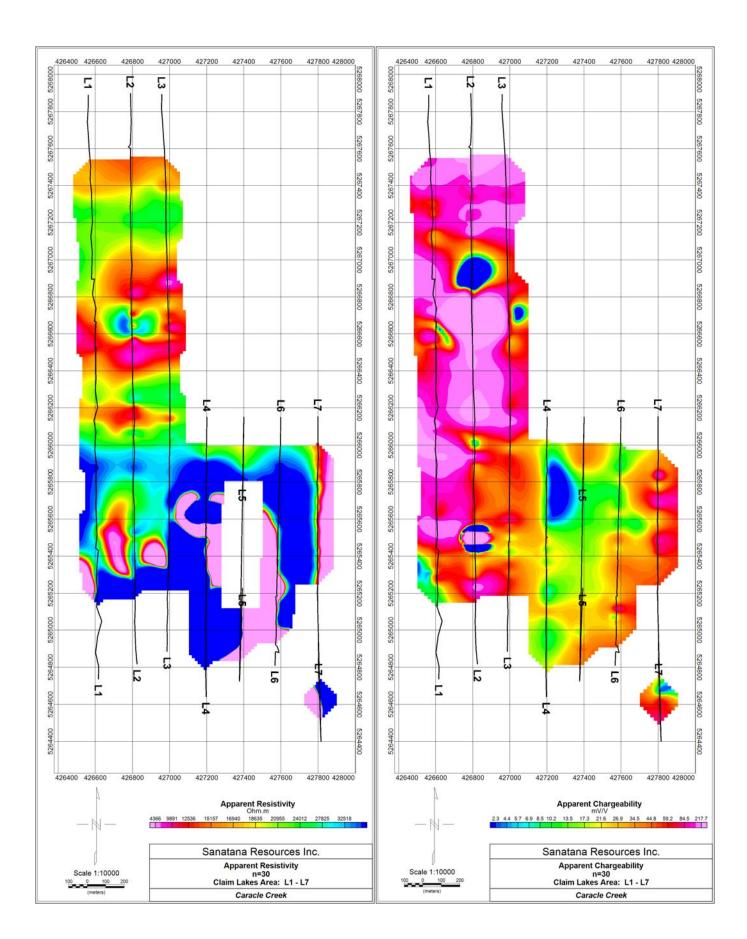
## APPARENT RESISTIVITY AND CHARGEABILITY PLAN MAPS

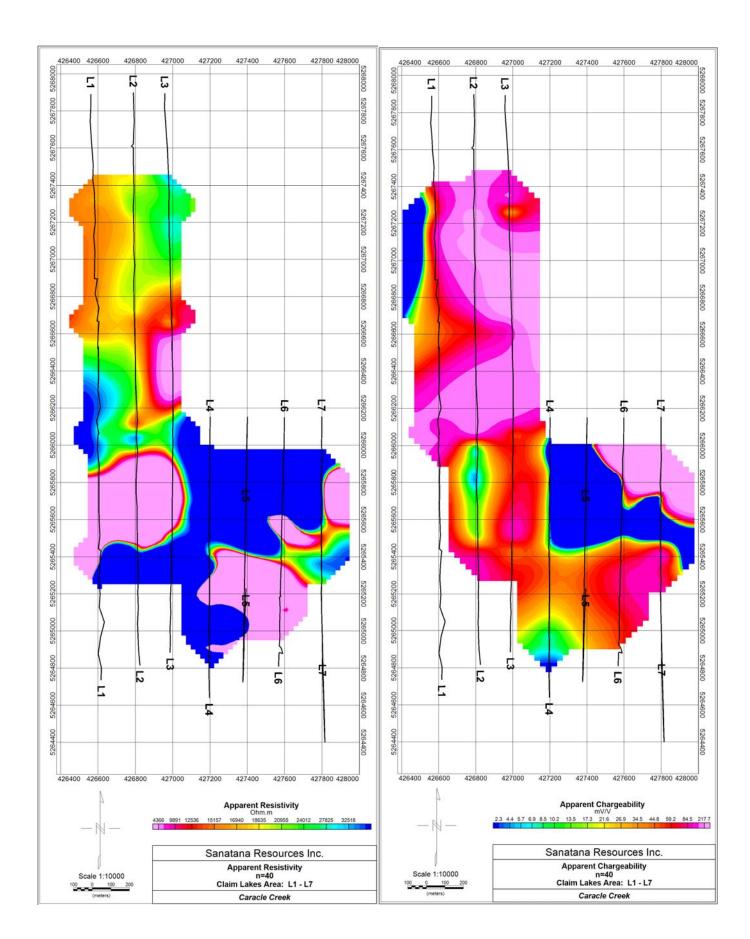


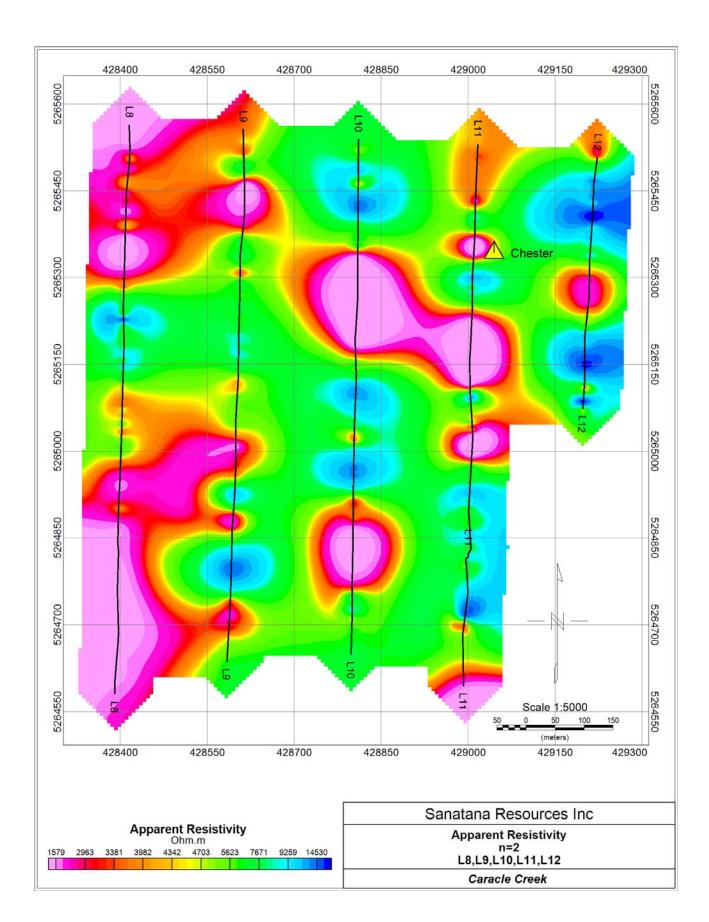


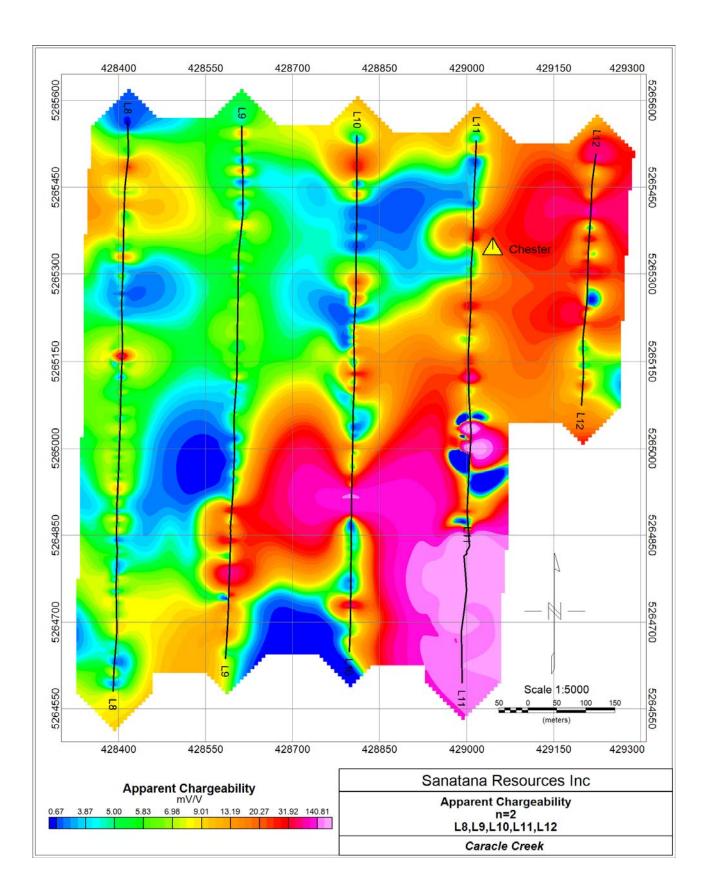


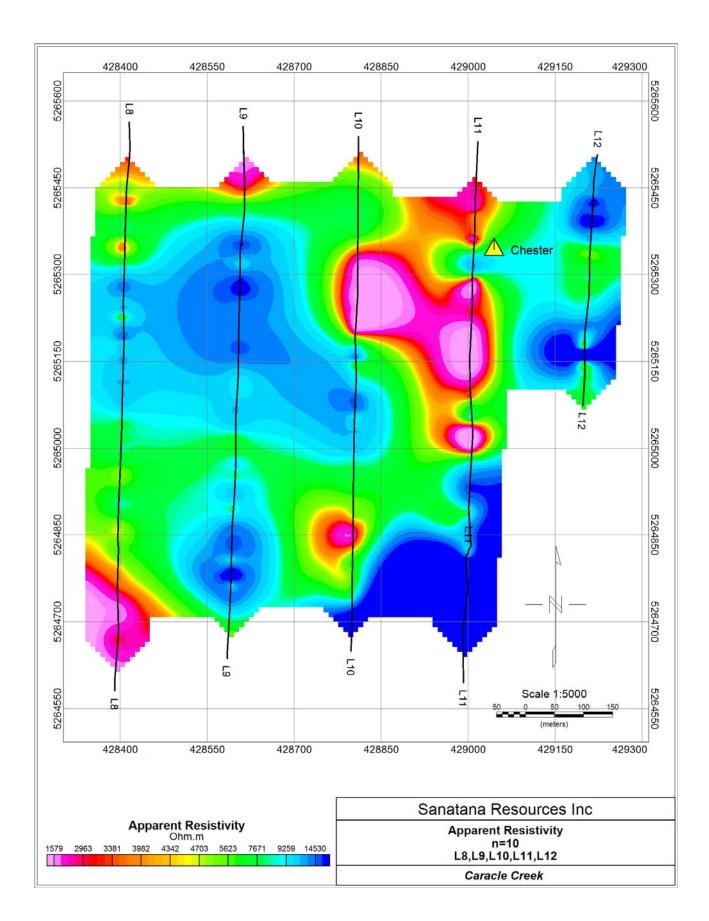


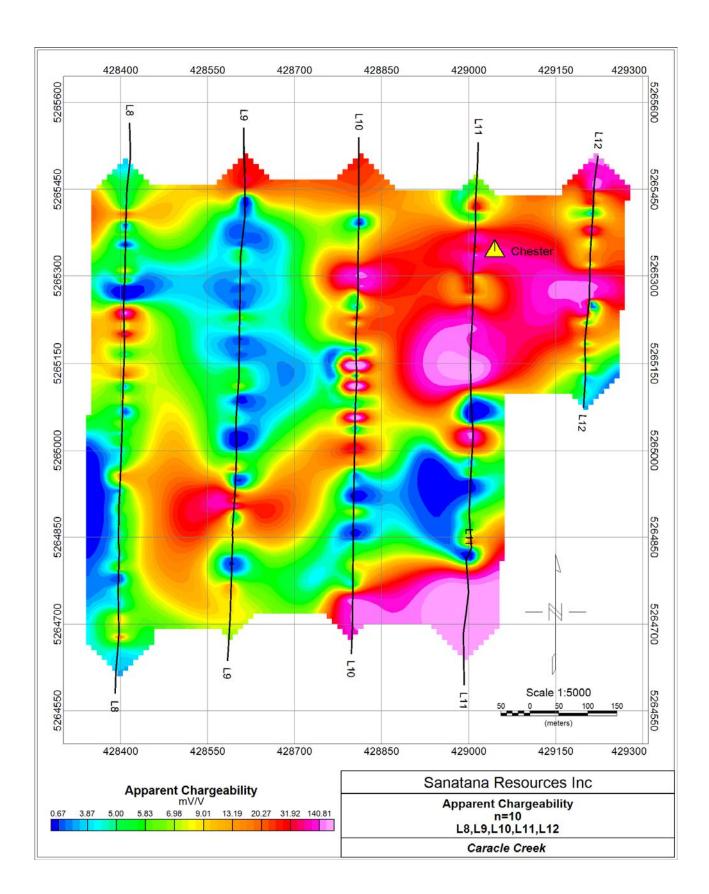


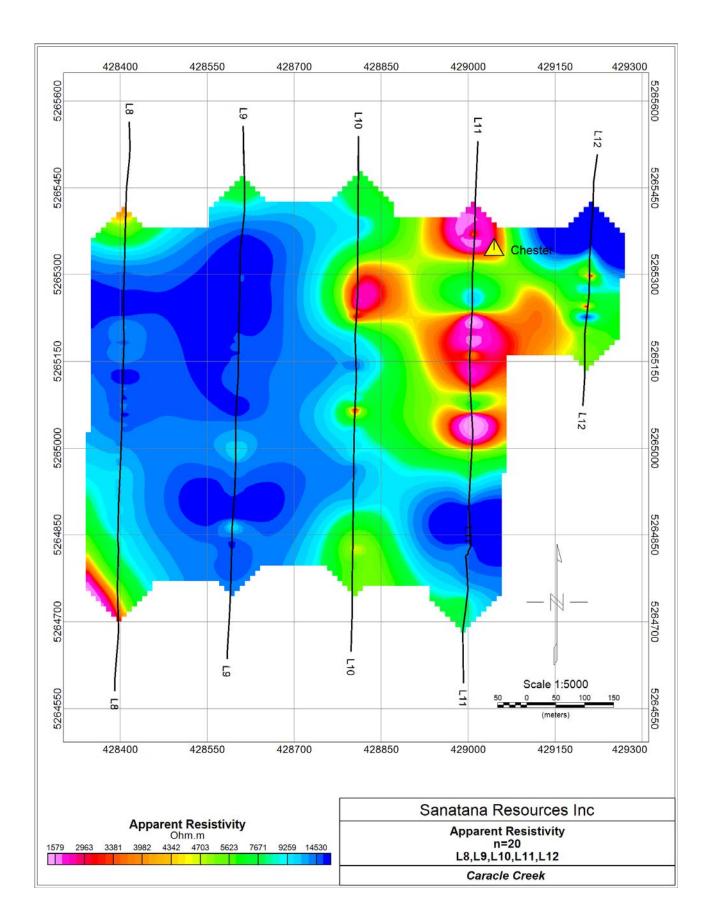


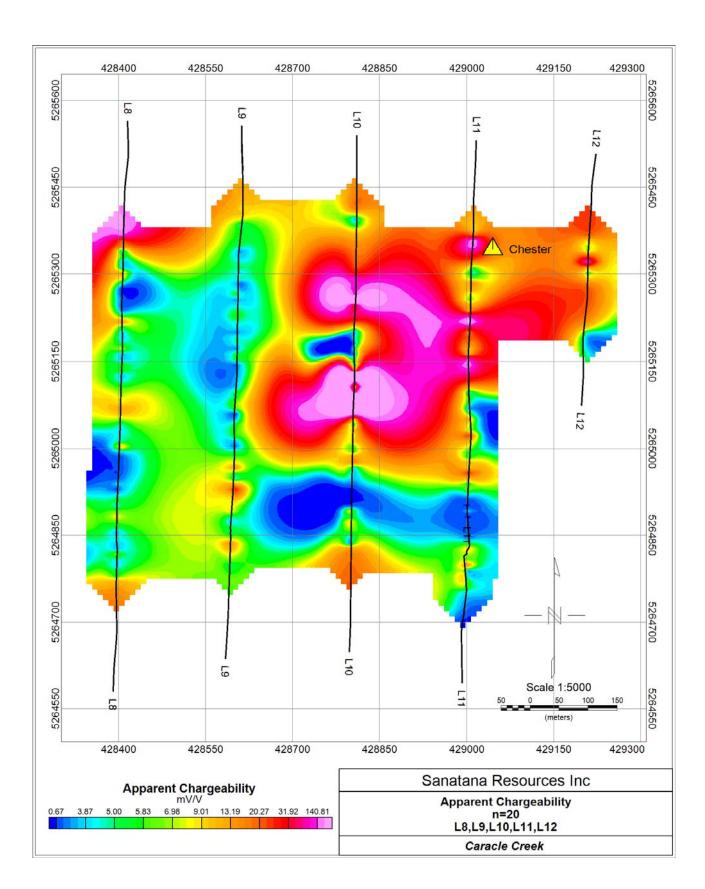


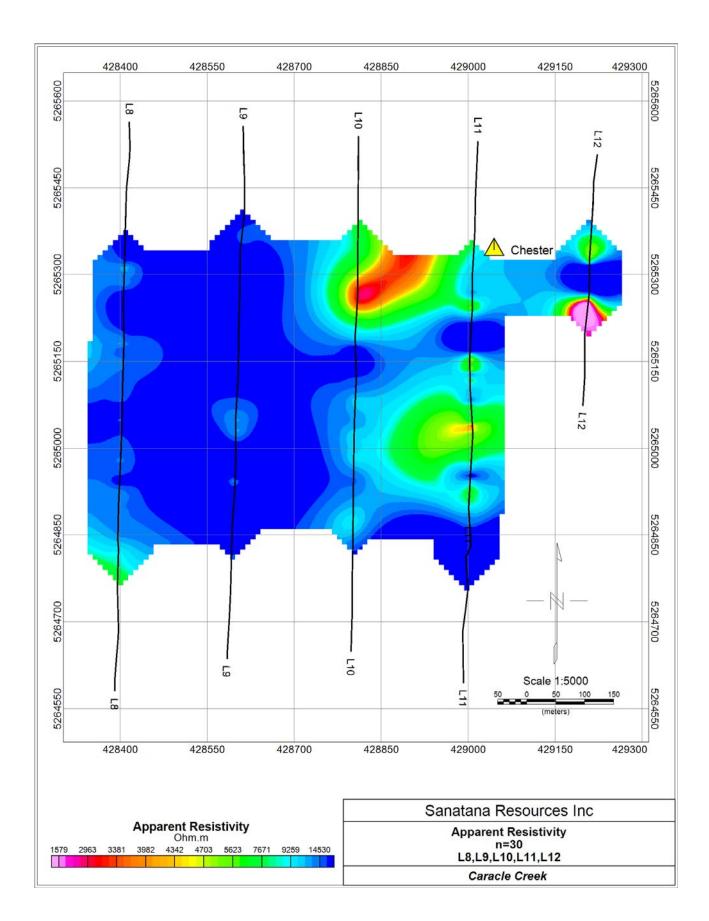


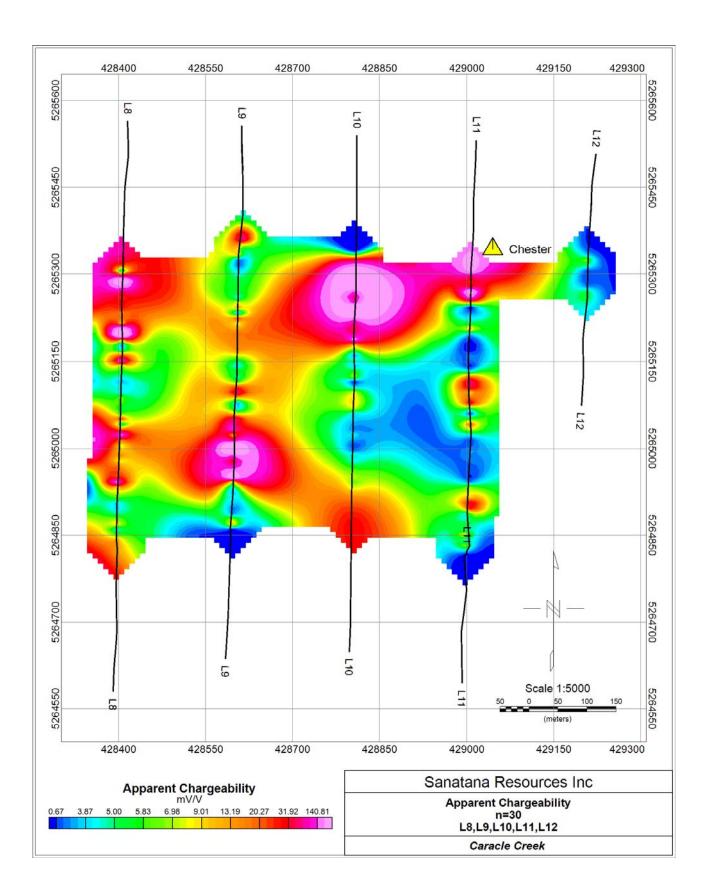


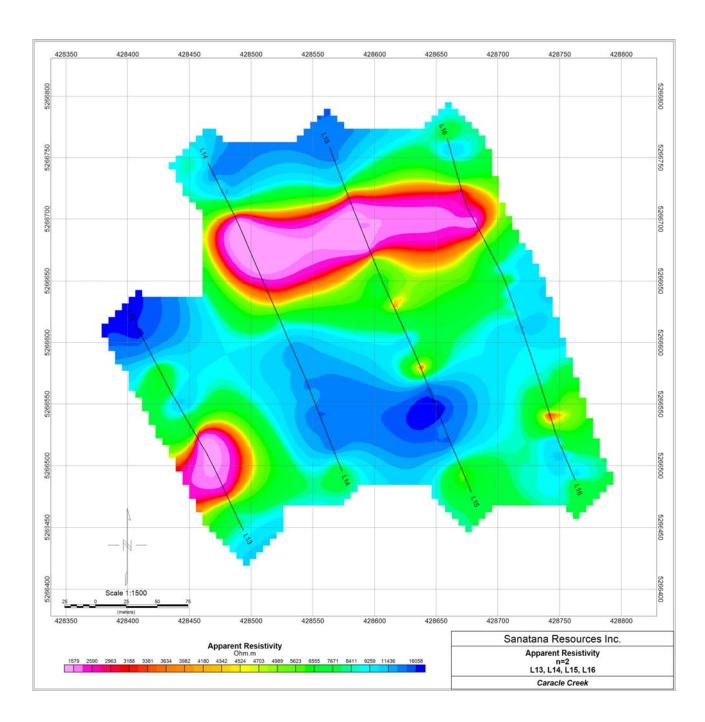


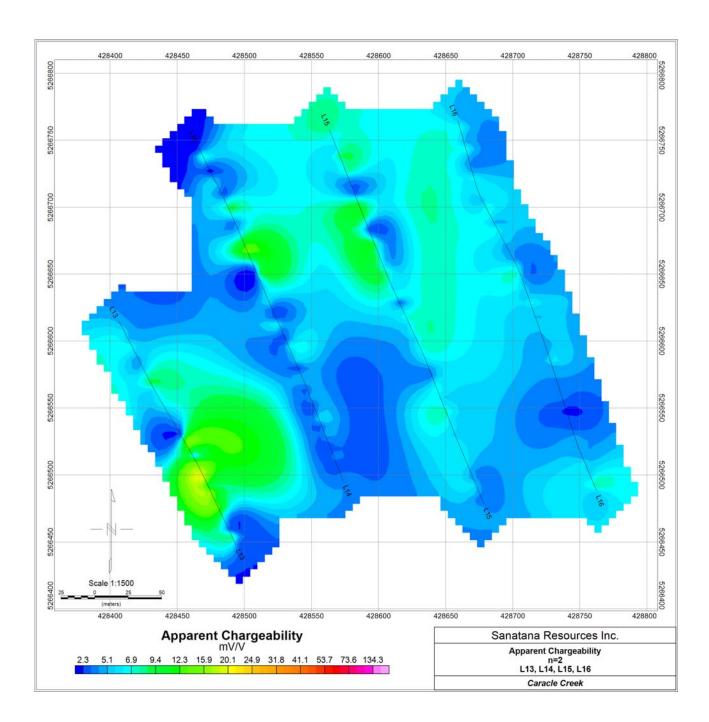


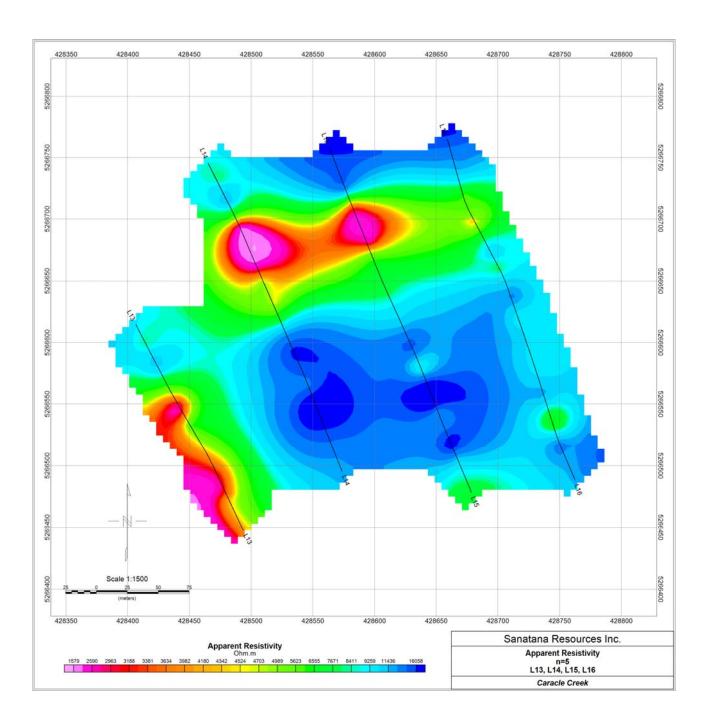


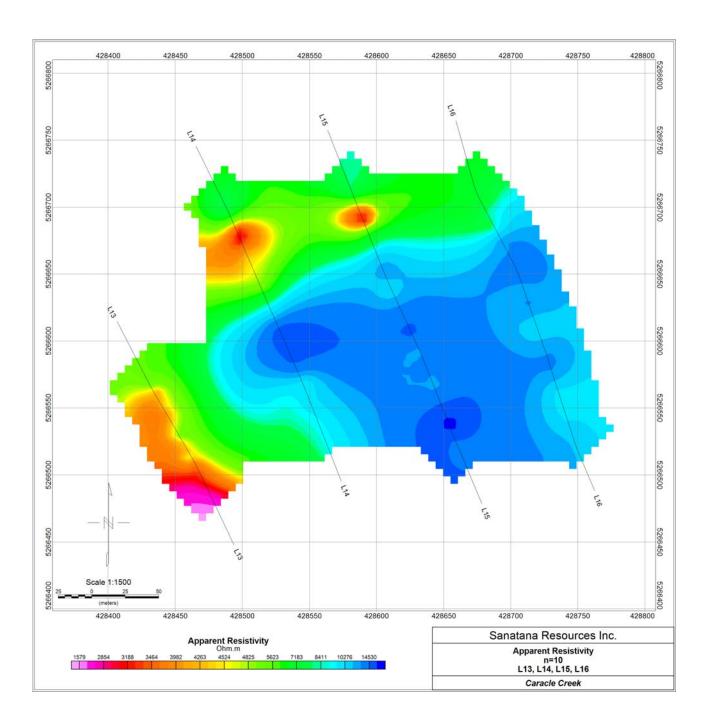


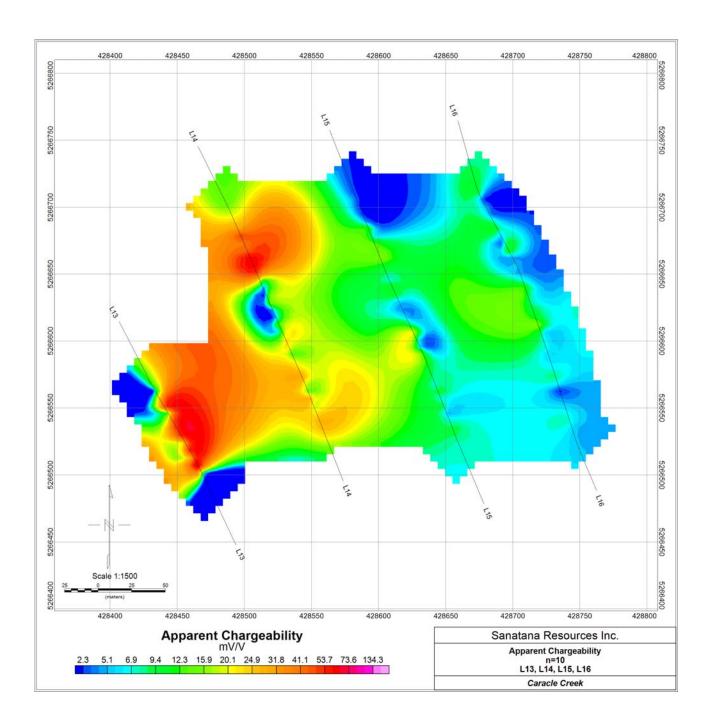


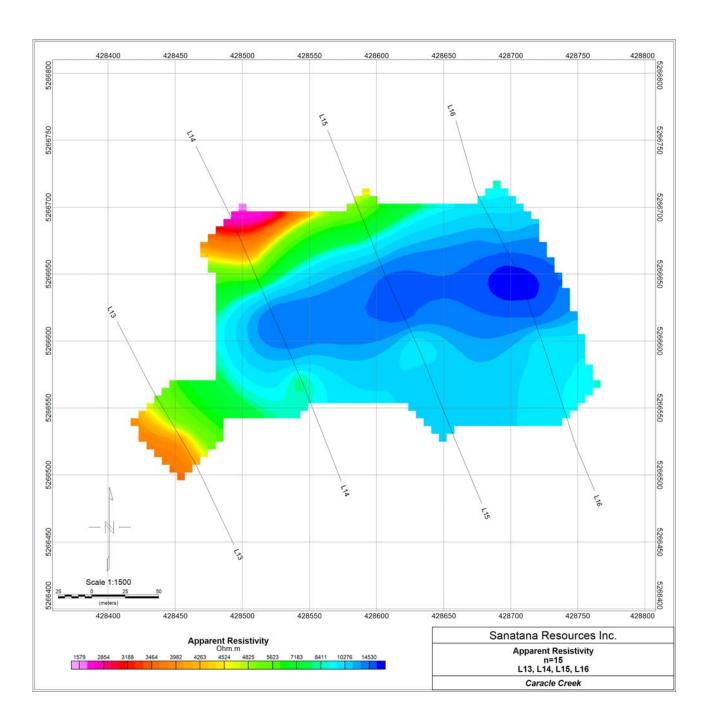


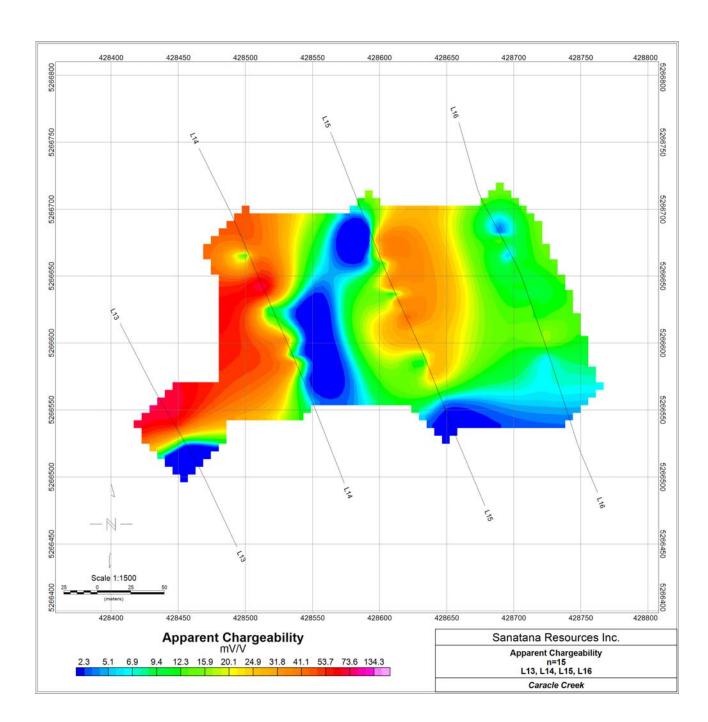


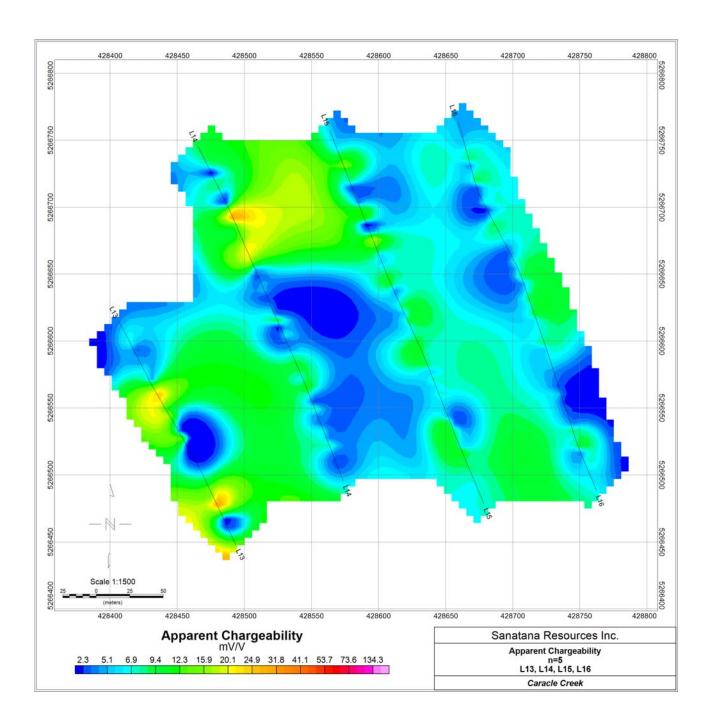












## APPENDIX 5

## PRODUCTION LOG

# **Production Log – EarthProbe DCIP survey**

Date	Activity	Line Surveyed
June 10, 2011	Mobilization	Toronto - Watershed
June 11, 2011	Standby	Heavy rain
June 12, 2011	Survey	L16
June 13, 2011	Survey	L16
June 14, 2011	Survey	L15, L14
June 15, 2011	Survey	L13
June 16, 2011	Survey	L4, Run A
June 17, 2011	Survey	L4, Run B
June 18, 2011	Survey	L4, Run C
June 19, 2011	Survey	L6, Run A
June 20, 2011	Survey	L6, Run B
June 21, 2011	Survey	L6, Run B
June 22, 2011	Survey	L6, Run C
June 23, 2011	Survey	L5, Run A
June 24, 2011	Survey	L3, Run A
June 25, 2011	Survey	L3, Run B
June 26, 2011	Survey	L3, Run C
June 27, 2011	Survey	L3, Run D
June 28, 2011	Survey	L2, Run A
June 29, 2011	Survey	L2, Run B
June 30, 2011	Survey	L2, Run C
July 1, 2011	Survey	L2, Run D
July 2, 2011	Survey	L1, Run A
July 3, 2011	Survey	L1, Run B
July 4, 2011	Survey	L1, Run C
July 5, 2011	Survey	L1, Run D
July 6, 2011	Survey	L7, Run A
July 7, 2011	Survey	L7, Run B
July 8, 2011	Survey	L8, Run A
July 9, 2011	Survey	L8, Run B
July 10, 2011	Survey	L9, Run A
July 11, 2011	Survey	L9, Run B
July 12, 2011	Survey	L10, Run A
July 13, 2011	Survey	L10, Run B
July 14, 2011	Survey	L11, Run A
July 15, 2011	Survey	L11, Run B
July 16, 2011	Survey	L7, Run C
July 17, 2011	Survey	L5, Run B
July 18, 2011	Survey	L15, redo
July 19, 2011	Demobilization	Watershed – Sudbury
July 20, 2011	Demobilization	Sudbury - Toronto