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Geophysical Survey and Data Interpretation Report

for Sphere and Duncan Park at Red Lake

DOME, HEYSON & BYSHE TOWNSHIPS, ONTARIO, CANADA

W. Qian
September, 2010

INTRODUCTION

Geoserve Logging & Tomography has carried out a high resolution DC resistivity and Induced Polarization (IP) surface survey on the southern block of the Dome property ("the Property) in Red Lake, Ontario, Canada, from the 3rd of June to 7th of July, 2010, for Sphere and Duncan Park. The survey uses the Earthprobe technology and it includes 7 north-south lines, 4 east-west lines, 2 SW to NE lines and 2 short lines from NW to SE. Table 1 summarises all the survey lines. The electrode separation used is 4.4 m. The survey data covered a total of 14.7 line kilometres. The objective of the survey is to identify deeper (upto 250 m) drill targets within the southern block of the Dome Property. The Dome Property lies about 6 km south west of Goldcorp's Red Lake mine and about 4 to 5 km east of the historic Howey, Cochenour Willans and Gold Shore mines. Access to the Property is via Highway 125.

Table 1: Survey line summary

Line Number	Claims	Line Orientation	Survey Stations	Survey Length (m)
LNW1	3004443, 1248071		000W to 1201W	1201
LNW2	4224887, 1248071, 4200380	45° SW-NE	000S to 632S	632
LNW3	4224887, 4200380	45° SW-NE	000S to 780S	780
LNW4	4224887, 1248398		000W to 225W and 280m	505
L4+50W	1248398, 4200380	N-S	879N to 466S	1345
L3+00W	1248398	N-S	775N to 457S	1232
L1+50W	1248398	N-S	765N to 416S	1181
L0+00	1248398, 4205246	N-S	749N to 532S	1281
L1+50E	1248398	N-S	637N to 227S	864
L3+00E	1248398	N-S	667N to 398S	1065
L4+50E	1248398, 4205246	N-S	700N to 380S	1080
TL300S	1248398	W-E	850W to 349E	1199
TL0N	1248398	W-E	597W to 451E	1048
TL1+50S	1248398	W-E	885W to 374E	1259

The EarthProbe system can be configured for the collection of standard surface IP data, vertical resistivity profiles (VRP), and/or multi-bore tomographic data. For this survey, data were collected using a normal Wenner-alfa electrode configuration as shown in Figure 1.

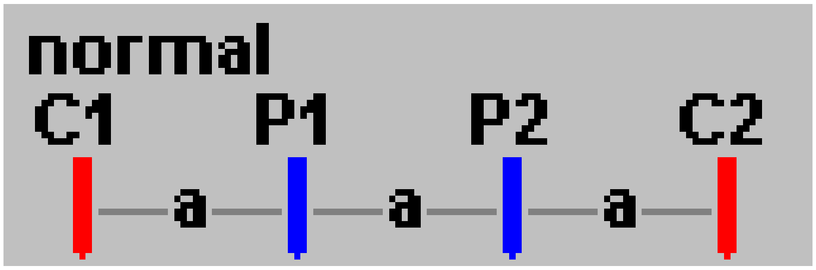

Figure 1: normal Wenner-alfa electrode configuration

Here the current electrodes are denoted as C1 and C2, and potential electrodes as P1 and P2. This configuration has the advantage of collecting high quality deep probing data. Stainless steel stakes were used for current and potential electrodes. C1-P1-P2-C2 is equal spaced. The “a-spacing” is incremented by one to scan deeper.

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 mineralised conductors.

The EarthProbe technology measures the IP effect in the time-domain. Time-domain measurements involve sampling the waveform at intervals after the current is switched off, to derive the apparent chargeability, which is a measure of the strength of the induced polarization effect. At the same time as chargeability measurements are collected, apparent resistivity data 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.

For this survey as shown in Figure 2, the electric current waveform is 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.

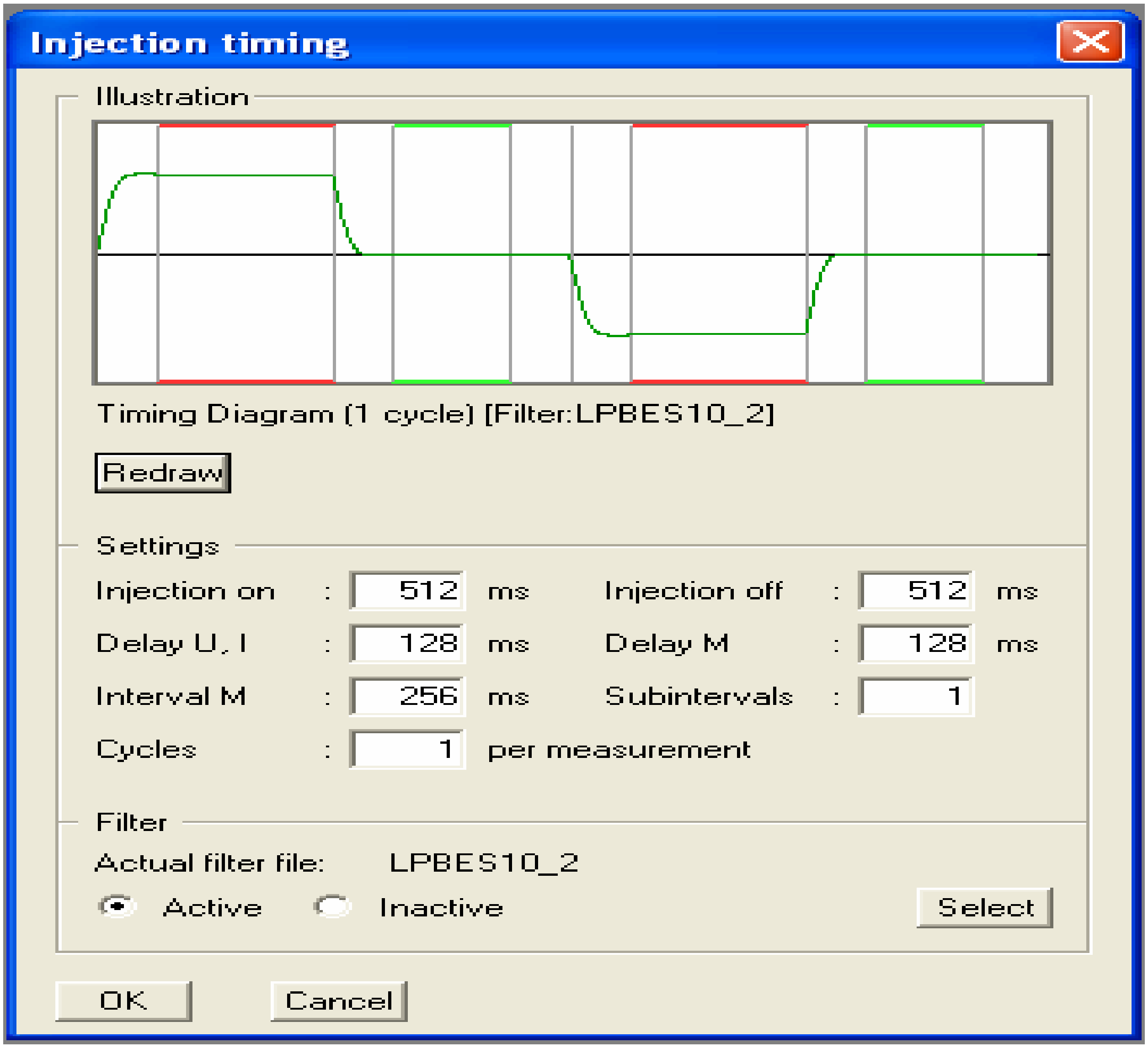

Figure 2: Electric current injection waveform

Several QA/QC criteria were applied during the survey to assess the quality of the data. Reasonable data QA/QC thresholds are established as shown in Table 1.

Table 1: Data QA/QC thresholds

Survey Compo-nent	**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	0.8

Injection current	Injected current must be within a defined range	5 – 1000 mA
Measured voltage	Measured voltage must be within a defined range	5 – 1000 mV
Apparent resistivity	Apparent resistivity must be within a defined range	1 – 50,000 ohm.m
Stacked voltages	Standard deviation of stacked voltage data must be below a defined threshold	1%
Self-potential	System self-potential must be below a defined threshold	100 mV

TARGET IDENTIFICATION

Following a meticulous interpretation of the data pseudo-sections and with the help of the 2D inversion, a total of 23 targets were compiled and prioritized accordingly. In addition, all targets are assigned with confidence ranking of I, II and III according to their strength, inversion sensitivity analysis, and inversion predicted data, as shown in Figure 3. All targets shall be evaluated by a geologist in the context of geology for further investigations and drilling. The criteria for target selection are resistivity low and chargeability high due to the disseminated sulphide association of the gold bearing formation. This contrasts to targets identified from the 2007 survey, where the criteria are resistivity high and chargeability high. Although the target selection criteria are different, the data patterns of the two surveys are very similar for the top 50 m.

After overall consideration, the best target is on line L0+00. As shown in Figure 4, a very pronounced and distinctive target can be identified as depth.

The second best target is on line L4+50E, the third best target is on line LNW4 and forth one on LNW1. The geological significance of these targets is yet to be assessed.

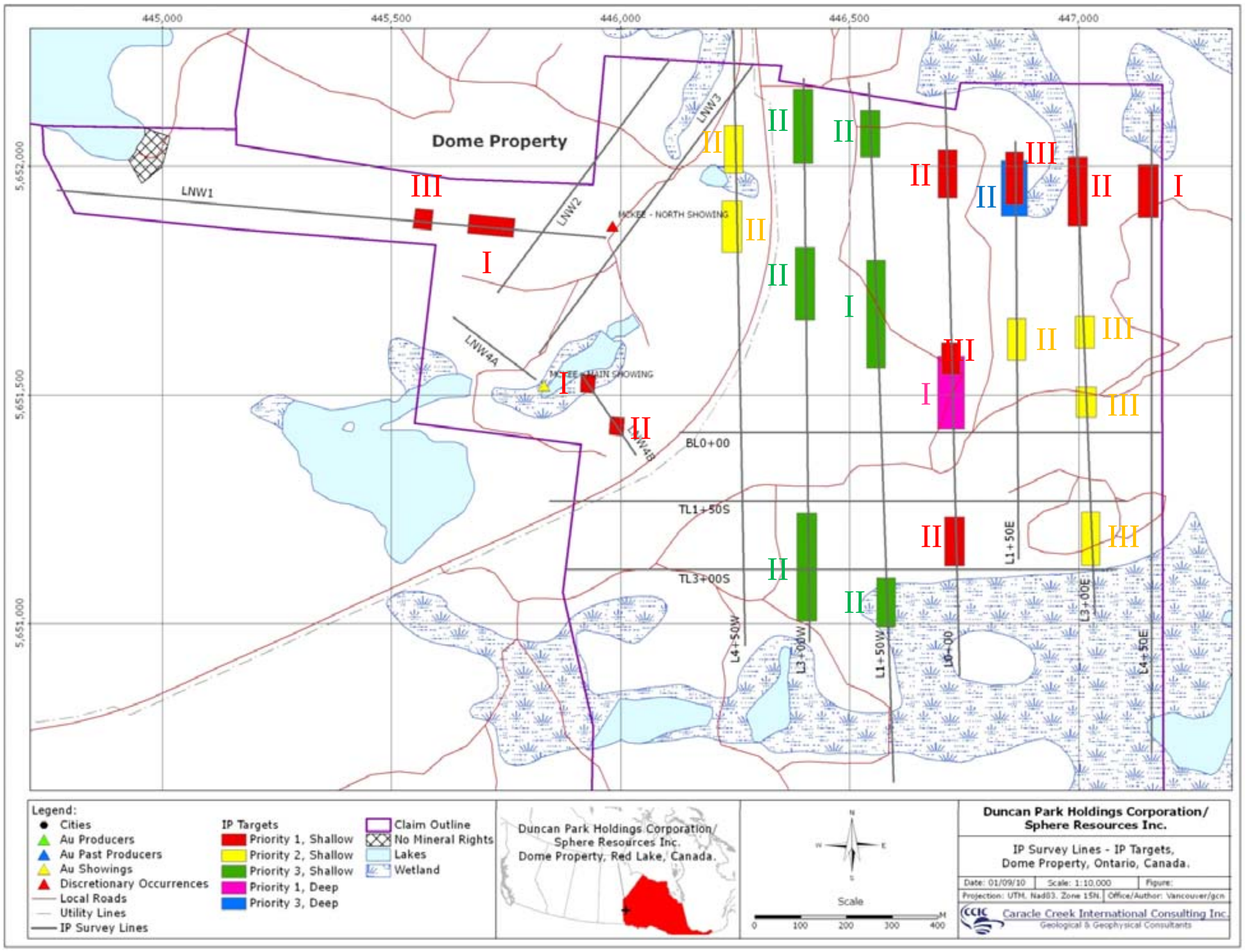

Figure 3: Map for target analysis

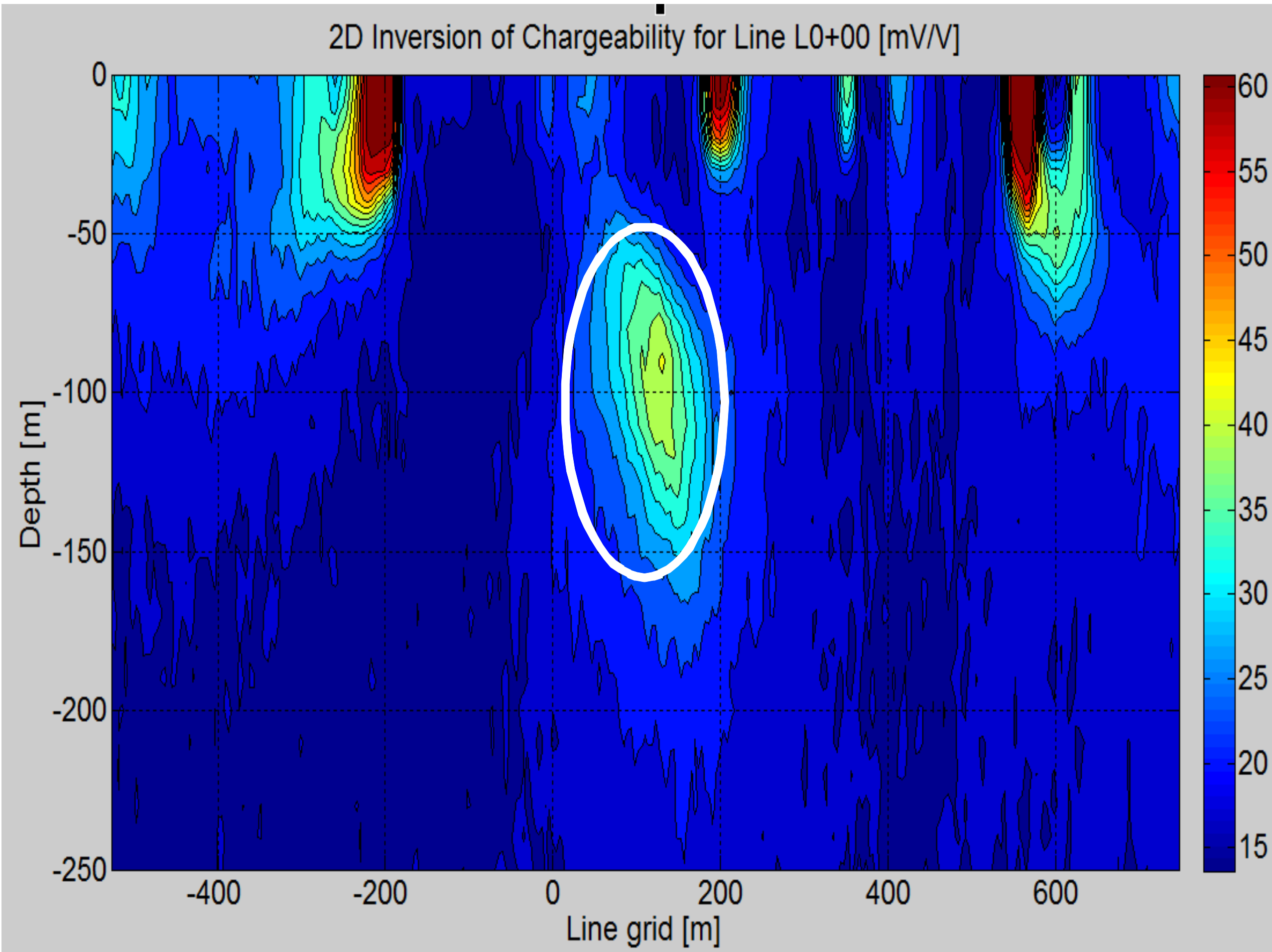

Figure 4: Best target on line L0+00

APPENDIX A

STATEMENT OF QUALIFICATIONS FOR WEI QIAN

1. Ph.D in Exploration Geophysics, from University of Uppsala, Sweden in 1992.

2. Registered professional geoscientist of Ontario (#1126), with license to practice in the Province of Ontario.

3. He is 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).

4. He has practiced exploration geophysics continuously since 1992.

5. He has published more than 30 papers on international peer-reviewed journals in exploration geophysics and worked on more than 50 projects in mineral exploration world wide.