



Zonge Engineering and Research Organization (Australia) Pty Ltd

**Pole-Dipole Induced Polarisation Survey  
at the Thomas Creek Project  
Logistics Summary**

**February to March 2018**

**For**

**Sherlock Minerals**

Compiled by:

P Soeffky

Report No: 180017

Date: January 2019

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## **1. SUMMARY**

During February and March 2018, Zonge Australia (Zonge) mobilised a three-person geophysical field crew to the Thomas Creek prospect within the Sorell Peninsula, TAS to conduct a Pole-Dipole IP (PDIP) survey for Sherlock Minerals. This was a continuation of a previous survey conducted by Zonge in 2014 (Job 140077).

Information specific to this survey as provided to Zonge by Sherlock Minerals may be found within the "Survey\_Info" folder on the accompanying disc.

Six lines of DPIP were collected at the Thomas Creek prospect. Data for the PDIP survey were collected using 100 meter transmitting dipoles; receiver dipoles were also collected using 100 meter dipoles, with transmitter and receiver dipoles shifted at 100 m station intervals. During this survey approximately 10.5 line kilometres of data up to n=1 to 16 were collected.

Initial plan for the survey included some Fixed Loop EM to be conducted however due to a various reasons that part of the survey was abandoned.

Data quality and repeatability were monitored throughout the course of the survey, which ensured that the best possible data was acquired given local conditions and time constraints.

## **2. IP INSTRUMENTATION**

A GDD-32 IP receiver was used to take all of the IP data for this project. Transmitted signal was generated using a GGT10 transmitter for the survey, powered by a 7.5kVa Kohler generator. Synchronisation was achieved through a GDD transmitter controller.

Daily raw data were emailed to Zonge's Adelaide office and the client representative. For quality control purposes data review, processing and modelling were performed at Zonge's Adelaide office.

### 3. IP SURVEY PARAMETERS

All IP data were recorded at 0.125 Hz. Chargeability data were recorded over 20 time windows after an initial delay of 40 ms. A semi-log window scheme was used to record decay data over the 2000 ms off-time. Stack size was varied depending on signal strength and number of repeat stacks was adjusted in the field to balance survey speed with data quality. Most of the IP data were collected using three to six stacks of 20 to 50 cycles (depending on background noise). Data quality was generally excellent.

PDIP data were collected at the Thomas Creek project area using 100 metre receiver and transmitter spacings with readings collected every 100 metres along line. Lines were read using a roll-along configuration from  $n=1$ , up to  $n=16$ . Line locations and other specifications for this project are reviewed in Table 1. All locations are given using the GDA94 z55 datum.

Transmitter electrodes were constructed using standard aluminium foil lined pits. All electrodes were watered using salty water. Rehabilitation consisted of removing exposed foil and backfilling each hole, once data collection was completed.

**Table 1 Pole-dipole survey line specifications: Thomas Creek (100m receiver stations)**

Method	Line	Start			End			Dipole Size (m)
		Local	UTM		Local	UTM		
PDIP	5285800N	1000E	369000E	5285800N	2700E	370700E	5285800N	100
PDIP	370300E	900N	370300E	5284900N	2600N	370300E	5286600N	100
PDIP	370150E	900N	370150E	5284900N	2600N	370150E	5286600N	100
PDIP	369850E	1000N	369850E	5285000N	2800N	369850E	5286800N	100
PDIP	369550E	1100N	369550E	5285100N	2900N	369550E	5286900N	100
PDIP	369400E	1100N	369400E	5285100N	2900N	369400E	5286900N	100

\* Start and End locations are taken from maximum extent of receiver electrodes.

**Table 2 Remote Transmitter Pits location: Thomas Creek**

UTM		Used for lines
368500E	5286700N	All

#### **4. PRODUCTION ISSUES AND SUMMARY**

No incidents were reported during this survey.

All safety information and other documentation produced by Zonge or provided to Zonge in execution of this survey can be found on accompanying disc under the *"Safety\_Documentation"* and *"Survey\_Info"* directories.

Appendix I provides a summary of the production of Job 180017. More detailed information on daily production may be found on the accompanying disc under *"Production Reports"*. Appendix II provides the "Pre-survey Information" provided by client before the start of the survey.

#### **5. DATA PROCESSING**

All data collected for this job, both raw and processed are presented to the client in digital format as part of this report.

All of the raw data collected during this survey have been reviewed at Zonge's Adelaide office to ensure that the presented data is of the highest quality. Raw, edited and processed results have been provided to Rob Angus shortly after survey completion.

To process the data, raw resistivity and IP data were imported into a Scientific Computing and Applications' TQIP database for review and editing using the program TQIP. Two to three data blocks (more if conditions were noisy) were collected at each data point to allow the data to be analysed for quality. Once these were examined all of the data from a given data point were averaged to create a single record for that data point. Blocks or channels that were considered of poor quality were skipped before averaging each station's data. Chargeability data was recalculated over the 590-1540ms integration timeframe. All raw data taken during this survey are included within the accompanying data set so that this data may be re-averaged if desired.

No further processing was conducted by Zonge.

## 6. EXPLANATION OF FILES

The data collected during this survey are provided to the client along with paper plots of the data (Appendices III and IV). Data from each surveyed line are placed in the following directory structure on the accompanying disc: *Processed\_Data\line#*. File formats are explained below:

<b>*.GDD</b>	The edited raw data downloaded from the GDD receiver.
<b>*.DAT</b>	Averaged data file from TQIP containing averaged and edited IP data, two varying formats are used for the TS2DIP and RES2DINV inversions.
<b>*.MDB</b>	TQIP database file containing all DDIP data.
<b>*.IPM</b>	Inversion model files produced by TS2DIP
<b>*.PNG</b>	Panel plot files showing modelled, observed and calculated data
<b>*.STN</b>	Station co-ordinate files containing station number, easting, northing and elevation.

**APPENDIX I**  
Production Summary



# Zonge Engineering & Research Organization (Aust) Pty Ltd

## JOB HOURS SUMMARY

Job No.: **180017**  
 Client: **Accelerate Res**  
 Project Name: **Sorrell Peninsula**  
 Summary Sheet: **1 of 1 - Part 1**

Date: **28/02/2018**  
 By: **Rajab Lokiri**

DATE	Prod Hrs		Misc Hrs		Comments
	Mobe	3 man	Travel (3 man)	Standby (3 man)	
28-Feb-2018	10.5				Mobilisation from Adelaide to Strahan - overnight
1-Mar-2018				5	On Standby waiting for equipment to arrive
2-Mar-2018				10	Loading swing load for chopper and setting up tents
3-Mar-2018		11			JSA and Toolbox meeting, Prep remote pits and deploying Tx wire
4-Mar-2018		11.5			Prep second remote pit, carrying water and deploying Tx wires
5-Mar-2018		11			Deploy RX cables / pots and Acquired data
6-Mar-2018		11			Acquired data
7-Mar-2018		11			Pack up line 5285800 and setup line 370300
8-Mar-2018		11.5			Finish setup and acquired data
9-Mar-2018		11			Acquire data, Pack up line 370300 move to next line 370150 and setup
10-Mar-2018		11.5			Setup and acquired data onLine 370150
11-Mar-2018		11			Acquired data, Pack up line and setup next line
12-Mar-2018		11			Setup and acquire data on Line 369850
13-Mar-2018		11			Acquired data on Line 369850, Pack up the line and setup next line
14-Mar-2018		11.5			Setup and Acquired data on Line 369550
15-Mar-2018		11			Acquired data and pack up Line halfway
16-Mar-2018		11.5			Pack up, setup and Acquired data
17-Mar-2018		12			Acquired data and pack up line halfway
18-Mar-2018		10			Pack up cables and tx wires
19-Mar-2018		10.5			Packing up
20-Mar-2018				11.5	Packing up - Chopper gear to Strahan and Pack in storage
21-Mar-2018			8.5	1.5	Finish Packing away gear - Travel to Devonport - Fly to Adelaide

TOTALS	TOTAL HOURS			
	Mobe	3 man	Travel (3 man)	Standby (3 man)
Sub Totals	10.5	189	8.5	28
Totals	10.5	189	8.5	28
Rate p/hr				
Billable Total				



## **APPENDIX II**

Pre-survey Information provided by client



## PRE SURVEY CLIENT CHECKLIST

**Date last modified:** \_\_\_\_\_

**Survey Details (Please attach maps or relevant documents)**

1.	Zonge Job Number:	180017
2.	Zonge Representative Managing Survey:	Simon Mann / Mike Hatch
3.	Client Company:	Sherlock Minerals / Accelerate Resources (AX8)
4.	Client Representative Planning Survey:	Peter Reid – Sherlock, Russel Mortimer - consult
5.	Survey / Project Name:	Cape Sorrell – Henrietta and Thomas Creek Prospects
6.	Exploration License Number:	EL6/2013 and EL7/2013
7.	Coordinate Datum / Zone to be used:	GDA94 Z55S
8.	Survey Type:	Pole-dipole IP (PDIP) Fixed Loop EM (FLEM)
9.	Survey area or line priority:	Map to be provided
10.	Station / Dipole Spacing:	PDIP: 100m FLEM:
11.	Frequency:	PDIP: 0.125Hz FLEM:
12.	Data coverage required for IP:	Min n=3, target n=10+
13.	Can the crew contact the client representative out of hours (weekends) if necessary?	Yes
14.	Will Zonge be required to perform specific processing or inversion modeling on the data acquired?	No



## PRE SURVEY CLIENT CHECKLIST

15.	Will the client require a hardcopy of the logistics report as well as digital?	No
16.	Will the client require a hard copy of safety documents and or MSDS?	No

### **Site Details (please provide information where possible)**

17.	Crew Accommodation:	Fly Camp, - Zonge to provide own sleeping tents. Sherlock will provide basic camp - messing tent, camp kitchen and food. 2KV power supply
18.	Client contact for crew ( <i>name, phone and email</i> ):	Peter Reid 0435 181 705, geovise@adam.com.au Robert Reid 0419 586 349, robreid@bigpond.com
19.	Relevant site liaison contacts ( <i>name, phone and email</i> ):	Robert Reid 0419 586 349, robreid@bigpond.com; Sherlock Satellite Phone Number 0011 8816 2345 9221
20.	Will Zonge crew be required to contact landowners or other external interested parties?	No
21.	Level of mobile phone coverage at accommodation or survey area:	None
22.	Please describe level of vehicle access along survey lines and expected topography ( <i>attach photos or maps if possible</i> ):	None
23.	Known obstacles along lines ( <i>fences, roads etc</i> ):	Wilderness area – working along pre-prepared cut lines
24.	Are cultural noise sources present ( <i>power lines, fences, houses etc</i> )?	No
25.	Please describe access to nearest water source, both potable and non potable:	Local fresh water creeks
26.	Are large volumes of water available for grounded electrodes ( <i>up to ~2000L/day</i> )?	Yes, ground is generally moist, good connection
27.	Are there cultural or environmental restrictions the crew should be aware of?	The site is located in the southwest conservation area. Ensure all equipment and personnel boots etc entering are clean to avoid carrying seeds and phytophthora, pathogens and water borne diseases. Will need to follow Sherlock's Hygiene Management Plan.



## PRE SURVEY CLIENT CHECKLIST

28.	Please describe nearest refueling location ( <i>diesel and petrol</i> ):	Strahan Village, Fuel to be flown into site.
29.	Do you require daily or scheduled contact with crew?	Yes
30.	Will the crew be required to work around other personnel?	Sherlock will have a field manager on site. There may be some overlap with the line cutting crew
31.	Please describe requirements (if any) for crew to work on site ( <i>restricted work hours, induction, drug test, PPE etc</i> ):	Be aware this is a remote area and appropriate first aider supplies should be brought in. No fires are allowed. May be wise to wear snake gaiters when walking through vegetation.
32.	Have the lines been flagged prior to crew arrival?	Lines have been cut
33.	What level of rehabilitation of transmitter electrodes is required?	Fill in any holes that are dug
34.	Will a client based Emergency Response Plan be available? ( <i>If so please attach copy</i> )	Yes to be provided
35.	Will there be stock or animals in the survey area?	No - a natural wilderness area
36.	Please describe vehicle requirements and site inspection checklist (where relevant): <i>e.g. no split rims, flashing lights etc.</i>	N/A

Form reviewed by \_\_\_\_\_ (if applicable)

Date: \_\_\_\_\_

Form reviewed by \_\_\_\_\_ (if applicable)

Date: \_\_\_\_\_

Form reviewed by \_\_\_\_\_ (if applicable)

Date: \_\_\_\_\_